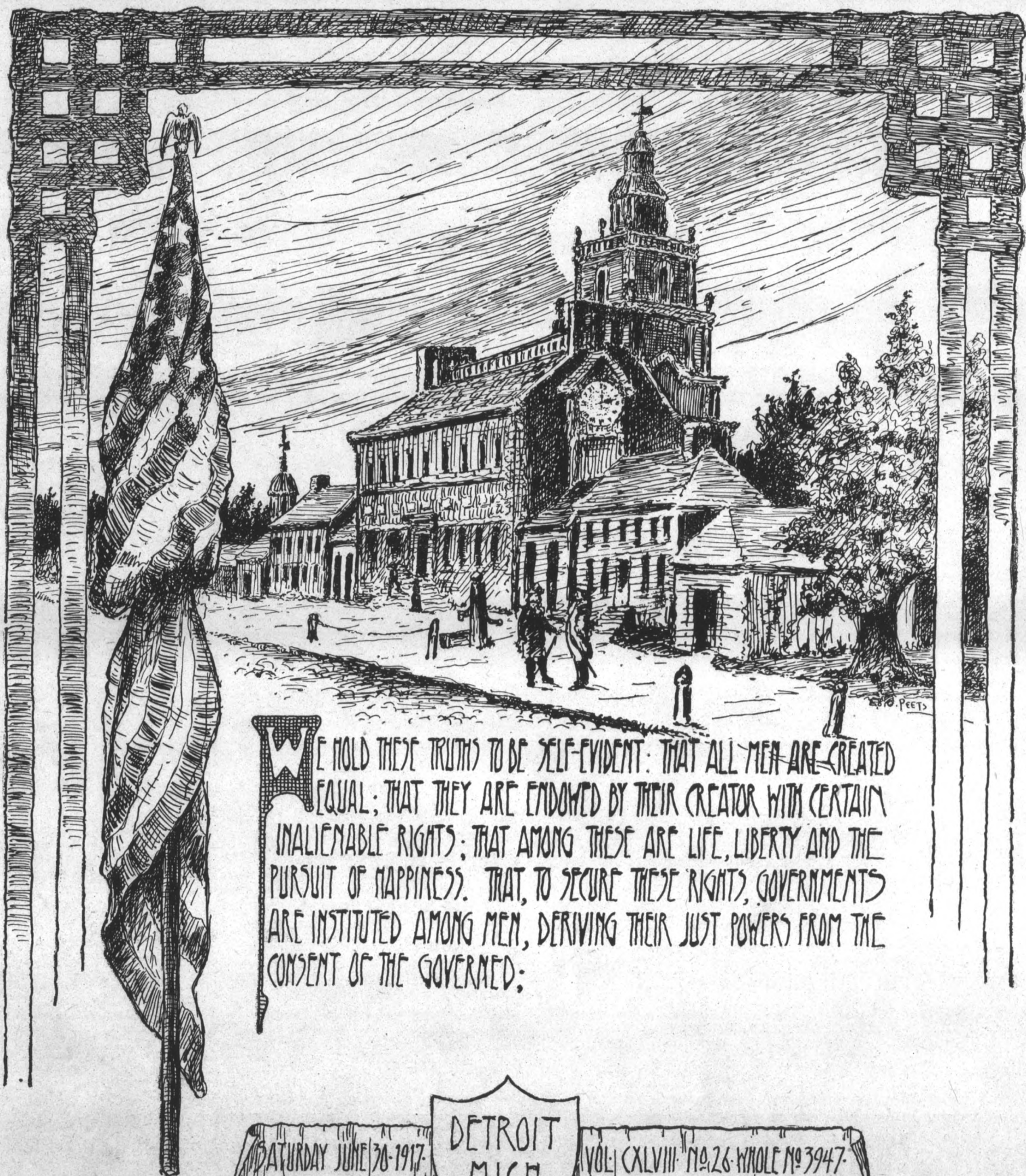


MICHIGAN FARMER

INDEPENDENCE DAY



WE HOLD THESE TRUTHS TO BE SELF-EVIDENT: THAT ALL MEN ARE CREATED EQUAL; THAT THEY ARE ENDOWED BY THEIR CREATOR WITH CERTAIN INALIENABLE RIGHTS; THAT AMONG THESE ARE LIFE, LIBERTY AND THE PURSUIT OF HAPPINESS. THAT, TO SECURE THESE RIGHTS, GOVERNMENTS ARE INSTITUTED AMONG MEN, DERIVING THEIR JUST POWERS FROM THE CONSENT OF THE GOVERNED;

SATURDAY JUNE 30-1917

DETROIT
MICH

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DETROIT, JUNE 30, 1917



Independence Day

OLD "Independence Hall," Philadelphia, where the Declaration of Independence was adopted and signed, is the "official" birth-place of America as an independent nation.

Faneuil Hall, Boston, often called the "Cradle of Liberty," and in other places also the thought of independence was given expression with more or less clearness before its formal and authoritative announcement by the Second Colonial Congress sitting in Philadelphia.

Every great movement in human progress is marked or emphasized either in the place of a great occurrence or series of events or by the great influence of some unusual personality or group of earnest heroic souls. While the beginnings of independent America cover many years, reach far in many directions and include many men and women of heroic mold, yet the place and time from which we date the American Republic will for aye be Independence Hall, Philadelphia, July Fourth, seventeen seventy-six. In this building also the National flag was formally adopted in the following year, June fourteenth, seventeen seventy-seven, and here during the long war—from Lexington to Yorktown—the Continental Congress met, except while the city was occupied by the enemy.

Quite naturally in the great exigencies that have come in the life of the nation, the thoughts of the people have reached back to the place of the Republic's birth. Many great meetings have taken place within and in the open space in front of the old hall, and many fervent words spoken from the steps to the fine old Colonial portals, have fired the American heart.

Of all of them, none was probably more picturesque than that February day in eighteen sixty-one when upon his journey to inauguration as president, Abraham Lincoln from those historic steps raised the flag to the staff on the top of the old tower and then in a few sentences of crystal clearness made plain the issues of that tense period to the throng that heard him gladly and realized the sincerity of purpose in a great soul.

A mighty purpose of liberty and

equality so splendidly and courageously pronounced in the old hall, and later so admirably organized in a written constitution, is now given a world-wide significance greater than ever before and under the lead of the flag that from the same staff first greeted the morning sun.

Note.—Our illustration of Independence Hall and the Flag, is a pen drawing in which the sketch of the Hall is from an old wood cut of 1794 made long before modern changes, and shows it as it probably appeared in 1776.

CURRENT COMMENT.

The celebration of our national birth-day has this year a deeper significance than ever before.

Following the same high purpose which fired the patriots of '76, the nation is again preparing to pour out its blood and its treasure in the cause of liberty. The seed which was planted in old Independence Hall on July 4, 1776, has grown into a great tree which has borne fruit of prosperity and contentment for the numerous people of the world's greatest democracy. And the seed of this fruit has been planted in the minds and hearts of the peoples of war ridden Europe where the greatest war of all ages is being waged in the defense of liberty in its broadest sense.

Well may we give to the celebration of our great national holiday a more significant character than has marked similar celebrations in recent years. Well may we consecrate ourselves anew to the principle of liberty, not alone for the people of our own country, but for the people of the whole world in whose behalf, as well as the defense of our own national honor, we have entered the lists in this great tournament between democracy and autocracy. May the celebration of our own national independence be in keeping with the momentous significance of the task to which we have set our hand, as well as of the achievements for which the day is an annual commemoration.

Food Conservation.

Herbert Hoover, recently appointed food conservator, has designated Sunday, July 1, as "Food Saving Day." Ministers will be urged to address their congregations upon the subject of food conservation, and the press will co-operate, as will civic, fraternal, patriotic and other organizations, in the effort to make the movement started on this date effective in conserving the food supply of the people of the United States and our Allies. It is hoped that it may be made the purpose and motto of every household in America to "Save the waste and win the war."

While there is no more thrifty class in the country than our American farmers, and while they lead a simpler and more natural and wholesome life than any other great class of our citizens, which implies less waste, yet wherever opportunity exists to eliminate waste of any kind, it is our patriotic duty to improve such opportunity. The cause is worthy the effort, and every Michigan Farmer reader should co-operate to make the food conservation campaign a successful one in his own home and his own community.

Wheat Week.

July 1-7 has been designated as "Wheat Week" by authorities of the Michigan Agricultural College. This institution has called upon the farm forces of the state to focus public attention upon the wheat crop for the seven days from July 1-7. The county agents, crop specialists and other agricultural forces of the state will be mobilized to attack the problems of the wheat harvest and the equally pressing question of how to increase wheat production for the ensuing crop year.

A definite plan of procedure is rec-

ommended, including the making of plans for the harvest, the making of arrangements for labor and threshers, the forming of "threshing rings," the holding of meetings in the best wheat fields, permitting observation of methods and fertilizers most effective, and what varieties yield best in the community. Since the campaign will cover the succeeding as well as the present wheat crop, the early making of plans for the next crop, including the early ordering of fertilizers and lime which may be needed, the making of plans for the preparation of the seed bed, the securing of high-yielding strains of seed, etc.

The people of the state in general are urged to aid in the harvesting of the wheat crop wherever possible, millers and elevator men are urged to conserve the best varieties for seed, while manufacturers and business men are asked to help in organizing and providing labor and financing the harvest. May the influence of "wheat week" be a potent force in augmenting next year's harvest as well as in securing this year's crop.

On another page of this issue appears an article from the State

Farm Help Specialist, who outlines therein the plan being followed in providing extra help for the haying and harvest season where same may be needed upon Michigan farms. It is probable that this source of assistance in the solving of this problem may be more generally utilized by farmers living in counties in which county farm bureaus are in operation than in counties where emergency agents have been recently appointed and the farmers are not accustomed to utilizing and working them.

Every farmer, however, who needs additional help for the haying and harvesting season, and who is unable to secure same in his own community, should immediately get into communication with the county agent in his county, to the end that the machinery already provided for the distribution of labor during the haying and harvesting season may be utilized to its fullest capacity. This work is sufficiently well organized to afford the farmers of the state much valuable aid in this direction, but farmers who may be in need of help for the haying season should realize that they must act in advance of their actual needs in order to best utilize this source of aid.

In a recent issue comment was made on the plan for est-

ablishing minimum prices by contract, which was advanced by State Market Director McBride. In a recent communication the Director of Markets calls attention to the fact that in placing orders for the initial contract of 50,000 bushels offered by W. K. Prudden, of the State Food Preparedness Committee, he found additional growers who desired to contract their crops. Further contracts have been made possible through the patriotic offer of the Federal State Bank of Detroit, to become the financial and distributing agent for the consummation of contracts made for Detroit delivery. This arrangement forms the needed connecting link between the grower who desires to sell his potatoes on contract at one dollar per bushel, f. o. b. Detroit, and the consumer who would insure his winter's supply of the tubers at an advance of ten cents per bushel to cover cost of delivery over this price.

Obviously, the volume of business done on this basis will depend upon the desire of growers and consumers to avail themselves of this opportunity. Under the arrangement contracts with growers will be signed in triplicate, one copy going to the grower, one to the Federal State Bank and one to the grower's local bank through which payment may be made. Contracts for

20,000 bushels of potatoes will be placed at once with responsible growers by the State Office of Markets, through the medium of the county agents. Growers desirous of contracting on this basis should advise the county agent in his county or the State Director of Markets, East Lansing, Mich.

The success which attends this plan of distribution will depend largely upon the attitude of the growers, who should scrupulously and in good faith carry out all contracts into which they enter. This experiment in direct marketing may prove a long step in the ultimate solution of the vexed problem of marketing. It will at least serve a considerable number of producers and consumers in the present emergency, and will afford a valuable object lesson to a legion of others.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Probably the most important item of news concerning the war is the apparently changed attitude of the Russians who, it would appear, are once more committed to co-operate with the entente allies against the central powers. United States agents have been instrumental in ending the mutiny among the sailors on the Black Sea fleet. The commanders have been reinstated, and the soldiers and workers vote to support the government. Already some activity has been noted on both the European and Asiatic-Russian fronts.—The allied troops operating from Salonika have been concentrated probably for a drive into Serbia.—On the Italian frontier renewed artillery fire is reported and further progress has been made in the region of Trentino. An Austrian attack in the Cordevole Valley has also been driven off.—On the western front the Germans were obliged to vacate additional grounds near the Belgian border. Late last week they forced the French to abandon trenches in the Champagne region, which however, was largely regained in counter-attacks.—The destruction of vessels by submarines increased considerably last week, in fact, approaching closely the high records made in April.—The United States program provides for the landing of 150,000 American soldiers in France this fall, and 750,000 by next spring. The first contingents will be taken from the regular army and the national guard.

Considerable damage resulted from the explosion of Fort Cabanas opposite Havana, Cuba. Much mystery covers the incident, and a commission has been named to make a thorough investigation into the cause of the explosion.

According to information via Amsterdam, the German federal council has decreed that during the coming harvest season all bread grains, barley, oats, peas, beans, buckwheat and millet will be requisitioned in their entirety for control and distribution by the Imperial Grain Bureau.

Seven ammunition shops at Marienhall, Germany, were destroyed by explosions and fire on June 18. Ammunition factories at Nuremberg and the hand grenade arsenal at Spandau have also been destroyed. This information comes through Zurich, Switzerland.

The Austrian cabinet resigned last week and the premier has failed in his attempt to reconstruct the ministry. The court has asked the Emperor to invite someone else to form a cabinet. The fall of the government was due largely to the revolt of the Poles in the Austrian parliament who aspired to a virtually independent kingdom. To force their claims they decided to vote against the war budget which was being prepared by the ministry.

Coal mines in the Fronie district of Calgary are to be opened by the government.

National.

The final tabulation of the Liberty Loan subscription shows that a total of \$3,035,226,850 was subscribed, or 52 per cent more than the bond issue called for. More than 4,000,000 persons subscribed for these bonds. Only twenty-one subscribers applied for allotments of \$5,000,000 or more.

The legal fight before the New York Court of Appeals in which the issue was raised as to the right of various automobile wheel manufacturers to make demountable rims without permission from the Perlman Company, who claimed to hold patent rights on this type of wheels, has been decided in favor of the rim manufacturers and against the Perlman Company. The Firestone Tire & Rubber Company undertook the burden of fighting this case to its successful issue.

Help for Hay Making

By A. L. BIBBINS

State Farm Help Specialists

IN a few days Michigan will be in the midst of her hay harvest. This is of vital importance to the state. We are not likely to consider the importance of this crop, because of its indirect use to us; however, it has a marked effect upon our daily supply of meat and milk, and any loss of it means a general shortage of two of the most important foods that man has.

Especially Important this Year.

Usually we are well supplied with hay, but at present this condition does not exist, as is shown by the present market prices of \$17 for timothy and \$13 for clover. This is ready proof of our shortage. Not only have we our own shortage to consider but we must remember that the horses of our army and perhaps those of our allies will depend upon a portion of the Michigan hay crop to provide the necessary energy with which to carry on the war.

Conditions at Present.

The extension specialists, having been through the state and being quite well acquainted with the general farm conditions, report that our present stand is only about fifty to sixty per cent normal. Usually Michigan harvests about 2,715,000 acres of hay, with an annual yield of approximately 3,632,000 tons. Under our normal conditions this is more than sufficient to care for our farm animals, but with only sixty per cent of a stand it will not allow much of a margin. Due to poor conditions during the year we have already lost about 1,700,000 tons of hay. This is more than we can afford to lose but we are unable to prevent that which is done; however, we can take precautions to guard against further loss.

Labor is Needed.

All that is left for man to do is to harvest the crop. This necessitates the use of horses, machinery, and men in large numbers. The first two factors are usually obtainable in sufficient quantity, but this is not so in the case of the third. The farmers must have men in order to harvest that portion of their crop which remains.

Amount of Men Needed.

It appears to be almost an impossibility to make an estimate in regard to this. Each farmer should calculate his own needs. To aid in solving this problem the following table is offered.

What one man can do in ten hours in the hay field:

Mowing	9.0 acres
Tedding	14.5 acres
Raking	16.5 acres
Cocking	6.0 acres
Hauling and stacking (two men and two horses)	4.5 acres
By hand	6.3 acres
Using sling	6.3 acres

Naturally these figures will vary with the yield of hay, size and shape of field, distance of haul, etc. The above is a general average of our farms in the state, however. The farmer should ascertain his own needs and endeavor to obtain help rather than to try to harvest the crop short-handed and run the risk of loss due to weathering, etc.

How May the Farmer Get Help?

This is a question that immediately arises and one that is very serious. The United States Department of Agriculture is endeavoring to solve this problem for the farmer by placing in each state farm help specialists who co-operate with the Governor's War Board and the county agents. Much success is being met with in other states, and if the farmers of Michigan will make known their labor wants every effort will be made to obtain the needed labor. Notify your county agent or his community leader in your locality of your labor wants, and through the federal organization your requests will be taken up at once.

The above co-operation will fail un-

less the men of the city (especially those who have had farm experience) are willing to lend their aid. The survey of the state which is now being made shows that thousands of experienced farmers are working in the city. Many of these have already signed up to aid for a few days during the harvest period. More are needed.

How the City Man May Enlist.

Any county agent or Y. M. C. A. secretary, or the Food Preparedness Committee at Lansing will gladly accept the offer of your services. Many factors are granting their employees leave of absence to enable them to go to the country for a few days to help with the work. The farmer is paying good wages and supplying excellent board. This is the time to guard against the wolves of hunger and to supply the nation with the most effective bullets of the war.

Efficiency

IN connection with the present food scarcity, it is well to understand that there is no scarcity of land to raise the food on. There are thousands of acres of productive land in central and northern Michigan alone, that are not farmed, some of it partly improved, and some in a wild state. This condition is true, to a certain degree, of every state in the Union.

Scarcity of farm help is the great trouble, and is hard to remedy. Greater efficiency is the answer to the problem. There are scores of ways of applying it. The man unit has got to do more work; not necessarily work harder, but he must accomplish more, raise more bushels and pounds of farm products: How is he going to do this?

On clean land, under ordinary conditions, it is a foolish waste of time, for one man to follow one plow bottom day after day, to the tune of one-and-one-half acres per day, and there are hundreds of thousands of farms in this country where this is the rule. Just think of it: One man spending a whole week to plow ten acres of land when he can by modern methods, with horse power, and two bottoms, plow the same in three days, or better still with the tractor, plow the whole ten acres in one day, by using a night shift. The trouble is we are so used to the old methods, we think we must continue to follow them, and we need a jolt to wake us up. The jolt is here!

Poor crops are often the result of improper, or insufficient tillage, this is impossible where so much time is killed by not working to advantage, if we are so long plowing a field that the planting season is right on our heels, we do not roll and harrow thorough enough to obtain a proper seed bed, and we grow a poor crop, and lessen the production of the farm to just that degree. But the interest on the land continues on just the same, and taxes are none the less; it is a dead loss. And this condition is an unalterable one; that it takes every bushel or pound of a crop up to a certain yield, to pay expenses, and there is absolutely no profit until that limit is passed, and every bushel or pound raised above that limit is all velvet, or nearly so, less the cost of harvesting and marketing at least.

This is a fact that is too seldom taken into consideration by the average farmer. We are too apt to associate efficiency with getting up early in the morning, and going to it until dark, day in and day out. You have all heard about the boy who has often heard his father say that it was "Half in Calculating," who was sent out with the team to work in the morning, and when about noon the father went out to the field to see how the work was

progressing, found the team hitched to the fence and the boy perched on the fence, and when asked for an explanation repeated his father's proverb, and reported he was half done, having spent the entire forenoon calculating. I sometimes think the boy had the principle all right, maybe he applied it too literally; we do not figure enough.

Yes, each man unit has got to accomplish more results and it is up to every farmer to devise ways and means for accomplishing this result.

Isabella Co.

W. J. COOPER.

HOW TO CUT SWEET CLOVER FOR HAY.

Examination of hundreds of acres of sweet clover in different sections of the United States during 1915 and 1916 showed that the stand on at least fifty per cent of the fields was partly or entirely killed by cutting the first crop of the second season too close to the ground. That is the report of a specialist in forage crop investigations of the United States Department of Agriculture, included in Farmers' Bulletin 820, "Sweet clover: Utilization." To prevent the loss of stands, the specialist says, farmers should examine the fields carefully before mowing to determine the height at which the plants should be cut. At least one healthy bud or young branch should be left on each stub. In fact, the plants should be cut several inches above the young shoots or buds, as the stubble may die back from one to three inches if they are cut during damp or rainy weather.

Because of the difference in growth that sweet clover makes on different types of soil and because of the difference in thickness of stands in different fields, it is impossible, the specialist says, to state definitely the proper height to cut the first crop the second season when a second crop is to be expected. When the field contains a good stand and when the plants have made no more than a thirty-inch growth, a five to six-inch stubble usually will be sufficient to insure a second crop. When fields contain very heavy stands—fifteen to twenty-five plants to the square foot—it may be necessary to leave an eight-inch stubble. When the plants have been permitted to make a thirty-six to forty-inch growth, a stubble ten to twelve inches high should be left. In semi-arid regions where the plants do not make as rapid growth as in humid sections, they may, as a rule, be cut somewhat closer to the ground without injury.

The proper time to cut the first crop the second season will vary in different localities, depending upon the rainfall, the temperature, and the fertility of the soil. In no event should the plants be allowed to show flower buds or become woody before mowing. On fertile well-limed soils in many sections, a very rapid growth is made in spring, and often the plants will not show flower buds until about five feet high. On such soils it is essential that the first crop be cut when the plants are no more than thirty to thirty-two inches high, if hay is desired which is not stemmy, and if a second growth is to be expected. In cutting the first crop of the second season it is a good plan to use extension shoe soles on the mower so that a high stubble may be left.

It is not necessary to leave more than an ordinary stubble when cutting the sweet clover hay crop in the fall of the year of seeding. A stubble four or five inches high, however, will serve to hold drifting snow and undoubtedly will be of some help in protecting the plants from winter injury.

In some sections of the country it is difficult to cure sweet clover hay because the stand is ready to cut at a time of the year when weather conditions are likely to be unfavorable for hay making. Succulent plants like sweet clover can not be cured into hay

of good quality unless excellent weather conditions prevail during the haying period. One of the most successful methods for handling sweet clover hay is to allow the plants to remain in the swath until they are well wilted or just before the leaves begin to cure. The hay should then be raked into windrows and cocked at once. The cocks should be made as high and as narrow as possible, as this will permit better ventilation. In curing, the cocks will shrink from one-third to one-half their original size. It may take ten days to two weeks to cure sweet clover by this method, but when well cured all the leaves will be intact and the hay will have an excellent color and aroma. When sweet clover is cocked at the proper time, the leaves will cure flat and in such a manner that the cocks will readily shed water during heavy rains.

In stacking sweet clover, a cover should be provided either in the form of a roof, a canvas, or long, green grass. A foundation of rails, posts, or boards, is desirable, as this will permit the circulation of air under the stack. No instances of spontaneous combustion in sweet clover hay have been noted, says the writer of the bulletin, but this may be due to the fact that comparatively little sweet clover hay is stored in barns. The same precautions in this regard should be taken with sweet clover hay as with red clover or alfalfa.

FARM NOTES.

Plowing Under Buckwheat for Green Manure.

If I should plow under a patch of buckwheat to kill quack grass, what damage, if any, would it do to the ground if plowed when the buckwheat is in full bloom?

Isabella Co.

C. M. B.

The most favorable condition for plowing under a green manure crop as buckwheat would be classed when in bloom are plenty of moisture in the soil and a green and sappy condition of the plants plowed down, which will aid in promoting their rapid decomposition. The slow decomposition of vegetable matter in the soil, as when a large amount of green matter is plowed under in warm dry weather is sometimes productive of injurious results.

When a green manure crop is plowed down too late in the fall when weather is cool, slow decomposition may also take place, with a resulting production of soil acidity. Where a crop is to follow the crop plowed down, it is preferable to plow the green manure crop under three or four weeks before the land is planted to the succeeding crop. Under normal conditions, the plowing down of buckwheat when in full bloom should be beneficial rather than otherwise, particularly on a soil which is deficient in vegetable matter.

Sowing Acid Phosphate with a Grain Drill.

Can I sow acid phosphate with an Empire force feed grain drill? It has no fertilizer attachment but I thought possibly it might work.

Arenac Co.

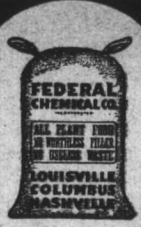
L. R.

Don't try this. The acid phosphate, in fact, any kind of fertilizer, is liable to gum up and clog the feed of your grain drill so that you will have to clean it all out. The feed for the grain is not the right shape for fertilizer. In my estimation, there is only one really reliable fertilizer feed and that is known as the "Bob Wizard" feed. Most all drill manufacturers have finally recognized it, and, as far as I know, they all use this feed, and this doesn't gum up and clog and will work well in all kinds of fertilizer.

If the fertilizer was made real dry you could probably sow it with a grain drill with no bad results, but I know of instances where it has been tried and it clogged up the grain feed so that it was a bad job to get it cleaned out again. I would rather sow the fertilizer by hand than to attempt to use a grain drill for this purpose.



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He has called on you "to omit no step that will increase the production of your land."

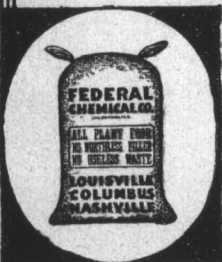
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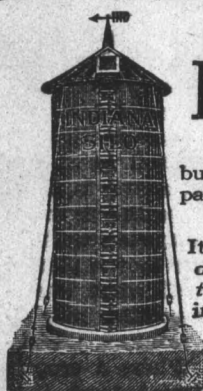
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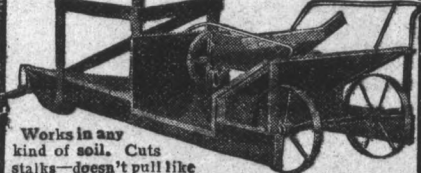
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Dept. H Lincoln, Illinois

Orchard Observations

THERE is never any loss without some gain. Although the intense cold weather we had last winter did damage to the peach crop, and the cold and rainy spring has been anything but ideal for the setting of fruit and the general carrying of orchard work, we have the winter's severe cold to thank for its help in insect control this season and the coldness accompanying the wetness this spring as a check to the development of fungus diseases.

Last winter has had telling effect on the San Jose scale and has undoubtedly had considerable effect on other insects which pass through the winter in various forms. This spring has been an ideal one for the development of aphids, but the writer's observations thus far have revealed but little evidence of early work by this insect.

Very Little Scab.

Thus far the apples and pears are very free from scab. Even unsprayed trees show no signs of it on the foliage. If we had normal seasonal temperature with the rains we have been having, undoubtedly considerable scab would be developed now and plenty of evidence of it would be seen on the foliage.

Fungus diseases, however, develop when weather conditions are right. Moisture and a certain degree of warmth are essential for the development of all fungus troubles, and when these conditions are right the fungus disease develops regardless of season. Therefore, while the fruit may be entirely clean now, scab may develop later in the season, or it may develop as sooty blotch even in fall.

Spraying, especially for fungus diseases, is a preventive, and therefore regardless of conditions one must spray as usual, unless the season is very bad, then there should be more spraying than usual.

Timeliness Important.

Timeliness is one of the chief factors in the successful spraying of fungus diseases, especially. Many persons will make the usual applications and then complain of poor results and even a matter of a few days will make the difference between clean and scabby fruit. The writer has often seen where spraying was interrupted by the weather and the part of the orchard which was sprayed after work was resumed became scabby. The reason for this is that the weather, which temporarily stopped spraying, was scab-producing weather and when once scab is started it is hard to check.

An illustration of the matter of timeliness is the control of the curl leaf on the peach this spring, or any other season when curl leaf is bad. Invariably when curl leaf is prevalent one hears complaints regarding the inability of spraying to control it. Already this season many have made such complaints. The trouble where curl leaf is not satisfactorily controlled by spraying is either lack of thoroughness in spraying or spraying too late. If it is lack of thoroughness the curl leaf will show itself in spots on the tree which the spray failed to cover. If the spraying is too late the curl leaf will be quite general over the tree. This disease starts at quite low temperature and if there is a warm spell in early March which will cause the buds to swell, the curl leaf will start and after started it is impossible to check it. The usual directions for spraying for curl leaf is to spray before the middle of March. Usually if this is done and the spraying is thorough, one can keep the trees entirely free from this disease. Occasionally, however, there is a warm spell early in March which starts buds before the spray is applied, then results are bound to be poor.

Two years ago when we had a rainy season such as these has started out

to be, many did not cultivate their orchards and got better results than those who did, especially in the setting of buds for the next year's crop and the maturing of the wood. The writer knows one peach grower who left his orchard uncultivated that year and it had a very good crop the next year, while his neighbors had very little. Naturally he and his neighbors concluded that non-cultivation was what caused this productiveness and that they would get better results if they did not cultivate, so last year they left the orchards in sod and the drought had telling effect on the orchards and did not bring about the expected results. If matters had just been reversed and the orchards been left uncultivated two years ago and kept well cultivated last year, they would have received the treatment which would have kept them in the best condition.

Thorough cultivation and wet weather, such as we have been having, tend to produce excessive growth, which does not usually set to fruit buds very well and is likely to be rather immature to go into the winter. If the severe weather we had last winter would have followed the wet growing season of the year before, there would probably have occurred some serious killing back of the previous season's growth.

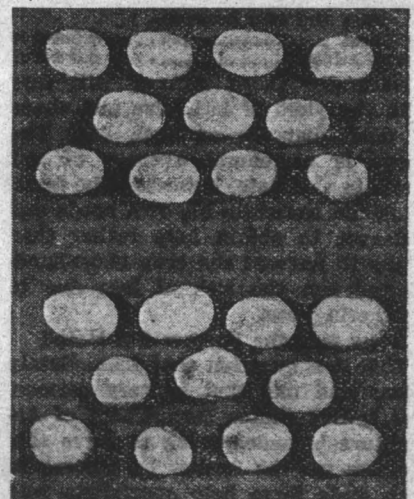
Stop Cultivation Early.

In view of the weather we have been having it is advisable to cease cultivation somewhat early this year in order that the trees will stop their growth at the normal time and harden up the wood. The fore part of July is not too early.

In some cases if the orchard is not cultivated at all it will do no harm, especially apple orchards, provided the grass is cut and let lay where cut, or put under the trees. This, of course, depends greatly upon the character of the soil. The writer has noticed that where the ground grows a good tough sod the trees do better without cultivation than where the grass is somewhat thin. I know of one apple orchard which is never cultivated and which grew very fine fruit during such a dry season as last year, but it has sod in it that is so thrifty and tough that it is difficult to turn under.

POISONOUS BURMA BEANS BEING IMPORTED.

Who are eating of the six carloads of poisonous Burma beans which are said to have been foisted upon the people of the middle west as a cheap sub-



Michigan White Beans at Top, Poisonous Burma Beans at Bottom.

stitute for navy beans? This question is asked by Dr. N. E. Hansen, horticultural expert at the South Dakota State College, who discovered a week ago that imported beans which are dangerously high in cyanogen content—or prussic acid—were being sold for food by innocent merchants. On June 15-16 (Continued on page 738).

Dairy Problems

Selling Butter-fat vs. Milk.

I would like to know which would pay the best, to sell cream at 47 cents a pound for butter-fat, or sell milk at \$1.85 per hundred for a three-and-a-half per cent test? Our milk tests 3.5. This is something a good many of us would like to know, but do not know just how to figure it out. M. A. S.

If your milk tests three and a half per cent butter-fat, 100 pounds of milk would contain three and a half pounds of butter-fat, and you could get forty-seven cents a pound for your butter-fat, then 100 pounds of fat would bring you \$1.65. Now, you could sell it as such for \$1.85, but skim-milk, if properly fed, is worth considerable. At ordinary prices of feed, that is, when corn meal and ground oats are worth \$1.00 per hundred, experiments have been made showing that skim-milk intelligently fed is worth twenty-five cents per hundred, but at the present price of these feeds, it would be worth practically double that, and even more. To be conservative, say this is worth thirty-five cents per pound. That would bring you \$2.00 per hundred for your milk

Soy beans or cowpeas sown thickly will furnish considerable pasture. This makes a most excellent soiling pasture and are better plants for cow food than rape, and some years they furnish an excellent amount of food, but here too many plants are injured by the tramping of the cattle. Sweet clover if it was sown early is liable to go on and make a very good pasture during the latter part of the season.

My judgment is that what we want is pasture for the early part of the season and need simply something to supplement this pasture in the latter part of the season, that it is safer to depend on soiling crops for this purpose than on any extra pasture which may be produced the same season. Peas and oats sown early come to maturity sufficiently so that they can be used as a soiling crop in July. Early sown sweet corn planted early can be used as a soiling crop and works very nicely in supplementing pasture. Different varieties of corn may be planted, that is, early and late varieties, so that they



Twin Jersey Cows, Darling Lassie and Lassie's Darling, Sold for \$4,700 at the Edward Butter Sale in New York. L. V. Walkley, Conn., was Purchaser.

by selling the butter-fat at forty-seven cents per pound. Of course, you have the expense of separating the milk but on the other hand, the cost of keeping the cream and delivering the cream is much less than caring for the milk and delivering the milk sweet.

Late Summer Pasture.

What can I sow that will furnish cow pasture for the late summer and fall? I have lost my seeding this season and will be short of pasture after about July 30. I have six acres of sandy loam, in a fair state of cultivation that grew a big crop of clover last year, but was pastured off very close last fall that I was thinking of sowing to oats and rape. Will the oats keep growing if they are pastured off or clipped? Can you suggest anything better? Would I stand any show of getting a catch of clover if I seeded in this pasture crop? H. S. S.

It is not an easy job to produce a late summer pasture from plants sown during the spring. Rape makes one of the best pasture plants; it isn't an extra good cow food, however. By seeding rape with other plants, like spring rye and oats and clover, it helps out in this respect. The oats and rye will keep growing fairly well if they are kept pastured down so that they don't joint, or if they are clipped occasionally, but none of these emergency pastures will compare with a good permanent pasture in efficiency. There is no sod and the animals tramping over the field destroy many of the plants. In a rather loose soil many of the plants are pulled out when the animals attempt to bite them off and so much depends upon the season that one cannot bank surely on any emergency crop for a pasture.

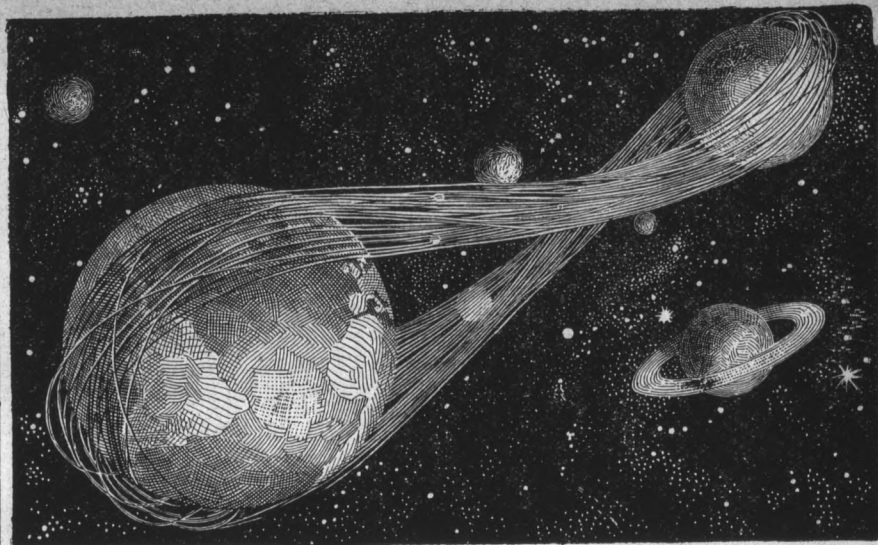
can be fed in succession and I am of the opinion that if this six acres of land was planted to early and late corn and the crop cut green and used as a soiling crop to supplement the pasture that you would get much more food from the field than you will be attempting to make a pasture out of it.

The very best food to supplement a pasture in summer time is summer silage. A man grows the corn crop the year before, it has time to properly mature and it is placed in the silo where it doesn't deteriorate in food value and then the next summer when the pasture begins to fail, the ensilage can be fed. This does away with very much labor and worry about carrying the cows through a summer drought.

COLON C. LILLIE.

Last winter was an unusually severe one in the far western cattle districts, and losses of cattle were abnormally large as a result, hay having given out early as a general rule. Through the region extending from Cheyenne, Wyoming, westward, little feed is to be found, and a man traveling recently from that city to Baker, Oregon, failed to discover a stack of hay.

Very few western spring lambs have arrived on the Chicago market so far, and word comes from Kentucky and Tennessee that there is a short crop in both of these important states. Dry weather has been experienced down there, and the lambs are dried up and in poor condition. All the indications are that there is going to be a marked scarcity of lambs in all the markets of the country up to July 1 at least, and high record prices are fully expected. Because of the dearth of wool the packers have sought woolled flocks eagerly and paid liberal premiums over prices paid for the clipped offerings.



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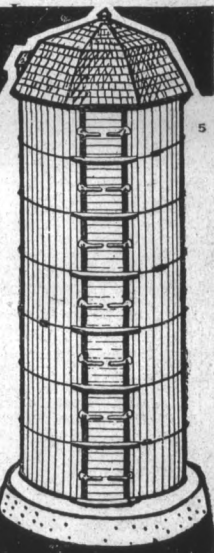
Turn under part of your pasture and plant it to saleable crops. Feed your stock this winter cheaper, easier and more profitably with a few acres of corn cut into ensilage with a Kalamazoo Ensilage Cutter and stored in a Kalamazoo Silo. Stop wasting land that should be used for money crops. This year, you have a chance to make big profits.

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Summer Hog Feeding

By N. A. CLAPP

At the present time farmers may be expected to do business with one, two or three objects in view. First, they are supposed to make an effort to advance their own private interests by working for profits for themselves; second, seek to be public benefactors, and third, work with patriotic reasons in mind. During the present year we have reasons to believe that the general farmer can raise hogs for pork and gratify his ambition in all three directions. There are possibilities for large profits on raising pigs the present summer, and by doing so one becomes a public benefactor, because the general public needs more pork, and, at the same time one is serving his country—is a real patriot. The inducements and rewards ought to be sufficient to stimulate and encourage farmers to make extraordinary efforts in the pork-making business the present season.

We will say in the first place, that there has been a general misconception in regard to the needs of hogs in order to make them grow and produce pork cheaply. People have acquired the habit of considering a hog as a distinctly grain eating animal, while by careful consideration we can see that he is an omnivorous animal and can and will thrive better, making better gains in size and weight if allowed a great variety of feeds, a part of which are grasses and other green feeds. To confine hogs to a grain diet alone is to make pork at great expense and reduce the possible profits.

Although the prices for grains are very high at present, the man who has a large number of spring pigs on hand and an opportunity to utilize pasture grasses and clovers, has before him great opportunities for making large profits from his pigs. Intelligent actions and businesslike methods are what are needed to enable him to succeed.

It has been shown, many times, in actual practice, that pigs, if allowed a

run at pasture, and especially if the pasture feeds are clovers, will make as rapid gains on a half ration of grain feeds and pasture, as they will on a full feed of grains. And farther, the pigs are healthier while running in the fields and make a better quality of meat than when confined to the pens or yards.

Another point I will mention: the pigs make their gains cheaper when young than later in life. Therefore, I will urge the importance of crowding the pigs along early in life. It may require a little greater effort on the part of the feeder than if the pigs are allowed to drift along at a half growing rate until late in the season, and then put them on full grain feeds to fit them for market.

If one is feeding corn, unless they are a long distance from a grinding mill, it pays to grind the corn. If they desire to do still better by the pigs by giving a variety of feeds they can with a greater show for profits, add oats to the ration and grind oats and corn together, and then add half, or an equal amount of wheat middlings, and they have an excellent combination of feeds which will encourage a rapid growth.

In my own practice I have found that it paid to scald the grain feeds, and feed while about blood warm. Regularity in feeding should be strictly observed. The pigs are good time keepers and know when feeding time has come. Promptness at such times saves uneasiness and prevents the squealing habit.

It is also worth the while to make the pigs comfortable by furnishing a dry place in which to sleep and shelter them from the burning midday sun and drenching storms. A love for the business of pig raising and feeding will insure kind treatment and consequently generous profits.

PREVENTION BEST REMEDY FOR CALF SCOURS.

The most common trouble in raising calves by hand on skim-milk is scours. There are two entirely distinct troubles, both of which have the symptoms of scours. One is from navel infection at time of birth and the other is from indigestion. If a calf becomes sick within a few days after birth and dies within a day or two the case is probably navel infection. This trouble is often called white scours because the passages from the animals are generally white.

Indigestion is the cause of common scours. This generally occurs when the calf is from two weeks to a month old. Prevention is the best remedy. The common causes of indigestion are overfeeding; feeding milk cold or sour; feeding sweet milk one meal and sour the next; dirty pails, troughs or stalls.

Each calf should be watched carefully. At the first sign of foul-smelling dung, its source should be determined as this is one of the first indications of indigestion. The amount of milk fed should be cut to one-half the usual amount and a dose of one ounce of castor oil in milk, followed by the formalin treatment, is advisable. The formalin treatment consists in giving one tablespoonful of formalin solution, made by adding one-half ounce of formalin to 15½ ounces of water, in each pint of milk fed. The amount of milk fed may be gradually brought back to normal after a day or two.

Many feeders have obtained good results from the use of blood meal as a means of correcting a condition of scours. Where the case is mild a teaspoonful of the dried blood is added to the milk at each meal.

Preventive measures against scours recommended by L. W. Wing, of the

Missouri College of Agriculture, are: Care against overfeeding; regularity of feeding; conditions of the milk at feeding time; and cleanliness of the pails, pens and stalls. In other words, keep the conditions right at all times.

CORN SILAGE REDUCES THE COST OF BEEF PRODUCTION.

A steer feeding test recently completed at the University of Missouri College of Agriculture illustrates the possibility of reducing the cost of beef production by the extensive use of corn silage. Sixteen head of two-year-old steers fed for 130 days made an average gain in live weight of 322 pounds per head. They were fed 3.16 tons of corn silage, 750 pounds of alfalfa hay, and 503 pounds of cottonseed meal and old process linseed oil meal per steer. They received no corn other than that contained in the silage. By this method of feeding a fairly satisfactory grade of beef can be produced, and it is possible to fatten three steers on an acre of good corn instead of one, which was usual under former methods of feeding.

POISONOUS BURMA BEANS BEING IMPORTED.

(Continued from page 736).

the statement was made to Professor Hansen that six carloads, or about a half million pounds, recently have been received from the Orient by way of Japan and Vancouver, B. C., and have been widely sold through many states, and that larger importations are planned for in the near future.

These poisonous beans are so dangerous that the military authorities of France, Germany and other European countries forbid their importation, especially this year, according to a statement received by Professor Hansen from Professor G. M. Shoemaker, of the U. S. Department of Agriculture at Washington. In fact, each shipment into France and Germany must be accompanied by a sworn statement as to the amount of cyanogen content. Some years the use of these beans causes wholesale poisoning in India.

Dr. Hansen is out with a vigorous protest against allowing the American people to be cheated in this manner, and against the possibility of injury to the staple food of the army and navy. He asks for rigid prohibition against importation to protect against the crippling and possible ruin of the legitimate bean industry of the nation which amounts to many millions of dollars annually. These beans are sold at wholesale much cheaper than the navy beans.

These Burma beans, although about the size of a good-sized navy, have a faint yellowish tinge with many fine lines or rays out from the eye, like spokes on a wheel. There are some colored ones of light brown, dark brown, mottled and speckled, various shades of brown and red brown. These beans are also a form of small lima from Burma but flatter and have the same characteristic rays out from the eye. They are equally poisonous, but at least cannot masquerade for the navy bean. We should guard against these two beans and also other dangerous beans from the East Indies, such as the Java which is even more deadly.

The poisonous principle, according to Mr. Viehoveer, of the U. S. Bureau of Chemistry, is called phaseolunatin, a glucoside, that in the presence of certain enzymes in the intestinal tract may release the cyanogen or prussic acid as one of the products. There is the danger of having sufficient cyanogen released after eating the beans to cause illness, if not death.

Farmers should not let the prevailing attractive prices for live stock influence them to sacrifice breeding animals upon which future profits depend.

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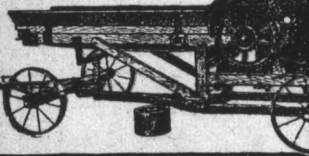
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Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK*
PUBLISHED WEEKLY. *JOURNAL*
ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

ON account of the European war, the importation of drugs into this country was stopped and the imported supply of drugs was soon exhausted. This led to experimental work along the line of drug growing in this country.

One of the most important of the drug plants to be tried out was belladonna. Nearly all of the drug houses have experimented on this plant with profitable results and have sent out information regarding its cultivation. However, experience is the best teacher, and the individual who has the moral courage to investigate a thing for himself, is the one who gets the real, practical knowledge. Doctor Warren H. Rand, of Eaton county, belongs to this class, and what he knows about the growing and harvesting of belladonna would make any wholesale drug dealer green with envy.

War Aids Culture of Drug Plants

By MARY L. DANN

The first year Doctor Rand put out one-fourth of an acre of belladonna, and this yielded 180 pounds of the dried leaves and 100 pounds of roots. Last year (1916) he put one about five acres from which he harvested 1,800 pounds of leaves, 725 pounds of stems and 525 pounds of roots. The market price this year is quoted at \$1.50 for leaves, \$5.00 for roots. Stems are not quoted, but will average about forty cents per pound. The expense incurred in last year's crop is \$2,200. However, Doctor Rand has found, through experimental work that the greater part of the expense in germinating seed and getting the plants ready for field setting may be eliminated.

The yield of this plant depends upon

the soil, which should be rich and well drained, and the culture should be carefully looked after. Weeds should be kept under control at all times and the soil stirred frequently, especially after each hard rain. As the plants are set about three feet apart each way, it is easy to cultivate the soil.

The foliage of the belladonna plant is greedily attacked by the potato beetle. Dusting with lime while the dew is on is sometimes effective, but usually the bugs have to be picked off, as poisonous insecticides cannot be used.

The harvesting of this plant comes late in the season, after most of the farm work is done. After the plant is in full bloom, the tops are cut off and

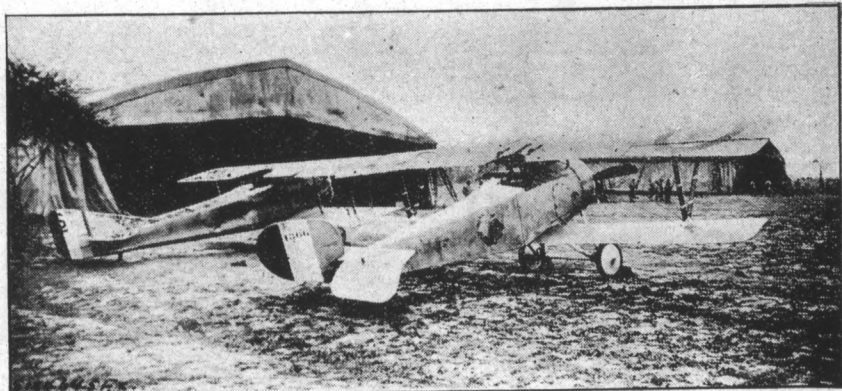
dried in a dark place. The roots are dug, washed and cut into about four-inch lengths. The larger pieces are split lengthwise to aid in the drying. It is essential that the roots be well dried, otherwise they will mould when stored. After the tops are well dried, the small twigs and leaves are taken off, and also the ripe seed. The roots, twigs, leaves and coarse stems are baled separately, an ordinary paper baler being used for the purpose. Each bale is covered with paper, then with burlap, and then tagged, when it is ready for the market.

Doctor Rand believes the commercial possibilities of this plant are very promising, although the cultural demands are such as to encourage the wise procedure of starting in a small way and gradually increasing the area grown as one gains knowledge and experience.

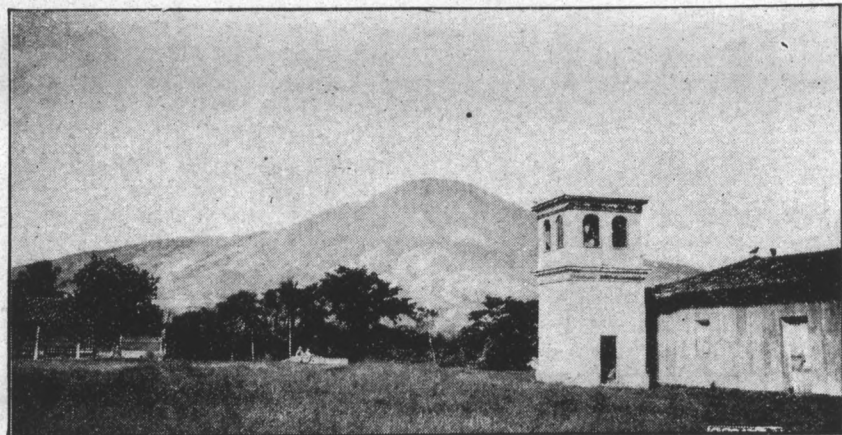
WORLD EVENTS IN PICTURES



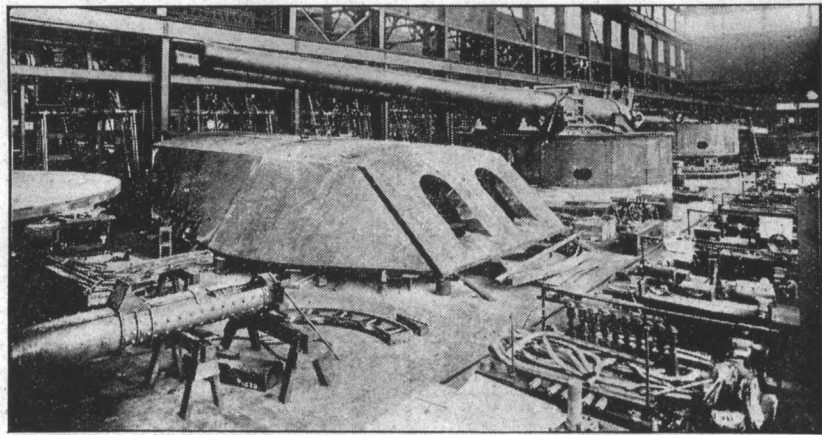
Battery of Heavy British Guns Moved Forward as the Foe Retreats.



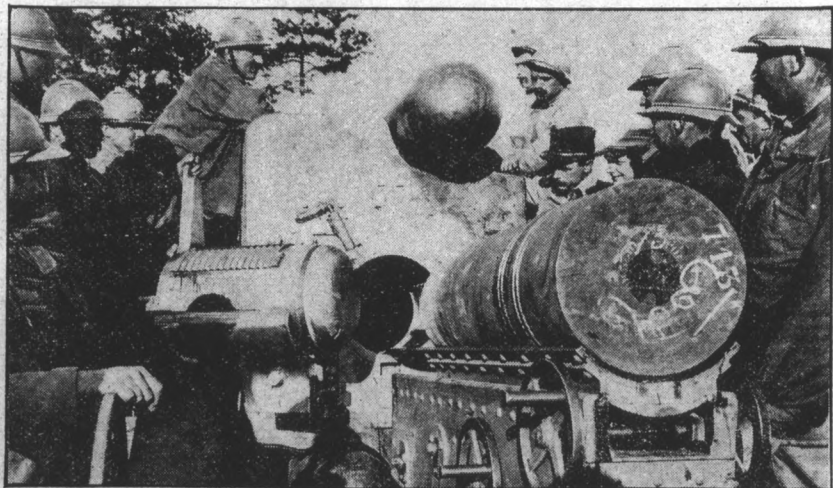
Aeroplanes Used by the American Flying Squadron in France.



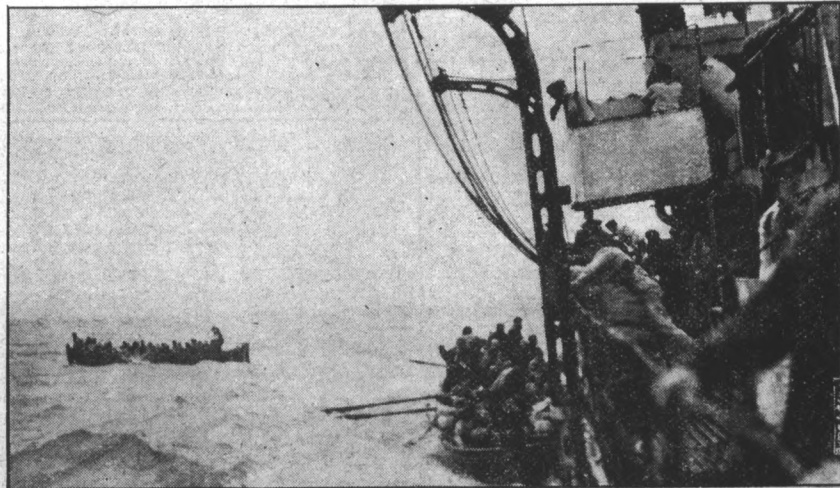
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"Contraband" RANDALL PARRISH

"Your name is Leayord?"
"Aye, aye, sir."
"This is your first voyage on the Indian Chief?"

"No, sir; my third."
"Very good, Mr. Leayord; from now on you will mess aft, and rank as first mate, serving watch and watch with me. Is there a man forward capable of filling the second mate's berth?"

He ran his eyes over the group below rather doubtfully.

"Olson might, sir," he answered finally. "He is sober, and a good seaman."

"Step forward, Olson."
The mass of men parted, and the man was pushed to the front. He possessed a strongly marked Swedish face, smooth shaven, almost boyish

"How old are you, Olson?"

"Twenty-eight, sir."

"You know the sea?"

"Twelve years in the fo'castle, sir."

"All right; I'm going to give you a chance to make good as second officer, Mr. Olson. Now, lads, that's all for the present. I take it you are sailormen and know what that sky means. The chances are ten to one we'll have a storm before midnight, and we'll meet it better with clear decks. Get forward, all hands, and clear away that rattle—lively now."

They were a bit slow about it, and grumbled among themselves. Olson spoke once or twice, although I could not hear exactly what was said, and the power of sea discipline finally conquered. They began shuffling forward, but in no good humor. Leayord lingered a moment to ask me a question; then joined the others on the main deck, roaring out orders in a full voice, which seemed to put some life into the men. I remained at the rail watching rather pleased with the way my newly appointed mates took hold, and confident the men would be kept at it. They were indeed a hard lot, yet possibly no worse than the average, and once they were sobered up, and settled to the voyage, would not probably give me any very serious trouble. Within ten minutes they were working cheerfully enough, and Leayord had ceased his gruff ordering, and stood silent beside the lee rail. It pleased me to observe that Olson took hold along with the others, and did his full share of the work. I leaned further over to gain view of the cabin entrance, but Bascom had disappeared. The girl, however, held her place, and glanced up, her eyes meeting mine.

"Could I come up there, Mr. Hollis?"
"Certainly as a passenger this deck is free for your use. Take the star-board ladder."
I gave her my hand, and helped her to grasp the rail. The sea was not heavy, but there was a nasty roll nevertheless, making it safer to cling to some stable object. She glanced into the mist.

"How gray and somber it is," she said. "The fog is almost like a hand clutching at you."

"The glass is falling rapidly," I answered, "and I suspect a storm is brooding behind that curtain; that is why I am so anxious to make all clear. What do you think of the crew?"

She glanced aside toward the motionless negro at the wheel, and then at the men shuffling about their work.

"I—I hardly know; they—they look awfully rough—and disreputable. Some of them were drunk, weren't they?"

"No doubt, yes. But that is nothing unusual at this stage of a voyage. The ship is not long out of port, you know, and some liquor was undoubtedly smuggled aboard. We'll have a search for it presently."

"You do not think them a bad crew?"
"About the average, I should judge; all sorts and conditions of men, of the kind who go down to sea in ships. The trouble is that you are accustomed only to the passenger service—uniforms and scrubbed faces. We do not often pick that sort of seaman for the rough work."

She didn't speak for a moment, watching the moving figures curiously.

"They were very much dissatisfied with your decision to go on. They did not see us in the companion, and spoke rather freely about it."

"You mean the continuing of the voyage?"

"Yes; they believed the vessel would certainly put back to the nearest American port."

"You heard no inkling of their plans, I presume?"

"Only profane threats."

I laughed. "Well, don't worry, Miss Vera. Those things are frequent enough on shipboard. We will have these lads thoroughly tamed within another twenty-four hours. There is never a mutiny without some leader and a better cause. Those fellows shipped for Hamburg, and to Hamburg they go, unless some cruiser stops us. I am working under your orders, you know."

She glanced up quickly into my face. "Under my orders? No, not that, Mr. Hollis. You told me it would be your choice; I merely granted permission."

"Your permission was equivalent to an order. I so accepted it."

"But that is hardly fair. Not that I regret the choice, for I could never have forgiven myself if my selfishness had ruined Philip Bascom. He is really an old friend."

"So I supposed; a very interesting man in spite of his misfortune."

"He was indeed, before that bullet wrecked him. It is sad; and to think that the one who shot him is actually on board—his guest."

"Not altogether a pleasant thought to me," I said soberly. "For McCann is the kind to breed more trouble if he can find an excuse. I doubt if he suspects as yet who owns this ship, but the two are bound to meet. His tongue has wagged already about the war."

"Yes; that accounts largely for their objections to continue the voyage, although they were ripe enough for revolt before. I shall have to caution McCann, and he does not take kindly to such things."

"You do not consider the man dangerous?"

"Not in the sense you mean. He will never attack openly, or permit himself to be known in any conspiracy. But he will have to be watched, nevertheless. He is the sort to harbor revenge, and as he feels hatred and distrust toward both Bascom and myself, we cannot be too careful. I shall have to tell Leayord the whole story."

"Leayord?"

"The man I named first officer; he is standing abaft the foremast yonder."

"The second officer is a Swede."

"Yes; rather young, but I like his face, and he seems to have the respect of the men." I turned, and gazed into the face of the compass.

"What is your name?" I asked of the black at the wheel.

"Watson, sah; Charles Watson."

"Well, Watson, let her head fall off a couple of points—that's it, my man. Is this the signal cord to the engine room?"

He nodded, the whites of his eyes showing oddly, and I rang for an increase of speed. Watson, bracing the wheel with one knee, wiped his lips on his sleeve. (Continued next week).

Woman and Her Needs

At Home and Elsewhere

A "Safety First" Measure

DR. CAROLINE B. CRANE, in one of her lectures explaining the work of the Woman's Committee of the Council for National Defense, advanced an idea in food conservation which is worth passing on. It is one everybody could observe with profit, not only to the nation but to themselves—"don't eat so much." For it is no doubt true that everyone, with the exception of the very poor, and the small boy who could never by any possibility eat too much, is guilty of the intemperance of over-eating. If we don't do it every day, we do on Sundays and holidays, and excuse ourselves with the plea that it's a celebration day.

But as a matter of fact, nearly everyone could eat less every day and feel better for it. At some one meal we are pretty sure to be guilty of taking so much food we feel uncomfortable, we are hungry when we sit down, and instead of taking time to chew our food thoroughly, we swallow it in chunks, washed down with water, tea or coffee. The result is that we take more than we should, to satisfy us at the time, and end the meal with a feeling which suggests the condition of an anaconda just after he has swallowed a lamb. Our stomachs are filled with a mass of food which is not masticated and mixed with sufficient saliva to be properly digested. Instead of getting all the nourishment possible out of the food, much of it is wasted. Worse than that, poisonous gases are started which lead to many of the ills we pay a doctor to cure.

Even those of us who are not guilty of eating too fast often eat too much. Something looks so good, we are tempted to take a little more, when we have already had all the body needs. "Just another spoonful" is more apt than not to be one spoonful too much. The body gets more fuel than it needs, and the organs are overworked in their effort to eliminate this wasted food.

For health's sake, if not for war time thrift, an "eat less" movement would be a mighty good thing for the American people. We try to feed our babies and small children, not to mention our live stock, wisely, but when it comes to ourselves we do not show the same discretion.

There is another point, too, which women at least should not overlook, and that is the effect on the complexion. Most of the blotchy, pimpled, sallow skins which are covered up with powder and rouge, are due to faulty eating and drinking. Too much sweet and starch, eating between meals, eating at irregular hours, and overstrong tea and coffee are sure to spoil the finest complexion. Then milady hies her to a beauty parlor, if she can afford it, and if not buys cosmetics to cover up defects she could cure by right methods of eating. Think what a saving in toilet articles, not to mention foods, if we all made "eat less and chew more," our slogan.

As a matter of right and wrong, temperance in eating is as much of a command as temperance in drinking. It is as much a sin against yourself to eat too much as it is to indulge too freely in the cup that inebriates, and doesn't cheer. I was interested in reading the list of questions asked the would-be ministers in a certain church. The aspiring young candidates are required to answer such questions as these:

"Do you feel drowsy after meals, and inclined to take a nap?"

"Do you eat until you are uncomfortable and your clothes are too tight?"

The book does not go on to say what will happen to the unlucky wight who answers "yes" to the queries, but I mistrust that he is either refused ordination, or required to sign a pledge agreeing to abstain from gluttony.

Ill-health and old age are often thwarted by so simple a thing as temperance in eating. One of our senators tells how he fought back from a complete breakdown after he was past sixty, by simply regulating his diet. Experience told him what foods he

could safely eat, and these he clung to, giving up absolutely everything which distressed him. He masticated every mouthful perfectly, held himself to regular hours and a limited supply of food, and drank freely of hot water, sipping it slowly a pint at a time. It took months to put him back on his feet, but he won the fight and came back to health and strength.

Every person of forty and over who wants to preserve youthful health, vigor and complexion needs to sign a pledge to eat less, chew more and drink more water, especially hot water. As a matter of personal comfort and health it is the best "Safety First" measure to adopt, and incidentally the cheapest.

DEBORAH.

Canning Currants, Cherries and Berries

THE latter part of June and the first of July are busy weeks with the canning expert. Strawberries, raspberries, currants and cherries are following fast on one another, and blackberries and huckleberries are not far behind.

Raspberries come under the head of sweet, or soft berries, and are canned much the same as strawberries. The syrup should be in the proportion of a half pound of sugar to one quart of water. A half pound, a half pint and one measuring cup of sugar, all are the same amount, so if you have no scales and no graduated measuring cup, remember that one pint of sugar equals one pound. Boil the syrup until it is medium thin, that is, sticky when it cools on the spoon. Then fill the cans with berries, pour over them the boiling hot syrup, adjust rubbers and tops and boil for sixteen minutes. Remember to cover the boiler as soon as the cans are placed in the water and keep the water boiling the full time. Blackberries and huckleberries are canned the same way, and currants may be, too, or a heavier syrup used if they are very sour, using one cup, or half-pound of sugar to three cups of water. Red raspberries keep their color better if this thicker syrup is used with them. This syrup is also used for gooseberries, or they may be canned uncooked, as rhubarb.

Currants may be canned uncooked, or bottled, which will save cans, by the method given for canning strawberries cold, in these columns last year. Stem and wash the fruit, and crush each berry. Add sugar pound for pound, and stir until all the sugar is dissolved. Then bottle and seal. Bottles and corks must be sterilized, and after corking, dip the tops in melted paraffin.

Unless the price of sugar frightens you, be sure to make raspberry jam. Use three-quarters of a cup of sugar to each cup of berries and cook to the desired consistency, watching closely to prevent burning. Do not add water to the jam.

Perhaps no jelly is so universally liked as currant pelly. This is better made with uncooked fruit, though many cook the fruit in order to extract the juice. Wash the currants thoroughly and pick off all bad berries and leaves. Crush with a potato masher, taking care to break each berry. Strain through a jelly bag, flannel makes the best bags, boil the juice from ten to twenty minutes, skimming carefully, then add the sugar, which has been heated in the oven, and boil until the product jellies when tried in a cold dish. Usually from three to five min-

utes is long enough to boil after the sugar is added. Use equal amounts of sugar and juice. Jelly is pour out when a double row of drops form on the spoon, according to the government experts.

No fruit juice will jelly unless it has a sufficient amount of pectin. To test the juice to see if it will jelly, add two teaspoons of alcohol to two teaspoons of unboiled, unsweetened juice. Stir and let settle. If a jelly-like substance forms at the bottom the juice will make jelly. If it will not, bottle and keep to mix with some fruit which will jelly. By using apples the juice of strawberries and other fruits which we do not now use for jelly may be utilized. To bottle the juice, boil up thoroughly, skim and pour into sterilized bottles, cork, seal, lay the bottles on their sides in the boiler and boil for thirty minutes. Pineapple juice and cherry juice combined with apples have made satisfactory jellies, according to the Department of Agriculture experts.

A government suggestion for the use of the cores and inner peeling of pineapples is to put through the food chopper and use for pie-filling. Instead put through the food chopper, cook for one hour, add three-quarters of a cup of sugar for every cup of fruit and boil until it thickens. This gives a preserve which looks and tastes like the familiar pineapple mixture poured over our "sundaes." It utilizes a great quantity of pineapple which we have heretofore thrown away.

If you are short of cans, dry part of your berries. This may be done as your grandmothers did, by boiling the fruit up as for preserves, spreading on platters and drying in the sun. The modern way, however, is to select only perfect berries, and spread uncooked on a clean piece of muslin in the sun, the muslin held in place by weights. The fruit must be looked over each day. When dried out store in paper bags.

Household Editor.—If Mrs. H. C. W. will make a thick paste of linseed oil and wheat flour, she will have excellent filler for cracks in floors. To be used after first coat of paint and before the second has been applied. Also can be used for puttying window panes.—Mrs. R. F.

Household Editor.—I am troubled with big black ants in my pantry, and wish someone would tell me their remedy for getting rid of them.—P. H.

The best remedy I know is to fill a saucer with sweetened water, add one teaspoon of tartar emetic and set it where the ants come.



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Markets.

GRAINS AND SEEDS.

June 26, 1917.

Wheat.—Trading in wheat is being conducted on a lower basis than has obtained in some time and the spirit of the dealing is somewhat mild at the new figures. Traders are waiting upon congress for they do not want to be caught with the grain in their hands. Statistically conditions have changed but little. Winter wheat is now developing normally but the damage done to the crop early cannot be overcome only in part. The lateness of the season should be a support to the market. Foreigners are not taking grain as liberally as they have been, and while there is slight improvement in the flour trade it has not gotten back to normal volume since the recent heavy retail buying. One year ago the price for No. 2 red wheat was \$1.06½ per bushel. Last week's Detroit quotations were:

	No. 2 Red.	No. 1 White.	July
Wednesday	2.50	2.45	2.05
Thursday	2.45	2.40	2.07
Friday	2.45	2.40	2.11
Saturday	2.45	2.40	2.12
Monday	2.45	2.40	2.08
Tuesday	2.50	2.45	2.08

Chicago.—July wheat \$2.09 per bu; Sept. \$1.84.

Corn.—The demand for corn is better than that for wheat and prices are firm. The outlook for the new crop is being clouded somewhat by the lateness of planting which is now so pronounced that the best of weather must obtain to enable many fields to ripen into merchantable grades. A year ago the local trade paid 76½¢ for No. 3 corn. Last week's Detroit quotations were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	1.69	1.71
Thursday	1.69	1.71
Friday	1.70	1.72
Saturday	1.70½	1.72½
Monday	1.70½	1.72½
Tuesday	1.70½	1.72½

Chicago.—July corn \$1.55 per bu; Sept. \$1.45½; Dec. \$1.07½.

Oats.—Oats are in active domestic and foreign demand and values are holding firm. The new crop is promising. One year ago standard oats were sold locally at 43¢ per bushel. Last week's quotations were:

	Standard.	No. 3 White.
Wednesday	71	70½
Thursday	70½	70
Friday	71	70½
Saturday	71½	71
Monday	72	71½
Tuesday	72	71½

Chicago.—July oats 62½¢ a bu; Sept. 52½¢; Dec. 54½¢.

Rye.—Prices here suffered a decline of five cents with cash No. 2 now quoted at \$2.25 per bushel.

Beans.—Buyers of beans are not in evidence and local quotations are down a quarter, being \$8.25 for cash and \$6.75 for October. The Chicago price for hand-picked Michigan pea beans is \$9.50@10 and \$8 for red kidneys, while farmers are offered \$8 for pea beans at Greenville.

Peas.—Chicago market is steady at \$3.75@4 for field kinds, sacks included.

Seeds.—Prime red clover \$10.80; 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 at last week's prices. Creamery extras offered at 37¢, bid 35½¢; creamery firsts offered at 36½¢, bid 35¼¢.

Elgin.—There is not much change

in conditions. Prices are a fraction higher. Price, based on sales, is 37¢.

Chicago.—The market has a steady undertone with prices slightly advanced. The demand is good and the market is kept well cleaned up. Extra creameries 37¢; extra firsts 36½¢ per lb; packing stock 30¢.

Eggs.—Market is steady with prices ½¢ higher than last week at this time. Fresh firsts were offered at 32½¢, bid 31½¢ 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 steady with the demand taking care of receipts. No. 1 hens 23@24¢; small and medium do 21@22¢; broilers 36@37¢; No. 2 broilers 32@33¢; ducks 22@23¢; geese 15@16¢; turkeys 22¢.

Chicago.—The market is steady at prices slightly lower than last week. Fowls 19½¢@20¢; roosters 14½¢; broilers 1½¢@2 lbs., 28@30¢ per lb; ducks 12@18¢; geese 12@14¢; turkeys 12@18¢ per lb.

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

Chicago.—The market is firm and higher; 50@60 lbs. weight 17½¢@18¢; 60@80-lb. weight 18½¢@19¢; 90@100 lbs. 19½¢@20½¢.

Dressed Hogs.—Best quality quoted at Detroit at 18@19¢ per lb.

Chicago.—Market is steady with the prices lower. Heavy hogs in demand. Quotations: 20@40 lbs, 18¢; 40@60 lbs 17@18¢; 60@100 lbs, 17@18¢; 100@250 lbs, 17@18.50.

FRUITS AND VEGETABLES.

Strawberries.—Are in fair supply. Lower prices expected. Michigan's are quoted at \$2@2.25 per 16-qt. case. At Chicago strawberries are in plentiful supply. Common \$2@2.25; fancy \$2.40@2.50.

Potatoes.—No old potatoes quoted in Detroit. At Chicago no Michigan stock was reported. Market is firm, the demand being good. Prices range from \$2.85@3.00 per bushel. At Greenville potatoes are selling at \$2.60@2.70 per bushel. They are about all cleaned up.

WOOL.

This market remains firm and strong with prices pushing upward. Enormous demands are being and will be made upon supplies, not only for regular demands and needed clothing for our own soldiers but also to aid in supplying our allies. This buying pressure and the short supplies even with the new clip considered, gives everyone who has wool to sell confidence that still higher prices will prevail. At Boston Michigan unwashed delaines are now quoted at 60¢; do combing 59@65¢; do clothing 54@56¢.

LIVE STOCK MARKETS.

June 25, 1917.

Chicago.

June 2, 1917.

Cattle. Hogs. Sheep.
Receipts today..17,000 45,000 20,000
Same day 1916..14,841 32,573 16,324
Last week.....50,358 126,926 54,415
Same wk 1916...48,052 156,166 67,180

The week starting off today with only a moderate supply of cattle and an active demand at firm prices, while desirable fat cattle are from 10@15¢ higher. A sale was made of some prime steers at \$13.85, a new high record, while two or three sales were made at \$13.90 a little later. Hogs were irregularly lower, with a few choice hogs selling only 5¢ lower and a \$16 top, but undesirable hogs and pigs broke 10@15¢ or even more, common packers and the poorer light lots and pigs being bad sellers. Most of the pigs sold at \$12.50@14. Hogs marketed last week averaged 229 lbs., or six pounds heavier than a week earlier. Most of the lambs marketed today were consigned direct to the packers from the south, there being approximately 14,000 of these southern springs, leaving only about 6,000 lambs and sheep to be offered on the market. Prices broke from 25@50¢, however, with some prime spring lambs bringing \$18.25, while some fat clipped lambs sold early at \$16.15 and some prime ewes at \$10.25.

Cattle were marketed freely last week, and while the choicer class sold well at high prices, other descriptions had to go at far lower prices than those paid a short time ago. A sensational fall in prices has taken place recently in canners and cutters, and grassy steers are going much lower under the increasing offerings. Plain canners on the grassy order are the hardest to sell, but cutters with some weight and kill are selling fairly well. The bulk of the steers marketed went

at a range of \$11@13.25, with choice to fancy lots taken at \$13@13.80, the top figure being a fresh high record in the history of the market. Steers classed as good sold at \$12.25@12.95, while a medium grade brought \$11.50@12.20 and ordinary to fair light weight killers sold at \$10@11.45, with scattering sales of inferior little steers as low as \$8@9.50. Yearlings that were fat were great favorites, selling at \$11.50@13.50, and sales were made down to \$9.50@10.50 for the commoner kinds. Butcher cattle were in good demand at uneven prices, depending on the quality of the offerings, cows going at \$7.30@11.90 and heifers at \$7.15@12.25. Seventeen prime cows which averaged 1335 lbs. brought \$11.90. Canners were down to \$5.50@6.55 and cutters sold at \$6.60@7.25, while bulls brought \$6.25@11. Calves were higher than ever, with light vealers selling at \$15@15.85 and heavy calves at \$6@13. It was a bad market for stockers and feeders, trade being slow, and prices were much lower, with stockers going at \$6.75@9.75, and feeders at \$9@10.25. Butcher cattle, canners, cutters, stockers and feeders declined during the week 25@75¢.

Hogs were marketed freely most of last week, although much less so than a year ago. Prices fluctuated up and down considerably, but the decreasing proportion of prime heavy barrows showed a good deal of firmness on the whole, a few carloads holding their ground at times when all other hogs were declining sharply. Common lots were discriminated against severely, and part of the time many of the big traders refused to buy rather than take inferior stock. The spread in prices is increasing. With larger receipts for the week than a week earlier, hogs sold at the close at \$14.60@15.45 for light bacon lots; \$14.85@15.60 for the heavy packers; \$15.50@15.75 for light shippers and \$15.65@16.05 for heavy shippers, while pigs brought \$11@14.30. Hogs closed at about the same prices as a week earlier.

Native spring lambs and clipped western and native lambs were marketed in moderate numbers last week, and there were limited offerings of clipped native ewes, with a few breeding ewes; but wethers and yearlings were hardly marketed at all. There was an active general demand and the prices were advanced sharply because of the greatly insufficient offerings. Although the week's receipts were larger than a week earlier, there were still too few, and most lambs advanced 75¢ and most sheep 25¢. Spring lambs closed at \$12@19, and clipped lots sold as follows: Lambs \$8.50@16.75; yearlings \$10@15.25; wethers \$8.50@11.75; ewes \$4@10.75; breeding ewes, including ewe yearlings, \$10.75@17.50; bucks \$7.50@8.25.

Horses were in limited supply last week, and there was a scarcity of good heavy drafters, while not enough war horses were received. Prices were strong for desirable horses, but animals selling at \$60@100 were slow sellers. Horses for the Swiss cavalry sold at \$150@170, and the British inspectors took all the horses adapted to army wants they could get hold of at \$150@205.

Buffalo.

Receipts here today as follows: Cattle 150 cars; hogs 60 d. d.; sheep 6 d. d.; calves 1600 head.

With 150 cars of cattle here today there was a good strong demand for all good shipping cattle, and all the dry grade butcher cattle, the bulk of them selling 25¢ higher, and in some cases the medium cattle looked 50¢ higher, but the medium and common grassy grades were very slow and no higher than the bad break we had last week. The demand for bulls and stock steers was very slow and no more than steady. We look for a fair run of cattle here next Monday and a good trade on all good dry-fed cattle, but a slow trade on the grassers and common grades.

Receipts of hogs were fairly liberal today, demand very light and prices generally 10@20¢ lower than Saturday's best time, bulk selling around \$15.85, a few selected up to \$16 and some ordinary grades of yorkers as low as \$15.25. Pigs and lights generally \$14.50; roughs \$13.75@14; stags \$12@13. A fair clearance was made and we look for quite an active trade at present prices for balance of week.

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

We quote: Spring lambs \$17@19.25; yearlings \$15@16.50; culls to common \$10@14; wethers \$11@11.50; ewes \$10.50@10.75; bucks \$8@9; best calves \$15.25@15.50; common and light \$10@14.50; heavy \$8.50@11; grassers \$6@6.50.

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.

June 27, 1917.

There will be no market Wednesday, July 4. Anything arriving will be cared for, but the scales will not be open.

Cattle.

Receipts 2034. Dry-fed steady; bulls and all grassers dull and 50@75¢ lower than last week, with many still unsold.

Best heavy steers, dry-fed \$11@12; best handy weight butcher steers \$10.25@10.75; mixed steers and heifers \$10@10.50; handy light butchers \$8.50@9.50; light butchers \$7.50@8; best cows \$7.50@8.50; butcher cows \$6.50@7.50; common cows \$6@6.50; canners \$5@6; best heavy bulls \$7.75@8; bologna bulls \$7@7.50; stock bulls \$6.50@7; feeders \$8@9; stockers \$7@8.50; milkers and springers \$5@8.50.

Bishop, B. & H. sold Walk 19 butchers av 650 at \$7.50, 3 do av 750 at \$7; to Bresnahan & C. 25 stockers av 600 at \$6.75, 22 do av 600 at \$6.75, 2 cows av 1035 at \$8, 5 do av 900 at \$6, 3 heifers av 700 at \$6.50, 4 bulls av 1070 at \$7.85, 1 do wgh 1590 at \$8, 2 do av 935 at \$7.25, 2 cows av 700 at \$6.50, 5 canners av 775 at \$5.50; to Breitenbeck 24 butchers av 875 at \$8.25; to Bresnahan & C. 6 canners av 750 at \$6; to Nagle P. Co. 17 steers av 980 at \$10.90, 2 butchers av 850 at \$8.50, 5 do av 1150 at \$8.25; to Goose 18 do av 700 at \$7.35; to Fineman 2 do av 760 at \$6.75; to Newton P. Co. 2 steers av 940 at \$10, 26 do av 980 at \$10.85, 7 do av 800 at \$9, 2 do av 950 at \$11.50; to Bresnahan & C. 2 cows av 900 at \$6, 16 butchers av 1000 at \$7.35, 3 canners av 850 at \$6; to Gobles 5 stockers av 800 at \$8.50; to Hammond, S. & Co. 2 cows av 1050 at \$6; to Mason B. Co. 14 steers av 950 at \$10.50; to Thompson 1 bull wgh 1300 at \$8.25; to Sullivan P. Co. 2 cows av 920 at \$6.10, 2 do av 850 at \$6.50, 4 do av 1000 at \$7.50; to Schlaack 29 feeders av 840 at \$9.50; to Thompson 10 steers av 1125 at \$11, 12 do av 770 at \$9; to Breitenbeck 25 do av 944 at \$9.85; to Kazner 13 butchers av 846 at \$8.50; to Schuaderer 13 steers av 904 at \$10.25.

Sandel, S., B. & G. sold Mason B. Co. 7 steers av 850 at \$9.15, 4 bulls av 1300 at \$8.10; to Bray 1 cow wgh 940 at \$6; to Applebaum 3 steers av 750 at \$9, 3 butchers av 675 at \$7.25, 3 do av 550 at \$7.35; to Sullivan P. Co. 2 cows av 1040 at \$7, 2 do av 940 at \$6; to Thompson 10 steers av 1086 at \$10.75, 1 do wgh 1260 at \$8.60, 2 do av 1010 at \$9.50; to Prentiss 3 do av 787 at \$9.25, 4 do av 800 at \$8.50, 3 cows av 990 at \$7.75; to Hammond, S. & Co. 2 bulls av 1035 at \$8; to Sutton 30 stockers av 699 at \$7.85; to Thompson 3 steers av 1213 at \$9.75; to Weller 32 stockers av 440 at \$6.75.

McMullen, K. & J. sold Applebaum 4 butchers av 650 at \$7 to Sullivan P. Co. 14 do av 850 at \$8.75 to Kamman B. Co. 3 do av 900 at \$9.50, 15 steers av 950 at \$9.25; to Greene 7 butchers av 690 at \$7.35; to Right Bros. 6 stockers av 585 at \$6.75, 3 cows av 950 at \$6; to McMullen 8 do av 700 at \$6.75; to Bray 1 do wgh 520 at \$5, 1 do wgh 1130 at \$8, 4 do av 875 at \$6, 3 do av 910 at \$6, 3 do av 963 at \$7.75; to Brown 6 stockers av 471 at \$8; to McGuire 8 do av 712 at \$8.50; to Kazmer 7 cows av 723 at \$6.75.

Veal Calves.

Receipts 971. Market strong. Best \$15.50@16; others \$10@15.

Erwin, S. & J. sold Parker, W. & Co. 27 av 185 at \$15.75, 2 av 130 at \$12.50, 1 wgh 300 at \$15, 2 av 120 at \$14.50, 8 av 180 at \$15.75; to Mich. B. Co. 13 av 175 at \$15.50, 4 av 190 at \$15.75; to Nagle P. Co. 1 wgh 230 at \$16; to Shipiro 3 av 140 at \$15.50, 4 av 155 at \$15.50; to Thompson 5 av 140 at \$15.50, 17 av 150 at \$15.50, 5 av 145 at \$12.50.

McMullen, K. & J. sold Nagle P. Co. 2 av 150 at \$15.75, 8 av 155 at \$15.75, 27 av 160 at \$15.75.

Sheep and Lambs.

Receipts 512. Market steady. Best spring lambs \$17; fair lambs \$15.50@16; light to common lambs \$12@13; yearlings \$13@14; fair to good sheep \$7.50@9; culls and common \$6@6.50.

Erwin, S. & J. sold Parker, W. & Co. 3 lambs av 85 at \$17.

McMullen, K. & J. sold Nagle P. Co. 24 sheep av 100 at \$8.50, 16 lambs av 80 at \$13.

Bishop, B. & H. sold Parker, W. & Co. 2 sheep av 85 at \$7, 10 lambs av 73 at \$12.50.

Hogs.

Receipts 2952. Pigs steady; others 15@25¢ lower. Pigs \$14@14.25; mixed \$15@15.25.

Report on Condition & Acreage of Important Michigan Crops

To give our readers additional information on the acreage and condition of the various crops grown in our state we have inaugurated a comprehensive crop reporting system including over 400 correspondents who cover closely the important agricultural counties of both peninsulas. The correspondents made reports on conditions of eight important crops as they appeared on June 18, and these reports have been arranged in the following table. The reports on acreage compare the area planted or sown this year with that of last, while the percentages on condition are based on a normal crop. As the season is fully two weeks later than usual the reports on condition should not be given the weight they would ordinarily be entitled to when made on that date.

County.	Acreage Compared with 1916 Crop.								Condition Compared with Normal Crop.							
	Wheat.	Corn.	Oats.	Rye.	Barley.	Potatoes.	Beans.	Beets.	Wheat.	Corn.	Oats.	Rye.	Barley.	Potatoes.	Beans.	Beets.
Alcona	96	101	120	91	105	179	138	60	74	80	91	80	90	89	92	...
Allegan	105	108	105	100	110	112	148	57	81	87	88	74	94	89	100	77
Alpena	94	105	112	84	107	114	122	100	85	73	95	103	90	100	95	80
Antrim	96	92	103	96	70	104	135	...	88	74	88	95	90	78	85	...
Arenac	92	100	112	110	...	65	120	75	67	87	95	92	...	90	98	100
Barry	93	106	100	101	110	122	113	...	65	90	86	120	100	103	100	...
Baraga	115	85	120	100	...	150	...	...	100	90	100	100	...	115	...	...
Bay	76	102	106	85	102	79	145	86	69	76	103	83	102	80	96	99
Benzie	100	125	110	100	...	125	225	...	100	50	90	100	...	100	100	...
Berrien	101	115	107	89	100	138	143	100	90	82	98	97	100	101	100	100
Branch	104	100	97	96	114	120	107	...	74	80	95	94	97	100	96	...
Calhoun	99	107	102	99	80	121	129	...	71	81	85	96	91	97	100	...
Cass	95	103	101	85	75	102	102	...	72	78	84	90	90	96	100	...
Charlevoix	100	106	105	83	100	135	193	...	92	86	98	89	100	98	100	...
Cheboygan	105	110	100	93	100	140	94	300	88	65	90	98	93	92	90	110
Claire	72	104	103	99	100	98	140	95	74	83	90	93	100	94	88	90
Chippewa	112	...	108	...	105	100	...	...	83	...	92	...	98	85	...	...
Clinton	90	108	103	100	110	100	110	113	65	83	75	85	100	95	100	100
Crawford	90	115	100	100	...	125	200	...	40	75	100	80	...	...	...	...
Delta	200	105	75	115	50	75	400	100	50	70	80	75	100	70	80	80
Dickinson	200	100	100	...	100	200	...	...	100	100	100	...	100	100	...	...
Eaton	101	109	98	90	127	101	111	70	73	80	84	86	89	86	91	89
Emmett	98	106	106	101	100	126	166	...	73	57	90	95	91	100	100	...
Genesee	96	105	101	100	95	112	132	86	72	79	89	85	91	95	85	74
Gladwin	95	98	110	90	101	94	139	111	97	82	105	98	98	93	100	85
Gogebic	100	100	110	100	110	132	...	...	90	80	100	100	90	95	...	...
Gd. Traverse	88	110	105	96	100	113	136	...	83	73	100	98	100	100	100	...
Gratiot	84	102	97	100	108	106	121	98	56	65	101	105	97	94	100	103
Hillsdale	98	110	107	99	102	94	115	100	76	92	96	91	100	96	100	100
Houghton	100	100	113	100	90	138	...	...	95	95	...	...	...	100	...	...
Huron	93	90	114	85	102	103	125	94	58	79	92	73	84	93	81	71
Ingham	63	90	97	93	97	100	107	100	68	53	73	79	65	50	...	80
Ionia	95	103	101	98	100	105	114	110	69	85	91	93	...	85	95	90
Iosco	88	107	105	92	93	95	175	102	87	77	92	68	98	83	100	...
Isabella	113	106	104	111	112	116	139	93	64	96	93	81	94	110	125	90
Jackson	101	106	99	103	75	110	135	...	70	81	94	99	88	98	100	...
Kalamazoo	100	104	102	96	106	95	111	...	73	71	83	90	92	73	100	...
Kalkaska	97	109	96	121	85	103	149	...	78	76	76	90	100	85	88	...
Kent	98	94	97	92	98	104	191	...	70	71	88	84	...	96	100	...
Lake	100	108	107	99	...	108	127	...	89	84	100	101	...	96	107	...
Lapeer	96	101	106	88	96	100	109	90	63	90	97	77	95	86	86	88
Leelanau	90	113	105	100	...	108	140	...	79	66	92	90	...	90	80	...
Lenawee	97	113	111	...	97	105	86	100	64	84	98	95	98	108	...	100
Livingston	65	104	101	89	100	105	121	...	73	79	84	87	100	92	...	80
Luce	105	110	110	125	110	125	...	...	98	100	97	100	95	100	...	...
Mackinac	105	103	103	105	100	122	115	...	93	100	100	100	80	100	100	...
Macomb	110	105	100	100	100	133	123	100	85	100	105	105	100	105	100	100
Manistee	101	108	100	95	...	103	154	...	85	86	96	89	...	87	150	...
Marquette	103	110	114	105	105	121	105	...	100	97	110	105	105	105	110	...
Mason	109	98	111	100	100	110	134	...	84	76	95	100	100	95	95	...
Menominee	115	120	105	75	60	160	105	100	100	100	100	105	100	100	100	100
Midland	85	103	118	92	112	122	120	118	53	77	87	65	92	90	97	100
Missaukee	95	113	109	85	100	116	145	...	73	76	93	85	100	93	97	...
Monroe	91	100	106	100	93	76	95	90	85	94	100	91	97	85	87	80
Montcalm	97	103	104	99	100	94	121	100	61	85	95	83	100	80	100	100
Montmorency	83	107	105	92	105	142	138	...	90	65	100	83	97	73	90	...
Muskegon	100	108	98	95	...	110	115	...	85	95	88	88	...	100	...	...
Newaygo	98	107	107	98	100	110	134	90	77	70	97	92	100	92	92	...
Oakland	80	108	105	102	96	93	194	...	73	77	96	94	94	106	85	...
Oceana	98	104	99	76	100	125	157	...	77	76	92	85	80	110	120	...
Ogemaw	200	120	130	150	150	125	150	75	125	85	120	100	100	85	85	75
Ontonagon	101	...	114	125	109	204	133	...	81	...	98	100	98	93	100	...
Oscoda	87	110	99	87	97	98	150	...	77	82	99	88	97	95	110	...
Oscoda	98	109	119	109	100	154	177	...	88	87	94	88	90	98	100	...
Otsego	100	85	100	90	...	133	200	...	100	90	100	100	...	90	100	...
Ottawa	95	97	79	91	73	102	113	74	81	67	95	93	88	76	63	80
Presque Isle	113	83	206	118	100	176	143	...	75	91	81	74	97	100	97	...
Roscommon	...	100	75	118	115	125	113	...	...	100	100	100	100	100	100	...
St. Clair	96	111	115	98	99	107	170	116	80	82	101	90	95	83	90	100
St. Joseph	104	106	106	102	...	96	134	...	80	86	93	97	...	94	...	...
Saginaw	71	100	106	94	93	97	112	97	63	84	100	92	100	93	100	97
Sanilac	86	103	109	99	97	102	135	102	71	87	98	87	98	89	91	89
Shiawassee	92	105	106	96	96	93	117	88	64	81	97	83	97	90	80	95
Tuscola	90	94	111	88	114	102	123	94	74	76	86	87	93	94	94	97
Van Buren	107	109	100	96	...	124	141	...	84	86	88	90	...	90	100	...
Washtenaw	98	111	104	96	102	102	129	120	79	84	91	97	97	100	90	100
Wayne	100	120	100	90	100	75	100	...	110	90	100	110	90	100	100	...
Wexford	97	100	91	98	...	112	131	...	72	72	83	75	...	87	100	...

NEWS OF MICHIGAN CO-OPERATORS.

Manager C. S. Baldwin, of the Union Co-operative Live Stock Shippers' Association of Bennington and Laingsburg, Shiawassee county, reports an increase to 120 members. Two cars were shipped May 27 and net prices to the farmers were as follows: Butcher steers \$9.69; butcher heifers \$9.59; canners \$6.34; top veals \$14.55; seconds \$14.05; thirds \$11.55; fat ewes \$11.02; yorkers \$14.85; pigs \$13.27; roughs \$13.60.

The Farmers' Elevator Company, of Freeport, Barry county, has increased its capital stock to \$10,000 and will install a new engine and recleaner.

The Southern Barry Co-operative Shippers' Association has been formed at Cressey, in Barry county, and will ship live stock and buy feed, etc., for its members. Farmers about Delton

have also become dissatisfied with the old method of selling live stock and have now formed their own shipping organization.

A. L. Robbins has been engaged as manager of the Bangor Fruit Growers' Exchange in Van Buren county. Kent Co. ALMOND GRIFFEN.

AMERICAN BUNCHERS SAVE THE CLOVER SEED
In one day's use it saves its cost. Write for catalog showing how to harvest clover seed.
AMERICAN BUNCHER CO., Indianapolis, Indiana

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.

EGG'S We want new laid stock and can pay top prices for them.
AMERICAN BUTTER & CHEESE CO. Detroit, Mich.

MINERAL ^{used over} **HEAVE** ¹⁵⁰ **COMPOUND** ^{years}
CURES HEAVES
Buckley Free
\$3 Package guaranteed to give satisfaction or money back. \$1 Package sufficient for ordinary cases.
MINERAL HEAVE REMEDY CO., 483 Fourth Ave., Pittsburg, Pa.

LOOK! DUCKLINGS
Woodford strain of White Egg Pekin Ducklings. Flock average about 115 eggs per duck per year. All white, no green or tinted eggs. \$7 for 25; \$13.50 for 50; \$26.00 for 100.
NABOB HATCHERIES, GAMBIER, OHIO

A few pairs of homing pigeons for sale from Majestic Squab Co. stock. Reasonable price for quick sale. RALPH E. ORANDALL, Imlay City, Mich.

WOOL
Write us about consigning your wool to us.
W. L. IRELAND & CO., Grand Ledge, Mich.

Seed Buckwheat
\$5.00 Per 100 Lbs.
Bugs Extra At 25 Cents Each
YOUNG-RANDOLPH SEED CO., Owosso, Mich.

Wasted Grain and Time Could Have Paid Your Thresh Bill

Save your grain from the straw stack. Hire the man with a Red River Special, or get our "Junior" Red River Special and thresh your own grain. "We know that this separator saved enough grain to pay our thresh bills," says W. B. Sharp and 13 other farmers of Cordell, Oklahoma, after threshing with a

Red River Special

It Saves the Farmer's Thresh Bill

Here's the thresher that's different. It beats out the grain. Built for fast work too. Saves the farmer's and thresherman's time—crowds more bushels into the day's work and more good jobs into the season's run.

Our

POULTRY.

LOOK! BABY CHICKS \$9 a 100 up

Live Delivery Guaranteed
Odds and Ends, \$9 a 100. Leghorns, \$10 a 100. Banded Rocks, White Rocks, White Wyandottes, Anconas, Black Minorcas, Light Brahmas, Buff Orpingtons, R. I. Reds, \$12 a 100. White Orpingtons, \$18 a 100. Campines, Black Orpingtons, Speckled Sussex, Buttercups, \$20 a 100. 10 day old S. C. White Leghorns, \$30 for 60. \$50 for 100. Eggs, \$7 a 100 up. Catalogue Free. Stamps appreciated.

NABOB HATCHERIES GAMBIER, OHIO.

Baby Chicks

From Standard Bred S. C. White and Brown Leghorns, \$10.00 per 100; \$90.00 per 1,000. Bred to lay large white eggs. Safe arrival guaranteed. Catalogue free. WOLVERINE HATCHERY, Box 2221, Zeeland, Mich.

Baby Chicks and Hatching Eggs

From Bred-to-Lay Banded Rocks, S. C. White Leghorns and B. C. Buff Orpingtons. All high class stock at very reasonable prices. Send for our Chick Folder at once. RUSSELL POULTRY RANCH, Petersburg, Mich.

Yearling Hens For Breeders

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

Baby Chicks Cheaper than hatching eggs. We specialize in Leghorns, Rocks and Reds. Send for catalogue. Twentieth Century Hatchery Company, Box 162, New Washington, Ohio.

CHICKS

TIFFIN POULTRY FARMS & HATCHERY, Dept. 16, Tiffin, Ohio.

JOHN'S big beautiful hen-hatched Banded Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$3, \$2.50, 100, \$7. Circulars. Photo, John Northon, Clare, Mich.

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

Ferris White Leghorns

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

GEORGE B. FERRIS 934 Union, Grand Rapids, Mich.

LAYBILT S. C. W. LEGHORNS

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Proved egg type from like ancestry. Not the "Best in the World," but None Better for beauty and laying ability. Laybilt Leghorns mean either better quality at the same price or the same quality at a less price. Selected hatching eggs, \$1.50 per 15. Parcel Postpaid: \$5 per 100; 90% fertility guaranteed. Strong Day-Old Chicks, now \$10 per 100. Hatch every week. Guaranteed delivery alive and lively. Everfresh Egg Farm, Ionia, Mich.

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Poultry Query Department**Feeding Chicks.**

I have been losing my incubator chickens. They have the diarrhoea when they are about four days old, and are all sick about the same time, and drop, as many as 11 and 12 a day. I feed them bread crumbs with pepper in after the first 24 hours, but they do not eat good on the start. I would like to know the cause of it. I keep my brooder cleaned out and fresh straw in it all the time.

Lapeer Co.

D. A.

I do not think that the bread crumbs and pepper you are feeding the chickens contains the essentials for developing vigorous chicks. It is not advisable to feed stimulants such as pepper to young chicks, and the bread crumbs are practically only starchy material, and lacks in the protein and bone-making material so essential for the development of chicks.

Instead of this it would be advisable to feed following mixture: One handful of rolled oats, three handfuls of bran and one raw egg. Break the egg into a small amount of the bran and mix it thoroughly, after which thoroughly mix the egg-coated bran with the rest of the mixture, so that each particle has a little of the egg on it.

This mixture should be fed five times a day, starting about thirty-six hours after hatching. This should always be fed in proportions so that there will be one egg at each feeding for every one hundred chicks. After a few days you can gradually substitute the commercial chick feeds for this mixture.

A very good first feed is a dry mixture of bran and grit. This furnishes the chicks with the grit essential to grind the feed, and also starts digestive operations.

It would also be advisable to feed the chicks sour skim-milk or buttermilk from the very start. Your chicks are undoubtedly affected with what is called white diarrhoea, and the feeding of this milk will do much to prevent it.

Harvest Mite.

Would like to have you give me a good ration for raising incubator chickens. I have fairly good success in the hatching, but do not seem to be able to raise them. I feed them mostly rolled oats the first week or two, then use the chick feed. They also have all the sand and gravel they want. I have an outdoor brooder. Most of the ones I lost seemed to have a spasm, would stiffen out like dead, then after a time would get up and walk around, but were weak. After a few days they would die.

Missaukee Co.

G. M.

Your method of feeding your chicks is not at fault, and would not cause the trouble you are having.

However, if you wish to improve your method of feeding, I would suggest that you read the article in the Michigan Farmer of June 9, entitled, "A Simple Method of Chick Feeding."

The cause of your chicks' death is probably the harvest bug. This is a minute brick-red mite which is prevalent on berry and currant bushes and often causes considerable mortality among late-hatched chicks. The mite fastens its claws into the chick and produces intense irritation and brings about spasms such as you mention. Dusting the chicks with flowers of sulphur is an efficient means of eradicating this mite.

Liver Trouble.

Can you tell us what causes our hens to die? We moved on a place where they had been losing poultry through what they called cholera. But we used a good disinfectant and cleaned everything good. We keep the coop well cleaned and sprayed and still they die. We doctored them for cholera. I do not think it is that. We killed one and found white spots on the liver, with some enlargement. They dump around a few days and finally die. I never lost any poultry before and am very anxious to check it as it means something to lose them just at this time every year.

Jackson Co.

C. T.

The prominent symptoms of fowl cholera is the yellow color of the

prates, the part of the excrement secreted by the kidneys. This is usually white when the fowl is healthy.

Undoubtedly your hens have liver trouble, which is frequently caused by the feeding of too much nitrogenous food, and by the lack of exercise. The treatment consists of cutting down the amount of beef scraps and other nitrogenous foods and the feeding of more green food. The amount of corn should also be cut down, and the birds should be compelled to exercise for their food.

When a flock has become badly affected with some form of liver trouble, the change in feeding will not remedy the trouble at once. The causes of this trouble have been working for a long time, and therefore it cannot be expected that the disease can be rapidly eliminated.

Some poultry authorities claim that the most satisfactory way, if the flock is quite seriously affected, is to get rid of the entire flock and start a new one. Medical treatment is of little value in this trouble, but the substitution of green feeds for some of the heavy nitrogenous feeds, and plenty of exercise, is of great importance.

Bee Queries.

I remember seeing an article regarding the making of homemade bee hives in an issue of the Michigan Farmer last fall, but now I cannot find it so am going to ask a little information on this subject. Recently I purchased a home-made hive body and super, the body measuring 13½x13½ inches by 10¾ inches deep inside measurements, and the super is 5½ inches deep. There were a few frames in the lower chamber, and I made some more similar one's, so that it now holds nine frames. Is it really necessary to buy fittings or wax foundations for the frames? If so, what would be necessary? I suppose the frames for the super would be made the same as for the brood chamber, except shallower, would they not? The honey would be used at home, of course. I intend to buy a complete hive or hives for future swarms, but would like to make this hive do for my first swarm of bees. All that I know about bees at present has been gleaned from papers, and as I do not know much about their habits or methods of filling the hive, please be quite plain in your reply.

Van Buren Co.

P. H. R.

We would advise you to use medium brood foundation in the frames of the hive proper. For the supers would recommend the use of light brood foundation.

This foundation can be purchased of any bee supply house, and is from three-quarters to one inch wide, and is very useful, because it gives the bees a foundation upon which to start their combs.

In placing the hives, one must use special care in having them level. Bees always make their comb perpendicular, and if the frames are tipped, the comb of one frame may cross into the next frame, which would make it very difficult to get the frames out.

If you are just starting a swarm of bees in your hives, it would be best not to put any supers on for at least three days, so as to give the bees time to make their brood comb in the brood chamber. If the supers are put on before this time, or if no queen excluder is used between the super and the brood chamber, much of the brood comb will be started in the super.

For the new hives which you intend to purchase, I would recommend the ten-frame Langstroth hive. This hive is the most popular among bee experts and can be purchased from any bee supply house.

If producing extracted honey, raise the brood chamber up and place a full extracting body below to give more room for the queen.

Clip one of the wings of all queens, to prevent the swarms from leaving, if they issue.

Veterinary.

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

Tuberculosis.—Heifer fresh eight weeks ago has light discharge of mucus from nostrils. Is quite thin, coughs considerable, breathes rather short and much faster than normal. She has lost flesh rapidly and I have stopped milking her. What do you advise me to do for her or with her? O. K. T., McBain, Mich.—Perhaps she suffers from tuberculosis and if so she should be destroyed. Have her tested with tuberculin and a physical examination made of her by your local Vet. Her recovery is decidedly doubtful.

How to Prevent Navel Infection.—Kindly describe how colt should be treated at time of birth, so as to avoid navel infection. L. T. H., Rapid City, Mich.—In order to be doubly sure of preventing navel infection, first prepare a clean place for mare to foal, the box stall should be thoroughly cleaned, disinfected and whitewashed with fresh lime wash, clean bedding supplied, the udder of mare washed clean. When colt is born sponge off lower part of abdomen with one part bichloride mercury and 1000 parts of tepid water, then paint cord with tincture iodine; also paint cord daily with one part tincture iodine and three parts glycerine until cord shrivels and the wound heals. Now this is only one method of treating the navel of newborn animals, there are many other home healing remedies which possess more or less merit. Colts born out in the pasture field are not likely to suffer from navel infection.

Loss of Vision.—Infected Udder.—I have a horse with white spot on one eye, causing blindness, other eye now inflamed and seemingly going the same way. What can be done for him? I also have a cow that had badly diseased bag when dried last season; now she has come fresh and our local Vet. tells me she will not get well. What do you say? W. C., Pittsford, Mich.—Doubtless your horse suffered from chronic periodic ophthalmia, which is now resulting in cataract and loss of vision. Dry and fatten the cow, she is incurable.

Stomach Worms.—Our eight-year-old mare is troubled with stomach worms; have given her some medicine but it fails to help her. Have two colts which occasionally pass few worms; what shall I give them? E. K., Holly, Mich.—Give her 1 oz. of rectified oil of turpentine and one pint of raw linseed oil once a week for three weeks, or turn horse and colts on grass and they will purge enough to get rid of their worm and bots.

Foreign Body in Stomach.—About a week ago our cow was taken sick; called local Vet., who treated her for chronic indigestion. She seems to have lost appetite, fails to chew her food and breathes as if in pain. A. G., Gaines, Mich.—I am inclined to believe she has swallowed a nail, piece of wire or some other foreign body which may produce fatal results. Ask your Vet. to keep watch of the case. Grass is the best feed and raw linseed oil a safe remedy to keep the bowels open; however, it may not be needed.

Barren Heifer.—Have a 16-month-old heifer that has not yet been in heat; would like to know what can be done with her. G. N. W., Lawrence, Mich.—You had better wait until July 1 and if she fails to come in heat before that date, sell her for beef. Give her 20 drops of fluid extract of nuxvomica and 30 drops of fluid extract capsicum at a dose in feed twice a day.

Horse Slavers.—Serious Abscess.—I have a four-year-old horse that slavers badly when driven; our local Vet. claims that there is nothing wrong with teeth or mouth. He is as bad in winter as in summer. I also have some pigs two weeks old that are seeming well, but some of them have bunches on them which are filled with yellow fluid. Have opened sack, but it soon fills again. A. C. B., Caro, Mich.—When your horse is five years old and has a full set of permanent teeth he will perhaps cease to slaver. In many cases it is the result of neglect in biting colt properly before driving in harness. A change of bit or working him in halter might overcome this trouble. Open sacks freely and dust on boric acid twice daily, this will soon heal wounds.

Rheumatism.—We have a litter of pigs six weeks old, some of them seem to be crippled in hind quarters, one of them died. Have been feeding bran, middlings, sour milk, oats and meal. C. M. F., Holton, Mich.—Your pigs should be kept in dry clean place and expose them to sun and light. Add some cooking soda to their milk and feed less corn meal.

Jerseys and Duroc Jerseys

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Sale of Duroc Jersey Bred Sows, Spring Pigs and Fall Boars, August 2.
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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 10 months, one 2 months, all out at a Jr. 2 year old. Another 21 lbs. in butter 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.

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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 record milk cow and his sire is a son of a world record butter 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

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Holstein Bull Calves from a 30 lb. 6.53 Sire. Dam are grand daughters of the King of the Pommes. Their dam grand daughters of Sam's Vale Concordia the first 30 lb. cow. Edwin S. Lewis, Marshall, Mich.

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

FOR SALE Reg. Holstein heifers, 8 months old. Large, finely marked and thrifty. Price \$100, crated at depot. O. L. RULETT & 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 3 to 6 mos. old. Some from 30 lb. sires. Priced to sell. Fred J. Lange, Sebawaing, Mich.

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30-21 lbs. sire. Their dam's 30 lb. cow, bred to 30 lb. A. R. O. sister to dam of 35 lb. cow, bred to 30 lb. A. R. O. old. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

Reg. Holstein Friesian Cows and Heifers, some A. R. O. Sires. Heifers nine 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.

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

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

Shorthorns For Sale. Young bulls \$100. Bred cows. Write W. J. BELL, ROSE CITY, MICHIGAN.

Shorthorns—Dairy 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. W. C. OSIUS, Hillsdale, Mich.

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 Maxwellton Sultan, 19 mos. \$350. C. Carlson, Leroy, Mich.

Cattle For Sale

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

POLLED Durham Heifers. Bulls ready for use and younger. Shorthorn blood except the horns. FRANK BARTLETT, Dryden, Michigan.

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 Glts from prize winners sired by one of the best Sows of the Great Defender & other noted strains. M. T. STORY, Lowell, Mich.

BERKSHIRES

We have 10 selected glts bred to farrow in August and September. All long bodied, growthy type. Are bred to our Junior Champion boar, Detroit 1916. They will go fast at \$55 each. All stock guaranteed as represented.

SWIGARTDALE FARM

PETERSBURG, MICH.

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

Berkshires. Bred glts 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:—Glts bred for July and Aug. farrow. March pigs ready to ship. Large type. F. W. ALEXANDER, Vassar, Michigan.

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

DUROCS

A few fall boars at \$30 to \$40 each. One 2 yr. cow, sired by Oak. Ohio Chief 28733 bred to Brook. Am. Col. 5333 due to farrow June 20th. A very dependable sow, raised 9 pigs last litter. Price \$75. NEWTON BARNHART, St. Johns, Michigan

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

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

DUROC Jersey fall Boars, ready for spring service. Also Glts bred for Aug. and Sept. farrow. Spring pigs, pairs not akin. All stock shipped on approval. F. J. DRODT, R. 1, Monroe, Michigan

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

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

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

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

Durocs Big boned March boars sired by grandson of Volunter. One July yearly 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. An extra fine lot of last spring pigs, either sex and not akin, from good, growthy stock. Farm 1/2 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 Glts 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. C. J. THOMPSON, Rockford, Michigan

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

O. I. C. bred sows and glts all sold. A few long bodied heavy boned fall boars to offer. G. P. ANDREWS, Dansville, Michigan

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

BIG TYPE POLAND CHINAS

Boar Pigs from the CHAMPION and GRAND CHAMPION and our other GREAT HERD BOARS and big STRETCHY SOWS of very best breeding and individuality \$20.00 each if ordered now. 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 glts all sold. Nothing for sale at present. W. E. LIVINGSTON, FARMA, MICH.

Big Type Poland Chinas April & May pigs from big stock with lots of quality. Stock guaranteed as represented. Prices right. L. W. Barnes & Son, Byron, (Shiawassee Co), Mich.

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

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

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

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

Big Type Poland Chinas Sept. farrow, either sex, sired by Jumbo Wood, 900 lb. hog. A. A. WOOD & SON, Safford, Michigan

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

Additional Stock Ads. on Page 743

THE GRANGE AND CLUBS HELP.

The Woman's Committee (Michigan Division), Council of National Defense, has fifteen departments of work, and none is more important than that of the Committee on Food Production and Marketing, with its two divisions of farming and gardening. Mrs. Dora H. Stockman, State Lecturer of the Grange, is chief of the department, and Mrs. Cornelia Steketee Hulst, of Grand Rapids, chairman of the Garden Committee of the Michigan State Teachers' Association, is chairman of the sub-section on gardens. Other members of the general committee are: Mrs. J. C. Brown, of Howell, State Secretary of Farmers' Clubs; Miss Jennie Buell, of Ann Arbor, Secretary of the State Grange; Mrs. Emily Warner Green, of Dowagiac, head of the Home Economics Department of the Grange; Mrs. Francis King, of Alma, President of the Woman's National Farm and Garden Association; Miss Mary Grosvenor, Supervisor of School Gardens, Detroit; Mrs. Cora Anderson, of L'Anse; Mrs. Lena Mantner, of Saginaw; and ex-officio, Mrs. Caroline Bartlett Crane of Kalamazoo, General Chairman of the Woman's Committee for Michigan.

A recent meeting of this committee was held in Grand Rapids, when the

work was outlined. The first principle laid down is that every woman who possibly can do so should provide for the needs of her own family by raising a sufficient supply of the kinds of foods that can be preserved, canned, dried, or stored in the natural state for use throughout the coming year.

1. Because the government is now commandeering canned goods for our soldiers and for the allies, and the prospect is for a continued heavy exportation; hence it is unlikely that we will be able to purchase canned goods this next winter.

2. Because, in any event, if we provide for the needs of our own families, that takes us out of the market, and we thus voluntarily increase the food supply that helps to win the war.

The committee asks the co-operation of all city women in being ready to buy fruits and vegetables of the farmers in quantity in their season, to can, dry, preserve and store; thus saving waste and cost of storage to both producer and consumer. This it is believed, will save nearly a twenty-five per cent waste of products.

The farm production section suggests that women's organizations in the country (a) encourage boys' and girls' club work; (b) adopt the slogan of "double the poultry production of Mich-

igan this year; (c) encourage the bee industry, and the saving of all breeding stock on the farm.

The gardening section recommends that groups of women in the cities visit children's gardens and encourage them to take the best possible care of them; also that women assist the children in marketing surplus products.

And to help the boys and girls and all amateur gardeners to persevere, the garden section of the department proposes to have some natty little buttons in the flag colors, with the motto, "See it through."

Red—White—Blue,
"See it through!"

These little buttons are calculated to stimulate courage against the onslaught of potato bugs and weeds and "the weather;" and it is expected that all who wear them will "show their colors," both as gardeners and patriots, right up to the end of the harvesting and canning season.

The actual canning and drying of foods is to be under another department that of Household Thrift and Food Conservation, of which Miss Paulina E. Raven, of the Extension Division, Michigan Agricultural College, is chief. Mrs. Stockman and Miss Raven will work in closest co-operation throughout the state. JENNIE BUELL.

CLUB DISCUSSIONS.

Price Fixing.—The more cloudy the day the more sunny should be the smile," was the very fitting sentiment for the Washington Center Farmers' Club, which met at Fair Acres, the home of Mr. and Mrs. Eugene Wagner, Thursday afternoon, June 14. The house was called to order by President F. L. Cook. Miss Lena Wagner opened the program by furnishing piano music. Roll call was responded to by naming a household pest. Miss Etta Wagner rendered a selection of piano music. The subject, "Mothers and Their Daughters," was led by Mrs. F. L. Cook. Daughters do not always understand why or appreciate the advice given until in after years they can see where mother was right. "Patent medicines and Drugs," was led by Mrs. Tobey. Persons using patent medicine would be very much better off by using less medicine and live closer to the rules of hygiene. Patent medicines are very much better for the manufacturer's pocket-book than for the stomach. A select reading, "Worth While," by Mrs. Clarence Henson, was very much appreciated. Music by Mrs. Gilman, followed by an interesting talk on Belgium by Mrs. Henry English. Mr. Cook read some well-made rules for automobilists, which if enforced would make traveling less dangerous for those using horses. The question, "Should the government put a minimum price on food stuffs and a maximum price on manufactured articles?" was discussed in favor of the affirmative.

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