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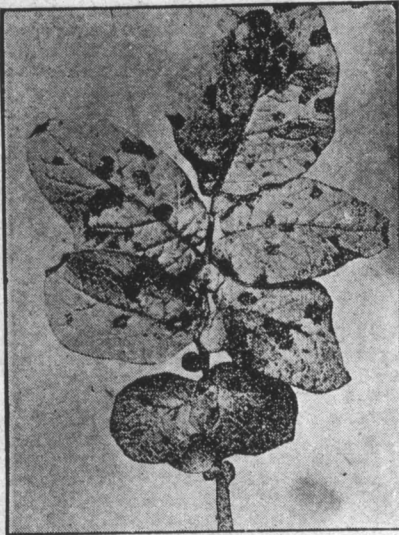
DETROIT, MICH., SATURDAY, JULY 21, 1917

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Potato Blight--"No-Top" Potatoes

By C. W. WAID

State Potato Specialist



Early Blight.

MUCH more interest than usual is being taken in the question of late blight on potatoes. This is in part due to the fact that the growing of potatoes this season has necessitated a much larger investment than under normal conditions. Then, too, some growers hope that prices next year will be as good as last, and they do not want the blight to reduce the yield.

The injury done as the result of late blight depends largely, each season, upon the weather conditions through the months of July, August and September. If the first part of this period is cool and rains are frequent as has been the case this season, conditions are favorable for the blight to start development. In 1915 the first evidence of blight which the writer saw was about the middle of August. It may appear somewhat earlier this season. However, none has been seen to date, July 10. If the blight gets a start by the middle of August and cool wet weather continues through the latter part of August and through September an epidemic of blight is certain. If the period just mentioned should be hot and dry, very little damage will result from the blight.

Some growers do not think the blight will affect their potato crop because they believe it never has. This is not a safe policy. No section of Michigan is immune to the blight on potatoes. There are certain local varieties which are resistant to late blight. They have not, however, proven of much commercial value. The writer believes that the only safe policy to follow this season is for every grower who possibly can arrange to do so to use Bordeaux with the poison which is applied to kill the potato bugs. If it does not become necessary to spray to control the potato bugs, make an application of Bordeaux when the potato plants are five or six inches high. Continue the applications of Bordeaux as long as weather conditions favor the development of late blight. Bordeaux should as a rule be applied every ten days or two weeks, the period between

applications depending on the weather and rapidity of the growth of the potatoes. Blight is most likely to occur and develop in a field where the vine growth is very heavy and thus the circulation of air among the vines is reduced to a minimum.

How to Identify Late Blight.

Many growers mistake other leaf troubles for late blight. The illustration shows the leaves badly damaged by tip burn. This is not a true disease but a collapsing of the cell walls of the plant tissues. It is thought to be due to weather conditions unfavorable to the normal development of the plants. Tip burn, as the name indicates, starts as a rule at the tip of the leaves. The affected area wilts, turns brown and dries up. If conditions are favorable for its continued development the margins of the leaves will also become affected as shown in the illustration. The use of Bordeaux will lessen this trouble to some extent. By selecting seed from hills which are resistant to

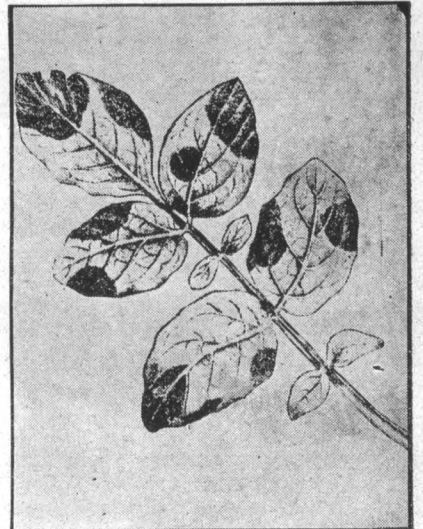
this condition it may be overcome. It is found more commonly on early than on late planted potatoes.

Early Blight.

This is a true fungous disease which attacks the leaves in small spots well distributed over the leaf surface as shown in the illustration. This disease may start to develop early in the season but is usually found also late in the season. It develops slowly and injures only the foliage. As a rule it does not seriously damage a crop. The same suggestion which was given to overcome tip burn will be found satisfactory in the control of early blight.

Late Blight.

This is a true fungous disease. It is very unlike the other leaf troubles previously mentioned. This disease develops in spots of various sizes and attacks the leaves most anywhere. It develops in spots of various sizes and shapes. It is very rapid in its development. The affected spots are downy on the under side of the leaves. This



Late Blight.

appearance is most conspicuous on moist mornings or during damp weather. The disease works on the leaves, stems and tubers. The effect on the tubers is to cause them to decay. The rotted tubers give off an offensive odor. This same odor may be detected coming from the diseased tops after the fungus has developed considerably. By keeping the foliage covered with a film of Bordeaux this disease may be controlled.

"No-Top" Potatoes.

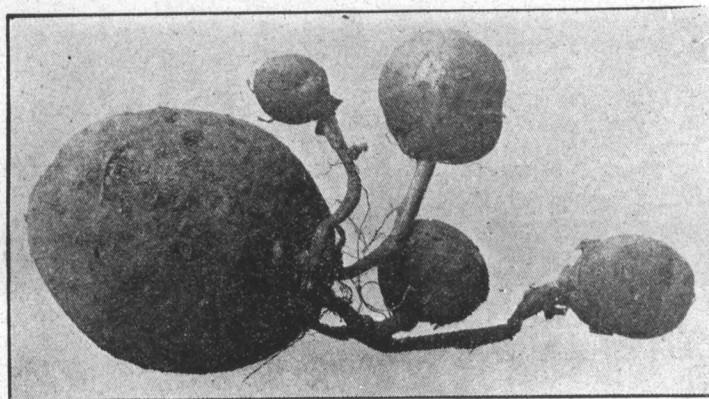
A large number of letters have been received at this office this season, the writers of which were seeking information as to the reason for a rather unusual potato trouble. In each case a part of the potatoes which were planted apparently failed to grow. Upon investigation the seed was found to be sound but had failed to develop any normal sprouts. Instead of the normal development a number of potatoes had started to grow near the seed. The illustration shows a typical "no-top" hill of potatoes.

Most of the complaints to date have been received from southwestern Michigan. One grower has disked up ten acres of potatoes because of this trouble. More cases of early than of late varieties, showing evidence of this condition, have been reported. The trouble does not, however, seem to be confined to any particular variety nor community.

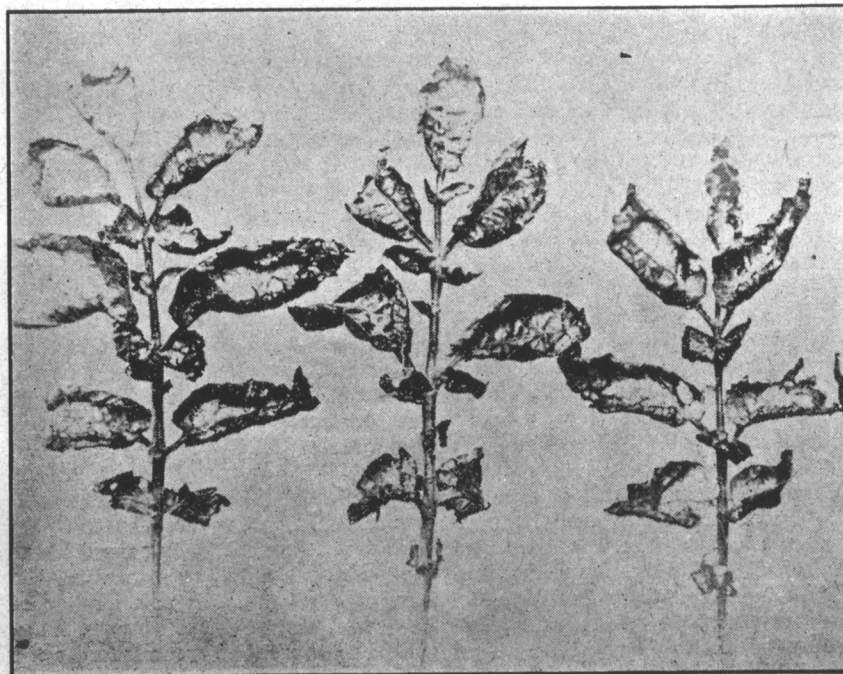
The writer is of the opinion that this condition is closely associated with last season's severe drouth and hot weather.

In many sections of the state the early potatoes of the 1916 crop which were not dug but left in the ground until the rains came following the drouth started the development of sprouts or tuber-like formations. The writer has a photograph taken of three tubers of last season's crop, two of which have developed sprouts and one developed an abnormal shaped tuber. This secondary tuber is unlike the prong-like development which frequently occurs after a drouth, which

(Continued on page 39).



"No-Top" Potatoes.



Tip Burn.

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DETROIT, JULY 21, 1917



CURRENT COMMENT.

The Wheat Crop. It is a matter for congratulation that weather conditions have been such as to make present prospects for the wheat crop in this state much better than was deemed possible a month or six weeks ago. Reports indicate sufficient available farm labor to harvest the crop in good condition if reasonably favorable weather conditions prevail.

While it is a matter for congratulation that Michigan will come so near furnishing her normal supply of bread-making material this season when it is so badly needed, and that her production of other food stuffs as indicated by the estimates published in the last issue will be considerably above normal, it is not too early for the farmers of the state to be laying plans for the production of a still better wheat crop next year, since the shortage of bread materials is reasonably certain to be still more pronounced before next year's harvest is available than is the case at the present time.

Considerable effort is being made toward a better seed propaganda in this state. This is commendable and in line with desirable progress in the improvement of this staple cereal crop; it is, however, but one step toward increased wheat production in Michigan, and should go hand in hand with a propaganda for better preparation of the soil and better fertilization of the crop, to the end that average wheat yields may be increased to the benefit of the country and to the profit of the wheat growers.

In fertilizer demonstration meetings recently held in Ohio, the marked increase in the yields secured by intelligent fertilization constitute an object lesson which should be heeded by the wheat growers of this state. In this connection, much could be accomplished if a round-up wheat meeting could be held at some central Michigan point in the near future, at which the results made apparent by the Ohio demonstration could be interpreted for the benefit of Michigan wheat growers by Director Thorne or some of his co-workers in these experiments. Wheat is a cereal crop so admirably adapted

to the rotation practiced upon a large percentage of Michigan farms, that a normal acreage of wheat will continue to be grown in Michigan, even without the stimulation of special market conditions. It is certainly important to the farmers who will grow this wheat, and it is doubly important to the state and county in this period of emergency that the best possible yields be produced on this normal acreage.

Michigan is capable of producing a much larger acreage of wheat than is normally grown, and it is probable that an attractive price for this year's crop will stimulate an increased acreage this fall. In discussing their plans for next year's wheat crop, many farmers are apparently waiting upon the action of the government in the matter of food control measures, as they relate to this staple cereal. In this work of food conservation and control, those in charge of this government function must of necessity adopt measures which in their judgment are calculated to accomplish the greatest good to the greatest number of people whom they represent in their work. In any event, it may be expected that the governmental policy in the matter of minimum price fixing—if such a policy is deemed expedient—will of necessity be one which will tend to stimulate rather than discourage the production of such important staple crops as wheat.

With this practical assurance it is obviously the duty of Michigan farmers to prepare to grow as large an acreage of wheat next year as is consistent with the general scheme of farming followed in each case. Early matured plans are far more important as related to next year's wheat crop than is the case in the ordinary season. Early and definite plans will make satisfactory preparation for next year's crop more feasible than will procrastination or delay. The earlier the seed bed is prepared the more certain will favorable moisture and soil conditions be present at seeding time. The sooner the seed wheat is selected and secured, the better will be the opportunity for a careful selection and preparation of the seed. The sooner the needed fertilizer is ordered, the more certain will the wheat grower be of having it in hand when sowing time comes. This last item is of special importance this year, as explained in a recent comment, owing to the congested condition of railroad traffic, and the unusual traffic burden to which the railroads of the country will be subjected in the mobilization of troops and military supplies during the next few months. The slogan in every community and on every farm should be "Prepare now for next year's wheat crop."

Notwithstanding the object lessons which have been afforded by other countries engaged in the European war in the matter of food control, congress has apparently found it difficult to quickly reconcile the views of its members on this subject in the enactment of an adequate food-control measure. Apparently the country is fortunate in having available the services of a man having had so extended an experience in food distribution in Belgium, and so wide an opportunity of observing the working of the methods adopted by European countries as has Mr. Hoover, who will be the country's chief food administrator under the food control measure which will be enacted by congress.

In approaching this Herculean task of food control and observation, Mr. Hoover has at the outset signified his intention of utilizing and harmonizing the most advanced opinion and thought of producers, manufacturers and distributors of foods and food materials as the best means of accomplishing the desirable result of aiding the people of this country in the best solution of this new and important

problem. In this connection, the opinions of men of wide experience in any of these different capacities in relation to the food supply become of more than passing interest; particularly as such expression of thought may affect producers of food or of raw materials entering into the manufacture of food stuffs, such opinion is of interest to the farmers of Michigan and the country.

Of such wide interest are the opinions recently expressed by Mr. J. Ogden Armour in an article published in a leading periodical, in which his plan for the most efficient farm campaign is summed up in four words, i. e., "diversify, fertilize, motorize, specialize." In this connection diversification is not given its usual meaning, but is held desirable in a degree wholly supplementary to specialization, while intelligent fertilization and the use of motor driven machinery so far as practical are held to be important factors in an increased food supply.

But by far the most pertinent of the thoughts expressed by this writer, who is so largely interested in the problem of food distribution in a business way, is the advocacy of the fixing of minimum prices for staple products by the government at a point sufficiently high to insure a reasonable profit in the production of such staples and the further advocacy of a degree of government supervision of distribution which will prevent the exaction of usurious food prices from the consumer.

So clear and complete recognition of the farmers' problem in relation to an increased food supply coming from such a source promises much for the success of government food control measures. It is, however, but another evidence of the characteristic American crystallization of thought along right lines. Team work between all classes primarily interested in this national problem of food control will conserve the public interest with justice to all and hardship to none, save alone the speculator in food stuffs, for whom there will be scant sympathy even after the present emergency has passed.

On Thursday, July 26, a historical celebration will be held in the city of Battle Creek and the village of Climax, in Calhoun county, will celebrate the twentieth anniversary of the establishment of rural mail delivery in the United States. This celebration will embrace the dedication of the first R. F. D. historical monument in the United States. Wrought into the construction of this monument, which will be of concrete, field stone and granite, will be one field stone from each of the three or four hundred farms served by the rural routes of the Climax post office where the first two experimental rural mail delivery routes were established.

Twenty years ago last December the United States post office department first started the experiment of delivering mail to the farmers' homes, and the Climax post office was one of the very first points selected for the trial. At the suggestion of Mr. J. H. Brown, of Climax, then associate editor of the Michigan Farmer, the late Senator Burrows succeeded in having Climax designated for a trial of the plan under the first appropriation of \$40,000 made for the purpose by congress.

After the ground had been gone over by department inspectors and two routes had been laid out, and carriers appointed a detailed map of the territory covered by the two routes was prepared by Mr. Brown and published on the first page of the Michigan Farmer. This map is said to be still preserved in the records of the post office department at Washington. About a year ago Mr. Brown conceived the idea of observing the anniversary of this event and of the erection of a historical monument to commemorate the same. These plans were later matured and have been developed as above

noted through the co-operation of the people of the community.

Delegates from the State Letter Carriers' Association and the Calhoun County Association will be present, as will also representatives of the Grange and other farmers' organizations of the state and county. Various notables from the governor down have been invited to attend this fitting celebration, which marks the anniversary of the beginning of a new era in American farm life.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Aside from the political crisis in Germany the chief interest of the week is in the drive of the Russian troops in Galicia. They have been forcing the Austro-Germans to retreat from position to position until the lines of the latter have become badly disorganized. The last village taken was Novica. The Russians are now in possession of the former headquarters of the Teutonic armies in this district and are moving systematically toward Lemberg, the apparent object of the drive.—In the western theatre strong German attacks were made west of Cerny on the Aisne front in which they succeeded in penetrating to the supporting lines but were forced back by counter attacks until their net gain amounted to 300 yards on a mile front. At the same time the French took strongly organized German trenches in the Campaigne sector near Teton.

The political upheaval in Germany has resulted in the resignation of the imperial chancellor, Theobald von Bethmann-Hollweg, who has been succeeded by Dr. George Michaelis through appointment by the Kaiser. It is believed that the whole cabinet has resigned. It appears that the crisis was forced by the reichstag announcing that it would not pass the war budget that was being asked by the government, until the government reaffirmed to the country its purpose in continuing the war.

The Chinese situation is more favorable for the republicans. The rule of the Manchus was short as the success of the republican troops enabled the re-establishment of a republic again last week.

The British battleship Vanguard, of dreadnaught type, blew up last week at anchor, from an internal explosion and sunk immediately with 773 men. This is the first big battleship the English have lost since the Jutland battle with the Germans in the North Sea in May, 1916.

National.

The entire shipbuilding program of the government has been placed in the hands of General Goethals who announces that every effort will be made to work the various yards of the country to capacity. The plans include the completion of the 1,500,000 tons of shipping under construction in the yards for other parties which has been commandeered by the government, and the construction of 400 fabricated steel ships having a total tonnage of 2,500,000 tons. Bonuses will be given for extra early delivery.

The lower house of congress has passed the aviation bill, which provides \$640,000,000 for this department of the military service and includes a program for the construction of 22,000 aeroplanes.

Several persons were killed and a number injured when a cyclone struck Champaign and Danville, Illinois, last Friday night. An interurban car was blown from the tracks near Homer and sixty persons were injured.

By proclamation President Wilson has stopped leaks of marine information in forbidding German marine insurance concerns from doing any business in the United States during the remainder of the war.

American miners at Flat River, Mo., are resenting the importation of large numbers of foreigners for mining work. Last Friday night rioting occurred in which a number of foreigners were hurt. Later fully 200 dwellings occupied by foreigners were wrecked.

Additional evidence has come to light during the past week of the irregularities in the Wayne county treasurer's office. The prosecutor has asked for a grand jury to examine into all the county and city departments, but his first request has been denied upon the ground that such a jury has already been called by the recorder's court and that the question of jurisdiction of the latter court is now pending before the state supreme court. A delay in serving a warrant for the clerk alleged to have confiscated public funds enabled him to escape arrest.

Drainage and the Food Supply

By JAMES N. McBRIDE

THE effort to increase the food supply is nullified, to probably twenty-five per cent, by lack of adequate drainage. Unoccupied land involves no large, if any, outlay, while seed and labor are applied unprofitably on land subject to wet weather losses. As a rule, these wet areas are exceedingly fertile in plant food, and are so near the profit point that an occasional favorable season lures to their continued cultivation without drainage. An accounting of gains and losses would probably leave the balance on the side of actual loss.

Make Drainage a Community Enterprise.

There are several good reasons for drainage that heretofore did not exist at least so strongly. The first is the added price of farm products. A second is that the financing can be done under the rural credits act as a private matter, or, if a large drainage proposition, either the rural credits act or a bond issue under the constitutional amendment finally secured by the persistent effort of Representative Croll, of Gladwin county. Agricultural organizations might well ask their prosecuting attorneys to address their meetings on the legal phases of financing and initiation of drainage procedure. There is still left a work for the local initiative to do in getting the actual work started.

Hand labor is so scarce and high priced that it is of little avail as a whole. A power tile ditching machine costs from \$1,500 to \$2,000, with some additional cost for extra equipment if desired. The operator of such an outfit may need financing for the initial payment for a machine, for as a rule the man who desires to do this work is not financially strong. Local farmers who desire work done can guarantee the first payment and pay this to the manufacturer at the start and be repaid by work done. The title of the machine may rest in such an association until paid for in part or wholly.

A Practical Co-operative Plan.

Another plan is for actual ownership by a co-operative organization organized under the act of 1903, to buy outright a drainage outfit and also tile in carload lots. One organization proposes to finance such an undertaking with a \$5 membership fee and sign collateral notes to be used with the co-operative body's note to buy an outfit, the actual money being advanced by the local bank. This is merely loaning their credit and the payments for drainage are made out of the actual drainage done, the members paying for their drain work at a fixed cost. After a time the completed work pays off the whole indebtedness and the machine is owned by the co-operative association. Tile are bought for cash and then paid for individually for the amount bought. This allows the farmer to have the advantage of his credit and he pays the bank for the service at a much less rate than he can by not paying cash.

Make Agriculture a Business.

Banks are coming to regard these co-operative company notes, secured by individual hypothecated notes, with great favor. From a bank's standpoint the credit could not be better, for the property is in existence and sold. The collateral notes make a personal responsibility that is beyond question. The quasi public services that banks can and are willing to render to agriculture is a constantly increasing factor. Agriculture can not become a business institution until it learns to use the institutions of business.

The wheat crop of Michigan for the crop of 1918 can be largely increased by tile drainage. The month of August is a good month for machine work and will, with the high cost of seed, labor

and fertilizer, write an insurance on many places which are uncertain under present conditions.

The State Should Foster Land Drainage.

There are pressing drainage questions in some portions of the state that are beyond individual control. Michigan should eventually provide a state drainage engineer, with powers over drainage similar to that accorded to the state highway commissioner over the public highways. There is need of drainage systems where there is now no system. A competent engineer could well judge of extravagant outlays and save the cost of administration many times over. The food question and agriculture are inseparably connected with adequate drainage.

Ingham Co. JAS. N. McBRIDE.

FARM NOTES.

Top-dressing Wheat with Marl.

I have eighteen acres of oats. I intend to sow wheat after oats. The field is somewhat run. I have plenty of marl near the river. Would it pay me to top-dress the wheat with marl? If so, how much to the acre? Would it be all right to spread with a shovel? Soil isn't heavy nor light.

Ionia Co.

J. B. S.

The principal purpose of applying marl or lime to the land is as a soil amendment for the purpose of correcting soil acidity. This is a very common condition with Michigan soils, especially those of a more open type which have been farmed for years. The need of lime is generally indicated by difficulty in getting good stands of clover. On very many soils the addition of lime is an absolute essential to the growing of good crops of clover. In all such cases there is no doubt about the profit which would result from the application of a liberal quantity of marl. For best results this should be applied when the land is being fitted for the wheat and well mixed with the soil by the process of preparation, but considerable benefit would also result from using it as a top-dressing, although the benefit in this case would not be so noticeable the first year. The marl can be spread with a shovel or in any way which is most convenient and in any amount desired. As it is well saturated with water it would require several loads per acre to be the equivalent of a ton of ground limestone, which is generally considered as the minimum application to soils which require amendment for acidity. A larger application would also be required on account of the greater difficulty of even distribution as compared with a dry product, but there is no danger of soil injury by heavy applications and the effect of the treatment will be more permanent, hence the advisability of a liberal application.

Marl deposits are common in many sections of Michigan, and wherever it is easily available the farmers of the community would find it profitable to use it liberally.

POTATO BLIGHT—"NO-TOP" POTATOES.

(Continued from first page.)

has occurred during the period of tuber formation, has been broken. It is more like the tuber formation shown in the illustration.

Further study may show that this trouble is due to some diseased condition but evidence to date seems to connect it with last season's drouth. Whether or not it will be transmitted to another season's crop cannot be stated at this time. It will be a good plan, however, as a precautionary measure for those who have seed showing a tendency to develop tubers without tops to secure seed from some other source for next season's crop.



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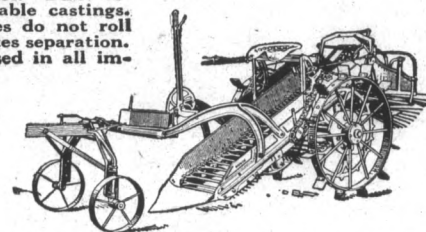
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Fire Blight of Apples and Pears

By G. H. COONS

FIRE blight, called also, pear blight, twig blight, apple blight, etc., is a disease affecting members of the rose family, the pear, apple, mountain ash, plum, thornapple, and other wild pomaceous fruits. Of the great mass of names proposed the name fire blight is most comprehensive and most accurately describes the general signs produced—a conspicuous blighting of the foliage which makes a tree look as if scorched here and there by fire. The blighting results from a sudden death of the tissues, and the blighted leaves turn brown (or blacken in the case of pear) clinging tightly to the branch. The tip of blighted branches usually curl, forming a hook-like tip.

Other characteristic signs occur and these are designated by appropriate names, each of which must be understood as merely subdivisions under the general term fire blight, and not the name of a distinct disease. For example, growers speak of blossom blight when the attack of the disease comes at blossoming time and the blossoms blight and droop here and there on the tree. Similarly twig blight is used to describe the phase of the disease in which the smaller twigs wither and die as has been described. This form of the disease soon becomes a limb canker due to the progress of the disease from the twig to the larger branch. If the twig first attacked happens to be a water sprout then the blight quickly enters the trunk or main branch and the serious condition known as "body blight" results.

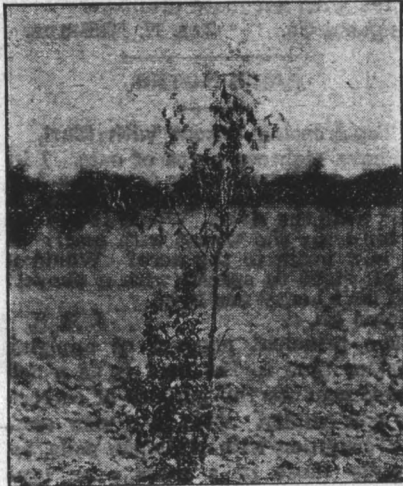
One characteristic is common to all these stages of attack and this constitutes the surest means of telling the disease in the field. The fire blight germs work first on the cambium or growing tissue of the shoot or limb. Affected cambium becomes brown or discolored—not clear, watery-white as in healthy stems.

Recent investigations have shown that many other insects besides the bees are important in the spread of blight, and probably more so than the

bees. Various wood borers working in blighted limbs carry the germs. Tree crickets wounding diseased limbs and then working in healthy ones inoculate the twigs as surely as the scientist in the first experiments. Aphids, occurring in hundreds on blighted twigs, fly to healthy twigs and inaugurate the disease afresh. In Michigan observation seems to warrant the belief that the aphid is especially important in transferring the blight germs.

Wet weather becomes important not only in its effect on cambium activity but because it favors the aphids.

The prevention of loss from fire blight depends upon our recognition of its germ nature. We proceed in two ways to control the disease. By indi-



rect means we can check the amount of blight by checking cambium activity. Trees in sod, trees that are not pushed by cultivation, or heavy nitrogenous fertilizers to make abundant growth are not blighted so badly as trees that have been pushed.

We can further fight fire blight by the control of aphids. The nicotine sprays are being used more and more by fruit growers. Aphids, aside from their relation to fire blight make unsightly, worthless twigs and some kinds injure the fruit.

But the chief means of fighting the fire blight consists in direct eradication of blighted parts. This is readily accomplished with young trees and should be tried with all, with the possible exception of the full grown, mature trees. Old trees frequently show an enormous amount of twig blight and but very little limb canker. Such cases can not be handled in the usual way and are ordinarily but small sources of damage.

When blight is found in an orchard—be it in blossoms or twigs—the blighted parts should be broken out in the case of blossoms, and cut out in the case of twigs. Many orchardists fail to see the value of breaking out blighted blossoms, but when it is remembered that each blighted blossom is likely to become a blighted twig, and that it is a simple matter to knock off the blighted spur and stop the trouble at once by about five minutes work on a small tree, the significance of this recommendation is apparent.

Following blossom time the orchard must be gone over to remove all cases of twig blight. Every blighted twig must be taken. If left they are not only a source of danger, but later, due to the progress of the germ down the twig, may become a limb canker.

But the work does not stop with one going over of the orchard. Each week the trees must be gone over and the blighted parts removed. If the work is done thoroughly so that no blight remains in a tree, the inspections can be made quickly and thoroughly.

And so throughout the season, every week or two the orchard must be gone over to cut out all twig blight, if loss is to be avoided.

But usually the grower does not

realize the seriousness of the situation until the orchard is badly hit. He must then go over the trees and cut out the blight, cutting back severely in order to remove all wood likely to harbor the germs. Every blighted twig must be removed. The trees when left must be free from all blighted parts. It is the common practice for growers to do this severe cutting out of the blight, but they usually do not remove all traces of the disease.

The absolute essential in fire blight control is the second and third going over of the trees in order to get rid of any blight which, hidden at the time of the first cutting, and has developed in the meantime. The reason for the careful removal of all traces of blight at the first cut was to allow ready discovery of any new developments. The orchard must be gone over and over so long as blight develops.

The grower usually gives up a badly blighted orchard. He allows trees that have cost him much money and he allows the land which he has turned into orchard for several years, to become a total loss because he overestimates the job. With the proper tools, with trees not overly large, the matter of cutting out blight is seldom a matter of more than ten minutes, or at the most, a half hour. If the job is done completely, the second cutting a week or two later can be done in two or three minutes. Figuring a man's time at thirty cents an hour, it usually will not cost more than ten or fifteen cents to save a tree worth from \$10 to \$40. If the matter concerned a milch cow, the farmer would not hesitate to call a veterinarian and pay a good-sized bill to save the animal. To save a tree, worth almost as much, he will not give a half hour's time.

Where water sprouts are not trimmed out regularly, severe losses occur. In such cases of body blight or blighting that is allowed to progress until the main limbs are involved, little can be done. If the tree is worth the trouble and the involvement is not too complete, the blighted wood can be gouged or cut out.

All large cuts (this is everything except small twigs) should be disinfected. The old advice to disinfect the tools between each cut is unhandy and the disinfectant may injure the tools. In cutting out blight the disinfectant (1-1000 corrosive sublimate) carried in a glass jar or wooden pail, can be swabbed on the cuts. This should be done the last thing before leaving the tree.

All chips from blighted portions, blighted twigs, and branches should be thrown into a basket or box and be carried from the orchard. If left on the ground the larger pieces are still a source of danger.

CULTIVATION OF THE LATE POTATOES.

From seven to ten days after planting, the potato field should be harrowed with a spike-toothed drag with the rows and followed in another week by cross dragging. This will keep the weeds down and the soil well mulched and in good condition. If you wish to hill your potatoes just as they are coming up, so you can follow the row, go through with a double cultivator with wings off of single cultivator with flanges set and cover potatoes one and a half to two inches with loose dirt. This will cover and kill the weeds and the potatoes will come right along. Deep close cultivating should be done early when plants are small so as to avoid root pruning later on in the season when plants are large. Do not hill high except when you are in need of drainage on low wet soils. A broad flat hill made early in the season, if hilling is at all necessary, is the best.

Frequent shallow cultivations during the season until potato vines cover the ground will insure you the maximum crop.

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Increasing Herd Efficiency

THE first year of the Kalamazoo County Co-operative Cow-testing Association was finished on June 16, on which day a meeting of all the members was held in the rooms of the county farm bureau.

Of the twenty-six herds in the association at present, nineteen finished a full year's test. The number of cows in the association increased from 336 in the first month to 395 in the twelfth. On the basis of the nineteen herds mentioned only 244 cows are included in the yearly averages. It was the aim of the association to get rid of the unprofitable cows as soon as their value was discovered. The association herd book discloses the fact that 120 cows were sold out of twenty-five herds, or about thirty-three per cent. This high mortality is a veritable achievement of the year's work of the testing association. Moreover, many more of the cows will be sold as a result of the full year's record. The standard we set for minimum production for profit is 250 pounds of butter-fat per cow per year.

The highest herd in butter-fat production is that of Pattison Bros. Their grade Guernseys averaged 333.48 pounds of butter-fat for the year. The herd of McMurray & Gibbs topped the association in milk production with 8,224.8 pounds.

The individual honors were carried off by Nina, a grade Holstein, both in milk and butter-fat production. Such is her yearly record:

Milk, lbs.....	14,934.00
Butter-fat, lbs.....	506.2
Value of product.....	\$225.34
Cost of feed.....	99.75

Profit \$125.59

Jumbo, grade Guernsey, owned by Pattison Bros., was second with 450.2 pounds; Olan, grade Guernsey, owned by J. R. Comings, was third with 446.5 pounds.

To show the relative profitability of good and inferior cows a comparison is made of the ten best cows in the association with ten inferior cows taken at random from the association herd-book:

	Good Cows.	Inferior Cows.
Butter-fat, lbs.....	4,182.10	1,622.6
Value of product.....	\$1,610.20	\$626.4
Cost of feed.....	630.04	442.2
Profit	980.26	171.76

It would, in other words, take fifty-seven inferior cows to make as much money above cost of feed as ten good cows. However, the difference should be far greater, for we must consider the extra labor, investment, barn-room, and many other expenses that go with a large number of cows.

The average for the association for the year was very satisfactory. For 244 cows:

Milk, lbs.....	6,168.9
Butter-fat, lbs.....	278.9
Value of product.....	\$106.85
Cost of feed.....	51.90
Profit	54.95

The excellence of the results of the first year's work assured the permanence of the cow-testing association as an institution of the Kalamazoo county dairymen. The association is already launched upon its second year with nearly all of the old members working with renewed zeal and energy for progressive business dairying in Michigan.

Kalamazoo Co. J. M. MAZE.

SILOS MORE NECESSARY THAN EVER THIS SEASON.

The prospects for a rather poor hay crop, and the late date at which corn has been planted, should be sufficient reason this season for the erection of a silo on every farm not already having one, and the addition of another silo on farms having only one. The advantages of the silo over the ordinary method of shocking and husking

the corn crop are numerous. A few may be mentioned:

1. Silage furnishes succulent feed throughout the winter season.
2. It reduces the area required for pasturage.
3. It provides the cheapest possible means of supplementing pasture in a dry season, and thus maintains the milk flow.
4. Silage is eaten without any waste, even when made from large coarse stalks. Only sixty-three per cent of the total digestible nutrients of the corn crop is found in the grain. The other thirty-seven per cent is in the stalks, and all of it is lost on many farms, and on others, even under the best methods of handling stalks, from twenty to forty per cent of their feeding value is wasted.
5. The crop is disposed of early in the fall, which permits putting the land into wheat, or at least plowing for the spring crops.
6. The value of an immature corn crop, or one frosted before ripening may be practically doubled by placing it in the silo, as compared with husking.
7. The crop may be stored in a much smaller space than it could be as dry fodder.

8. The labor required to feed the crop is reduced where it is stored as silage.

9. The live stock carrying capacity of a farm can be materially increased by the use of a silo. A given area of corn, in sections where corn is successfully grown, when placed in the silo will furnish feed for a larger number of stock than will any other crop that can be produced on the same area. To keep more live stock on each acre, or reduce the number of acres required to maintain the stock already on hand, is the key to successful farming, and the more extensive use of the silo will provide the opportunity. On an eighty-acre farm the writer has one 14x35-foot silo and his faith in the silo is such that another silo 12x36 feet will be erected this summer.

The conservation of all food for man and beast is the duty of every farmer. Careful husbandry of all the crop is not only a patriotic obligation, but is also necessary if the increased operating and labor expenses on the farm are to be met and a reasonable profit left.

A silo will increase your profits.

Mich. Ag. Col. PROF. G. A. BROWN.

CURED ALFALFA HAY FOR COWS.

In an experiment to determine the feeding value of cured alfalfa hay as compared with green alfalfa fed as a soiling crop for cows producing milk, and to ascertain the physical effect of green alfalfa fed as a soiling crop with silage as compared with alfalfa hay, two lots of cows were fed by the New Jersey Station by the reversal method during two periods of forty days each. Both lots received in addition silage, beet pulp, corn meal, gluten, distillers' grains, cottonseed meal, and bran. The total average weight of the cows on the alfalfa hay ration was practically the same as of those on the soiling crop ration, and the production of both lots remained remarkably constant during the entire experiment. The average daily milk production was 22.6 pounds per head when alfalfa was fed, as compared with 23.1 pounds on the soiling crop ration. On the alfalfa hay ration 358.4 pounds of milk fat from milk testing 3.27 per cent was produced, and on the soiling crop ration 364.9 pounds from 3.29 per cent milk. The cost of feed was \$153.90 and the profit over feed cost \$100.91 on the alfalfa hay ration as compared with a feed cost of \$132.07 and a profit over feed cost of \$125.99 on the soiling crop ration. For every pound of alfalfa hay that was fed 1.9 pounds of milk was produced, while it required 2.68 pounds of green alfalfa fed in the form of a soiling crop to produce 1.9 pounds of milk.



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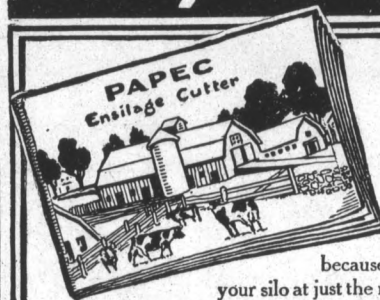
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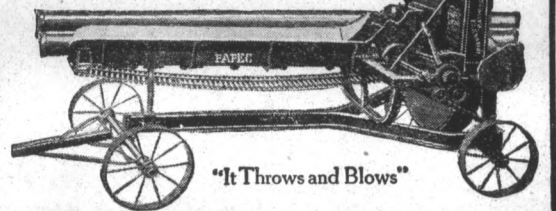
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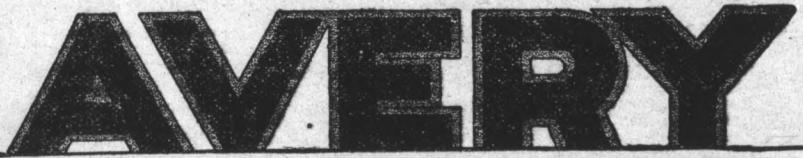
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Extending Hog Production

By N. A. CLAPP

THE United States of America has been considered the granary of the world. The fertile valleys, hilltops and mountain slopes constitute vast areas of tillable land that invite enterprising grain growers to make their habitations where the grasses grow in almost unbounded profusion, and the land can be but tickled with the plow, grain seed sown and in due time there will be rejoicing, for there will be a golden harvest awaiting the husbandman who may garner it for food for family use and to feed to his domestic animals.

The United States has also been called the live stock emporium of the world, a country where domestic animals of all kinds are kept in great numbers and all the world, so to speak, can look to us for almost any number that may be required to meet the immediate needs. In no other kind of stock has the idea been more pronounced than in swine production, and yet during the last six months prices for hogs and pork meats have been so high that the numbers of hogs sold have brought us to the point where it is necessary to change our views, in some ways, in regard to the absolutely necessary feeds and encourage a more liberal breeding and feeding of pigs in those portions of the country which are outside of the so-called corn belt.

On account of the great demands from other countries for the one pork product, lard, we have become imbued with the idea that to make marketable hogs we must have corn, and that hogs, in order to meet the demands of the world markets, must be raised in the corn belt. When we consider the matter in the light of modern conditions, and more modern demands, it seems strange that we have clung to the one idea so long.

Corn Not the Only Good Hog Feed.

We produce in the United States a little less than one-half of the hogs that go into the markets of the world. In all other countries outside of our own, hogs are bred, kept, fed, and prepared for market on other feeds than corn. We do not hear complaints that the quality of the pork produced in England or Canada is inferior to that which is produced in our own country, and yet the most of the hogs in those countries never saw or ate any corn. In Germany alone, the hog supply, by instruction from the government, was increased from thirteen million head to seventeen million head during the last year.

What the Department of Agriculture at Washington, D. C., seems to desire to impress upon the minds of the farmers of this country, is the fact that hogs can be raised and fitted for market on other feeds than corn and a good profit from the same realized. If "Continental Europe" can produce pork on such grains as are raised in those countries, it is reasonable to believe that the same can be done here in this country.

Hog Production is Practicable Outside the Corn Belt.

Here in our own country we are trying, for profit and patriotic reasons, to produce all the pork we can to supply the necessities of our home population and at the same time help to feed the armies of our allies in Europe. We need not restrict our efforts in that direction to that portion of the country known as the corn belt, or where corn is produced in considerable quantities. There are vast areas of country where other crops than corn are produced, where it is practicable to breed, raise and feed large numbers of pigs, and by so doing, each and every part of the country can be doing something in that direction—doing its "bit" toward helping fight the battles in this world war for human liberty and help to free

the present and future generations from an enslavement to the iron hand of tyranny and despotism.

An effort is being made to revive an interest in pig raising and feeding in all parts of our great country. Almost unconsciously we have let the number of hogs on the farms sag considerably below the number we call a normal one. Formerly we had sixty-eight million of hogs on the farms, but today, exclusive of the small pigs, we can not show much, if any, more than one-half that number. Breeding stock has been sacrificed on account of high prices for corn. It is advisable to call a halt in that direction, and help save us from a pork meat famine.

What Shall we Feed?

We have looked upon oats as only fit to feed the horses. We have in recent years, learned that oats are excellent feed for the dairy cows. Now we should learn that oats are excellent feed for pigs. For either cows or pigs they should be ground before being fed. Oats mixed with peas, equal parts, and ground, make nearly an ideal ration for not only growing pigs, but a ration on which we can prepare them for market. In my own experience and practice I have raised a good deal of barley which is an excellent feed for pigs in either summer or winter. A combination of one-half oats and barley, equal parts, ground together, makes an excellent feed for both growing and fattening pigs. In some cases the barley and oat feed has been the main reliance for fitting pigs for showing at the fairs.

Any of the feeds mentioned can be fed with profit in conjunction with wheat middlings. We have been too much given to feeding one feed alone and middlings have been the main reliance. A combination of all the feeds, middlings, oats, barley and peas, make a much better feed and will give better results than any one of those feeds used alone.

The present year it may be desirable to fit for market the hogs on hand before this year's corn crop is available for that purpose. The peas, oats, barley and middlings feeds can be utilized, the pigs put in market condition early in the season, and probably a better price may be secured than can be when the winter rush comes. In most of the years during the last half century, the summer and early fall markets were better than during the late fall and early winter.

Another fact should be kept in mind: The demand, at the present time, is for hogs of medium weight. Anything that can be made into bacon and light hams can be cured, transported and used to good advantage before the heavy hogs can be utilized. It is bacon and light hams that are needed for immediate use in all parts of the world.

Here in Michigan there are large quantities of peas, barley and oats raised; especially is this true in the northern portions of the state where it is impracticable to raise corn in large quantities. If those feeds are appreciated at their full value it is possible for those portions of the state to do their share in helping to keep up a supply of hogs for the markets of the world. A still farther consideration should not be overlooked. In those portions of the country, remote from the traffic centers, there is less liability to meet losses from disease.

Let us work for a revival of interest in pig growing and pork production in Michigan. Let each and every farmer take a hand in the game and by raising a variety of feeds make it possible to produce more and better pigs, and not only aid in feeding the armies in the field, but add to the wealth and general welfare of the country.

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MECHANICAL

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

THE Grand Canyon is one of the things almost impossible to describe. Imagine a huge gash in the earth's surface over 200 miles in total length, nearly two miles deep and thirteen miles wide from rim to rim, its walls so nearly perpendicular in many places that a plummet could be dropped the entire distance. Fill the floor or bottom of the chasm with huge mountain peaks of vivid red and green, brown and ochre, all carved, apparently by water, which in some former period covered them, into fantastic shapes, spires, battlements, towers and castles in grand array, with the mysterious Colorado River commonly credited with having done the work, winding like a brown thread far below, and some faint idea of the sight that

meets the visitor's eye can be obtained. Told that the opposite rim is thirteen miles distant, the tourist can scarcely believe the statement, though he has probably been at least partially prepared for it, by the surprising clearness of the desert atmosphere which makes distant objects appear quite close at hand.

At Maricopa Point which juts out into the canyon with a sheer drop from the edge, of nearly two miles, there has recently been erected a granite monument bearing a bronze tablet to the memory of Major Powell, the first

The Grand Canyon

By ELLA E. ROCKWOOD

white man to explore the canyon. He made the descent to the river, a most perilous undertaking at this point, in 1849, if I remember the date correctly. Determined on an exploration of this at that time inaccessible region, he had set out by boat far up the river, accompanied by a party of friends, willing, like himself, to make the attempt. He succeeded in escaping with his life, but two of the party, after the boat had capsized, left the others and attempted to make their way back over the desert. Both were lost. While nearly all the bed of the can-

yon is filled up with mountain peaks as described, there are places where considerable comparatively level land is found. Through one of these runs Bright Angel Trail. Parties go down "Jacob's Ladder" to reach it, the descent on mule back being full of thrills. The trail, once the bottom is reached, runs several miles on the level then abruptly descends via "Devil's Slide" to the brink of the river. This trip can easily be made in a day.

Standing on the rim we watched a trail party cheeping slowly along two miles below. The animals and riders appeared about like ants in size. Midway on the route could be seen a small patch of vivid green and a speck of white. The former we were told was a clump of cottonwood trees and the

WORLD EVENTS IN PICTURES



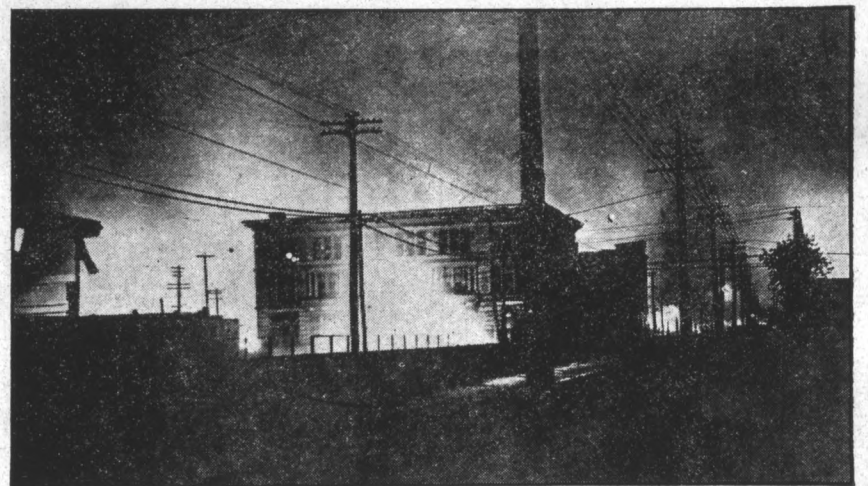
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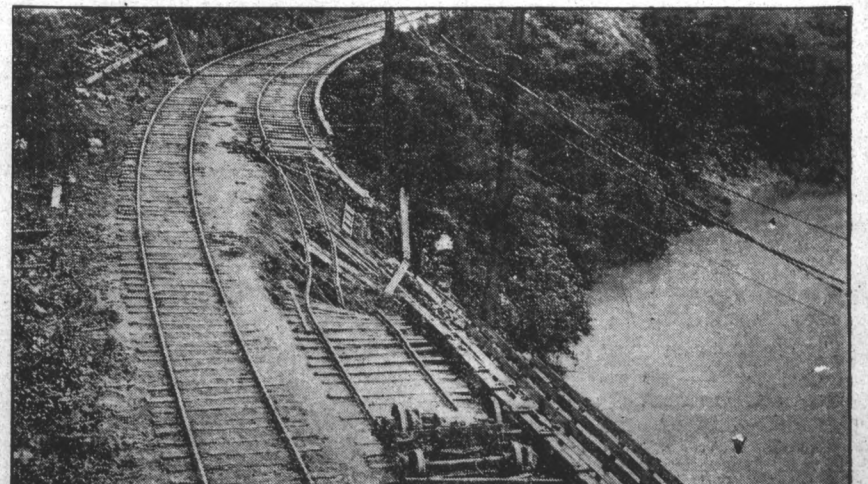
Endless Stream of German Prisoners Counted as they Pass to Rear.



Conflagrations in East St. Louis During the Recent Race Riots.



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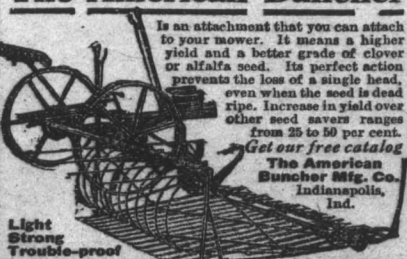
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latter a tent at a spot called Indian Garden. A cultivated farm of forty acres surrounds the trees and the tent but could not be distinguished at that distance. There flowers bloom all winter, while at the rim the thermometer frequently marks twenty-two degrees below zero at an altitude of over 7000 feet.

Our party took a rim drive to Pima Point, the round trip occupying about four hours. At every turn the scene is magnificent. Occasionally a glimpse of the river is obtained but as a rule it is out of sight between obscuring cliffs. At one place we descended from the surrey and paused to take in the glorious sight. Someone remarked upon the stillness and then we noticed that there was not a sound to be heard. A stout railing enabled us to go quite near the edge without being too venturesome, and as we stood there, awestricken and silent at a spectacle so sublime, a faint rippling fell upon the ear, a sound as of falling water. Our guide pointed out a spot said to be two and one-half miles distant,

mostly downward, where the river runs over the Hermit Rapids. It looked white, and we heard the sound, ever so faintly, at that distance. The opposite rim at that point was 1,300 feet higher than where we were standing. Yet its topmost layer of rocky soil appeared little if any above us. It is heavily wooded so our guide informed us, and abounds with big game, deer, mountain sheep, lion, and wild cat.

As the afternoon began to wane and the sun swung toward the west, silence fell upon our party as we watched the changing shadows play upon the rocks. All day, for that matter, they shift and change almost continually. The beautiful purple haze peculiar to mountainous regions filled the space from rim to rim. Rosy now were the granite peaks, darker on the shady side. Gradually the sunlight faded, deeper grew the grays and purples. The sun slowly disappeared, leaving a golden glow. Then the short twilight settled into night, the stars began to twinkle one by one, and darkness hid the canyon from sight.

"Contraband" RANDALL PARRISH

My eyes distinguished no figures, but suddenly a blaze of lightning seemed to rip the sky asunder, and, in the swift, ghastly glare, I perceived two human figures against the starboard rail, safe from observation beneath a boat swung in davits. The man directly facing me, his countenance illumined for a single instant by the flame, was Liverpool Red. Then all was silence and darkness again, the ship plunging against the storm, the deck swept by wind and rain. The very postures of the two men, the position chosen amidships, and in the shadow, led me to identify Liverpool's companion and guess their purpose. Very well, there was no better time than now to start my task. Yet I had scarcely taken a step forward when I became aware that their secret conference was over, and that the two were separating. I could not positively determine the movement in the intense darkness, but I felt assured that one of the two men had moved forward, crouching along the rail, leaving the second man standing alone. Unquestionably the one thus left would be McCann.

I waited motionless until the fellow stealing away was well beyond earshot and then advanced straight across the pitching deck. The fellow, taken quite by surprise, stared at my indistinct figure, unable to determine my identity until I spoke.

"Well, McCann," I said shortly, "you seem to prefer associating with the crew, rather than with your own class aft. What is the game?"

"I was not aware there were any of my own class on board," he answered sneeringly.

"Perhaps you have not yet discovered who are on board. Do you chance to know who owns this vessel and the cargo?"

"Who owns them!" with a coarse laugh. "What difference does that make?"

It depends entirely on whether or not you have any decent manhood left in you," I said coldly, "and frankly I do not believe you have. However, the truth can do no harm, and we'll understand each other better. This ship and cargo are owned by Philip Bascom of Philadelphia."

"Bascom! Great Scott! You don't mean it?"

"But I do; and more than that, all his fortune is invested in this one enterprise; that is why I consented to assume command, and sail the Indian Chief across to Germany."

There was a moment's silence.

"Bascom," he repeated at last. "You learned this from the ship's papers?"

"I learned it from his own lips—the man himself is on board."

He breathed heavily from surprise; then laughed.

"Lord, this is some news, Hollis," he managed to ejaculate, "but surely you hardly expect me to be sympathetic, do you?"

"No, I hardly expect it," unable to disguise my intense disgust at his tone. "I'd hardly expect you to exhibit ordinary decency under any circumstances but I thought I would give you a chance. However, Philip Bascom is here, ruined by your persecution, crippled for life by the cowardly bullet—"

"Now, look here, Hollis," he broke in, "if you think I am going to stand for your bullying any longer you're mistaken. It's my turn to talk."

"Yours! What will you talk with—money?"

"Perhaps," he sneered, "and with men also. In the first place, I might as well tell you, I don't give a darn who owns this ship. Of course you gave me a jolt by saying that this man Bascom was on board, but, after all, that's nothing to me. We had our fight, and he learned the same lesson others have that Fergus McCann is perfectly able to take care of himself. Now I'm ready to teach the same thing to Mr. Robert Hollis, of Chicago."

I listened to him quietly, and my silence seemed to bolster up his courage considerably.

"Those are the facts," he went on, as I made no reply, his tone assuming a more marked bluster. "This is no small boat in mid-Atlantic, where you can bully me because of your physical strength. You made a mistake, Hollis, playing me for a fool. I've got your number already."

"You are quite sure of that?"

"You bet I am, but I'm not going to say any more about it tonight. Tomorrow I'll talk with you again."

He turned away, the shrug of his shoulders picturing contempt, and a studied insolence which set my blood boiling. With the grip of one hand I flung him back against the rail, and held him there.

"No, we'll discuss it right now," I said sternly, "but I'll do the talking in your place. You haven't anything to tell me. I know what your plans are already. When you came aboard you learned that there were men forward ripe for any dirty work if they could only be paid well for it. That is your long suit—money. The trouble with you, McCann, is that you have been

brought up to believe that money will buy you anything. You get along very nicely on that theory in New York probably, but this is not New York. Just face the difference. You are not at present Mr. Fergus McCann, stock broker and multi-millionaire; you are a mere passenger, picked up at sea by the freighter Indian Chief. That is your exact status. On the other hand, I am no longer Robert Hollis, of Chicago, an idler and one of your own set; I am Captain Hollis, in command of this vessel, responsible for its safety. I know what you are attempting to accomplish, and I know your purpose. You have found a few ruffians forward, who will take your dirty money. To gain control of the others you have played up the war scare. You think now that the time has come when you can act—is that so?"

He wriggled in an effort to break free of my grip, and I let go of him in utter contempt.

"You would find out," he snarled angrily, "if I called for help."

"But you are not going to call for help, for if you even open your lips for that purpose, you are going to die right where you stand. Take that seriously, McCann. You are endeavoring to incite mutiny on board, and under the law of the sea, I can kill you for it. Now, I confess my feeling toward you is not a tender one, but there is going to be no bloodshed if I can avoid it. Where have you bunked?"

"Amidship."

"Petty officers quarters. Well, I prefer having you aft. There is a vacant stateroom below. Walk ahead of me to the cabin, and go down the steps."

"You'll pay for this in the morning."

"Do not worry about the morning, my man. Trust me to take care of your friends forward when the time comes. This is not my first voyage. Move on."

He could not have seen the expression on my face because of the darkness, but the tone of my voice, the sharp grip of my fingers on his shoulder, must have told him I was in no mood for further discussion. Sullenly he left the rail, and crossed the deck to the companion, with me trailing a step behind. I was aware that Olson was leaning out over the poop-rail watching our dim figures, wondering no doubt what was occurring below. I did not venture to glance upward, or remove my eyes from the prisoner.

"Below there," the mate called down, gruffly, "what's going on?"

"It is all right, Mr. Olson," I answered, speaking quietly. "I'll explain later. Open the door, McCann, and go straight down."

He must have realized the utter futility of resistance, for he never even turned his head, marching before me down the stairs, and across the deserted cabin. I threw open the door next to Bascom's stateroom, switched on the light, and glanced within, keeping my grasp hard on McCann's arm. The place was bare enough, a single bunk, with ample covering, and a wooden stool.

"Go on in," I said shortly.

His eyes met mine, black with a coward's hatred.

"You cur! if you wasn't armed—"

I swung him about in sudden disgust, flinging him forward, and he fell sprawling on the deck, overturning the stool. The next instant I had closed the door, and locked it, dropping the key into my jacket pocket. There had been little noise, scarcely enough to arouse the sleepers below, and it was with a feeling of relief that I returned to the open deck. This easy capture of McCann would greatly simplify matters. Now, at least, we had time in which to prepare for emergencies, and solidify our forces for the defense of the ship.

The rain had ceased, the lightning showing only fitfully along the horizon. There were rifts in the clouds overhead, and I could perceive the glimmer

of a star, or two. The sea, however, remained heavy, but with a steadier roll to the great combers. No movement attracted my eyes on the main deck, and I climbed the ladder, joining Olson at the port rail. Two men were at the wheel, which lucked sufficiently to keep them busy. I could not distinguish their faces in the gloom, but paused to glance at the compass.

"You are off a couple of points, my lads," I said. "Can't you hold her any closer?"

"Not the way the sea is running, sir," answered a voice I recognized as Simms', "unless we raise a bit more jib, and the mate thought it best not to risk the canvas."

"Right, no doubt, but hold her down the best you can."

"Aye, aye, sir."

The response was cheerful enough, and I crossed the deck to where Olson stood, in somewhat better frame of mind.

"You are not exactly holding to the course, Mr. Olson," I said, but not unkindly, "and Simms tells me that you thought it best not to shake out another reef in the jib."

"It would only strain the old hooker to buck these seas, sir," he replied, "and as you had no observation I hardly thought a point or two would make much difference."

"Nor does it; but I prefer to be consulted on such matters hereafter. You must have had some other reason?"

He glanced about to make sure of our distance from the men at the wheel.

"Well, in a way I suppose I did, sir," he admitted slowly. "The watch forward is sullen, and I had no desire to stir them up unless there was some real need. It's Liverpool's turn on deck, Mr. Hollis, and he and I never was no friends. If I was to give an order, and then had to go forward to make 'em take hold, it might start up quite a row, sir."

"Quite a sensible decision. It may interest you to know that I have just cut Liverpool's claws—his friend McCann is below, safely locked up."

"Exactly, sir. That was what occurred on the main deck just now? He was very quiet about it, sir."

"Yes; fighting doesn't seem to be McCann's trade. He prefers to pay others to do that for him. But the fellow is no less dangerous on that account, Mr. Olson."

"I know that kind, sir," and the second mate hesitated. "Is it true what I hear that this one is a real New York millionaire?"

"He's rich enough, if that is what you mean."

"And you are not a real sailor, Mr. Hollis, but just a yachtsman?"

"Has McCann been circulating that yarn forward?"

"He has, sir. Simms just told me the story at the wheel."

"Well, then, listen to me, Mr. Olson, and then see to it that the word gets to the crew. I was a member of a yachting party when we suffered shipwreck, but I'm no yachtsman. I left the sea some years since, having come into some money, but before that I was a deep-water sailor, all right. I've served before the mast, Mr. Olson, and won every grade up to a captaincy in the Old Atlas Line. I know the sea, and its way from forecastle to after-cabin, and any time those lads forward there want to take my measure the chance is wide open. You understand?"

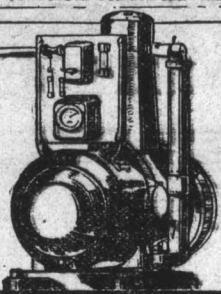
"I do, sir," and I thought there was more respect in the tone.

"Good; there will be no trouble to-night?"

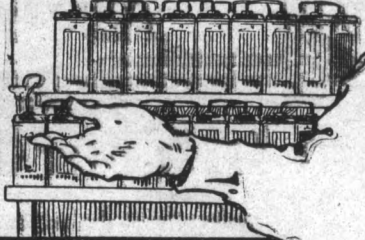
"I think not, sir, but by morning they will begin to wonder what has become of this man McCann, and may grow ugly."

"We can handle them by daylight. It is darkness, which gives them an advantage. I'll return to the main deck, Mr. Olson, and leave you in charge here." (Continued next week).

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Woman and Her Needs

At Home and Elsewhere



The Beam In Your Own Eye

I DON'T know what's the matter with everybody." It was a querulous voice behind me on the inter-urban car. "I never can get a thing done the way I want it. Everybody lies and is dishonest. I have to watch the grocer like a cat watches a mouse or he cheats me, and the hired man is always sneaking things home to his mother. I never saw such folks. Everything is wrong."

"Did you ever try blaming yourself?" asked a tired voice, none too politely. Its owner had evidently heard the same tirade before. "I've noticed that when a body thinks everybody else is wrong there's always a lot of cleaning up to be done around home." And a raw-boned man arose and stalked into the smoker, thus effectually closing the conversation.

I wanted to turn around and look at the woman who found everything wrong, but I didn't dare. I know though that the corners of her mouth were drawn down, and her face was lined with fine creases and that she eyed everyone about her with suspicion. There are others like her of both sexes, people who have looked for the bad so consistently that they now can find no good. Fortunately, there are not many of them or we'd all be cutting throats. But the man's little admonition is good for us if even we haven't gone to extremes.

An unusually successful man was once asked how he managed to get along with so little friction.

"I always look first for the fault in myself," he replied. "Half of the time, yes, three-fourths of the time, I find it right at home. The other fourth I don't bother about because I'm so busy straightening out my own mistakes."

Children who complain of hard treatment at home would do well to try this man's method. It has been my experience with American fathers and mothers that their sin lies on the side of too much leniency, and yet lately I have heard quite a little of father's "domineering" and mother's "fussiness." I suppose father thinks that so long as he pays the bills he has some right to say how the money shall be spent and how much of it, yet this does not seem to occur to the boys who want to burn up the gas, and the girls who sigh for more and daintier clothes. And mother, who has to bear all the blame when joy rides terminate disastrously, could hardly be expected to sit down without a murmur when things do not look just right to her. The children who are heady with a little new liberty, resent any interference and blame father and mother for "spoiling" their happiness. If they would sit down instead and look for the fault at home they would find it in at least fifty cases out of every one hundred.

The same way with husbands and wives. For some reason, let's blame it on the war, there seems to be a lot of domestic unhappiness just now. In a good many homes things are at sixes and sevens and team work is an unknown quantity. Each side blames the other, where to unprejudiced outsiders it looks like a fifty-fifty proposition. If instead of looking for the mote in the other's eye, each would pluck out the beam in his own the atmosphere would clear up decidedly. Selfishness is real-

ly at the bottom of the trouble, as it is at the bottom of all trouble, even the great world war.

We are all unwilling to admit our own shortcomings. What is a vice in the other chap is only a perfectly natural instinct in us. As young Martin Chuzzlewit put it, "Grandfather is so confounded stubborn, but I only display a proper firmness of spirit."

What is selfishness in our husband or children is only insisting on our rights when we do it. When husband wants to go holidaying without us, he is neglecting his home, but when we take a vacation without him we need the change. And so with friend husband. The money we spend for candy and sodas or trifles for the house, which to his eye lack utility, is all nonsense and extravagance. But the money he spends for tobacco and "being a good fellow" is perfectly legitimate because he earned it and a man has to have some diversion.

All the friction could be removed if everybody made it a rule to look for flaws at home first. Of course, not everyone will, but a few of us could make a start, and that would help mightily. It would remove a great deal of trouble at once and then our example would influence others to follow in our footsteps.

DEBORAH.

REFRIGERATOR WITHOUT ICE.

BY MARY RAE.

In traveling through the hot regions of Arizona, I found many places where it was impossible to secure ice. The people there, however, used a water cooler, usually home-made, which was very successful even in that climate, and as it is very easily and cheaply made, many northern farmers, who live too far out for the ice man, would find it a great convenience through the hot summer months. It is made in the following manner: The size or shape may be varied, but care must be taken to give all parts a free circulation of air.

Make a skeleton frame two by two feet square and three feet high. Make a skeleton door for the front, put a solid top and bottom on of wood or zinc, put two slat or perforated shelves inside, cover the sides and door with burlap, fasten it on the north side of the house where it will be in the shade and the wind will strike it. Place three or four thicknesses of burlap on top and on this set a large can of water, make a hole in the can large enough to let enough water drip to keep the burlap wet, or a keg may be used and a small faucet attached to regulate the supply of water.

MAKING JELLY.

Probably less jelly and jam will be made this summer than formerly, owing to the price of sugar, but a certain amount is bound to be made. Not only because the family wants it, but because jelly is a good food and it is more truly economical to conserve the fruits which may be kept this way than to allow them to go to waste because sugar costs money.

Some fruits will not jelly at all,

while others sometimes do not behave as they should and we feel our time, labor, fruit and sugar are wasted. Use care in selecting your fruit, do not use that which is over-ripe or dead ripe, and then test it for its jelling qualities. To do this pour a teaspoonful of the juice, after it has been cooked and cooled, into a cup with an equal amount of ninety-five per cent grain alcohol. If a jelly-like substance forms in the bottom the juice will make jelly. If it forms in a solid lump, use equal amounts of juice and sugar. If it is not in one lump use less sugar.

In making jelly from currants and small fruits the less water used the better. Simply add enough to prevent burning, heat through, crush the fruit and cook up well. Strain through a double cheesecloth bag or through flannel. If you wish a clear jelly, do not squeeze the bag. In these days of thrift it is well to extract the fruit two or three times. After letting all drip that will, boil up again, and extract the juice. Often jelly can be made after re-cooking three and four times, but of course the quality is not so good.

After extracting the juice bring to a boil before adding the sugar. The sugar should be heated in the oven and poured gradually into the juice as soon as boiling begins. Remove as soon as the liquid jellies. Rapid boiling gives a clearer jelly. It is not necessary to skim while boiling. Instead, better results are obtained if you do not skim the jelly until it has been poured into the sterilized glasses. When the juice pours off the spoon in flakes or in a sheet, instead of like syrup, it has cooked long enough.

In making orange marmalade use the same jelly test to tell when it has cooked long enough. If you let the marmalade cool before pouring into glasses the fruit will not rise to top.

The Department of Agriculture anticipates a serious shortage of jars for canning and urges all housewives to save all their bottles for jellies and preserves, which do not need to be sealed. Simply pour into the wide-mouthed bottles and cover with paraffin. Then cork, or if you have no corks tie a piece of muslin over the mouth.

The department also advises drying sweet corn, snap and string beans, shelled beans and peas, and most other fruits except strawberries and grapes.

CHILD WELFARE BULLETIN.

The Children's Bureau of the United States Department of Labor is sending out bulletins on the care of children which contain a great deal of valuable information for mothers. These may be obtained free by writing the Children's Bureau, Washington, D. C., and asking for them. As they can not be printed at length in this department owing to lack of space, the editor suggests that interested mothers write and ask for them. They contain the answers to many questions which mothers are anxious to have answered. A few titles, taken at random, are "The Care of the Growing Child's Teeth," "What is your Child Learning?" "Feeding the Child of Four," "Clothes for the Growing Child," "Food for Young Children." Practically every phase of the care of children is treated in the series.

HOME QUERIES.

Household Editor:—Can someone tell me how to remove varnish from linoleum? Also when to gather dandelion root for medicine?—Mrs. R. V. E.

A very good varnish remover is made of two parts of ammonia to one part of turpentine. This rubbed over the linoleum or wood from which the varnish is to be removed will soften the varnish so that it can be easily scraped off. The best time to dig dandelion roots for medicinal use is in the fall. The roots should be washed immediately after digging and thoroughly dried before storing. If they are not washed at digging time they need not be washed at all.

The following is a very good method of drying beef: Brown salt until the color of coffee, and while the salt is still hot, roll each piece of beef in it. Then pack in a crock and let remain for five days, after which it should be taken out, washed well and hung up to dry. For pickling beef, the following is a good method: Nine ounces of salt, four ounces of saltpeter, two ounces of saleratus, two quarts of molasses. Add water enough to cover the meat. This brine should be scalded and skimmed and then let cool before pouring over the meat.

Graham "War" Bread.—Two cups of sour milk, one rounded teaspoonful of soda, half teaspoonful of salt, small half cupful of granulated sugar or less if desired, three tablespoonfuls shortening, graham flour to make a smoothly stiff batter. Bake in a loaf pan or in gem pans. This will rise like a cake in a moderate oven and be really light and keep moist in a covered receptacle for at least three days.—G. E. S.

Household Editor:—I am a reader of the Michigan Farmer and greatly enjoy the Household Department. I think it could be made more interesting and helpful if farm wives would help it along, so I am going to send Mrs. Wm. J. M. my recipe for making graham bread, which I think, if she follows directions, will help her. Take one good tablespoon of bread flour, one tablespoon of salt, two table-spoons of granulated sugar, and water enough to wet (perhaps a quarter of a cup). Then add three good-sized potatoes, mashed fine, and pour about one quart of potato water over the flour, salt and sugar while boiling hot. Then add the mashed potato and stir until the potatoes are dissolved. When lukewarm add a yeast cake. Set in a warm place to rise until next morning, then take two sifters of white bread flour and put in bread pan, in winter warm flour, make a hole in center of flour and pour in the light yeast, to which has been added one teaspoonful of soda. Add lukewarm water enough to make four loaves or more if wished, and stir and beat into a light sponge. When light, if all is not wanted for graham, take out what you want and put it in some other pan, add six table-spoonfuls of sugar, or four table-spoons of molasses if you like it dark, and graham flour to knead a hard loaf. Knead well and set to rise. When light mold in loaves and set to rise and when light again bake the same as white bread. My graham bread is always good when made in this way.—Mrs. G. E. B.

Woman's Aid to Preparedness

Plan of Work of Department of Food Production and Marketing, Woman's Committee (Michigan Division), Council of National Defense.

OF the fifteen departments of work of the Woman's Committee (Michigan Division), Council of National Defense, none is more important than that of the Committee on Food Production and Marketing. Mrs. Dora H. Stockman, State Lecturer of the Grange, is chief of the department; 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. S. 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. Fred Marvin, of Detroit, Director of Ladies' Work, the State Gleaners; 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; with, 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. This is held to be necessary:

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.

Every woman is urged not only to put up her own family supplies, but to sell surplus supplies, either fresh or preserved, to neighbors less fortunately situated, or to neighboring grocers. No food should go to waste—even products so ripe that they cannot be sent to market in the ordinary way should be saved by drying or canning, and to make this possible public canning apparatus will be available at centers in cities and towns.

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 temporary storage to both producer and consumer. This, it is believed, will save nearly a twenty-five per cent waste of products.

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

The garden 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 thru."

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.

The Food Production and Marketing Committee points out the fact that much available land, not only in cities and villages, but in the open country, is still not under cultivation; and that a good many persons having labor to offer, are lacking land or the necessary capital to buy seed, etc. The committee is therefore seeking, by conference with the Governor's Agricultural Preparedness Board, with the agricultural agents of the several counties, and with men who control money, to help bring together capital, land, and labor, before the season has progressed too far for planting.

Plans for the registration of women for emergency service in the lighter forms of farm labor are now awaited from the Chairman of the Central Woman's Committee, Council of National Defense, Dr. Anna Howard Shaw, at Washington. In the various parts of the state the women are now engaged in automobile transportation of labor requisitioned by the county farm agents and employment bureaus.

A good deal has already been done in various parts of the state in securing potato seed at cost. Pledges were taken not to eat potatoes until the seed scarcity was past. In Kalamazoo county and nearby counties thirteen hundred bushels of potatoes at from \$2.40 to \$3.00 a bushel were bought and sold by the woman's committee, each buyer pledging himself, as a patriotic duty, to plant and faithfully cultivate every potato.

As fast as cities and counties are organized by the General State Committee, Council of National Defense, local committees on Food Production and Marketing are appointed. This work is being organized not for this year alone, but for the period of the war, and as long thereafter as requested by Secretary of War Baker and the other members of the Council of National Defense.

Will the woman farmers and gardeners wear overalls or any kind of uniform? Probably not. This, at least, will be left to individual choice. The committee only asks that women work in any way they can to increase staple foods and to conserve and use all food in the way best calculated to help "us win the war."

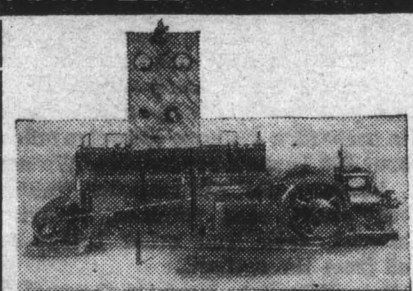
Self-reliance, self-restraint, self-control, self-direction, these constitute an educated will.—J. F. Clarke.

Education will not make people happy unless it is directed into useful channels.—Lord.

Two Giants of the Great Lakes

Regular steamer service on the Detroit and Buffalo Division of the D & C Lake Lines. The Two Giant Steamers of the Great Lakes—City of Detroit III and City of Cleveland III—make daily trips between these points, leaving Detroit at 5.00 p. m., Central Time, and Buffalo at 6.00 p. m., Eastern Time. Daily service is also given between Detroit and Cleveland. Two trips weekly between Detroit, Alpena, Mackinac Island, St. Ignace and Lake Huron way ports. Rail tickets are honored for transportation on all D & C steamers. Adv.

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HOGS

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.

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

"War is —"

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

Large Type P. C.

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

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

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

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

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

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

Big Type Poland Chinas Sept. farrow, either sex, all hog. A. A. WOOD & SON, Saline, Michigan

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

Hampshire Swine Nothing for sale but fall boars and gilts. Write for prices. R. No. 9. Decatur, Ind. FLOYD MYERS.

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

FOR SALE YORKSHIRE BOAR PIGS

Waterman & Waterman, Packard Road, Ann Arbor, Mich.

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Shropshire Ewes

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

Kope Kon Farm, Kinderhook, Mich.

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

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Will Sell at

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200 Hampshire ewes	200 Hampshire rams
100 Shropshire ewes	100 Shropshire rams
100 Lincoln ewes	50 Lincoln rams
100 Rambouillet ewes	50 Rambouillet rams
50 Cotswold ewes	10 Cotswold rams
250 Oxford yearling ewes	200 choice grade ewes
250 Shropshire ewe lambs	

These sheep are consigned from the celebrated flocks of Walnut Hall Farms, Dr. S. F. Snow, H. W. McLaughlin, Telfer Bros., W. J. Cherry, Harley R. Emmons, A. J. Knollin, Zelora Green, Lincoln Bros. Peter McIntyre, R. S. Robson, Dadds & Dadds, W. W. Osler and others. This will be a bona-fide sale to the highest bidder, the opportunity of the year to buy good sheep. Send bids or write for particulars to Joint Sheep Sale, 39 Woodland Ave., Detroit, Mich.

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For Sale Reg. Black Percheron Stallion Colt

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

SHETLAND PONIES

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

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

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

For Sale or exchange for other stock three Percheron Stallions and one Spanish Jack. E. J. Aldrich, R. 1, Tekonsha, Mich., Bell Phone

DOGS

Fox Hounds of all ages, Stunk and Rabbit dogs. Send 2¢ stamp. W. E. LECKY, Holmsville, Ohio.

FOR Sale: Thoroughly broken beagle, rabbit and fox hounds, good hunters, also puppies of all ages ready or ship out. Rockfield Kennels, West Chester, Pa.



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Made of solid cast iron, has triple jacket, substantial firepot and radiator, best type grate. Designed right, built right. 60 years of experience and the **Mueller Guarantee** behind it.

Tear out this ad, write your name and address on margin and mail to us for valuable free book on pipeless heating, and name of nearest Mueller dealer.

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Makers of Heating Systems of All Kinds Since 1857

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R. Barringer, Richland	275.00
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All garage and repair men can give you immediate service. If you have any difficulty getting them, write us. We'll see you are supplied.

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Saves time and labor in unloading hay. Operates from load. Adaptable to gas, oil or steam engines. Has quick return drum. The only hoist made with automatic brake. Price is right. Write for circular.

O. K. CLUTCH and MACHINE CO.
Columbia, Pa.

His Trailer Soon Paid For Itself

WE bought our trailer to carry crates and baskets to our orchard and bring our fruit in. Last year we hauled to Alpena from the orchard, a distance of twelve miles, about 300 bushels of cherries. We use it, however, for all purposes, taking seed beans, seed potatoes, spraying material, tools and other things to and from the orchard.

It is difficult to compare the cost of the trailer with team hauling. A trip from the city where we live to the orchard with a team costs us from \$3.50 to \$4.50. The use of the trailer gets quicker results, the only expense being the wear and tear on the trailer, besides we only require small loads in our fruit business. This would apply to truck gardening as well, and the trailer is unquestionably a great saver in this particular.

We can go to the orchard and back with the trailer loaded in about an hour and a half. It would take a team more than a half day to make the same trip with the same load.

The great advantage to the farmer in having a trailer, if he owns an automobile, is the time saved in going to the city for little things. If his reaper or other machinery breaks down, he can rush to town with the parts and bring them back in the trailer. If he grows any kind of fruits for market, he can get them down quickly and in

small quantities, or large quantities, according to his requirements. He can also market vegetables and grain in considerable quantities to advantage by use of the trailer. In fact there are so many things a farmer can use a trailer for, I should regard it as an indispensable auxiliary to the auto. If he attempts to carry the stuff in his auto, he soon has it all marred up and keeps it constantly soiled, so that it is undesirable as a vehicle to travel in.

There are not a half dozen trailers in this vicinity and yet there are hundreds of autos. Our trailer practically paid for itself last year. This spring we set out over 200 apple and cherry trees. They came in a large box, weighing over 800 pounds. We put the box on the trailer, and although it had been raining for a day, we had it at the orchard in three-quarters of an hour. We carry all kinds of things in it for ourselves and neighbors.

There are no electric lines around this vicinity, and it is the ideal place for trailers, but as a rule farmers exceed their means in buying automobiles and feel that the trailer, which is the most useful part, is an extra burden they cannot bear. Their reasoning is all faulty, and the time will soon come when every farmer who has an automobile will have some kind of a trailer.

Alpena Co.

C. R. HENRY.

Jackson Reopens Its City Market

Jackson opened a city market three years ago, which flourished for a time and then for various reasons went into a sad decline. It was re-opened June 15, under new rules and starts off in good shape. Jackson market gardeners have organized and have voted to support the new market and discontinue their peddling through the city. Under the new market rules wholesaling will be done from 5:00 to 8:00 a. m., with special attention paid to the city grocery trade, followed by sales at retail to city consumers from 8:00 to 11:00 a. m. This rule is not rigid, however, and growers may sell in large or small quantities at any time. The market master is required to be on hand also from 1:00 to 4:00 p. m., so that some business will probably be done at the market afternoons as well.

Market stalls are free to the growers except that by payment of \$1.00 per month in advance the grower may reserve a particular stand. Growers must have name and address on their wagons.

The new market will be watched with interest throughout the state, for other cities will open markets as soon as they know how. Growers will endorse the plan of free stalls and the plan of selling will also appeal to them as well as to the retail grocers. Whether there will be much stuff left for the ultimate consumer when the grocers and hucksters get through, remains to be seen.

In addition to vegetables it is planned to have on sale butter, eggs, cheese, chickens, pork, etc., which will add greatly to public interest in the market. Some system of advertising, preferably in the daily newspapers, to keep city consumers posted as to market offerings, is quite essential. The market supply must be as continuous and certain as possible, for otherwise the consumer will be discouraged very quickly.

There must be stuff to buy, also people to buy the stuff. Consumers at this market are still confronted with the problem of getting their potatoes or their heavy stuff home.

One of the speakers at the recent opening of the Jackson market stated that prices should be regulated so as to make it worth while for the city consumer to visit the market mornings

with his or her basket. That would be a difficult task. Supply and demand regulate prices. Consumers will quickly discover whether it pays them to visit the market. Apparently the Jackson market will be largely wholesale from the start, as the growers like to clean up their loads quickly and get home. They are willing to let the peddler peddle.

Kent Co.

ALMOND GRIFFEN.

BUSINESS METHODS IN FARMING.

Farmers often complain that prices are always fixed for them—that when they go to buy a price is named which they must pay, and when they go to sell, a price is named which they must accept. This is true, but is not the fault partly the farmer's? The merchant insist upon a certain price or no sale, because he knows just what the article costs him, and under ordinary conditions it would be foolish for him to sell at a loss. Further, he buys a thing, not because he happened to buy it the year before, but because there will be a demand for it at a price for which he can afford to sell.

Back of him is the manufacturer who knows what it costs to produce an article, hence sells to the merchant at a certain price or not at all.

But the farmer, in most cases, does not know what his products cost him. This ignorance makes him helpless at the very start. He is not in position to say, "pay me so much or no sale," for he has no grounds for such an assertion. When he fixes the price he cannot fix it upon the cost of production, for he does not know what the cost of production is. Then he has not taken the pains to find out the cost of production. He has not taken the pains to produce only those things for which there is a demand at fairly profitable prices.

Would not more careful business methods used by farmers put them in position to fix the prices on what they have to sell? If the farmer knew what his products cost, and knew that they were what the people wanted, he would be in position when he went to market to say, "The price of my stuff is so and so," not "What will you give me for it?" Farmers, as a rule, are too lax in their business methods, thinking

that after their yearly accounts are all settled up, the remaining cash on hand is clear gain, and not considering how much it cost them to gain this surplus cash.

The farmer should know just how much it cost him to accumulate the surplus and often he would find that he had not made a single dollar of clear profit. In these days of educational advantages the farmer should have a system as well as the manufacturer and merchant, and there would be fewer mortgages recorded and fewer foreclosures on and against farm property.

Shiawassee Co.

D. H. M.

CO-OPERATIVE ROUTE MARKETING.

An extension of the method of collective marketing of small quantities of food supplies from a number of neighboring farms, now practiced in some sections of the country, might be a desirable step in food conservation and more economical and efficient marketing, according to specialists of the United States Department of Agriculture.

Routes for the collection of milk, cream, butter and eggs have been established co-operatively by farmers in various parts of the country and have been found to meet the special marketing needs of small farmers more fully than other arrangements. Under this plan a single farmer, or the various members of the marketing group in rotation, drives from farm to farm to collect the small quantities of supplies, and attends to the marketing of the aggregate produce collected. In this way the multiplication of trips to town is avoided and supplies which otherwise might be wasted find their way into the market.

Although route marketing usually is practiced for the disposal of dairy products and eggs, it has been used in some regions for disposing of vegetables, fruits, dressed poultry, and other products of small bulk, and in many cases might well be employed in other sections in a similar way.

MICHIGAN FARMERS CO-OPERATE.

Representatives of co-operative associations of fruit growers from Benton Harbor, Coloma, Millsburg, South Haven, Saugatuck, Bangor, Benton Center, Lansing and Hartford met at Hartford, Van Buren county, and decided to federate their interests in securing a uniform pack of fruit and strict observance of the new Michigan apple packing law, which is planned to raise the standard of Michigan fruit. Peach grades and sizes were adopted as follows: B grade, 1½ to 1¾ inches in diameter; A grade, 1¾ to 2¼ inches; AA grade, 2¼ inches up. Leslie Scott, of Bangor, newly appointed fruit inspector for Michigan, was present and asked the co-operation of growers in making the new state law a success.

The Farmers' Co-operative Elevator Company has been formed at Corunna, Shiawassee county, and has bought the elevator and equipment of A. W. Green, taking possession July 1. Joseph Rundell, for many years in charge of the Corunna mills, has been engaged as manager. A farmers' elevator company is also being formed at Laingsburg, while just across the county line at Chesaning on the north and at Flushing on the east, there are farmers' elevators in operation. Co-operative live stock shipping associations have been formed at Pennington and Laingsburg.

A co-operative live stock shipping association has been formed at Delton, Barry county.

Farmers of Hartford, Van Buren county, have bought the Finley elevator at that place, taking possession September 1.

Kent Co.

ALMOND GRIFFEN.

Poultry Query Department

Cholera.

Will you please tell me what is the matter with my hens and the cure for same? They take with looseness of the bowels, lose their appetite, get very thin, mope around for a few weeks and die. Lost about 12 in past two months from this complaint. Fed them oats and all the milk, mostly thick, for the past month. Changed feed now to corn, only with very little improvement in their condition. Keep house fairly clean; its an old building. Have an idea its some contagious bowel trouble akin to cholera. Droppings are yellow and green.

Oakland Co.

A. B.

You are probably right in your statement that the disease is the cholera, as one of the symptoms of this disease is the yellow and green color of the droppings, accompanied with diarrhea.

The bird also separates itself from the flock, the feathers become ruffled, the wings droop and the head drawn toward the body. The bird also becomes drowsy and sinks into deep sleep from which it is almost impossible to arouse it. The crop is usually distended, and in some cases there is intense thirst.

There is no certain cure for this trouble. The birds showing these symptoms should be immediately separated from the others, and when they die the bodies should either be burned or buried very deep. The house should be thoroughly cleansed by removing all droppings and litter, and then thoroughly sprayed with some good disinfectant.

There is only one other thing which might cause the trouble you are having with your fowls, and that is copper poisoning. This usually causes bluish or green colored droppings and diarrhea. However, this trouble is usually fatal in a few hours. Large quantities of milk, white of egg and sugar water are recommended as remedial measures.

Rheumatism.

My hens get lame in one of their legs and on some of them seems to be a bunch where the foot joins the leg. The most of my hens are Black Minorcas and they are the only ones that have been lame. Have fed them through the winter and spring, on oats and corn ground together, with poultry medicine in it. They have been and are now laying well.

F. A. B.

The lameness of your hens is undoubtedly due to rheumatism, which is caused by muscular and joint inflammation brought about by exposure to cold or dampness. Where there are several cases in a flock, it indicates that there is something wrong in the housing conditions.

The treatment consists entirely of preventive measures, which are keeping the hens in dry, warm and well ventilated houses, and allowing them to run on well drained ground.

Lameness is also caused by such diseases as tuberculosis and aspergillosis, scaly leg and bumble-foot, but if your hens show no other symptoms of disease, you can feel quite sure that the cause is rheumatism.

Catarrh.

Can you tell me what to do for my little chicks that have sore eyes and then go blind. They seem smart and well, only their eyes, and after they get blind they starve to death. Have had several hens die that were only sick one day. They get sick and dump around for a day and the next day they die. Their combs are red and they are healthy looking and are not overly fat. Have been feeding oats and wheat screenings and some corn; they have free range.

J. B.

Undoubtedly your chicks and hens have catarrhal trouble. Weather such as we have been having is likely to produce this condition, and it is difficult to keep things sanitary about the coop during continued wet periods.

The essential thing is to keep the coops dry and clean, and to use special care and not feed anything which has become spoiled. Mashies should be fed so that the chickens will clean up all of one feeding within thirty minutes,

as any mash left over from one feed to another will become sour and cause digestive troubles. Probably your chickens are getting food from some source while on free range which is not as sweet as it might be.

For the eyes, it would be advisable for you to wash them with either a three per cent solution of boracic acid or a two per cent solution of potassium permanganate.

In addition to the grains you are feeding the hens, I would suggest that you feed in a hopper a dry mash consisting of eighty-five per cent of bran and fifteen per cent of beef scraps. It is also a good thing to have bran with about five per cent of commercial beef scraps available for the chicks.

Tuberculosis.

I am losing my hens. They get lame lose flesh and head color, finally die. I have lost several of them and have eight or nine lame ones. They finally get so they can hardly walk. My flock are nice healthy looking R. I. Reds. I lost some last summer and fall, then didn't lose any for awhile in winter, and have lost about half a dozen this spring, and feeding corn and oats.

Oceana Co.

J. B. S.

The symptoms you give of the disease attacking your hens would indicate that very likely they have tuberculosis, as lameness, loss of flesh and lack of color in the comb are indications of this disease.

However, it is very difficult to determine accurately from exterior symptoms when tuberculosis is present. I would therefore suggest that you open one of the dead fowls or kill one of the sickest ones and examine the liver and intestines. If you find these organs covered with whitish cheese-like nodules, you may be sure that the disease is tuberculosis.

There is no known treatment for this disease, and authorities agree that the best and most economical way to fight it is to destroy the entire flock and start with new stock, after the coop and surroundings have been thoroughly disinfected.

Other causes of lameness are aspergillosis—which is a disease of the air passages—bumblefoot and rheumatism. Aspergillosis is often confused with tuberculosis, but loss of weight and lack of color in the comb are not usually symptoms of this disease.

If you cannot satisfy yourself as to whether the disease is tuberculosis or not, I would suggest that you consult a competent veterinarian before you carry out the drastic measures suggested above.

Digestive Troubles.

Can you tell me what is the trouble with my young chicks? From the smallest to the largest size (say 1½ lbs.), they are dying. There is no lice, no bowel trouble, no roup, colds or cholera of any kind. Their feathers on the head stand up like bristles and often go with their wings out and drooping and soon die. Thinking it might be indigestion I gave them a weak drink of epsom salts in water.

Allegan Co.

Mrs. C. B.

Undoubtedly your method of feeding is at fault, and this has resulted in digestive troubles in your chicks. As you did not state what you are feeding, I cannot make any suggestions.

However, you should read the article on "Chick Feeding" which appeared in our issue of June 9. If you have no copy of this issue on hand, we can send you one upon request.

Be sure that the chicks are getting nothing but clean food, and in feeding mashies, give them no more than they will clean up in a half hour. It would also be advisable to make an investigation to see whether there is any possible chance of their getting poison while out on free runs. Very often chickens will pick up poisonous material which has resulted from spraying. The mere fact that the cold affects the chicks very easily is an indication of congestion which is most likely in the digestive organs.

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JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$30, \$2.50; 100, \$7. Circulars. Photo. John Northon, Clare, Mich.

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GEORGE B. FERRIS 924 Union, Grand Rapids, Mich.

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EGGDAY RANCH, Marshall, Mich.

Improve Your Poultry. My Young's Strain S. C. White makers. 20,000 baby chicks for June at \$9 per 100. Order direct or get our catalogue. Satisfaction guaranteed. W. VAN APPELDORN, R. 7, Holland, Mich.

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

Barred Rock Eggs Four pullets layed 950 eggs in one year.
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Intends to be a real service to our farmers. Gradually it is making itself a service to farmers of Bloomingdale vicinity. The call for Chicks went way beyond what we could take care of, for next year we are making greater preparations. We can now supply a limited number of yearling hens, one and two year old Cocks and Cockerels; no more Pullets. We invite correspondence about any breed and will advise according to inquiry. Pure breed practical stock; nearly all breeds. We are developing a big class market with our summer who want strictly fresh eggs—a matter of value to Michigan Farmers in connection with their poultry breeding. HOMESTEAD FARMS, Bloomingdale, Mich.

RHODE ISLAND REDS and PLYMOUTH ROCKS Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00; 100, \$5; 120, \$6.00. Mammoth Bronze Tom Turkeys, 8 to 28 lbs. according to age \$5 to \$25, 10 eggs \$3. A. E. Cranston, Vassar, Mich.

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Silver Spangled Hamburg Eggs setting \$1.50 Balance season, young Belgian Hares pedigreed \$6.00 pair. Pedigreed Persian Kittens great hunters \$10 each. Send stamp. Riverview Farm, Vassar, Mich.

S. C. White Leghorns Yearling hens for sale. Thoroughbred stock, bred for vigor and egg production. \$1.00 each. References. Write Krentel Bros., Box 624, East Lansing, Mich.

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

SILVER, Golden and White Wyandottes. Eggs from some grand matings. \$1.50 per 15, \$2.50 per 30, large vigorous birds. C. W. Browning, R. 2 Portland, Mich.

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

WHITE Wyandottes. A. 1 layers. Eggs for hatching, \$1, \$2, \$3 for 15, \$7 per 100. Special matings \$5 for 15 DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

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

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ABERDEEN-ANGUS

Bulls by BLACK QUALITY IT0, sire, First prize, Breeders and Calf Herds Mich. State Fair 1916. We also won first on Exhibitors Herd, Jr. Champion Bull, Jr. Champion Female and Grand Champion Cow. Also breeders of Percheron, Hackney and Saddle Horses. WOODCOTE STOCK FARM, IONIA, MICH.

CHOICE Angus Bulls for sale. Have several well bred, excellent type Angus Bulls at reasonable prices. M. L. Smith, Glenwood Farm, Addison, Mich.

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

Guernsey Bull Calves From Imported and American bred dams of high producing ancestry. Cash or bankable note. Or would exchange for br. gilt or yearling boar large type Duroc swine. G. A. Wigent, Watervliet, Mich.

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

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

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

GUERNSEYS: Two fine, registered bulls, 6 and 7 mos. old. May Rose breeding, from good producing dams, and at farmer prices for quick sale. Meadow-Gold Guernsey Farm, St. Johns, Mich.

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Prof. Carlyle of the Wisconsin Experiment Station asserts that "It will be readily seen that the Holstein cow has the ability to digest coarser feeds and work them over to a better advantage than Jersey and Guernseys and this is a strong point, in which I contend that the Holstein has a great advantage over any of our smaller breeds, and it is a point which is going to appeal to the farmer in the future far more than it has in the past." There's big money in the big "Black and White" Holsteins.
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Registered Holsteins. Very fine Young bull five months of age A. R. O. breeding Satisfaction guaranteed. W. B. Jones & J. F. Lutz, Cohoctah, Mich.

"TOP NOTCH" HOLSTEINS

Many years of careful management and systematic handling of our three large herds find us the breeders and owners of a cow that heads one of the only eight combinations of three direct generations of thirty pound cows in the United States. We have young bulls for sale sired by a son of this great cow. The blood of this cow in them, combined with that of other great animals of the breed in our herds, would insure most pleasing results in almost any herd. McPHERSON FARMS CO., Howell, Michigan.

Bigelow's Holstein Farms, BREEDSVILLE, MICH.
Have Some Fine Registered Stock For Sale

REG. HOLSTEINS: Herd headed by Albina Bonto Butter Boy No. 93124. Dam's record at 6 yrs. butter 28.53 lbs. milk 618.4. Yearly record at 24 yrs. butter 802 lbs. milk 1562 lbs. W. B. READER, Howell, Mich.

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Buy Your Bulls From Parham's Pedigree Stock Farm Choice Registered Holstein calves from A. R. cows. RAY B. PARHAM, Bronson, Michigan.

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For Sale:—17 mos. old bull whose 7 nearest dams average 560.1 lb. milk and 25.679 lb. butter in 7 days. Sire is by the son of a 32.9 lb. cow and from a 31 lb. 4 yr. old cow. Dam is a 22.5 lb. 1r. 3 yr. old daughter of a 26.5 lb. Jr. 4 yr. old cow, whose dam is a 27 lb. cow.

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(Additional Stock Ads. on Page 51).

Markets.

GRAINS AND SEEDS.

July 17, 1917.

Wheat.—Owing to the general belief that the government is ultimately to take full charge of the wheat market traders are keeping away and the only transactions are those resulting from actual needs. Millers, however, are not finding any large outlet for flour and consequently the transactions in the wheat line run in small volume. While the crop is very late in maturing the cool weather is in its favor and the early estimates seem likely to be realized for winter wheat. The spring wheat is in much poorer condition than a month ago and the lateness of that crop makes possible damage from fall frosts. One year ago the price for No. 2 red wheat on the local market was \$1.18 per bushel. Last week's Detroit quotations were:

	No. 2	No. 1	Sept.
Wednesday	2.25	2.20	2.05
Thursday	2.25	2.20	2.06
Friday	2.25	2.20	2.06
Saturday	2.28	2.23	2.07
Monday	2.30	2.25	2.07
Tuesday	2.35	2.30	2.07

Chicago.—July \$2.07; Sept. \$1.93.

Corn.—A fear is taking hold of many of the dealers and farmers over the corn belt that the frost will catch much of the crop before it has hardened and this feeling has strengthened the market and forced prices to new high levels. But the situation is modified somewhat by continued rumors of peace possibilities among the warring nations. But with cash grain well cleaned up and the outlook unpromising, buyers feel quite easy in bidding the present high range of values. One year ago the price paid on the local market for No. 3 corn was 82c. Last week's Detroit quotations were:

	No. 3	No. 2
Wednesday	1.92½	1.93
Thursday	1.95	1.96
Friday	1.96	1.97
Saturday	1.97	1.98
Monday	1.97	1.98
Tuesday	1.99	2.00

Chicago.—Sept. \$1.60; Dec. \$1.33½.

Oats.—Field advices give hopes of a bumper crop and the market is feeling easy because of this. However, the strength of corn is bolstering this deal and inspiring buyers to take hold in a moderate way. A year ago standard oats were quoted at 45½c. Last week's Detroit quotations ruled as follows:

	Standard.	No. 3
Wednesday	77	76½
Thursday	77½	77
Friday	80½	80
Saturday	80½	80
Monday	80½	80
Tuesday	80½	80

Chicago.—July 68¼c; Sept. 54¾c; Dec. 56c.

Rye.—There is nothing going on in this trade and the quotation of \$2.15 for cash No. 2 means little, as dealers are not disposed to pay sellers anywhere near this figure.

Beans.—Very little left in this trade, with local quotations practically nominal at \$8.25 for cash and \$6.60 for October deliveries. The Chicago trade is dull at former prices. Michigan pea beans, hand-picked \$8.75@9; red kidneys \$6.65@6.75.

Seeds.—Prime red clover \$11.40; October \$11.95; alsike \$11.30; timothy seed \$6.30.

DAIRY AND POULTRY PRODUCTS.

Butter.—The butter trade is quiet with prices a fraction higher. Fresh creamery firsts were offered Monday at 36¼c.

Elgin.—Price based on sales is 37½c per pound, the same as a week ago.

Chicago.—Trade is in moderate volume at slightly advanced quotations. Extra creameries 38c; extra firsts at 37½c; firsts 36@37c; seconds 34@35½c; packing stock 30½@31c.

Eggs.—Fresh firsts sold at 34c and trading is about steady with a week ago.

Chicago.—Receipts slightly larger, with good stock ruling steady and poor lots somewhat easier. Firsts 31½@33¼c; ordinary firsts 29@31c; at mark cases included 27@33c.

Poultry.—Steady for most grades. Best broilers 32@33c; Leghorns 26@27c; No. 1 hens 20@21c; small to medium 19@20c; ducks 22@23c; spring ducks 26@27c; geese 15@16c; turkeys 24@25c.

Dressed Calves.—Fancy 20@21c; No. 2, 17@18c per lb.

FRUITS AND VEGETABLES.

Gooseberries.—\$3 per 24-qt. case; raspberries, red \$4; black \$4; huckleberries \$5.50.

Cherries.—\$3.50@4 per bushel. At Chicago the market is firm, with the Michigan stock at \$1.25@2 per 16-qt. case.

WOOL.

The uncertainty of the government action toward the wool trade has slowed up business. However, prices are as firm as ever. Wool from the fleece states is selling in Boston as high as 75c, while growers are being paid as much as 70c by local dealers. The consensus of opinion is that in the event of peace, prices would have a temporary decline, but the general world shortage would undoubtedly bring back high values as soon as trading could be readjusted to a peace basis.

GRAND RAPIDS.

Local mills are paying \$2.05 for No. 2 red wheat and \$2 for No. 1 white. Corn is quoted at \$1.95; oats 80@85c; rye and barley \$1.25@1.50. The egg market continues firm, with prices at 32@33c. Last of the strawberries are bringing \$2@2.50 per crate. Sour cherries are in good supply this week and the market starts around \$1 per half bushel. First home-grown potatoes are due this week.

DETROIT EASTERN MARKET.

Considering the season, offerings were large and buyers plentiful on the market Tuesday morning. Lettuce 15@20 per bu; cabbage \$1; string beans \$3.50 per bushel; greenhouse tomatoes \$2.75@3 per 14-lb. basket; onions six to eight bunches for 25c; eggs 43@45c; ducks 70c each; broilers 25c per pound. Very little loose hay moving, with sales at \$20@22 per ton.

LIVE STOCK MARKETS.

Buffalo.

July 16, 1917.

Receipts here today as follows. Cattle 175 cars; hogs 55 d. d.; sheep 5 d. d.; calves 1400 head.

There were around 175 cars of cattle on the market today and what shipping steers were here sold 10@25c higher. There was a strong demand for the best grades of butcher cattle and they also showed an advance of 10@25c, but the light common grassy grades were very slow and about steady. There was a good demand for the best bulls and they sold readily at strong prices. What few stockers and feeders were here sold about steady. We look for a fair run of cattle here next Monday and a good trade on the best fat grades but no more than steady on the medium and common kinds, and would advise being very careful in buying these grass cattle.

Receipts of hogs footed about 55 double decks, demand very light and unfortunately prices 10@15c lower, due practically to no outside demand, packers having a clear field. A few selected hogs sold at \$16, with the bulk around \$15.80@15.90; pigs and lights generally \$15; roughs \$13.75@14; stags \$11.50@12.50. Quite a number of hogs arrived too late for market and with a fair supply in sight for Tuesday prospects no better.

With a light run of lambs today our market opened up active and prices 75c lower than the close of last week. All sold and we look for steady prices the balance of the week, depending on receipts.

We quote: Lambs \$15.50@16; yearlings \$13@13.50; cull to common \$10@13; wethers \$10@10.25; ewes \$9@9.50; bucks \$7@7.50; best calves \$15.50@15.75; common and light \$10@15; heavy \$8.50@13; grassers \$6@6.50.

Chicago.

July 16, 1917.

Cattle. Hogs. Sheep.
Receipts today. 21,000 40,000 19,000
Same day 1916. 21,912 36,721 13,347
Last week. 45,942 133,077 58,873
Same wk 1916. 45,952 139,935 79,319

The week starts off today with a large cattle supply for these times and while fat beefs are selling all right, with a good demand, others are slow and expected to go off at least a dime. There was a sale of a carload of prime Missouri steers which averaged 1450 lbs. at \$14. Kansas City reported receipts today of 30,000 cattle, an unusually large supply. The Chicago hog market today is firm for the small percentage of choice lots, with a \$15.90 top, but most grades are about 5c lower, with a poor demand for the many inferior offerings. Hogs marketed last week averaged in weight 232 lbs. Most of the lambs received here today failed to come on the open market, as the big packing firms received sixty cars direct from the south. Lambs were

25c or more lower, but the market was unchanged for sheep, the top price for prime lambs being \$15.50, paid by a city butcher.

Cattle started off last week with prices largely 10@15c higher, and later made additional gains. Fresh high records were made for prime heavy cattle and fancy little yearlings, the former bringing \$13.95@14, while a sale was made of prime yearling steers and heifers mixed, averaging 893 lbs. at \$13.80. Beef steers sold largely at \$11.25@13.50, with a better class of prime beefs at \$13.55@14, good fat steers \$12.25@13.20. Yearlings on the grassy order had to go below \$10, but desirable kinds found ready sales at \$12@13.80, choice bringing \$13 and over. A good business was transacted in calves on the basis of \$13@15 for ordinary to prime light vealers, with sales down to \$6@11 for heavier lots. The stocker and feeder branch of the market was very dull at lower prices, stockers going at \$6.50@9.25 and feeders at \$8@9.50. Buying was mostly confined to good lots. Most stockers and feeders closed 25c lower than a week earlier.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.

July 19, 1917.

Cattle.

Receipts 1655. Market steady and much more active than at the same time a week ago and the quality better. Prices for anything but prime dry-fed stuff were the same as at the close last week. Two loads of dry-fed brought \$11.50. The close was fairly active, due probably to light receipts.

We quote: Best heavy steers \$10@11.50; best handy weight butcher steers \$8.50@9.50; mixed steers and heifers \$8@9; handy light butchers \$7.50@8; light butchers \$6@7; best cows \$7.50@8.25; butcher cows \$6.50@7.25; common cows \$5.75@6.25; canners \$5@5.50; best heavy bulls \$7.50@8; bologna bulls \$6.50@7.25; stock bulls \$6@6.25; feeders \$8@9; stockers \$6@8; milkers and springers \$5@9.00.

McMullen, K. & J. sold Hyman 5 butchers av 580 at \$6; to Thompson 9 do av 902 at \$8.75; to Bray 1 cow wgh 980 at \$5.75; to Hoffend 8 steers av 700 at \$7, 1 do wgh 560 at \$6.25; to Thompson 1 bull wgh 1430 at \$8, 2 steers av 960 at \$8, 2 do av 970 at \$9.75, 7 do av 625 at \$6.25; to Goose 7 do av 543 at \$6.75; to Hammond, S. & Co. 1 bull wgh 1000 at \$7; to Goodgold 8 steers av 790 at \$7.25, 2 do av 830 at \$7.75; to Bresnahan 3 cows av 1200 at \$8.50, 3 do av 850 at \$5.75, 4 do av 1000 at \$6.75, 2 do av 1125 at \$7, 2 do av 910 at \$5.75, 3 do av 770 at \$6, 2 do av 1085 at \$7; to Thompson 5 steers av 1090 at \$10, 4 do av 900 at \$8.25; to Parker, W. & Co. 19 do av 905 at \$8.25, 18 do av 850 at \$8.25; to Brighton D. M. Co. 3 cows av 900 at \$7.25.

Veal Calves.

Receipts 587. The veal calf trade was very dull and 50c lower than last week, common and heavy grades being nearly unsalable.

Best \$14@14.50; others \$7@12. Sandel, S., B. & G. sold Sullivan P. Co. 8 av 130 at \$13, 12 av 175 at \$13.50, 20 av 150 at \$14, 3 av 160 at \$13.50, 3 av 135 at \$14, 4 av 215, \$9; to Thompson 5 av 165 at \$14, 5 av 155 at \$14.25, 4 av 250 at \$12, 4 av 135 at \$13, 13 av 160 at \$14.50; to Mich. B. Co. 8 av 150 at \$13.

Bishop, B. & H. sold Thompson 12 av 155 at \$14.50, 7 av 150 at \$14.50; to Mich. B. Co. 9 av 140 at \$14.50, 5 av 155 at \$14, 5 av 160 at \$14.50, 12 av 155 at \$14.50, 14 av 175 at \$14; to Parker, W. & Co. 20 av 145 at \$13.

Sheep and Lambs.

Receipts 479. There was only a handful of sheep and lambs, but it was hard work selling even these few and prices were 25@50c lower than last week.

Best lambs \$15@15.25; fair lambs \$13.50@14; light to common lambs \$12@12.50; fair to good sheep \$8@8.50; culls and common \$5.50@6.50.

Sandel, S., B. & G. sold Sullivan P. Co. 6 lambs av 85 at \$15, 3 do av 70 at \$12, 10 sheep av 109 at \$7.50, 13 lambs av 75 at \$15.25; to Thompson 11 do av 65 at \$15.25, 31 do av 73 at \$13.75.

Hogs.

Receipts 1314. The hog trade was 25c lower than on Tuesday and few were sold; prices 50@60c lower than they were a week ago; a large number went over unsold. Mixed \$14.75@15; pigs \$14.25@14.50.

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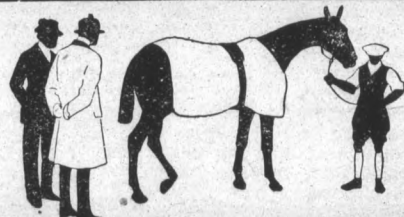
Don't overlook this opportunity to make your savings earn more.

South Bend National Bank
103 N. Mich., South Bend, Ind.

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your profits into loss, feed Dr. Lape's Medicated Stock Salt, it will rid your stock of worms, tone up the system, aid digestion, and make more pounds of flesh on the same feed, get it at your dealer's or sent on receipt of price, 25 lb. pail, \$1.50, 50 lb. pail \$2.50, 100 lb. sack \$4. DON'T let your poultry die of disease when Dr. Lape's Poultry Tonic will prevent it, and keep your hens healthy, and healthy hens lay eggs, 1½ lb. pkg. 25c, 5 lb. pkg. 75c, 10 lb. pail \$1.50. DON'T let the lice worry and kill your poultry and little chickens, when a can of Dr. Lape's Lice Killer will prevent and kill lice, price 1 lb., 25c. DON'T let the flies worry your cows, and lessen the flow of milk, when a can of Dr. Lape's Fly & Insect Destroyer will give relief and thus increase your milk, 1 Gal. \$1.00. DON'T let your horses work with sore necks and shoulders, when a can of Dr. Lape's Nevefale Healing Powder will give satisfaction in 5 days or your money refunded. Price 50c. DON'T let smut and other fungi destroy from 10 to 50% of your grain crop when Dr. Lape's "Smutene" will prevent it and increase your yield. Pint \$1.00, ½ pint 60c. DON'T fail to ask your dealer for these goods, they are guaranteed, and he will cheerfully refund your money if they are not as represented, but if he will not supply you, send at once to the manufacturers, they will ship at once on receipt of price, send to

Dr. Lape Veterinary Co. Inc.
Adrian, Mich.



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Big race horse men and breeders know Save-The-Horse is a sure cure for SPAVIN—Ringbone—Thoropin or any Shoulder, Knee, Ankle, Hoof, or Tendon Disease. Over 200,000 cases have been successfully treated. Sold with a Signed Contract—Bond to return money if remedy fails. No bilking or laying up of horse when you need him. Learn how to diagnose and treat cases. Send today for our FREE 96-page BOOK, sample contract and expert veterinary's advice. All FREE.

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For Sale, Used and Rebuilt Machinery

25 H. Peerless steam traction engine, 24 H. Port Huron, 22 H. Peerless, 22 H. Pitts, 20 H. Huber, 20 H. Russell, 19 H. Port Huron, 18 H. Peerless, 18 H. Pitts, single and double cylinder, 18 H. Huber, 18 H. Nichols and Shepard, 18 H. Wood Bros, 16 H. Huber, 16 H. Pitts, 15 H. Case, 15 H. Port Huron, 36" Case steel grain thrasher, 32" Advance, 28" Wood Bros., 30 and 34" Pitts, 33" Peerless; and many others. Write us for complete second hand lists. New machinery is high, but rebuilt machinery and save money.

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114 Superior St., - TOLEDO, OHIO

We want Fresh White Leghorn Eggs. We pay a premium over the highest market quotation and remit immediately upon arrival.
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Daniel McCaffrey's Sons,
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FRUIT

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

EGGS

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

When writing to advertisers please mention
The Michigan Farmer.

Veterinary.

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

Sweeney—Indigestion.—We have been working our three-year-old filly since spring and find both of her shoulders have sweeneyed some. She was worked in a nice-fitting collar with sweat pad; therefore, we do not believe this the result of bad-fitting collar. We also have a three-month-old pig that is not thriving, stands with back arched, eyesight not very good, and I might add that we feed him middlings, oil meal, tankage, whey, and he is running on good pasture. C. D. W., Ewart, Mich.—I am inclined to believe that your filly has reduced in flesh since working her and perhaps the shoulder muscles are none too well developed. Apply equal parts turpentine, aqua ammonia and olive oil to atrophied muscles three times a week. She should be fed plenty of oats, hay and grass. Give your pig two or three tablespoonfuls of castor oil which will purge him, then mix together equal parts cooking soda, ginger, gentian and powdered charcoal—give a teaspoonful at a dose in feed twice a day.

Feeding Questions.—Will you please give me some advice? I have a brood sow with a litter of ten pigs three weeks old; can I raise them and make a profit at the present prices of feed, \$3.25 for coarse corn meal, and \$2.85 for re-ground bran? I am unable to buy white middlings at any price and can seldom secure linseed meal. Have two cows, but wish to raise my two calves, so have little milk and only a small pen or yard to keep my pigs in. Therefore, I must cut clover and other feed for them. I have a half acre of peas and oats sowed, one and a half acres of corn planted, also plenty of pumpkin seeds and squash to sow later. Will also have some mangles, beets, carrots and turnips to thin out. Will also have some rye to grind after threshing; however, I am an elderly woman living alone, must hire all my team work done, which is very expensive around here. I have also three-quarters of an acre of beans and some sweet corn sowed. Now what I would like to know is, could I keep the pigs under these conditions and make a profit, or had I better sell them for \$4.50 or \$5 each right away. Mrs. S. W., Wolverine, Mich.—All things considered, I advise you to sell the pigs at weaning time, for the most you can get for them, as there is always more or less risk of pigs that are confined in close quarters dying before they get their growth. The high price of feed, labor, etc., makes it impossible to raise pigs on a small scale and make much profit; furthermore, your pigs, in their present condition, will bring a good price, therefore they ought to be sold.

Indigestion—Worms.—I have a six-year-old mare in a run-down condition and would like to know what to do for her. Some time ago this same mare was troubled with worms. I gave her commercial remedies which I thought done her some good; but she may yet be troubled with worms. E. R. H., Fennville, Mich.—Mix together equal parts of cooking soda, salt, powdered sulphate iron, ginger, gentian, red cinchona and charcoal and give your mare a tablespoonful or two at a dose in feed two or three times a day. Also give her 2 drs. acetate of potash in feed or drinking water night and morning until her kidneys act free. Her food supply should be increased, as she is perhaps not fed enough grain.

Tuberculosis of the Liver.—On killing one of my hens which had the appearance of being a well fowl, I found the liver and heart filled with white spots; I lost a number last winter from the same complaint, only in a more advanced stage. They are fed commercial scratch feed and bran with plenty of grit and oyster shells. I also aim to clean my coops once a week. C. H., Manitou Beach, Mich.—Your poultry suffers from tuberculosis, perhaps the result of feeding them milk from tubercular cows, or from eating the infected inwards of hogs that suffered from tuberculosis. There is no remedy for this ailment.

Chronic Scours.—Heifer calf four and a half months old has been troubled with scours for some time. A former calf from this same cow suffered from a similar ailment and died when eight or nine months old. I feed the calf some skim-milk occasionally, and I might add that it has a good appetite. A. F., Glennie, Mich.—Give your calf 30 grs. of salol at a dose in feed three times a day. Mix together equal parts of ginger, gentian and powdered charcoal and give it a tablespoonful or two in feed twice a day.

Auction Sale of Durocs

Friday, August 3, 1917

40 big type sows of the best lines of breeding bred to Walt's King 92949, Jo Orion 14th 85855 and Brook. American Col. 82583. This trio of boars are hard to be equaled and not to be beaten when breeding and individuals are considered.

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

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

NEWTON BARNHART, St. Johns, Michigan.

Aug. 2 | BROOKWATER FARM ANNOUNCES | Aug. 2

Its Seventh Auction Sale of Durocs Thurs. Aug. 2

50 Will be sold including Bred Sows, Boar and Sow Pigs 50

Do not forget that Brookwater Farm has held six consecutive successful sales of Durocs in three years. This has been accomplished by selling the best in individuality and blood lines to the highest bidder. When you buy a bred sow you plan to sell part of the litter. The fact that you buy at Brookwater will help make sales for you as it has helped others. Our Durocs have won more prizes at the Michigan State Fair during the past two years than any other herd, either inside or outside the state. Many of the Aug. 2 offering are descended from our prize winners. Come to the sale and see one of the leading Duroc-Jersey herds in the country and take advantage of the opportunity to meet some of the foremost breeders who find it to their advantage to attend our sales. Our free illustrated catalog gives full particulars. W. Barnhart sells Aug. 3, attend both sales.

Aug. 2 | Brookwater Farm, R. 7, Ann Arbor, Mich. | Aug. 2

Herbert W. Mumford, Owner O. F. Foster, Manager

Holsteins vs. Berkshires

The greatest of Live Stock Combinations.

The Holstein furnishes you the largest production of Milk, which separated gives you great hog feed—Skim Milk. The Berkshire will make wonderful growth on skim milk, makes food. It balances any food you raise on your farm. Other conditions equal the man with skim milk always excels in hog raising. The Holstein and the Berkshire is each more profitable to you by reason of the other. We have the best to offer you in each breed. A young bull out of a tested dam and a trio of spring pigs for your breeding pen would prove the best of investment, providing you feed and care for them as you should. Correspondence solicited. All stock guaranteed as represented.

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WINNWOOD HERD

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

I Always Have Holsteins To Sell

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

L. E. CONNELL, Fayette, Ohio

Need Reg. Holsteins??

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

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

Butter Fat Counts

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

OUR Holstein cows are from sons and grand sons of most noted bulls of breed and are heavy milkers. C. 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 Friesian Heifers. 3 to 6 mos. old. Some from 30 lb. sires. Priced to sell. Fred J. Lange, Sebawaing, Mich.

3 Holstein Heifers 30.21 lbs. sire. Their dam's dam A. R. O. sister to dam of 35 lb. cow, bred to 30 lb. A. R. O. 4 yrs. old. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

Reg. Holstein Friesian Cows and Heifers, some A. R. O. \$125. 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.

Holstein Bull Calves one born Feb. 15, 1917, another Nov. 30, 1916 good breeding. Price with all papers, \$80 & \$70. VICTOR E. JONES, Bellevue, Mich.

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

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

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

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Buy a Jersey Bull!

The improvement of your herd depends chiefly on the selection of the right sire. Get the best. Read the ads of Jersey breeders in this and other papers. Write them at once for prices, pedigrees and plan to grade up your herd. Jersey bulls are strongly prepotent and you'll find even grade Jerseys surprisingly profitable. Send for our free book, "The Story of the Jersey," and learn the truth concerning this great breed. The American Jersey Cattle Club 346 West 23rd Street, New York City

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

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

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

Maple Hill Farm Registered Jersey Cattle Stock under 2 1/2 years all sold. J. R. Worthington, R. No. 7, Lansing, Michigan

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

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

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

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

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

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

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

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

Bidwell Shorthorns "For Beef and Milk" This heifer at 6 months has bone, size and quality—Our own breeding. The blood of Scotch bulls, Imp. Shennstone Albino and Imp. Villager Registered stock always for sale.

BIDWELL STOCK FARM, Box B, Tecumseh, Michigan.

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

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

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

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

SHORTHORNS Maple Ridge Herd, Established 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. O. Carlson, Leroy, Mich.

Shorthorn Cattle a few bulls for sale. W. J. Lessiter, Belding, Mich.

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

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

For Sale a fine registered three year old brown Swiss bull, price reasonable. Address: HENRY BOOHER, Ewart, Mich. R. F. D. 4

HOGS.

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

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

Berkshire Pigs going fast \$35.00 & \$20.00 each three months old. Registered & transferred, richly bred. Riverview Farm, Vassar, Mich.

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

40 HEAD DUROC BRED SOWS 15 Spring pigs and 3 fall boars by Panama Special. At Auction, Aug. 3. Catalog on request. NEWTON BARNHART, St. Johns, Michigan

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

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

Duroc Jerseys. Fall Boars & Gilts all sold. I have some extra good heavy boned spring pigs for sale. F. J. DRODT, R. 1, Monroe, Michigan.

Dobson's Durocs; Pigs at weaning time; either sex, Best of 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 Ram Lambs ready to ship. Exp. Paid. Fine Stock. J. R. HICKS, St. Johns, Mich.

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

DUROC spring Boars Sow pigs from registered stock and good ones. Satisfaction guaranteed. Prices right. Hillcrest Farm, Lon, Grabach, Manager, R. 3, Chio, 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. Make 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 for Mar. and Apr. farrow. HARRY T. CRANDELL & SON, Cass City, Mich.

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

Chesters Bred Gilts all sold. Special prices on March, boars, also 6 months Holstein Bull. F. W. ALEXANDER, Vassar, 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 Gilts all sold. I am booking orders for March and April pigs either sex, single, or in pairs not akin. A. J. BARKER, Belmont, Mich. R. R.

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

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

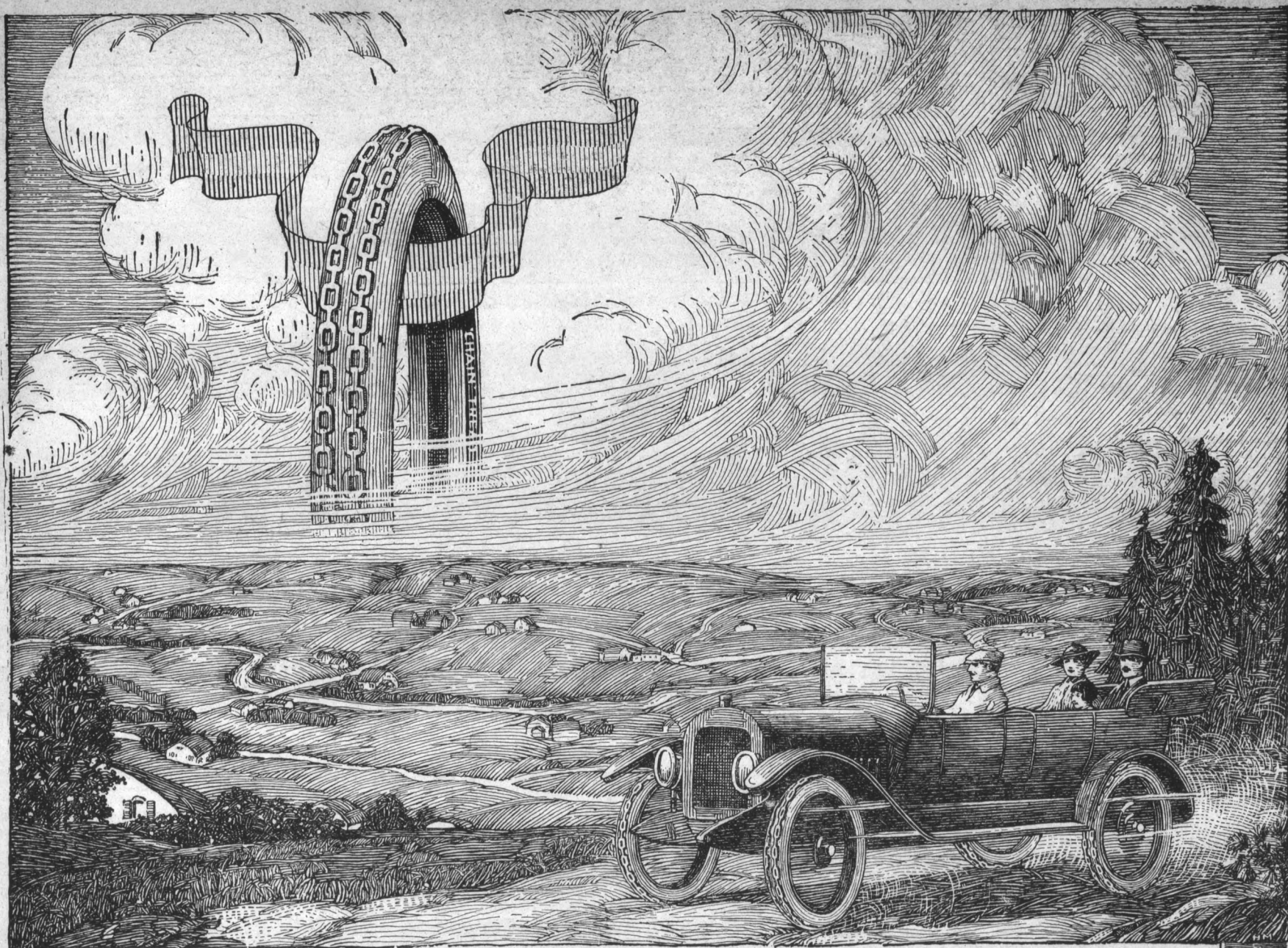
O. I. C'S. Spring pigs and Reg. Holstein heifers from 5 to 15 months old. O. L. O'LEARY LEAF STOCK FARM, R. 1, Monroe, Mich.

P. C. SWINE Big boned Apr. boars. Sows bred for fall farrow. Satisfaction guaranteed. R. W. Mills, Saline, Mich.

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

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

Additional Stock Ads. on Page 47



Rough Roads

demand tires that are tough, resilient and efficient anti-skids. Inferior quality of rubber, workmanship and inspection won't do. Only the best material and craftsmanship in tire-making can withstand the wear and tear of roads full of ruts and holes and rocks.

That's why the *United States 'Chain' Tread Anti-Skid Tire*—one of the five famous *United States Tires*—made by the largest rubber manufacturer in the world—is forging ahead in popularity with farmers and others who *know* the tire needs of rough country roads.

More mileage per dollar, better all round service and greater assurance against ordinary tire troubles—no matter how bad your roads may be—are guaranteed when you equip your car with *United States 'Chain' Treads*. Try them TO-DAY.

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'Nobby' 'Chain' 'Usco' 'Royal Cord' 'Plain'

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