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Save Farm Seed for Next Year's Crop

By MYRON A. COBB

THERE will be a world shortage of seed for 1918 and probably longer," is the comment of a man connected with a large seed firm, "and strange enough," he continued, "the Department of Agriculture does not seem to have realized it." Beyond a doubt he is right, for Germany, Belgium, Holland and France have supplied us in the past with many seeds. War has rendered it impossible to secure seeds from these countries, in fact they are buying back some of the seeds sent to us, England this season rebuying turnip seed. United States has not learned to grow many seeds in any quantity, the supply has been exhausted by ordinary and backyard planting and we will pay dearly for some of our favorite and staple varieties next year or possibly go without them.

As already indicated the seriousness of the situation is not realized. A few of the seed firms are planting heavily but this supply will be only a drop in the bucket as compared with the demand. With two years of world war and the United States just beginning the conflict, note the actual seed condition at the middle of the planting season of 1917. Many seeds have doubled in price, such as cauliflower, artichoke, White Bermuda and White Portugal onion seed; some have trebled, as lettuce, Kohl Rabi, Hubbard squash, peppers, spinach, and some varieties of flower seeds, (pansy, salvia and asters); it is impossible to secure some at any price, as Egyptian beet, some varieties of sorghum, fuchsia, and some varieties of other flower seeds, as nasturtium, poppy and pinks. A shipload of Silver Skin onions from Italy was torpedoed, rendering it impossible to get this variety.

Some of our common varieties have gone sky-high, potatoes \$3 to \$5 a bushel, beans \$9 to \$15, and even Golden Bantam sweet corn at \$12 a bushel. If this condition exists in 1917, what about the supply for 1918, when everybody is bent on raising food? This is the problem we face.

The present shortage may be partially relieved by farmers and gardeners being careful in not over-planting, and saving carefully all seed left over and by raising as much seed as they can, allowing radishes, onions, lettuce, etc., to seed. A few biennials, as turnips, carrots, parsnips, and other foods may be planted and allowed to seed. One is sure of his varieties; it will be financially worth while and help to relieve the seed situation. The supply of biennial seeds is the most

serious situation for very few are willing to wait two years before realizing any financial gain. The following are the most common biennials: Onions, beets, cabbage, Brussels sprouts, cauliflower, kale, turnip, parsnip, parsley, carrot, celery, and salsify.

Much of the world involved in the conflict supplies us with seeds in times of peace. England sends us the Prize Taker and Elsie Craig onion; she also sends us turnip seed; Denmark supplies Brussels sprouts, cauliflower, carrots, onions; Holland supplies us with flower seeds, as tulips, salvia, pansy and nasturtium. These countries are in many instances not only unable to furnish seeds, but are anxious to buy from us.

This seed shortage will last for some time, even if the war should stop within the next few months it will be some

Thus slowly but surely this nation is laying the foundation for the greatest nation of the globe and in times of this great trial we must not forget that the great law of food is to produce and to conserve the seed supply.

USE HOME-GROWN SEED.

There is one mistake that a large number of Michigan farmers make every year which affects their crops throughout the season, affects their returns from the crops, and taken altogether, over the whole state, makes a big difference in the total yields. It is the mistake of buying seed from an outside source when they have better at or near home.

Michigan has great variation of climates and soils and each locality has its combination of soil and climate that

each year for the crops which mature seeds on his own farm we know that he is not following any plan of seed selection, which is the basis of all improvement. Many a farmer has a pure-bred bull of his chosen breed and perhaps pure-bred cows or, if not, some grade cows, and every year he sells off a few of the least profitable cows and keeps only the good ones, thereby continually improving his herd—but each year he buys his seed oats of someone else, generally in some other state, the farther away the better (he buys in Alaska and he plants in the moon). When he leaves his cows he ceases to think. Individual seeds vary as much as individual animals in their ability to produce profits. The principle that "like produces like" is as applicable to the breeding of oats as to the breeding of cattle. The heavy, plump kernels come from good plants which grew from good kernels planted. As the farmer soweth so shall he also reap.

If good seeds are planted good seeds will be harvested. Selection is vital to improvement. The poorest individuals, whether cows or oats, must be eliminated and only the strongest used to breed from. When we buy of someone else we have no idea how he may have been handling his seed in years past. Maybe it is getting better under good care, and maybe it is becoming less valuable under poor care. At any rate, we are paying our money and taking a chance. If we use our own we know we are not guessing.

Pedigreed grains

have been put out by our experiment stations which are particularly suited to the conditions which we have. Each farmer should get a small quantity of these, and try them out thoroughly. If he finds they do well he should use them exclusively and select his own seed every year from his own crop. This can be done effectively with the small grains by the use of a good fanning mill. The large heavy seed can be separated from the light and small ones. The results of experiments show us that crop yields may be increased from two to ten bushels per acre by using only the heavy seeds. One bushel increase per acre will more than pay for the labor. A great deal of the fanning that is done is only about half done. The horses are fed out of the oat bin all winter and in the spring some from the same bin are run through the fanning mill which results in ninety per cent seed and ten per cent chaff. Why not take a little more time earlier in the winter when there are plenty left and run more through

(Continued on page 3).



Wheat Crops in Adjacent Fields from Acclimated and Unacclimated Seed.

time before they will be able to produce more than they need. If the war continues there will be a demand not only in this country, but the allies; in fact, this is one of the best ways we may serve them. Here is America's opportunity. There is no reason why, in times of peace, we should not be independent in our seed supply. With our vast acreage, our alert people and the application of machinery we can certainly produce our own, if not supply the world.

Several specialized seed producing tracts are already developing in the United States. The Long Island belt, marked by its long season, is producing the following seeds. Cucumbers, carrots, asparagus; New Jersey produces cabbage, egg plant, artichoke, and spinach seed. The north, peas, clover and bean seed; California, perhaps the largest specialized seed area, producing tomato, garden beans, and many flower seeds; the most promising and youngest area in the Puget Sound district which has a humid climate similar to northwestern Europe.

is quite different from that of any other district, the changes being great in some cases in very short distances. It is unreasonable to expect that wheat grown in one place is going to be exactly like the same variety grown in some other place. The local conditions affect the crops in such a way as to make them look like different varieties. The particular kind may be adapted to both sections but the seed grown in one of the two places will not be as good to plant in the other place as it will be in the one in which it was grown, the reason, of course, being that it isn't used to the conditions. It has to be given time to adjust itself. We speak of acclimating horses and we mean that when we take them to a different climate we have to give them time to get used to it before we can expect them to do their best. The same is true of seeds. Wheat needs to be acclimated as well as horses. We can expect to get better results from wheat grown on our own farm than from the same wheat grown elsewhere. When we see a farmer buying seeds

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CURRENT COMMENT.

Co-operation of producers in the selling of their products has been successfully developed in many communities of Michigan and the country at large during recent years. Efforts of this kind have been notably successful in many lines of production, and these successes forecast the rapid development of co-operative selling by producers in future years. The most economic distribution of food stuffs cannot, however, be attained until co-operation is practiced by both producers and consumers.

The possibilities of co-operation among consumers are illustrated by the success of the Rochdale plan which has reached a very considerable development in England. The first successful co-operative store under this plan was started in Rochdale, England, in 1844. The beginning was a small one, being started by twenty-eight men who contributed small sums to the scheme, giving them an aggregate capital of twenty-eight pounds, or approximately \$140. The plan adopted limited the profits of shareholders to five per cent, and provided for the division of surplus profits among the purchasers of goods, the same being prorated in accordance with their purchases.

A recent report by United States Vice-Consul Weber, of Nottingham, shows how this scheme has increased in popularity and prosperity since its inauguration more than two generations ago. This report shows that in 1914 the co-operative societies of England organized under this plan had a membership of 3,504,456 persons, and a co-operative capital aggregating \$231,000,000 with an annual turnover in sales of \$737,750,000. In Nottingham alone there are thirty-four co-operative stores employing 450 persons. The society owning these operates a large farm in connection with the business. Some of these societies also do a banking and real estate business for the benefit of their members, while others maintain libraries and reading rooms and provide entertainment of different kinds for the membership,

thus adding social to business advantages.

The development of the Rochdale plan in England affords a valuable object lesson for consumers in the industrial centers of this country who desire to effectively reduce the present high cost of living. It also holds a lesson for the producers who are identified with co-operative selling organizations, in that the plan of organization is standardized, and there is a larger degree of co-operation among the societies themselves than obtains among the co-operative selling organizations in this country.

Solving the Milk of this issue appears a plea from the Field Secretary of the Michigan Milk Producers' Association, in which the milk producers of the state are urged to identify themselves with this organization through the formation of local associations. The work which has been done by this organization in helping to put the dairying business of the state on a more profitable basis has been exceptionally successful, considering the short time which has elapsed since the inception of the organization. Unfortunately, the cost of production has continued to increase to an extent which has proven discouraging to dairymen who are operating under contracts made last fall.

All should appreciate the fact, however, that the best way to remedy this situation is by strengthening their organization before the time arrives for the making of new contracts. Dairymen should be reassured by the fact that the Field Secretary of this organization was called for consultation with Mr. Hoover, the recently appointed food conservator of the country, and that President Hull of the Michigan Milk Producers' Association has been appointed to represent the dairy interests in future food conservation work. By affiliating to a man with this organization, the milk producers of Michigan will place themselves in the strongest possible position to secure a fair proportion of the price which the consumer is obliged to pay for dairy products.

The country and the world need more dairy products now than ever before; to quit the business of dairying because of present unbalanced conditions would not be a patriotic course. Co-operation with each other and with the government in the present crisis is at once the most patriotic and most profitable course open to Michigan dairymen. Affiliation with the Michigan Milk Producers' Association should be the first step in this program.

Coal Production and Prices. Due to their last winter's experience in securing fuel, many Michigan Farmer readers have expressed anxiety with regard to next year's supply, and have asked the pertinent question as to why the government does not intervene in the coal situation. Notwithstanding the strenuous activities of the government in preparation for taking an active part in the European war, the coal situation has received attention which its importance certainly warrants.

Last week Secretary Lane called the coal producers together and advised them that the best thing for them to do was to establish fair prices for coal rather than to compel the government to use the strong hand in distribution of this necessity. As a result, coal prices have been reduced at loading points to a degree which will save the people of the country many millions of dollars. At the same time, the Federal Trade Commission is making an investigation into the cost of production so as to place the government in a position to intervene in coal distribution if necessary.

Recent government reports show a

new high record to have been made in the production of coal for the first six months of this year, fully 270,000,000 tons of bituminous coal having been produced, exceeding the output of the first six months of last year by 20,000,000 tons. With the plans under way by which a more prompt handling of coal by railroads can be made possible, it is hoped that the near coal famine of last year may be avoided. The transportation problem has not, however, been wholly solved, and may be expected to become more difficult with the coming of winter, when the added burden of the war upon transportation facilities is considered.

The exorbitant prices for coal which prevailed during last winter's shortage should be considerably reduced this year. It would, however, be the part of wisdom for those who are able to buy coal at fair prices during the summer season to lay in their stock for next winter's use, provided they have not the resources of a wood-lot to draw upon in case of necessity.

A PLEA TO MICHIGAN MILK PRODUCERS.

It is the desire of the Michigan Milk Producers' Association to use every possible means to advance the interests of the milk producers of Michigan.

We have not only worked openly with the buyers and producers to bring better price conditions, but we have had many meetings with the buyers to cause them to see the advantage of dealing liberally with this industry, which the American people are coming to appreciate as never before, as the greatest of all food products for the growth and development of the human body.

Dairy Products Vital to Warring Nations.

This war is teaching the people many things. When we realize that in all the warring nations of Europe that only about ten per cent of the children under two years old are living (except in England): that ninety per cent of these little ones have died because there was no milk available for their use; and that England, by maintaining the supply of condensed milk, has been able to raise the babies and not more than a usual death rate has prevailed there among the children, this shows the absolute need of the dairy product for the growth of childhood.

In our private interviews with the buyers we have tried (and in many cases succeeded) in causing them to look upon the milk product as a very necessary part of their business industry; and that this must not be throttled, must not be killed, but that it must be encouraged. The United States is today 6,000,000 dairy cows short of the normal supply.

Your field secretary has been in correspondence with Mr. H. C. Hoover, who has the tremendous responsibility of food conservation in this nation. At Mr. Hoover's call your field secretary went to Washington and there, in conference, met Mr. Hoover. I wish that I could bring to you the impression that Mr. Hoover made of his sincerity, knowledge and ability to handle this great problem. He knows the need of the dairy products for he has been for two years in control of the food distribution in Belgium. He knows the call of the famished mother for food for her child; he knows the cry of the dying baby for milk. In this country he knows that dairy cows are being slaughtered, and that this wanton waste means not only impoverished soils, but it means also impoverished humanity.

When we talk to Mr. Hoover of the 27,000 dairymen in Michigan, he instantly has a vision of the three million people of the state who are more vitally dependent upon the products of these dairies than the producer himself. We are trying to impress upon Mr. Hoover, as well as upon yourself, the fact that our demand is only to place the dairy business upon a footing like other industries; i. e., that the milk producer shall have a price for his product that is equal to the cost of production plus a small profit.

Thorough Organization is Essential. But to press our just claim; to attain what is justly ours; we must do as other industries are doing to attain like results. Investigation reveals the fact that every product of the farm, as soon as it passes from the hand of the producer, passes into the hands of organized industries. It matters not whether it be milk, or meat, or wheat.

These industries have prospered; they have enlarged; they have become rich. They have attracted the boys from the farms until today there is a

dearth of farm labor that alarms the entire world.

What these industries have done, can and should be done by the more vital industry: the farmer, the producer of foods.

And so we come to the vital proposition. Profit depends upon organization. Don't blame anyone for a failure to make profits in your business if you fail to co-operate in an organized effort for the betterment of your business. So we make a plea for your co-operation with the Michigan Milk Producers' Association.

If you are co-operating now, we ask for your more earnest co-operation. Push the work among your friends and neighbors. If you are not co-operating now, get into the game. Every milk producer in Michigan should join this organization.

The field secretary is at your call as far as is in his power. He has dates now extending into September to speak at picnics, Grange and Gleaner rallies, but at any open date it would be a pleasure to bring his message to your people. Let us pull together. We want your name and address; we want your help and your counsel and your push in this great enterprise.

Write us for your needs and your desires.

R. C. REED,
Field Secretary, Michigan Milk Producers' Ass'n, Howell, Mich.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Official reports tell of the renewal of activities by the Russian armies against the central powers. The heaviest drive was on an 18-mile front in the Stripa sector where the undertaking proved a failure, according to Berlin. At several other points the Slavs are reported to have made attacks.—The British have been successful on the western front in extending their lines about Lens in northern France. On the other hand, the Germans under the crown prince have made a super-effort to force the French to forfeit ground before Verdun along the Meuse. The gains resulting from this drive were lost in counter attacks. One position exchanged hands five times during the battle. Artillery engagements were in evidence at many points along the western lines from the North Sea to Verdun.—Austrian forces regained positions recently occupied by Italians on the Julian front but they were in turn compelled to retire and leave the Italians masters of the field.—No important military movements are reported from Macedonia or Asia Minor.

Following the abdication of Constantine, Alexander the new King of Greece, appointed Venizelos, who has opposed co-operation with the central powers, to his cabinet, and last week Greece severed diplomatic relations with all of the Teuton powers. A declaration of war against Germany is expected soon.

The Russian duma will not abide by the resolution of the soldiers' and workmen's congress calling for its dissolution. It claims the nation is behind it and that its maintenance is necessary for unity in national affairs. Brazil has revoked her stand of neutrality in favor of the Allies and is organizing her military forces. Allied navy ships are welcomed to the Brazilian harbors.

Norway has sharply protested to Germany in regard to a bomb plot designed to destroy Norwegian shipping.

National.

In conference with the government officials the country's bituminous coal producers have reduced the price of soft to \$3 and \$3.50 per ton at the mines. Jobbers and dealers are also not allowed to make more than 25 cents per ton profit. The cost to the consumer will be \$3 to \$3.50 per ton plus freight and 25 cents profit. For government use there will be a further reduction of 50 cents in price.

Congress has provided for the improvement of the River Rouge in the rivers and harbors bill. This allows for the widening and deepening of the river up to the proposed large tractor plant. This was adopted as a war measure as it is felt that increased production of tractors will help to alleviate the farm labor problem.

The income tax receipts for the current fiscal year show that Michigan corporations and individuals have paid \$8,882,032 into the federal treasury through this tax system. The first district of Michigan which comprises the eastern half of the state ranks eleventh in the income tax receipts among all the districts of the country.

Because of the shortage of steel a bulletin has been issued by the federal government warning many lines of manufacture to curtail the use of steel. In all cases government work will be given preference by the steel mills.

USE HOME-GROWN SEED.

(Continued from first page).

and make the selection more rigorous? The mill can be adjusted so that only ten per cent will be the heavy seed stuff and the other ninety per cent chaff, weed seed, and light oats. This ten per cent would be much better seed than the ninety per cent under the usual plan.

The pictures of winter wheat accompanying this article were taken by the writer in Ontonagon county, July 22, 1916. The soil in the two fields is identical, only thirty rods apart, the land was prepared the same and seeded the same day, both fields are well drained. In one field good clean seed secured from a seed house in a nearby state was used and as you will notice a very poor stand resulted. In the other home-grown seed was sown and a very good crop was secured. This vast difference may or may not have resulted alone from the difference in the seed, but as near as we could determine, all other conditions were identically the same.

Ontonagon Co.

R. G. CARR.

"RUNNING OUT" OF SEED.

In the past few years we have heard a great deal about the so-called "running out" of varieties of grain. If a farmer had a variety that he had grown for a large number of years and it began to yield poorly, he would say that it was running out and get a new variety from some other source. In reality his home variety was not running out, but its yield was decreasing because of some other factor, such as poor tillage, or lack of seed selection or grading. In fact, it has been shown quite conclusively by two or three different experiment stations that those two factors are the causes of the "running out" in most cases rather than the natural causes.

So by reserving the best piece of grain on the farm for seed, and by using the fanning mill and grader the variety will not only in most cases be kept from running out, but besides the yields will be easily increased and the particular variety made more valuable to the community, because of its being acclimated to that particular soil and climate. This also eliminates the unwise practice of buying seed every year from regions having different soils and climate. Therefore, care in selection, in tillage and in grading the seed obviates the so-called "running out."

Iowa Ag. Col.

H. W. HULBERT.

MAKE SURE OF THE MOISTURE SUPPLY.

Now that we have an abundance of moisture to start the seed germination and give the young plants their start, let us practice farming methods this summer which will tend to retain the moisture for the benefit of the growing crop until it reaches maturity in the fall.

Personal experience farming in the semi-arid region in western Nebraska taught me the value of dry farming methods and I find it advisable to follow the same practices, although to a more limited degree, in the states farther east and north where the rainfall is more plentiful but sometimes lacking at the critical time when moisture is needed to fill the grains and round out the production with a full crop.

Moisture is available from the supply below just as well as from the clouds above. The only difference is that the moisture from above is rained down from the clouds and reaches the roots by being absorbed into the soil or carried in by the plants, while the moisture from below raises up by capillary attraction, touching the roots and passes out from the surface of the

soil through the pores of the earth into the air above. Now the thing to be aimed at is to hold all the moisture possible that falls from above and retain all the moisture possible that rises from below. Cultivation furnishes the one and only means of accomplishing this double purpose and at the same time serves the growing crops to the best advantage.

By cultivation, I mean not only the thorough preparation of the seed bed, but the frequent tillage of the soil by means of the harrow, the cultivator and the disk. On the corn I use a spike-tooth harrow, removing some of the teeth so they will miss the rows. When the plants grow beyond the harrow stage, I stir with the cultivator, not just three times then stop, but four and five times. Usually the last two times must be accomplished with a one-horse adjustable cultivator or an old mower wheel dragged between the rows. Where a dust mulch only is required to preserve the moisture, I find a mower wheel will give excellent results. These last two cultivations may be the means of turning a good many nubbins into full size ears and adding a good many bushels to the crop by preserving the moisture underneath when the longed for rain fails to come.

After the small grain crop is removed, I find it best to follow the binder immediately with the disk and plow. A stubble field loses moisture surprisingly fast. If the practice of disking, plowing and harrowing is followed, it will hold the moisture and will be in the best possible condition for the next crop.

Frequent stirring of the soil all through the crop growing season pulverizes the surface, lets in the air and water and forms a dust mulch that protects the stores of moisture from rapid evaporation and loss. Stirring in some form should follow every rain, then if no more rains come until too late, the stores of moisture beneath the surface will finish out the crop almost as well as the moisture from above.

P. H. E.

WEALTH IN FRESH MANURE.

With the absolute lack of potash in all commercial fertilizers due to the war, and the high price of nitrogen, there is the most imperative need for not only the saving but the proper handling of all barnyard manure. On account of the potash it contains, manure may be estimated to be worth double its normal value. A load of barnyard manure which is ordinarily worth \$1.00 or \$1.50, according to locality, is now worth \$2.00 or \$3.00. There is no doubt about it and until we get commercial potash manure will continue to increase in value. Haul your manure and spread it on the field as soon as it is made. In this way there will be practically no waste. If allowed to stand in piles or in the yard it will fang or leach or dissipate in one way or another anywhere from twenty-five to fifty per cent of its value. This is a proven fact. Manure hauled and spread upon the field, whether it be in mid-summer or in mid-winter, conserves all its fertility for the soil. There is no greater waste of fertility than to pile manure and carefully work it over from time to time, until it becomes well rotted.—G. E. M.

PREPARE FOR EFFICIENCY IN THE HAY FIELD.

Efficient work in the hay field will be more important this year than usual, and efficiency counts far more in securing the hay crop than in most other farming operations. All preparations should be made before the job is begun, from getting the mower in shape to inspecting the hay ropes and slings, to the end that valuable time may not be lost in the midst of the haying season.

A Bigger Yield From the Same Field.

From any field that you have been manuring by the hand method you can get a bigger yield if you use the spreader method—and save much time and labor.

A good spreader tears up the manure into small particles and spreads it evenly. The manure goes farther. It can be worked well into the seed bed so that the plant roots get all of its valuable plant food. *Wasting manure is like wasting money—a good spreader makes every particle of manure count.* A Newton County, Ind., farmer testing the spreader and hand methods of applying manure on two ten-acre tracts found that the spreader method gave 120 more bushels of corn, 140 more bushels of oats and 9 more tons of clover.

The John Deere Spreader

The Spreader with the Beater On the Axle

has special capabilities for increasing your crop yields. Its exclusive features make it the ideal implement for the best method. Ask any owner of the John Deere Spreader about the way it increases crop yields and saves time and labor. After you have operated a John Deere Spreader of your own for a year, you will fully appreciate how much these gains really mean. You'll find that the Spreader with the Beater on the Axle more than pays for itself in one year from the gains it gets on even a fair-sized farm.

The beater on the axle construction eliminates all chains, clutches and scores of other trouble-making parts. Does away with half the types of castings otherwise necessary. Does away with adjustments. Puts upkeep at minimum. Makes the John Deere Spreader exceptionally long-lived.

Beater is all steel—practically indestructible—runs on roller bearings, aiding light

draft. Beater teeth spirally arranged—tear up manure perfectly and distribute it evenly. Deliver manure close to the ground—wind does not affect spreading.

Revolving rake feeds manure to beater evenly, aiding in uniform distribution. Shock—absorbing spring relieves spreader and horses of sudden strains.

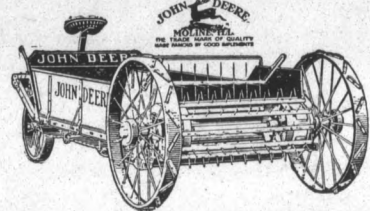
Spreader only hip-high to top—easy to load. Big drive wheels—light draft. Ball-bearing apron drive—apron travel frictionless. Simple

gear attachment keeps weight of load from making apron race when spreading up hill.

Easy to operate—only two levers—one lever determines number of loads spread to the acre; the other starts and stops the spreading. It's so simple, a boy can operate it.

Wide-spread attachment for extra wide spreading.

Write for booklet on the John Deere Spreader.



Bare Spots Are Costly Make All Your Land Produce

Farmers in California increased their yield three to six bushels, Illinois five bushels, Kansas three and one-half bushels, and Iowa over nine bushels per acre by using an accurate grain drill.

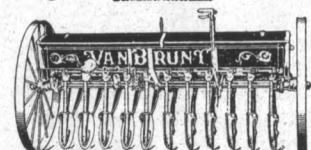
You gain both in the yield and cost of the seed saved by using a

John Deere-Van Brunt Fertilizer Grain Drill

Plants All the Ground—No Costly Bare Spots

The Van Brunt Fertilizer Grain Drill plants all the ground without skipping, puts the seed in even, continuous rows of equal depth across the entire field, and does not waste high-price seed. Equipped with the famous Van Brunt Adjustable Gate Force Feed that compels seed to leave seed box in even, continuous streams. Merely shift feed gauge levers to regulate amount of seed sown per acre. Any standard fertilizer is handled just as positively.

No clogging in gumbo, muddy, sticky or trashy soils. Notice the adjustable spring steel scrapers. The Van Brunt Single Disc Drill was the first ever designed that could do the



work right under such conditions. Discs controlled by powerful pressure springs adjustable to make all discs cut the same depth.

Grass seed attachment can be furnished for any Van Brunt Grain Drill. It sows broadcast or drills as desired. Write for free booklet.

Big Book Free



Better Farm Implements and How to Use Them

America must produce more food. Labor-saving implements will play an important part in increased crop production.

This book tells all about a full line of labor-saving farming implements. Tells how to

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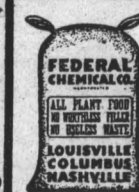
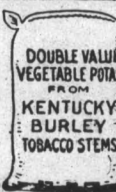
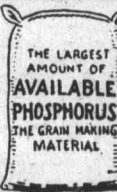
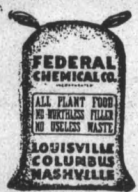
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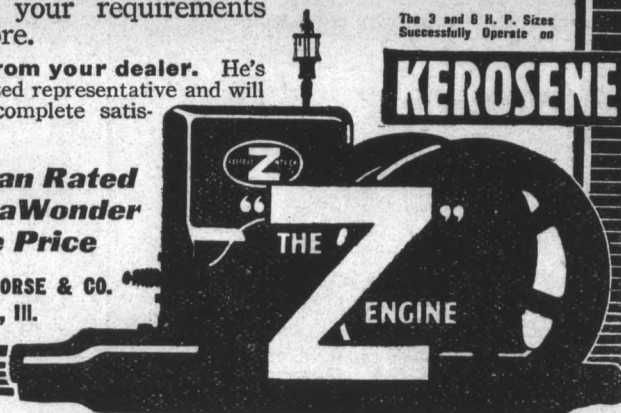
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Thinning the Fruit Crop

EVEN if orcharding is only on a small scale it pays to thin the fruit. The small home orchard never adds much money to the farm income but if the fruit is properly thinned it will be much improved in quality and in that way add to the satisfaction in farming. Fruit that is thinned seems to be of better flavor than the insipid product that frequently comes from trees which are breaking down with the weight of their crop.

Maintaining the vitality of fruit trees is necessary if the orchard is expected to be profitable over a long period of years. The tree that overbears may have no fruit the next year. Limbs that break from carrying an overload are difficult to repair and usually have to be removed, which reduces the bearing surface of the tree. Fruit of good size brings the best price on the market and the small specimens meet with little favor from the best trade. Small fruit from unthinned trees seldom brings a profit to the grower, but frequently the market becomes glutted with the inferior stock and then prices fall for the finest of fruit. If the trees producing the culls had been thinned the ultimate consumers would not have lost their taste for fruit by purchasing some of the poor quality consignments and probably they would purchase more fruit and both the consumer and the producer would be benefited. Probably many people eat less fruit because of the prevalent custom of shipping culls to market. The cull apple, peach, pear or plum seldom makes friends and customers for the producers of such fruit.

Thinning Essential.

In commercial fruit growing thinning is very necessary if the grower desires to continue in the fruit business. Peaches are always thinned by the most progressive growers in spite of the large expense of the work. Every tree must be thinned or the peaches will be small and lacking in quality, the trees will be broken down by their overload and the buyer of peaches will not be there to do business when he learns that the orchard is not thinned. A first-class grade of peaches will bring a profit when the culls scarcely pay for hauling to the canning factory.

Some growers thin apples and find that it pays in the increased size and quality of the fruit. Apples are not thinned as frequently as peaches but some experiments seem to prove that apple producers can increase their average annual profits by making more of an effort to thin their fruit. Plums should be thinned for the same reason that we thin peaches. The quality of the fruit is improved and the average size will be larger. The plum tree that is allowed to bear until it sags to the ground will soon become devitalized and lacking in vigor and if the overbearing is continued for several years the tree may die. Plums do not find as ready a sale as peaches and apples and possibly one of the reasons for this lack of interest in some sections is due to the fact that the market is frequently filled with small insipid plums. The large size, carefully graded and rich plums shipped into Michigan from distant states and much enjoyed by people who can afford to buy them from the fruit stands.

Quality Improved.

Pears seem to be improved in quality by thinning if the trees show a tendency to produce more fruit than they can carry safely. The pear is one of our finest fruits and possibly it is not appreciated as much as it will be in the future when growers make more of an effort to market a fruit of fine flavor and large size.

The work of thinning should be started as soon as the natural falling of the fruit is over and it should be carried on as rapidly as possible. How-

ever, too much haste is apt to result in poor work. Many peach growers encourage their thinners to work slowly and not hurry over the trees. They know that it pays to make an effort to thin thoroughly and never remove more than is necessary in any one part of the tree, but always break up the clusters and leave the right number of inches between the specimens, depending on the variety and the amount of fruit on the tree. Haste in thinning results in careless work and broken branches. The green fruit should not be clawed from the trees but carefully picked. It certainly pays to instruct hired labor in the work of thinning if they are inexperienced along that line. A poor thinner can injure a commercial orchardist about as much in one week as it costs to hire the man for a year.

R. G. KIRBY.

TROUBLE DEPARTMENT.

Ginseng Growing.

Can you tell me where I can get a bulletin on the culture of ginseng? About what is the value of the roots per pound? When should they be dug and how handled?

W. H. E.

Ginseng growing is one of the special lines of agriculture which promises great results on paper, but which often fails to work out in practice.

If you are interested in this subject, I would suggest that you write to the Secretary of Agriculture, Washington, D. C., for Farmers' Bulletin No. 551.

The roots are usually allowed to grow until five years old, after which they are dug and sorted. First-class roots will bring as much as \$5.00 per pound, the mis-shapen roots about \$2.50, and fibrous trimmings from fifty cents to \$1.00 a pound.

These are rather high prices, but the ultimate result is not as good as usually expected, because it is usually difficult to get a good stand of plants, and there are also several diseases which seriously curtail production.

Leaf Curl.

Can you tell me what is the matter with the leaves on some of my peach trees? I gave them a dormant spray this spring. This is the third year for them.

H. B.

The sample of peach leaf which you enclosed, was affected with the peach leaf curl. This disease is quite serious this year, and if one did not apply the dormant spray early enough or thoroughly enough, he will have quite a little of the foliage affected.

If the spraying lacked thoroughness one will find these leaves in spots on the trees. If the spray was put on too late, the infection will be more general.

This is fungous disease which starts very early in the season, and if we have weather which will cause the peach buds to expand even in early March, the disease gains a foothold if the trees have not been thoroughly sprayed. If the infection occurs before spraying, no amount of spraying will materially check the disease.

Lice on Peonies.

I would like you to explain what is the matter with my peonies. It was a large old bush and a year ago last spring I took it up and divided it. Now they are very nice, large bushes and very full of sprouts, or branches. They were full of buds and grow to be about the size of a pea and then turn brown. One is near the house and the other is where an old stump stood.

Allegan Co.

Mrs. J. G.

Undoubtedly what is causing the trouble with your peonies is little lice which attack the blossom bud and suck the sap. In that way the bud is deprived of considerable nourishment, and is unable to mature.

You can control these by dusting the bushes with pyrethrum powder. This is sometimes also called Persian insect powder, and can be purchased at any drug store.

On Keeping Butter

I NOTICED in the Michigan Farmer of May 26, page seven, the following questions were asked by J. L. K.: "Will you please give me some good recipe for a brine to cover butter for laying down? When do you think is the best time for laying it down for winter use? Do you think it necessary to make the butter more salty than for present use?" First, we have no set rule for strength of brine to cover butter. The main thing, as Mr. Lillie says, is to understand that the buttermilk must all be worked out of the butter. The time to pack is through the summer months when butter is in greatest supply and bringing the lowest price.

Use Only Best Cream.

Butter that is intended for winter use should be made from only the choicest cream. I would hesitate to pack butter if churning was done but once a week in hot weather. In order to have first-class butter in winter, the cream must be in first-class condition when churned. Whether the butter should receive more than two washings depends on the condition of the cream when churned. If the weather is cool, so that the butter comes in good shape, one washing is sufficient, but if warm so that the butter is filled with the white flakes or specks so often complained of, the washings should continue until the water is clear and free from flakes. Only two workings need be given, once when churning is done and again when packed. The cause of the white flakes is too high temperature of the cream.

I have packed butter, not only for winter use but for our local market, and have always received more per pound than was being paid for winter-made butter. Our "modus operandi" is this: First have your butter in perfect condition, for an imperfect article will not improve any with age. I use one-gallon jars for packing, for the reason that when opened it is short-lived and like eggs, fruit, or any other storage articles, will not keep any great length of time after being exposed to air. It is best to have new jars but if old ones are used they should be thoroughly cleansed, and new or old, let them be filled with strong brine and stand over night. Be particular in packing, to have the butter pounded down good and solid, until within an inch or so of the top. Cover with clean muslin and fill the remaining space with salt. Cover with an inverted plate, weight with a stone thoroughly cleansed and put into your barrel or whatever receptacle you have for your brine. When through packing, weight down with a large clean stone supported on a wooden frame placed on top of the jars. They have to be well weighted or they will float.

Use Pure Water and Salt.

Mr. Lillie says: "The only caution necessary about the brine is that it should be made from good, pure water, that is, water containing no organic matter and that if these rules are followed, there is no trouble about keeping butter in fairly good shape." Now, I would differ from him a little. Experience has taught me that fully as much, or more, depends upon the salt, as upon the water. To illustrate: A few years ago a certain well-known butter factory had trouble with their butter, but try as hard as they would, they could not for a long time locate the difficulty. At length it was found that it came from a shed adjoining the packing house where the salt was stored which was used by farmers to stand their teams under when in town. The mystery was solved, for it was found that the salt was tainted by the scent from the shed, notwithstanding there was no door through the partition. This tainted salt had caused their loss, thus showing that pure salt

is just as necessary as pure water in making brine.

Solving the mystery of the packing-house also solved a mystery for us—for we thought at once of the loss of a fine barrel of pork that we could not account for until we read of the experience at the packing-house. We had built a fine new barn and when butchering time came, concluded that the spacious granary would be a fine place to store the pork barrel—never thinking of the basement stable underneath. Well, the butter-makers had their experience, so did we.

Oceana Co. JENNIE WILLSON.

COW-TESTING WORK IN BERRIEN COUNTY.

In keeping with the general trend of agricultural advancement in Berrien county, six new associations were formed during the year to strengthen the dairy interests of the county. These organizations, the Berrien County Cow-testing Associations Nos. 1 and 2, the Berrien County Guernsey Breeders' Association, the Berrien County Holstein Breeders' Association, and two milk producers' associations, owe much of their success to the untiring efforts of County Agent H. J. Lurkins. His aid has been especially valuable in the Milk Producers' Associations in securing a better price for their products. At the present time members of one association have contracts by which they realize nineteen cents per gallon for their milk and in the other association the price for ten months is twenty cents per gallon for four per cent milk with an increase or decrease of one-fourth of a cent for each variation of 0.1 per cent from this standard and eighteen cents per gallon for four per cent milk during the remaining two months.

Following are a few facts brought out by the tester's report for the Berrien County Cow-testing Association No. 1: 365 cows are recorded as having been tested at some time during the year 208 of this number completing the entire year's test. Registered cows comprised 19.7 per cent of this number and thirty-one registered Guernseys were run on semi-official test during the year.

Ranging between a profit of \$108.44 on a grade Guernsey and a loss of \$31.98 on another cow, the average profit over cost of feed per cow was \$38.76. In one herd the difference between the "star boarder" and the highest profit cow was \$112.09. These cows received the same kind of feed and care.

In addition to producing the highest profit cow the Earl Hemingway herd furnished the leading butter-fat cow, a grade Guernsey with 588 pounds of fat and the largest herd average with 424.5 pounds of fat per cow. This stands as the highest herd average in Michigan Cow-testing Associations and is closely followed by the Ed. King herd which made 423.2 pounds of fat per cow. Showing a splendid high production, the Ed. King herd also furnished the leading cow in the milk class with 13,081 pounds and an average of 10,120 pounds per cow for the herd. Four cows in the association passed the 500 pound butter-fat mark and two more which began records before the association year commenced finished with over 500 pounds each. The association average for the year was 4.5 per cent, the M. L. Becker herd leading 5.66 per cent. The average cost of roughage was \$40.05, while the average gain cost was \$25.61.

An example of the value of association records is shown in the sale of the champion butter-fat cow. Mr. Hemingway sold this grade Guernsey upon completion of the year's work, and when the cow was nearly dry, for \$200, and states that she would have brought but little more than half this amount without the association record. It seems highly probable that this county which already boasts the Michigan Guernsey champion, Abbie of Riverside, 816 pounds of fat, and a cow-testing association with an average production of 304.9 pounds per cow, will develop into a dairy center of some prominence.

Berrien Co.

C. D. Cook.

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This is because hot weather conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

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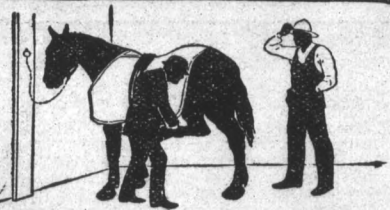
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Increasing Hog Products

By W. F. TAYLOR

I AM writing this article for two reasons—first, I have been feeding pigs every day in this cold wet season so far, and I feel like talking about them, and second, it occurred to me that some reader of this paper might possibly get a little inspiration from what I might write. I do not expect to give any new information. I don't know any more about hogs than the average reader of the Michigan Farmer, but I like to feed and sell them, especially while the price remains where it is now, and if other people feed them as I do they will like it, too, for it will pay.

Pork is scarce in the market. I do not know how much the present supply might be increased without lowering the price to a point where it could not be produced with profit, but I think we need not worry about any immediate decline in price. Hogs are scarce, pigs are hard to find, feed is so high, and the demand for pork so strong that the temptation to sell every hog off the farm that the buyer will take is very great.

Breed Sows for Fall Litters.

If we are going to increase the amount of pork in the country two or three things must receive attention. First, we must breed our sows for fall litters. Of course, it will be too late for early fall pigs before this advice can possibly be read. But we may be situated so that we can take care of litters that come late, as I am sure that many of us are.

It does not make so much difference when pigs are farrowed, if they have proper care. They may come along in mid-winter, providing the sow has a warm place, and the pigs have a chance to exercise.

Of course, it is not desirable to have pigs come later than October 1, though some of the best ones I have ever raised have been farrowed later than that. After all, it is all in the care they receive, though it is easier to give them that care in warm weather than in the cold of winter.

Second, we should prepare to feed well the pigs that we keep. To plant a larger acreage than we can cultivate, to milk more cows than we can feed properly, or to keep a larger number of pigs than we have the courage to furnish grain for, is to increase with none of the products indicated, but rather it has the effect to diminish the supply. If we have twice as many pigs on hand as we will feed liberally, we might better sell half of them to someone who will feed them, and thus make sure that all of them will be ready for market at the earliest possible date.

The pigs we do keep should be fed for rapid growth if we would really increase the sum of pork products. If we have not faith enough in the business to feed liberally, let us sell our pigs to someone who has. It is a great mistake to let a bunch of pigs live along, hungry as bears, growing just a little, but evidently preferring to die if they only could, and waiting for the corn to get ripe so that we can get something with which to fatten them.

But you say, "Hold on, do you expect us to pay the present high prices for feed and give it to the hogs?" Well, I am putting a sack full into the self-feeder as often as the hogs can make room for it, and the faster they eat, the more I shall get for my work.

If anyone who reads this doubts that I am right, let me ask him if he expects that grain will be any cheaper next fall than it is now? Think for a moment of our present wheat shortage. Consider the large amounts of breadstuffs that must be sent to the bottom of the ocean before Germany's submarine war can be arrested. Corn cannot possibly be cheap next year. Pork can not be produced in sufficient quantities to more than supply the demand at the present high prices, if, indeed, it can be grown fast enough to keep the amount up to the present supply. So I shall feed just all the pigs will eat, from the time they come into the world until they go to market.

Utilize Pastures for Profit.

In the third place, we can use pasture in many cases economically. I do not believe it is wise to give the hogs very much good alfalfa meadow this summer, alfalfa is going to be needed next winter for cow feed. Grain is going to be very high. People everywhere are thinking about beans and potatoes, and while I do not think they are going to overdo either, still it looks as though corn will be in great demand. But lands not otherwise occupied can be pastured by the hogs, and rape can be sown here and there, and now and then a man who is short of help may use the hogs to advantage in harvesting his corn. But in a general way, it seems to me that our good meadows, either clover or alfalfa, should be cut and the hay should be properly cured and stored for winter use, except so much as is needed to supplement the pastures, or to feed, for other reasons, on the farm.

In purchasing feeds for the hogs, we should watch for by-products more sharply than before. Products from the breakfast food factories, salvage grains, middlings, and in fact anything that the hogs like, that we can afford to buy.

Use the Self-feeder for Best Results.

In the fourth place, I would feed the hogs from a hopper feeder. It takes but very little time to make one, and that will be saved many times over, in feeding before the summer closes, and the feeder will still be as good as new. Every experiment I have seen proves that hogs will make more rapid, and more economical gains when fed in this way, than when a man attempts to say to the hog, just how much is good for him, and how often he shall eat.

Lastly, I would not sell the hogs un-

til they had attained to good weight, unless the market looked bad. Every time a small hog is marketed, a chance to increase the supply of food is cut off.

If we feed too slowly, then this would not be good advice, for the hog would be too old to grow economically before he attained the proper size. It should always be remembered that it costs much more to put weight onto an old hog than a young one. But if we keep them growing rapidly all the time, we can get them to a good weight early enough to insure economical production.

It has been a long time since the world needed food as it now needs it. Pork is not everything, but it is a meat product that is much relished. I have often noted with interest how many people in hotels and restaurants will order pork, even if it costs more than some other meats.

The world needs our pork. Again, it needs the fat that is produced by the hog as cheaply as by any other animal. We are at war. We believe we are in a "Titanic" struggle for the maintenance of our ideals of government. We are sorry we must fight to defend these ideals, but fight we must, and we shall not be found wanting. But we can not fight if we are hungry. A lot of us are too old to fight, anyway, but we can help quite as much as those who are at the front.

In one way it seems like an easy way to fight, just to feed hogs, but as sure as we live, if we do not feed hogs and cows, and animals for beef and mutton, and poultry for an ever waiting market, our brave boys must go hungry over in a foreign land.

So now in closing, if we would increase the sum of pork in the country, or even if we would maintain the present supply, we must first breed all the sows we can; second, feed as liberally as we can, and third, grow our hogs to a good size before we market them.

Thus, if we seek economical sources of feed supply, if we watch all the little details that make for success, if in short, we put a little of our better selves into this work, we shall get our pay in dollars, and we shall help to feed a hungry world, and thus be good soldiers though employing only the weapons of peace.

MANAGING A "GOLD MINE."

I always read Mr. Lillie's articles with interest, and when I read in the issue of June 16 of his trouble with sheep ticks I felt that it would only be doing as I would be done by to tell him and others how we keep almost entirely clear of them. We clip the sheep just before the lambs begin to drop, so as to be rid of the very few, if any, that are on the ewes before there are lambs for them to hide on. The yearlings are apt to have a few as we sometimes fail to get them clipped in time, but as we keep them separate from the sheep until they are rid of ticks they do not get on the lambs. The only time we ever dipped our lambs was seventeen years ago, and we kept all in a full minute as directed and it killed ticks and eggs at one dipping, so we did not see a tick in six months.

We have a grade flock of Shrops. Taking out three of the light fleeces from those of the thirty ewes the rest averaged eleven pounds of clean white wool. Several fleeces weighed fourteen pounds each. We call them our gold mine and they like us as much as we do them. We sold one last winter nearly eight years old that raised a nice pair of twins last year and was not as fat as many of them that weighed 190 pounds. I am nearly seventy-six; the son that is left at home is not strong, but we sort sheep easily by using a light short panel of fence to crowd them up between the feed rack and side and let the ones we wish slip past either end.

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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

WHEREVER and whenever the interests of citizens of the United States and its possessions are endangered Uncle Sam orders out the marine corps and these sea-soldiers go about their business of establishing law and order.

The first American flag that ever floated over a stronghold of the Old World was hoisted by Lieutenant P. N. O'Bannon, of the United States Marine Corps. This occurred when Derne, a fortress of Tripoli, was captured under fire on April 27, 1805.

Major Levi Twigg was in command of the force of Uncle Sam's sea-soldiers which were the first regulars to enter Chapultepec, a fortification of Mexico City, which was taken by storm on September 13, 1847. General Win-

Soldiers on Land and Sea

By YULE CARDIGAN

field Scott, commander-in-chief during the Mexican war, paid a tribute to his gallant amphibian fighters when he said:

"I have put the marines where the hardest work was to be accomplished, and I have never found my confidence misplaced."

When John Brown "started things" at Harper's Ferry in 1859 a hurry-up call was sent to the marines. Robert E. Lee, who later became commander-in-chief of the Confederate troops, headed the little force which succeeded in capturing the Osawatomie man and six of his companions.

The marines were very active during the Civil War. They participated in the capture of New Orleans by Admiral Farragut on April 25, 1862. Captain John L. Brooks commanded the valiant force which first entered the city and raised Old Glory above the customs house and the other government buildings. Though the river front blazed with burning ships and thousands of cotton bales, the marines did not hesitate.

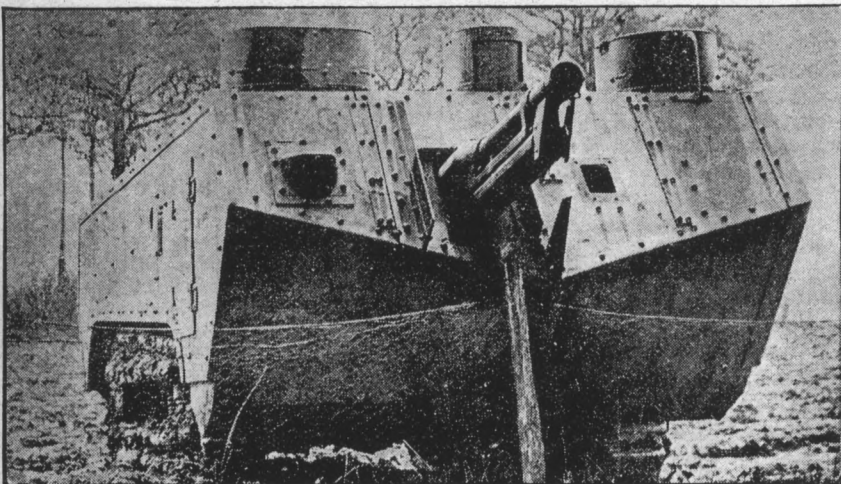
On June 10, 1898, Lieutenant Colonel R. W. Huntington with 647 marines was the first American command to touch Cuban soil. Though the Spanish

army in Guantanamo numbered seven thousand, the marines speedily landed and soon made the harbor safe for Admiral Sampson's fleet. Their physical condition was such that during the five months' campaign in mid-summer no deaths resulted from sickness.

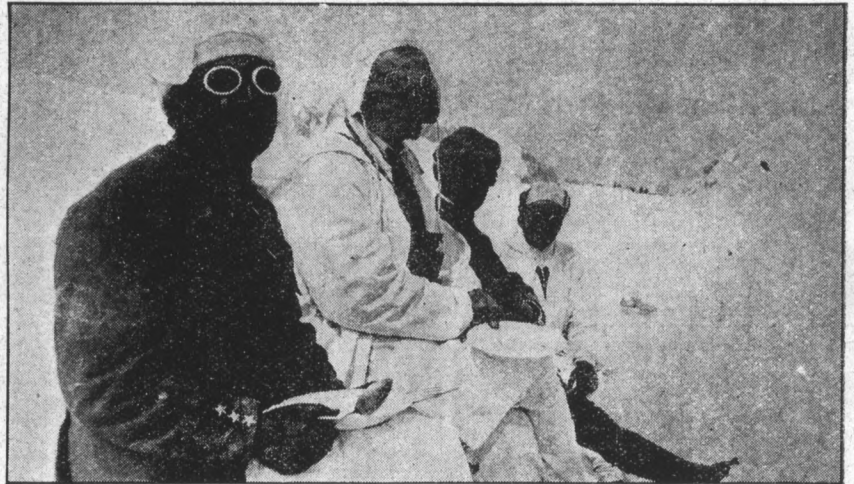
Uncle Sam's sea-soldiers were in China during the Boxer uprising of 1900. The marines of Captain John T. Myers of the battleship Oregon were the first American troops to enter Peking just before the outbreak, and Major L. W. T. Waller's battalion of marines were the first to enter the Chinese city afterward.

At Vera Cruz in April, 1914, Lieutenant Colonel Neville's company of marines were the first to gain the Mexican shore. The capture of the city

WORLD EVENTS IN PICTURES



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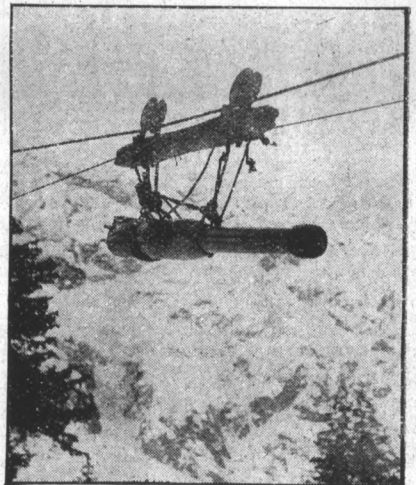
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was due largely to the efficient work of these men, but of course they were amply aided by all the marines from the American battleships guarding the entrance to the harbor.

The marines invariably are first in action. They are the emergency boys, equally at home on land or sea. The long list of their battlefields includes Mexico, China, Alaska, Philippines, Panama, Nicaragua, West Africa, Tripoli, Egypt, Fiji Islands, Formosa, Korea, Hayti, Santo Domingo, Cuba, Hawaii, Sumatra, Paraguay and Uruguay.

Back in the days of the War for Independence, on June 25, 1776, the United States Marine Corps was organized with Major Samuel Nichols as commanding officer over nine captains and ten first lieutenants. In every naval engagement of the two wars with Great Britain the marines participated, and during the intervening years they have served as advance guard.

"Contraband" RANDALL PARRISH

"Am yo' shorely aimin' fer ter sail dis yere ship long ter Hamburg, sah?" he asked cautiously.

"You heard what I said to the men?" "Yes, sah, I done heerd. But I thought maybe I best tell yer, sah, that thar's sure a bad lot forward, an' they is plum set against goin' no further."

"A bad lot, hey? And who seems to be the leader, Watson?" He scratched his head.

"Wal, sah, there's two or three who has a lot ter say, but I sorter reckon as how de real boss is a white pusson call' Liverpool Red—he dun started ter knife me night afore last, and if I hadn't done got outer thar right lively I reckon I'd bin a dead nigger sure."

"What objection does this fellow and the others with him, have to finishing the voyage?" "Wal, mostly at first it was just ordinary cussedness, sah. Ya see thar ain't mo'n a half-dozen deep sea sailors aboard; all the rest are jist costers, and sich truck. Dem others wus mostly shipped drunk, and want ter kit back ter Baltimore. That wus how it all started; but now they got the war ter harp about, dat Liverpool is a play-in' it up ter beat the band, sah. He says this ship is loaded with war stuff, and bound to be sunk, or captured; am dat so, sah?"

"We have a miscellaneous cargo," I answered, "and some of it might be contraband. But it was shipped before war was declared, and we have ample time to reach port before the establishment of a blockade. There will be no trouble, Watson, if the men only do their duty."

"Yas, sah."

"You let them know that I said so when you go forward."

"Yas, sah."

He was far from being satisfied, yet there was nothing more I could say in explanation. I left him, and walked over to the rail, realizing keenly the position of peril into which I had drifted. With a loyal crew my task would prove no easy one, but with a crippled ship, and the men already on the verge of mutiny, the situation was almost desperate.

CHAPTER XIV.

The Crew Grow Ugly.

FOR a moment I remained forgetful of the presence of the girl on deck. The dusk of night had already enveloped us in its somber folds. Lanterns were being used forward, and the lamp was lighted in the cabin, its glow streaming out through the skylight. I could hear the sturdy rush of water past the ship's side, and feel the heaviness of the swell, but the clinging vapor still in the atmosphere rendered the night opaque. There was but one

An old yellowed flag was recently discovered in an unused portion of the marines' barracks at the city of Washington. When it was examined by an expert, he declared it to be the flag of the marine corps battalion which marched with General Scott from Vera Cruz to Mexico City in 1847. It bears their motto, "By Land, By Sea," also the phrase, "From Tripoli to the Halls of Montezuma," which evidently refers to the war with the pirates of the north African coast from 1801 to 1805.

The sea-soldiers of Uncle Sam have a marching hymn of their own. The first stanza, which follows, is a fair sample of the song these double-gaited fighters love so well to repeat:

From the halls of Montezuma
To the shores of Tripoli,
We fight our country's battles
On the land and on the sea.
Admiration of the nation,
We're the finest ever seen,
And we glory in the title
Of United States Marine.

course to pursue—at the very first evidence of disobedience I must assert full authority. There must be no hesitation, no sign of weakness. And whether this method would succeed, or fail, depended utterly on the loyalty of my officers. I must depend on unknown men, and the test would come suddenly. Even as this knowledge crystallized in my own mind, the girl's hand touched the sleeve of my jacket.

"Supper is ready, Mr. Hollis," she said. "Are you not coming down?"

"Very shortly. I will have the men knock off work, and leave the mate in charge of the deck."

"What were you thinking about so earnestly? You actually forgot me."

I glanced aside into her eyes. "Not guilty, Miss Vera; I was thinking of you, and of how I could get you safely out of this scrape."

"You wish I were not aboard?"

"The problem might be much more easily solved. Frankly, I anticipate the necessity for some rough work before many hours."

"The men, you mean? The wheels-man told you they were mutinous?"

"It has hardly gone that far as yet, but they are dissatisfied, and threatening. Most of them were brought aboard drunk; they have liquor still in their possession, and have not been at sea long enough to be given a proper taste of discipline. The loss of their officers served to increase the trouble, while they haven't taken my caliber

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yet. They are bound to try me out, sooner or later."

"To see how far they can go?"

"Yes, it will come to a show-down presently. I do not say this to frighten you, Miss Vera, only, perhaps it is best for you to know the situation. The first thing necessary on this voyage is to show those fellows forward who is master aboard. But we've talked about it long enough now. I do not anticipate any locking of horns tonight for those lads will need to discuss plans among themselves first. Bascom will be waiting for you in the cabin, and I will join you presently."

I walked with her as far as the ladder, and watched until she disappeared. Forward I could perceive little outside the glow of the lanterns in the radius of which black, grotesque figures constantly passed and repassed. Occasionally a voice sung out some commands, the words scarcely distinguishable. Judging from the plunging of the planks underfoot, and the rattling of the mizzen rigging overhead, the volume of wind was steadily increasing.

"Mr. Leayord!" I sang out.

"Aye, aye, sir."

"Let the men knock off work for the present, and send the second mate's watch down for supper. You will take the deck, and it will be better to have another hand aft here at the wheel."

"Very well, sir."

I waited until he clambered heavily up the ladder and joined me, his huge figure outlined against the gleam of the binnacle light.

"Wind seems to be rising, sir," he said, lifting one hand to feel its weight, "and has shifted into the nor'west."

"Yes, the glass promises us a storm, and I look for a dirty night. How are matters progressing forward?"

"Most of the heavy stuff is overboard, sir, and there is room now to get around."

"We'll put the men at the job again after they've eaten; there is nothing like a clean deck on a stormy night."

"Right enough, sir, and the beggars are better kept at work."

"I was pleased to see the way in which they took hold, Mr. Leayord," I said quietly, "and that Olson set them so good an example."

He crossed over to the rail, and came back wiping his lips on his sleeve.

"Olson is a good man, Mr. Hollis; you made no mistake when you chose him for second officer, but I never saw a worse bunch of sea scum in any fo'castle than we've got aboard here, sir."

"They took hold, all right."

"Aye, for the once; they're a bit dazed yet, an' have had no time to talk it over among themselves. Besides there are sailors enough among them to know that that ruffle had to be cleaned away whatever port they sailed for."

"We'll hear from them later, you think?"

"Tomorrow, sir, or perhaps tonight, as soon as they learn for sure the course we're steering. The nigger will tell them that when his trick is up, an' then the rumpus is likely to begin. They are dead set against Hamburg."

"Why Hamburg, Mr. Leayord?"

"Well, sir, I don't just know myself, for I was the bosun, and the lads never talked to me very freely. I thought I would question Olson a bit as soon as I got him alone. From all I've heard, however, it's largely caused by what that fat bloke yer brought aboard with yer had to say about this war breakin' out. I don't know the duffer's name, sir; but I hear he claims to be a millionaire, an' is willin' ter spend a lot o' coin, just to be took back ter New York. Cookie told me that he and the guy that goes by the name of Liverpool had quite a talk."

"Liverpool Red—yes, I've heard of him; he's the men's leader forward."

"Likely so; but there's others of the same kidney. If I was you, sir, I'd

have a talk with Olson when he comes on deck again. He'll tell you mor'n I can."

"I will, Mr. Leayord, and then I'll attend to this fellow McCann. I've got his number already; that black eye he's carrying about I gave him in the boat."

Leayord chuckled.

"So I heard, sir; tain't the kind o' treatment a millionaire is likely to forget, but I guess it wasn't a lick amiss at that."

I stood silent a moment, staring out into the black void.

"I presume, Mr. Leayord, I can confidently rely on your loyalty in case of trouble?"

"You sure can, sir."

"And Olson?"

"He'll face it like a man; and although Masters is a bit of a fool, I'm guessing he can be counted on in a pinch."

"Are there any others?"

"That's hard to say, sir, off hand. I haven't been shipmates with them, or with any o' this crew long enough yet to size 'em up; but there are a few men forward who don't chum none with Liverpool's crowd. Olson would know 'em better than I."

"Well, the sooner we learn exactly how we stand in this matter the better. I'll relieve you as soon as I have a bite to eat."

"Yes, sir, and the course?"

"Nor-east by east. There has been no observation taken for three days, Masters tell me, but that ought to keep us outside the regular steamer lanes. Half-speed, and a good lookout forward!"

In spite of its general dinginess of paint and furnishings, the main cabin had a look of coziness and comfort as I entered from the black gloom of the decks. The table had been set for four, the swinging light above gleaming over a white table cloth, and an abundance of food. Bascom and Miss Vera occupied seats on one side, while Olson, washed and brushed into a state of rare discomfort, sat alone opposite. No doubt the fellow would have greatly preferred being forward, and was so embarrassed as to scarcely glance up at my entrance. A slim, narrow chested man, his weak mouth partially concealed by a straggling mustache, and who answered to the name of Dade, acted as steward, but the boy, Moon, was doing most of the work. I drew out the single vacant chair, and sat down.

"Well," I said pleasantly, breaking the rather awkward silence, "I do not exactly know where we are going but we are on our way."

Olson's eyes wandered to the tell-tale compass overhead, but his mouth was full, and he made no attempt to speak. Bascom glanced from the girl's face across at me inquiringly.

"You have chosen our course, then, Mr. Hollis?" he asked.

"Hardly; at least only for temporary purposes. Yes, milk and sugar, Dade—one is enough. You see I have no observations yet, and I must find what charts are left on board. Remain after supper, Mr. Olson, and we will examine Captain Hadley's stateroom together."

"Yes, sir," he grumbled gruffly.

"But surely we are under way," Bascom insisted.

"Half-speed, and heading nor-east by east, which should take us out of the usual course of ships in these seas. By tomorrow noon I hope to know our exact position, and also the disposition of the crew."

"The sea is rising, I judge."

"There is every promise of a rough night, but nothing to worry over. Dade, why did you set the table only for four. There is another passenger aboard?"

"He has refused to mess aft, sir."

"Oh, he has! Well, possibly I may have something to say as to that. Did he give any reason?"

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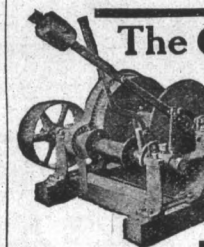
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Woman and Her Needs

At Home and Elsewhere



Good Health and Conscience

A MAGAZINE editor was recently asked by an "Anxious Father" how he could develop ideals of honor, courage and honesty, and a conscience in his eight-year-old son. The editor replied, "See that your boy bathes daily, cleans his teeth thoroughly night and morning, goes to bed regularly at 7:30 in a room with wide-open windows, plays out in the open air all his spare time with healthy, normal boys, is fed plain, substantial foods, given no stimulants, kept from exciting 'movies' and his conscience will develop itself."

It reminded me of the zealous young mother who had been to a lecture which impressed on her mind the importance of caring for her children's teeth. She was going out for the evening and leaving the youngsters in the care of an aunt.

"See that they clean their teeth and say their prayers before they go to bed," she said impressively, "and be sure they clean their teeth whether they say their prayers or not."

The orthodox aunt was shocked, but the mother meant no irreverence. She had just got the idea that perfect health is as much of an act of worship, if we can get it through observance of the laws of hygiene, as is praying. She felt it was as much her duty as a mother to see that her children were taught ways of correct bodily living as it was that they be taught morality, and she was right.

All parents are anxious to do their best for their children, but too often we overlook the thing which would be best in our zeal to do only second best. What could be better for our children than health? And how many of us think of it as we should? Many a fond mother ruins her child's chance of perfect health forever, before it is five years old, by wrong methods in feeding alone. They begin in infancy to feed the baby every time it cries, instead of at stated intervals, and follow along through childhood letting the youngster eat whenever it happens to think of it, and anything it whines for. I know one "fond" mother who kept an eighteen-month infant quiet so she could do her ironing, by giving it lumps of brown sugar. The poor thing devoured nearly a half cup of sugar in the course of the afternoon, and when it was sick in the night the mother could not be made to believe it was her foolishness that caused the sick spell.

Added to bad feeling, there are irregular hours of sleeping. How many children are put to bed with the birds, and how many stay up until the family retire, even if the hour is midnight? Then there are evening parties and sociables, to which five-year-old children are dragged when they should be tucked in their beds, and allowed to eat rich cake and sip poor coffee because "they want to."

Daily bathing after the youngster is able to toddle? Not for nine out of ten children, and as for cleaning teeth night and morning a large percentage of American children never clean their teeth at all until they are taught to in school.

And yet doctors and dentists tell us that good health is absolutely dependent upon good teeth. Indeed, so im-

portant are perfect teeth considered that in cities the school children have their teeth examined in school two or three times a year, and if the parents can not afford to take care of defects the children are sent to a dentist and the city pays the bill. In Detroit the school children are marked on their report cards in care of the teeth and personal cleanliness as regularly as they are in arithmetic and reading.

Good health is about the only thing that the average parent can give to their children, and as it is the easiest thing to bestow it seems a pity more parents do not go in for it. Personally, wouldn't you rather start life with a sound body than with a fat bank account without perfect health? If you have health you can take a chance at getting the money yourself. If you haven't health, the money can not buy it for you. Proper attention to simple rules of living would almost guarantee every child perfect health when it is grown, for the average child that weathers infancy is born sound of wind and limb. Defects come after birth because of bad habits.

Good health usually guarantees nearly everything else desirable, good nature, courage, honesty and clean thoughts. You seldom see a healthy person who is cranky, cowardly, sneaking or intemperate. These mental and moral defects are nearly always found in persons who are "below par" physically. So the editor who stated that conscience would take care of itself if good health was insured for the child had a great deal of right on his side.

DEBORAH.

VEGETABLE CANNING.

Canning vegetables is a rather harder process to most housekeepers than canning fruit. The vegetables are more apt to spoil, lose their color, shape and flavor than fruit if great care is not taken, and for this reason many women have taken to using "canning compounds." This is entirely unnecessary, and sometimes injurious to the health as well, as many canning preparations contain substances which have been condemned by pure food experts. If cans, tops and rubbers are carefully sterilized, and all directions faithfully followed, there is no reason why vegetables should not be successfully canned at home.

Pick only ripe, firm vegetables, rejecting all that is over-ripe or imperfect. Look over and wash thoroughly, and prepare as for fresh cooking. Peas, string beans and lima beans are canned alike by the following method. Blanch in boiling water from two to eight minutes, depending upon the age. Then remove and plunge quickly into cold water. Pack the cans full, but not too full as they expand a little while cooking. Fill the cans with boiling water and add one teaspoonful of salt to every quart. Put on the rubbers and tops, and set at once in the container of boiling water. Cook two hours, then remove, tighten tops and set the cans away to cool. After they are cool wrap each can in paper and store in a cool dark place. Vegetables fade when exposed to light, and some even lose a part of their food value, so it is necessary to wrap the cans if you

wish them to keep their good looks. Do not use too much salt, a level teaspoon is sufficient. A level teaspoon of sugar added to each can, and also to corn when canning, improves the flavor.

The sour taste which is sometimes noticed in home-canned vegetables is usually caused by allowing the vegetables to stand too long after they are picking before they are cleaned. They should be canned at once, or at least within two hours after picking.

There are several devices on the market to be used for blanching vegetables so that they may be quickly removed from the hot water and as quickly from the cold into which they are plunged after blanching. One of these is a wire basket which fits into the kettle. The vegetables are placed in the basket and then the basket set into the kettle. It is not necessary to buy a basket, however. One housewife uses her colander, another a steamer which sets down into a large kettle, while others put the vegetables into cheesecloth bags, which of course must be kept scrupulously clean.

Vegetables may also be dried successfully at home. To dry them easily make racks such as we used to use for drying apples. Beets, turnips, carrots, parsnips, onions and cabbage are among those easily dried. Select the young beets and turnips, wash, peel, cut into slices one-eighth of an inch thick and spread on your racks. Suspend over the stove or place outside in the sun. Stir them frequently while they are drying and leave on the rack until all moisture has dried out. Carrots and parsnips should be treated in the same way, rejecting all that have woody cores. Onions should have the outside covering, tops and roots removed, cabbage has the outside leaves removed and the "heart," and both are to be sliced in thin slices about like the other vegetables.

Spinach, beet tops and Swiss chard may also be dried for winter "greens." Look over carefully, wash thoroughly and cut into pieces about one-fourth of an inch long.

LETTER BOX.

"Doing One's Bit."

The article by Deborah in the issue of May 12 under the above heading, was a cruel jolt after the experiences of the past few weeks.

There had been the flag-draped hall, filled with earnest men and women, listening while men who knew told them about the needs of the hour in Red Cross, and the necessity for increased food production and conservation of our resources.

There had been the large gathering of women at the Federation meeting, and women of wide outlook and experience in many fields of work inspired us with suggestions as to what we could do to help and how we could do it.

There had been the constant reading of editorials of best periodicals and the utterances of those who are in a position to form correct estimates. Out of all these there had grown a very clear conclusion, the result of a definite experience, the experience of feeling our horror and fear and trembling which overcame us at the prospect of war gave way to the sense of uplift

that can only come to one who hears the call of need—their country's call—and answers it with willingness.

To those of us born since the Civil War, except those whose lives were touched by the Spanish American war and those who are in touch with the regular army and navy, a comparatively small number, this emotion comes as a very new experience.

All the patriotism we have ever known pales as it stands by the side of this new stinging, biting sacrifice that faces us when our young men, our boys, so lately little babies, so quickly grown past school days into college life, when we see them face their day of danger.

We come into fellowship with the heartache of the women whose lives help to form the fabric of history.

And how willingly we accept that which will fortify our faith and courage. How gladly we share in the spirit which has moved women who in the past have not darned their stockings, to teach their untrained fingers new arts of service.

I know it is possible to read into written or printed words a meaning entirely foreign to the purpose of the writer.

The spoken word has the tone of the voice and the expression of the face to help convey the speaker's meaning. The human race spoke to each other ages before it wrote letters which probably accounts for the greater number of good talkers than good writers. To reduce this wide margin between the writer's meaning and the reader's understanding is one branch of literary skill.

It is to be hoped that the above fact figures largely in the article from which the following extracts are taken:

In the cities, women are bustling about establishing Red Cross units and taking first aid lessons, which they will never use, but which gives them a fine chance to get their names in the papers.

* * *

But through it all, how many are conscientiously trying to find out what their particular "bit" is? A certain per cent, I grant you. There always is a minority of workers. But the greater part of it is simply froth and excitement.

* * *

The one class of American women who know the meaning of the word and practice it in all its moods and tenses are farm women, and for Uncle Sam, or any of his menials, to preach thrift to farmers' wives seems to me little short of an insult. * * * If a woman is inclined to be thrifty and conscientious, she doesn't need anyone to tell her how. She finds her own ways, fitted to her own needs. If she is not so inclined no amount of "canned" advice sent out by the government, nor real fresh matter written in an office by some girl who doesn't know a potato ricer from a soap shaver is going to make her see the error of her ways.

Whatever the author's meaning, there are phrases which cannot harmonize with the spirit of these later days.

Would it not seem that Deborah needs a gentle hint from someone?—Hope Long Deferred.



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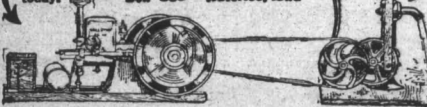
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Grange.

A BIG POMONA MEETING.

Oceana and Mason County Pomona met together June 2, at Pentwater. Six Oceana county Granges were represented, and patrons were present from a number of Granges of Mason county. All were entertained royally by North Weare Grange, Oceana county, which holds regular meetings in the village of Pentwater. A very pleasant little church had been secured for the meeting and arrangements had been made to serve dinner in the basement.

Memorial exercises were held in the morning. Fitting words concerning the brothers and sisters who had passed away during the year, were spoken by representatives of the Granges to which they had belonged. The choir sang a fitting selection, floral offerings were presented and W. F. Taylor sang a solo.

The dinner was simply one of those which the good sisters of North Weare Grange know so well how to serve. It was enjoyed to the limit and recollections of it will linger long.

The afternoon meeting was called to order by the Worthy Master who introduced the Worthy Lecturer as the presiding officer for the session. Bro. Griffin, of Pentwater, welcomed all in a few well chosen words in which he told us a lot of good things about the Grange in general, and Pentwater in particular. The master of Mason county Grange responded, after which the writer welcomed the Mason County Pomona, Commissioner C. A. Rhinehart, of Scottville, responded ably in behalf of Mason County Pomona Grange. He spoke forcefully upon the subject of distribution, and the evils of food speculation.

The address of the day was delivered by Mrs. Dora H. Stockman, lecturer of Michigan State Grange. Mrs. Stockman was at her best, and naturally she talked about the war. She emphasized the importance of the home garden, of canning the fruits which might otherwise be wasted, and in particular she urged the drying of corn, and also of fruits when cans were not obtainable.

She spoke of the scarcity of wool and cotton in the market, a condition which must necessarily grow worse as time advances, and spoke of ways in which the women of the country might help. She asked all to co-operate with the Red Cross, to assist in the Y. M. C. A. movement to render less terrible the consequences of this war.

She said, "I heard a woman who is not a mother say the other day, 'If I had a boy, I should want him to be first to enlist.' Well, I wonder if she might not feel just a little different if she really had a boy? My own boy is now in the officers' training camp. He is going to do his duty."

Thus, from beginning to end, her address was a call to higher patriotism, an exhortation to greater efficiency on the farm and in the home. At its close we all sang America as I have seldom heard it sung.

We can not close this report without calling attention to one more number—the talk by our new county agent, Mr. Alfred Henrickson.

Mr. Henrickson is a graduate of the M. A. C. and a very practical farmer and breeder of Jersey cattle.

He did not ask for the job of county agent, but while he is in it he proposes to stand for real things. Of course, he has concerned himself with the seed situation, with the matter of labor on the several farms in the county, and with that of credit where this was necessary. But with that part of his task well in hand, he told us that it is his purpose to accomplish with the help of the people, some other things which will make for permanent improvement.

It is his wish to secure the largest possible number of people who will sow Red Rock wheat next fall. He wants to see Oceana county a Red Rock county. He will assist those who wish seed to find it, and will be ready to help in any possible way to secure this much of standardization.

He also wants to organize the breeders of high grade, and pure bred cattle. This is somewhat of a dairy county, and here may be found some very good Holstein cows, and Jerseys that are among the best in the state. But too many are still simply keeping cows with no ideals of breeding. Mr. Henrickson wishes to organize breeders of Jerseys and Holsteins and to interest the largest possible number of farmers in the breeding of these two breeds. In this he will have the support of a large number of our best farmers and we confidently look for good things to come from the movement. In a resolution the Pomona went on record in favor of the plan, and so Brother Henrickson has a start. W. F. TAYLOR.

Farmers' Clubs

CLUB DISCUSSIONS.

Will Take up Red Cross Work.

About sixty of the leading farmers and their families of Lynn and adjoining townships met at the home of Mr. and Mrs. William Campbell, the occasion being the June session of the Lynn Farmers' Club. The meeting was opened with a patriotic song, followed by prayer by Rev. Charles, of Yale. After the reading of the minutes by the secretary, Mrs. Ransom Teetzel, the matter of joining with the other Clubs in holding a county picnic in August was discussed at considerable length. The sentiment was unanimously in favor of some location on Lake Huron, such as Lakeside Park or Lakeport. An invitation had also been extended to the Lynn people by the Union Club of Mussey township, to participate in a similar gathering at Lake Pleasant, Lapeer county, on July 4th. Mrs. Thomas Johnson, of Yale, then addressed the meeting on the work of the Red Cross, and suggested that the Lynn Club take up the work as an auxiliary of the Yale Red Cross Branch. Wm. Campbell also stated that Red Cross work was one of the noblest lines the members could take up, and urged everyone present to give it their best support. Mr. Campbell was appointed as chairman, with the privilege of selecting the other members on the committee. Mrs. Andrew Curry was chosen as vice-chairman, Mrs. Ransom Teetzel, secretary, and Mrs. A. J. Smith, treasurer. This was followed by a campaign for members which resulted in the majority of the people there becoming identified with the movement. The next number was an address by Rev. Charles, of Yale, on "The Man of the Hour." The speaker discussed some of the conditions and effects of the great conflict now going on in Europe, and stated that it was his belief that fully 5,000,000 soldiers would need to be enlisted before freedom's song could be sung throughout the world. A reading by Mrs. William Hodgins portraying some of the weak points in our present day educational methods was well rendered and one of the best appreciated numbers of the afternoon. County Agent Brody was then called upon to explain farm loan associations and took up a number of questions asked by the audience. He also explained the methods that are being practiced at the experiment station in breeding more desirable varieties of farm grains and the following men will sow considerable acreages of Red Rock wheat the coming fall: William Campbell, Robert Middleton, Thomas Shutt, Martin Ostrander, William Merkle, and A. J. Smith. One of the pleasing features of a Farmers' Club is that everyone is invited to join, and at this meeting four families were enrolled as new members. The picnics already mentioned will be held in July and August and the next regular meeting will be held in September at the home of Mr. and Mrs. Robert Middleton, in Lynn township.

Improvements in Farm Housekeeping.—The Union Farmers' Club held a very successful meeting in June at the home of Mr. and Mrs. Louis Kaiser in Mussey township. President Albert Tosch presided, and as the secretary, Mrs. Maude Kemp, called the roll each member responded with a short story or quotation. This feature brought out many things that were especially applicable and helpful at the present time, and some of the more humorously inclined provoked much laughter with their comic sayings and stories. The matter of holding a picnic was taken up and after an extended discussion it was decided to hold the event at Lake Pleasant in Lapeer county, July 4th. In this connection, too, a motion was passed extending an invitation to the Farmers' Clubs in the western part of the county, including Lynn, Berlin, Riley, and Brockway organizations. The question, "Have the improvements in farm housekeeping kept pace with those of the farm?" was next discussed by Mrs. Charles Brennan. She traced a development of household equipment and farm appliances from pioneer days to the present time and showed in a clear and logical way that, while the housewife on the farm enjoys the use of many things that were not known a quarter of a century ago, the same amount of attention has not been given to conveniences in the farm home as has been true with the operations of the farm itself. Her remarks showed that she had given the subject much thought and careful preparation.

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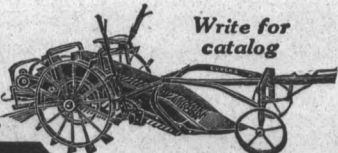
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Drying Vegetables—A Home Operation

By MARJORIE MORRISON

PRACTICALLY everybody had concluded the day of the home-drier was past and that the tin can, glass jar, and storage warehouse had secured supremacy which could not be questioned. Just now, however, when the need for saving everything that can be eaten is evident to everyone, drying is vying with canning and cold storage for popularity. In fact, I have found the drying of fruits and vegetables has several distinct advantages over canning or storing products in the cellar.

This summer I had available for canning my usual number of glass jars, crocks, and wide-necked bottles. I have never used tin cans and so have not the apparatus for sealing them, and besides, the glass jars appeal to me as cheaper in the long run for they can be used year after year. But with prices of food advancing almost daily I decided to save for winter use all I could by canning those products which do not contain a large amount of water, make jelly out of others, and to put up some preserves. Other fruits and vegetables I intend to dry; in fact, I have dried successfully a large number and it is a most economical way of preserving them. It requires fewer jars or cans than canned products, and it is not necessary to use the receptacles for storing dried food that should be utilized in canning. Further, there is comparatively little risk of spoilage.

Several Methods of Drying.

So far I have tried drying vegetables on racks in the sun, in the oven, suspended over the stove, before an electric fan, and by a combination of two or more of these methods. In fact, the combination frequently is the most feasible and the cheapest way. If the sun is very hot and the day fairly windy, but not too dusty, I spread the finely sliced vegetables on galvanized wire trays about eighteen inches wide and four feet long and set them in the sun, usually on the roof of the house, where the wind can blow across them. The vegetables are washed and wiped dry, of course, before they are sliced, and when exposed to the sun for a few hours they wilt rapidly and the drying process is well started. If the weather conditions are right—dry and hot—I continue the drying in the sun as it is the cheapest method. The final drying, however, is done in the oven where the temperature is run up to 150 to 180 degrees and the vegetables are dried until they are fairly brittle. The oven door is left ajar and the drying product inspected frequently to see that it is not scorching.

To Keep Vegetables from Sweating.

To keep the dried vegetables from sweating I place them, as soon as they are dried, in a colander or sieve or leave them in the drying trays and stir them once or twice daily for about two or three days. This seems to allow the whole mass to become evenly dried. They are then ready for packing for winter use. I follow the same rule in packing dried vegetables that I do with canned fruit or vegetables; I put only enough for one or two meals into a package. If one small package is not good because it has been infested with worms or has become moldy, then I have not lost as much as though I had packed the product in bulk. It is work to seal a large number of bags and pack them in tin cans or other receptacles away from insects and rodents, but I believe it pays. A common paper bag, the top of which is twisted into a neck, bent over and tied, makes a good container when covered with paraffin, applied hot with a brush. I have used a few patented paraffin cartons which I had on hand and have purchased a few more as I find they are handy for other uses about the house.

In drying over the stove I use the

same racks as when drying in the sun. The sides are made of half-inch by three-inch slats and the bottom is covered with quarter-inch galvanized wire netting. One rack is suspended from the ceiling by means of a clothes line rope which passes through a screw-eye placed in the ceiling directly over the middle of the stove and attached to the four corners of the rack. To this rack I attach another rack by means of four ten-inch wire hooks, made of common soft iron wire. These are hooked over the four corners of the upper rack and under the corresponding corners of the lower rack. Thus a whole tier of racks is hooked together and can be raised or lowered to suit my convenience when working about the stove.

Drying Rhubarb.

I have tried drying by placing the electric fan close to the ends of the trays and have been successful with this method, but, of course, this would not have been possible had I not already owned a fan. The rapid circulation of air at room temperature over the finely sliced vegetables dries them with surprising rapidity. When the air is not dry and warm, however, it requires a much longer time, and I have usually finished the process in the oven or on the racks suspended above the stove. On very hot, dry days I have dried asparagus, rhubarb, and string beans in about twelve hours by use of the fan; on other days it has taken much longer. On very hot days sun drying is fairly rapid and it is questionable, in my mind, whether it pays to use the fan at such times. Today I have dried some rhubarb; one tray by the fan and the other on the roof in the sun. The day is fairly warm, about eighty-five degrees in the shade at 2:00 p. m., and a fair breeze is stirring. The rhubarb was washed and dried with towels, but was not skinned. It was sliced to about one-fourth inch in thickness and spread on the trays. That which was placed in the sun dried in about seven hours and that before the fan in about the same time.

Preparing Vegetables for Drying.

In order to facilitate drying the vegetable should be sliced thinly, say one-eighth to one-fourth of an inch in thickness. This exposes a larger surface to the air. If sliced too thin, however, they tend to cling together and are not easily handled. Besides, some vegetables would not be a very attractive dish if sliced too thinly; with others it does not matter. Rhubarb, for example, may be sliced very thin while string beans should be sliced into about half-inch lengths.

If a large amount of drying is to be done it will pay to buy a slicer as it is a tedious task to slice a large quantity of vegetables with a kitchen knife or chopping knife. Either a kraut cutter or adjustable rotary slicer makes the work much easier and shorter.

Blanching vegetables by boiling them for a few minutes before drying tends to set their color. It makes a good product but the operation is not necessary.

Sweet Corn for Drying.

Sweet corn should be cooked in boiling water about five minutes to set the milk. Cut the kernels only half way down to the cob and scrape the remainder from the cob, being sure not to remove the chaff next to the cob.

Carrots, beets, and turnips may be dried either with the skins on or off. When cut into thin pieces the skins are not objectionable.

Before cooking dried vegetables they should be soaked in water until they nearly regain their natural size. Gen-duct is exceedingly dry. Many vegetables should be cooked in the water in which they are soaked.

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Hot Weather Poultry Hints

GATHER the eggs twice each day in hot weather and place them in a cellar free from odors. Market at least twice each week and do not keep the eggs in a large basket and only sell from the top or the bottom layers will become stale before they are marketed. It pays to have two egg baskets and use one for a week and then the other. Sell from the first basket before using the second and in this way there will be no accumulation of old eggs.

Do not over-feed the laying hens in hot weather. Too much corn will cause an accumulation of fat when the hens are also obtaining an abundance of seeds and insects on the range. The use of oats in the ration in place of an abundance of corn will be beneficial and oats are much cheaper.

Ventilation of the poultry houses is necessary on hot summer nights. Some breeders cut holes through the back of the houses over the roosts and cover them with fine mesh wire. This insures an abundance of fresh air flowing over the birds and helps to keep up their vitality during the extremely hot nights.

Give Plenty of Water in Hot Weather.

Fresh water is one of the first needs of the hen in hot weather and the water crocks should be filled at least twice daily. Cocks keep the water much cooler than pails or shallow pans. They are not easily tipped over and can be scalded.

Litter is necessary in the poultry houses during the summer to absorb the droppings. It need not be more than two or three inches deep but that amount should be used to give the hens a scratching place during warm weather on rainy days.

The slogan of "Swat the Rooster" is carried too far when it is carried out on a fine breeding male bird which has proved his worth by producing first-class progeny. Such a bird is worth keeping over to the next year and if he is penned in a yard with two or three hens for company the remainder of the flock can produce infertile eggs and the extra work of caring for the male will be repaid in the assurance that he will earn more than his board during the next breeding season.

Do Not Overcrowd Shipping Coops.

In shipping poultry during hot weather it pays to know the law, and not overcrowd the coops. Select a reliable dealer and if he gives good returns possibly it will not pay to experiment further but give him the business.

Sunflowers should be used for shade in some portion of the poultry yard as they will give the birds a cool place to dust. In raising young stock sunflowers are of some value in keeping down the ravages of hawks and crows. If the birds have a place to hide at the first sign of an approaching enemy they are in less danger of being carried away.

Red mites collect under the roosts in unsprayed poultry houses and at night they come out upon the birds and fill themselves with good red blood. At least once each week paint the roosts with kerosene oil or one of the coal tar disinfectants. Soak every crack and crevice in the roosts and the dropping boards with the oil and it will be death to mites.

Change the Curtains.

During the summer remove the canvas curtains from their frames on the poultry house and replace them with clean material. Possibly the curtains will not be needed in the summer as the birds roost upon them if they are not lowered at night and it is not necessary or advisable to lower them in the summer. The curtains that roll up instead of swing back will often prove the most satisfactory in a poultry house. It is difficult to keep Leghorns

from flying up and roosting on the curtain frames when they are swung back and hooked to the ceiling of the house.

The ventilation of a poultry house can sometimes be improved during the hot weather by fastening back the door and substituting a door covered with fine mesh wire. To assist in preventing thieves the door should be made of strong material and it should be padlocked every night.

Keep Coops Clean.

Clean the dropping boards daily in hot weather and use the material in the garden. An ill smelling poultry house is an abomination on any farm and the smell simply means that high-priced elements of fertility are being given off into the air.

When the hens steal their nests it is best to keep the eggs separate from the market basket. A few of the eggs in the discovered nest will probably be all right for home use, while some of them may have to be buried. Never risk the reputation of the farm by allowing spoiled eggs to be marketed at the price received for a fresh honest product.

When chickens die they should be buried about three feet under ground or burned. Burning is the best as it absolutely destroys any chance of the birds being brought to the surface where they can spread disease among the healthy members of the flock.

Ingham Co. R. G. KIRBY.

DUCKS ON THE FARM.

The keeping of ducks calls for little outlay in the matter of building houses. Any kind of a house, so it has a good roof, and dry floor, will do. A plain shed with dirt floor, and having the south side entirely open makes an excellent duck-house.

The floor of the duck-house must be kept dry and should be well littered with clean, dry straw. Strange as it may seem, while ducks will thrive if they have access to a stream of water or pond, they must have dry quarters at night. Ducks compelled to spend their nights on damp floors or on damp litter, will surely contract rheumatism.

Ducks are conveniently kept in flocks of about thirty. A house fifteen by ten feet is large enough for this number.

When kept in flocks of thirty or more one male should be allotted to each seven or eight females.

It is never advisable to keep ducks and chickens in the same house or run, for the reason that the ducks will keep the drinking water in such a constant state of filth that the health and life of the chickens are endangered.

Ducks require a much more bulky ration than hens. A good ration is as follows: Two parts bran, one part each of middlings and corn meal, one-half part of beef scrap and five parts of green food. This green food may be most anything—chopped turnips, beets, pumpkins, cut clover, etc. As the breeding season approaches it would be advisable to increase the beef scrap to one full part. Little whole grain should be fed. If on range during the spring and summer months ducks require little feeding.

Any of the larger breeds of ducks will yield quite a great deal in the way of feathers in a year's time. Feathers should not be plucked during the cold weather. When ready for picking, the feathers will pull easily, without leaving blood on the end of the quill. If not picked when "ripe" the feathers will fall out and be wasted.

Indiana. T. Z. RICHEY.

Cut queen cells out but once. If they build them up again, then remove the queen and return later and cut out all cells but one. They will then raise a new queen without swarming.

Markets.

GRAINS AND SEEDS.

July 2, 1917.

Wheat.—The cash wheat market remained steady through most of the sessions of last week, while futures advanced. Flour dealers are buying only for immediate needs, believing that prices may rule lower in the near future. However, stocks of flour have been quite closely cleaned up, thus forcing some activity in the market and giving strength to the cash wheat deal which had become very bearish. The future market was disturbed by reports of hot winds in the west and the possibility of damage to the crop elsewhere due to the lateness of the harvesting season. On the other hand, the crop has developed favorably the past fortnight over a considerable portion of the winter wheat belt. Speculation is likely to be eliminated in the handling of the coming crop through the action of the federal government. The probability of this change is temporarily acting as a bearish factor, in that dealers are taking only such quantities of grain as are needed to supply present requirements. One year ago No. 2 red wheat was quoted locally at \$1.07 per bushel. Last week's Detroit quotations were:

	No. 2	No. 1	Sept.
	Red.	White.	
Wednesday	2.50	2.45	1.86
Thursday	2.50	2.45	1.85
Friday	2.50	2.45	1.85
Saturday	2.50	2.45	1.87
Monday	2.50	2.45	1.87

Chicago.—July \$2.01; Sept. \$1.84½.

Corn.—Prices for this cereal gradually advanced throughout the past week. The market is strong with both domestic and foreign demand showing activity. Weather conditions have delayed planting throughout the corn belt, and thus increased chances for a poor crop. Old corn is going into consumption rapidly, and the cereal will likely be very scarce before the new crop can be harvested. One year ago No. 3 corn was quoted at 77½¢ per bu. Last week's Detroit quotations were:

	No. 3	No. 2	Yellow.
	Mixed.		
Wednesday	1.73	1.75	
Thursday	1.74	1.76	
Friday	1.73	1.75	
Saturday	1.74½	1.76½	
Monday	1.74½	1.76½	

Chicago.—July \$1.59½; Sept. \$1.50¼.

Oats.—There is a moderate demand for this cereal, with prices ruling a fraction above those of last week. The new crop is developing nicely, and promises to be a bumper one. Standard oats were quoted at 43¢ on the local market a year ago. Last week's Detroit quotations were:

	No. 3	Standard.	White.
Wednesday	72	71½	
Thursday	72½	72	
Friday	72½	72	
Saturday	72½	72	
Monday	72½	72	
Monday	72½	72	

Chicago.—July 66½¢; Sept. 55½¢.

Rye.—There is very little doing in this market, there being only a few offerings and a moderate demand. Cash No. 2 is steady at \$2.25 a bushel.

Beans.—Local quotations for immediate and prompt shipment are down to \$8, with the trade very quiet. October beans are quoted at \$6.50 per bushel. In Chicago sales are comparatively few, with Michigan pea beans, hand-picked, quoted at \$9.50@10; red kidneys \$8.

Peas.—Market is practically closed up, with field varieties, sacks included, quoted at \$3.75@4.50 per bushel.

Seeds.—Prime red clover \$10.80; October \$11.50; alsike \$11.40; timothy \$3.60.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$14; seconds \$13.50; straight \$13.30; spring patent \$14.75; rye flour \$13.50 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$34; standard middlings \$41; fine middlings \$44; cracked corn \$68; coarse corn meal \$66; corn and oat chop \$55 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$17.50@18; standard timothy \$16.50@17; No. 2 timothy \$15.50@16; light mixed \$16.50@17; No. 1 mixed \$14.50@15; No. 1 clover \$13.50@14.

Pittsburg.—No. 1 timothy \$18@18.50; No. 2 timothy \$16@16.50; No. 1 light mixed \$16.50@17; No. 1 clover, mixed \$16.25@16.75; No. 1 clover \$16.25@16.75.

Straw.—In carlots, on track Detroit,

rye straw \$10.50@11; wheat and oat straw \$9.50@10.

DAIRY AND POULTRY PRODUCTS.

Butter.—The market is quiet, with the bid prices slightly higher than last week. Creamery extras bid 36¢.

Elgin.—There is not much change in conditions. Prices are somewhat lower. Price, based on sales, is 36½¢.

Chicago.—The feeling continues weak with prices slightly lower. Extra creameries 36½¢; extra firsts 36¢ per lb; packing stock 30½¢.

Eggs.—Market is steady with prices ½¢ higher than last week at this time. Fresh firsts were bid at 31¼@32¢ per dozen.

Chicago.—The feeling is steady and prices are slightly higher. The demand is for the best lots. Fresh firsts 29½@30½¢; ordinary firsts 27½@28½¢; miscellaneous lots, cases included 26½@30½¢.

Poultry.—Market is easy with prices lower. No. 1 hens 20¢; small and medium do 18¢; best broilers 28¢; Leghorns 25¢; ducks 22@23¢; spg ducks 26@27¢; geese 16¢; spring geese 20@22¢; turkeys 22¢.

Chicago.—The market is quiet, with consumptive demand limited. Fowls 18¢; roosters 15¢; broilers 1½@2 lbs., 28@30¢ per lb; ducks 12@18¢; spring ducks 22@23¢; geese 12@14¢; spring geese 16@18¢; turkeys 12@18¢.

Dressed Calves.—Market at Detroit steady. Fancy 20@21¢; No. 2, 17@18¢ per lb.

Chicago.—The market is dull and lower. 50@60 lbs. weight 16@17¢; 60@80-lb. weight 17@18¢; 90@100 lbs. 18@19¢.

FRUITS AND VEGETABLES.

Strawberries.—Are in fair supply. Michigan's are quoted at \$2 per 16-qt. case. At Chicago the supply exceeded the demand. Prices range from \$1.25@1.75 according to quality.

Potatoes.—There is no regular market for old potatoes at Detroit or Chicago. They are not wanted.

WOOL.

Boston.—Holders of wool are stronger than ever in their determination to hold out for the prices they have been asking. The shortage of raw wool is becoming more and more evident as the season advances. Dealers in Michigan have been paying farmers as high as 68¢ for fleeces. In Boston Michigan unwashed delaines are quoted at 60¢; unwashed combing 68@72¢; do clothing 54@56¢.

LIVE STOCK MARKETS.

July 2, 1917.

Buffalo.

Cattle.—Receipts 5000; market is slow; prime steers \$12.75@13.50; shipping steers \$12@12.75; butchers \$9@12; yearlings \$11@13; heifers \$7.25@11; cows \$5.25@9.50; bulls \$6.25@9.50; stockers and feeders \$6@9; fresh cows and springers, active, \$50@125.

Veals.—Receipts 1,600; market is steady; \$5@15.50.

Hogs.—Receipts 7,200; market is steady; heavy \$15.90@16; mixed \$15.75@15.90; yorkers \$15.75@15.85; light yorkers \$14.75@15.50; pigs \$14.50@14.75; roughs \$13.85@14; stags \$12@12.75.

Sheep and Lambs.—Receipts 1,600; slow; lambs \$10@17; yearlings \$9@14.50; wethers \$10.50@10.75; ewes \$5@9.75; mixed sheep \$10@10.25.

Chicago.

Cattle prices started off from 10@15¢ higher for desirable lots last week, with only about 17,000 head received on Monday and a good demand; but others were steady. Later in the week, under much larger receipts, the ordinary to fair middling kinds declined as much as 15@25¢, grassers from the southwest catching it the worst, as they were marketed in fast increasing volume. The greater part of the steers marketed during the week brought \$11@13.40, with sales of the better class of weighty corn-fed beefs at a range of \$13.25@13.90, and the top was 10¢ higher than was ever paid on the open market before in the history of the trade, the top for the preceding week standing at \$13.75. A good to choice class of steers brought \$12.50@13.20, while a medium to pretty good grade brought \$11.25@12.45, and fair light weight killers sold for \$10@11.20, with scattering small sales of inferior little steers down to \$7.25@8.50. Yearlings were in especially good demand if of desirable quality, with sales of fair to choice offerings at \$11.50@13.65, while the commoner lots sold down to \$9.50@10.50. Butchering cattle were good or poor sellers according to their quality, with cows selling at \$7.30@11.50 and heifers at \$7.25@12.25, while cutters went at \$6.45@7.25, canners at \$5.50@6.40 and bulls at \$6.50@11.

There was such a large demand for veal calves of light weight that prices rose to higher figures than were ever paid before, sales ranging at \$14.50@15.90 per 100 pounds and sales down to \$7@12 for the heavier weights. The stocker and feeder branch of the market showed little animation, with small offerings of well-bred lots and high prices, although values were much lower than a short time ago. Stockers sold mostly at \$6.75@9.75 and feeders at \$8.60@10.25. Beef cattle sold at the widest range of prices yet seen.

Hogs underwent further bad breaks in prices last week under increasing receipts and no corresponding gain in the general demand. The average price at the low time of the week was the lowest in three months, while the top was the lowest in weeks, the small proportion of choice heavy hogs tending to check their downward course in a marked degree. Country shippers have lost heavily on the big declines in prices for the general run of hogs, and many of them said they would wait for reactions before resuming shipments to market. Packers favored the good hogs with weight, and neglected common and fair mixed lots. On some days competition was lacking owing to an indifferent demand on speculative account. Lowest prices were paid at the week's close, when sales were made of hogs at \$13.80@14.50 for grassy mixed lots averaging from 150 to 250 pounds and of the better class of hogs at \$15@15.60, pigs bringing \$11@13.75. A week ago hogs sold at \$14.50@16.

Receipts last week of lambs, both springs and clipped, were very much larger in volume than a week earlier, while still much smaller than in former years before the sheep industry had been greatly diminished. The offerings were all much needed, but while prices had some rallies, the market was on the down grade most of the time. Native clipped ewes and breeding ewes were offered to a moderate extent and had a fair sale, but hardly any wethers or yearlings showed up on the market. Prices closed on Saturday \$1.25@2 lower for lambs and largely \$1@1.25 lower for sheep than a week ago. Spring lambs closed at \$12@17.50; clipped lambs at \$10.50@14.50; ewes at \$4@9.75 and bucks at \$6@7.50.

Horses were marketed moderately last week and had a fair sale, with the British inspectors making purchases of army horses at \$170 for 1400-pound weights and sales up to \$205 for choice heavier ones. Horses rejected by the British buyers had to go at very low prices. It was reported that some horses were bought in the country for the United States army. A few good drafters were bought to ship east at \$200@225, and horses were quoted anywhere from \$60@185, with very few choice ones on sale.

LIVE STOCK NEWS.

Veal calves have been selling on the Chicago market at much higher prices than ever before, with an urgent demand for choice light vealers.

Grass cows have been reaching the Chicago market in increasing numbers, and they include fair numbers of milkers, but there are few of the best class. Ordinary milch cows are much lower in price than a few weeks ago, but choice ones come high.

Hogs are selling wider apart in extreme prices as the summer advances and the offerings run much more largely to inferior descriptions, and the meager offerings of prime heavy barrows often sell little or no lower on days when the general market is much lower. The packers say the June marketing of hogs was a disappointment, both in numbers and average quality, and it is evident that the crop has been rather closely marketed, nearly all of the stockmen having shipped out their holdings unusually early because of the high prices prevailing and the great dearth of corn everywhere. Recent Chicago hog receipts have averaged in weight 229 lbs., comparing with 223 lbs. one week earlier, 227 lbs. one year ago, 231 lbs. two years ago, 237 lbs. three years ago and 240 lbs. four years ago. During the remainder of the season the receipts may be expected to run very largely to mixed droves composed of various descriptions ranging from coarse heavy packers to common light hogs and pigs of all sizes and grading. In spite of the extraordinarily high prices asked for all kinds of fresh and cured hog meats and lard, their domestic consumption continues very large, but exports of provisions are showing a great falling off in volume. During a recent week exports of lard aggregated only 2,972,000 pounds, comparing with 15,971,000 pounds for the corresponding time last year while bacon exports amounted to only 7,340,000 pounds, comparing with 14,395,000 pounds a year ago.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.

July 5, 1917.

Cattle.

Receipts 826. Market very dull; all grades 50¢ lower than last week; large numbers going over unsold; all butchers filled up, little selling.

Best heavy steers \$11@11.50; best handy weight butcher steers \$10.50@11; mixed steers and heifers \$9@10.25; handy light butchers \$7.50@8.75; light butchers \$6.50@7; best cows \$7.50@8; butcher cows \$6@7.25; common cows \$6@6.50; canners \$5@5.75; best heavy bulls \$7.50@8; bologna bulls \$7@7.25; stock bulls \$6@6.50; feeders \$8.50@8.75; stockers \$6.50@8.25; milkers and springers \$50@85.

Erwin, S. & J. sold Mason B. Co. 5 steers av 1067 at \$9.50, 2 do av 1113 at \$10.25, 9 butchers av 741 at \$7.25, 12 do av 1083 at \$9.25; to Bray 4 cows av 1000 at \$6; to Golden 23 butchers av 808 at \$7.

Sandel, S., B. & G. sold Thompson 7 butchers av 726 at \$8.75, 3 do av 873 at \$8.75, 17 steers av 921 at \$9.75, 1 bull wgh 1480 at \$7.50, 1 do wgh 630 at \$6.50, 3 steers av 970 at \$8.75; to Applebaum 3 heifers av 647 at \$7.50, 1 do wgh 770 at \$6.50, 2 steers av 875 at \$7.35; to Benamin 4 stockers av 630 at \$6, 2 do av 780 at \$7.50; to Holmes 2 cows av 1020 at \$6.50, 1 canner wgh 1100 at \$5.75, 5 do av 750 at \$5; to Walk 7 cows av 900 at \$6.75; to Holmes 5 do av 984 at \$6; to Baker 5 stockers av 632 at \$6.50; to Delano 3 steers av 751 at \$7.35, 2 heifers av 580 at \$6.50; to Mason B. Co. 4 steers av 970 at \$9.50; to Bray 4 cows av 1062 at \$6, 1 do wgh 760 at \$5; to Hammond, S. & Co. 12 steers av 866 at \$8.50, 2 bulls av 935 at \$7; to Delano 4 steers av 755 at \$7.85; to Starrs 1 cow wgh 1080 at \$6.25, 17 stockers av 815 at \$7.85, 6 do av 613 at \$6.50; to Delano 6 do av 720 at \$7.50; to Thompson 16 steers av 1026 at \$9.40; to Starrs 7 stockers av 740 at \$6.50; to Sullivan P. Co. 6 cows av 945 at \$7, 8 butchers av 917 at \$8; to Fineman 6 do av 658 at \$6; to Hamilton 13 do av 740 at \$7.25.

Bishop, B. & H. sold Hammond, S. & Co. 13 cows av 920 at \$6; to Parker, W. & Co. 12 butchers av 691 at \$7.75, 9 do av 722 at \$8, 27 do av 866 at \$8; to Mason B. Co. 5 steers av 980 at \$9.80; to Hammond, S. & Co. 9 cows av 1000 at \$7; to Thompson 1 bull wgh 1190 at \$7.75, 1 do wgh 1190 at \$7.75; to Bresnahan 13 butchers av 811 at \$6.10; to Garber 14 do av 716 at \$7.75; to Bray 2 cows av 1240 at \$8.25; to Thompson 2 steers av 950 at \$8.90, 3 do av 970 at \$10.50, 1 do wgh 900 at \$8, 5 do av 992 at \$10; to Sullivan P. Co. 6 cows av 1026 at \$6.75, 4 bulls av 965 at \$7; to Hammond, S. & Co. 5 steers av 886 at \$9.60, 1 cow wgh 970 at \$7; to Goodgold 10 butchers av 881 at \$8; to Dunn 17 do av 725 at \$8.

McMullen, K. & J. sold Applebaum 1 bull wgh 1320 at \$9; to Reamer 8 feeders av 700 at \$8; to Thompson 16 steers av 740 at \$8.65; to Bray 6 cows av 1000 at \$7, 1 do wgh 960 at \$5; to Parker, W. & Co. 10 steers av 665 at \$7.50, 1 do wgh 890 at \$8; to Hammond, S. & Co. 16 butchers av 883 at \$8.20; to Breitenbeck 16 do av 934 at \$8.25.

Veal Calves.

Receipts 351. Market 25@50¢ lower than last week. Best \$15@15.25; others \$9@14.

Bishop, B. & H. sold Sullivan P. Co. 11 av 170 at \$15.25, 25 av 165 at \$15, 10 av 170 at \$12.50, 23 av 150 at \$15; to Hammond, S. & Co. 8 av 125 at \$14.25, 2 av 135 at \$15, 14 av 140 at \$14.75.

Sheep and Lambs.

Receipts 40. Lambs steady; sheep dull. Best lambs \$17; fair lambs \$15.50@16; light to common lambs \$12@13; yearlings \$13@14; fair to good sheep \$8@9; culls and common \$6@7.

Hogs.

Receipts 864. Market strong. Pigs \$14@14.25; mixed grades \$15@15.75.

We want Fresh White Leghorn Eggs. We pay a premium over the highest market quotation and remit immediately upon arrival.

Fox River Butter Co., Detroit, Michigan.

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

FRUIT We want your entire crop. Write for rubber stamp. The E. L. Richmond Co., Detroit, Michigan.

EGGS We paid 4¢ to 6¢ above Detroit quotations last week for New Laid Stock. If you have real Fresh Eggs and want premiums, write us. AMERICAN BUTTER & CHEESE CO. Detroit, Mich.

Veterinary.

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

Hip Joint Lameness.—I have a horse that has quite recently acquired a "whirlbone" lameness; kindly advise if there is any cure for such lameness. C. Y. Harrisville, Mich.—The hip joint of a horse is seldom the seat of lameness, unless the hip is fractured the result of an injury; therefore, I am somewhat inclined to doubt your diagnosis. The first and most important part in the treatment of lameness is to locate it, then by giving the animal rest and applying a counter-irritant, such as equal parts of turpentine, aqua ammonia and olive oil every day or two, the animal will perhaps recover. If your horse sprained the hip, give him a rest and apply the remedy I have prescribed.

Leucorrhea.—We have a nine-year-old mare which weighs about 1400 lbs; is in good flesh, but for about four months she has been troubled with leucorrhea and is losing flesh. She has a good appetite and does not appear to be sick. E. A. D., Ellsworth, Mich.—Give your mare a teaspoonful of powdered sulphate iron and a tablespoonful of cooking soda at a dose in feed two or three times a day. Dissolve 1 dr. of permanganate of potash in three quarts of tepid water and wash out vagina, using fountain syringes every day or two.

Serous Abscess.—Stiffast.—I have a three-year-old colt that had a soft swelling on shoulder about the size of a saucer, and two inches in depth. Had it opened, a yellow watery fluid escaped, but a bunch formed which is about the size of a teacup and is quite hard, but not painful. W. D., Willis, Mich.—Surgical removal is the only remedy for a case of this kind and there is no danger in having it cut out, but it should be done by a Vet. or other person who has had some experience in doing surgical work. Apply one part iodoform and nine parts boric acid to wound twice a day.

Vertigo.—I have a very valuable yearling boar that is in bad shape; he shakes his head, jerks and squeals as though he had been struck a blow in the nose, in fact, acts as though he were partially insane. When moving he staggers about very much like an intoxicated person, and when I drive him, he dodges as if afraid of obstacles. Our local Vet. has been treating him, but with rather poor success. H. J. R., Breedsville, Mich.—If your hog is fleshy, he should be reduced, exercised some two or three times a day, his bowels kept open, and give him 20 drops of dilute hydrochloric acid in drinking water three times a day. Also give him 10 grs. of bromide of potassium at a dose twice a day.

Vaginitis.—I have a heifer which calved March 4, and apparently cleaned thoroughly. She kept up a uniform flow of milk until after she came in heat the second time, then I bred her. This was on May 31. The following morning I noticed a slight reddish discharge from vagina, since then she has not done well and seemingly suffers pain while urinating. C. W. E., Whitehall, Mich.—Give her two tablespoonfuls of cooking soda at a dose in feed or drinking water three times a day. Dissolve 2 ozs. of acetate of lead in a gallon of clean boiled water and wash out vagina with fountain syringe daily, using not less than half a gallon at a time.

Actinimycosis.—I have a four-year-old cow that has a lump the size of a hen's egg on the face between the eye and nose, and it is as hard as a stone. Is there any cure for this, and do you think the milk fit for use? She gives about ten quarts daily. S. A. Mc., Beaverton, Mich.—Your cow suffers from either lumpjaw, or else a bony tumor, the result of a bruise. I do not believe there is any particular risk in using her milk, before the lump suppurates; however, all things considered, if I owned her I would dry her and market her for beef as soon as she was fattened.

Acute Indigestion.—A short time ago I lost a brood sow that had a litter of pigs three weeks old. She was apparently well in the morning, but later in the day took sick, bloated badly and died. She was fed separator milk and dish water with a little lime added. She also had some cut clover and timothy hay. L. B., Munith, Mich.—Doubtless your sow died the result of an attack of acute indigestion, an ailment quite common in hogs. Prompt energetic treatment, giving her a dessert-spoonful of aromatic spirits of ammonia, or 30 grs. of salicylic acid every hour or two, might have saved her life.

Auction Sale of Durocs

Friday, August 3, 1917

40 big type sows of the best lines of breeding bred to Walt's King 92949, Jo Orion 14th 85855 and Brook. American Col. 81383. This trio of boars are hard to be equalled and not to be beaten when breeding and individuals are considered.

Walt's King 92949 is called by Duroc experts the best fall boar produced the past season. 15 good growthy Spring pigs including 1 by Pathfinder, 2 by Fancy Orion King a number by Defender Advance that are full brothers and sisters to the 1st prize under year boar at State Fair 1916.

3 last fall boars by Panama Special 65383 that are real Durocs and credit to their sire. Catalog sent on request, entertainment the night before sale at Whitney Hotel, Ann Arbor or Steele Hotel, St. Johns. All trains met Sale day and transportation to farm and good dinner free. H. L. Igleheart of Elizabethtown Ky. is Auct. assisted by R. L. Bixby and August Miller, St. Johns. All those unable to attend sale may send mail enclosing their bid on any of the animals to be sold. Mail to be addressed to the local auctioneers, or H. L. Igleheart, auct. or W. P. Peury who will represent the Duroc Bulletin, and sent in my care. Any and all stock bought by mail will be guaranteed.

NEWTON BARNHART, St. Johns, Michigan.

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.

Sale of Duroc Jersey Bred Sows, Spring Pigs and Fall Boars, August 2.
H. W. MUMFORD, O. F. FOSTER, MANAGER
OWNERS
BROOKWATER FARM
Ann Arbor, Mich., R. 7.



Purebred Registered HOLSTEIN CATTLE

To the open minded farmer or dairyman, the results of actual comparative tests of Holsteins with other breeds are striking object lessons of economic investment. The ten largest records of Holstein cows average 1,007 pounds of butterfat and 25,897 pounds of milk in a year. A like number of 974 pounds of butterfat, and 18,120 pounds of milk. One good Holstein cow will produce as much as two ordinary cows at a saving in feed and care. There's big money in the big "Black and White" Holsteins.

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HOLSTEIN BULL

Swigartdale Pledge Calamity No. 207041 Born Nov. 13, 1916. Marked half and half, will weigh 450 lbs. This calf is excellent dairy type and will develop into a very large sire.

Dam is one of our best cows. Has given 13,000 lbs. of milk since this calf was born. Is a very persistent milker and is now giving over 50 lbs. milk per day. Is a large well marked cow.

Sire is our herd bull G & B Segis Ulrica. Pledge a grandson of the Great King Segis whose blood predominates in most all world records.

For production inheritance we could not offer you a better calf. Price \$90.00.

SWIGARTDALE FARM

PETERSBURG, MICH.

WINNWOOD HERD

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

Reference: Old State Bank, Fremont, Mich.

Have for sale 6 Maplecrest Korndyke Hengerveld Holstein bulls. One 12 months, one 6 months; one 2 months, all out of A. R. O. dams. One made 19 lbs. butter in 7 days as a Jr. 2 year old. Another 21 lbs. in 7 days as a Jr. 3 year old. Also have five others, same bred from 2 to 6 months. Must sell at once, need the room. Our prices will surprise you. John H. Winn, Holton, Michigan.

Ten Good Young Holstein Cows For Sale

I want to sell as soon as possible, TEN GOOD YOUNG cows. Most of them are bred to "The Milk & Butter Champion" a son of a world's record milk cow and his sire is a son of a world's record milk cow. We will have more cows than we can milk this Spring. So this is your chance to get a few good ones. Also have bull calves and a few bulls ready for service.
L. E. CONNELL, Fayette, Ohio

Butter Fat Counts

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

FOR SALE Reg. Holstein heifers, 8 months old. Large, finely marked and thrifty. Price \$100, crated at depot. O. L. HULETT & SON, Okemos, 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 dam of 35 lb. cow, bred to 4 brother to 30 lb. 4 yr. old. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

Reg. Holstein Friesian Cows and Heifers, some 9 months old, \$100; Bulls \$40 up, with papers. FRANK STAFFEN, R. 3, Howard City, Mich.

BULL CALF for sale. Pontiac Korndyke Breeding. Dam gives 60 lbs. milk per day at 2 years. Farmers Prices. JOHN A. RINKE, Warren, Mich.

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

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

20 Head of high grade Holstein Heifers sired by Hengerveld 3rd, some of them due to freshen soon, for sale at Huron Valley Farm. F. S. PETERS, Flat Rock, Michigan.

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.

The All-Around Jersey

is the farmer's cow. She's his friend and pride—the beautiful, gentle, ever-paying milk machine that lifts the mortgage, builds up the fertility of the farm, and puts the whole business on a sound, paying, permanent basis. She adapts herself to all climates and all feeds and does not need fancy care. She matures early and lives long. And she's so sleek, clean cut and handsome, as to be the family pet and pride. She produces well and sells well. Learn about her in our fine, free book, "About Jersey Cattle." Write for it now.



THE AMERICAN JERSEY CATTLE CLUB
346 West 23d St., N.Y. City

Jersey Bulls for Sale from high-producing dams, with testing Asso. records, also on semi-official test. C. 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 2 1/2 years all sold.
J. R. Worthington, R. No. 7, Lansing, Michigan

The Wildwood Farm

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

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

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.

S. T. Clair County Jersey Cattle Club. We have for sale 5 Bulls old enough for service and Bull calves, from best strains of Jersey Cattle. Majestic'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 Maxwalton 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. Shentone 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.

Shorthorns 3 Red Bull Calves, 6 months old. 1 Roan Bull, 2 years old, for sale. Hillsdale, Mich. W. C. OSIUS.

For Sale One Roan Shorthorn Bull Calf 5 mos. old, a well built calf of milking strain. The first \$100 takes him, also a few heifers and a black, blocky Percheron Stallion, 2 yrs. old in Aug., weight 1500 lbs. M. A. Bray Estate, Okemos, (Ingham Co.) Mich.

SHORTHORNS Maple Ridge Herd, Established 1867. No stock for sale. J. E. Tanswell, Mason, Michigan.

Shorthorns for sale, 5 bulls Scotch top 10 to 14 mos. 3 Roan, 1 white, 1 red, price \$150, to \$250, 1 son of Maxwalton 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 Shanstun, Fairfield, Iowa, R. 8.

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 sons of the Great Defender & 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.

CHESTER WHITES:—Gilts bred for July and Aug. farrow. March pigs ready to ship. Large type. F. W. ALEXANDER, Vassar, Michigan.

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

40 HEAD DUROC BRED SOWS

15 Spring pigs and 3 fall boars by Panama Special. At Auction, Aug. 3.

Catalog on request. NEWTON BARNHART, St. Johns, Michigan

Duroc Jerseys. Breeding Boars and Sept. Gilts J. H. Banghart, East Lansing, Mich.

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

Duroc Jerseys. Fall Boars & Gilts all sold. I have some extra good heavy boned spring pigs for sale pairs not akin. F. J. DROTT, R. 1, Monroe, Michigan.

Dobson's Durocs; Pigs at weaning time; breeding. Collier Pups. Orlo L. Dobson, Quincy, Mich.

DUROCS, a few choice spring boars. Write for description & prices. E. D. HEYDENBERG, Wayland, Mich.

Reg. Duroc Spring Boars and Oxford Ram Lambs ready to ship. Exp. Paid, Fine Stock. J. R. HICKS, St. Johns, Mich.

Durocs, Good Spring pigs by Defender's E. E. Calkins. R. D. 6, Ann Arbor, Michigan.

Durocs Big boned March boars sired by grandson of Volunteer. One July yearling Gilt bred for August farrow. Price \$50. RUSH BROS., Romeo, Mich.

Raise Chester Whites
Like This
the original big producers

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

1/2 Ton O. I. C's & Chester Whites 1/2 Ton 10 Oct. and Nov. boars sired by our undefeated Grand Champion School Master. The boar that has size and quality combined. All sold any age. Write and get our Catalogue its free and describes our champions. We do not say our hogs are the best but we win the championships to prove it. We have 100 sows bred to our champion boars for Mar. and Apr. farrow. HARRY T. CRANDELL & SON, Cass City, Mich.

O. I. C. & Chester White Swine strictly Big Type, with quality. One yearling sow & two gilts bred for Sept. farrow. Guaranteed safe with pig. I have the finest lot of early Spring pigs I ever raised, can furnish a few in pairs not akin. Address, NEWMAN'S STOCK FARM, Marlette, Mich. R. 1.

O. I. C. An extra fine lot of last spring good, growthy stock. Farm 1/4 mile west of depot. Otto B. Schulze, Nashville, Mich.

CHOICE SPRING PIGS

Ready to ship. The big smooth, growthy type, sired by noted boars. Registered and shipped C. O. D. J. CARL JEWETT, Mason, Mich.

O. I. C. Boars and Gilts all sold. I am booking orders for March and April pigs either sex, single, or in pairs not akin. A. J. BARKER, Belmont, Mich. R. R.

O. I. C. Thorough bred O. I. C. Swine all sold out except fall pigs. O. D. Somerville, Grass Lake, Mich. R. D. 4.

O. I. C'S. All sold. Booking orders for the best of our winter and spring pigs. O. J. THOMPSON, Rockford, Michigan

O. I. C'S. Spring pigs and Reg. Holstein heifers from 5 to 15 months old. O. L. OVER LEAF STOCK FARM, R. 1, Monroe, Mich.

O. I. C. 'S. Gilts bred for Aug. and Sept. farrow. Also a few choice spring farrowed boar pigs. Geo. P. Andrews, Dansville, Mich.

O. I. C. SWINE. Nothing to offer at present. H. W. MANN, Dansville, Michigan.

O. I. C's. A few choice boar pigs ready to ship. Want O. one? Act quick, they won't last long at this price. Stock recorded free. Elmer E. Smith, Redford, Mich.

BIG TYPE POLAND CHINAS

Boar Pigs from the CHAMPION and GRAND CHAMPION and other GREAT HERD BOARS and big STRETCHY SOWS of very best breeding and individuality.

HILLCREST FARM, F. B. Lay, Mgr. Kalamazoo, Mich.

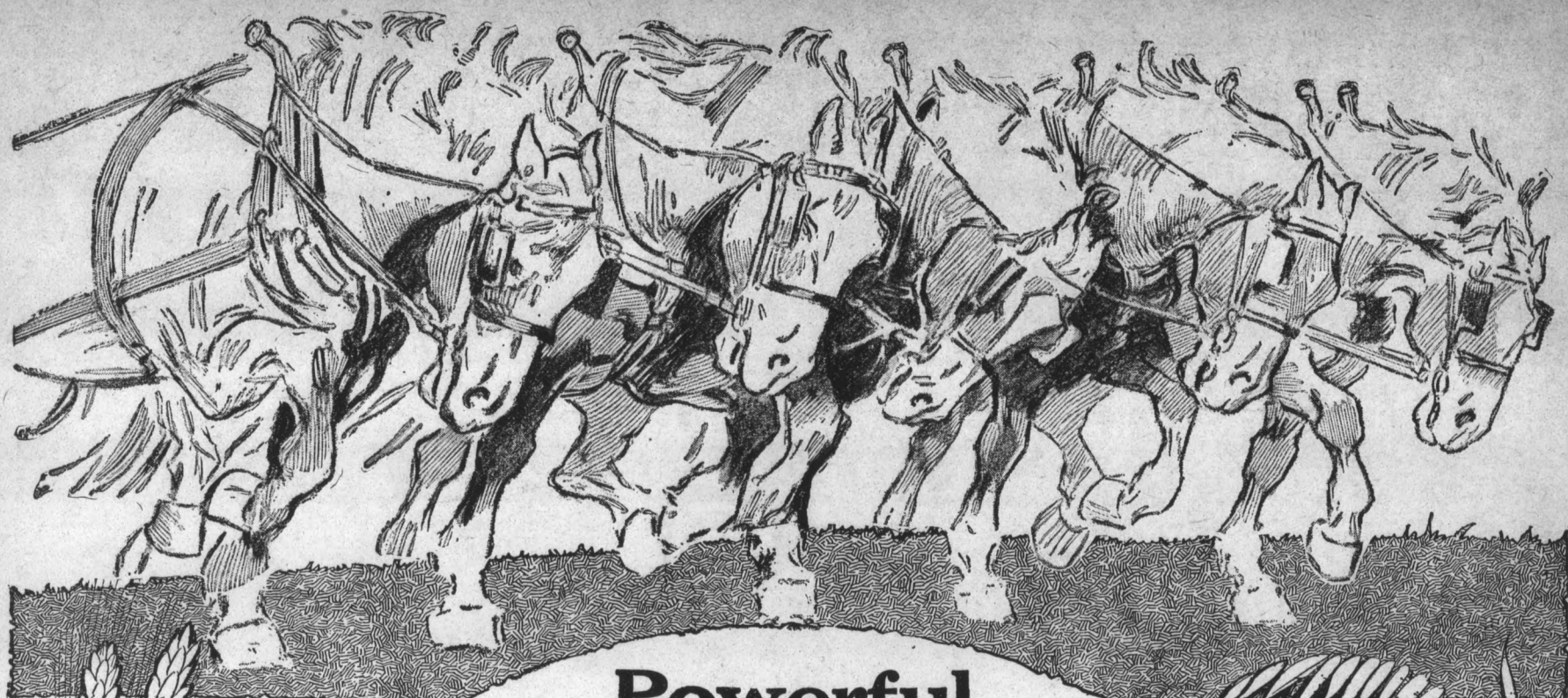
"War is ————" So is starvation. Every one should do their bit. You can raise more pork on less feed if you breed Butler's big type Poland Chinas. Sows bred for fall farrow. Boars ready for service. J. C. BUTLER, Portland, Michigan, Bel' Phone

Large Type P. C. Fall pigs and bred gilts all sold. Nothing for sale at present. W. E. LIVINGSTON, Parma, Mich.

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

L. S. P. C. yearly Gilts for August farrow. A few long boned heavy boned boars ready for service. 2 nice fall boars by Smooth Jumbo, H. O. Swartz, Schoolcraft, Mich.

Additional Stock Ads. on Page 11



Powerful As Five Horses Costs Less Than Four Horses

Here is the kind of a tractor you've been looking for—one that not only plows, but does ALL farm work that horses can do, besides supplying power for belt work. Not a big, heavy, cumbersome tractor, that plows while your horses loaf and eat, then leaves the rest of the work for your horses to finish; but a tractor that does EVERY job a horse can do—does it better—faster—easier and cheaper.

It costs less than four horses, yet it plows 4 to 12 acres a day; pulls two 14-inch bottoms; harrows, discs, plants and CULTIVATES corn or other hill and row crops—16 to 20 acres a day. It is as powerful as five horses and does the work of seven horses; easy to drive as a team—a REAL ONE-MAN TRACTOR and the only tractor that does all farm work without horses. It is so inexpensive to buy and operate that even 80-acre renters can profitably use the

MOLINE ^{ORIGINAL} 2 WHEEL UNIVERSAL TRACTOR

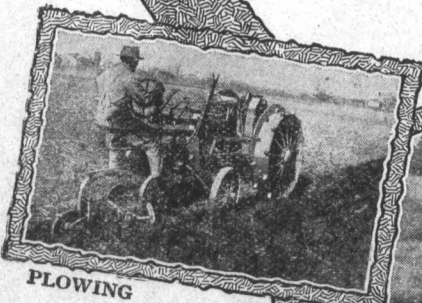
Note the big advantage of its two-wheel construction—ALL ITS WEIGHT IS TRACTION WEIGHT. ALL its weight goes into the PULL. That's why we can build it lighter—why we eliminate almost a ton of excess dead weight necessary on tractors of the three and four-wheel types. Then notice how handily it is hooked to the tool you use—the plow—harrow—cultivator—mower—binder, etc. Notice how you operate both tractor and implement from the implement seat. All your work is plainly in view. No craning or straining of your neck looking back to watch the farm tools—no extra man needed. Easy to back up with tool attached; easy to make quick and short turns; to work close to fences; to do all work as well and aseasy as with a team.

No matter what size farm you own, if you have 80 acres or more, here is the tractor for you. If your farm is extra large, two MOLINE-UNIVERSAL Tractors will be cheaper than either horses or one large tractor. Write for our free catalog-folder which tells all about this all-work, all-purpose, low-cost, one-man tractor. See for yourself how it will solve the power and hired help problems on your farm.

MOLINE PLOW COMPANY Dept. 42
Moline, Ill.

The Moline Line Includes: Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons; also Stephens Six Automobiles

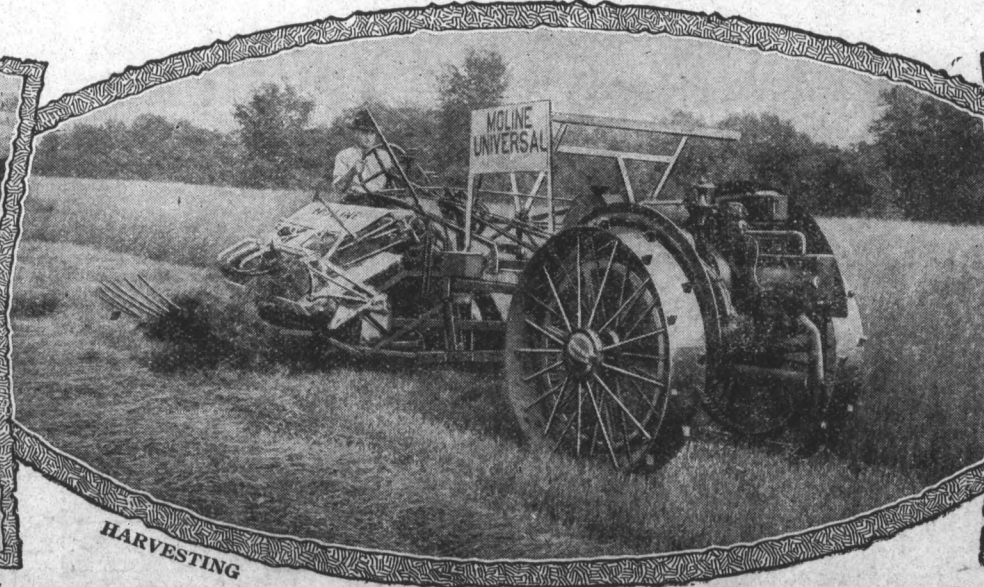
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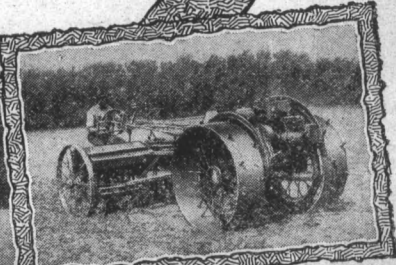
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