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Forty Million Bushels of Wheat for 1918

By J. F. COX

Dept. of Farm Crops, M. A. C.

THE world is crying for more wheat. The cause of liberty demands that every possible acre be planted during the coming season. In times of peace bread is often called the "Staff of Life." Under present war conditions, bread may be as truly termed the "Staff of Liberty." The armies of America and her allies, as well as hungry mouths at home and abroad, depend on wheat more than any other crop for subsistence. Without a doubt Michigan will rise nobly to the demand placed upon her, but in order that she may do her full duty, the patriotic co-operation of all is needed—farmers, laborers, grain dealers, bankers—all must do their full part.

Forty million bushels for 1918 is the goal set. The acreage planted to wheat in Michigan in 1916 was 766,391 acres; in 1899 it was 1,925,769 acres. Her wheat acreage then was almost three times what it is today, but with the present greater area of tillable land and with improved machinery and more hands for the field, as much or more wheat can be grown in Michigan during the coming season provided a supreme effort is made. The decline in wheat production has been due chiefly to the low price received, but now that the price is all that could be desired, wheat ranks again as a profitable money crop. The wheat grower has come into his own.

In order to give widespread publicity to methods employed by the most successful wheat growers, the following suggestions are set forth:

The Variety.

Grow the best variety which can be obtained. Red wheat, in general, is much superior to white wheat for bread making. Red Rock wheat, a pedigreed strain developed at the Michigan Agricultural College, is the highest yielding, finest milling wheat obtainable for growing in Michigan. All that is available should be used for seed. There are many other excellent varieties, such as the Egyptian, Shepherd's Perfection, and Red Wave. The Agricultural College, county agents, successful wheat growers, local millers and elevator men should be consulted and their opinion and aid solicited in securing the best variety.

Newly advertised varieties, particularly those recommended as requiring a small amount of seed per acre, should be given a trial in a small way before planting. In careful experiments with these varieties and with the rates of seedings advertised, they have not been found to yield as good as average wheat varieties, nor do they have the hardihood to withstand Michigan winters.

Prepare Wheat Land Early.

It requires from four to six weeks to put land in the best condition for wheat. Wheat requires a firm, well-worked seed bed carrying sufficient moisture for proper germination. If prepared early and worked thoroughly,

land can be put in such condition. phosphate and other fertilizers are much more effective on soils well supplied with calcium carbonate. An indirect benefit, but an important one, nevertheless, is the great increase in the stand of clover secured after liming. Two tons of finely ground limestone or two cubic yards of marl, or fifteen hundred pounds of hydrated



Stand of Red Rock Wheat on Farm of J. W. Veitenburger, Saginaw County, which Yields Forty-seven Bushels to the Acre.



Red Rock Wheat Thrives on Farm of O. F. Bell, Ingham County, Despite Adverse Conditions. (See Page 91).

plowed much more easily. Plow for wheat at an ordinary depth and follow with roller to pack furrow slice, and disc or harrow frequently. In many cases, beans have failed in Michigan due to the bean maggot or other causes. Such land held for wheat should be disced frequently during August and September. Where wheat is to follow beans, potatoes or corn, the land should be disced as soon as possible after the crop is removed.

Lime Acid Soils.

From two to four bushels increase can be expected in the wheat crop after a suitable application of lime. Acid

lime are the amounts usually applied.

Manure for Wheat.

In preparing wheat land an application of manure at the rate of six or eight tons per acre will greatly benefit the crop, not only is plant food supplied, but the water-holding capacity of the soil is greatly increased. It is not wise, however, to manure land high in organic matter previous to planting to wheat. Just before winter sets in, a light top-dressing of manure or straw will prove very effective in preventing winter-killing, and in giving the wheat a good start in the spring. Manure, however, is deficient

in phosphorous and the benefits derived from its use will be greatly increased if it is re-enforced with acid phosphate or rock phosphate.

Phosphate for Wheat.

Phosphate is the most effective mineral which can be applied to the wheat crop. Michigan soils as a rule are deficient in phosphorous. The wheat crop demands a large amount of phosphorous in order to develop plump grains and to yield heavily. The application of acid phosphate hastens maturity and increases the yield. At the Michigan Experiment Station two hundred pounds per acre on wheat gives a return of six bushels, or over four hundred per cent on money invested in fertilizer. Under average conditions about two hundred and fifty or three hundred pounds of acid phosphate should be applied at time of seeding, either broadcast or through fertilizer attachment. Acid phosphate is also very effective when used to re-enforce manure. Twenty-five pounds of acid phosphate with each ton of manure will more than double the value of the manure and pay for the phosphate as well. Rock phosphate is also valuable when used in this way. From thirty to fifty pounds of raw rock phosphate to a ton of manure, either mixed with the manure at time of application or used as a stable absorbent scattered in the stalls or over manure in feeding yard will render the manure much more effective. When nitrogen and potash are used in connection with phosphorous, a further increase is noted but at present prices the greatest net profit will come from the use of acid phosphate. Ammoniated phosphates also return a good profit, and where complete fertilizers cannot be bought at a reasonable price their use is strongly recommended.

Use Fanning Mill.

The proper use of the fanning mill will remove weed seeds, dirt, smutted kernels and light kernels. Heavy seed will give a greater yield than light seed. A good fanning mill will pay for itself in a short time. All seed wheat should be thoroughly fanned before treating with formaldehyde.

The Formaldehyde Treatment.

The stinking smut of wheat can be almost entirely controlled by the formaldehyde treatment. The method usually advised is to sprinkle wheat thoroughly with a solution made by mixing one pint of forty per cent formaldehyde with forty gallons of water. Wheat should be spread out on barn floor or wagon box and thoroughly sprinkled and shoveled over during the process. It should be left in a covered heap for two hours, and then spread out to dry.

A simpler method is the new concentrated formaldehyde treatment, recommended by the Department of Botany, M. A. C., direction for which are as follows: Use formaldehyde at the rate of one pint (cost about twenty cents) per acre.

(Continued on page 91).

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DETROIT, AUGUST 4, 1917



CURRENT COMMENT.

At the congress of Michigan wheat growers held at the Agricultural College on August 1, a campaign was launched for the production of 40,000,000 bushels of wheat in Michigan in 1918. Every phase of the question of wheat production was discussed by the speakers, which included addresses by Dean Shaw, of the Agricultural College, Ex-Governor Warner, chairman of the Food Preparedness Committee, Prof. C. G. Williams, of the Ohio Experiment Station, and short talks by a dozen or more speakers, including wheat growers, grain dealers, millers, members of the College faculty, county agents and others.

Special emphasis was placed on the matter of good seed, thorough preparation and intelligent fertilization of the crop as the best means of increasing production, which phases of this campaign will be given special emphasis in future issues of the Michigan Farmer. Resolutions were presented by Ex-Governor Warner and Hon. A. B. Cook, which were referred to a committee who reported the following resolution which was unanimously adopted by those present at the meeting:

We, the Michigan farmers, assembled at the Agricultural College this first day of August, 1917, do hereby pledge our every effort to double the wheat crop of this state next year and increase our rye acreage.

Whereas, increased food production is a prime necessity to meet the present world-wide emergency and to meet this requires the effort of well-trained young men on the farms; therefore we ask the draft boards to make exemption from the first draft of indispensable farm labor.

We further direct the president of this meeting, I. R. Waterbury, to wire these resolutions of our pledge and wishes to President Wilson.

J. N. McBRIDE,
N. P. HULL,
C. B. COOK.

This campaign for the production of more than twice the normal crop of wheat in Michigan for 1918 should be easy of attainment without sacrificing the acreage of other staples to any extent. With the adoption of better cultural methods which experiments have shown will increase the average yield materially, a fifty per cent increase of the acreage sown will easily double

the total crop. With the practical assurance of a compensatory price for the crop grown, Michigan farmers can well afford to support this campaign enthusiastically.

With the probability that the labor situation will become still more serious as the time of our participation in the war lengthens, the fact that the greater proportion of the labor required in producing the 1918 wheat crop will be accomplished this year with the labor now at hand is a strong argument in favor of this movement.

In another column of this issue will be found the text of the new threshers' license law, passed by the last Legislature and now in force. The object of the law will be apparent from reading this text, and its benefits will accrue to the farmers of the state by furnishing authentic information with regard to the yield of grain and seed crops threshed in the state.

This law, as will be noted, requires the thresher to file weekly reports regarding the amount and kind of grain and seeds threshed by him, together with the name and address of the grower and the number of acres of each and the yield of the crops threshed for each grower. The Secretary of State in turn is required to tabulate these reports and make the same a matter of public record, which shall be available to the people of the state.

By this means farmers will have just as reliable advice with regard to the yield of grain and seed crops as will grain dealers and speculators. This law will provide dependable information with regard to crop yields at a time when information regarding same will be of greatest value to the farmers of the state. Farmers everywhere should co-operate to this end by giving authentic information with regard to the acreage of grain threshed, in order that these statistics may be of greatest possible value.

In another column of this issue will be found the text of the new dog law enacted by the last Legislature and now in force. Since this law was mentioned in the columns of the Michigan Farmer, various inquiries have been received regarding it, and a number of requests for its publication.

As will be noted, this is a more stringent dog law than has ever before been written on the statute books of this state. This law, as will be noted, gives authority to the sheriff or other police officer and makes it his duty to destroy any dog or dogs found at large in violation of the provisions of this Act. Co-operation from the public by making complaint in each and every case where the law is not fully complied with will aid materially in its enforcement and bring about an abatement of the dog nuisance which has been a serious menace to the sheep industry in many sections of the state during recent years.

Permanent road improvement, so-called, has made rapid strides in this state during recent years. With the adoption of the county road system in many counties and the subsequent bonding of the counties for the rapid improvement of their highways, permanent road building, especially of gravel roads, was given a great impetus, and the rate of improvement in many counties has been very rapid. In a great majority of cases, however, the matter of maintaining these roads in good condition has apparently been neglected to too great an extent by the officers in charge of highway administration.

The first great cause of the deterioration of these roads is the use of automobiles on them at speeds greatly

in excess of the legal limit. In many communities the authorities are making an effort to abate this nuisance by the haling of speeders into court and the administering of a lesson which is calculated to serve to check the speed of driving on these improved highways. In a measure, this is thus accomplished, but permanent benefits in this direction can only be secured by constant patrol of the roads by officials having police power.

But maintenance of improved gravel roads requires more active measures than the abatement of the speeding nuisance. Only by road dragging or the scraping of the loose gravel to the crown of the roadway filling the incipient ruts and holes after each rain when moisture conditions are right can the surface of a gravel road be kept in good condition and the foundation of the road protected from disintegration. In a few sections only is this work properly done at the opportune time. Roads which have been longer used also require the addition of gravel in this filling and smoothing process if they are to give a maximum of service. It is probable that after the road building program is completed in counties which have laid out a definite program, more attention will be paid to road maintenance, but in many sections this will, from present appearances, be too late for the accomplishment of the most satisfactory results.

With the severe traffic to which many improved roads are subjected, they will be worn out before the bonds issued to build them are retired, unless given the most efficient maintenance. With the increased mileage of good roads which will result from the road building program being followed out in many counties, this traffic will be better distributed and the problem of maintenance simplified to that extent. In the meantime, it is within the province of every interested citizen in communities where permanent gravel roads have been constructed to insist on their proper maintenance. If sufficient pressure is brought to bear upon the highway officials who are responsible for this work, it will be better done. The people of every section of the state traversed by an improved gravel road should apply this pressure without delay in every case where it appears to be needed.

MICHIGAN MILK PRODUCERS, ATTENTION!

A Commission Investigation and a Delegate Meeting of the Condensery Patrons of the State.

That the leading milk condenseries of Michigan have been the greatest factors to cause the ruinous prices to the dairy business, the result of which is alarming the federal government as well as the producers and consumers of dairy products the world over, is now a conceded fact, and now with contracts with this and other governments, which are the most remunerative of any ever made, most of these condenseries are still holding the milk price far below the cost of production. Some of these condenseries are making a daily profit of not far from 100 per cent, making fabulous wealth at the expense of this vital industry. The Michigan Milk Producers' Association in its endeavor to help the government to be prepared to take hold of this industry if necessary, to save it from destruction, have been asked and are preparing to lay before the government head of the food supply of this nation all obtainable data, and facts concerning this industry in Michigan. To this end, we have invited and secured a commission, the caliber and class of which cannot be excelled in any state. This commission will begin its investigation at the Michigan Agricultural College, East Lansing, August 13, 1917.

The men who will serve you on this commission are Ex-Governor Fred M. Warner, chairman of the Michigan Food Preparedness Board; Hon. I. R. Waterbury, Member of the State Board of Agriculture, and editor of the Michigan Farmer; Hon. Fred L. Woodworth, Dairy and Food Commissioner; Hon. J. N. McBride, State Market Director; Prof. A. C. Anderson, Dairy Division Michigan Agricultural College. You cannot overestimate the in-

fluence that such a commission will have on the government in this national crisis and on the industry for years to come.

The field secretary of the Michigan Milk Producers' Association is getting data as to cost of production and food value of dairy products that have been compiled by investigators and scientists of this country to lay before the commission at its opening session. The result of this investigation will be presented to the delegates of the condensery districts at their meeting, which is to be held at the college as per call on August 21, 1917.

The Michigan Milk Producers' Association is using every honorable means to save the dairy industry from destruction at the hands of those who are willing to throttle this vital food supply for the sake of an exorbitant profit. We are convinced by the facts at hand that there is not a condensery in Michigan that is paying anywhere near what could be paid on the basis of the present price of condensed and evaporated milk, and yet some condenseries are paying \$2.60 per hundred for August milk. What is your condensery paying? Write your field secretary about it.

Now, milk producers of Michigan, our desire is to help you and the consuming public against interests that are willing to see this industry waste and die for the sake of the extortionate profit. Now you get busy, do your bit to save your own business, co-operate, fit in. If the government sees fit to take over some of these factories; to requisition them as it has some of the other concerns that are making exorbitant profits, we are sure that the milk producers of Michigan will be willing to come on the same basis and sell his product at cost plus ten per cent profit which seems to be the thought of the government as a basis of action. We are sure that we can depend on you. Let us be loyal to our nation, our homes and ourselves. Let us co-operate as every other industry is doing. We want to help you.

R. C. REED,

Field Secretary, Howell, Mich.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—In an offensive by the allies last week in Flanders northeast of Ypres, considerable ground was gained from the Germans under Crown Prince Rupprecht of Bavaria. Success attended the efforts of the allies until the heavy rains forced them to quit. However, on the fifth, when the storms had abated, additional territory was taken to the southwest of Lens, which brings the Canadian troops within one thousand yards of the center of that important position. This drive is apparently calculated to rout the German forces from the Belgian coast and thus destroy the U-boat bases located there, which are making it easy for the Teutons to raid the commerce of the allied nations.—The Austro-German armies continue to force the disorganized Russian troops still farther back on Russian territory in the Galician district. However, the Russians have at some points rallied and in a few cases have been successful in defeating the enemy and taking prisoners. Such was the case in an offensive east of Czernowitz, the capital of Bukowina.—No infantry operations of importance are reported from the Italian front, but aerial attacks on the Austrian naval base of Pola have been attended with considerable success.—Following the advance of the allied forces on the western front last week, Emperor William of Germany immediately called a conference of his military leaders at Berlin.

The Japanese diet has provided for a mission to be sent to this country to make a study of general conditions. This delegation shall be composed of five representatives of each of the political parties of Japan.

Amid great pomp and ceremony King Alexander took the oath of office as King of Greece on August 5.

National.

With practically the same equipment railroads of the United States during the month of May, 1917, increased their service 16.1 per cent over the corresponding month of 1916. This increased service is the result of co-operation between the different lines, and also with shippers who are making better use of car space.

The principal task before Congress this week is the final work on the food control bill. Following that, the Senate will start debate on the \$2,006,000,000 war tax measure.

Communication with the Philippines and China by way of San Francisco has been interrupted through the breaking of the Pacific cable somewhere between Guam and the Philippines.

There has been a most remarkable increase in the iron and steel production (Continued on page 105).

The Record of Red Rock Wheat

By J. W. NICOLSON

THROUGH the efforts of state and government officials and the Michigan Agricultural College, Michigan's educational, agricultural and industrial forces are co-operating to develop and utilize her vast resources to best meet the crisis now faced by the country.

Michigan is noted for her great and diversified production of agricultural products, but by proper utilization of information, organizations and resources now available, her farms can be made to practically double their production of food supplies during the coming year. Last year Michigan was credited with 800,000 acres of wheat, producing an average yield of seventeen bushels per acre. But during this same year, Red Rock wheat growing in nearly every county in the lower peninsula, maintained an average yield of thirty bushels per acre, or almost twice what the common varieties averaged.

For wheat seeding in Michigan, Red Rock is the most desirable variety.

Red Rock is a pedigreed wheat developed at the Michigan Agricultural College, and now distributed quite generally over Michigan and a part of Indiana. The variety was first sent out in very limited amounts in 1912, and during the fall of 1913 a number of peck samples were sent to county agricultural agents and others in the state. A large percentage of the Red Rock as now grown traces directly to those peck samples. In some of the counties where there were county agricultural agents at that time, the wheat grown from the peck sample was flailed out and subsequent crops were so handled that the strain was kept pure, so that this year we will have several thousand bushels of inspected Red Rock wheat whose pedigree traces directly to these peck samples sent from the College in 1913.

The following is one of a number of instances showing how even small amounts of pedigreed grain, when it is properly handled, can quickly increase the wealth of a community.

With the co-operation of C. B. Cook, at that time county agent for Allegan county, John O'Dell, of Allegan sowed one peck of Red Rock in the fall of 1913. The plat and yield were accurately measured in the presence of creditable witnesses and this peck yielded at the rate of fifty-five bushels per acre. The wheat obtained was all used for seed and much of it has been properly handled since, so we now find several hundred acres of Red Rock in the county. At the present time, two fields in the vicinity of Allegan give promise of yielding forty bushels per acre, and all the other fields of the variety are uniformly far superior to the average.

Again, practically all of 7000 to 8000 bushels of Red Rock which will be inspected in Kent county, and several thousand bushels in Newaygo county, trace directly to a peck sample sown in 1913 on the farm of Joseph Gerber of Fremont.

Of course, ordinary granary and threshing methods tend to mix grains very quickly unless special precautions are taken. Consequently, much of the Red Rock in the state is not pure, but even so, there are about 4000 acres of it now growing, giving satisfaction to hundreds of farmers.

The writer has observed Red Rock growing in most of the counties of central and southern Michigan and has yet to find a case where any variety of wheat has surpassed Red Rock when grown in the same field with the same care, and in fact, has found but few instances where Red Rock has not shown marked superiority. But don't take the word of someone else

for this. The most convincing evidence of the desirability of pedigreed grains is to see them growing and then note the yields at threshing time. Ask your county agricultural agent or find out in any way possible where some of these grains may be observed, and then look them up and judge for yourself. That's the beauty of these pedigreed grains—they stand on their own merits and will bear observation at every stage of their development, whether it be at seeding time; in the spring after a severe winter, or at threshing time. While they are not adapted to growing in water and will not give high yields on any kind of ground or seed bed, they are almost invariably better than common varieties grown under the same conditions.

The Michigan Crop Improvement Association is now carrying on a field inspection of pedigreed strains. Those which pass are bound to be of good quality and practically pure.

If you want a wheat that on an average is increasing yields twenty per cent, get Red Rock. It is a red, bearded, good milling winter hardy wheat, developed in and adapted to Michigan.

(There is every reason for believing that Red Rock wheat is a great contribution to our list of wheat varieties. However, its value will be better appreciated and the chance of disappointment less if ten thousand farmers grow two acres each than if one thousand grow ten times as much per capita. We would recommend, therefore, that our farmers sow this variety in a moderate way and in such manner that they can compare the yields with those of their best old varieties.—Ed.)

FORTY MILLION BUSHELS OF WHEAT FOR 1918.

(Continued from first page). ty-five cents) to fifty bushels of grain. Put the fresh formaldehyde, just as it comes from the druggist, into a pint or quart hand-sprayer (cost seventy-five cents) and spray the grain which has been spread out on the barn floor. Spray the grain as it is shoveled over and over. Keep sprayer close to the grain and the penetrating odor of the formaldehyde will give no discomfort. When the right amount of formaldehyde has been applied shovel the grain into a heap and cover for exactly four hours with canvas or blankets. The grain should then be spread out for a few hours' time, airing. It may be sown at once, or stored in clean or disinfected sacks.

Wheat Seeding.

Those who have made a close study of Michigan wheat conditions agree that a large number of Michigan farmers seed wheat too late. It is true that the Hessian fly must be controlled, but many bend backward and seed at too late a date to secure a good top before winter. Occasionally seeding made too early may be badly injured by the fly but seeding at the proper time will not only control the fly but give sufficient time for a strong growth before winter. No definite date can be set for Michigan. As a general rule, however, wheat growers in the southern half of the lower peninsula should seed wheat from the tenth to twenty-fifth of September. In the northern half of the southern peninsula from the first to fifteenth, and in the upper peninsula of Michigan from August 20 to September 5. On good wheat soils in southern Michigan eight pecks per acre will give better results than the usual seeding, which is six pecks. Where seeded at a late date, eight pecks is advisable in all cases. Drilling will give better results than broadcasting, since the wheat is planted at a more uniform depth and more uniformly covered.

The Bottom Is the Heart of the Plow

The right kind of plow bottom lays the foundation for the right kind of seed bed. Crop yield is increased. The plow lasts longer and pulls lighter—a saving in actual cost, power, trouble.

John Deere Tractor Plows

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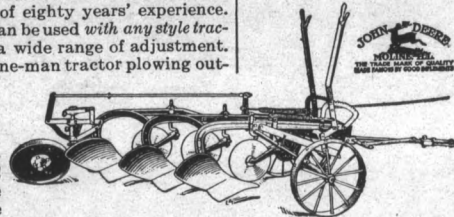
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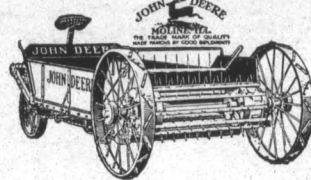
Ask any farmer who uses a John Deere Spreader. How much would that mean to you in these years of high crop prices? And you'll find there is a saving of 50 per cent in time and labor.

Beater on the Axle is found only on John Deere Spreaders. Does away with chains, clutches and half the castings otherwise necessary. Means better spreading, fewer repairs.

Revolving Rake which feeds manure to beater evenly, and Ball Bearing Apron Drive, securing frictionless apron travel with no racing, are other exclusive features.

Spreader only high—easy to load. Big drive wheels—light draft. Easy to operate—only two levers—a boy can run it.

Write for free booklet on the John Deere Spreader.



30% of the Corn Crop's Feeding Value Is in the Stalk

You save money by cutting your corn and putting it in the silo or feeding it to stock in the feed lot—because thirty per cent of the entire feeding value of the corn crop is in the stalk.

John Deere Corn Binder

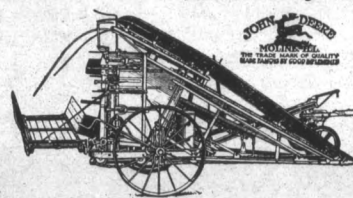
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Inspect the Power Carrier—a Great Improvement.

The John Deere Corn Binder saves corn that is lost by binders equipped with the old style tooth carrier. The power carrier delivers into the windrow all loose fodder that is discharged onto it with the bundles. Requires no leg power or effort to operate it. It places all the bundles out of the way of the horses

when three horses are used abreast. This carrier is always ready to receive the bundles.

The John Deere Corn Binder can be turned quicker than the horses turn. There is no dragging of binder at any time. Square corners can be turned and the horses are relieved of neck weight. The all-steel, quick-turn tongue truck



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DU PONT

Farm Notes

I have a five-acre field with good natural drainage, which I want to get into alfalfa next year. It was well manured two years ago, and sowed to wheat; not seeded last year. Plowed last fall, and beans planted this spring without fertilizer. Shows a good stand of beans. The soil needs lime. Will you kindly tell me the best way to start the alfalfa, also when and how to lime the soil?

Oakland Co.

A. F.

The best method of preparing this soil for alfalfa would be to apply the needed lime at the earliest practical date. It would have been better if the lime had been applied before the beans were planted, but good results would be secured if the lime is applied and the field harrowed over to mix with the soil as soon as the beans are off this fall.

It is impossible to tell just how much lime should be applied to supply the lime requirements of a given soil. From the writer's experience two tons of ground limestone per acre applied some time before the alfalfa is sown will produce the desired result on the average soil. However, there is undoubtedly a great difference in the lime requirements of different soils and even of different fields on the same farm. As a safety measure, it would be a good plan to apply say two tons per acre of ground limestone this fall and then from 300 to 500 pounds of hydrated lime next spring before the alfalfa seed is sown. On the writer's farm we have found such a supplementary application to make a great difference in the first crop of hay on land limed for alfalfa. However, if the ground limestone is sown this fall and the alfalfa is seeded next summer without a nurse crop after thorough preparation of the seed bed in the spring, it is entirely probable that an application of two tons per acre of ground limestone will prove sufficient to correct the soil acidity and promote the development of the bacteria for which the alfalfa is a host plant, and which are so necessary for its profitable production.

In seeding alfalfa the first time on soil which is not inoculated with the bacteria peculiar to the plant, it is generally conceded to be a better plan to thoroughly kill the weeds in the spring by surface cultivation before the alfalfa is sown, then sow without a nurse crop whenever favorable moisture conditions prevail. Some favor seeding in a thin sowing of oats or barley. This is an excellent method of seeding the crop after the soil has been inoculated, but in our experience with first seedings, this plan has not brought as uniform success as has the plan of seeding without a nurse crop. After the ground has been properly neutralized and thoroughly inoculated, however, there is no more difficulty in getting a good stand of alfalfa when seeded with a light crop of oats than in getting a stand of common red clover.

If this land is in a good state of fertility it would be all right to seed with a light seeding of oats, using not more than one bushel of seed oats per acre, then either permit the oats to mature a grain crop or cut them for hay, as the growth of the alfalfa and weather conditions indicate to be desirable.

The seed or soil should be inoculated with the alfalfa bacteria in all cases where neither alfalfa or sweet clover has been grown upon the soil. This is not so essential where lime has been applied for a sufficient length of time, as under these circumstances natural inoculation is more readily and quickly attained. For the past two or three years the writer has seeded a mixture of alfalfa, June clover and timothy in oats sown at the rate of one bushel per acre. The past two seasons a fairly good oat crop was secured from this light seeding, and excellent stands of the legumes. Two years

ago the clover was thicker and more vigorous than the alfalfa, and the first cutting of hay from this seeding last year was very heavy and mostly clover. This year the alfalfa made a much better stand than the clover, apparently enduring the winter conditions better, and the first crop yielded around a ton and a half per acre of almost clear alfalfa hay.

This idea of a mixed seeding is probably a good one, particularly where fields are seeded which have not previously grown alfalfa, since the mixture insures a better yield for the first crop, and is an insurance against the partial failure of the alfalfa, which may occur if the lime requirements of the soil are not fully satisfied, or if imperfect inoculation with the nitrogen-fixing bacteria peculiar to alfalfa is secured.

PIT FOR SILO.

As we are going to put up a silo this year I would like to ask a few questions in regard to a pit, say about three or four feet deep, as I did not buy as high a silo as I now think I will need. Our soil is clay. How thick should the walls be to keep out the water, or isn't a pit practicable on clay land? Some say I can not keep the water out.

Monroe Co.

F. T. S.

Where good drainage can be secured, a pit not exceeding four feet in depth below the floor of the barn may be considered as a good investment. It is usually necessary to place the foundation of a silo to a good depth to secure a firm foundation. This is especially true if the silo is to be built of concrete blocks or other masonry construction. It will be seen, then, that by properly constructing this foundation it may be used to give the silo additional depth. It is scarcely practicable, however, to attempt to make such a floor or pit water-tight. It is possible, however, in using very careful engineering methods, properly reinforcing and placing the materials to secure a concrete which would be water-tight. This is scarcely to be recommended, however, when done by the average workman. If drainage can be secured, however, so that the water will be taken from the bottom of the pit, it would certainly be worth while to use the pit as a part of the silo. The kind of silo has little to do with the keeping of the silage. The essential thing is that the silo and pit should be both air and water-tight, smooth on the inside so that the silage can settle evenly and not catch on the shoulders of the foundation as it settles. If such a pit is built the inside of this pit should conform as nearly as possible to the inside diameter of the silo. It should have a broader base or footing, also, then the walls may be made about six inches thick if made of solid wall concrete. This pit should preferably have a floor which slopes to the center and which has a drain leading away from it. However, the drain is not absolutely essential.

Mich. Ag. Col. H. H. MUSSELMAN.

ERADICATING QUACK GRASS.

I am sending you the method I was advised to use as an experiment to kill quack grass.

Plow and fit the ground well and sow buckwheat. When the buckwheat is in full bloom, plow just deep enough to turn the buckwheat under nicely. The ground should be left untouched for the rest of the season.

Isabella Co.

C. M. Buxton.

If any reader has tried out this method or a similar method of eradicating quack grass, we would be grateful for information regarding the success attained. Eds.

Ottawa county farmers have formed the Hudsonville Produce Association, with Henry Gerret as president and Joseph Dolman, secretary-treasurer.

Grow Pedigreed Grain



Produced by the Michigan Crop Improvement Association.

Why grow common varieties of wheat and rye when you can obtain pure seed of improved varieties which have been thoroughly tested at the Michigan Experiment Station and by hundreds of farmers of the state?

Red Rock Wheat and Rosen Rye were developed at the Michigan Agricultural College where, after a number of years testing against hundreds of other varieties, they have proved superior to all others.

Red Rock Wheat
Is a hard red wheat
Is winter hardy
Stools abundantly
Has stiff straw
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Is the best wheat for Michigan

Rosen Rye
(Compared to Common Rye)
Has shorter, stiffer straw
Has greater leaf surface
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Has larger, plumper grains
Yields twice as much per A.

A number of farmers, members of the Michigan Crop Improvement Association, have had their fields inspected under the auspices of, and by agents of the Association, and now offer for sale inspected seeds as follows:—

Red Rock Wheat, \$3.60 to \$3.85 per bu., depending on size of order.

Rosen Rye for \$2.60 to \$2.85 per bu.

Winter Barley for \$2.65 per bu.

To pass inspection, the fields in which these grains were grown, must be practically free from all weeds and must show less than 1% mixture of other varieties.

For list of growers from whom you can obtain Inspected Seed of the above varieties, write to the Sec'y of the Michigan Crop Improvement Association.

J. W. NICOLSON, East Lansing, Mich.

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A New Type of Cold Storage House

DOES it pay the fruit grower with but a moderate sized crop to store his apples? It most certainly does, especially in this day and age of progressive farming. In fact, the value of having a cold storage house on the farm of the orchardist is readily appreciated. Its chief value, perhaps, is that it simplifies marketing, for the grower with his fruit safely put away in cold storage is independent of the buyer. He can then dictate his own terms, and can wait until he gets them.

The ideal storage house should have the following features:

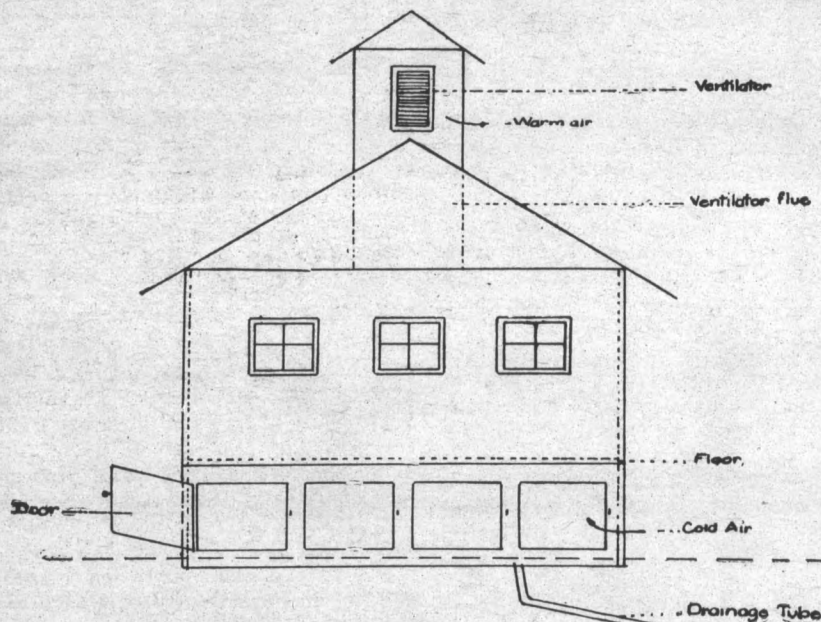
1. Ability to secure and maintain without variation a temperature of thirty to thirty-two degrees.
2. Provision for keeping the air sufficiently saturated with moisture.
3. Adequate ventilation.
4. Absolute protection from rats and other vermin.

The city iced, or chemically cooled cold storage house is, of course, the most satisfactory and efficient type, and comes nearest to fulfilling these

8. Inch furring strips.
9. Inch tongue and groove sheathing.

The flooring should be laid with intervening spaces of about a half inch. The doors are hinged and must fit tightly. The ventilator extends from the ceiling to the roof and is capped by an aerator with four large windows, equipped with shutters. Moisture is best secured by having a tiny brook, or dripping hydrant and trough running through the storage cellar.

The original feature of this storage house is the large, swinging doors, which are placed just below the level of the floor. They, too, must be of heavy, air-tight construction with weather strips or felt lining. In operating, the doors are opened up on cold nights for two or three weeks prior to picking time, and closed tightly early in the morning before the temperature rises. The fruit is stored away in the late afternoon, when it is cooler without. In this way, a fairly low and surprisingly constant temperature may be obtained, and a temperature of



A Simple and Practical Farm Storage House.

conditions, but in addition to the requisites given above, the average fruit grower must of necessity require a moderate original cost—inexpensive operation, and convenience in getting the fruit out and into the building. To secure these things, he must be content with a somewhat higher temperature, which may also be less constant than is considered right for the best results.

Many types of frost-proof cold storage houses have been advocated; and in the Hood River, Wenatchee and Yakima valleys of the northwest, as well as in the Annapolis Valley of Nova Scotia, a high degree of efficiency has been obtained.

The latest and most advanced type has been developed in the Wenatchee and Yakima valleys of Washington. This farm storage house represents the results of long-continued effort and investigation on the part of experts from the United States Department of Agriculture, Bureau of Markets. It has many original features. In construction, it is exceedingly simple and inexpensive, yet it is very efficient in northern fruit-growing regions, where cold nights prevail at picking time.

A simple diagram of the structure is given above.

The walls should be well insulated. The following is a common construction. Beginning from the outside, we have:

1. Shingles.
2. Water-proof paper.
3. Inch boards.
4. Water-proof paper.
5. Inch boards.
6. Two-by-four-inch studs.
7. Lath and plaster.

thirty-two degrees may be secured by the middle of November.

Where these low evening temperatures are of regular occurrence, this is a most satisfactory type of frost-proof storage house, and for the fruit grower with a moderate production it is strongly recommended.

Ingham Co. H. L. FISHER.

TROUBLE DEPARTMENT.

Curculio.

We have some plum trees that are five years old, and every spring are full of blossoms, and as soon as the plums show good they all drop off. What is the trouble? What would be best to spray berry bushes with for worms.

Wexford Co. SUBSCRIBER.

Your plums have undoubtedly been attacked by the curculio, which is an insect which forms a crescent-like mark on the plum in which it deposits its eggs. Spraying thoroughly with arsenate of lead at the rate of three pounds to fifty gallons, just as the blossom petals drop, and repeat twice at intervals of ten days will do much to keep this insect in check.

As the plum is also susceptible to rot it is advisable to use lime-sulphur at the rate of one gallon to fifty of the arsenate of lead mixture, or Bordeaux made of four pounds of copper sulphate and six pounds of lime to fifty gallons.

For any chewing insect attacking fruit of most any kind, arsenate of lead as a spray at the rate of two and one-half pounds to fifty gallons, is a sovereign remedy. It will be effective on your berry bushes. However, precaution should be used not to spray the bushes within three weeks of the ripening of the fruit.

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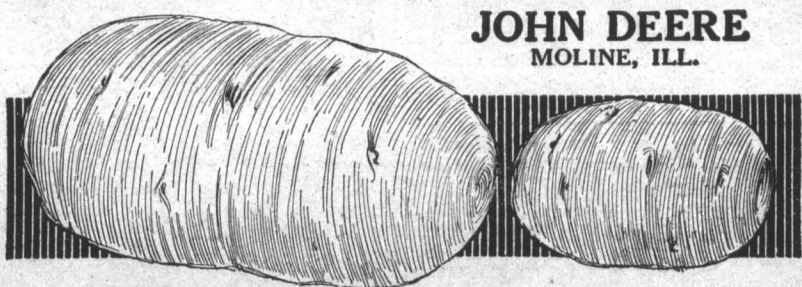
This year, of all years, it is important to get all of your crop out of the ground. Every potato you harvest means money to you. Every potato available will be needed for food consumption. You are sure to get all of your crop if you use the

Hoover Potato Digger
Built in a variety of styles.

Besides getting all of the potatoes the Hoover digs your crop at less cost. Indications point to a big shortage of farm labor this fall. A Hoover Digger is crop insurance. It enables you to dig your crop in the shortest possible time. Digs as fast as any ten men. Delivers all of the potatoes in rows—every one exposed. The Hoover can be furnished with picker attachment. Potatoes can be delivered in crates or dumped in piles.

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is a dairy food containing three times as much protein and fertility as corn. It contains no human food. **Every day more breeders in Michigan adopt UNICORN for their ration base.** We have the choicest feeds to make it with and give you the best money can buy. Send for genuine certified list of high records and free copy of our useful Cow Testers' Manual. Prices quoted on request.

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A REAL POTATO DIGGER

Not a mere Plow with a rake attachment, but a low priced, scientific implement. Cleans the trash from the dirt and the dirt from the potatoes as well as machines that cost five times as much. Steel beam with high arch to prevent clogging. Polished high carbon steel shovel. Adjustable wheels regulate depth and "pitch" exactly. Will not bruise potatoes. **Don't buy a Drill, Cultivator, Harrow, Lime Spreader, Potato Digger, or any other piece of Farm Machinery before writing for our special catalog.** State what machine you want and give your dealer's name. **Hench & Dromgold Company** York, Pa. 1514 6th Ave.



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Factors In Sheep Raising

By I. J. MATHEWS

IT has been quite a long time since farmers have taken any great interest in sheep, and for this reason the oncoming generation knows very little about the particular points of care that are necessary to make the sheep business a paying one.

Desirable as Scavengers.

As scavengers, sheep are certainly good and for this reason alone a dozen or fifteen head of sheep might well be carried on a farm of ordinary size—say one that contains a hundred and twenty acres. Cattle in the pasture refuse to eat the weeds along the fences and here is a place where sheep come in handy, since they seem to relish the weeds almost as much as the grass. Many farmers have found to their everlasting pleasure that a few sheep turned into a corn field that is weedy will soon rid the field of the weeds without doing any particular damage to the corn. Of course, if the corn is about ripe, after the sheep have eaten up the ragweeds and other foreign plants in the corn field, they may tackle some of the ears of corn, but they will not do this until after they have exhausted the supply of weeds.

In cleaning up old brush rows or pastures that are intended for breaking, sheep do excellent work since they sprout the stumps so completely that the sprouts are killed out during the first season of pasturage. The following spring this land can be broken very well.

Rotate the Pastures.

Where sheep are kept as one of the major businesses of the farm, particular attention must be paid to the pasture upon which they graze, since there seem to be a number of internal and external parasites that prey upon the woolly creatures. After sheep have pastured upon one piece of land two seasons it is high time that they were moved to the next pasture.

Another point that often comes up regarding sheep is that of shelter during the winter. When it is taken into consideration that when winter draws on the sheep have all the way from two to five inches of wool covering their backs and when we remember how warm woolen clothing is, we are in a position to know at once that the sheep do not require a very warm shelter. The most successful sheep men

with whom I have acquaintance do not give the sheep close shelter at any time of the year, except the ewes, for a few days just at lambing time.

Dogs, no doubt, contribute something to the loss of sheep and whether or not there happens to be a law to that effect I should feel perfectly free to shoot any dog that was nosing about the sheep yards. Until secure protection from dogs can be legislated through, sheep men should take precautions by building high dog-proof fences about the place where the sheep stay nights. Under present conditions however, there can be no doubt but that it will pay to take on a few sheep, but as with all other ventures, he who makes the venture should know the limitations of his enterprise.

The New Dog Law

MUCH interest has been manifested in the new dog law, enacted by the last legislature, which is now in force. In response to several requests, the full text of the law is here reproduced:

Section 1. It shall be the duty of the owner of any dog or dogs, to keep the same confined to the limits of his or her own premises or the premises to which such dog or dogs regularly belong, in such manner as to make escape impossible, except when accompanied by the owner, caretaker or custodian of such dog or dogs, or when wearing a tag as hereinafter provided.

Section 2. It shall be the duty of each owner of any dog over four months of age, on or before the first day of February of each year, to secure from the clerk of the village or township in which he or she may reside, a metal registration tag showing the name of the township or village and license year and the clerk's registration number thereon, and such tag or device shall be securely fastened to the collar of the dog and constantly worn by such dog. The clerk of the village or township shall keep a registration book for such purpose and enter therein the name of the owner and the number of each tag applied for, together with a description of each dog so licensed. The owner shall pay to the clerk the sum of two dollars for each male dog and each spayed female dog (when a certificate of a veterinary surgeon that such female dog has been spayed is presented to such clerk), and the sum of five dollars for each unspayed female dog for each tag issued. Provided, however, that in the case of dogs kept solely for breeding purposes, and confined in kennels, the fee shall be one dollar for each male dog and two dollars for each female dog so kept. The money so collected shall be deposited by monthly returns with the township treasurer as a special fund for the payment of damages and expenses caused by dogs to livestock in each township, as hereinafter provided, excepting that no part of such fund shall be paid out for damages done by dogs suffering from rabies, except it has been determined by the State Live Stock Sanitary Commission that such live stock is affected with rabies, and the justice of the peace authorized to make the appraisement is so notified.

Section 3. It shall be the duty of the State Live Stock Sanitary Commission to purchase in the month of December of each year, and from time to time thereafter as may be necessary, a sufficient number of tags for the State of Michigan, which tags shall be purchased from such commission by the clerk of each township or village within the state as the same may be needed to comply with the provisions of this act. Such tags shall be sold at cost to the said clerks of the said townships and villages. The state treasurer is hereby authorized to advance to the said commission out of the general fund of the state such sum of money as may be necessary from time to time to pay for the tags so purchased, which sum shall be repaid to the state treasurer from moneys collected from the township clerks in payment for the tags. The said clerks shall pay

for the tags so purchased out of the license money fund in the same manner as other contingent expenses are paid. The said commission is hereby authorized to extend thirty days' credit to any township or village clerk for tags purchased. The said tags purchased shall be uniform in size and design for each year, and the said commission shall change the design each year in such manner as to prevent the use of expired tags.

Section 4. It shall be unlawful for anyone to permit any dog owned by him or her to be at large without said license tag, and it shall be the duty of all sheriffs, deputy sheriffs, constables and police officers to enforce the provisions of this law. It shall be the duty of each supervisor or assessor at the time of making his annual assessments to make a list of the dogs within his assessing district and to make a report thereof direct to the said township or village clerk within thirty days after such assessment has been made.

Section 5. The tags provided for in this act shall not be transferable either from person to person or from dog to dog, and shall be good for only one year from and after the first day of January of the year in which the tag is issued.

Section 6. Any sheriff, deputy sheriff, constable or police officer shall have authority to destroy, and it shall be his duty to destroy, any dog or dogs found at large in violation of the provisions of this act. These officers shall receive for any services performed under this act the same fees as are provided in case of executing warrants in criminal cases.

Section 7. Whenever any person shall sustain a loss by the killing or wounding of his livestock by any dog or dogs, he may call upon a disinterested justice of the peace of the township where such killing or wounding occurred, not of kin to such person or otherwise interested therein, who shall proceed to view the live stock so killed or wounded, and if from such view he shall be satisfied that the same were killed or wounded by a dog or dogs he shall make a certificate thereof in writing, stating such fact, and the amount of damage sustained by such person, and shall deliver the same to the clerk of the township or village in which such killing or wounding occurred, who shall file and record the same in his office. The said justice shall receive for his services in each case the sum of two dollars, and mileage at the rate of ten cents per mile for going only, over the usually traveled road, to be paid from the fund created by this act. Any justice of the peace may examine witnesses under oath relative to any such view and when witnesses are examined a statement of their evidence shall be forwarded with the certificate of damage to the said clerk.

Section 8. Upon receipt of such certificate of damage the said clerk shall issue an order for the amount specified in such certificate, payable to the person entitled to the same, which order shall be paid by the township or village treasurer upon presentation to him out of the special fund provided for in section two of this act, provided there is sufficient money in such special fund. All such orders shall be good until fully paid and payment thereof shall be made according to the time of filing such claim with the said clerk. All such claims shall be subject to the auditing rules of the several townships or villages. After all claims have been paid, and at the end of each calendar year, any surplus remaining in such special fund exceeding two hundred dollars shall revert to the general school fund of the township or village where such surplus was accumulated.

Section 9. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor and on conviction thereof shall be subject to a fine not exceeding twenty-five dollars, or to imprisonment not exceeding thirty days, or both such fine and imprisonment in the discretion of the court. Any person presenting a false claim under the provisions of this act, or receiving any money on such false claim, shall be deemed guilty of a felony and on conviction thereof shall be subject to a fine not exceeding one thousand dollars or imprisonment in the state's prison not exceeding two years, or both such fine and imprisonment in the discretion of the court.

Section 10. Nothing in this act contained shall be construed as limiting the common law liability of the owner of a dog for damage committed by it.

Section 11. Act number forty-eight of the Public Acts of nineteen hundred one and all amendments thereto are hereby repealed.

Section 12. This act shall not apply to cities which by their charters or ordinances provide for the disposition of fees derived from the tax upon dogs.

A Perfect Day

should end—as well as begin—with a perfect food, say—

Grape-Nuts

with cream.

A crisp, delicious food, containing the entire nutriment of whole wheat and barley, including the vital mineral elements, so richly provided by Nature in these grains.

Every table should have its daily ration of Grape-Nuts.

"There's a Reason"



Increasing Dairy Production

I AM in receipt of a communication from the Department of Markets in which prices paid by condensaries and creamery companies in different points within the state are noted. Too wide a variation exists between these prices but they are all fairly good, while some of them are high enough to include the cost of production and a reasonable profit.

From the viewpoint of the consumer the cost of milk and butter is great enough, but "the end is not yet." These prices are going much higher. The demand for milk and butter is bound to increase much faster than the possible supply.

A number of causes exist to produce such a result. All grains are abnormally high, and must remain so for a long time. No one can foretell the corn crop of this season, but in case it should be normal, or even above that point, still grain must remain high because much of the corn will be used for human food. People will not consume much corn while flour is obtainable at normal prices, but we are facing the greatest wheat shortage in our history, and if flour is not to be had, in sufficient amounts, we must eat corn meal instead. Hay is still selling at a price much lower in proportion than grain, but hay is going higher, and so is seen little hope of cheap feed from that source.

Beef Prices Good.

Beef cattle are bringing prices so attractive that it is hard to hold on to cows, providing they are getting old or do not milk very liberally. Cows that are fit for beef are now selling for eight cents on foot. Such prices open the way for the owner of poor animals that happen to be in good flesh, to get rid of them. Again, the scarcity of labor and the very high prices at which it must be purchased makes it almost necessary for the farmer to turn his cows out to pasture early in the spring, thus lessening labor as well as feed cost, but obliging the cows to get their own living in the best way possible. This means that while they may milk fairly well for a short time, the flow will soon fall off and during the latter part of the summer milk will not be produced in sufficient quantities to pay for the little care the cows have had.

This is one of the years when we are apt to under-estimate the value of pasture. If land is pastured which can not be tilled, then the case is different, but when good tillable land is given up to pasture the value of the pasture must always depend in part upon the worth of the land in question, were it devoted to crop production. When all products of agriculture are so scarce and high, we ought to consider a while before releasing much good tillable land from cultivation, and giving it up to pasture.

Prices for Dairy Products to Go Higher.

In the judgment of the writer, butter and milk will be much higher in a few months than they are at present. In the general effort to increase acreage of cultivated crops, pastures will be lessened in extent, and the very high prices paid for beef of only average quality will diminish the number of cows.

If we do not take care of our dairies, if we allow the milk flow to fall off because feed is high or because we do not want to give the cows the increased care necessary to better production, then we shall not be able to get them back where we want them after the price of milk or butter has gone still higher and we wake up and realize our mistake.

If we are to increase the quantity of butter and milk we must feed better. True, there is much in breeding but it takes time to breed up a herd.

We can not improve the cows we have by breeding. We can feed them more wisely and more liberally, however, and this will increase our profits and the quantity of butter and milk as well. We ought to do it right away. The majority of us who milk cows might increase our cream checks or the amount received for milk by from ten to twenty-five per cent within the next month, providing we would go at it with a determination to win, and use the best knowledge obtainable. Those of us who have a summer silo can do it more easily, but we need not despair if we have no silo at all.

Supplement Pasture When it Fails.

In some parts of Michigan it will not be necessary to feed grain when the cows are on pasture. I have been in the north during the month of June and have seen herds that were receiving no grain, and still were producing the maximum limit. Any cow on good pasture has need of but little grain. If the pasture is limited, if the herd is going to consume it in a short time, it is poor policy to allow such a thing to happen. The pasture may be prolonged and the production of milk be increased by feeding something to supplement the grass.

In many localities hay is still quite cheap. Present indications are that while many meadows are not in condition to produce large crops of hay this season, the weather is still favorable for the production of that crop. If my cows were not going to have all the pasture they needed, and if I had no summer silo, I would buy hay of the nearest neighbor if I had none of my own, and would give the cows ten pounds of hay daily in two feeds. This would make the pasture last longer, and yield more because, not being so hungry, the cows would not eat the grass down quite so closely.

Hay as a Supplement.

There is bound to be a short time about the end of July and the first of August, when oats and peas are dry, when rye and vetch are ready to harvest, and corn is not large enough to feed without loss. What shall we do then? Simply increase the old cow's ration with a liberal feed of clover hay, or better still, alfalfa, if we have it.

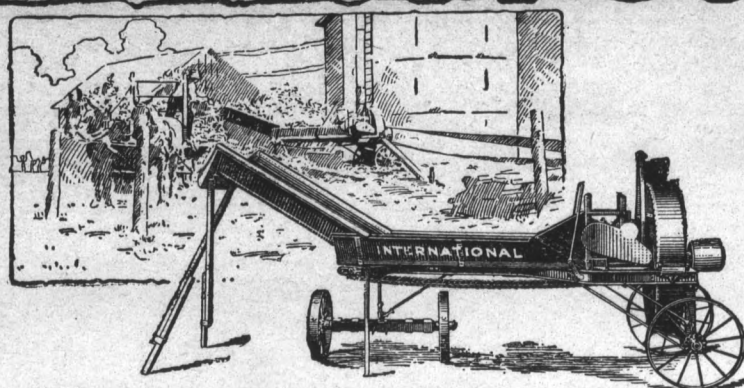
The writer has found, however, that at this time, while it is yet possible to obtain considerable feed from the pastures, good clover will give just about as good results as alfalfa. This is true because pasture grass is rich in protein, and for this reason the generous supply of that element in alfalfa is not so much needed while the cows are on pasture, as later in the season when they are confined in the stable and fed largely on ensilage which is rich in carbohydrates but lacking in protein.

As soon as the corn is far enough advanced to be fit for roasting, it may be fed without loss. Sweet corn is very good and some of the larger sorts yield an abundance of feed.

A number of people have complained to me that they did not get the results from feeding sweet corn that they expected. In fact, some have said that it dried their cows up. It should always be remembered that in feeding corn of any variety, we are feeding a ration deficient in protein, but very rich in carbohydrates. Now if we are to get the most out of such a ration, we must balance it with a feed of grain rich in protein. Then we shall find sweet corn a very valuable addition to the ration.

Thus by providing a liberal amount of feed for the cows throughout the summer we may largely increase the production of the year, and so do our part in helping to feed the world.

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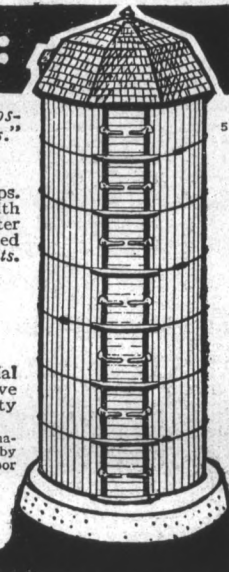
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These are only a few of the factors contributing to that quality in Goodyear Tires which has made them a proper monument to our endeavors.

They are very much better tires than would otherwise be possible.

So much better that the motorists of these United States buy more of them than of any other brand.

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Magazine Section

LITERATURE
POETRY
HISTORY and
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MICHIGAN FARMER
AND *LIVE STOCK* JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

THE popular idea of fighting deer pictures them with locked horns. Elk, however, fight erect on their hind legs, their heads thrown back. In this position they stab viciously at each other with their sharp front hoofs and often inflict serious wounds. It is a very human way of fighting. These sparring contests often develop high skill.

Mr. S. N. Leek, who lives just south of the Yellowstone National Park boundary and in sight of the lordly Teton Mountains which some day will be included in the national park, has spent many years among the great herds of elk which swarm back and forth between the Jackson Hole country and the safe refuge of the park wilderness. His adventures as a pho-

tographer are many and interesting. Here is an extract from a recent letter:

"To get the photographs of fighting elk was both interesting and tiresome. After they were fed hay, I would stop the sleigh in as good a position as possible. Then I would set up the camera within a few feet of the sleigh, draw the dark slide, set the shutter, and, bulb in hand, await what might happen.

"The elk, before they rear up, usually hold their heads high in the air and make a peculiar clicking, snapping noise with their mouth, which at

Elk Fight Standing Up

the time is held partly open so that their tusks will show. On hearing this noise, the camera is instantly swung in that direction. If the brewing storm proves to be more than a quarrel, the two animals rear in the air together, and slug each other with their fore feet. The object of each seems to be to strike the other on the lower jaw. For this reason each holds its head as far from the other's fore feet as possible.

"Blows are landed that sound as if struck with sledge hammers. Each bout is of only a few seconds duration; the vanquished lights on his fore

feet, running to escape the cruel thrust that is sure to be delivered with lightning quickness.

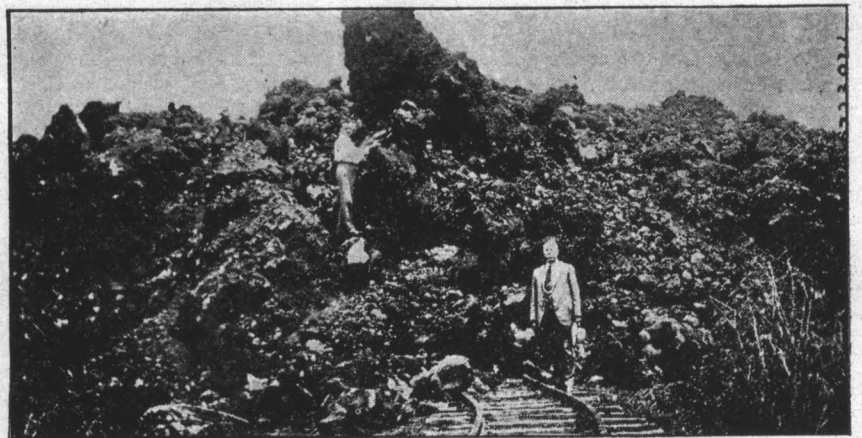
"Sometimes the wait is long between each scrap; then it most usually ends in a clicking noise. The fight is nearly always in a dense bunch of elk where no picture worth while can be secured. Hours of constant watching often result in no exposure; or several exposures may be made during the time without a single picture resulting for one's patience.

"While it is aggravating to spend days without results, nevertheless, it gives a splendid chance to study the animals. Elk cows fight the same as the bulls, and cows will fight bulls and very often whip them. Once I saw a cow knock a bull over back-

WORLD EVENTS IN PICTURES



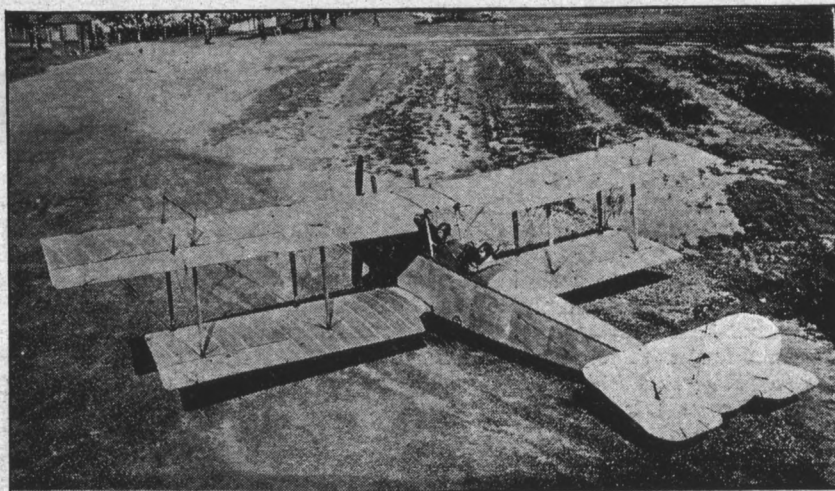
Carpenters at Work on New Hangars at One of American Aviation Schools.



Railroad Covered with Tons of Lava in San Salvador Volcanic Eruption.



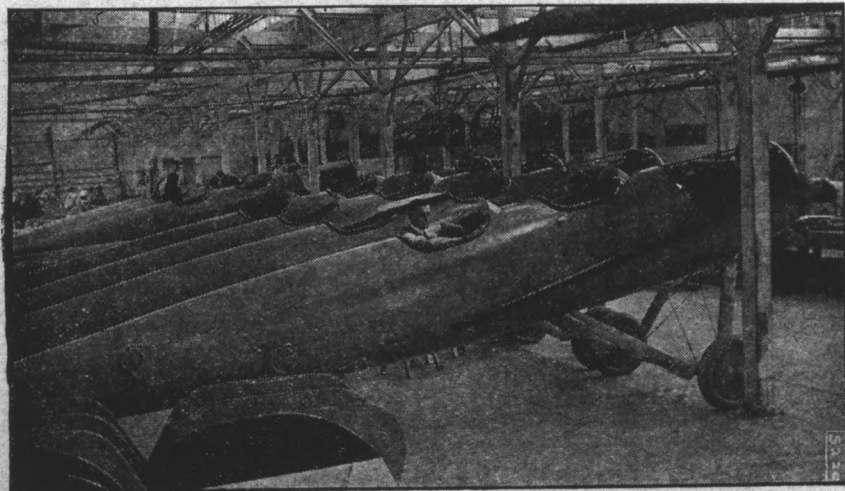
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Uncle Sam's Latest Flier will Soon be Seen on Western Front.



Gen. Kerensky Inspiring Russian Soldiers to Rout the Foe.



American Aeroplanes are Being Turned Out at Top Speed.



Gettysburg Battle Ground Again Resounds with Tramp of Soldiers' Feet.

wards completely out; one of her hard fore feet reached his lower jaw. Another time I saw a horn knocked off; have a bad tooth pulled."

"Contraband" RANDALL PARRISH

"Exactly. I would have suggested it, but was detained below. Who have you aloft?"

"Simms, sir; he has the best pair of eyes in my watch."

"Nothing reported?"

"Not yet, sir. Mr. Olson said it was all quiet while he was in charge."

He moved over to the starboard rail, with a glance at the wheelsman, and I joined him, understanding the movement.

"Your purpose is to avoid vessels if possible, I presume, Captain?" he asked, pointing out across the water in pretense at admiring the scene.

"The fewer we meet with the pleasanter our voyage, Mr. Leayord. By the way, your language is hardly that of a fore-castle hand; seemingly it has changed over night."

He permitted a smile to curve his lips.

"Environment, sir, no doubt. As bosun, I was a bit careless, but now that I've come aft, the speech of a gentleman seems more appropriate. The fact is, I had two years at Eton, sir."

"Ah, indeed. Well, I'm not sorry for that. It will make our relations aft much more congenial. You are English born then, I take it."

"Yes, sir; Bristol man."

"This running of a contraband cargo to Germany can hardly be altogether to your liking?"

He spat over the rail, and drew the sleeve of his jacket across his lips, as his eyes met mine.

"'Twould be more of a pleasure, I admit, Captain, to be putting over a trick for the other side," he answered, his fingers nervously gripping the rail, "but I shipped for this voyage fair enough, and I always held it a sailor's duty to stick to his ship. Once I'm through with this job, sir, and I'll do my hearty bit for old England."

"Well said, Mr. Leayord," and I gripped his hand. "So far as I understand this row, my sympathies are all on your side. I may as well explain to you that I have been induced to assume command because of the condition in which I found the owner."

"Mr. Bascom, sir?"

"Yes; as you must know, the man is a helpless cripple, and his entire fortune is represented by the cargo in this vessel."

"He is a friend of the lady's, sir, I heard Dade say."

"Yes, they knew each other ashore when she was a young-girl. It was odd enough for them to have met out here again, but stranger still is the fact that this fellow McCann, whom I have locked up below, should have been the cause of Bascom's present condition."

"You don't say, sir."

"That is the story as Miss Vera Carrington tells it. I have got very little out of Bascom, although I remember the newspaper accounts published at the time. There was a shooting affray, in a New York restaurant, over some woman."

"McCann shot him and got away?"

"Bought his way clear."

"He is rich then?"

"The fellow has more money than you and I will ever see, Mr. Leayord. He's in the only place now where it can do him no good."

The mate shook his head doubtfully, his eyes wandering toward the men at the wheel.

"I wish I was so cocksure of that, sir," he said soberly. "There's some mighty bad blood forward on this ship, and it's my judgment we're not out of

the bull that lost it went away holding his head as some people do when they have a bad tooth pulled."

the mess yet by a long ways. Those wolves have got a scent of McCann's gold, and they'll never leave the trail until they get it."

"You mean Liverpool and White?"

"Well, they're the main guys, sir. But there are others ready enough to follow them."

"They have only McCann's word for his ability to pay."

"Not them; the fellow has a belt on, with a bunch of the real stuff. I have it from Dade, sir, that he's scattered a thousand already, just to prove that he's got it."

"But you don't think they would actually attempt mutiny?"

"They're not calling it that, sir. It's the cargo aboard, and your determination to land it safe at Hamburg, which is going to make the trouble. There is only one German in the crew, sir—the rest are all English except the Swede, except a couple of niggers. The Swedes and niggers will do whatever the others tell 'em to, an' the argument forward, according to Dade, is, that it'll be no crime to capture this ship, and run her into an English port."

That's the talk Liverpool and White are putting up in the fore-castle—they naturally aim to hog all that money themselves, an' get off scott free. Red even suggested to Olson that he come in on the scheme, and accept a third."

"What did Olson say?"

"Well, sir, Olson is all right. Liverpool didn't come out square with the proposition, so that the second mate could knock him down; he just hinted at it easy like, and Olson told him he would have nothing to do with it, and later reported it to me. But that shows us the way the wind is blowing, sir."

"The men seem quiet enough."

"They're not ready yet, but there will be trouble presently, according to my notions. Wait until they hear what has happened to McCann."

"Well," I said deliberately, "we shall have to meet whatever comes, Mr. Leayord. I talked with McCann again this morning, and offered him his freedom aft if he would promise to keep away from the crew. He refused to accept parole so I locked him up again. Do you suggest any other course?"

"No, sir, I don't," he said slowly, after a pause for thought. "It's likely to amount to the same thing either way we turn, but it's to our advantage to have that fellow in our own hands." He lifted his eyes inquiringly to my face. "This Miss Carrington now, by any chance is she the same lady these two men got to shooting about?"

"No, she was not involved in the quarrel. The fact is she was only a young girl when she knew Bascom, and McCann had never met her personally until we escaped from the wreck of the yacht together."

"She was a passenger, also?"

"In a way, yes," feeling no necessity for further explanation. "She was the owner's daughter."

"Then she's rich, too?"

"Her father is one of New York's multi-millionaires. What difference does that make, Mr. Leayord?"

"Nothing much, likely," he answered, leaning against the rail, his eyes on the distant bank of clouds, "only maybe we might play money against money in this game, with a fair chance to win. I reckon gold, no matter where it comes from, would look good to those devils forward."

"Scarcely a manly act on our part to suggest such a thing."

"Well, I don't know about that, sir,"

he insisted stubbornly. "I reckon old man Carrington would be willing enough to pay the price, rather than have his girl left in the hands of those fellows. They'll be no lambs if they ever get control of the ship. But maybe you know best, sir."

CHAPTER XIX.

The Latitude and Longitude.

I LEFT him and walked forward to where I could look down on the main deck. Vera must have already retired to the cabin, as she was not visible, the boy Moon alone appearing below me on his way to the cook's galley. As deeply as I despised the thought of ever resorting to this last suggestion made by Leayord, yet I could not remain entirely indifferent to its possibilities. If matters on board were, indeed, as serious as he pictured them, our situation was far from pleasant. To keep on probably meant a battle to preserve the ship, and involved not only our own rough handling, even possible death in the melee, but also unspeakable horror to the woman left alone, and unprotected, on board. What would be her fate, if we failed to uphold discipline, and those unbridled ruffians once obtained control of the vessel? The thought staggered me.

McCann—even if he desired to do so, and I sincerely doubted the desire—would be utterly helpless in the grip of those lawless spirits whom he had unchained. They would merely laugh at him. Even if, through the influence of his wealth, he retained supremacy and a measure of control, would not the fellow himself use his power for evil? The suggestion he had dropped of a desire to gain influence over the girl, and, through her, profit in her father's millions, left on my mind little doubt as to what he would attempt openly if the opportunity presented itself. And if he was left alone with her on board—the only man who even faintly represented her social class; the only one to whom she could hope to appeal—there was a chance for him to erase from her mind the memory of past brutality, and build up a new conception of his character by becoming her protector. Nor did I doubt he had the subtlety to do this, and play the part to absolute perfection. The man was not devoid of brains, or the ways of social refinement. If under the stress of danger, and the hardships of unaccustomed environment, he had reverted to his true type, he still retained the veneer of outward form, and could easily assume, if occasion warranted, the semblance of a gentleman.

To my thought he was the most to be feared of all those aboard, and the least to be trusted. Long sea training had taught me how efficiently to deal with the others; they were of a type easily understood, to be mastered by stern discipline, and driven to their duty; but this fellow McCann, wealthy, ruined by flattery, controlled by unbridled desire, would never respond to such methods. Neither persuasion, nor fear, would suffice to turn him from his course or change his bitter hatred into respect.

Yet I could reach no other conclusion except to continue the voyage, meeting its problems as they presented themselves. There was no turning back now. I had pledged my word, openly announced my intention forward as well as aft, and to retract would brand my action as cowardly. Once I relaxed my grip, confessed my weakness, it would cost me all influence over the crew. It would give them the upper hand, and be equivalent to complete surrender. All hope lay in keeping McCann prisoner, entirely isolated from his confederates, and dealing with the men forward with a harsh firmness sufficient to strike terror into their souls. The slightest movement of revolt on their part must be my signal for action. There could be no

compromising, no hesitancy, no tenderness. The fate of the ship, the very life of Vera Carrington, rested on my decision, and the swift resourcefulness of my action. I felt equal to the task.

The morning wore away with no demonstration of any kind, the Indian Chief bowling along freely on the course set, but at half-speed. The watch was busied at various tasks about decks, and seemingly exhibited no interest in anything except their duties. I watched them closely, but could detect no signs of uneasiness or conspiracy. None of the watch below emerged from the fore-castle, nor did the men collect in groups, or exhibit any special interest in affairs aft. Nor could I detect any evidence of drunkenness among them, and Olson, after a trip forward to tighten one of the pibs, reported them as all sober, and quick to obey his orders. We decided, therefore, that the stock of liquor must be exhausted, and it would be extremely foolish on our part to arouse the animosity of the men by any search.

The day held fair, with a stiff breeze blowing over the port quarter, and the expanse of sea about us vacant of either sail or smoke. Not once did the lookout in the main cross-trees hail the deck, and I grew weary of the changeless view, as I continued to pace from rail to rail, watchful of every movement, yet gradually becoming satisfied that the peril of mutiny had greatly diminished. Miss Vera did not venture again on deck, nor had I any glimpse of Bascom. Twice I peered down through the skylight into the cabin beneath, but without gaining sight of either.

As noon approached I had Dade fetch the sextant from the captain's stateroom, and took my observation with considerable care, going below to work out my figures alone, as the many years passed ashore had left me a bit doubtful of my facility. No one appeared to take any deep interest in the event, although I noted a group of men forward watching as I disappeared. Their interest, however, had merely the appearance of a natural curiosity, and left no impression on my mind. As the ship had been drifting for days, it was natural enough for all aboard to speculate as to where we were.

With nothing to guide me, or check my figures with on the chart, I went over them twice to be assured of accuracy, finally marking our future course. Leayord had just been called for his watch, and both officers were upon the after deck, waiting for my appearance. They remained silent as I approached, and, as I turned and faced forward, my eyes observed a largely increased grouping of men about the fore-castle, and all staring aft.

"Are both watches on deck, Mr. Leayord?" I asked. "Has there been any call for all hands?"

"No, sir," he answered, his gaze shifting. "It's the change of watch, and the second mate's men haven't gone below yet. Maybe the cook is slow, or else they are a bit curious to find out where the ship is, sir. Would you mind giving them the figures, sir?"

"Not at all; the wheelsman would spread the news fast enough as soon as relieved. We are at fifty-two degrees, thirty-five minutes west longitude, and forty degrees, ten minutes north latitude, approximately. I am not exactly sure as to the chronometer, but practically these figures are correct."

"And where does that put us from New York?"

"About five hundred miles, a little north of east; Halifax is the nearest port, two hundred and seventy-five miles nor' nor' by west. We are between the North Atlantic steamer lanes, and the direct course to the

Mediterranean, more in line with the Azores, I should say. That accounts for the deserted sea—we're out of the beaten track."

"The big liners pass to the north of us?"

"Yes, from fifty to a hundred miles; under good steam we could cross their track in a night."

"And that would be your plan, sir?"

"Well, I know of no better one. Except for fishing craft we would be scarce likely to encounter any vessels amid that desolation to the north. They would have no opportunity to report us, and as soon as our latitude was safe, we could take a direct easterly course above the Shetlands."

"There is a northern passenger line."

"All slow boats, and neutral. There will be little danger until we encounter the English trawlers in the North Sea."

"Is that the chart, sir? Olson and I would understand better if we had a look at it—the figures don't mean much to us."

I spread it open on the skylight, holding it flat with one hand and a pair of compasses, and the two mates bent over in earnest study of the lines. The men at the wheel beyond us endeavored also to gain a glimpse, as I reached forward to point out our present position in the blank space of water.

"This red cross is about where the ship is now," I explained, "with our course a point north o' east. Just before night we'll shift to the north, get up full steam, and make a run for it."

"And what may be all these lines, sir?"

"The regular sailing lanes between North Europe and the American ports."

"We cross them in the night?"

"That is the plan; if we can accomplish that unobserved, we'll have a clear ocean for a while, at least."

"And what would you say would be your highest north, Captain Hollis?"

"At about fifty degrees latitude, for the west coast, and then a course to the northeast. That would place us in here, off the north coast of Newfoundland. Have either of you ever been in those seas?"

Both men shook their head soberly, Leayord saying:

"Not I, sir. I made one voyage to Quebec, but we never came that far north. However, I should say, there wasn't likely to be much shipping in those waters."

"No—only fishing schooners. We may not raise a sail all the way across. One thing is certain, there can be no occasion for English warships to be patrolling those seas—they'll have their work cut out for them farther south. What have you to say to the plan?"

The two straightened up, and looked at each other, and Leayord crossed to the rail, and spat overboard.

"Well, I don't know how there could be a better one, sir," he answered, (Continued on page 101).

BOYHOOD ROMANCE.

BY A. D. SPENCER.

When I got my first employment
Doing farm work by the day.
Seemed as if my whole enjoyment
Was to eat and hit the hay.
'Til one day a charming lassie
Came to spend a week or two.
My, but she was cute and sassy;
Had them city manners, too.
She would stand around and giggle
When I milked the cows at night.
'Til my head would fairly jiggle
With the thrill of rare delight.
But my ride on joyous billows
Came each day just after noon,
When we'd sit beneath our willows
For our after-dinner spoon.
All too soon her short vacation
Reached an end; she must return.
And my heart in indignation
Seemed to palpitate and burn.
As she left, my face grew thinner.
Something in me made me wince.
I resolved some day to win her,
But I haven't seen her since.



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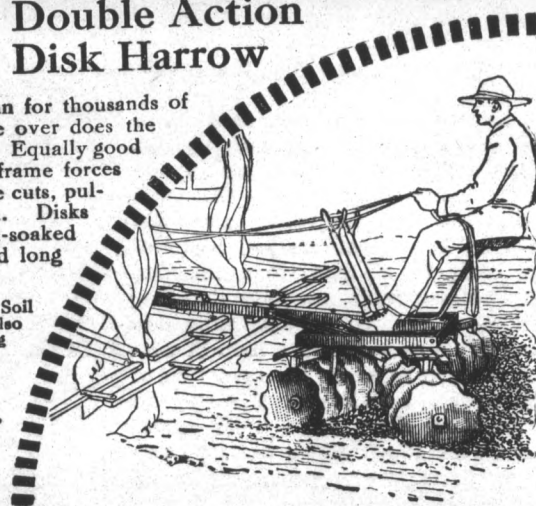
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A New Way

THE leaders in a certain neighborhood got together one day and decided to "work up" a canning demonstration. So long as the state stood ready to furnish the demonstrator it seemed too bad not to get in line, and incidentally have a social time as well. So a canvass of the countryside began.

"I've been canning fruit for twenty-five years," sniffed the first woman approached, "and I guess I know as much about it as them professors at M. A. C. How many of them ever really put up strawberries? It's all well enough to sit in a classroom and tell a bunch of girls how to do it, but I'd just like to see any man can fruit. No, I guess I know enough about it."

"I wouldn't mind joining if I was sure they'd send us a graduate," said the next woman. "But I'll bet they'd send us some young snip of a girl that just went in for a week this summer, or else some rich woman that's just doing it to show off. Over to White Plains they sent Mrs. Gotrox. Why, she never even had any fruit or vegetables canned in her house till this summer, say nothing about doing it herself. Then she got all excited about food conservation and rushed off for a short course and now she's teaching women who've canned fruit all their lives. I heard say she bragged that she canned a whole half-bushel of cherries all herself, as if that was much. She's got a half dozen servants and never lifts her finger. What do you think she could teach me?"

The next woman approached was willing to try anything once, though contemptuously amused at the idea. "They can't hurt us any," was her comment. "It surely won't do any harm to go and listen to 'em, and if I don't like their way I needn't try it."

So it went on through the neighborhood, a part of the women deriding the idea that they could learn anything from the demonstrators, and a part willing to investigate, but skeptical as to results. However, the necessary number was secured and a demonstrator arrived in due course of time. Curiosity brought out most of those who had thrown cold water on the plan, so the rooms were packed with women.

The demonstrator was young, and plainly experienced only in the class room. But what she lacked in age she made up in earnestness and zeal. It was clear to be seen that she was fully imbued with the idea that her work as a canning demonstrator was going to be as powerful a help in winning the war as would the invention of a sure-pop sub-destroyer. She had the whole thing down pat. "Cold pack," "blanch and dip," "steam pressure outfits," "water seal," "process," "syrup percentages" and "open kettle" method, fell trippingly from her tongue, and she seemed not only to be able to tell others how to do, but to do.

"It sounds all right when she tells it," one objector grudgingly admitted, "but what I want to know is, who's got time to stand around and watch a clock? I put my stuff on and boil it till I think it's done and it always keeps. Anyway, it keeps as long as I keep it locked up, but if the family sees it, it doesn't last long. What's the sense of covering the cans clear up with water, too? My mother's cousin's wife done some raspberries in the boiler and she only had the water

up about three inches and they kept two years and were just lovely. What's the use of lugging all that water and waiting for it to boil if a few quarts will do it?"

None of her immediate hearers could tell her, and she didn't take the pains to ask the demonstrator, who might have given her a scientific reason.

"They keep just as well with salicylic acid, and it's a lot easier," ventured another woman, who had evidently missed the part of the lecture where the demonstrator warned against using preservatives which are injurious to health.

"Yes, but our old way is just guess work," argued a serious looking woman who had busily taken notes. "I never can remember just how much sugar I put in last year and how long I let the fruit cook. And when I'm through I am never sure it will keep. I'm always in a stew until spring comes and it's all gone, and lots of it does work. My corn almost always spoils on me unless I dry it. This way is a lot different and may take longer till we get used to it, but if we follow directions exactly we know we are sure of successful canning."

"It's probably all right for vegetables," granted the first woman, "I never do have much luck with them. Those she has canned certainly do look fine, if they'll only keep. Anyway, I've found out why my canned corn is never so tender and sweet as the fresh. I put too much salt in it. I guess that's worth my time."

"It's worth anybody's time to get a new point of view," declared a hitherto silent woman. "I'm sick and tired of doing the old way, and never being sure of results. Now I've got something new and sure, too, I'm going to try it."

DEBORAH.

SEASONABLE DISHES FROM SMALL FRUITS.

BY MRS. H. W. SWOPE.

Raspberry Pudding.

To one quart of hot milk and six teaspoonfuls of corn starch moistened with a little cold milk, to this add four tablespoonfuls of granulated sugar. Cook in a double boiler until thick, then add a small pinch of salt, fold in the stiffly beaten whites of two eggs, and pour into a border mold. When firm, turn out, fill the center with raspberries, (any other berries can be used in season). Serve with sugar and cream, or whipped cream.

Berry and Rice Pudding.

Butter a shallow pudding dish, put in a layer of any kind of berries in season. Sprinkle with sugar and grated lemon peel, orange peel can also be used. To this add a layer of boiled rice. Alternate these layers until the dish is full, having the last layer if possible, of rice. Sprinkle over the top with bread crumbs and small bits of butter. Bake in a moderate oven until the fruit is tender, about half an hour being sufficient.

Huckleberry Pudding.

Three cupfuls of huckleberries, one cupful of molasses, one-half teaspoonful of ground cloves, two cups of flour, one-half teaspoonful baking soda. Stir soda into the flour then add the other ingredients. Do not mash the berries but keep them whole if possible. Pour

the mixture into a buttered pan and boil about forty minutes. Serve with hard sauce.

Currant Pie.

Mash and stem the currants. Line a deep plate with pie crust and sift one tablespoonful of flour evenly over the bottom. Fill with currants and sweeten with sugar. About one cup of sugar will be required. Add a few fine pieces of butter over the top and bake between two crusts. This same recipe is used for making cherry, raspberry and huckleberry pies. The amount of sugar required will depend upon the sweetness of the fruit. If cherries are used it is better to make the pie one-half sour cherries and one-half sweet ones. Raspberries and blackberries make better pies when not over-ripe.

SAVE BABY BEETS FOR WINTER USE.

Now is a good time for garden owners who have more beets of the early crop than they can eat in the fresh form and an abundance of glass jars or tin cans, to can baby beets, says the United States Department of Agriculture.

Grade for size, color, and degree of ripeness. Wash thoroughly, using a vegetable brush. Scald or blanch in hot water sufficiently to loosen the skin. Dip quickly into cold water. Scrape or pare to remove skin. Pack whole vegetables, slices, or cross-section pieces in hot glass jars or tin cans. Add boiling hot water until full. Add level teaspoonful of salt to quart. Place rubbers and tops of jars in position; partially seal, but not tight. Cap and tip cans completely. Place on false bottom in a vessel of hot water which just covers the containers. Sterilize at boiling temperature in hot water bath canners for ninety minutes.

CANNING TIME TABLE.

In response to a large number of requests we are publishing this canning time table.

For Scalding or Blanching, and Sterilizing in Cold Pack Canning.

Products.	Scald or Blanch Mins.	Hot Water Bath Outfits degs.
Fruits.		
Blackberries	No	16
Blueberries	No	16
Cherries	No	16
Cranberries	No	16
Currants	No	16
Gooseberries	No	16
Grapes	No	16
Peaches	1 to 2	16
Plums	No	16
Raspberries	No	16
Apples	1½	20
Pears	1½	20
Quince	6	40
Some Specials.		
Tomatoes	1 to 3	22
Tomatoes and corn	T.2, C.8	90
Egg plant	3	60
Pumpkin	5	90
Squash	5	90
Greens, Roots, and Tubers.		
Dandelions	10 to 15	120
Spinach	10 to 15	120
Greens, all other kinds	10 to 15	120
Asparagus	2 to 4	90
Brussels Sprouts	4 to 10	90
Cabbage or sauerkraut	6 to 15	90
Cauliflower	3 to 6	90
Beets	6	90
Carrots	6	90
Parsnips, turnips, etc.	3	60
Pod Vegetables.		
Beans (Lima or String)	5	90 to 120
Hominy	5	90 to 120
Okra	5	90 to 120
Peas	5	90 to 120
Corn (on cob or cut off)	5 to 8	180

"CONTRABAND."

(Continued from page 99).

coming back, wiping his lips. "If we're really going to Hamburg, the longest way round seems like the safest for us to travel. Isn't that your idea, Olson?"

The second mate nodded.

"How's the coal, sir?"

"All but one bunker full yet; we'll not steam heavy, except tonight."

"Personally I don't see any objection to making a try of it," Leayord added, "but I don't know how the crew may feel. This isn't exactly the sort of voyage they shipped for."

"We may as well test them first as last," I said, determined to have it over with. "Both watches are mostly on deck. Have the bosun call them aft, Mr. Olson."

The fellows responded quickly enough, a few slouching along in pretended indifference, but the majority exhibiting a real interest. I stood between the two mates at the rail watching them closely, but the uplifted faces told me little as to their disposition, although I confess the general impression was that of sullen rebellion. It was a motley throng, and they stared up at us in silence; the only noise was the restless movement of feet and the singing of wind in the rigging overhead. All about us stretched the blue domain of the sea, the heaving surges tipped with crests of foam, and above a few flying clouds. Liverpool Red stood directly below me a step in advance of his mates. His cap hid his eyes, but there was an ugly, defiant grin on his face, which angered me.

"Well, men," I said, wasting no time in soft phrasing, "I've called you aft for a straight talk. You shipped on the Indian Chief for a voyage to Hamburg—"

"Yes we did," a voice interrupted. "The most of us was shanghaied and brought aboard drunk."

"That has nothing to do with me," I replied sharply. "I was not skipper then; but I am now. Your names are on the papers regularly enough, and the only thing I need to explain is the necessity for a change in our sailing course. As most of you know, war has broken out in Europe since this ship cleared from Baltimore. The chances are about a hundred to one that we would be captured, or sunk, if we tried to reach our port through the Channel."

"By whom?" it was Liverpool who spoke.

"English or French warships."

"It's a Dutch cargo then we've got in the hold. That's the way I figured it. Well, now look here, sir, Smits is the only Dutchman aboard, an' the rest of us don't take kindly to that sort o' job."

"You're sailormen, and shipped on this voyage before ever war was declared. Now will you listen to me until I get through?"

"Aw, let him talk, Red," someone interjected. "What we want to know is where we are, an' the course we're sailing on."

"That's the ticket, Bill," chimed in another. "Let the blooming war slide till we find out what's the program. We'll hear ye, sir."

I outlined my plan in as few words as possible, and they seemed to listen respectfully enough, only occasionally interjecting a question. Liverpool did not speak at all, nor Jim White, who had pushed his way forward, until I concluded. Then the latter asked suddenly:

"Would you mind if a couple of us had a glance at that chart? Maybe we'd see it clearer then."

"Certainly, you can all look at it. Mr. Olson, take the chart down there, and point out the lines so the men can see where we are."

They crowded about, endeavoring to

gain a glimpse, although probably not half a dozen among them possessed the faintest conception of what the various markings signified. Liverpool and White, however, got down on their knees, and followed Olson's stubby forefinger closely, as he traced the proposed course. White appeared rather the more intelligent, asking a question or two before regaining his feet.

"I was on the Labrador Coast once, sir," he said, turning his face toward where I stood waiting, "but that don't help me much to get this thing straight. It's to be a north course tonight then, so as to take us through the steamer lane before daylight?"

"Yes."

"And after that we'll steam north—for how far, sir?"

"Until satisfied that we are safely beyond any stray vessel driven out of her course—to about fifty degrees north I had it figured. Mr. Olson pointed it out to you."

"Yes, sir; I see the spot, although it don't mean much to me. And where would we be about daylight tomorrow morning?"

"I can only guess at that, not knowing the exact shape our engines are in, or the probable speed of the ship. But we ought to be close to fifty degrees west and about forty degrees, twenty minutes north, I should say."

"How far away from land?"

"One hundred and fifty miles to the east and south of Cape Race."

"Cape Race!" broke in Liverpool. "I've heard o' that point—it's south of a harbor called St. John's. Here it is, marked on the chart, Jim."

He pointed it out with a dingy forefinger, and the two stared at the spot for a minute before they got to their feet again. I waited, but neither spoke.

"Is that all, men?" I asked with a glance at their faces. "All right then, you can go forward. If any of you wish to ask any questions later I shall be glad to answer them."

They disappeared without demonstration, talking among themselves, yet to all appearances the conference had not deeply impressed the crew. They seemed a stolid, dull-witted bunch, even Liverpool and White slouching back to the fore-castle, with scarcely the exchange of a word. Olson rolled up the chart, and clambered up the ladder to where I stood beside the first mate. For a moment he clung to the railing watching the last of the men disappear.

"Well, I'll be hanged," he said almost under his breath.

"What is it, Mr. Olson?"

"That's just what I don't know, sir," he answered slowly. "But this beats me. I naturally thought those lads would raise a big yell, an' instead they are so many lambs. There's something wrong when sailormen are afraid to even grumble."

"I must say I do not like it myself," added Leayord soberly. "There's something in the wind. Did you notice, sir, not one of them asked about what had become of McCann?"

"He may not have been missed yet."

"Oh, he's missed all right; the word has gone forward before this time. It's my opinion, sir, this whole matter has been thrashed out already in the fore-castle, an' those bullies have made up their minds just what they're goin' to do."

"Well, what can they do?"

"One guess is as good as another, sir, but I'm mighty near certain of one thing—they haven't no intention of goin' to Hamburg. Even Liverpool and White showed no interest, except in one point."

"You mean where the ship will be tomorrow morning?"

"Just that; and it's going to be tomorrow morning when they show their hand. Till then, sir, we'll have

(Continued on page 105).

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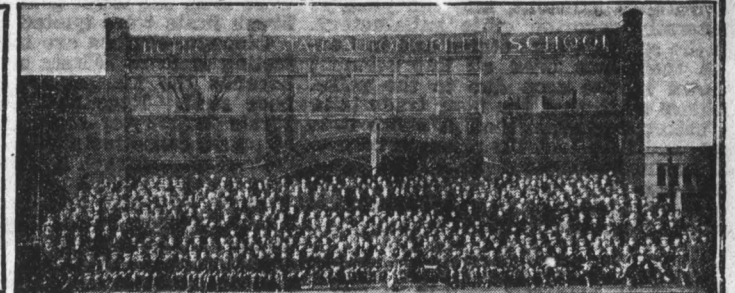
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Markets.

GRAINS AND SEEDS.

August 7, 1917.

Wheat.—Wheat values suffered a sharp decline for the cash grain on Monday. There was also a small loss in September wheat. This, of course, is the season when new wheat is moving toward market centers, and prices naturally seek lower levels. Rains early this week extended over a large territory, and benefited practically all the cereal crops, which naturally had a bearish influence on the wheat deal. In the winter wheat region harvesting and threshing are progressing under favorable conditions, and the yield is generally reported quite satisfactory. In the spring wheat states and in Canada there has been an improvement shown in the crop due to the rains. Millers state that the flour trade is in a better condition than a short time ago, and they look for a larger volume of business in the near future. One year ago No. 2 red wheat sold on the local market at \$1.38 per bushel. Last week's Detroit quotations were:

	No. 2	No. 1	
	Red.	White.	Sept.
Wednesday	2.50	2.45	2.20
Thursday	2.50	2.45	2.22
Friday	2.50	2.45	2.25
Saturday			
Monday	2.43	2.38	2.24
Tuesday	2.43	2.38	2.24

Chicago.—September wheat \$2.25½.

Corn.—Prices for this cereal suffered a narrow decline by reason of the lower wheat market and because of the effect of the rains. In many sections the crop was suffering for lack of moisture, which has now been fairly well supplied. The warm weather has improved chances for the maturing of the crop. One year ago No. 3 corn was quoted locally at 86c per bushel. Last week's Detroit quotations were:

	No. 3	No. 3	
	Mixed.	Yellow.	
Wednesday	2.35	2.36	
Thursday	2.35	2.36	
Friday	2.39	2.40	
Saturday			
Monday	2.38	2.39	
Tuesday	2.38	2.39	

Chicago.—December corn \$1.16½ per bushel; May \$1.13½.

Oats.—Apparently there will be a good crop of oats harvested and as a result of this probability prices were easily forced downward when cash wheat fell off in value on Monday. There will, however, be more than an ordinary demand for this cereal, in that farmers are short on feeds and will undoubtedly retain a much larger portion of the crop on the farms than they are in the habit of doing. Oats are beginning to move from the Ohio and Missouri valley districts. One year ago standard oats were quoted at 43½c per bushel. Last week's Detroit quotations were:

	No. 3	
	Standard.	White.
Wednesday	87½	87
Thursday	87½	87
Friday	87½	87
Saturday		
Monday	85	84½
Tuesday	85	84½

Chicago.—September oats 58½c per bushel; December 58½c.

Rye.—This market is inactive and easy, with cash No. 2 quoted at \$1.95 per bushel, which is a decline of 15c from last week's quotations.

Beans.—While cash beans have suffered another decline, October options have advanced. Although the crop is making fair progress, in nearly all portions of the state, the yield will be far from a normal one. On the local market cash beans are quoted at \$7.85; October \$6.50. An easy trade continues at Chicago with Michigan hand-picked pea beans quoted at \$8.50, and red kidneys at \$6.

Seeds.—Prime red clover \$11.95 per bushel; October \$12.90; alsike \$11.90; timothy \$3.90.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$13.20; seconds \$12.90; straight \$12.50; spring patent \$14.80; rye flour \$12.50 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$42; standard middlings \$50; fine middlings \$52; cracked corn \$90.50; coarse corn meal \$88.50; corn and oat chop \$71.50 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$16.50@17; standard timothy \$15.50@16; No. 2 timothy \$15.50@16; light mixed \$15.50@16; No. 1 mixed \$14@14.50; No. 1 clover \$13@13.50.

Pittsburg.—No. 1 timothy, \$17.75

@18.25; No. 2 timothy \$15@16; No. 1 light mixed \$15@15.50; No. 1 clover mixed \$15@15.50; No. 1 clover \$15.50@16.

Straw.—In carlots, on track Detroit, rye straw \$10.50@11; wheat and oat straw \$9.50@10.

DAIRY AND POULTRY PRODUCTS.

Butter.—Prices have remained stationary, with market firm. Fresh creamery firsts 36@37½c.

Elgin.—Market is a little firmer at a price ½c higher than last week. Price based on sales is 35½c.

Chicago.—The feeling is very firm with prices ½c higher than last week. The business is good in all grades. Creamery extras are quoted at 38½c; extra firsts 38c; firsts 37@37½c; packing stock 32@32½c.

Eggs.—On Monday good quality eggs were firm, the lower grades were easy. Fresh firsts were quoted at 33@35c.

Chicago.—Prices are higher and the feeling is firm. Firsts are in demand because the market is flooded with poor stuff. Eggs should be candled. Firsts 31@32½c; ordinary 27@29½c; at mark, cases included 27½@32½c.

Poultry.—Market is firm, with offerings small. Prices are higher. Best broilers 31@32c; Leghorns 27@28c; hens 18@22c; ducks 21@22c; spring ducks 23c; geese 15c; spring geese 18@20c; turkeys 24@25c.

Chicago.—Market is firmer than last week, with receipts light and demand fair. Shippers should not crowd coops during hot weather. Fowls sell from 16@19½c; broilers over 1½ lbs. 24@25c; under 1½ lbs. 19@20c; ducks 14@18c; geese 12@14c; spring geese 16@18c.

FRUITS AND VEGETABLES.

Fruits.—Sour cherries \$2@2.25 per 16-qt. case; raspberries, red \$5.50@6 per bu; blackberries \$3.50@3.75 per bu; huckleberries \$4.75@5 per bushel.

Chicago.—Sour cherries \$1@2.50; currants \$1.50@2; black raspberries \$1.90@2.15; blueberries \$3@3.25; red raspberries \$1.50@2.35 per 24-qt. case; other fruits in 16-qt. cases.

Apples.—At Detroit this fruit is quoted at \$2.25 per bushel. At Chicago, Illinois No. 1 Transparents are quoted at \$5@5.50 per bbl; Astricans \$3.50@4; Dutchess \$4@4.50.

Potatoes.—Southern offerings \$4.75 per bbl. in store lots.

WOOL.

The time is near when the government must secure its supply of wool, and to satisfy her requirements it will take probably one-half of the supply now in dealers' hands. It is believed that the effect of this transaction will have a decidedly bullish influence upon the market, consequently manufacturers working on private contracts are anxious to find sufficient wool to carry them through. This is adding to the strength of the trade and dealers anticipate further advances in prices. Fleeces sold on the Boston market last week from 55@85c per pound. Many farmers are still holding their wool and likely will secure advanced prices as compared with the present market.

GRAND RAPIDS.

Home-grown potatoes went off to \$1.25 a bushel early this week, with supply ahead of the demand. The raspberry crop is well along now, with reds selling at \$3 and blacks at \$2.50. The cherry season is about over. First of the home-grown green corn is in, selling at 25c per dozen ears. Cabbage is worth 40@50c; cucumbers 40@50c; celery 15c. In grain the mills are paying \$2.25 for No. 2 red wheat. Fresh eggs are firm at 33c.

DETROIT EASTERN MARKET.

Produce was offered in fairly liberal quantities on the city market Tuesday morning. For most lines, prices are being well maintained. Potatoes are selling at \$1.50 per bushel; large cucumbers \$1.50; beans 75c; cabbage 45@50c; tomatoes \$5.50; red raspberries 28@30c per qt; black raspberries 25c; eggs 45c; broilers \$1 per pair.

LIVE STOCK MARKETS.

August 6, 1917.
Buffalo.

Receipts here today as follows: Cattle 175 cars; hogs 25 d. d.; sheep 5 d. d.; calves 1300 head.

With 175 cars of cattle here today there were very few corn-fed cattle in the run and what were here sold strong, but the bulk of the run was medium and common grades and the trade was slow and lower, the bulk of the cattle 10@25c lower, with bulls and cows about steady, and bulk of stockers 10@15c lower. We are get-

ting more of this common stuff here than the trade can handle at present and where there is plenty of grass we would advise holding cattle back a while longer, as we think these feeders will sell better later on. We look for a fair run of cattle here next week and a good trade on the best heavy cattle and a slow trade on the medium and common grades.

We had the lightest run of hogs of the season, about 25 double decks, and with light supplies throughout the west the market was 15@25c higher on all except pigs, this class ruling extremely dull and fully a quarter lower than Saturday. A few loads of selected hogs sold at \$16.75@16.80, with the bulk from \$16.50@16.60; pigs generally \$15; roughs \$14@14.50; stags \$12@13.

With a light run of lambs today our market opened up active and prices steady with the close of last week. All sold and we look for steady prices the balance of the week, depending on receipts.

We quote: Lambs \$14.75@15; yearlings \$12.50@13; cull to common \$9@12; wethers \$10@10.25; ewes \$9@9.50; bucks \$7@7.50; best calves \$15@15.25; common and light \$8@14; heavy \$7.50@10; grassers \$6@7.50.

Chicago.

August 6, 1917.

Cattle. Hogs. Sheep.
Receipts today..12,000 31,000 11,000
Same day 1916..14,274 26,979 15,804
Last week.....39,461 91,724 42,719
Same wk 1916..45,651 131,355 80,717

Cattle were steady to a dime higher today, with another small Monday supply. Hogs averaged 10c higher, with sales at \$14.85@16.60. Hogs received last week averaged 235 lbs. Lambs were lower, with prime range lambs bringing \$14.40 and the best range wethers \$10.

Cattle receipts fell off materially in volume during the past week, and the prices for the small percentage of choice beefs stood firm, with a good demand; but the ordinary offerings making up most of the arrivals had to suffer a further decline of as much as \$1 or more. As there were no such fancy steers of heavy weight as sold a week earlier for \$14.10@14.15, the top price paid was \$14, with the bulk of the steers crossing the scales at \$10.25@13.25 and choice beefs at \$13@14. Steers grading as good found buyers at \$12@12.90 with sales of a medium class at \$11 and upward, while sales took place all the way down to \$6@7 for inferior little steers. Yearlings with any quality sold at \$11.50@13.75, with sales all the way down to \$9@10 for the commoner lots. Butchering cattle found an outlet at \$6.30@10.25 for cows and \$5.50@12 for heifers, with cutters taken at \$5.50@6.25, canners at \$4.25@5.45 and bulls at \$5.40@10. Calves reached much lower prices, and heavy ones were especially bad sellers, being discriminated against by killers. Heavy calves sold at \$5@10 and ordinary to prime light vealers at \$11@12.75. The market for stockers and feeders was extremely dull at the further reduction in average values, with the former selling at \$6@7.75 and the latter at \$7.25@9 and a few selling up to \$9.25. Prospects for the remainder of the season are encouraging for owners of choice beef cattle but very unfavorable for grassy cattle and cattle fed a little corn. These have had a big decline since the year's highest time, and extremely few are now selling anywhere near the top quotations. Most intending buyers of stockers and feeders are evidently expecting to buy on better terms later in the year.

Hogs have been marketed so sparingly recently that prices have firmed up all along the line, with sales at \$16.40 per 100 lbs. for the best lots of heavy shipping barrows. Sales were made all the way down to \$14.90 for ordinary lots of grass-fed swine, with pigs going at \$11@14.50, according to quality and the best prices paid for pigs weighing up to about 135 lbs. Provisions have followed the same upward course of prices as hogs, with a good domestic and export demand. On the first day of August the stocks of provisions in Chicago warehouses amounted to 147,663,362 lbs., comparing with 141,657,485 lbs. a month earlier and with 124,411,536 lbs. a year ago. Future prices for hogs will be governed largely by the volume of the receipts, it having been demonstrated that the farmer-stockmen have the control when they determine to exercise it.

Lambs met with a big break in prices during the past week, the packers controlling the market in spite of the light supplies offered for sale. Prices touched the lowest point of the season, with lambs purchased at \$10@14.50, whereas a week earlier the best lambs sold up to \$15.75. Feeding lambs sold for \$14 and breeding ewes at \$9@15. Yearlings sold at \$9.50@12.75, wethers at \$8.50@10.75, ewes at \$5@9.25 and

bucks at \$5@7.50. Most of the receipts were lambs.

Horses were in small supply last week and in poor demand, most of the buying consisting of army horses, both cavalry mounts and light gunners. Shippers wanted only good horses, and these brought firm prices. Inferior to fair horses were salable at \$60@100 and drafters at \$185@265, with drivers at \$100@200.

LIVE STOCK NEWS.

Fat cattle and hogs have been closely marketed from northeastern Missouri, and the dearthness of feed is a hindrance to stock feeding, although grass is luxuriant. Normal numbers of young cattle are grazing, and spring pigs are as numerous as in other years.

S. M. & O. B. Parham, with headquarters in Billings, Mont., largely interested in the sheep industry, have marketed this season about 231,000 head of sheep and lambs. They own five big ranches near Billings that aggregate 23,000 acres, besides a large tract in northern Wisconsin. The lambs on their ranches were fed corn, with sugar beets and alfalfa. Mr. Parham believes in selling his lambs when they are ready for the market. He and his son raised in Montana this year 2000 acres of early wheat and planted 4000 acres more to corn, wheat, oats, beans and potatoes. He says more of the Montana farmers are going into general farming than ever before.

James V. Merriam, of eastern Montana, is a great believer in saving the ewe lambs for breeding purposes, because of the poor lamb crop, following the great shrinkage in the flocks of sheep in recent years. Wool is at least 100 per cent higher than a year ago, and from \$13 to \$15 per head is being paid in eastern Montana for breeding ewes of mixed ages. He says that between 25,000 and 30,000 ewes have been shipped already from Montana to Idaho and Oregon, with \$15 per head the prevailing price of yearlings. Not long ago a shipment was made of a bunch of aged wethers costing \$11.50 per head to the northern Wisconsin grazing lands. Some eastern Montana lambs were contracted for autumn delivery at \$6 to \$8 per head. Early in the season Colorado feeders contracted for Montana lambs at \$9 to \$10.50 per 100 pounds, but of late they were willing to pay as high as \$15. Mr. Merriam believes that shipments of sheep and lambs from Montana to the large central markets will be the smallest since the state first became an important sheep growing region.

Col. J. D. Waters, for half a century engaged in feeding Shorthorn cattle for the Chicago market without any interruption, and many times a winner of awards in the International Live Stock Exposition, is now fitting two carloads of yearlings and two-year-old steers for the next show. He began feeding cattle when only 14 years old.

Eastern Montana has suffered seriously from a prolonged period of dry weather, unrelieved of any rainfalls of any consequence, and stockmen have had to resort to shifting their cattle herds around to find water holes and pasturage. Existing conditions, together with the certainty of short supplies of winter feed, indicate plainly an early marketing of cattle, and shipments have begun already from some places. This means a large feeder end. Some of the eastern Montana stockmen have begun to contract for next winter's feeding, and they have paid \$15 a ton for alfalfa hay.

Fly time and a disposition to await developments have kept prospective buyers of stock and feeding cattle away from the market of late, thereby narrowing the outlet and giving killers a good opportunity to pick up bargains in fleshy steers of the feeder class. Because of the extremely dry weather experienced in the western portions of the two Dakotas, eastern Montana and some other parts of the west, a speedy cutting loose of grass stock from such regions is promised. Undoubtedly, many farmers are watching the market and prepared to buy feeders or stockers when they think the right moment has arrived.

There is much greater demand in the markets of the country than can be met, with unprecedentedly high prices for both. With only about half a normal spring lamb crop, it is natural that sheepmen should prefer to retain their ewe lambs for future breeding purposes, and this is being done as an almost universal rule. One of the best-known dealers in sheep and lambs in the Chicago market says that ten times as many breeding ewes as are offered could be disposed of readily.

THIS IS THE LAST EDITION.

LIVE STOCK NEWS.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.
August 8, 1917.

Cattle.

Receipts 1363. Market active and 50¢ higher than last week.

Best heavy steers \$9.50@10.50; best handy weight butcher steers \$8@9.25; mixed steers and heifers, \$7.50@8.25; handy light butchers \$6.50@7.50; light butchers \$5.50@6.50; best cows \$7@7.50; butcher cows \$6.50@7; common cows \$5.50@6; canners \$4.50@5.25; best heavy bulls \$7.50@8; bologna bulls \$6.50@7.25; stock bulls \$5@6.25; feeders \$7.50@8; stockers \$6@7; milkers and springers \$4@8.5.

Bishop, B. & H. sold Parker, W. & Co. 2 steers av 1040 at \$9, 1 do wgh 950 at \$8; to Sullivan P. Co. 6 cows av 943 at \$6.25; to Garber 5 steers av 710 at \$7.25; to Sullivan P. Co. 1 cow wgh 990 at \$800, 2 do av 1165 at \$7, 3 do av 997 at \$7.25, 4 do av 1112 at \$7.25, 3 steers av 1160 at \$11, 18 do av 975 at \$10, 7 cows av 940 at \$8, 4 do av 1055 at \$6.50, 7 steers av 814 at \$8, 6 cows av 1113 at \$8, 20 steers av 812 at \$8.25, 20 do av 850 at \$8.75; to Newton P. Co. 2 cows av 985 at \$5, 9 do av 900 at \$5.25, 4 do av 870 at \$5.10; to Thompson 21 steers av 900 at \$9, 2 bulls av 1140 at \$7.25, 8 steers av 986 at \$9; to Parker, W. & Co. 22 do av 900 at \$8.50, 3 cows av 770 at \$6.50, 9 steers av 944 at \$9; to Hammond, S. & Co. 7 do av 800 at \$8.50, 3 heifers av 770 at \$7.50; to Breitenbeck 12 steers av 948 at \$8.70, 4 do av 920 at \$6.10; to Bresnahan 6 do av 1075 at \$6.35; to Mich. B. Co. 10 steers av 836 at \$8.50, 8 butchers av 704 at \$6.50, 25 do av 620 at \$6.85, 23 do av 733 at \$7.50; to Newton P. Co. 14 steers av 750 at \$8, 33 do av 700 at \$7; to Sullivan P. Co. 14 do av 850 at \$8.40, 16 do av 1000 at \$9.50; to Mich. B. Co. 4 bulls av 815 at \$7, 4 do av 850 at \$5.

Erwin, S. & J. sold Mason B. Co. 1 bull wgh 1130 at \$8; to Applebaum 8 butchers av 560 at \$6.25; to Thompson 3 do av 840 at \$7.85; to Garber 7 do av 671 at \$7, 2 steers av 840 at \$7.50, 1 cow wgh 870 at \$6; to Newton P. Co. 13 steers av 907 at \$8.85, 2 cows av 750 at \$5; to Sullivan P. Co. 7 steers av 917 at \$7.10, 2 cows av 1170 at \$7.50; to Mich. B. Co. 16 butchers av 623 at \$6.50, 6 do av 851 at \$8.75, 1 heifer wgh 600 at \$7, 6 cows av 933 at \$6.85; to Hammond, S. & Co. 19 steers av 755 at \$8.50, 12 do av 850 at \$8.25, 2 do av 770 at \$7; to Newton P. Co. 4 do av 955 at \$8.50, 1 do wgh 1270 at \$9, 3 do av 1060 at \$9.25, 3 do av 957 at \$8.50, 7 do av 936 at \$8.75, 2 do av 900 at \$8.25, 1 do wgh 1000 at \$9, 3 do av 1140 at \$9, 2 do av 875 at \$8, 3 cows av 850 at \$6.25, 4 do av 1107 at \$8, 2 do av 1210 at \$7.50, 4 canners av 825 at \$5; to Mich. B. Co. 1 bull wgh 1330 at \$8, 6 steers av 985 at \$9.25, 2 cows av 1015 at \$7.25; to Thompson 5 steers av 970 at \$8.50; to Mason B. Co. 5 do av 752 at \$7.50; to Rattkowsky 4 do av 662 at \$6.75; to Sullivan P. Co. 3 cows av 970 at \$6.75.

Veal Calves.

Receipts 562. Market strong and 50¢ higher than last week. Best \$15@15.50; others \$8@14.

Bishop, B. & H. sold Newton P. Co. 29 av 160 at \$15.50; to Mich. B. Co. 15 av 175 at \$15.50; to Shipiro 1 wgh 240 at \$16, 5 av 180 at \$16; to Nagle P. Co. 21 av 210 at \$15.25; to Thompson 14 av 160 at \$15.50; to Parker, W. & Co. 28 av 160 at \$15.50, 4 av 130 at \$15.25; to Hammond, S. & Co. 5 av 170 at \$15.25, 13 av 160 at \$15, 24 av 180 at \$15, 6 av 150 at \$15.25; to Mich. B. Co. 13 av 185 at \$15.50; to Sullivan P. Co. 20 av 170 at \$15.50; to Hammond, S. & Co. 4 av 150 at \$15.50; to Newton P. Co. 15 av 160 at \$15.25, 11 av 165 at \$15.50.

Sheep and Lambs.

Receipts 612. Market steady at last week's prices. Best lambs \$14.50@14.75; fair lambs \$13@14; light to common lambs \$11@12.50; fair to good sheep \$7.50@8.25; culls and common \$4.50@6.

McMullen, K. & J. sold Nagle P. Co. 15 lambs av 65 at \$14.50; to Parker, W. & Co. 72 do av 75 at \$14.50; to Mich. B. Co. 67 do av 67 at \$14.10, 6 sheep av 110 at \$7.50, 43 lambs av 75 at \$14.75.

Bishop, B. & H. sold Mich. B. Co. 16 lambs av 75 at \$14, 14 do av 77 at \$14.50, 18 do av 70 at \$14.50, 3 yearlings av 95 at \$11; to Sullivan P. Co. 4 sheep av 90 at \$6, 10 do av 135 at \$8, 11 do av 130 at \$8; to Mich. B. Co. 61 lambs av 65 at \$14.25, 8 sheep av 110 at \$6.50, 27 do av 70 at \$14.50, 22 do av 70 at \$14.90.

Hogs.

Receipts 871. Market strong. Pigs \$14@14.50; mixed \$16@16.75.

A prominent Ohio stockman reports that while Highland county in that state is famous for its many fat cattle, it is now doubtful whether a carload of fat corn-fed cattle could be found in a day's drive through the county, while fat sheep are hardly to be found. Stock ewes are much wanted, but there is very little call for stock and feeding cattle. Matured hogs have been mostly shipped out, farmers being unwilling to hold to maturity owing to the high price of corn. With corn worth \$1.75 a bushel, most stock feeders are marketing their pigs when they weigh from 140 to 160 pounds.

Heavy calves have been hit the hardest in recent declines in prices in the Chicago market, and in a recent week they sold largely from \$2 to \$3 per 100 pounds lower than at the close of the previous week. A good demand is witnessed usually for good to prime light weight veal calves, but calves weighing around 200 to 250 pounds are strongly discriminated against by buyers and are the first to sell lower. The markets have been glutted with such calves, large shipments having been made from Texas especially.

In view of the recent sales of the choice lots of beef steers in the Chicago market at \$13 to \$14.15 per 100 pounds, it is interesting to turn back to this time in 1911 and recall the fact that at that period steers were bringing from \$4.75 to \$7.50 for the commonest to the best grades. The greatest advance in prices is naturally in the well fattened kinds of cattle, as these are extremely scarce in all feeding districts of the country. It is simply a case of unprecedentedly high-priced corn everywhere discouraging its use by feeders, although some stockmen understand the trick of converting dear feed into high-priced beefs and reaping a fair profit. Such corn prices as have been paid of late were never dreamed of in past years, recent cash sales having been made on the Chicago market as high as \$2.40 a bushel for No. 2 white corn and \$2.35 for No. 2 yellow corn. Most of the cattle now reaching the Chicago market show plainly that they were not pampered by their feeders. Grass-fed cattle comprise a large share of the weekly receipts, and the customary big decline in prices for the ordinary and trashy cattle, taking in thin, flabby steers, ordinary stockers and feeders, canners, cutters, etc., has taken place. Country buyers have had a fine chance recently to restock their pastures at much lowered prices.

The brief strike of the railroad switchmen employed in the Chicago stock yards checked the marketing of live stock temporarily, and only 7,141 head of cattle, 15,481 hogs and 4,566 sheep and lambs arrived on Monday.

Southwestern markets have been getting unusually large supplies of grass cattle from Texas and Kansas, drought forcing many on the market prematurely, and inadequate packing house forces in Kansas City have caused numerous reshipments to the Chicago market.

In point of average quality the recent receipts of hogs in the Chicago market leave much to be desired, most of them not showing a sufficient familiarity with corn. Prices have continued to rule far above those paid in past years, but killers are discriminating strongly in favor of the good corn fed hogs and against the many ordinary grassy swine, this causing a great widening out in prices between the best and the poorest. This is due in great part to the fact that it has been found that the poorer hogs have cost more on the hooks than the well fattened lots. For several months the Chicago receipts have been showing a pretty steady gain in weight, but, while the average weight is about the same as a year ago, it is decidedly less than in other summers. Recent receipts have averaged 231 pounds, comparing with 230 pounds one year ago, 239 pounds two years ago, 245 pounds three years ago and 246 pounds four years ago. Naturally, the highest prices are paid for prime heavy shipping barrows, with the best light hogs on the eastern shipping order selling not much below them. Within a short time price hogs have sold as high as \$16.30, comparing with \$7.75 two years ago. Far less pigs were marketed during the month of July than for the same time last year. There is a tendency to raise two litters of pigs a year in districts where this has been the exception, and a fairly large fall crop of pigs is hoped for.

Provisions have shared in the boom in hogs, with the unexpected purchase in a recent week of over twelve million pounds of lard and cured hog meats for the Belgian relief. Both fresh and cured hog meats are in good demand on domestic account, with recent heavy shipments to southern points.



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32x3	9.25	9.95	2.75
30x3 1/2	9.95	11.10	2.55
31x3 1/2	10.55	11.60	2.90
32x3 1/2	11.50	12.95	3.00
34x3 1/2	12.15	13.35	3.55
31x4	14.75	16.60	3.70
32x4	15.05	16.85	3.80
33x4	15.75	17.20	3.90
34x4	16.10	17.55	4.00
35x4	17.00	18.60	4.50
36x4	17.20	18.65	4.30
34x4 1/2	21.65	23.65	4.90
35x4 1/2	22.70	24.70	5.00
36x4 1/2	23.05	25.15	5.15
37x4 1/2	23.85	26.10	5.35
35x5	24.90	27.25	5.95
36x5	27.10	29.60	6.65
37x5	26.40	28.85	6.25

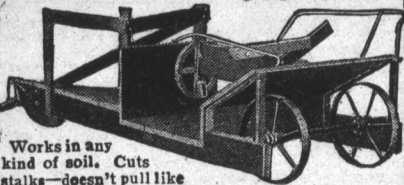
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When writing to advertisers please mention The Michigan Farmer.

A Triumph for Cooperation

ONE of the first co-operative concerns organized by the farmers of the writer's section, was the Litchfield co-operative creamery. Since the establishment of this creamery, the co-operative idea has borne fruit in other fields, and the movement has spread with unparalleled rapidity over wide areas of the state. For a number of years, the creamery at Litchfield has been marked as one of the most successful concerns of its kind, anywhere in the country. It has grown amazingly, and has drawn patronage from the remotest corners of accessible territory. Prizes have been awarded this creamery for its butter, and the prices realized by patrons for butter-fat have reached, at times, a point considerably in advance of that paid by similar concerns under private management and ownership.

Perhaps the most signal triumph yet scored by this co-operative creamery, came recently, when it landed an order from the United States navy department, for one hundred and ten thousand pounds of butter. The navy department purchases only high-class butter and pays the highest market price for the product. That the Litchfield co-operative creamery could land such an order, is a fact of which the stock-holders and patrons generally, may well feel proud. It proves conclusively, the efficiency and success of the business. It is a triumph for the co-operative idea, and a refutation of the argument that co-operative enterprises lack the system and efficiency of privately owned and managed undertakings.

In considering this victory for co-operation, still another factor comes to the front, at this time. It is this: The preparedness that is now so much talked about, loses nothing through the recent growth of the co-operative idea among American farmers. Indeed, it gains something, if we are to judge from this achievement of the Litchfield creamery. Efficiency is one of the things needed most, in this time of nation-wide and world-wide calamity. The American farmer is being told that on him, depends the final outcome of the battle between democracy and autocracy. More farm products of all kinds, less waste, greater productivity, greater efficiency—these are the things that will count in winning the world war for democracy.

In co-operation, the farmer has found a degree of protection against unscrupulous middlemen. He has also found that greater efficiency which always comes from organized effort and common interests. In localities where the co-operative idea has taken root, the farmers are in a much better position to handle effectively, the present situation. Co-operative associations can easily act along some of the lines pointed out by the government, where individual effort would be unavailing.

Every ounce of the one hundred and ten thousand pounds of butter sold by the Litchfield creamery to the navy department, pulls down the beam on the side of successful and efficient co-operative enterprise. Speaking broadly, the farmers have realized more for their cream, and the consumer has enjoyed a premium-winning grade of butter at a price not higher than that charged by other concerns. Farmers have a measure of protection, too, in their co-operative organizations, against a slump in prices which might come, should the war terminate suddenly and unexpectedly. At such times, in former years, the stock-buyers and other middlemen have taken advantage to the limit, of such situations. With the co-operative idea alive and active, the farmer will realize at least as much as the market warrants, for his products. The speculators,

large and small, have stood in the way of producer and consumer alike, for many years. Elimination of this evil influence, by government control or any other means, can but benefit, in the long run, all the people. The co-operative movement is against the speculators, whether they be local stock-buyers or stock gamblers higher up. Any triumph which a co-operative association can achieve, counts mightily on the side of the movement. The co-operative creamery whose success has occasioned these paragraphs, through its success, has set in operation in this section, a group of co-operative associations which are efficient and successful. Unquestionably, these associations are a help rather than a hindrance so far as the farmer is concerned, in carrying out the preparedness idea.

Hillsdale Co. J. A. KAISER.

USE YOUR OLD JARS AND BOTTLES.

Jars and large-necked bottles can be used for certain preserving if capped with paper and paraffin, or, in the case of jellies and stiff marmalades, with paraffin alone. Small-necked bottles, for use in putting up fruit juices, can be sealed in the following manner: Make a cotton stopper, press it into the neck of the bottle and leave during the sterilization or boiling period. To sterilize, set the bottle in boiling-hot water up to the neck and let it remain for forty minutes at a temperature of 165 degrees F. Then remove the bottle, press the cork, which has been baked in the oven for one hour, in the top over the cotton, immediately, and dip top into melted wax or paraffin.

HOW TO DRESS TURKEYS.

Attractiveness is the main essential in marketing dressed poultry, aside from having well-fattened stock. Many farmers fail to receive the best prices for their first-class fowls because they do not realize the importance of picking, packing, and shipping, and do not meet the requirements of the consumer.

During the fall months there is a heavy demand for turkeys, and usually good prices prevail. Plucked birds are regarded more salable than the unplucked. The fowls should be fasted for twenty-four hours, which empties the crops and intestines, for the fermentation of food in the body would destroy the highest market qualities. The turkeys should be given a small amount of water before killing. Killing is better by wringing the neck, rather than by sticking. The legs are grasped by the left hand and the head held in the right hand, the back being turned upward and the crown of the head held in the hollow of the hand. The legs are placed against the left hip and the head against the right thigh or knee. In this position strongly stretch the head, at the same time bending it suddenly backward, so as to dislocate the neck near its junction with the head. The bird is instantly killed, and this is more humane than sticking. Proceed at once to pluck off the feathers, while the carcass is still warm, leaving those about the neck for about three inches from the head; also a few feathers on the tail and tips of wings. Great care should be used not to injure the flesh.

It would be well to hang the bird on a hook while picking, thus allowing free use of both hands at once. Take a sharp knife and insert it in the roof of the mouth, so as to pierce the brain, cutting along the entire length. Allow the bird to bleed until all blood has drained out. Then dash into a pail of water and wash off all stains, but do not do this until the picking has been

completed, as dry picking is easiest.

If you are placing orders direct, you may be requested to dress the bird completely. First weigh, then remove intestines from rear, using great care not to break the gall. After the bird is thoroughly cooled, it may be placed in the packing case, wrapped in white paper. Only place those birds of uniform weight in each case, and in no case should any bird be heavier than the weight marked on the case. Pack hens and cocks separate. Put a quantity of paper around the head to absorb any blood.

The same general methods prevail in preparing poultry for market. Inasmuch as dressed poultry is usually several cents above live weight prices, farmers should aim to dress their own poultry and receive this added profit. To do this they must comply with the set rules for the market they would sell.

New York. E. W. GAGE.

MICHIGAN FARMERS CO-OPERATE.

The Grand Rapids Dairy Co., made up of the milk producers supplying largely the Grand Rapids trade, has bought a site on Scribner avenue, south of Bridge street, and is getting bids on a building, 100x125 feet, two stories and basement, for use as a central distributing plant. M. W. Willard of Alpine township, is president and Cyrus Hunsberger is secretary and treasurer.

Manistee county milk producers met at Manistee and formed an association with J. Victor Swanson as president and Frank Russell as secretary and treasurer. Educational advantages is one of the main objects sought through this closer co-operation.

Co-operative associations have been formed in Chippewa county, at Dafter and in Soo township. The Dafter association has officers as follows: President, Joseph Welsh; vice-president, Wm. McKee; secretary, Thomas Armstrong. Officers of the Soo Farmers' Marketing Association are: President, H. A. Osborn; vice-president, O. C. Newcomb; secretary, C. A. Hungerford.

Co-operative farmers' elevators in the state have been very successful during the past year. At Breckenridge, in Gratiot county, the books of Manager Muscott show a net gain for the farmers of over \$10,000. This company has had the same officers, directors and manager since 1913. A surplus of nearly \$7,500 was shown in the year's business of the Farmers' Elevator Co., at Ithaca, Gratiot county, and after cleaning up old debts, installing new motors and purchasing a storage plant for cement and wool a six per cent dividend was paid the stockholders. Reports of the first ten months of business of the Flushing Farmers' Elevator Co., Genesee county, show operations totaling \$700,000, with net profits to farmers of \$14,000. Net profits of the elevator at Chesaning, in Saginaw county, were \$17,264.18. An association has been formed at Laingsburg, Shiawassee county, and will either buy or build an elevator there. This association also talks of taking over the elevator at Bennington.

Kent Co. ALMOND GRIFFEN.

HIGH PRICES MAKE PROFITS.

A short time ago a carload of branded yearling Hereford cattle which averaged only 1133 pounds brought \$13.90 on the Chicago market. They were fed by Ole Low, of DeKalb county, Illinois, having been bought as feeders last autumn, when they averaged 680 pounds and cost \$7.25. They were fed in dry lot for eight months on a mixed ration of timothy and sweet clover hay, oats, oil meal, and crushed corn. The supply of corn fed cattle is about gone in DeKalb county, one of the big feeding districts of Illinois.

"CONTRABAND."

Continued from page 101).
a model crew. That's the way I see it, sir."

"Which looks reasonable enough," I acknowledged, after a pause, "although it's more my judgment that the arrest of McCann has left them leaderless. I am not really looking for any more serious trouble. However, we'll be ready for it, when it comes."

CHAPTER XX.

A Glimpse of a Woman's Heart.

THE afternoon brought me increased faith that the imprisonment of Fergus McCann had practically ended the rebellion of the men forward. No doubt the spirit of mutiny still lingered, but without his leadership this had ceased to be dangerous. Unbacked by the New Yorker's display of wealth, Liverpool Red and Jim White were suddenly shorn of power to control the crew.

Of course, these two were not of the kind to yield without a struggle; there would invariably be an effort of some sort made to discover McCann's exact whereabouts, and release him. But this could be easily guarded against. Even in the darkest night there was small chance of any member of the crew being able to slip aft along the main deck unseen, and I took precaution to close, and lock securely, the only passageway below which led forward. Whatever scheme the two ringleaders might evolve, I felt we were now in position to effectively block. Their only possible chance of success, of obtaining control of the ship, lay in the exercise of force. Undoubtedly there were men enough forward to overwhelm us by sheer force of numbers, if they became desperate enough to make the attempt. But I no longer felt fear of this; not only had the impression been left upon me as I faced them that they had already lost the spirit of resistance, but there was no gathering in groups forward, no whispered conferences, no indication of any kind to lead me to suspect they were planning action. White had gone below with his watch, while Liverpool was serving his trick at the wheel. Not so much as a word had been exchanged between the two since I had dismissed the crew. Probably their questionings had been prompted merely by curiosity, and not because of any purpose already fixed in their minds.

Nor did anything occur during the remainder of the day to lead me to revise this conclusion. The weather held fair, and the men worked cheerfully. Now that the liquor was out of them they proved themselves a fairly efficient crew, obeying the orders of the mates smartly. No occasion arose for me to interfere, and even Leayord expressed approval and surprise. I made a brief tour of the decks, noting that things were shipshape and in order in spite of the remnants of wreck forward, and then visited the engine room below, interviewing Masters, and giving him personal instructions relative to the duties of the coming night. All was quiet in his department, and the stokers were attending to their work. Apparently the crisis has been passed, and the only problem remaining to confront us was that of navigation. With my mind at rest on this point, I passed the hours of the afternoon largely in my own stateroom, sleeping for an hour or more in preparation for the night's watch on deck, and later carefully figuring out in detail the exact course I should attempt to follow during the period of darkness.

Before the call to supper came, I called on Bascom to explain to him the situation, but found the man stupefied by some drug, taken perhaps to alleviate pain, and scarcely capable of comprehending my meaning. Satisfied that

Farmers' Clubs

CENTRAL MICHIGAN CLUB RALLY.

Central Michigan Farmers' Clubs will hold their second rally at the M. A. C., Wednesday, August 15, 1917. Everybody should plan to be there. Basket picnic at noon in grove just west of electric station.

W. L. CHENEY, President,
Mason, Mich.

A PLEA TO CLUB PATRIOTISM.

Through the authority of President C. B. Scully, the secretary of the State Association of Farmers' Clubs, has been instructed upon the call of Dr. Caroline B. Crane, chairman of the Michigan Division of Woman's Committee of the Council of National Defense, to request and urge each local Club in the state to contribute \$1.00 for our state war board in the Council of National Defense, the same to be forwarded to the treasurer of the state war board, Miss Frances E. Burns, of St. Louis, Mich.—Mrs. Joseph Brown, Howell, Mich.

CLUB DISCUSSIONS.

Adopt Conservation Resolution.—At a recent meeting of the Clyde and Grant Farmers' Club, of St. Clair county, the consideration of the serious food situation in our country, and the heavy responsibilities that are devolving upon the farmer, led to the passage of the following resolution: "Whereas, the manufacture of large quantities of farm grains into intoxicating liquors every year not only wastes these products and renders them unfit for human consumption, but also corrupts the life and ruins the health of thousands of our men and women, be it resolved that the Clyde and Grant Farmers' Club be placed on record as favoring and urging Congress to prohibit at the earliest possible date the making of alcoholic drinks from food products."

Young People's Day.—Mr. and Mrs. John Pike entertained the Hickory Farmers' Club on its Young People's Day, July 26, when the young folks had full swing with the program. Readings were given by Alice Reavey, Pearl Turner, Doris Reavey, Anna Monte and Doris Pike and Eva and Anna Coler sang a duet, all of which were appropriate and well rendered. The only business of importance was the appointment of Inez Monte, Mr. and Mrs. Robert Robinson, Mrs. Earl Edgar and Mrs. Charles Lahman as a committee to prepare the Club exhibit for the Caro fair. The August meeting will be held with Mrs. Jane Daugherty at Rose Island, with a picnic dinner will be one of the attractions.

HAPPENINGS OF THE WEEK.

(Continued from page 90).

tion of the country since 1914. A recent review of the trade shows that during that year 23,300,000 tons of pig iron and 18,370,000 tons of finished steel were produced. During the past fiscal year it is estimated that the production aggregated 38,300,000 tons of pig iron and 33,000,000 tons of finished steel.

Hon. H. O. Young, for twelve years representative of the twelfth district of Michigan in Congress, died at his home at Ishpeming, Sunday morning.

Much damage was done in Washtenaw county Sunday, by storms. A number of buildings were wrecked, including the hall of the State Normal School at Ypsilanti, which was unroofed, wire lines were demolished, and trees and crops leveled where the storm hit.

In a fire that swept the Spruce River Valley near Fernie, B. C., eight persons were burned to death and sixty others trapped by the flames. Great quantities of timber and logging equipment have been lost.

I could gain no assistance from him, I left the man lying helplessly in his bunk, and returned to the main cabin. Vera did not appear until after Leayord and I were seated at table, yet she had been on deck during the afternoon, and had much to say relative to the beauty of the ocean scene through which we sailed.

(Continued next week).

Grange.

THE GRANGE AND FOOD SAVING.

Has your Grange had a canning demonstration or in some other practical way tried to do its part in promoting the great campaign to save all the food possible?

Canning, drying and storing of vegetables, fruits and meats ought to be discussed in every Grange and Club in the state. Demonstrations and exhibits of equipment for saving food in economical and safe ways should be displayed at these summer meetings. Each meeting should aim to be a radiating point from which women, (men, too), shall go out to preach the doctrine of "every household to provide for its own needs."

Talk these subjects everywhere. Why not, when ministers are asked to preach sermons upon food production and thrift in food saving? Why not, when the success of this awful war and lives of boys in the trenches depend largely upon the food you and I help produce or save?

Women of the Grange never had a more important and vital part to play through our organization than just now at this point of food saving. Do not put this paper down until you have resolved to do your part in the campaign, however small it may seem to you.

Our state lecturer has been made head of the food production and marketing department of the women's committee for Michigan of the Council of National Defense. She, with her associates, is trying to have every nook and corner of our state reached by this food campaign, so that there shall not be an empty can in our cellars next winter; so that corn and fruits shall be dried and stored in paper bags; so that beets, carrots, onions, squash, celery and other vegetables that may be stored in bulk may be put away for our own provision and all else disposed of where it will help most.

Mrs. Stockman's department is working with the Home Economics Department of M. A. C. Many demonstrators are available to go out and help start the use of the cold pack method of canning, where desired, but in every neighborhood there are practical housekeepers who can give valuable suggestions and help. With the aid of government bulletins, the cold pack method can be used successfully by one who has never seen it demonstrated, by carefully heeding each detail. Many of our papers are printing the time tables for blanching and sterilizing which are given in the government bulletins and these will help us much. See page 12 of this issue for canning time table.

With all the seamy side of the war situation, women are being roused to think and discuss the food questions as no amount of urging by Grange Lecturers has ever gotten them to do. So let us count the good we find in it and help the cause of food study and practice along. JENNIE BUELL.

HOLDS ANNUAL PICNIC.

Ann Arbor Grange held its third annual picnic on the Fourth of July. Instead of going to the state forestry farm, as in previous years, the gathering was in a beautiful grove surrounding the home of a member, L. D. Carr, at the edge of the city. A hundred members and friends met for a gala time, mixed with some practical patriotism as befitting this serious anniversary.

Besides ball games and a tug of war by the men, the women profited by a canning demonstration conducted by Miss Cora Swingle, and the men held a hoeing contest for garden cultivation which elicited huge interest and brought out many scientific and practical facts.

DEATH TO HEAVES

NEWTON'S Heave, Cough, Distemper and Indigestion Cure.

Some cases cured by 1st or 2nd \$1 can. Three cans are guaranteed to cure heaves or money refunded.



The original and the up-to-date Standard Veterinary Remedy for Heaves; free booklet explains fully. 35 years sale and veterinary use.

CURES HEAVES BY CORRECTING CAUSE—INDIGESTION. IT'S A GRAND CONDITIONER AND WORM EXPELLER

Safe. Most economical. Excellent for Cattle and Hogs. \$1.00 per can at dealers, at same price by parcel post. THE NEWTON REMEDY CO., Toledo, Ohio.



Booklet Free \$3 Package guaranteed to give satisfaction or money back. \$1 Package sufficient for ordinary cases. MINERAL HEAVE REMEDY CO. 463 Fourth Ave., Pittsburg, Pa.

HOGS

"War is —"

So is starvation, every one should do their bit. You can raise more pork on less feed if you breed Butler's big type Poland Chinas. Sows bred for fall farrow. Boars ready for service. J. C. BUTLER, Portland, Michigan. Bel' Phone

Large Type P. C.

Fall pigs and bred gilts all sold. Nothing for sale at present. W. E. LIVINGSTON, FARMA, MICH.

Big Type Poland Chinas: April and May pigs, healthy and growthy. Prices right. L. W. BARNES & SON, Byron, Mich.

LARGE Strain P. C. everything sold except 1 husky yearling boar that is long, tall & deep. 1 extra choice fall boar. H. O. SWARTZ, Schoolcraft, Mich.

LARGE type P. C. Some very choice summer gilts bred to farrow in August. Will sell 1 of my yearling herd boars. W. J. Hagelshaw, Augusta, Mich.

Large Stiled Poland China, fall and spring pigs. at farmers prices. B. P. Rock eggs \$1.50 per 15. Robert Neve, Pierson, Mich.

POLAND Chinas bred gilts all sold, still have some choice fall pigs of large and medium type, at farmers prices. F. D. LONG, R. 8, Grand Rapids, Mich.

Big Type Poland Chinas Sept. farrow, either sex, sold by Jumbo Wood, 800 lb. hog. A. A. WOOD & SON, Saline, Michigan

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

HAMPSHIRE Boar pigs only for sale \$15 and up as to age. JOHN W. SNYDER, R. 4, St. Johns, Mich.

Hampshire Weanling Pigs: from good breeding. Priced for quick sale. A. E. BACON & SON, Sheridan, Mich.

FOR SALE

YORKSHIRE BOAR PIGS Waterman & Waterman, Packard Road, Ann Arbor, Mich.

SHEEP

Shropshire Ewes

Mostly yearlings with lambs by side, extra good ones, come at once if you want them.

Kope Kon Farm, Kinderhook, Mich.

Shropshires Big, early, reg. ram lambs, for coming fall trade, sired by imp. Nock ram. Milo M. Gibson, R. 5, Lapeer, Mich.

OXFORD DOWN SHEEP We have a few rams for sale. M. F. Ganssley, Lennon, Mich.

For Shropshire Yearlings or Lamb Rams and Ewes, write or call on ARMSTRONG BROS., R. 3, Fowlerville, Michigan.

OKDALE STOCK FARM. Shorthorn Cattle and Shropshire Sheep. Stock for sale. W. J. Lessiter, Belding, Mich.

HORSES

OVERSTOCKED

20 head horses and colts for sale including 1 team chestnut mares 3200, 1 team grays 3200, 1 black mare 1800 and colt. Ten head colts one to three years, from these large mares. Albert B. Holmes, Ypsilanti, Michigan.

For Sale Reg. Black Percheron Stallion Colt

Weighing 1600 pounds at 24 mos. old Sired by a Stallion Weighing 2100 pounds well bred and bred to sell. M. A. Bray Est., Okemos (Ingham Co.) Mich.

SHETLAND PONIES

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

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

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

FOR SALE or exchange for Reg. Percheron mare. A five year old Reg. Percheron stud. E. J. Aldrich, Tekonsha, Mich.

AGENTS WANTED

to represent a reliable concern canvassing among farmers in your own neighborhood or elsewhere. No experience necessary. Liberal pay and supplies furnished free to right parties. Reference required. Address, THE MICHIGAN FARMER, Detroit.

POULTRY.

Yearling Hens For Breeders

S. C. White, Buff and Black Leghorns at \$1.00 each. SUNNYBROOK FARM, Hillsdale, Mich.

JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$3, \$2.50, \$1.00, \$1.00. Photo, John Northon, Clare, Mich.

Barred Rocks: records to 297 eggs a year, \$2 per 15. Delivered by parcel post, prepaid. Circular free. Fred Astling, Constantine, Mich.

Barred Rock Hens Great Layers first class breeders 10 for \$25.00. W. C. COFFMAN, R. 3 Benton Harbor, Mich.



Ferris White Leghorns
A real heavy laying strain, trapped 17 years, records from 200 to 264 eggs. Get our special summer prices on yearling hens, breeding males, eggs for hatching, 8-week-old pullets and day old chicks. We ship C. O. D. and guarantee results. Catalog gives prices; describes stock; tells all about our farm and methods; results you can get by breeding this strain. Send for your copy now—it is free.
GEORGE B. FERRIS 934 Union, Grand Rapids, Mich.

2000 - Pullets - 2000
"200 Egg" Pedigree White Leghorns.

"Bred-to-lay" strain. These vigorous, April-hatched pullets will be laying in a few weeks. These birds of quality are the choicest ever offered for sale. Prices in hundred lots, \$1 each now—\$1.25 August 15th—\$1.50 September 1st—\$2 September 15th. Book your order at once. Thousands of satisfied customers. Catalogue.
MICHIGAN POULTRY FARM, Lansing, Michigan
"Michigan's Largest Poultry Farm."

LOOK 5000 PULLETS

March, April, May hatched, at right prices S. C. White Leghorns only from trap-nested stock. Write for prices and free catalogue. Stamps appreciated.
NABOB POULTRY CO., Gambier, Ohio.

COCKERELS

Can furnish some fine young's strain White Leghorn cockerels at \$1.00 to \$2.00 apiece. Will make fine breeders. W. Van Appleton, R. 7, Holland, Mich.

Fowlers Buff Rocks. Eggs one half price for bal. of season \$7.50 for 15; \$1.50 for 30; \$2.00 for 50; \$3.50 for 100. R. B. FOWLER, Hartford, Mich.

Buff Leghorns. August sale 25 hens one dollar each. 16 two dollar hens and cock bird for \$20.00. Dr. William A. Smith, Petersburg, Mich.

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

HOMESTEAD FARMS

We now offer for immediate delivery the following pure bred practical poultry: Yearling stock—White Leghorn Hens, Brown Leghorn Hens, Barred Plymouth Rock Hens, Rose Comb Black Minorca Hens, Rhode Island Red Cocks, White Leghorn Cocks, Cockerels—White Leghorn, White Wyandotte, Ancona, Barred Plymouth Rock, Young White Pekin Ducks. We have no more pullets for sale now. Here is offered some pure bred practical stock which is daily proving its value in the direct poultry product market we have built up. All this stock is guaranteed. Write to us for prices. HOMESTEAD FARMS, Bloomingdale, Mich.

RHODE ISLAND REDS AND PLYMOUTH ROCKS Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00; 100, \$5; 120, \$6.00. Mammoth Bronze Tom Turkeys, 8 to 8 lbs., according to age \$5 to \$25, 10 eggs \$5. A. E. Cramton, Vassar, Mich.

R. C. Br. Leghorn c'krls. \$1.00 each from Kulp and Gale strains. Eggs \$1.00 per 100. MRS. CLAUDIA BETTS, Hillsdale, Michigan

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Orpingtons, Rocks, Reds, Leghorns, Wyandottes, Anconas, Minorcas, Pullets, \$11 a dozen up; 6 Ckls., \$5. Baby chicks, \$10 a 100 up. Eggs, \$7 a 100 up. Catalog free, stamps appreciated. Nabob Poultry Co., Gambier, O.

S. C. W. Leghorns at a sacrifice, buy them now. Two-year-old hens each. Cockerels \$1 and \$1.25. HILL-CREST POULTRY FARM, Ypsilanti, Mich.

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

S. C. W. Leghorns. Cockerels on free range at \$2.00 each. White Line Poultry Farm, Hillsdale, Mich.

WHITE Wyandottes. A. 1 layers. Eggs for hatching, \$1.25, \$3 for 15, \$7 for 100. Special matings \$5 for 15. DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

BREEDERS' DIRECTORY.

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

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

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Aberdeen-Angus

Herd established in 1900, Trojan-Ericas and Black birds only. Bulls in service: Black Brandon 20892, Enos of Woodcote 191382. Also breeders of Percheron and Saddle Horses.
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CHOICE Angus Bulls for sale. Have several well bred, excellent type Angus Bulls at reasonable prices. M. L. Smith, Glenwood Farm, Addison, Mich.

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

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

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

GUERNSEYS Bull calves for sale, from A. R. dams and cows on test. GEO. N. CRAWFORD, Holton, Mich.

Registered Guernsey Bulls. Service age, and Bull Calves. May Rose and Gov. Chene breeding. Avondale Stock Farm, Wayne, Mich.

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REG. HOLSTEINS: Herd headed by Albina Bonte Butter Boy No. 33124. Dam's record at 6 yrs. butter 28.53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter 802 lbs. milk 1852 lbs. W. B. READER, Howell, Mich.

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Herd Sire
Ypsilanti Sir Pietertje De Kol
Service bulls all sold. Buy a calf and raise it. Fine individuals 4 and 5 months old. E. H. Gearhart & Son, Marcellus, Mich., R. No. 4.

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Choice Registered Holstein calves from A. R. O. cows. RAY B. PARHAM, Bronson, Michigan.

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100 REGISTERED HOLSTEINS 100

For Sale:—17 mos. old bull whose 7 nearest dams average 560.1 lb. milk and 25.679 lb. butter in 7 days. Sire is by the son of a 32.9 lb. cow and from a 31 lb. 4 yr. old cow. Dam is a 22.5 lb. Jr. 3 yr. old daughter of a 26.5 lb. Jr. 4 yr. old cow, whose dam is a 27 lb. cow.

Ready for immediate heavy service. Priced to sell immediately. Send for pedigree and price.

R. BRUCE McPHERSON, Howell, Mich.

WINNWOOD HERD

REGISTERED HOLSTEINS

Holton, Mich.

Reference: Old State Bank, Fremont, Mich.

Flint Maplecrest Boy sire in service
His sire is Maplecrest Kornelke Hengerveld, his 3 Nearest Dams each over 30 lbs. of butter in 7 days. His dam and grand dam both made over 1232 lbs. of butter in 1 year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vasser Bell, 30.57 lbs. of butter in 7 days and 120 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have Bull Calves from 2 weeks to 8 months old for sale at dairy farmers' prices all out of A. R. O. Heifers. Write and tell us the kind of a bull you want.
John H. Winn. (Inc.) Holton, Mich.

842 Lbs. BUTTER

Is the average of the semi-official records of our herd bull sdam (at 2 yrs.), his grand-dam (at 3 yrs.) and his great grand-dam. Three choice young bulls from A. R. O. dams. Herd tuberculin tested annually. Holsteins of course. Peace and Stock Farm, Three Rivers, Mich. Chas. Peters, Herdsman. C. L. Brody, Owner, Port Huron, Mich.

PURE bred Holstein Bull born July 15, 1917, not eligible to record, 15 1/2 white, a good one. \$35 crated & delivered anywhere in state. Newton Barnhart, St. Johns, Mich.

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The Holstein furnishes you the largest production of Milk, which separated gives you great hog feed—Skim Milk.

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

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Need Reg. Holsteins??

You can't find better bred bulls than we are offering, ready for service. You don't need cash. We'll try to you. Get our description booklet. LONG BEACH FARMS, Augusta, (Kalamazoo Co.), Michigan

For Sale A Yearling Heifer, pure bred Holstein, Sire, Colantha Johanna Cream-elle Lad, Dam, Elizabeth Segis Lyons. If you want something good, write, Geo. D. Clarke, Vassar, Mich.

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

High Grade Holstein Heifers

Fresh or soon to freshen. Also grade Holstein Bull Prices reasonable. THE JENNINGS FARMS. V. M. SHOESMITH, General Manager, Bailey, Mich.

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

3 Holstein Heifers 30.21 lbs. sire. Their dam's of 35 lb. cow, bred to 3/4 brother to 30 lb. 4 yr. old. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

August Poultry Reminders

DURING hot weather sour or musty food is more apt to be used for poultry feed than in the winter. Severe losses will result from the use of poor feed so it pays to know the exact condition of the grain in the bins which may have been there for a long time. Never allow portions of the mash to remain in the troughs on hot days as it may become contaminated with dirt and then be eaten by the young stock.

It is now time to arrange with your neighbors to purchase grain that is not raised on the home farm, but is needed for the flocks. Right after harvest time grain can usually be purchased cheaper than at any time of the year and the quality is apt to be first class. Before placing grain in the bins be sure that they are strong and that mice have not eaten into them. When metal cribs and bins are not used it is a constant fight to keep down rats and mice, but the effort in destroying them pays.

Prevent Over-crowding.

Cool nights following hot days will cause much crowding among the young stock if they are not on the roosts but forced to spend the night on the floor of the brood coops or colony houses. In the morning they come out on the cool ground after being overheated at night and the result is colds. It pays to have all of the young stock on the roosts before the middle of August unless they have been hatched very late. It requires some patience to educate a flock of chicks to roost at night. Some learn quickly and others are stubborn, but it is necessary to teach every one of them or colds may cause losses.

Pullets that are to produce fall eggs must be placed in their winter quarters several weeks before they begin to lay. If eggs are produced in the colony houses and then the birds are moved the change will often stop egg production for weeks and sometimes the disturbed pullets will not lay again until toward spring. Place them in the laying houses with as little disturbance and excitement as possible. They will soon learn the nests that they like, and act like old birds.

Clean Houses Thoroughly.

Houses with earth floors should be thoroughly cleaned and disinfected before being used as the winter quarters for pullets. It pays to sweep down the walls and ceiling and then drench them with one of the coal tar disinfectants. Remove about eight inches of the soil and spread it on the garden and replace it with fresh garden soil or with sand if it is available. The work of cleaning out the soil in a poultry house is well repaid in the value of the fertilizer and the clean soil will add to the comfort of the hens and reduce the chances for epidemics.

When hens are confined in yards the soil will become unclean and it is good management to plow it up and plant rye before using it for the pullets brought in from the colony houses. Some poultrymen have used air-slaked lime to top-dress sour soil before plowing. Others use two yards for flocks which are confined. While the birds are harvesting the green crop in one yard the other is developing a thick growth of some other kind of green food. All things of that kind require work and time but they are part of the price that must be paid for success with poultry.

Hens like clean nests. In the summer when the poultryman is busy there is a tendency to neglect the nests. The nesting material is scratched out until some nests are nearly bare and others become unclean and the hens seek other places to lay. Clean nesting material is an economy and before it is used the boxes should be scrubbed out and sprayed to pre-

vent mites and lice from breeding in the cracks and crevices.

Young stock will not thrive if exposed to the hot dry winds of August and they should be allowed to range where there is some shade. I have just noted a large flock of young Barred Rocks resting in the shade of the Cuthbert red raspberry patch. The birds are cool and contented and not bothered with the sun or wind. The rich green canes of the berries form a thick foliage which nearly hides the flock and they are also protected from hawks.

Now is the time to save money in poultry equipment by carefully gathering and storing all appliances not needed until next spring. Stove brooders will be apt to rust and deteriorate if they are left in the colony houses after no fire is needed. Clean and then rub them with an oiled rag. This will prevent rusting. Store them in a dry attic where they can be left ready to assemble in the early spring. Drain hot water incubators immediately after the last hatch and store them in a dry room where they will not warp or rust. Small feed hoppers or fountains which the chicks no longer need this year should be cleaned and stored with the brooder equipment. They will be useful next year and should not be allowed to wear out before their time.

In the late summer additional breeding stock can be purchased to good advantage. The farmer can save money by ordering new blood before winter. Feed is high and all of the birds saved this year for sale as breeders will command high prices.

Ingham Co. R. G. KIRBY.

POULTRY QUERY DEPARTMENT.

Roup.

Can you tell me what disease our hens have and what to do for them? In the first stages of the disease the comb becomes pale and the eye, or sometimes both eyes, swell up and become very red. Inside the mouth at one side from the eye and ear pus forms in a little cavity which seems to lead down the throat. Then the swelling goes down a little and becomes less inflamed, while the eye becomes matted. The disease seems to be contagious. We have been unable to find out what it is.
Washtenaw Co. G. B.

Your hens have the common disease called roup. Usually the comb turns dark and then pale, and probably with your hens this was the case, but you did not notice it. This disease is a contagious catarrh and the cankers in and about the mouth indicate that roup is of a diphtheritic nature.

The best treatment is prevention, and in order to stop the spread of infection all birds having the disease should be isolated, men and animals should not go from infected coop and yards to uninfected flocks, the yards and coops should be disinfected with a five per cent carbolic acid solution or some good coal tar disinfectant, potassium permanganate of potash should be used in the drinking water and all dead birds should be burned or buried deep.

Local treatment helps sometimes, but if the bird is not a valuable one it usually does not pay. The painting of the diphtheritic patches with tincture of iodine will usually suffice. If false membranes reappear they may be burned out with a fifty to seventy-five per cent hydrochloric acid. In using this, care should be taken to not touch unaffected parts.

Roup generally is caused by exposure to dampness and cold. Often it breaks out whenever such weather conditions prevail. Vigorous stock is better able to resist the disease than others and cleanliness in feeding and watering is a preventive measure.

Veterinary.

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

Deep Milker.—We have a cow that is due to calve soon. I have been trying to dry her up and the result is that she passes gargety milk from one quarter. H. W. B., Pontiac, Mich.—As good a cow as yours, which is a persistent milker, should not be dried before coming fresh. During the hot weather this is rather a dangerous procedure and very likely to injure the udder, especially during hot weather. Gently hand-rub udder and milk her clean twice a day. Give her a teaspoonful of powdered nitrate of potash once or twice a day in feed or drinking water.

Contagious Abortion.—I have two cows that gave birth to calves that were only seven months along. I don't know that these cows were hurt in any way, yet they might have been. If I have abortion working in my herd, would there be any symptoms that I could detect and what should I do to overcome this trouble? Cows are in good condition, give good quantity of milk and have all the appearance of being healthy. The first cow lost her calf early last fall and the other one just a few weeks ago. A. J. K., Three Rivers, Mich.—All things considered I do not believe it necessary to treat these two cows; however, it is perhaps necessary for you to thoroughly clean and disinfect your stable as sanitary measures have a whole lot to do with controlling and stamping out abortion infection in a herd. Your cows should have been treated when they miscarried. Both of them will perhaps carry their next calf the full gestation period and there is a possible chance of their having met with an accident, causing them to miscarry.

Worm Colic.—I have a horse that appears to have periodic attacks of colic, at which time he scours. I am quite certain that he is troubled with worms as it is not unusual for him to pass a few. J. H. B., Siloam, Mich.—Mix together one part powdered sulphate iron, one part salt, one part of ground fenugreek, one part of ground nux vomica and four parts of ground gentian, and give him a tablespoonful at a dose in feed twice daily.

Wounded Hock.—I have a black mare that was kicked by another horse three or four weeks ago, wounding hock joint. She must suffer considerable pain as it affects her appetite, and I forgot to say that there is a thin light colored stringy discharge from joint. G. L., Holland, Mich.—Clip hair off joint and paint swollen parts with tincture iodine three times a week. Apply equal parts powdered alum, tannic acid and boric acid to wound twice daily. It is possible that you have a case of open joint, if so, you had better secure the services of a competent Vet., or she will perhaps not recover.

Nasal Catarrh — Surfeit — Weak Heart.—I have a black mare that is eight years old; when turned out to grass she continually blows her nose; besides, her skin is covered with small pimples and blotches. I took her to a Vet. and he filed her teeth, prescribed medicine which I gave her without it seemingly making any impression. I have another seven-year-old horse that seems to pant and blow a great deal since the warm weather set in; besides, she perspires almost too freely. S. T. H., Kalamazoo, Mich.—Give your mare a teaspoonful of hyposulphite of soda at a dose in feed or drinking water twice a day for two weeks. Wash her with a two per cent solution of coal tar disinfectant twice a day. Give your seven-year-old a ½ dr. of fluid extract of nux vomica and 3 drs. of Fowler's solution of arsenic at a dose two or three times a day. Now for the sore shoulders you had better dissolve 1 oz. of tannic acid in 8 ozs. of alcohol, add 1 oz. of spirits of camphor, then add water to make one pint and apply to sores two or three times a day.

Breeding Question.—Have a two-year-old bull for service, but nearly all the cows that he serves have to be bred at two or three different heat periods before they get with calf. Would like to know if the fault is with the bull or the cows. A. F. D., Fowler, Mich.—You are in a much better position to determine wherein the fault lies; however, I am most inclined to believe that the cows are shy breeders, or may perhaps suffer from contagious abortion infection, or may have had clinging afterbirths following last calving.

Indigestion—Cow Holds up Milk.—Have a heifer that came fresh in April, that gave a good mess of milk for several weeks and now is so very ir-

regular in her milk yield, that I am unable to tell what causes it. Can you tell me what to do for a cow that holds up her milk? R. B. E., Vestaburg, Mich.—Doubtless your cow suffers from periodic attacks of indigestion which can be best remedied by her food supply. Give her ½ lb. of epsom salts in three pints of water as a drench as soon as she shrinks on her milk yield, and change her feed for a few days. A cow that is inclined to hold up her milk should be milked by the same person and treated kindly at milking time; besides, if they are fed at milking time they are more apt to give down their milk.

Infected Milk—Laminitis.—We have an eight-year-old cow that came fresh last spring, gives a good mess of milk, but occasionally it is unfit for use. If left to stand five or ten minutes after milking, it becomes thick and sour. So far as I can tell the milk appears to be normal when milked, but does not keep sweet; however, it is not stringy or ropy. This cow is in good condition, runs in wild pasture where some timothy has been sown. I also have a ten-year-old mare that slipped her colt last winter, but it left her stiff in front legs. Now her hoofs seem to be changing and new ones growing on. I might add that her foot became tangled up in wire fence and she pulled the old hoof and shoe off, leaving the foot sore and tender. W. F. S., Brown City, Mich.—The cow's milk becomes infected, either at time of milking or soon after. During the hot weather great pains should be taken to clean the cow's udder, milking utensils and hands of the milker; furthermore, the milk should be promptly cooled and also placed in a clean, well ventilated building. The writer is inclined to believe that your cow is healthy, but possibly her food or water supply may be faulty. This is a matter that you should be able to figure out fully as well as myself. Give her a tablespoonful of cooking soda at a dose in feed or drinking water twice a day. Apply pine tar and a bandage to fore hoofs occasionally, and wait for new hoof to grow on. Proper shoeing has a whole lot to do with relieving a case of this kind.

Cow Passes Bloody Milk.—I have a good cow but she gives bloody milk from both fore quarters of udder occasionally. She came fresh last October. A. R., Metamora, Mich.—In order that a cow give bloody milk a small blood vessel must be opened, therefore it usually follows rough milking, scant bedding, uneven stable floors, blows from another cow hooking them, a kick from a colt or from the boot of a milker, stepping over door sills, fences, logs in the pasture, or out of ditches. Giving a cow drugs does very little permanent good, but a removal of the cause cuts a very important figure as a remedy for this ailment. Astringent remedies which will check the hemorrhage, interfere with the milk yield, consequently it is not always good practice to apply cold applications to the udder. A small quantity of blood mixed in the milk does no particular harm.

Irritation of the Skin.—Recently I turned my white pigs into a two-acre lot of rape and oats which is about four or five inches high. Since I turned the sow and her six pigs in this lot, the skin of the pigs seem to be sore. I have given them air-slaked lime, but they are no better. A. J. P., Bancroft, Mich.—Apply petrolatum to the skin of young pigs and avoid letting them run in the rape and oats while it is covered with dew or wet. White skinned young pigs are easily made sore if subjected to too much moisture.

Paralysis.—One of my lambs lost the use of its legs about a month ago, first the front legs were the most affected and now the hind legs are entirely helpless, but it can move its front legs some. Is there any help for this lamb? C. G. H., Woodland, Mich.—Your lamb is incurable, therefore it should be humanely destroyed.

Hernia.—I have a colt two months old with a rupture just back of the navel and I might add that this ailment developed since birth, and bunch appeared only a few days ago. A. M., Remus, Mich.—Leave your colt alone until November, then have a competent Vet. operate on him. This is the only treatment that will prove satisfactory. In some cases a young colt recovers without treatment.

Tumor in Mouth.—I have a horse which has a large lump on the left side of jaw near the roof of his tongue. I might say that this bunch first appeared about a year ago, at which time it opened and discharged pus. We have applied tincture iodine, also iodoform, and gave nux vomica as a tonic. L. C., Gobles, Mich.—This is a case requiring the attention of a qualified Vet., as I am inclined to believe that some surgical work will be required before the horse gets well.

Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers.

Brookwater offers to sell a few choice bull calves of this kind.

H. W. MUMFORD,
OWNER

BROOKWATER FARM

O. F. FOSTER,
MANAGER

Ann Arbor, Mich., R. 7.

FOR SALE Seven full blooded Holstein heifers from eleven to twenty one months old, also twelve head of grade Holstein cattle. The DECKER FARMS, Brighton, Mich.

Registered Cows, heifers and heifer calves. Priced reasonable. Noted breeding and good individuals. R. B. Heavey, Akron, Mich.

On Our Easy Payment Plan we will ship you any registered Holstein Bull calf in our stables. Prices from \$50 up. Ypsilanti Farms, Ypsilanti, Michigan.

RINKLAND HERD BULL CALVES from A. R. O. cows at farmers prices. JOHN A. RINKE, Warren, Mich.

For Sale 2 Reg. Holstein cows 7 years old due to freshen on Sept. 1 and 8. Well marked, price right. C. L. HULETT & SON, Okemos, Mich.

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

HEREFORDS

Sires in service, Governor by Prince Donald Militant Farmer by Farmer (Imp), Bonnie Brae Jr. by Bonnie Brae 24th. Inspection invited. ALLEN BROS., PAW PAW, MICH.

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

Jersey Bulls for sale, ready for service. Out of good producing dams. Prices right. R. B. FOWLER, Hartford, Mich.

Hillside Farm Jerseys. For sale ten months old bull backed on both sides by R. of M. dams with high official records. C. & O. DEAKE, Ypsilanti, Michigan

Maple Hill Farm Registered Jersey Cattle Stock under 2½ years all sold. J. R. Worthington, R. No. 7, Lansing, Michigan

The Wildwood Farm Breeder of Line bred Majesty strain of Jersey Cattle. Herd on R. of M. test. Tuberculin tested. Bull calves for sale. Type & Production is our motto. Alvin Balden, Capac, Mich.

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

Maple Lane R. of M. Jersey herd offers for sale tuberculin tested cows, bulls, bull calves and heifer calves, carrying the best R. of M. blood of the breed. IRVIN FOX, Allegan, Mich.

St. Clair County Jersey Cattle Club. We have for sale 5 Bulls old enough for service and Bull calves, from best strains of Jersey Cattle. Majesty's, Noble of Oaklands, Combination's Premier, etc. Write for Pedigrees, price and particulars. Fred A. Brennan, Sec. Capac, Mich.

Notten Farm Jerseys also a few Duroc Jersey pigs for sale. NOTTEN FARM, Grass Lake, Mich.

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

FOR Sale—Reg. Short Horn Bulls by Maxwellton Monarch 2nd, a son of Avondale, from 1 to 9 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

Francisco Farm Shorthorns Big Type Poland Chinas "They're rugged—They pay the rent." Nothing for sale at present. P. P. POPE, R. R. 3, Mt. Pleasant, Mich.

Bidwell Shorthorns

"For Beef and Milk" This heifer at 6 months has bone, size and quality—our own breeding. The blood of Scotch bulls, Imp. Shennstone Albino and Imp. Villager Registered stock always for sale. BIDWELL STOCK FARM, Box B, Tecumseh, Michigan.

Shorthorns For Sale Young bulls ready for service, also cows and heifers. W. B. McQuillan, Howell, Michigan.

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

Richland Shorthorns Largest and best herd in the state. Tuberculin Tested by the state. IMP. Lorne one of the Sires in service. Entire Herd of Reg. Angus cattle, including the show cattle for sale at a bargain. Mostly Erics and Blackbirds. Herd at Prescott, Mich. Office Tawas City, Mich. O. H. PRESCOTT & SONS.

For Sale Shorthorn Bulls 3 mo. to 2 years old from good milking cows. R. R. Clyde Station, H. J. DeGarmo, R. 6, Milford, Mich.

SHORTHORNS Maple Ridge Herd, Established 1887. No stock for sale. J. E. Tanawell, Mason, Michigan.

Shorthorns for sale, 5 bulls Scotch top 10 to 14 mos. S3 roan, 1 white, 1 red, price \$150. to \$250. 1 son of Maxwellton Sultan, 19 mos. \$350. C. Carlson, Leroy, Mich.

Cattle For Sale

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

Cloverly Stock Ranch Angus! Bulls, Cows and Heifers for sale. GEO. HATHAWAY & SON, Ovid, Michigan

HOGS.

Durocs and Victorias

Heavy bone, lengthy Spring Boars and Gilts from prize winners sired by one of the best Sires of the Great Defender and other noted strains. M. T. STORY, Lowell, Mich.

Berkshires, Boars, serviceable age, best blood lines. Registered. ELMHURST STOCK FARM, Almont, Mich.

Berkshires. Bred gilts and sows for fall farrowing. Also Spring pigs, either sex. A few boars serviceable age, reg. Chase Stock Farm, R. 1, Marlette, Mich.

Berkshire Pigs going fast \$15.00 & \$20.00 each three months old. Registered & transferred, richly bred. Riverview Farm, Vassar, Mich.

Duroc Jerseys bred gilts for sale priced to sell. Carey U. Edmonds, Hastings, Mich.

Duroc Spring Boars sired by Orion Cherry American Col. One 2 year old sow by Cherry King's Rival due to farrow Nov. 1st. farrowed 15 pigs last May raising. NEWTON BARNHART, St. Johns, Mich.

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

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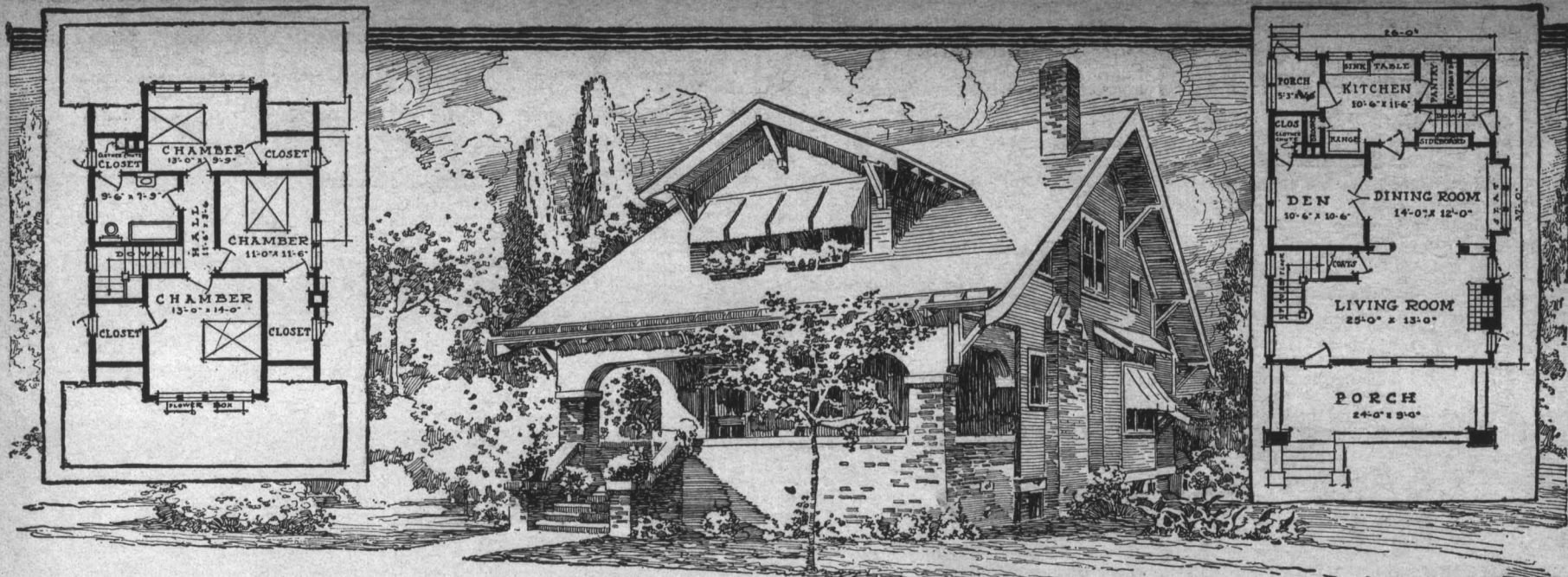
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Additional Stock Ads. on Page 105



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