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DETROIT, MARCH 2, 1918



CURRENT COMMENT.

Potato Growers' Opportunity.

In another column appears the announcement of the annual meeting of the Michigan Potato Growers' Association. This is an important meeting to Michigan potato growers and should be attended by as many potato producers as can possibly arrange to attend. This meeting will present an opportunity which should not be neglected for the potato growers of the state to thresh out the potato grading question with the representative of the National Food Administration who organized Michigan dealers for the early enforcement of the grading rules in this state. This gentleman will address the growers at their first session on Thursday afternoon on "The U. S. Food Administration and the Marketing of the 1918 Potato Crop." This is virtually the Food Administration's day in court on the potato grading proposition and Mr. Miller should be given a fair hearing and an opportunity to present in detail the views and claims of the Food Administration on the potato grading rules as they affect Michigan potato growers. If he can justify the rules to the satisfaction of a representative convention of growers the controversy should be closed. If he cannot, the growers should clearly express their attitude with regard to the grading proposition in general and the rules under which it should be continued, if at all, in particular, to the end that the Food Administration may have fair notice as to the attitude of the growers in one important potato producing state, which will make them responsible and absolve Michigan farmers from responsibility regarding the maintenance of normal production this year, when food stuffs of all kinds will be more badly needed than ever before in the history of the country.

Again we voice the opinion expressed in these columns last November, when potato grading was first proposed, that its enforcement is undesirable in the present emergency. Again we repeat the opinion expressed in an editorial comment weeks ago, that as at present enforced potato grading will not benefit growers as claimed by its sponsors, because the potatoes are not sold to consumers by the two grade

names as purchased from the growers. Again we urge that unless it can be clearly shown that the two grades as established are of economic benefit to both growers and consumers, the two grades recommended by the Bureau of Markets should be abandoned in favor of a single grade to which the market is accustomed if enforced grading is to be continued at all.

Better results in the improvement of the average quality of the crop would undoubtedly follow the establishment of one standard grade with a standard label under which any grower could market his crop at his own option. Crop improvement cannot be accomplished by compulsion. Attempts in this direction will only curtail production—unfortunately at a time when maximum production is needed.

This controversy should be settled without further delay, not alone because of its effect on this year's production, but also as a means of relief to northern producers who have been unable to move their last year's crop at all, and to whom the present rules are a serious hardship. A full attendance of growers at next week's meeting will help to settle it on a just basis.

Pursuant to fixing Mill Feed Prices. the price on wheat for 1917 the federal food administration announced prices at which mill feeds should be sold by millers. Reports from various sections of the state indicate that farmers in many sections are not getting mill feeds at anywhere near the prices fixed therefore by the federal government. We took this matter up with the Food Administration, and are advised that in the cases which have been investigated the feeds were purchased outside the state and came from jobbers and wholesalers who had purchased them on contract before the fixed prices went into effect, under which conditions they have been given the right to take a reasonable profit on the actual cost.

Last week we received a notice from the State Food Administrator that the government is about to inaugurate a new ruling providing that in no case shall the wholesale price of mill feeds exceed \$3.50 per ton over the price fixed for the sale of these products by milling companies, that is, this \$3.50 per ton shall cover all commissions and profits up to the time the feeds reach the retailers.

In order to aid purchasers of mill feeds in getting fair prices on same, we will publish on the market page of this and future issues the price fixed by the government for mill feeds sold by millers.

Any farmer who is asked higher prices than those proscribed, by any miller should at once report same, and the case will receive prompt investigation. These prices plus actual transportation charges, and handling costs, should be the prices asked by other dealers, except in case of feeds purchased by them previous to the announcement of this ruling, in which case, as above noted, prices should not exceed those given more than \$3.50 per ton plus transportation and handling cost. Every case in which these rules are not followed should be promptly reported.

Every Michigan Farmer Live Stock Prospects. read but carefully weigh the statements made in the article entitled, "Live Stock and the War," which is published in another column of this issue. The facts contained therein are here presented by a writer of wide reputation, whose careful analysis of the present and prospective agricultural situation is worthy of more than passing attention. The obvious truth of the statements made should cause every Michigan farmer to consider the future as well as the present in determining how large a factor live stock production shall be made up on his farm.

There is no doubt about the depletion

of the herds and flocks of all Europe. During the period of rehabilitation of the live stock industry in both the belligerent and neutral countries of Europe, these countries must draw heavily upon the United States both for animal food products and for foundation stock with which to rebuild their flocks and herds. These countries can far more quickly supply their immediate needs of cereal foods, and this they must do from their own soil so far as is possible, owing to the necessity of cheapening the cost of living to the greatest possible degree.

This will reduce our market for grains to a corresponding degree, but live stock cannot be produced in large volume so quickly, and the people of these countries will be obliged to buy in a market in which there is no large surplus to be offered, consequently better prices may be expected to prevail for live stock and live stock products than for the cereal grains or other products of our farms for immediate consumption. There will unquestionably be a large and profitable market for good meat animals of all kinds for some years following the declaration of a general peace. There will be a still better market for foundation stock of quality suitable for use in the improvement of our own live stock or in re-establishing the live stock industry of European countries.

The farmer who is prepared to take advantage of that market when it offers will be doubly rewarded, first in the better state of fertility in which he will be able to maintain his land by making live stock a larger factor in his total production, and second by cashing in on his surplus stock at a price which will without question yield a handsome profit. In addition to that the vexed labor problem with which every farmer is confronted at the present time can be better solved where a well balanced system of production is followed in which live stock is given a prominent place.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Bolshevik government in Russia has acceded to the demands of Germany and accepted the terms laid down by the central powers. As a result another peace conference is to open at Brest-Litovsk. Active military operations against the northern portion of the Russian front by German troops hastened the acceptance of peace terms. Notwithstanding the agreement, defense measures are being taken by the Socialists in Petrograd, who are reported to be recruiting a considerable military body to resist the German advance. Similar actions are said to be in progress at Kiev, Moscow and Pskoff. Russia is seemingly thoroughly disorganized and it is the opinion of statesmen that it will be years before she can recover from her present chaotic condition. Sweden has seized the Aland islands in the Baltic district. The British have extended their operations in Palestine and captured the ancient city of Jericho. Brisk firing has taken place at many points along the Italian frontier, but no infantry efforts have been undertaken. On the western front no important troop movements have been attempted but each side appears to be feeling out the other with artillery fire and small raids. One of these was made against the American sector northwest of Toul on Sunday, but the German batteries were silenced following a heavy retaliatory shelling from the American guns. Berlin reports that the Allies are taking the initiative on the Belgian front.

Brazil will mobilize a defense army of 700,000 men. It is generally believed, however, that this army is to remain in Brazil and will not be sent to France.

National.

The Red Cross liner Florizel bound from Newfoundland for New York ran upon ledges near Cape Race on Sunday during a blizzard, and it is believed that all persons aboard were lost. There were seventy-eight passengers and sixty-two members of the crew on the boat at the time.

The government has completed arrangements for a conference between labor and capital representatives to be held this week at Washington. Each side will select five men and these ten will name two others to represent the

general public in the conference. The government hopes to settle some perplexing industrial problems, at least during the period of the war, through this conference.

At least sixteen men have been imprisoned in the Amasa-Porter mine near Crystal Falls, Mich., by a cave-in which filled the lower workings of the mine with sand and water. After four days' work the rescuing squads have failed to reach the victims.

Former ambassador to Germany, Gerard, is slowly recovering from an operation which he underwent last week.

Henry Ford, automobile manufacturer is establishing a \$2,000,000 plant in Detroit for the manufacture of U-boat chasers. It is announced that the plant will be ready for turning out boats in seventy-five days. The plans for making these boats are in general along the same line as those used by Mr. Ford in the making of automobiles.

The Council of National Defense of the United States Bureau of Education is planning the organization of school districts into small democracies with the school houses as capitols. The program includes the organization of 750,000 of these democracies, which will reach 22,000,000 pupils for public service.

The emergency school for teaching farmers and others how to operate and repair tractors will open at the Michigan Agricultural College on Monday, March 4, for a two-weeks' course.

MICHIGAN POTATO GROWERS MEET.

The fourth annual meeting of the Michigan State Potato Growers' Association will be held at East Lansing, Thursday and Friday, March 7-8, in conjunction with Farmers' Week.

Thursday Afternoon.

1:30—President's address, Dorr D. Buell, Elmira.

2:00—Secretary's report, C. W. Waid, M. A. C.

2:30—"The U. S. Food Administration and the Marketing of the 1918 Potato Crop," H. P. Miller, U. S. Food Administration.

3:30—Discussion, opened by L. A. Siple, Greenville.

Friday Forenoon.

9:00—Business session.

10:00—"What the U. S. Department of Agriculture is Doing for the Potato Growers," Dr. Wm. Stuart, U. S. Department of Agriculture and Secretary of Potato Association of America.

10:45—"Marketing the Balance of the 1918 Potato Crop," F. W. Hinyan, President Michigan Potato Shippers' Association.

11:30—"Getting Together," John C. Ketcham, Master the Michigan State Grange.

Friday Afternoon.

1:30—"How Potato Growers Can Help Themselves Market their Crops," J. W. Weston, Assistant State Leader of County Agents and John V. Harrison, Secretary of Wexford-Missaukee County Potato Growers' Association, Manton, Mich.

2:15—"Organized Potato Development Work in Wisconsin," J. G. Milward, Secretary of Wisconsin Potato Growers' Association.

3:00—"Future of the Potato Industry in Michigan," John I. Gibson, Secretary Western Michigan Development Bureau.

3:45—"County Agents and Potato Growers," Dr. E. B. Mumford, State Leader of County Agents, M. A. C.

STATE VEGETABLE GROWERS ASSEMBLY.

The second annual meeting of Michigan State Vegetable Growers' Association will be held at East Lansing, March 6, in conjunction with Farmers' Week at the Agricultural College.

9:00 a. m.—Address by President G. C. Raviler. Subject, "Benefits of a State Organization to Vegetable Growers."

9:30 a. m.—"Commercial Vegetable Growing and the War," Prof. C. P. Halligan, M. A. C.

10:00 a. m.—"The Vegetable Seed Situation," George E. Starr, of Grass Lake.

10:30 a. m.—"Intensive Gardening," G. W. Kennedy, Dearborn.

11:00 a. m.—"Feeding the Vegetable Plants in 1918," Dr. M. M. McCool, M. A. C.

11:30 a. m.—"The Tomato Crop and the War," W. H. Barrett, Adrian.

1:30 p. m.—Business meeting.

2:00 p. m.—"Control of Vegetable Diseases in 1918," Dr. G. H. Coons, M. A. C.

2:45 p. m.—"Control of Diseases of Muck Crops," Ezra Levin, M. A. C.

3:15 p. m.—"Insect Control in 1918," D. B. Wheelan, M. A. C.

3:45 p. m.—"The County Agent and the Gardener," O. I. Gregg, Dearborn.

4:15 p. m.—"Melon Culture," Roland Morrill, Benton Harbor.

Where Is the Hire Man?

By R. G. KIRBY

MAYBE Bill has gone to the city. Possibly he has joined the army or navy. Anyway, we are very busy. Where's Bill. Such is the call that has gone out from many farms where every available acre has been planted in a patriotic endeavor to increase production. Several years ago the hired man problem was discussed more or less by every farmer requiring hired labor and the problem was seldom solved. Today it is getting so serious that farmers dislike thinking about it as it makes them worry and seems so far from a solution. Advice is plentiful along this line and some city officials are glad to criticize the farmers for not paying higher wages.

Many residents of our cities are prone to criticize the farmers because of their methods of dealing with labor. They draw their conclusions from a study of factory conditions and then pick out the good points of the factory system which are usually good pay and reasonable hours, with a chance to have a home they can call their own even if it is rented. They forget fresh air, small expenses in the country and the chance to live a healthful life. Then they often figure that any hobo is good enough to work on a farm and blame the farmer for not achieving a magnificent success with such material. Here is the way I feel about it. Every farmer understands his own limitations better than some city adviser who has never lived on a farm. It is up to the farmer to solve his own labor problems in his own way. If he waits for associations or government control to solve his problems he may not have them solved to his own satisfaction.

A farmer cannot do more than one man's work for a great length of time without injury. In the first place, a farmer must plan his work according to the measure of his labor supply. The supply will depend upon the section in which he lives and its location in regard to manufacturing cities. Next, we must study our local supply of labor and make arrangements for assistance early in the season. This gives a chance for several disappointments and still allows enough time to obtain some man's services before the rush of work begins.

In selecting the man, it is well to remember that a farmer can never satisfy a worker who does not like farming, even if he pays him more than he is worth. A farmer who cannot hire a man who likes the life of a farmer will never have any success with hired men.

The Only Solution.

Among all the farmers I have known the only ones who solved their labor problems in a satisfactory manner, had tenant houses and hired married men. When a farmer can furnish a hired man with a home he has something to offer that is worth attention. The hardest part of keeping good hired men has been their lack of home life. A first-class hired man will seldom stay on a farm if he is compelled to room in the attic and keep out of the parlor. At the same time a first-class farmer does not like to have his home constantly filled with strange men who are going and coming as the fancy suits them. The old system of trying to keep a full grown man in another man's house has been responsible for more farm labor troubles than any other cause.

For example, Bill is a good man who understands farming. Possibly he liked his job and thought that he would always farm. While he was a boy he was satisfied to work out for the neighbors and spend most of his evenings with the young people of the community. At last Bill becomes a first-class farmer of twenty-one years of age and desires to marry and have a home

of his own. He has not earned enough capital to buy a farm. He looks around the neighborhood. A dozen farmers are anxious to hire Bill as a single man. Not one is able to give Bill a tenant house where he can continue in the business in which he is trained. What is the result? Bill finds work in the city, ringing up fares, putting wheels on automobiles, or climbing telegraph poles. The farm loses a good man. Who can blame Bill? He is married and happy. He has a home and for that he is willing to work hard even though his job is not as pleasant as farming.

There are many farmers with sufficient acreage to make a small tenant house a good investment. Some of these farmers are worrying about their labor supply though they have funds available for the building of a tenant house. When they can offer a good hired man a chance to work for them and live in a home of his own, they can talk business with a lot of good farmers who have been forced to leave for the city because they lacked capital to start out for themselves on a farm. A lot of these farmers under-estimated the cost of living in the city and now they would be glad to come back to a farm if they could have the opportunities of home life which they are now enjoying in the city.

TOP-DRESSING WHEAT WITH FERTILIZER.

In your last issue I notice a question from F. C., of Missaukee county, regarding the top-dressing of wheat. This is a time when everyone should give all the information possible to help raise more and better crops, so I would like to give my opinion on this question. I imagine that this man has no fertilizer drill, but if he has I would suggest that he apply a good grade of fertilizer at the rate of 200 pounds per acre. Leave the discs up just so they will not disturb the roots of the wheat. If he is obliged to broadcast it is all right, and then go over the ground with a spike-tooth harrow (lengthwise with the rows, of course), setting the teeth back to an angle of forty-five degrees. Dragging is helpful to the wheat anyway, but by doing as stated and as early as possible, he will without doubt be well paid, not only in his wheat, but will almost insure himself a good clover stand. I have known of top-dressing being done when the wheat was three to five inches high and with splendid results. I would suggest that F. C. leave off a strip without any fertilizer. I am quite sure that he will see a big difference, and besides show himself without asking whether it pays to top-dress wheat or not. I have no fertilizer drill and rather than borrow, I apply it broadcast for any crop and I never have failed to get good results.

Leelanau Co. N. C. MORGAN.

PLOWING VS. DISKING FOR OATS.

In the present emergency, when every day's labor must be made to count its utmost in the accomplishment of productive work, short cuts to the accomplishment of all tasks should be taken wherever possible. The writer has found the disking of corn ground, as well as potato and bean ground, a desirable method of getting a seed bed for oats. Some farmers plow their corn ground for oats to get rid of the stubble, but after double disking, harrowing, drilling with a disk drill and rolling with a corrugated roller the stubble is well broken up and pressed into the surface soil so it will never be a source of trouble. This method gives a firmer seed bed. This insures better results with the clover where same is seeded in oats.

Oakland Co. A. R. FARMER.



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Treating Fence Posts

By PROF. F. H. SANFORD

THE use of preservatives for prolonging the usefulness of fence posts is no longer a matter of experiment or uncertainty. Owing to the rather high price that is charged for the preservative, and the trouble necessary to equip for treating posts, or rather the lack of knowledge generally as to the simplicity with which posts may be treated, the matter is at more or less of a standstill among Michigan farmers.

Treating fence posts is not a difficult thing—either to understand or to do. The creosote must be forced to penetrate a depth of one-quarter to one-half inch a depth of one-quarter, one-half inch or more. This means that all checks, holes and defects must be treated the same as the outside surface. A paint brush application does not reach the interior surfaces of checks, nor does a cold dip. It, therefore, becomes a matter of forcing the creosote into the wood, which is accomplished by heat or boiling. There is really no reason why the average farmer should not own and operate his own post treating plant. The outfit is simple and consists of one large steel barrel and one wooden barrel (the long barrels, nearly three feet are best), and two eight feet lengths of two and one-half inch iron pipe, and one eighteen-inch piece of two and one-half inch pipe, two ells and two inner and outer lock nuts. Connect the pipe and fittings in the

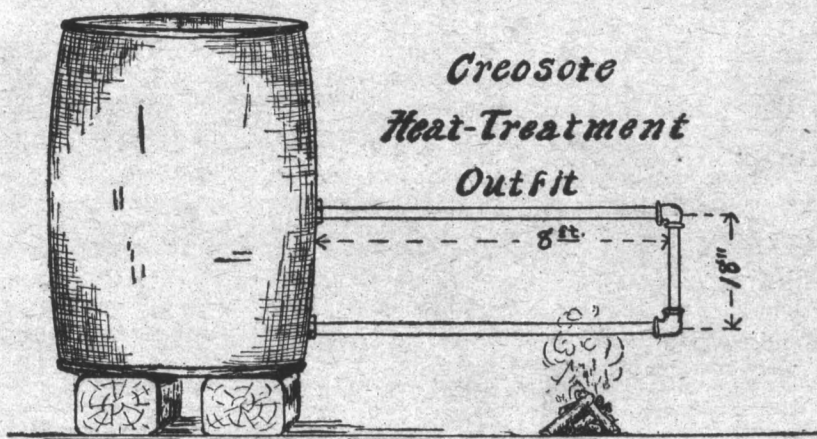
coloring. One-quarter to one-half inch is a sufficient penetration for most species.

From the hot bath the posts should be plunged directly into the barrel containing the cold creosote. Do not let the temperature in the cold barrel rise above 100 degrees F.

The theory of this treatment is that the hot treatment causes expansion which expels a portion of the air and water contained in the wood cells. Upon changing the posts quickly from the hot to the cold bath there is a partial contraction and condensation of the air and water left in the cells. This produces a partial vacuum which sucks the creosote into the cell structure of the wood.

If, however, it is not convenient to have both barrels, and the operator is not in a hurry for the posts the same results may be attained by kicking the fire away from the tube and allowing the posts and liquid to cool without removal from the steel barrel. Where this plan is followed the posts will remain in the barrel throughout the treatment. An entire day would be required to each charge, but no attention would be required after the fire had been drawn away from the tube.

Wherever a steam engine is available for furnishing steam to heat the creosote a community treating plant is more desirable and far more efficient



form of a letter U. Enter one end of the U into the bottom of one of the barrels, the other end above at about the middle of the barrel. Connect up by lock-nuts. This provides the heater and may be put in operation by filling the barrel (and tube) with creosote. Build a fire on the end of the U and about six or seven feet from the barrel. The liquid may be raised to any temperature necessary for good treatment in this equipment.

The other barrel is for the cold treatment.

To Charge.—Use only well seasoned posts for treatment and remove all the bark. Bark prevents uniform penetration. Posts should be air dry. Place as many as will go in the steel barrel with butts down. Usually from twelve to fourteen average posts will be all that can be put in at once. These should all be resting on the bottom of the tank. Next pour the cold creosote into the heater until the liquid is within about six inches of the top of the barrel. With the posts in position in the heater one-half barrel of creosote should be enough ordinarily to bring the level of the liquid up to the proper height. The next step is to start the fire on the pipe, and begin the "heating up." The liquid should be brought up gradually to 150 degrees F. and maintained between 150 and 200 degrees F. for an hour or so. A careful watch should be kept on the first run, which should be charged with only one kind of timber, to tell how far the penetration is carried. This is determined by cutting a notch into the bottom of the post and noting the depth of dark

than is the individual plant. Or the operator of an individual plant may heat by steam or do custom post treating by using a large tank equipped with steam coils. If posts are made from small trees and are round or half round it is suggested that the inner bark be left on the butt end of the post, if tight, to a height of about sixteen inches from the butt. This tight bark prevents the penetration of creosote into that portion of the post which does not need deep penetration, as it is far below the active decay zone of the post.

The post should be well treated for the portion at the ground line and six inches above and below the ground line.

The top of each post should be dipped into the boiling creosote, or else bevelled to prevent lodgment of rot spores. Posts treated as above should endure for from one-half again to double the natural life of the untreated post.

No definite figure can be given covering the cost of treatment per post owing to the difference in capacity of different kinds of timber for taking up creosote. It is safe to say, however, that with the approximate cost averaging from ten to fifteen cents per post for treatment, that a very material saving may be made by prolonging the life of the post as well as the saving due from not having to reset the posts.

The names and addresses of firms handling good grades of creosote may be obtained on application to the Advertising Department of the Michigan Farmer.

The Idle Acres

By N. A. CLAPP

THE Food Administrator is constantly urging farmers to plan to make a greater effort than ever before to raise such crops as can be utilized to meet the needs of consumers in our own country and the armies of the allies in the European war. The demand is in general terms without definite instruction as to particular kinds of crops that can be made available for use in a short period of time. From present conditions we are led to believe that the call should be heeded and responded to very willingly, as every loyal American citizen is anxious to do all that can be done to help win the war.

Seeing what I have seen and knowing what I know, I believe that there are other acres than those, within the farm inclosures that should be utilized for the purpose of adding to necessary food supplies.

Farms Abandoned for Speculation.

During the recent era of prosperity and advancement in values of real estate in both city and country, there has been a good deal of speculation in lands near or on the outskirts of our cities and villages. These lands are held for a raise in price and are unoccupied and not producing anything of value as food for man or beast. More often such lands are abandoned to fate and produce weed seeds which are a curse and a damage to the cultivated farms which may happen to be maintained in what may be termed the neighborhood.

To prudent and economical people it seems as though some method should be adopted by which such lands as are held by speculators and are not producing anything, can be utilized and made to contribute something in the form of food products that can be used for food for the armies. It seems as though those lands could be under the care of the township supervisors who should see to it that they are tilled at the proper season, in the proper manner, planted to some of the useful crops, and made to increase the supply of food needed for our armies. If well handled such lands could be made to be useful instead of being a damage to the community in which they are located. If it must be under government control and supervision, let it be that way.

Village Lots.

In very many villages and small cities there are large numbers of vacant lots, sometimes whole blocks of lots, which are vacant and not producing anything but noxious weeds. Many, if not all, of such, could if properly handled be made to produce valuable and useful products.

Farm Fields.

On some of the farms there are fields that are neglected for various reasons that could be worked, not only for patriotic reasons, but for profit to the owners, and a benefit to the war needs by adding to the general supply of army foods. Such fields could be called for the season, "War Food Fields," and pointed to with pride for years to come, because they had been redeemed for the purpose of helping feed the American soldiers.

The Kind of Crops to Raise.

As to the kind of crops to plant, on account of immediate needs, such should be chosen as will require the least labor and yield quickest returns. For the early part of the season, spring wheat, peas, barley and oats will meet the needs as all can be utilized in a short period of time after planting. For a later crop there is none, perhaps, that will yield better returns and meet the immediate needs of the consumers better than field beans. Corn and potatoes can be grown to good advantage under conditions mentioned, but they require considerable attention, taking

both time and labor. These late planted crops usually yield heavily and can be depended upon to aid, very materially, in meeting the needs of humanity during a critical period.

An Appeal to American Pride.

The United States is a great country and if all the tillable land were to be well worked, planted to the best crops, and the products harvested and garnered for use, we could feel assured of a bountiful supply of all that will be needed and much to spare. Germany has a land area not much, if any, greater than our one state of Texas. Shall we do in the future as we have done in the past, let her produce proportionately more of the substantial foods on her restricted area and out-match us in endurance of her men as soldiers, because we have neglected to utilize our idle acres and have not furnished a sufficient amount of food to meet the needs of our great population at home and our great armies in the European war? It is earnestly hoped that local pride and patriotic zeal will arouse the Americans to activity and vigorous efforts which will convert the waste places mentioned into a veritable Eden of productiveness. May the work of the producers of the present generation be so well and faithfully accomplished that the generations that follow may be proud of our achievements and in the future be able to say that there were heroes in the strife, not only on the field of battle, but among the producers of the necessities of life.

WATCH THE BEAN SEED.

Some beans last fall contained an excessive amount of water—from twenty to forty per cent. Often the water in these beans would be driven to the outside by the freezing and the beans would be frozen so as to form large lumps. If there is enough water to form lumps the beans ought not to be saved for seed. Such beans will spoil as the warm weather comes.

Most beans contain considerable water even if they seemed to be dry in the fall. The cold freezing weather has either left these soft or has driven the water to the outside of the bean bearing particles of ice on the surface.

All beans, especially seed beans, should be examined as to their condition regarding water. If they seem to be soft, or have particles of ice on the surface, the beans should be dried before warm weather comes. Otherwise the beans are likely to heat or spoil, injuring the vitality.

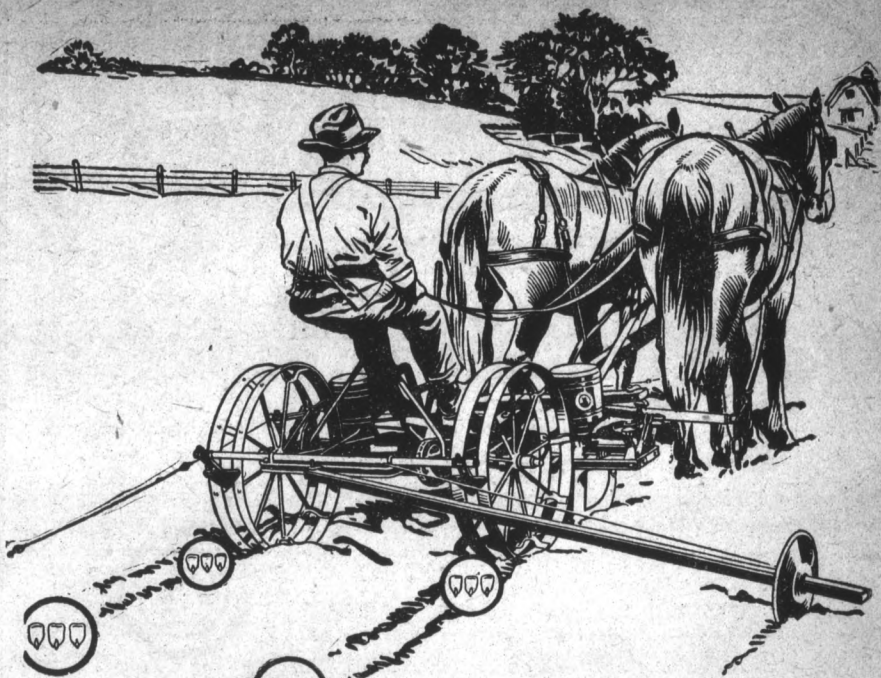
Beans may be spread out to dry if one has a few, or shoveled over from time to time. A farmer near Mt. Pleasant buried hot bricks in the damp beans. The bricks create a circulation of air among the beans in addition to the heat, directly drying them. Beans stored in bags will spoil easily if not dry. All beans in storage should be examined. It may save considerable trouble later.

Isabella Co.

M. A. COBB.

The sum of six and a half million dollars is available for road building in Michigan this year. Approximately two million dollars comes from state rewards and automobile tax, and half a million dollars from the federal aid fund. About 1,000 miles of new road are being figured on in the different counties, which is a slight decrease from the mileage of some previous years.

Material is being placed for early construction of the Saginaw road in Genesee county, reaching from Flint to the Oakland county line. The contract has been let and it will be eighteen feet wide, of asphaltic concrete on concrete base.



ACCURACY

BEFORE buying a corn planter consider this fact—accuracy is essential to the biggest yields. An inaccurate planter covers up its mistakes. It does hit-and-miss work. It is a "thief in the field" and you don't realize how much it has stolen until the corn plants are above the ground and you compare the results with those obtained by using an accurate planter. If it misses only fifteen kernels in every 100 hills there is a loss of five bushels per acre in the yield.

You can get a planter the accuracy of which is proven before it leaves the factory. That planter is the

JOHN DEERE 999 Corn Planter.

The Accurate "Natural Drop" Planter

The same accuracy that you would get if you painstakingly counted out the kernels of corn and dropped them by hand—that is the accuracy of the John Deere No. 999 Planter. It is the accuracy of the hand planting method made tireless and rapid by mechanical devices.

John Deere Planter accuracy is the result of 50 years' experience—50 years of thought, of study, of experimenting with that one goal always in mind—accuracy. The 999 has rightly been styled the "super-planter."

Careful design and workmanship have made possible this high degree of accuracy. Each kernel enters the cell in the seed plate in a natural position. The sloping hopper bottom feeds the corn to the cells whether the hopper is full or nearly empty. It is the most simple, yet most effective planting mechanism ever used on a corn planter.

You Control the Number of Kernels Per Hill

Without changing seed plates or even stopping the team you can plant 2, 3 or 4 kernels in the hill, whichever number you decide the land will sustain. Merely shifting

the foot lever varies the number dropped and you can change the drop as frequently as you desire. The variable drop mechanism of this planter is just as perfect and well protected as the gears on the best automobiles.

You can also drill corn with the John Deere Planter. Change from hilling to drilling or back to hilling is made instantly by means of a foot drop lever. Not necessary to get off the seat or stop the team. The 999 Planter gives nine different drilling distances without changing seed plates.

You will appreciate the substantial front frame of this planter; the disc marker without any troublesome ropes; the underhung reel, easy to put on or remove; the great variety of seed plates for handling various sizes and types of seed and the quick detachable runners. This planter can be furnished with fertilizer and pea attachments, also with various types of furrow openers.

Valuable Books—FREE

"More and Better Corn." Beautifully illustrated in four colors—24 pages of interesting and valuable information for every corn grower. Tells how to prepare the seed bed, select, store and test the seed, shows the dollars and cents gained by accurate planting, explains just what is meant by accuracy in a corn planter, and describes the latest and best method of corn cultivation.

"Better Farm Implements and How to Use Them." A 156-page text book on farm machinery. A book for your library. Worth dollars. Illustrates and describes a full line of modern farm implements.

Write today for package CP-221.

JOHN DEERE, Moline, Ill.



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With a Howell Drag Saw Machine. Turn your timber into cash. Big coal shortage. The demand and prices for fire wood are greater than ever. Our drag saw cuts more wood in less time and at less expense than any machine built. Send today for our FREE catalog and prices. R. R. Howell & Co., Mfrs., Minneapolis, Minn.

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Labor scarcity no longer prevents ANY man pulling STUMPS! One man alone handles, operates this famous Kirstin one-man CLUTCH Stump Puller! No help needed! No horses! Leverage principle gives man giant's power—enables you to pull stumps big, little, green, rotten, low-cut tap-rooted—or brush! Pulls them *quickly!* EASILY! CHEAPLY!! A record breaking 30 Days FREE TRIAL to prove astounding superiority! Clear one acre from one anchor—think of it! No longer is labor scarcity a good excuse for stumps—not with the

Kirstin One Man Stump Puller

Single — Double — Triple Power

Because of its wonderful double leverage, the Kirstin gives a boy the power of a giant. A few pounds on the handle pulls tons on the stump! No stump can resist it!

6 Speeds! When stump loosens, increase speed, *without stopping!* Patented jiffy "speed-shift" enables you to operate in any one of 6 speeds and make the change instantaneously. Saves time—saves trouble—permits pulling stumps in from 4 to 10 minutes at a cost of from 5c to 10c.

Take-up saves time and bother in taking up cable-slack—makes quick hitches possible—saves cable. The Kirstin is made of high grade steel, strong, light, easy to handle. Soft steel clutches grip cable without injury. Nothing to wear, get out of order! None like it! A 3-year guarantee—flaw or no flaw! Lasts for years. Most economical puller made! Used by U. S. Gov't! Users everywhere.

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This Great Book FREE describes, illustrates the famous Kirstin Puller, both one man style and Horse Power. Tells how to clear your stump-land quickest, cheapest and easiest. Solves every stump pulling problem—reproduces letters of proof. Write for this book before our SPECIAL OFFER expires.

Producers Distribute Milk

By ALMOND GRIFFEN



This Battery of Delivery Rigs Inspired Confidence in Consumers that the New Organization was Prepared to Deliver a Satisfactory Product.

LAST summer a fleet of new milk wagons, attractive in looks and bearing the words, "Direct from Producer to Consumer" began to do retail business in Grand Rapids. It was the beginning of a cooperative experiment that is being watched with great interest not alone in Michigan, but throughout the country. Can dairy farmers successfully work together in marketing their product? This is the issue that is being tried out.

The Grand Rapids Dairy Company was formed last June. It has 462 members and all are milk producers as required by its articles of association. Now for a word of history leading up to this organization. For years Grand Rapids had been blessed with milk peddlers, close to 150 of them, with often half a dozen wagons covering a single city block. It was the usual happy-go-lucky state of affairs, with all sorts of rigs chasing each other over the same territory. The producers were getting fourteen to sixteen cents per gallon for their milk. This was a low price but the worst feature, as far as the dairymen were concerned, was the uncertainty of their market. It happened often that the peddler would say to the farmer, "I shall not want your milk tomorrow morning." He had made other arrangements, perhaps had found somebody who would sell for less, and so without adequate notice the farmer was left in the lurch with his product. After a few years some of the leading dairymen got together and formed the Grand Rapids Milk Producers' Association, an organization that went along very well but was always having trouble to get a fair price for milk. The producer with an investment that averaged \$1,000 per cow was on a parity so far as profits are concerned with the peddler with an investment of only \$300 to \$500. After great effort the producers finally did get twenty cents per gallon but could make no contracts at this price. They tried repeatedly and would have taken contracts at twenty cents, even after feed had soared to \$50 a ton, but the peddlers still stood out. It was at this stage that the dairy farmer formed the idea of cooperation in the sale of their own products. They were still hoping, however, that this would not be necessary, for they were not anxious to enter the new field, with trouble and expense that entailed and so

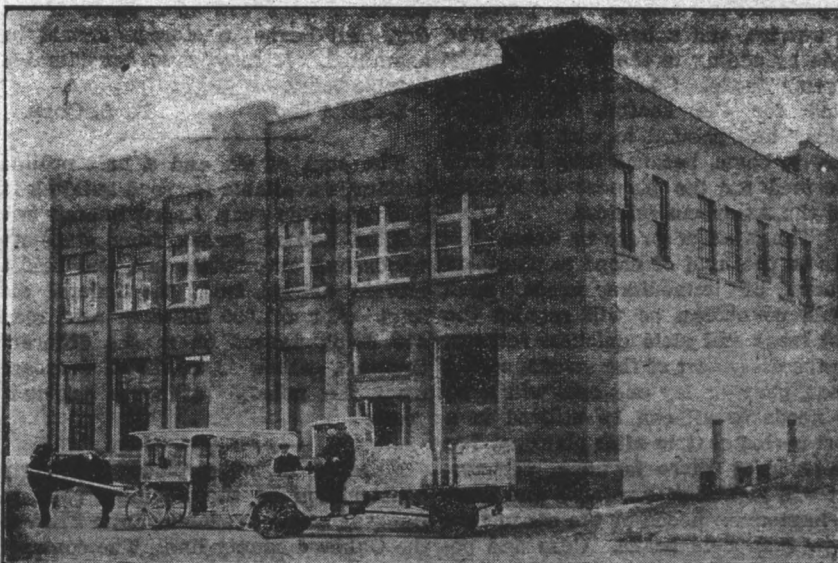
largely experimental. The peddlers had fully six months' notice of the intentions of the farmers and were fairly dealt with.

When \$50,000 in stock had been subscribed the Grand Rapids Dairy Company began doing business. A modern fireproof building has been erected on Scribner avenue, near the heart of the city, equipped with pasteurizing, butter-making, bottle-sterilizing and other machinery, with investment in plant and equipment of upwards of \$100,000. Starting with fifteen retail delivery wagons there are thirty in use now and the company is supplying about one-third of the milk consumed in Grand Rapids. The members are getting twenty-five cents for their milk and they should have thirty cents, according to present prices of feed, labor, etc. Milk is retailing in Grand Rapids for ten cents, skim-milk four cents, buttermilk six cents, coffee cream ten cents per one-half pint, whipping cream twenty cents, cottage cheese fifteen cents per pound, butter at market price. All these products are carried on the retail wagons.

Milk is the cheapest food product in Grand Rapids today. The producers realize that it is too cheap and that whole milk should bring at least twelve cents retail, but at the time the Grand Rapids Dairy Company was formed, outside of one company, which was getting eleven cents, milk was being sold here at nine and ten cents. It would have been a hard matter for the new company to do business at twelve cents on the start, and then the "trust" talk would have been loud and clamorous.

The Grand Rapids Dairy Company is no trust and there has been no thought of "trust" methods, such as getting control of the local milk situation and then boosting prices. All meetings have been open to the public and all its books of record are open to disinterested people. Each stockholder must own at least one share of \$100 and is limited to ten shares. Stock pays six per cent dividends.

There are about fifty peddlers in Grand Rapids. While extreme fairness was shown to the distributors who have had to retire because their supply of milk was shut off, a few of them have been shouting "trust" from the housetops. Through sympathy and expense that entailed and so some of the city officials and the city



The Very Substantial and Commodious Building Occupied by the Grand Rapids Dairy Company, an Association of Milk Producers who are Successfully Distributing the Milk from their Farms to Consumers in Grand Rapids.

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Upward
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FULLY GUARANTEED
CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$17.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from picture, which illustrates larger capacity machines. (See our easy plan of)

Monthly Payments
Bowl a sanitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.
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CASH FOR EMPTY BAGS
We pay highest prices and also freight charges. Be sure to get our prices before disposing of your bags. They're worth money to you and we'll pay you best cash price for them as soon as received and assorted. Write us at once stating how many you have.

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Only \$2 DOWN ONE YEAR TO PAY

\$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.

30 DAYS' FREE TRIAL Earns its own cost and more by what it saves you in use to cream. Postal brings free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
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The B. V. T. is built like a skyscraper—to last a thousand years. Frost, heat, moisture and decay can't touch it, because it is of everlasting vitrified fire clay. These blocks are reinforced with heavy steel rods bedded in cement.

You Only Build It Once!

Four layers of tile and three dead air spaces protect silage from freezing. The patented block gives tongue-and-groove air-tight joint construction. Looks as bright and new ten years after as the day it was built. No hoops to adjust. Never needs painting or repairs. As clean and solid as a jug.

Ask Your Neighbor Who Has One
Every B. V. T. Silo owner is a booster. Ask them what they think. Don't get any kind of silo until you at least know all about the B. V. T., the kind you never have to rebuild.

Ask us for Booklet D.
Brazil Hollow Brick & Tile Co.
Brazil, Indiana

Wet Beans

We Buy Them. Send Exact Sample in Tin Can. Cull Beans For Sale.
W. L. IRELAND & CO., Grand Ledge, Mich.

papers have been lukewarm and sometimes hostile towards the new company. The producers want only a fair and living price for their goods and they feel that all people should give support to a movement that is honestly headed towards providing a cheaper, cleaner and better food product by eliminating antiquated and costly methods of production and distribution. The herds of members are tuberculin tested, barns are kept sanitary and all city milk is pasteurized. Best equipment as to bottling and handling is used. The farmer who retails his own milk naturally has deeper interest in proper sanitation and in selling a pure product, hence this experiment ought to succeed. It is based on the right principle—that of direct dealing between producer and consumer—with elimination of unnecessary middlemen.

The Grand Rapids Dairy Company has met with all the troubles incident to the new cooperative concern, and then some more seemingly by way of good measure. The initial investment ran far ahead of all estimates, due to the soaring war prices. Then there was serious trouble with the management, conceded to be the keystone to any business enterprise. The manager was let out and with him went some of the office force, thus demoralizing the factory organization. An appeal was made to the state dairy and food commission, the state agricultural college, and the federal bureau of markets with the result that skilled aid was secured in this emergency. A cost accounting system has been installed by the federal bureau. The books of the company were audited and no shortage in accounts was found. This audit seems to indicate that members were paid about five cents more per gallon for their milk than conditions warranted at the start.

For many weeks the company has had milk sufficient to supply the city and the problem has been to take care of the surplus to advantage. All shipping has been tied up by snow storms or otherwise much of the milk might have been sent to the condensaries. The surplus milk has been made into butter and at a loss because of lack of facilities to dispose of by-products, the skim-milk and buttermilk, to advantage. This loss is a serious matter and menaces the very life of the organization. This leak must be stopped, and soon. Plans are being laid to make cheese, the basement of the plant being admirably fitted for this purpose, so that the surplus by-products in large or small quantities may be profitably taken care of at any time.

The company is doing some advertising of its products in the local newspapers, in street cars and in other ways and plans to do more in the way of intelligent publicity. It is realized that the main problem is right management. President Willard, Secretary Hunsberger and the seven directors are level-headed, progressive farmers, who are doing their best for the organization during its trying days. The whole country is watching Grand Rapids in this new milk deal. It is a patriotic movement along the line of more economical operations, the cutting out of middlemen and reduction of waste. A similar cooperative experiment has been successful at Erie, Pa., after ten years' trial, and stock in this company of milk producers is now said to be selling at three times its par value. Erie is very nearly large as Grand Rapids and we do not know of any other cities where this cooperative plan of selling dairy products is being followed.

Our Hour of Trial.

Now is the hour of our testing. We must save, serve and sacrifice. If we are selfish or even careless, we are disloyal; we are the enemy at home!

You Feed Your Stock Regularly—Why Not Your Land?



NO ONE looks for milk from a starving cow; yet thousands of farmers pile stable manure month after month till the "regular yearly hauling time" comes, and then they wonder why their corn is poor and their grass thin.

It's just as sensible to starve your stock as your land! Either way you can grow poor as fast as you want to. Neither way can you make an extra dollar, or save—for long—those you have.

Stable manure is never worth as much as when first made and *then* is the time to use it! Get a

NEW IDEA Registered U.S. Pat. Off. The Original Wide Spreading Spreader

Load it with manure right in your stable daily, and as fast as you have a load, spread it on your growing crops and *see* them jump. Corn, alfalfa, clover and grass respond almost over night to this treatment and—your bank account will, too.

The New Idea Spreader is spreading wealth all over the United States. Thousands of farmers who used to think "manuring doesn't amount to much" now use the New Idea Spreader and *know* that it puts dollars in their pockets.

The New Idea is the leading Spreader in the country today. It was the first of all spreaders to distribute wider than its own wheel track—an improvement that has saved millions of dollars worth of precious time and removed the necessity of driving over spread manure. Others imitate, but the New Idea sets the pace.

The machine is low down and light draft—easy on the loader, easy on the team. Can be piled fully 30 inches high where others distribute only a level box full. Has a positive chain drive, a solid bottom and a chain conveyor that brings all the load to the two beaters. Spreads at will 3, 6, 9, 12 and 15 loads per acre.

The New Idea is a lifelong dividend payer—the best investment a farmer can make. See the New Idea dealer in your territory and let him give you an actual demonstration. If you don't know him, we'll give you his name. Write us, too, for our catalog and our book, "Helping Mother Nature." Every farmer ought to read this; it's a gold mine of fertility facts.

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Always mention the Michigan Farmer when writing to advertisers.

Better Apples— More Money

Worms and caterpillars—bad as they are—are not the cause of all poor fruit.

Apple scab, blotch, sooty fungus, bitter rot and cedar rust, attack the fruit and cause damage running into millions of dollars every year. You spray to kill the worms. *How about the diseases?*

You can protect fruit from worms and disease by spraying with Pyrox. One preparation does both.

It does more. Pyrox by invigorating the foliage, causes the fruit to hang on longer, so that it takes on size, finish and quality—what the market wants and will pay for. If you want the best price you must grow the kind of fruit the market demands.

Pyrox

"Fills the Barrel with the Apples that Used to Go on Top"

"With 50 cents worth of Pyrox we got \$22.50 worth of fruit where we grew only \$2.90 worth before using it," writes a Pennsylvania grower. "From one orchard I used to sell about \$1500 worth a year. The year I began to use Pyrox my sales went up to \$5400. Can I afford NOT to use it?" said a fruit grower at a N. Y. State fruit growers' meeting.

Fifteen more Perfect Apples on the Tree will Pay for all the Pyrox Needed

Send for the new Pyrox Crop Book. You will be interested in the spraying methods used by practical growers in getting profitable crops. If apples are your specialty, you will want to read the experience of representative growers who use Pyrox and *make apples pay*. This book also contains spraying hints on many fruits and vegetables.

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TODAY a bushel of corn or wheat buys more fertilizer (potash excepted, of course) than at any time during the past three years. Note how much cheaper you can buy a 2-10 fertilizer now than before the war.



In 1914

would buy



Today

will buy



In terms of farm products, fertilizers cost less today than in 1914.

Fertilizers paid you then—they will pay you better now.

Fertilizers are today more profitable and more necessary to efficient production than before the war. Boost crop production, grow more per acre and increase your profits by using fertilizer.

Help both the railroads and yourself by ordering Spring Fertilizers NOW.

Send for literature to Department 3

Soil Improvement Committee of the National Fertilizer Association

Postal Telegraph Bldg., Chicago The Munsey Bldg., Baltimore

New Life for Old Gardens

By R. D. BAILEY

IF "Food will Win the War," every householder, who owns or can control a garden, has in that garden almost unlimited opportunity to aid our country, for no one knows the possibilities of an acre.

At the recent International Live Stock Show in Chicago, the writer saw an exhibit of vegetables being:

(a) Stored in a "cave" in the back yard in those cases in which the cellar was too warm for them to keep well;

(b) Being easily and satisfactorily dried by use of home-made appliances, and at slight cost, and in a condition to be stored in paper bags.

Few gardens produce to the maximum amount because yield is reduced through ravages of insect pests before whose antics we stand aghast and helpless. However, these insects need not be allowed to run amuck among the tender things that we have planned for by the winter fireside, and have brought into being with such an expenditure of cash, time, and backache; for, the entomologist, or bug man, at our agricultural college, has shown us how to "put a crimp" in the actions of Mister Insect.

Get Acquainted with the "Bugs."

But we generally don't know the insect, nor the method of control if we do recognize him; so we see our young onions, squashes, cucumbers, et al, melt away.

The bulletins plainly show by word and picture how to identify the pest; and he who will read can find tested antidotes.

It seems to the writer that it would be nearly as much comfort to farmer folk, whose children, in many instances, comprise half the enrollment of the village high school, if John and Mary could promptly state the name of a garden pest and unerringly prescribe the standard treatment, as to have them discern the factors in an algebraic problem or to translate another chapter in a German classic.

Gardens Need Humus.

Few gardens give as many months of service as they should, because the owner does not study a succession of planting. For instance, early peas can be planted among potatoes or squashes and be out of the way by the time the main crop needs the room. Father, mother and children will find new zest and interest in the garden through studying our new plans for successions.

Few gardens produce to the maximum for the reason that fertility is not sufficiently attended to. No one knows the possibilities of an acre. About the only demonstrations we Americans have of busy gardens are when we see one owned by some one born across the sea. But we are quick and adaptable; and I venture to predict that the American garden is about to undergo a large improvement.

Most gardens need more humus. In the southern half of the state, where the fall is long, the delightful, dreamy Indian summer days are accentuated by the blaze of burning leaves. To this day the writer never smells the delightful fragrance of burning maple leaves, nor views the wreath of smoke floating lazily upward in the ward in the hazy autumn that he is not instantly and irresistibly carried back in memory to halcyon days, long gone, when, back in old Constantine it was fun to heap up the abundant leaves from the majestic maples, make the bright bon fire, gather soft-shelled hickory nuts, and go to school with hands, hair, and clothing smelling of smoke, and thus appeal to the dying barbarian within us. It is a practice almost any man would like to indulge in again. His children tease to, and he would like to let them, while he looks on dreaming of the past; but he can-

not afford it; the public can not afford it, for he would be wasting precious fertility and humus that is now so much needed.

A Form of Plant Sanitation.

Though the writer believes in burning potato tops, various vines and trimmings as a precaution against the spread of plant disease, sacrificing humus for plant sanitation, they should be burned in the fall in small piles that the lime and the potash of the ashes may be evenly spread.

Next spring, that part of the leaves raked up in the spring cleaning, that can be spread on the garden plat without making too thick an application should be so applied and plowed in.

The decaying leaves return much fertility to the soil, while their value as decaying organic matter or humus in the soil can scarcely be estimated; for it adds to the power of a soil to hold moisture to be given up later to plants; humus makes a sandy soil less leachy, and a troublesome clay soil less compact and easier to manage; humus is a source of the indispensable nitrogen, and is a cheap way for most of us to get it.

An Excess of Leaves.

Though advocating the value of leaves, their use may be overdone. A large part of the enormous amount of water necessary to grow a plant rises from below by capillarity. Should leaves in excess be plowed into the soil they serve as a blanket, both from their amount and from their flat, easy compacting form, preventing the rise of the optimum amount of water to the waiting plant roots.

Leaves not needed should be used to start a compost heap in a corner, out of sight. The clippings of the lawn, beyond those needed as green feed for hens, should be added to this compost heap. Some day this compost heap will serve as a welcome source of fertility.

Through the use of leaves, lawn clippings, compost heap, wood ashes, and the contents of the dry earth closet, the typical village garden and most farm gardens can be kept at a high stage of fertility.

If acid phosphate is added at the rate of 250 pounds per acre, a marked improvement will be noticed.

We do not need to say, "My garden did not do very well, because I did not find anyone to haul me a load of manure." We can fertilize our own garden, if we will.

A Good Method of Fertilization.

In the typical village garden, let the owner spread his wood ashes over half from fall till spring. Over the other half daily empty the contents of the pail from the dry earth closet that should be attached to every village and country home, plenty of fine dry chip dirt or dry earth being used as an unsurpassed absorbent and deodorizer.

Liquid excreta has twice the fertilizing value possessed by solid, and can nowhere do less harm than when applied to the absorbent earth.

If hens are kept, spread thin the cleanings from the hen house on the part treated from the dry earth closet. Next year reverse the order. Do not mix ashes and excreta.

It is presumed that the tops, vines and trimmings were burned in the fall, and the garden plowed just before the ground freezes, and left unranked or undragged. How much nicer it is to look out of the window all winter upon a neatly plowed garden lot, with its uniform furrows and clean surface, than upon an untidy, belittered garden, with grinning, ghastly cabbage stumps and staggering sunflower stalks. To leave a garden like that is like pitching a pretty Christmas tree out the door and watching it die day by day.

Just Guide the nozzle

of our No. 1 Auto-Spray and s-p the auto-spray shut-off with your thumb, the Auto-Spray will do the rest—no clogging, and no waste of solution.

units are made in 40 styles, operated by hand, traction and gasoline. Used by State Experiment Stations and by over 450,000 farmers, gardeners, poultrymen and home owners.

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I'd as soon look on the skeleton of a sheep or pet dog at my back door.

Value of Fall Plowing.

Then, too, fall plowing aids greatly in reducing insect pests, as they, in various stages, are turned to the top to be frozen or eaten by birds.

In the spring apply a moderate coat of leaves and plow in.

What, two plowings?

Yes, tillage is manure.

Don't expect much fertility from the coal ashes. Their effect will be to improve the mechanical condition of the soil.

The lime of the hardwood ashes will hasten the decay of the leaves, besides being needed by the plants.

The potash of the ashes might better be saved than bought.

TROUBLE DEPARTMENT.

Hogs in the Orchard.

I have a peach and apple orchard of about six acres. The peach trees are four and the apple trees are three years old next spring. Previously it has been cropped but is quite fertile. I would like to sow alfalfa next spring and then pasture as many hogs as I could properly finish off in the fall.

Hillsdale Co. A. L. B.

We doubt the advisability of following the practice you mention. It is very essential for peach trees, especially young ones, to have thorough cultivation. Young apple trees will also do much better if they are cultivated.

If your trees are far enough apart, I would suggest that you sow the space between the rows with alfalfa and then pasture as you suggest, but I would leave a space of about three or four feet on each side of the tree row which I would cultivate. There is one objection to this plan, and that is that the hogs might root in the newly cultivated ground, and thus disturb the trees.

One man, who has had considerable experience in pasturing hogs in orchards, says that if the pasture is supplemented with other feed so that the hogs will get all they want, they will do little rooting.

One grower I know has been very successful in growing alfalfa hay in his orchard by a method similar to the one suggested above. He leaves sufficient space on each side of the tree row for cultivation, and each year cuts off a strip of sod, and thus widens the space to be cultivated. Such alfalfa is cut for hay the same as other fields.

TIMELY ORCHARD HINTS.

There was a time when the average farm orchard did not pay the interest on the money invested but that time is forever past. The orchard is truly a valuable part of any farm besides its productiveness, it has still another value perhaps greater—that of beautifying the farm. A good orchard, productive, cultivated and well kept, has been the direct means of selling many farms during very recent years.

In order to have a productive orchard and one that is in a good growing healthy condition, we must care for it. However, the average orchard receives perhaps less care than any single crop otherwise grown on the farm. The greatest thing of importance in the average orchard is more pruning, cultivating, and spraying. Pruning shapes up the trees and keeps down disease which is very important. Cultivation encourages growth and also turns the orchard into making an extra profit from growing vegetables each season. A cultivated orchard always produces more fruit than one not cultivated. This is a fact proven many times over; the only objection perhaps to cultivation is the fact that the apples do not color up and make quite as good an appearance when placed on the market at least some growers think so, but from my own experience I am convinced that cultivation pays in any orchard.

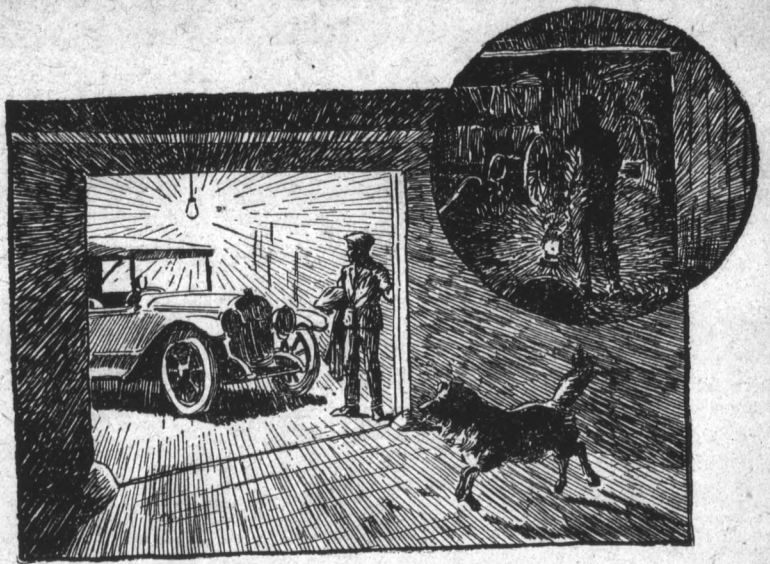
Pennsylvania.

H. W. SWOPE.

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On thousands of farms Lalley-Light keeps the young folks contented; it is a boon of comfort to the old folks.

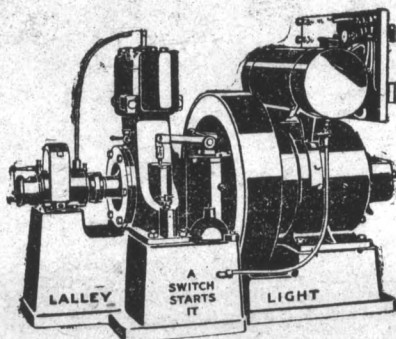
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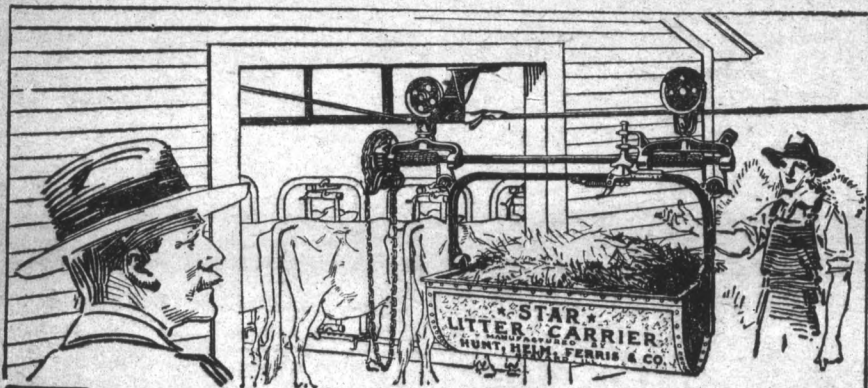
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Live Stock and the War

By H. L. ALLEN

IN the present crisis which confronts this country, the full gravity of which is just becoming realized in its true aspects, nothing stands out more clearly to the deep thinking land owner than the great need there is for a decided and country-wide increase in live stock breeding. Already "meatless days" are giving notice of the inability of our herds and flocks to supply with meat the needs of our own people and those of the nations of Europe who are allied with us in the tremendous struggle which has been imposed upon the world by a ruthless, autocratic government seeking to destroy the principles of democracy and personal freedom wherever found.

That this inability on the part of the breeders of live stock to supply sufficient meat to the nations of the world will become more and more pronounced during the next two years, regardless of whether or not the war comes to a close during that period, is beyond the range of doubt. Whether in war or in peace, the peoples of the earth will clamor for meat and it will be impossible in two years or three years, even if the breeding industry is stimulated to the degree hoped for, but hardly expected, to give to the world the supply of meat the people were accustomed to before the outbreak of this Titanic struggle.

Points to be Considered.

It is not alone the fact that the world is confronted with an alarming scarcity of meats, milk, butter, cream, cheese, wool and hides that concerns the farmers of the United States, although it will be their task to ameliorate the present conditions by an increased production of live stock. Indissolubly connected with these conditions are other facts of equal importance when looking to the return from the farmer's viewpoint.

First, it is impossible to keep the soil up to the highest degree of productiveness without keeping live stock through which a large proportion of the crops grown may be converted into high-priced beef, pork, mutton, dairy products or their allied branches; also to return to the soil the manurial fertilizers for which there are no satisfactory or economical substitutes.

Second, there is not the shadow of doubt but that it will be the United States to which the war-scourged nations of Europe will come when the war is over to secure breeding stock to replenish their decimated herds and flocks.

The European Situation.

From the best information obtainable, Germany had, at the commencement of the war between 24,000,000 and 25,000,000 head of cattle. When war was declared she set aside 8,000,000 head for breeding and milking purposes, leaving about 16,000,000 head to furnish food for her soldiers and the population at home. Figures which became available late in 1916—there have been no figures received since then—indicated that of the 16,000,000 head of cattle set aside for food purposes, less than 5,000,000 remained. In view of these figures it seems reasonable to believe that by this time Germany is in possession of few if any cattle outside the 8,000,000 which were reserved for breeding and milking purposes.

No authoritative figures have come from Austria but in view of what is known about the conditions in Germany it is safe to say that Austria has but a small surplus of cattle left now if she has any at all. In Belgium, of course, there are practically no cattle left and the same may be said of the situation in Serbia. In Holland the greatest dairy county among the European neutral nations, it is said that half a million of the milch cows have

been sold because of the high price of feeds. In Denmark, too, where dairy- ing is a very prominent part of the farming industry, there were 13,310,263 milch cows in 1914, whereas the official report for 1916 showed a decrease of 169,022 during the first two years of the war.

This means that when the war is over and the men in the armies go home to pick up the threads of their lives again, there will be no nation in Europe that will be in a position to assist, to any great extent, in restocking the breeding herds of these countries where live stock has been so nearly wiped out.

A Look Into the Future.

And these countries if they would feed their people must have live stock in order to keep up the fertility of their land as well as to provide meats and fats. In both Germany and Austria every cow, ewe or sow and a goodly number of the males raised during the first three or four years after the war, will be used for rebuilding the breeding industry. In France this will also be true in a lesser degree and in Belgium and Serbia even the foundation animals for breeding will have to be secured from other countries.

The growing of cereal crops will, however, be commenced at once in the warring countries of Europe when they turn to peace again, and that means that, while the prices for cereal crops will drop to lower figures, there will still continue to be a shortage in cattle, sheep and hogs with no prospect for noticeably lower prices on meat and dairy products for three or four years at least; in fact, if history repeats itself, as may be expected, there will be a considerable period of time after the war when grain will be low in price—compared with present prices—while the products of the dairyman and the feeder of beef cattle, sheep and swine will continue to bring high prices. It is needless to say that such conditions will greatly favor the farmers who prepare now to take advantage of them.

Signs of the Times.

And this is what far-seeing farmers are doing. In the endeavor to increase the productiveness of their herds dairymen have been, and are, paying record prices for bulls with a maternal ancestry of highly-tested cows back of them and there has never been a time when females that have made superlative tests have brought so much money as they are bringing at the present time. During the past two years a half dozen Holstein-Friesian bulls have sold at prices ranging from \$20,000 up to a trifle over \$50,000 each, while values correspondingly high have been registered for Guernseys, Jerseys and Ayrshires.

In the beef breeds similar conditions exist. During the sales which followed the recent International Exposition in Chicago, fifty-eight head of Herefords sold for an average of \$1,774 per head, one bull selling for \$31,000. Fifty-three head of Shorthorns sold for an average of \$1,090 per head, and thirty-four head of Aberdeen-Angus brought an average of \$1,005 per head.

Men who a few years ago disposed of their sheep are now restocking in this branch of breeding at prices more than double those received when they sold out and the advance in values on swine has been even greater.

The problem of the live stock breeder now is not only to produce more cattle, more sheep and more hogs, but also to produce better cattle, sheep and hogs. While there will be a ready sale for all stock that can be converted into meat and a sale for all dairy products, whether or not produced at a profit, the breeders, feeders and dairy- men who will secure the maximum net

returns from their investment and their labors will be those who recognize the value of pedigree as a demonstrated record of certain excellencies which have been obtained as a result of the selection of individuals of merit for one generation after another to mate with other individuals selected because of their possession of similar inherited qualities.

Performance the New Standard.

There was a time when pedigree, as it referred to live stock, was simply a record of an animal's ancestors. Today it means something vastly different. It is true that it still remains a record of an animal's ancestors, but it is something more. Performance—or demonstrated merit—today goes hand in hand with pedigree. A dairy animal may have a pedigree made up of five or six generations of pure-bred ancestors, but unless the merit of those ancestors has been established by authoritative tests, tests which showed them to be in possession of the inherent power to produce milk or butter-fat prolifically, the pedigree made up of their blood lines possesses no value to the dairyman who is aiming to make his herd productive and profitable in the highest degree.

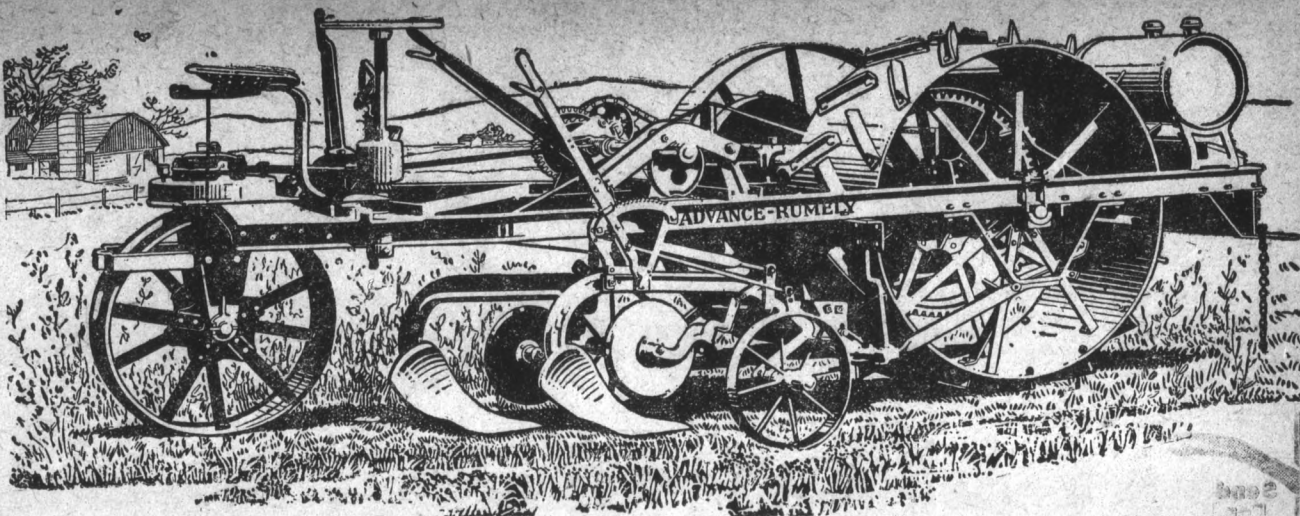
Performance and pedigree do not go hand in hand with the beef breeds nor with sheep nor swine, in the same meaning of the term, as when it is used in connection with the dairy breeds, because of the fact that the development of the function of producing milk and butter-fat affords an opportunity for keeping records such as is not afforded by the conversion of an animal into meat. In this last mentioned case the end of an animal proves its possession or lack of the qualities desired while in the case of the dairy cow, her life and the record she makes day by day or month by month is preserved and is used as a guide by breeders in the selection of individuals to improve their herds.

Quality the Slogan.

On the other hand, inherited qualities are more plainly shown in outward form, in the case of animals bred for meat production than in those of the dairy breeds. Constant and intelligent selection, with a knowledge of the potential qualities possessed by the animal's ancestors, meaning their power to transmit the anatomy best adapted to the acquirement of flesh in the parts furnishing the choice cuts of meat; the temperament which permits early and rapid growth; the vitality which will enable the animal to convert large quantities of food into bodily fat instead of butter-fat or muscle, are the matters which are considered along with pedigree by the breeders of the meat producing breeds and the combination is almost as definite a guide in pointing the way to further improvement as performance and pedigree is to the dairyman.

The Breeders' Opportunity.

The whole world will at the close of the war, be demanding, not only dairy products, beef, mutton, pork, wool and hides, but it will also be demanding breeding stock to rehabilitate the decimated herds and flocks. Whether the aim is to supply the food products or the stock to help upbuild the breeding industry, the pedigree in which recorded performance and intelligent selection are factors must be the main dependence. No dairyman, no grower of beef cattle or of swine or sheep can hope to follow the old hit-or-miss system of breeding and secure anything like the results which will be secured by the man whose herd or flock is made up of animals in which demonstrated productive capacity, as shown by pedigree, is the keystone; and if the object is to secure a share of the money that will be paid for breeding animals to restock the European countries, it is only the man in the last mentioned class who can hope to participate in its division.



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The reason for the saving is simple—the Sharples skims clean at any speed. Other separators do not—their construction prevents it. Only the Sharples has the suction-feed principle that draws the milk into the separating bowl in proper proportion to the speed of turning. No cream loss from slow turning—no bell-ringing bugaboo: just complete, uniform separation—that's the Sharples way. Any other way is wasteful. No discs in the Sharples—that means easy, quick cleaning. More than a million users are saving with a Sharples. Write for catalog today; address Dept. 18



The Sharples Separator Co., West Chester, Pa.

Sharples Milkers—used on half a million cows daily

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Your farm buildings must shelter your crops, stock and family. Erect buildings that are firesafe and storm-proof, affording complete protection from the elements.

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EUREKA CORN

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Address

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37 Front Street Worcester, Mass.

Detroit Area Milk Producers

PRODUCERS of milk in the Detroit area are just now getting their organization work on an effective basis. Although the advantages of cooperation were evident before, the final step toward efficiency was made when the eastern branch of the Michigan Milk Producers' Association dissolved last November and the locals of that organization became units of the Michigan Milk Producers' Association.

What did this step accomplish for the producers of the Detroit area? It enabled them in the first place to deal advantageously with the distributors in the city of Detroit. While the cooperative efforts previously to the entering of the larger organization had distinctly shown that the solution of their many perplexing problems would be solved only through mutual effort, it became apparent that the local unit was too limited in scope to handle the situation successfully. In general, the problem worked in this manner: As soon as the producers who were supplying the Detroit distributors became thoroughly organized these big buyers would reach out into new territory and secure milk from producers not members of the Detroit area organization. This scheme was followed until the distributors were securing milk from points two hundred miles distant from the city. It became apparent therefore, to the producers that a more comprehensive organization scheme must be brought into being before the seller and buyer of milk for the Detroit market could meet on an equal basis and make contracts. The state organization seemed to offer this advantage which led to the step mentioned above.

As soon as the officers of the state association were entrusted with the responsibility of arranging contracts with the distributors, the Michigan Milk Commission was brought into being. The personnel of this commission was such as to at once gain the confidence of producers and consumers alike. The members were: J. Walter Drake, chairman, President Hubmobile Co.; Ex-Governor Fred M. Warner, Prof. A. C. Anderson, Dean of Dairy Division of the Michigan Agricultural College, J. N. McBride, Michigan State Market Director, I. R. Waterbury, member of the State Board of Agriculture and Editor-in-Chief of the Michigan Farmer, Fred L. Woodworth, State Dairy and Food Commissioner, Frank X. Martel, representing the Detroit Federation of Labor, and Mrs. R. M. Grindley, representing the Detroit Federation of Women's Clubs.

As a result of the efforts of this body a compensatory price was secured for the milk producers of the Detroit area. Thus it happened that the first fruits of the work of the state association appeared to fully justify the faith of the leaders of the state as well as of many of the Detroit area locals in coordinating the work and efforts of producers throughout the state.

A movement has also been started toward advertising to the Detroit people the virtues of milk as an item in the human diet. There is a very general belief that a broader knowledge of the food value of milk will stimulate a more liberal use of the product, since the elements of nutrition can be purchased much cheaper, even at recently advanced prices, in milk than in any other staple food products. Under the old plan of organization this advertising program would have been difficult to finance, but through not only the cooperation of the widely scattered locals whose members are delivering milk to the Detroit distributors, but also through the cooperation of the producers and the distributors, has it become possible to successfully finance such a publicity campaign.

That our readers may have a better idea of the number and the distribu-

tion of the locals of the Michigan Milk Producers' Association which contribute to the Detroit district, we are appending herewith a list, together with the names of the presidents and secretaries:

Officers of Local Milk Producers' Association in Detroit Area.

Adair, O. Lindsay, president; Carl Greenberg, secretary.
Addison, Leroy T. Smith, president; Bernard P. Phillips, secretary.
Almont, Alex. T. Mair, president.
Base Line, J. W. Cole, secretary.
Beech, George Bench, president; F. Gleason, secretary.
Bell Branch, L. A. Newman, president; George W. Burt, secretary.
Belleville, Chas. Evans, president; Steven Pearl, secretary.
Birch Run, W. J. Newman, president; Chas. B. Forrest, secretary.
Birmingham, J. H. Broughton, president; A. H. Beebe, secretary.
Brighton, Chas. Pless, president; Carl Birkenstock, secretary.
Britton, Leon Exelby, president; W. A. Rockington, secretary.
Cady, Joseph Murphy, president; George Eppler, secretary.
Canton, C. E. Van Vleet, secretary.
Chelsea, Roy E. Ives, secretary.
Cherry Hill, E. W. Moyer, president; E. C. Pooles, secretary.
Clarenceville, Chas. Erwin, president; Wm. Thornton, secretary.
Clayton, W. E. Baker, president.
Cohoctah, K. Wigglesworth, president; Herbert Brown, secretary.
Davis, R. G. Potts, president; Irving Ellis, secretary.
Dearborn, R. R. Pointer, president.
Denton, Frank Van Tassel, president; Chas. A. Freeman, secretary.
Dundee, F. A. Bordine, president; Earl Stowell, secretary.
Elm, Harry Wolfom, president; Wm. Garchow, secretary.
Eureka, John Galloway, president.
Farmington, Chas. Erwin, president; Carl Ely, secretary.
Fenton, Clare S. Severance, president; C. E. Haskell, secretary.
Flint, L. C. Ketzler, president; W. T. Hill, secretary.
Fowlerville, Ralph Carr, secretary.
Frazer, F. Fostam, secretary.
Flat Rock, F. F. Peters, president; Cairon Metler, secretary.
Gilt Edge, Wm. Harlan, president; Edw. Millard, secretary.
Hadley, Dewey C. Pierson, secretary.
Hand Station, Henry Theis, president; F. A. Schuman, secretary.
Highland, Bert Wardlow, president; G. C. Kinney, secretary.
Holland, F. M. Pronty, president; L. F. Kittendorf, secretary.
Holly, Chas. Swegles, president; George Clarke, secretary.
Howell, N. E. Dunning, president; Guy Borden, secretary.
Imlay City, John J. Hunt, president; H. F. Hovey, secretary.
Inkster, Wm. Lathers, president; E. M. Stewart, secretary.
Lambertville, H. L. Deland, president; F. J. Hull, secretary.
Meade, Wm. Hagen, president; Geo. Richards, secretary.
Milford, A. L. Johnson, president; M. A. Mastick, secretary.
Mt. Clemens, J. C. Miller, president; Bert Shattuck, secretary.
New Boston, Ernest Gumption, president; J. A. Herman, secretary.
Newburg, Wm. Farley, president.
New Haven, W. Downer, president; H. L. Kesner, secretary.
New Hudson, E. Davis, president; Burton Bunn, secretary.
North Farmington, Hartwell Green, president; Fred Portus, secretary.
Northville, M. N. Johnson, president; E. H. Ash, secretary.
Ortonville, Claude Owen, president; Jesse Blow, secretary.
Perrinsville, Isaac Innes, president; John F. Beyer, secretary.
Petersburg, Fred Knopf, secretary.
Plymouth, C. E. McClumpha, president; Edw. Hirschberger, secretary.
Powers, Jesse Hake, president; A. B. Schroeder, secretary.
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Ray Center, J. Hartway, president; Albert Goldenstine, secretary.
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Rockwood, Newport Post Road, Chas. Lamenschlager, secretary.
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Romulus, S. M. Prouty, president; John C. Piper, secretary.
St. Clair, I. S. Parke, president; E. Rankin, secretary.
Salem, Forrest Roberts, president; DeForest Thompson, secretary.

(Continued on page 286).

Seasonable Dairy Notes

By I. J. MATHEWS

TO the experienced dairyman, the work of late winter is the most dreaded of all the year. Then it is that the breeding season comes on, especially if a late fall or early winter calf crop is expected. Likewise, the subject of pastures is one that forces itself to the front as the cattle have been kept up all winter and are anxious to plant their feet on terra firma once again. This year, the increasing costs of grain rations for the cows make it necessary for the dairyman to go carefully over his inventory of ideas to discover if there is any feasible way to diminish the quantity of grains that seem to be so necessary to the maintenance of a creditable milk flow. Moreover, he who sees a few inches further than the end of his nose will be thinking about the midsummer season of short pasture and will be planning on crops which may be put in to supplement these pastures and tide the animals over until fall pasture comes on in abundance.

Fall or Spring Calves.

The spring calf is the one most commonly met. Despite this fact, his brother born in the fall has the better of him in many different respects. While it is well nigh impossible to

all the way around, the youngsters soon get to eating hay and grain—they grow and thrive and spring finds them ready to go on pasture without fear of scours. Lice are to be feared, especially if the calves are kept in a dark place. Not that the dark place brings the lice into being but in such an environment they develop more rapidly and are harder to get rid of. I have used several of the advertised louse powders and any of them do the business.

The late winter is the time to plan on setting all the cows back so that in two years, all of them will calve in the fall. While the usual thing is for the cow to reproduce every twelve months, my observation is that absolutely no harm results from the reproductive process being repeated every ten months for two years if the cows are well fed. When I say well fed, I don't mean running about the straw stack. I refer to a bushel basket full of silage morning and night, a liberal hay feed at noon and a six to eight pound daily grain supplement. Under this feeding, cows show no ill effects of more frequent reproduction. While not advocating this as a general practice, to have the animals bearing their young



One Method of Increasing Production from Stump Land.

have all the cows freshen in the fall, it is certainly desirable from many viewpoints. It has been proven long since that the cow freshening in the fall will produce from one-fourth to one-fifth more milk than the same cow freshening in the spring. And why shouldn't she? While the calf is still young, the mother secretes the milk copiously, and this, taken together with the silage, keep up the flow all winter. Spring, with the attendant green grass further stimulates the dairy matron. Thus there is a constant and continuous urge until the period of short pastures. Then while the owner is busy making hay, plowing corn and harvesting grain, the cow kindly desists from milk giving and allows her owner to enjoy the balmy breezes of a midsummer evening in preference to sweltering in the torrid heat radiating from a cow with a full stomach, a distended udder and a turbulent, fly-tossed tail.

Moreover, the cows that freshen in the spring add insult to injury by giving milk most copiously just at a time when the price of milk, butter and their derivatives are lowest in price. The fact that the cows give most through fall freshening and that this product is worth much more during the winter are reasons sufficient to make any self-respecting dairyman change the old order of things.

But that is not all. I find that fall calves can be raised much more easily than spring calves. The calf pails are easily kept sweet, there is more time to fuss with the young bovines and so,

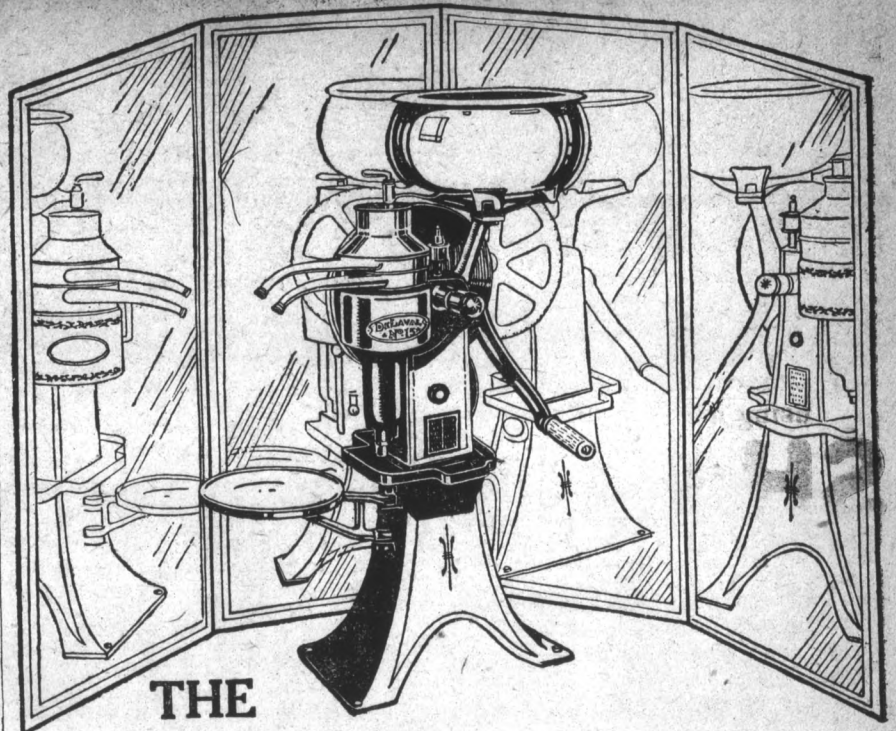
in the fall will greatly overbalance any loss of milk the owner might suffer through this practice carried on for two years.

Let Pastures Get Good Start.

After the long, cold winter with its many attendant dark days in many stables, the cattle will be anxious to get their feet on the ground. Ordinary springs, the temptation is keen to let the cows onto the pastures as soon as they look green; this spring, the temptation will be much keener. The cattle will tease harder and feed will undoubtedly be scarcer.

The man who, in a fit of economy, opens the gate to the pasture before it is able to carry the load is lost. He will immediately curtail his milk production, the pasture will be irreparably damaged with nothing of value to show for it. Grass may be green without being nourishing; also, cattle may eat it with avidity even though it lacks body.

As a long established fact, the early grass is neither nourishing nor satisfying. While it will stimulate a greater milk flow for a few days, the stimulation is of a temporary nature and is not founded upon any added nourishment which the cows get by virtue of the green, washy grass they consume. Then one should not lose sight of the fact that the grass blades are the lungs and stomach of the plant. In other words, unless the leaves get an opportunity for expansion and development, they fail in their function of combining the carbon dioxide of the atmosphere with the water of the plant to form the



THE NEW DE LAVAL CREAM SEPARATOR

Every Reflection Shows Perfection

VIEWED from every angle, the De Laval is distinctly in a class by itself. It has a business-like appearance. It looks as if it were well made, and it is. It looks sturdy, and it is. There is no make-believe about it anywhere, from the wide-spreading substantial base to the solid, seamless, symmetrical supply can.

It's no wonder that big dairymen and creamerymen who have for years made a careful study of dairy methods and machinery refuse to consider any other separator but the De Laval. They know that from every angle—clean skimming, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

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Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

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carbohydrates which are so valuable in feeding. If there was no other suitable reason, this one would be sufficient since the leaves are like the start which a man makes on a savings account. Destroy the start at starting and the account is worthless—let the start run awhile and the account becomes a source of satisfaction and a fund forever. In the same way the leaves must be allowed to get some plant food manufactured before the supply can be legitimately drawn upon.

Many pastures are ruined each year through being perforated by the stock in early spring. In such cases, the plant roots are crushed and they cease to function normally until well along in the season. A herd of cattle in a wet pasture for a single day can ruin the prospects for two weeks' feeding a little later on.

Late Summer Soiling Crops.

Abundant feed for a while and then a scarcity of feed will not suffice to keep a dairy cow at her maximum production. If at all possible, the supply of pasture should at all times be kept ample for the animals that must go to grass each day. And so it becomes the part of good, dairy, long-distance wisdom to plan now on that portion of the late summer which is ordinarily one of extremely short pastures and what there is of poor quality. Commonly, the last two weeks in July and the first two in August see a dearth of good pastures. It is necessary to grow something to bridge over the gap between the abundant pastures of early summer and those of early autumn.

While not generally in favor of soiling crops for the dairy cows, nevertheless a soiling crop it must be since there is no feasible combination which will insure pasture at this time under the conditions which usually rule. True, some years oats planted about the first of June make good supplementary pasture, but two weeks of dry weather in June puts all this at naught. More dependable than this combination, however, is one of oats and cowpeas planted together about June 1. I have seen this combination in use several times and ordinarily it fills the bill.

Wilted alfalfa hay is a No. 1 supplementary soiling crop but since this queen of hays rules on so few farms, we must of necessity turn to that favored disciple of King Corn—sweet corn.

EXPRESS TRAINS FOR DAIRY FEED.

Freight congestion resulting from weather and car shortage has produced an acute feed situation in the east, particularly in New York and New England. To relieve these sections where severe pressure was developing, the Food Administration has perfected arrangements for a system of express feed trains to take care of the threatened shortage.

Even the priority plan did not prevent single cars marked "permitted" being caught in the freight block and causing serious delay. To cut such a car out of a train of forty cars and give it the preference ordered meant hours of delay in switching at intermediary yards. It is believed that the solid train method will relieve this situation.

Since the latter part of January, solid trains of prepared feed from the corn and flour mills of the middle west, have been rushed east on fast schedule. These trains move under special orders and are subject to no interruption in transportation except those due to weather conditions. The solid train of feed is dispatched to distributing centers and there radiated off in carlots to surrounding towns to meet the shortage. In the two weeks following the inauguration of this plan, ten express trains of thirty-five to sixty cars each have moved out of Cedar

Rapids, Milwaukee, Peoria, Detroit and Indianapolis under special dispatch orders.

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(Continued from page 284).

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Wayne, Clifford Tinkham, president; Allen Beard, secretary.
Wixom, Burt Bunn, secretary.

Members will also be interested in having before them the officers of the Michigan Milk Producers' Association. They are: N. P. Hull, Lansing, president; C. F. Hainline, Alma, vice-president; R. C. Reed, Howell, secretary; H. W. Norton, Howell, treasurer. The acting officer of the association is Field Superintendent R. C. Reed, who can be addressed at Howell. The directors of the association are: M. L. Noon, of Jackson; Milo Campbell, Coldwater; John C. Ketcham, Hastings; F. J. Newman, Birch Run; M. W. Willard, Grand Rapids; Chas. Evans, Belleville; F. F. Consull, Mt. Pleasant; C. S. Bartlett, Pontiac; John C. Near, Flat Rock.

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A new type of silo made by the McClure Company, manufacturers of Saginaw Silos.

More non-conducting to heat and cold than any silo ever made of wood or any other material.

Will make and keep silage under extreme low temperatures better than any silo known.

Built of Redwood—nature's best silo material.

So rigid that no cables are necessary. Easiest to erect—simplest form of construction.

Pleasing in appearance. Both inside and outside walls smooth and even. Prices so low it will astonish you. Write today for circular No. 370 describing the new Liberty Silo.

McCLURE MILKER Soon Ready for Market

Q This remarkable machine takes the place of labor called to the colors. Q Practical, simple and sanitary. One man can milk as many cows as three men by hand. Q Insures uniformity in milking—the same operation day in and day out—gives greater consistent flow of milk. Q Price based on quantity production—low in price, easy to install and costs little to operate. Q The Valve Chamber—the heart of the machine—is made of glass, rubber and metal. Body is a molded glass cylinder—you can see what's happening. All connections are rubber to metal or rubber to glass—absolutely airtight—will not stick, easy to remove. Q No milk spray in valve—milk enters spirally, eliminating any danger of spray being drawn in connecting hose with outgoing air—cleanliness is assured. Q Teat cups are made of special heat-resisting glass—will not break easily when cleansed in hot water. You can see any dirt—surface absolutely smooth. Q The McClure Milker is made and backed by The McClure Company—this guarantees its manufacture and standing. You buy from a reliable company. Write for McClure Milker booklet No. 270.

Since the first of the year this is the second announcement made by The McClure Company in the interests of the conservation of the agricultural resources of the nation—another achievement aimed at the more successful prosecution of the war, making possible the building of more silos quickly, at low cost, and thereby increasing the feeding value of our acreage.

Recently we placed before you the McClure Milker—a scientific milking machine that saves time and labor in the dairy. Now we have developed the Liberty Silo.

The Liberty Silo frees more acres for the production of food-stuffs. With a silo you can feed more stock per acre than by the old method. This has been proven time and time again over a period of many years.

The Liberty Silo is a product of The McClure Company, old and successful silo manufacturers. We know silo construction and your needs, and the "Liberty" is designed along sound engineering principles.

A Silo for Every Need

In addition to the Liberty Silo you also have your choice of the Saginaw Steel-built and the Saginaw Leader—all types of silo construction proved by years of service.

There is no question as to the value of the silo as a war-time necessity. It prevents waste of time, feed and acreage—builds up the land and provides at all times succulent, nourishing feed for live stock.

Farmers are realizing this condition. Orders are coming in at an unprecedented rate. We believe we have sufficient materials on hand, but if you order now you will be on the safe side.

Furthermore, material prices are continually advancing. Place your order before it is necessary to raise our prices. Write us today for silo information. Ask for circular No. 470.

THE McCLURE COMPANY, Saginaw, Michigan; Cairo, Illinois

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French Advancing Across No Man's Land Behind a Barage Fire, which Conceals them from the Enemy.



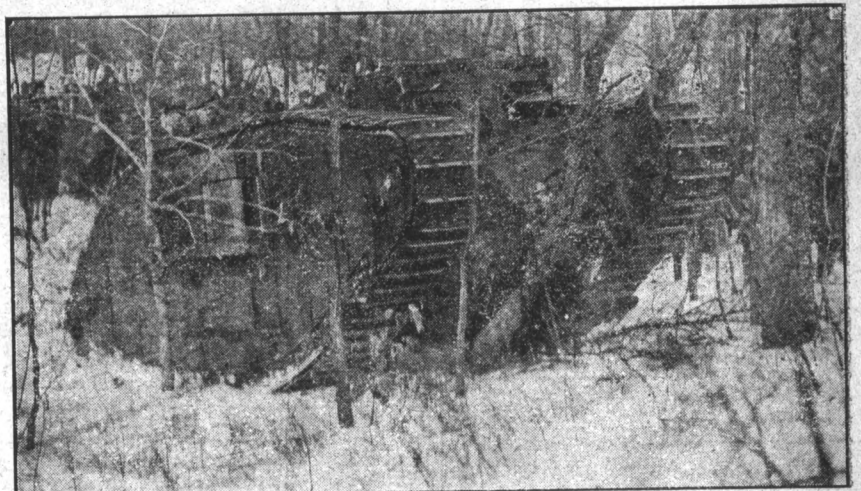
Three Thousand Men Volunteer to Help Build Much Needed Ships.



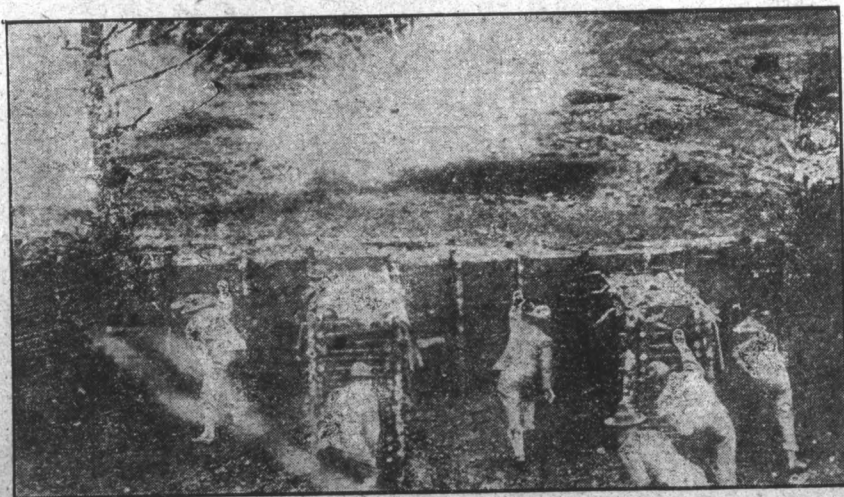
Soldiers at U. S. Training Camps Obeying Order to "Go Over the Top."



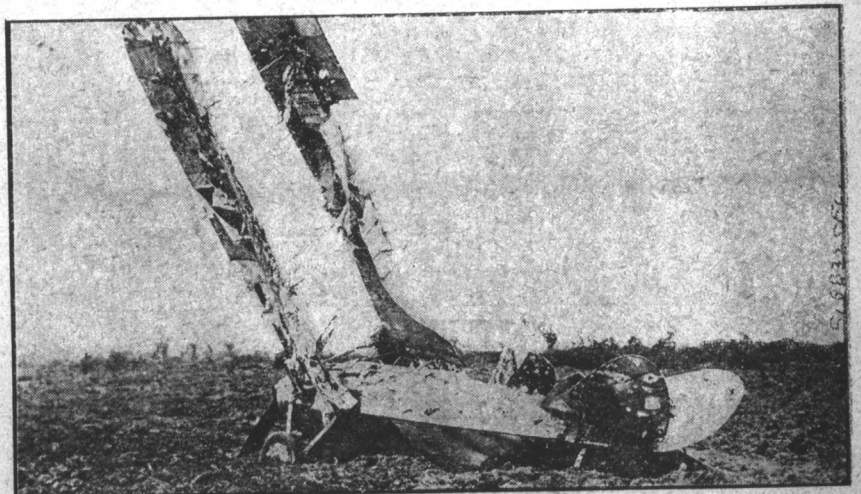
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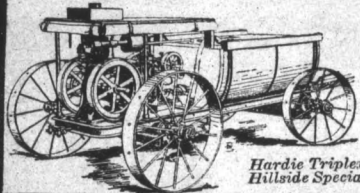
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Hardie Sprayers are noted for their simplicity. No complicated devices to cause trouble when every spraying minute counts. You can put any of the help to work with a Hardie and get maximum results. Makes the work of spraying easier than ever before.

When you see a Hardie Sprayer you will readily understand its superiority. See how compact it is—the few working parts and how everyone of them is quickly accessible. There are 21 Hardie features that make it the leader among sprayers. The Hardie catalog tells all about them. A copy is yours for the asking. Send today. You can see a Hardie at your dealer's.

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The latest Hardie device made to improve spraying conditions. Shoots a cloud of penetrating spray, covers the trees with a fog. Easy to handle. Takes a tiresome load off the arms and does the work in much less time. Fits any high pressure sprayer and increases its efficiency.



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Inside the Lines

By EARL DERR BIGGERS & ROBERT WELLES RITCHIE

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General Crandall sat at his desk and tried to bring himself down to the routine crying from accumulated papers there. But the canker Billy Capper had implanted in his mind would not give him peace. Major-general Crandall was a man cast in the stolid British mold; years of army discipline and tradition of the service had given to his conservatism a hard grain. In common with most of those in high command, he held to the belief that nothing existed—nothing could exist—which was not down in the regulations of the war office, made and provided. For upward of twenty-five years he had played the hard game of the service—in Egypt, in Burma, on the broiling rocks of Aden, and here, at last, on the key to the Mediterranean. During all those years he had faithfully pursued his duty, had stowed away in his mind the wisdom disseminated in blue-bound books by that corporate paragon of knowledge at home, the war office. But never had he read in anything but fluffy fiction of a place or thing called the Wilhelmstrasse, reputed by the scribes to be the darkest closet and the most potent of all the secret chambers of diplomacy. The regulations made no mention of a Wilhelmstrasse, even though they provided the brand of pipe clay that should brighten men's pith helmets, and stipulated to the ounce an emergency ration. Therefore, to the official military mind at least, the Wilhelmstrasse was non-existent.

But here comes a beach-comber, a miserable jackal from the back alleys of society, and warns the governor-general of the Rock that he has a man from the Wilhelmstrasse—a spy bent on some unfathomable mission—in his very forces on the Rock. He says that an agent of the enemy has dared masquerade as a British officer in order to gain admission inside the lines of Europe's most impregnable fortress, England's precious stronghold, there to do mischief!

General Crandall's tremendous responsibility would not permit him to ignore such a warning, coming even from so low a source. Yet the man found himself groping blindly in the dark before the dilemma presented; he had no foot rule of precept or experience to guide him.

His fruitless searching for a prop in emergency was broken by the appearance of Jane Gerson in the door opening from Lady Crandall's rooms to the right of the library. The girl was dressed for the out-of-doors; in her arms was a fragrant bunch of blood-red roses, spraying out from the top of a bronze bowl. The girl hesitated and drew back in confusion at seeing the room occupied; she seemed eager to escape undetected. But General Crandall smilingly checked her flight.

"I—I thought you would be out," Jane stammered, "and—"

"And the posies—" the general interrupted.

"Were for you to enjoy when you should come back." She smiled easily into the man's eyes. "They'll look so much prettier here than in my room."

"Very good of you, I'm sure." General Crandall stepped up to the rich cluster of buds and sniffed critically. Without looking at the girl, he continued: "It appears to me as though you had already made a conquest on the Rock. One doesn't pick these from the cliffs, you know."

"I should hardly call it a conquest," Jane answered, with a sprightly toss of her head.

"But a young man sent you these flowers. Come—confess!" The general's tone was bantering, but his eyes

did not leave the piquant face under the chic summer straw hat that shaded it.

"Surely. One of your own men—Captain Woodhouse, of the signal service." Jane was rearranging the stems in the bowl, apparently ready to accept what was on the surface of the general's rallying.

"Woodhouse, eh? You've known him for a long time, I take it."

"Since last night, General. And yet some people say Englishmen are slow." She laughed gaily and turned to face him. His voice took on a subtle quality of polite insistence:

"Surely you met him somewhere before Gibraltar."

"How could I, when this is the first time Captain Woodhouse has been out of Egypt for years?"

"Who told you that?" The general was quick to catch her up. The girl felt a swift stab of fear. On the instant she realized that here was somebody attempting to drive into the mystery which she herself could not understand, but which she had pledged herself to keep inviolate. Her voice fluttered in her throat as she answered him:

"Why, he did himself, General."

"He did, eh? Gave you a bit of his history on first meeting. Confiding chap, what! But you, Miss Gerson—you've been to Egypt, you say?"

"No, General."

Jane was beginning to find this cross-examination distinctly painful. She felt that already her pledge, so glibly given at Captain Woodhouse's insistence, was involving her in a situation the significance of which might prove menacing to herself—and one other. She could sense the beginnings of a strain between herself and this genial elderly gentleman, her host.

"Do you know, Miss Gerson—he was speaking soberly now—"I believe you and Captain Woodhouse have met before."

"You're at liberty to think anything you like, General—the truth or otherwise." Her answer, though given smilingly, had a sting behind it.

"I'm not going to think much longer. I'm going to know!" He clapped his lips shut over the last word with a smack of authority.

"Are you really, General Crandall?" The girl's eyes hardened just perceptibly. He took a turn of the room and paused, facing her. The situation pleased him no more than it did his breezy guest, but he knew his duty and doggedly pursued it.

"Come—come, Miss Gerson! I believe you're straightforward and sincere or I wouldn't be wasting my time this way. I'll be the same with you. This is a time of war; you understand all that implies, I hope. A serious question concerning Captain Woodhouse's position here has arisen. If you met him before—as I think you have—it will be to your advantage to tell me where and when. I am in command of the Rock, you know."

He finished with an odd tenseness of tone that conveyed assurance of his authority even more than did the sense of his words. His guest, her back to the table on which the roses rested and her hands bracing her by their tense grip on the table edge, sought his eyes boldly.

"General Crandall," she began, "my training in Hildebrand's store hasn't made me much of a diplomat. All this war and intrigue makes me dizzy. But I know one thing: this isn't my war, or my country's, and I'm going to follow my country's example and keep out of it."

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General Crandall shrugged his shoulders and smiled at the girl's defiance.

"Maybe your country may not be able to do that," he declared, with a touch of solemnity. "I pray God it may. But I'm afraid your resolution will not hold, Miss Gerson."

"I'm going to try to make it, anyway," she answered.

Gibraltar's commander, baffled thus by a neutral—a neutral fair to look on, in the bargain—tried another tack. He assumed the fatherly air.

"Lady Crandall and I have tried to show you we were friends—tried to help you get home," he began.

"You've been very good to me," Jane broke in feelingly.

"What I say now is spoken as a friend, not as governor of the Rock. If it is true that you have met Woodhouse before—and our conversation here verifies my suspicion—that very fact makes his word worthless and releases you from any promise you may have made not to reveal this and what you may know about him. Also it should put you on your guard—his motives in any attentions he may pay you can not be above suspicion."

"I think that is a personal matter I am perfectly capable of handling," Jane's resentment sent the flags to her cheeks.

General Crandall was quick to backwater: "Yes, yes! Don't misunderstand me. What I mean to say is—"

He was interrupted by his wife's voice calling for Jane from the nearby room. Anticipating her interruption, he hurried on:

"For the present, Miss Gerson, we'll drop this matter. I said a few minutes ago I intended shortly to—know. I hope I won't have to carry out that—threat."

Jane was withdrawing one of the buds from the jar. At his last word, she dropped it with a little gasp.

"Threat, general?"

"I hope not. Truly I hope not. But, young woman—"

She stooped, picked up the flower, and was setting it in his buttonhole before he could remonstrate.

"This one was for you, General," she said, and the truce was sealed. That minute, Lady Crandall was wafted into the room on the breeze of her own staccato interruption.

"What's this—what's this! Flirting with poor old George—pinning a rose on my revered husband when my back is turned?" Brazen miss. I'm here to take you off to the gardens at once, where you can find somebody younger—and not near so dear—to captivate with your tricks. At once, now!"

She had her arm through Jane's and was marching her off. An exchange of glances between the governor and Hildebrand's young diplomat of the dollar said that what had passed between them was a confidence.

Jamihir Kahn announced Major Bishop to the general a short time later. The major, a rotund pink-faced man of forty, who had the appearance of being ever tubbed and groomed to the pink of perfection, saluted his superior informally, accepted a cigarette and crossed his plump legs in an easy chair near the general's desk. General Crandall folded his arms on his desk and went direct to his subject:

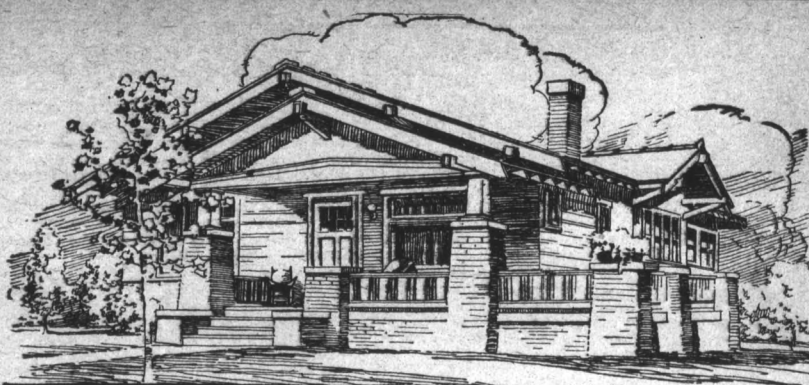
"Major, you were here on the Rock seven years ago, you say?"

"Here ten years, General. Regular rock scorpion—old-timer."

"Do you happen to recall this chap Woodhouse whom I sent to you to report for duty in the signal tower today? Has transfer papers from Wady Halfa?"

"Haven't met him yet, though Captain Carson tells me he reported at my office a little more than an hour ago—see him after parade. Woodhouse—Woodhouse—" The major propped his chin on his fingers in thought.

(Continued on page 293).



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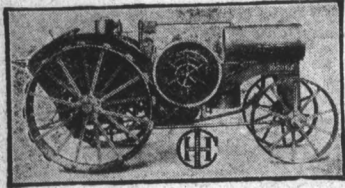
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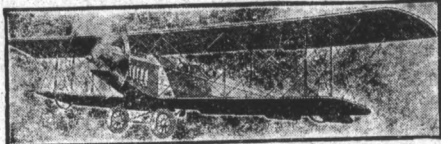
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The Grizzly King

By JAMES OLIVER CURWOOD

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CHAPTER X.

If it had not been for Langdon, this day of the fight between the two bears would have held still greater excitement and another deadlier peril for Thor and Muskwa. Three minutes after the hunters had arrived breathless and sweating upon the scene of the sanguinary conflict Bruce was ready and anxious to continue the pursuit of Thor. He knew the big grizzly could not be far away; he was certain that Thor had gone up the mountain. He found signs of the grizzly's feet in the gravel of the coulee at just about the time Thor and the tan-faced cub struck the Bighorn Highway.

His arguments failed to move Langdon. Stirred to the depth of his soul by what he had seen, and what he saw about him now, the hunter-naturalist refused to leave the blood-stained and torn-up arena in which the grizzly and the black had fought their duel.

"If I knew that I was not going to fire a single shot, I would travel five thousand miles to see this," he said. "It's worth thinking about, and looking over, Bruce. The grizzly won't spoil. This will—in a few hours. If there's a story here we can dig out I want it."

Again and again Langdon went over the battle-field, noting the ripped-up ground, the big spots of dark-red stain, the strips of flayed skin, and the terrible wounds on the body of the dead black. For half an hour Bruce paid less attention to these things than he did to the carcass of the caribou. At the end of that time he called Langdon to the edge of the clump of balsams.

"You wanted the story," he said, "an' I've got it for you, Jimmy."

He entered the balsams and Langdon followed him. A few steps under the cover Bruce halted and pointed to the hollow in which Thor had cached his meat. The hollow was stained with blood.

"You was right in your guess, Jimmy," he said. "Our grizzly is a meat-eater. Last night he killed a caribou out there in the meadow. I know it was the grizzly that killed 'im an' not the black, because the tracks along the edge of the timber are grizzly tracks. Come on. I'll show you where 'e jumped the caribou."

He led the way back into the meadow, and pointed out where Thor had dragged down the young bull. There were bits of flesh and a great deal of stain where he and Muskwa had feasted.

"He hid the carcass in the balsams after he had filled himself," went on Bruce. "This morning the black came along, smelled the meat, an' robbed the cache. Then back come the grizzly after his morning feed, an' that's what happened! There's yo'r story, Jimmy."

"And—he may come back again?" asked Langdon.

"Not on your life, he won't," cried Bruce. "He wouldn't touch that carcass again if he was starving. Just now this place is like poison to him."

After that Bruce left Langdon to meditate alone on the field of battle while he began trailing Thor. In the shade of the balsams Langdon wrote for a steady hour, frequently rising to establish new facts or verify others already discovered. Meanwhile the mountaineer made his way foot by foot up the coulee. Thor had left no trace of blood, but where others would have seen nothing Bruce detected the signs of his passing. When he returned to where Langdon was completing

his notes, his face wore a look of satisfaction.

"He went over the mount'n," he said briefly.

It was noon before they climbed over the volcanic quarry of rock and followed the Bighorn Highway to the point where Thor and Muskwa had watched the eagle and the sheep. They ate their lunch here, and scanned the valley through their glasses. Bruce was silent for a long time. Then he lowered his telescope, and turned to Langdon.

"I guess I've got his range pretty well figured out," he said. "He runs these two valleys, an' we've got our camp too far south. See that timber down there? That's where our camp should be. What do you say to goin' back over the divide with our horses an' movin' up here?"

"And leave our grizzly until tomorrow?"

Bruce nodded.

"We can't go after 'im and leave our horses tied up in the creek-bottom back there."

Langdon boxed his glasses and rose to his feet. Suddenly he grew rigid.

"What was that?"

"I didn't hear anything," said Bruce.

For a moment they stood side by side, listening. A gust of wind whistled about their ears.

"Hear it!" whispered Langdon, and his voice was filled with a sudden excitement.

"The dogs!" cried Bruce.

"Yes, the dogs!"

They leaned forward, their ears turned to the south, and faintly there came to them the distant, thrilling tongue of the Airedales!

Metosin had come, and he was seeking them in the valley!

CHAPTER XI.

THOR was on what the Indians call a pimootao. His brute mind had all at once added two and two together, and while perhaps he did not make four of it, his mental arithmetic was accurate enough to convince him that straight north was the road to travel.

By the time Langdon and Bruce had reached the summit of the Bighorn Highway, and were listening to the distant tongue of the dogs, little Muskwa was in abject despair. Following Thor had been like a game of tag with never a moment's rest.

An hour after they left the sheep trail they came to the rise in the valley where the waters separated. From this point one creek flowed southward into the Tacla Lake country and the other northward into the Babine, which was a tributary of the Skeena. They descended very quickly into a much lower country, and for the first time Muskwa encountered marshland, and traveled at times through grass so rank and thick that he could not see but could only hear Thor forging on ahead of him.

The stream grew wider and deeper, and in places they skirted the edges of dark, quiet pools that Muskwa thought must have been of immeasurable depth. These pools gave Muskwa his first breathing-spells. Now and then Thor would stop and sniff over the edge of them. He was hunting for something, and yet he never seemed to find it; and each time that he started on afresh Muskwa was so much nearer to the end of his endurance.

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lake. It was a dark and unfriendly looking lake to Muskwa, who had never seen anything but sunlit pools in the dips. The forest grew close down to its shore. In places it was almost black. Queer birds squawked in the thick reeds. It was heavy with a strange odor—a fragrance of something that made the cub lick his little chops, and filled him with hunger.

For a minute or two Thor stood sniffing this scent that filled the air. It had the smell of fish.

Slowly the big grizzly began picking his way along the edge of the lake. He soon came to the mouth of a small creek. It was not more than twenty feet wide, but it was dark and quiet and deep, like the lake itself. For a hundred yards Thor made his way up this creek, until he came to where a number of trees had fallen across it, forming a jam. Close to this jam the water was covered with a green scum. Thor knew what lay under that scum, and very quietly he crept out on the logs.

Midway in the stream he paused, and with his right paw gently brushed back the scum so that an open pool of clear water lay directly under him.

Muskwa's bright little eyes watched him from the shore. He knew that Thor was after something to eat, but how he was going to get it out of that pool of water puzzled and interested him in spite of his weariness.

Thor stretched himself out on his belly, his head and right paw well over the jam. He now put his paw a foot into the water and held it there very quietly. He could see clearly to the bottom of the stream. For a few moments he saw only this bottom, a few sticks, and the protruding end of a limb. Then a long slim shadow moved slowly under him—a fifteen-inch trout. It was too deep for him, and Thor did not make an excited plunge.

Patiently he waited, and very soon this patience was rewarded. A beautiful red-spotted trout floated out from under the scum, and so suddenly that Muskwa gave a yelp of terror, Thor's huge paw sent a shower of water a dozen feet into the air, and the fish landed with a thump within three feet of the cub. Instantly Muskwa was upon it. His sharp teeth dug into it as it flopped and struggled.

Thor rose on the logs, but when he saw that Muskwa had taken possession of the fish, he resumed his former position. Muskwa was just finishing his first real kill when a second spout of water shot upward and another trout pirouetted shoreward through the air. This time Thor followed quickly, for he was hungry.

It was a glorious feast they had that early afternoon beside the shaded creek. Five times Thor knocked fish out from under the scum, but for the life of him Muskwa could not eat more than his first trout.

For several hours after their dinner they lay in a cool, hidden spot close to the log-jam. Muskwa did not sleep soundly. He was beginning to understand that life was now largely a matter of personal responsibility with him, and his ears had begun to attune themselves to the sound. Whenever Thor moved or heaved a deep sigh, Muskwa knew it. After that day's Marathon with the grizzly he was filled with uneasiness—a fear that he might lose his big friend and food killer, and he was determined that the parent he had adopted should have no opportunity of slipping away from him unheard and unseen. But Thor had no intention of deserting his little comrade. In fact, he was becoming quite fond of Muskwa.

It was not alone his hunger for fish

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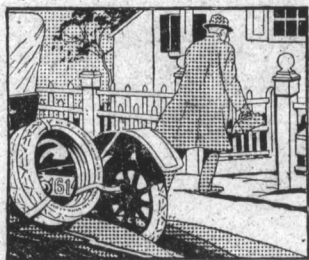
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or fear of his enemies that was bringing Thor into the lower country of the Babine waterways. For a week past there had been in him a steadily growing unrest, and it had reached its climax in these last two or three days of battle and flight. He was filled with a strange and unsatisfied yearning, and as Muskwa napped in his little bed among the bushes Thor's ears were keenly alert for certain sounds and his nose frequently sniffed the air. He wanted a mate.

It was puskooowepesim—the "moulting moon"—and always in this moon, or the end of the "egg-laying moon," which was June, he hunted for the female that came to him from the western ranges. He was almost entirely a creature of habit, and always he made this particular detour, entering the other valley again far down toward the Babine. He never failed to feed on fish along the way, and the more fish he ate the stronger was the odor of him. It is barely possible Thor had discovered that this perfume of golden-spotted trout made him more attractive to his lady-love. Anyway, he ate fish, and he smelled abundantly.

Thor rose and stretched himself two hours before sunset, and he knocked three more fish out of the water. Muskwa ate the head of one and Thor finished the rest. Then they continued their pilgrimage.

It was a new world that Muskwa entered now. In it there were none of the old familiar sounds. The purring drone of the upper valley was gone. There were no whistlers and no ptarmigan, and no fat little gophers running about. The water of the lake lay still, and dark, and deep, with black and sunless pools hiding themselves under the roots of trees, so close did the forest cling to it. There were no rocks to climb over, but dank, soft logs, thick windfalls, and litters of brush. The air was different, too. It was very still. Under their feet at times was a wonderful carpet of soft moss in which Thor sank nearly to his armpits. And the forest was filled with a strange gloom and many mysterious shadows, and there hung heavily in it the pungent smells of decaying vegetation.

Thor did not travel so swiftly here. The silence and the gloom and the oppressively scented air seemed to rouse his caution. He stepped quietly; frequently he stopped and looked about him, and listened; he smelled at the edges of pools hidden under the roots; every new sound brought him to a stop, his head hung low and his ears alert.

Several times Muskwa saw shadowy things floating through the gloom. They were the big gray owls that turned snow white in winter. And once, when it was almost dark, they came upon a pop-eyed, loose-jointed, fierce-looking creature in the trail who scurried away like a ball at a sight of Thor. It was a lynx.

It was not yet quite dark when Thor came out very quietly into a clearing, and Muskwa found himself first on the shore of a creek, and then close to a big pond. The air was full of the breath and warmth of a new kind of life. It was not fish, and yet it seemed to come from the pond, in the center of which were three or four circular masses that looked like great brush-heaps plastered with a coating of mud.

Whenever he came into this end of the valley Thor always paid a visit to the beaver colony, and occasionally he helped himself to a fat young beaver for supper or breakfast. This evening he was not hungry, and he was in a hurry. In spite of these two facts he stood for some minutes in the shadows near the pond.

The beavers had already begun their night's work. Muskwa soon understood the significance of the shimmering streaks that ran swiftly over the surface of the water. At the end of each streak was always a dark, flat head, and now he saw that most of

these streaks began at the farther edge of the pond and made directly for a Babine waterways. For a week past there had been in him a steadily growing unrest, and it had reached its climax in these last two or three days of battle and flight. He was filled with a strange and unsatisfied yearning, and as Muskwa napped in his little bed among the bushes Thor's ears were keenly alert for certain sounds and his nose frequently sniffed the air. He wanted a mate.

This particular barrier was strange to Thor, and with his maturer knowledge of beaver ways he knew that his engineering friends—whom he ate only occasionally—were broadening their domain by building a new dam. As they watched, two fat workmen shoved a four-foot length of log into the pond with a big splash, and one of them began piloting it toward the scene of building operations, while his companion returned to other work. A little later there was a crash in the timber on the opposite side of the pond where another workman had succeeded in felling a tree. Then Thor made his way toward the dam.

Almost instantly there was a terrific crack out in the middle of the pond, followed by a tremendous splash. An old beaver had seen Thor and with the flat side of his broad tail had given the surface of the water a warning slap that cut the still air like a rifle-shot. All at once there were splashes and divings in every direction, and a moment later the pond was ruffled and heaving as a score of interrupted workers dove excitedly under the surface to the safety of their brush-ribbed and mud-plastered strongholds, and Muskwa was so absorbed in the general excitement that he almost forgot to follow Thor.

He overtook the grizzly at the dam. For a few moments Thor inspected the new work, and then tested with it his weight. It was solid, and over this bridge ready built for them they crossed to the higher ground on the opposite side. A few hundred yards farther on Thor struck a fairly well-beaten caribou trail which in the course of half an hour led them around the end of the lake to the outlet stream flowing north.

Every minute Muskwa was hoping that Thor would stop. His afternoon's nap had not taken the lameness out of his legs nor the soreness from the tender pads of his feet. He had had enough, and more than enough, of travel, and could he have regulated the world according to his own wishes he would not have walked another mile for a whole month. Mere walking would not have been so bad, but to keep up with Thor's ambling gait he was compelled to trot, like a stubby four-year-old child hanging desperately to the thumb of a big and fast-walking man. Muskwa had not even a thumb to hang to. The bottoms of his feet were like boils; his tender nose was raw from contact with brush and the knife-edged marsh grass, and his little back felt all caved in. Still he hung on desperately, until the creek-bottom was again sand and gravel, and traveling was easier.

The stars were up now, millions of them, clear and brilliant; and it was quite evident that Thor had set his mind on an "all-night hike," a kupatipsk pimootao as a Cree tracker would have called it. Just how it would have ended for Muskwa is a matter of conjecture had not the spirits of thunder and rain and lightning put their heads together to give him a rest. (Continued next week).

MARCH.

BY L. M. THORNTON.

March, March, March winds
Cutting winds and cold;
Over mead and pasture lands,
Over plain and wild.
Rude, rude, rude winds,
Blustery winds and bold;
Over closely guarded kine
Over sheep in fold.

Fierce, fierce, fierce winds,
Searching winds and chill;
Round the palace and the hall
Round the cot and mill.
March, March, March winds,
Loud your voice and shrill,
But your glad promises
Springtime shall fulfill.

INSIDE THE LINES

(Continued from page 289).

"His papers—army record and all that—say he was here on the Rock for three months in the spring of nineteen-seven," General Crandall urged, to refresh the other's memory.

Major Bishop stroked his round cheeks, tugged at one ear, but found recollection difficult.

"When I see this chap—so many coming and going, you know. Three months—bless me! That's a thin slice out of ten years."

"Major, I'm going to take you into my confidence," the senior officer began; then he related the incident of Capper's visit and repeated the charge he had made. Bishop sat aghast at the word "spy."

"Woodhouse will be here to tea this afternoon," continued Crandall. "While you and I ask him a few leading questions, I'll have Jaimihr, my Indian, search his room in barracks. I trust Jaimihr, implicitly, and he can do the job smoothly. Now, Bishop, what do you remember about nineteen-seven—something we can lead up to in conversation, you know?"

The younger man knuckled his brow for a minute, then looked up brightly.

"I say, General, Craigen was governor then. But—um—aren't you a bit—mild; this asking of a suspected spy to tea?"

"What can I do?" the other replied, somewhat testily. "I can't clap an officer of his majesty's army into prison on the mere say-so of a drunken out-cast who has no proof to offer. I must go slowly, Major. Watch for a slip from this Woodhouse. One bad move on his part, and he starts on his way to face a firing-squad."

Bishop had risen and was slowly pacing the room, his eyes on the walls, hung with many portraits in oils.

"Well, you can't help admiring the nerve of the chap," he muttered, half to himself. "Forcing his way on to the Rock—why, he might as well put his head in a cannon's mouth."

"I haven't time to admire," the general said shortly. "Thing to do is to act."

"Quite right. Nineteen-seven, eh? Um—" He paused before the portrait of a young woman with a Gainsborough hat and with a sparkling piquant face. "By George, General, why not try him on Lady Evelyn? There's a fair test for you, now!"

"You mean Craigen's wife?" The general looked up at the portrait quizzically. "Skeleton's bones, Bishop."

"Right; but no man who ever saw her could forget. I know I never can. Poor Craigen!"

"Good idea, though," the older man acquiesced. "We'll trip him on Lady Evelyn."

Jaimihr Khan appeared at the double doors. "The general sahib's orderly," he announced. The young subaltern entered and saluted.

"That young man, General Crandall, the one Sergeant Crosby was to escort out of the lines to Algeciras—"

"Well, what of him? He's gone, I hope."

"First train to Madrid, General; but he left a message for you, sir, to be delivered after he'd gone, he said."

"A message?" General Crandall was perplexed.

"As Sergeant Crosby had it and gave it to me to repeat to you, sir, it was, 'Arrest the cigar girl calling herself Josepha. She is one of the cleverest spies of the Wilhelmstrasse.'"

MR. JOSEPH ALMER, proprietor of the Hotel Splendide, on Waterport Street, was absorbed, heart and soul, in a curious task. He was emptying the powder from two grain quinine capsules on to a sheet of white letter paper on his desk.

It was noon of Wednesday, the day following the arrival of Captain Woodhouse. Almer was alone in the hotel's

reception room and office behind the dingy glass partially enclosing his desk. His alpaca covered shoulders were close to his ears; and his bald head, with its stripes of plastered hair running like thick lines of latitude on a polished globe, was held far forward so as to bring his eyes on the work in hand. Like some plump magpie he appeared, turning over bits of china in a treasure hole.

A round box of the gelatine cocoons lay at his left hand; it had just been delivered by an Arab boy, quick to pick up the street commission for tuppence. Very methodically Almer picked the capsules from the box one by one, opened them and spilled the quinine in a little heap under his nose. He grunted peevishly when the sixth shell had been emptied. The seventh capsule brought an eager whistle to his lips. When he had jerked the concentric halves apart, very little powder fell out. Instead, the thin, folded edges of a pellet of rice paper protruded from one of the containers. This Almer had extracted in an instant. He spread it against the black back of a ledger and read the very fine script written thereon. This was the message:

"Danger. An informer from Alexandria has denounced our two friends to Crandall. You must warn; I can not."

The spy's heart was suddenly drained, and the wisp of paper in his hand trembled so that it scattered the quinine about in a thin cloud. Once more he read the note, then held a match to it and scuffed its feathery ash with his feet into the rug beneath his stool. The fortitude which had held Joseph Almer to the Rock in the never-failing hope that some day would bring him the opportunity to do a great service for the fatherland came near crumbling that minute. He groaned.

"Our friends," he whispered, "Woodhouse and Louisa—trapped!"

The warning in the note left nothing open to ambiguity for Almer; there were but four of them—"friends" under the Wilhelmstrasse fellowship of danger—there in Gibraltar: Louisa, the man who passed as Woodhouse, and whose hand was to execute the great coup when the right moment came, himself, and that other one whose place was in Government House itself. From this latter the note of warning had come. How desperate the necessity for it Almer could guess when he took into reckoning the dangers that best any attempt at communication on the writer's part. So narrow the margin of safety for this "friend" that he must look at each setting sun as being reasonably the last for him.

Almer did not attempt to go behind the note and guess who was the informer that had lodged information with the governor-general. He had forgotten, in fact, the incident of the night before, when the blustering Capper called the newly arrived Woodhouse by name. The flash of suspicion that attached responsibility to the American girl named Gerson was dissipated as quickly as it came; she had arrived by motor from Paris, not on the boat from Alexandria. His was now the imperative duty to carry the warning to the two suspected, not to waste time in idle speculation as to the identity of the betrayer. There was but one ray of hope in this sudden pall of gloom, and that Almer grasped eagerly. He knew the character of General Crandall—the phlegmatic conservatism of the man, which would not easily be jarred out of an accustomed line of thought and action. The general would be slow to leap at an accusation brought against one wearing the stripes of service; and, though he might reasonably attempt to test Captain Woodhouse, one such as Woodhouse, chosen by the Wilhelmstrasse to accomplish so great a mission, would surely have the wit to parry suspicion. (Continued next week).

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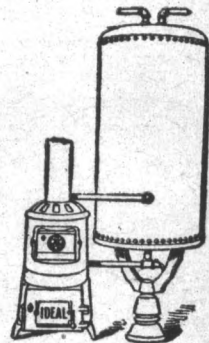
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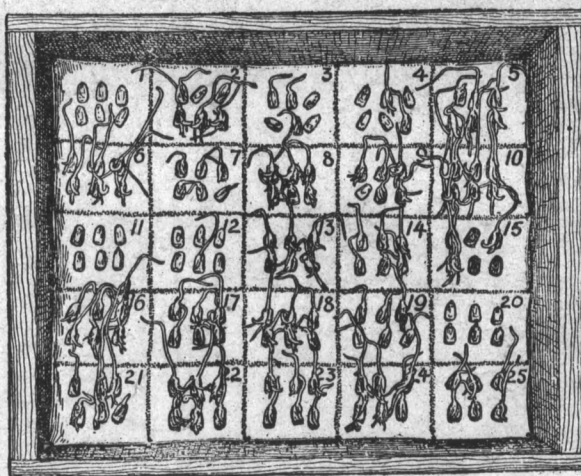


Boys' and Girls' Club Notes

Conducted by E. C. Lindemann

America is dependent on her corn crop as never before. The supply of seed is limited and the germinating qualities are low. Every ear of corn that is used for seed should be tested. Here is an opportunity for boys and girls to render a patriotic service. Test the seed corn for your community. Have the seed ears brought to the school or to the club meeting.

Seed may be tested in germination boxes or with rag-doll testers. If you do not have a text-book or a bulletin describing how to conduct the test, write to the Farm Crops Department, East Lansing, Michigan.



Would you Plant Seed which Came from Ears No. 1, 2, 3 or 20? Which Ears Would You Select Out of the Above Test?

How the World's Business Is Transacted - By COMFORT A. TYLER

IN article ten I find that I promised our young people that I would, in article eleven, take up the matter of the commercial, or checking account. Now, in glancing back over some of our previous articles I find there is one very important chapter that I have quite omitted that should be discussed before going to the checking account and so begging your pardon for the oversight, I will tell you something about the Savings Certificate of Deposit.

In a purely savings account wherein the pass book is used, the best and proper way to handle a savings account where more or less frequent additions are to be made, and perchance an occasional withdrawal (you promised me to consult the banker first about this, didn't you, or didn't you, well no matter, I am sure you will anyway), the rate of interest in the large majority of banks in Michigan is three per cent, with more or less variation in the conditions imposed, varying with the different localities, but nearly all banks will issue you a four per cent certificate of deposit running for a stipulated period of time, usually one year or more.

Some of the more progressive banks have a coupon certificate of deposit that usually becomes very popular wherever introduced. This coupon certificate is usually written for three or five years, carries a coupon for every six months for which it is written. These coupons are the interest payments. Interest is figured at the time the certificate is taken out in semi-annual periods and the amount entered on the coupons at the time it is issued to you. At the end of each six months period you simply clip this coupon and present it at your bank or any other bank in the state and get your cash for six months of interest.

These coupon certificates of deposit are usually issued in multiples of \$50, varying somewhat with different banks. They are an extremely convenient and satisfactory form of investment for I am inclined to class them as investments.

Now, this being the case I think it is well for every boy and girl to have first, a savings pass book to take your small savings from time to time, and I

hope you will devise some kind of a system by which you will make additions to this with regularity, and then as your savings grow in your pass book, whenever it has reached the sum of fifty dollars, take out a four per cent savings certificate, preferably a coupon certificate. This coupon certificate is quite similar in form and appearance to a government or other bond and its use familiarizes you with this form of document, all of which is desirable.

Now, there are several reasons why I advise this. First, in nearly all Michigan banks you will be able to realize a little larger rate of interest from your time certificates of deposit, be they coupon or otherwise, and again, a more potent reason is that it will not be quite as easily disturbed by small withdrawals. Of course, in all ordinary times or financial conditions, the banker would take this certificate up, pay you a part of it and issue you one for a smaller amount, or pay the whole if you so desired, but it is not quite as simple to withdraw small amounts from it, and for this very reason if for no other, I advise it.

In nearly all banks, if you have a time certificate of deposit at a higher rate of interest than the regular savings book rate, should you really need the money you have invested, will go to your banker and tell him your needs, while he might, under the Michigan banking law, require that you give him ninety days notice before withdrawal, if convinced that you want the money for a good cause, he will gladly give it to you under the regular savings regulations regarding interest computation so you will be taking no chances in any event by taking the time certificate and it will usually be advantageous.

Now there are, in my estimation, only just a few things that a farm boy or girl should invest their money in. First, a piece of land, some live stock or equipment with which to utilize to the best advantage that land, or a savings account of some kind. You will often be sought to invest your money in this thing or that thing or the other thing, some of which may be good, possibly all are good, but when you put your hard earned money into them you are, as a rule, playing the other fel-



No. KSB14

No. K50

No. K1

If seeds are
worth sowing

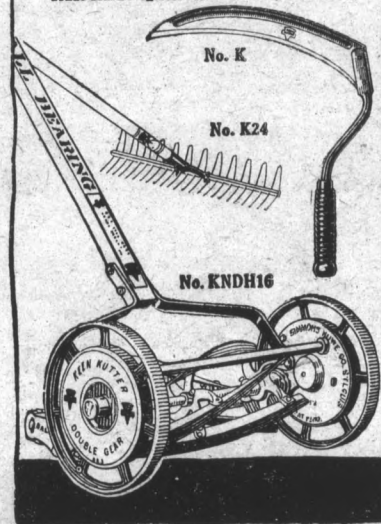
—your lawn, garden, hothouse or flower beds are worth caring for. Planting and then just letting things grow never gets the same results as careful cultivation.

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low's game. Now don't do it. Play your own game. Save your money until such time as you can invest it in a business of your own. The other game may be all right but it isn't yours, so pass it by. Keep your money right where you know it is safe, available, earning a fair rate of income and some day when opportunity does come along and seek you out, you will have a little capital to do business with.

I am always glad to see a farm boy buy a piece of land and go in debt "head over heels" for it, if the land is well bought, for if he is the right kind and our boys and girls are the right kind, he will win out.

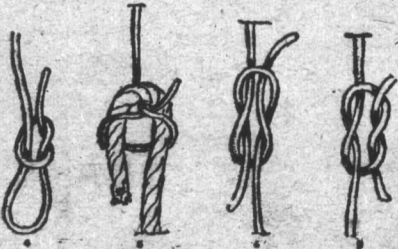
I like to see father encourage the boy, and the girl as well, to buy a colt, a calf, a sheep or two, a pig or some poultry if there is opportunity to care for it and let them handle it on a business basis. If the animal will not pay out and settle for the feed it consumes, then it is not a good buy. If it will then I like to see the movement encouraged.

Father, a word to you, let the boy make his own bargain for it. Let him pay a little too much maybe, and then keep an estimate to see where he lands. If he loses on his first buy, and knows it by actual computation it may be the cheapest schooling he ever had.

So, boys and girls again, use your money to buy something you know about or can use in your business, or keep it in the savings bank.

HOW MANY KNOTS CAN YOU TIE?

Every farm boy should be able to use at least ten useful knots. Have you tried these?

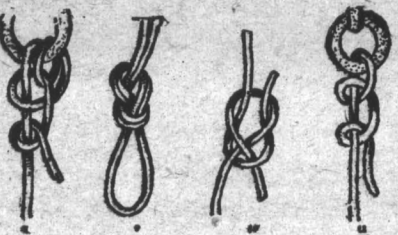


No. 4. A slip knot, running noose, or halter knot.

No. 5. Becket hitch for joining a cord and a rope.

No. 6. Reef knot or square knot; it never slips and is easily untied.

No. 7. False reef or granny. Diffi-



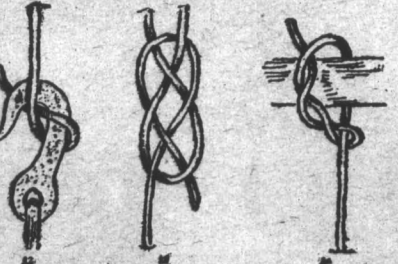
cult to untie; a bad knot.

No. 8. Anchor bend.

No. 9. Fixed loop in middle of a cord.

No. 10. Weaver's knot or sheet bend for joining small cords.

No. 11. Two half-hitches.



No. 12. Blackwall hitch.

No. 13. Carrick bend for joining of large ropes

No. 14. Timber hitch; cannot slip or jamb; easily untied.

Never before has the boy had such an opportunity to become a vital factor in history. Every boy who loves his country should ask himself, "How can I best serve the nation in the war emergency?"

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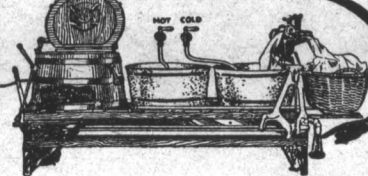
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Woman and Her Needs

When Resolutions Totter

ISN'T it funny how good resolutions fade away when the sun strikes them? Just like some of the dyed stuffs we're getting now. After the children have been put to bed and the pan-cakes set and the kitchen door locked and the knitting gotten out, and you can sit down with peace reigning within, if not abroad—then's the time you resolve firmly, and let us hope prayerfully, to make a better job of it tomorrow. That's when you admit that you're a scolder and a nagger, and that it's all your fault when things go wrong, because the mother makes the home atmosphere. And you promise yourself fervently not to scold the children again, ever, no matter what they do. And not to say, "Don't." And to keep a cheery tone in your voice and not to "yelp" when father spills the gravy on the brain clean table cloth. And not once to feel sorry for yourself when you see your neighbors going by, all gaily dressed, to some afternoon party or lecture or concert, while you sit home and tend the baby.

Lamplight is surely the time for making resolutions. For there is something about "the cold, gray dawn of the morning after," that chases them all away. I "do hereby resolve" every evening of my life. But the next morning—well, that's another story. The mornings usually begin with the thought expressed by one of the boys.

"One more day of this awful life! Got to get up and clean my teeth and brush my hair!" Though I vary the phrasing by going over the breakfast and the beds, and the baby's bath, and the picking up, and hurrying the children off to school, and darning, and, oh, well, you all do the same things. So why go over them?

Last night I resolved even more strenuously than ever. But this morning when I got up with a headache and symptoms of a cold, and one boy wailed, as on every morning:

"Can't I wait until after breakfast, to clean my teeth, mother?"

And the other one got half dressed, as on every morning, and then marched around and around in a circle in his room singing and swinging his waist around by one button,

And the baby cried,

And the furnace fire was out,

And the milk was frozen,

And the pan-cakes had refused to get light,

And I forgot the salt in the oat meal, and it was wheatless day and I had to make corn meal muffins, because they wouldn't eat the cakes, and the coffee didn't percolate long enough and I was too cross to put it back on again, and friend husband was too tired to talk, and I dropped a spoon and broke my pet cup.

Well, what's the use? You all know what I did. And you know where my good resolutions went to. I even shook the poor baby because he cried, and, quite naturally, made him cry harder.

But I'm not through with resolutions even yet. Some days I manage to keep them fairly well. And I'm going to keep right on making them, and breaking them, until the breakages gradually dwindle away and cease to be. One thing brought a ray of hope today. It was a letter from a reader who says she has been helped by something I've written. So it must be that somewhere in this muddle of things which I know as life there is some good evolving.

But the chief reason for my determination to keep on is the thought that we're all here to build character, and

that if the things I have been given to do hadn't been the best way to bring mine out, I wouldn't have been set at this particular job. My same correspondent also points out to me that much which wears our strength and patience is simply the chase of non-essentials; that the supreme thing in life is to do "your bit" in the right spirit, and make life better and happier for your family and acquaintances.

So I'm going to resolve again, and yet again, not to scold nor nag, nor rage. And if I break my resolution, I'll get up and try again, knowing that "though I fail, I shall not be utterly cast down."

DEBORAH.

UNITED STATES FOOD LEAFLET.

A Whole Dinner in One Dish.

The youngsters will like it. Father will like it. You will like it. Your pocketbook will surely like it. Your bodies can't help liking it. Uncle Sam is bound to like it.

Everybody will like the one-dish dinner. Why?

A dish hot and savory—good for work or play—that is why the father and the children will like it.

Easy to cook and to serve—that is one reason why you will like it. Only one dish to cook, few plates to wash, steps saved.

Good, nourishing food. You can feel that you are feeding your family right if you give them this dinner. It contains all their bodies need to help them work and grow strong.

This dinner helps you do your part for your country. You can save wheat and meat to ship abroad. Our soldiers and the Allies need them more than we do.

Try the One-dish Dinner.

Try these one-dish dinners. Each enough for a family of five.

Fish Chowder.—One and a half pounds of fish, fresh, salt or canned; nine potatoes peeled and cut in small pieces; one onion, sliced; two cups of carrots cut in pieces; one-fourth of a pound of salt pork; three cups of milk; pepper; three tablespoons of flour. Cut pork in small pieces and fry with chopped onion for five minutes. Put pork, onion, carrots, potatoes in kettle and cover with boiling water. Cook until tender. Mix three tablespoons of flour with half a cup of cold milk and stir in liquid in the pot to thicken. Add rest of milk and the fish which has been boned and cut in small pieces. Cook until fish is tender, about ten minutes. Serve hot. You can omit the pork and use a tablespoon of other fat.

Dried Peas with Rice and Tomatoes.—One and a half cups of rice, two cups of dried peas, six onions, one tablespoon of salt, one-fourth teaspoon of pepper, two cups of tomato, fresh or canned. Soak peas over night in two quarts of water. Cook until tender in water in which they were cooked. Add rice, onions, tomatoes and seasoning and cook twenty minutes.

Potted Hominy and Beef.—Hominy is excellent to use as a part of a one-dish dinner, if you have a fire in your stove so that you can cook it for a long time, or use a fireless cooker. Heat one and a half quarts of water to boiling; add one teaspoon of salt and two cups of hominy which has been soaked over night. This makes five cups. This recipe may be increased and enough cooked in different ways for several meals. Hominy is excellent combined with dried, canned or fresh

fish, or meat or vegetable left-overs. Here is one combination: Five cups of cooked hominy, four potatoes, two cups of carrots, one teaspoon of salt, one-fourth pound of dried beef, two cups of milk, two tablespoons of fat, two tablespoons of flour. Melt fat, stir in flour, add cold milk and mix well. Cook until it thickens. Cut potatoes and carrots in dice, mix all materials in baking dish and bake for one hour.

These dishes supply all five kinds of food. Each is enough for a whole dinner for a family of five. Eat them with bread and with fruit or jam for dessert. Then you have all the five kinds of food your body needs. These five kinds are: Vegetables or fruit; milk or cheese, eggs or fish, meat or beans. Cereal: Corn, rice, oats, rye or wheat. Syrup or sugar. Fat: Such as drippings, oleomargarine, oil or butter. Choose something from each of these five groups every day.

More One-meal Dishes.

There are more recipes of this kind in other United States Food Leaflets. "Instead of Meat" tells what foods are good to use when you don't buy meat, and how to make some meatless one-dish meals.

"Make a Little Meat go a Long Way" will help you cut down your meat bills. The savory stews and meat pies show how you can give your family a good one-dish meal by using a little meat in various combinations. These leaflets will be published later.

You can make up other recipes for yourself by combining foods from most of the five groups. Pass them on to your neighbor.

PURPOSES OF REGISTRATION.

To compute the woman power of the country, a registration of all women, over sixteen years of age, is being made throughout the United States. The week of April 6 has been chosen as registration week for Michigan. The registration is for trained and untrained workers and for volunteer and paid services. This registration is voluntary, but all women are urged to declare their occupations so that the government may have a correct tabulation of the lines of work engaged in by women, both in the homes and outside of them, so that in case of emergency, women will be prepared and ready to contribute their share in winning the war. This general registration is being directed by the Woman's Committee of the Council of National Defense. Mrs. Caroline Bartlett Crane, of Kalamazoo, is chairman of the Michigan division.

It is not the intention of the government to take women out of the home or to remove them from work they are already doing, unless they definitely offer themselves for such service. Nor, if a married woman registers as "trained" and capable of self-support, will this give cause for her husband to be drafted. The main objects back of the registration are:

To furnish accurate information to the government, of the capacities in which women are now serving, whether in their homes, or in paid pursuits, trades, professions, etc.

To have in every community, lists of women carefully classified, who are willing to be called upon for trained or untrained service to the state or to the nation.

To ascertain which women are available for work outside the home and which are not.

To enlist the women who wish to take advantage of some special training, in order to give more efficient service.

To be able to furnish women for salaried positions, whether in government service or not, and to be able to place women who can volunteer their services, in positions of usefulness.

To have a registry of the capacities

and training of the women of the country as the basis of the work of the Woman's Committee of the Council of National Defense.

Should a woman register for service and then later find herself unable to respond to a call, she will not be compelled to do so, nor will any criticism be directed to her. The idea of the registration is simply to obtain for the government some definite idea of the woman power of the city, state and nation.

In the first two years of the war, in England, over one million women were needed to replace men in industrial positions and an almost equally large number of volunteer workers was required to cook for the workers, to care for their children and to help in various ways made necessary by the war. It is to be prepared for any such conditions in this country that the government desires to know just how many women, and in what lines, it can call on for special service.

It is expected that public schools and the down-town department stores may be used for the registration. A large number of women are now being trained to handle the week's campaign.

FOOD EXHIBIT AT WOMEN'S CONGRESS, MARCH 4-8.

A food show, which will be used by the feminine faculty and co-eds of M. A. C. to teach lessons in war economy to Michigan housewives by example rather than by precept, will be a part of the Women's Congress here from March 4 to 8, when the college will be thrown open to agriculturists of the state for Farmers' Week. Men of national note will come in person to meet the state's food producers. One of the aims of the food show for the housewives will be to display the various edibles that have come into vogue with the war and to demonstrate how these can be converted into palatable and economical dishes. The program for the women will run a full five days and will amount, practically, to five days of intensive training of housewives for their war duties.

Some of the national notables who will be present will be Vernon Kellogg, Hoover's right hand man; Carl Vrooman, Assistant Secretary of Agriculture for the United States, and Charles Brand, Chief of the United States Bureau of Markets.

Entertainment will be mixed with instruction during the week. The lighter side of the bill will include such things as patriotic band concerts, motion pictures of the war from the department of public information in Washington, and community singing, in which a number of well known soloists will assist.

SOME SUGARLESS RECIPES.

Prune Conserve.—Two dozen prunes, one-third pound raisins, two oranges, one-third cup of corn syrup, half cup of water, one-fourth cup of nut meats. Dried apricots, peaches, or canned plums may be used in this recipe. Wash and cut prunes in pieces; add chopped raisins and orange pulp and peel, cut very fine; then add corn syrup and water. Cook slowly until it is the consistency of marmalade. Add chopped nuts five minutes before removing from the fire.

Chocolate Sauce.—Add one square of melted chocolate to one cup of hot corn syrup. Season with vanilla.

Fruit Sauce.—To one cup of corn syrup add one-half cup of chopped raisins or dates. Heat before serving.

Honey-Grape Sauce.—Boil together until thick one cup of honey and one cup of grape juice. Apple sauce, prune juice, or the juice from canned fruit can be used in this recipe. Another variation can be made by using a cup of cooked apricots that have been run through the food chopper.

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fight

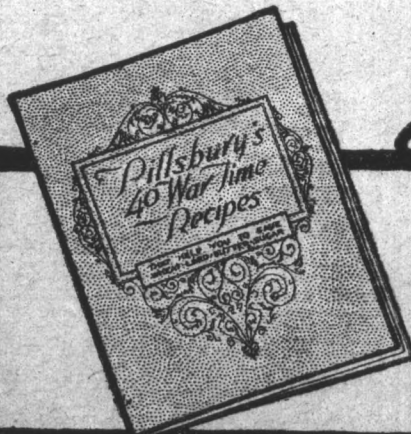


Food
will win
the war



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Wheat

with Pillsbury's Best Flour



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It is a 20-page booklet containing over 40 recipes for bread, rolls, griddle-cakes, biscuits in which wheat-saving flours are used. The recipes are economical with respect to lard, butter, sugar. They have been tested by a competent home cook and are best and safest for a beginner. Send your name and address for free copy.

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Special Offers Provide Ways for You to Make Extra Money.

With this **Guaranteed Hatching Outfit** and my **Guide Book** for setting up and operating, you can have poultry in abundance, as shown here. Order now or write today for my big Free catalog "Hatching Facts"—the most practical guide to success with poultry. A postal will do. Jim Rohan, Pres.

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POULTRY SUPPLIES and equipment.

Need from legbands to buildings. 40 page free catalog quotes lowest prices on hundreds of articles.

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Mention the Michigan Farmer when writing Advertisers

Profit In Duck Raising

By ANNA WADE GALLIGHER

IT is now generally known that two of the most profitable ducks in this country are the Indian Runner and the Mammoth Imperial Pekin. If eggs are wanted, by all means keep the Runner. If you want a duck that will bring a fancy price when dressed for market keep the Pekin—the market duck par excellence. Of course, opinions differ, but if there is a better or more popular kind of duck than either of the above named, we have yet to learn of it. As between these two, we believe the honors are pretty evenly divided; each in his own particular class.

Why, then, will beginners (and others), waste their time with common ducks; or, worse yet, colored Muscovys and Black Cayugas? If either of these ducks have a single redeeming point, the writer has failed to discover it. We would far rather keep the good old Rouen, which undoubtedly possesses more good qualities as a utility duck, than some of the newer varieties.

Some Fancy But Impractical Breeds.

We know a woman who has been raising colored Muscovys for several years past, while at the same time, admits that they are not at all profitable. It takes five weeks to incubate the eggs. As a rule, the ducks do not begin laying until they are about two years old. And when a duck is wanted for the table, the skin often has to be removed, on account of the black pin-feathers.

What are this lady's reasons for raising these ducks, while several of the neighbors are raising the Runners and Pekins? Here are some of them: They are odd-looking, and pretty, (save the mark), and are easy to raise. They really do require less care than other ducks. But why keep ducks for ornamental purposes alone?

For beauty as well as utility, both the Indian Runner and Pekin have the colored Muscovys "beaten a mile." Then, too, it is almost impossible to control the Muscovys. They can sail around like buzzards and go over the fences with as much ease as a Leghorn hen.

The above is merely intended as a warning to beginners to steer clear of colored Muscovy ducks. White Muscovys have some of the same traits.

Begin Early.

Every reader who is interested in duck-raising should begin early to plan for the coming season, i. e., have a definite idea as to what is required in the way of equipment. We always try to have duck houses built or repaired before the eggs are hatched.

We keep the laying ducks housed at night, even after the weather gets mild, because they always lay their eggs on the bare ground (if permitted to do so) and they are liable to get chilled. And besides, it is not good for the eggs to get plastered with mud, as they often do when ducks are not housed.

Give the ducks a good, dry place to sleep; with plenty of straw or clean litter for bedding. It must be renewed often. Shallow nest-boxes should be provided.

Ducks must be well fed, if a good supply of fertile eggs are wanted. A thin, under-fed Pekin duck will lay very few eggs. The feed must not be too highly concentrated, but the Pekin is a large feeder and requires a considerable quantity of food.

The Indian Runner is not as large a duck nor as large a feeder. But the ration should be generous and of about the same quality. Never use musty grain without cooking.

Practical Feeding Methods.

Do not feed much whole grain. Soaked corn, once a day, preferably in the evening, will be all right. But for the best results whole grain should not

constitute the entire ration. Bran should play an important part. Also, corn meal, ground or boiled oats, cooked vegetables, raw, chopped vegetables, sprouted oats, green rye (when available), silage, cut clover or alfalfa, steamed or boiled, etc. Of course, all these need not be used. We vary the ration, but always try to provide some sort of green stuff or a substitute for same, to give the ration the proper consistency and bulk.

We sometimes add the chopped vegetables to the ground grain and then moisten with sour milk, being careful not to make the mixture sloppy. Silage, of course, is fed alone. So, also, is the sprouted oats and green rye. We often use clover or alfalfa in the mash.

A good ration for ducks is composed of one part each of bran, corn meal and "shorts," added to two parts cooked vegetables. Feed twice a day all they will eat up clean.

We add a little salt, also powdered charcoal. Provide grit, coarse sand or coal cinders. Ducks must have clean water to drink.

INFLUENCE OF BREEDING STOCK.

Early attention to the selection of the breeding stock will assist materially in the building up of a good strain of layers. The hens for the laying of the hatching eggs should be chosen with just as much care as is exercised in the selection of males for mating. By careful observation before the breeding season begins, it is possible to note the strong points of the various hens and determine any tendency toward weakness. To get a prolific strain of layers, it is essential to choose only vigorous, healthy hens, prolific layers themselves and which have been bred in line from stock carefully chosen for like characteristics. Like tends to beget like, so that hens chosen from a single line of breeding, and possessing the desirable qualities of heavy layers will tend to improve and develop the strain in a highly satisfactory manner.

Keep the Culls by Themselves.

Where the flock is large and it has been necessary to arrange the hens and pullets in separate flocks for the winter there is an excellent opportunity to cull out the weaker and less desirable fowls and maintain them in a flock by themselves, while the vigorous hens intended for breeding may be housed in a separate enclosure. This arrangement makes it possible to confine the breeding flock within suitable enclosures during the time they are mating and their eggs are being saved for hatching purposes. Nothing pulls down the value of a good flock of hens quite so quickly as to use eggs for hatching that have been laid by any and everything in the flock. Many infertile eggs and weak chicks are the result of carelessness in this matter. No male should be allowed to run with the poorer fowls. Infertile eggs will keep better and are better for the market.

In choosing the male birds it is necessary to keep well in mind their characteristics and breeding. Each generation of their offspring should tend to improve the quality of the strain. They should be physically well built, vigorous and healthy specimens of their breed and be sons of strong, vigorous hens that have been bred in line from stock that has graded near to what you desire. Careful selection and breeding tends to develop individuality of character that may be maintained and improved upon with each succeeding generation. Nothing but the best should be admitted into the breeding enclosure. A small flock of well chosen hens will produce as many eggs as

NATIONAL Gets Big Hatches

J. L. Orr, Malden, Mo., writes, "Out of 592 eggs I got 588 thrifty chicks. My first experience with an incubator." The 1918 National with all latest features and improvements is the greatest incubator bargain ever offered. It has hot water heat—double wall—asbestos lining—self regulating and ventilating—double glass doors—safety lamp—copper tank, etc. No extras to buy. Strongest, most durable incubator made. Money cannot buy greater hatching value. A guaranteed hatcher.

40 DAYS TRIAL

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165 Egg Incubator & Brooder

Both \$12.50

If you do not need both we will ship incubator alone prepaid for \$10. Brooder alone prepaid for \$4.00.

Freight Paid East of Rockies. Take no chances. The National is built on Government specifications. Simple, compact, economical. Contains every modern operating convenience. A proven cold weather hatcher. The World's Greatest Incubator Bargain. Send postal for Free Catalog and Poultry Book worth dollars to every poultry raiser—or order direct from this ad and save time. Comes set up ready to run with book of instructions. You take no risk. We deal fair and above board—no red tape. Satisfaction guaranteed or money refunded. Order now—start hatching early or send for poultry book today sure. Get big profits from poultry in 1918.

National Incubator Co., Box 311, Racine, Wis.

PROSPERITY HITS WESTERN CANADA

Big crops with war-time prices have put Western Canada farmers on a prosperity footing that was undreamed of in pre-war days.

54 bushels of wheat and 90 bushels of oats to the acre were not uncommon yields last year; the average being 30 bushels of wheat and 53 bushels of oats. With wheat at \$2.20, Government set price, it is scarcely to be wondered that probably more Western Canada farmers are wintering in California than ever before.

As another evidence of their prosperity more than sixteen thousand motor cars were bought in Saskatchewan during the year, which was a greater number than the total number of cars in Saskatchewan up to 1917. Over-subscription to the Victory Loans and large contributions to various war relief organizations also point vividly to the wealth of the country.

Many of our neighbors' richest farmers acquired their land free, while still others bought their farms from the Canadian Northern Railway at \$15 to \$25 per acre.

Canada still has 128,000 (160 acre) farms to give free to settlers, and countless other farms for sale at low prices. Detailed information and FREE BOOK may be had by writing Y. Y. Shaw, G. A., 527 Majestic Bldg., Detroit, Mich.

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You men and women of his "home guard" should wear this patriotic economy cloth, too. It's fast sulphur dyed and wears like leather.

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THE KRAUS CULTIVATOR CO. Dept. 62 Akron, Ohio

are required for hatching purposes. Then, too, if any eggs are offered for sale the breeder can truthfully recommend the quality of the eggs and the character of the offspring which they will get.

The Result of Continuous Work.

Building up a satisfactory strain of prolific layers is not the work of one or even two sessions, it is the culmination of constant effort applied year after year along a definite line of breeding and selection, choosing each year, breeding stock which most nearly meets the requirements in every way sought for. In the matter of producing eggs for hatching purposes, the breeder should be just as careful and exacting as though he were purchasing eggs to add quality to his flock. Pure-bred fowls of a standard variety will respond satisfactorily to careful breeding. Good care and feeding will do the rest.

Nebraska.

P. H. EATON.

POULTRY QUERY DEPARTMENT.

Blackhead.

All my young turkeys died last year of a disease called the black-head or spotted liver. Can anyone tell me how to cure them of this disease? They kept dying all through the summer.

Bay Co.

H. L.

If your turkeys have the true black-head, it will be very difficult for you to cure them, as no treatment for this disease has given satisfactory results. The remedy more commonly used is: Five grains of sulphur and one grain of sulphate of iron. This should be preceded and followed by a dose of epsom salts, about fifteen grains. This treatment sometimes gives fair results, but the general opinion regarding treatment of this disease is that it does not pay to do anything for sick poults, except to kill them and dispose of their bodies by burning. This last precaution is necessary to prevent further spreading of the disease.

Preventive measures are considered the only successful ones to follow. The following have given good results: The using of eggs from healthy birds only. The wiping of eggs with a cloth wet with eighty per cent alcohol before they are placed in the incubator or under the hen for hatching. This is to remove any contagion that might be on the shells. A day or two before hatching the eggs should again be wiped with alcohol. After hatching the young poults should be placed apart from all domesticated fowls on ground which has not recently been occupied by other fowls. Frequent disinfection of the houses, troughs and drinking fountains is also necessary, and excluding so far as possible pigeons, rats and mice from the houses and runs occupied by the poults will greatly help to make less the possibility of contagion.

SEX OF GEES.

It is almost impossible to tell a goose from a gander. They all look alike to most people. The gander has a shorter, thicker neck than the goose. The bag-between his legs is single, while that of the goose is double. The gander's voice is high and thin. The goose has a deep bass voice. The beak of the gander is thicker; the under mandible is fuller; the under mandible of a goose is shrunken around the nostril. Put a flock of uncertain ganders into a pen, and turn a strange dog in. The granders will come forward ready to fight while the geese will huddle in a corner. Some breeders claim that they can tell the sex of a gosling at hatching time; that the ganders have yellow feet and bills, while the geese have black feet and gills. Since the feet change color very quickly, it would be well to mark the yellow feet promptly and note at maturity whether or not the prediction held good.

Saginaw Co.

Mrs. F. P.

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is a corker for staying on the job.

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Both Machines \$12

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Wisconsin are made of genuine California Redwood. Incubators have double walls, air space between, double glass doors, copper tanks, self regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Biggest incubator bargain of the year. Send for our new 1918 catalog fully describing this outfit. A postal brings it by return mail.

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attached to your plow you can disc and harrow your land at the same time and with the same work and power that you use for plowing. You really do three operations in one. Time saved in planting season is money in the bank.

Write today for full description.

Kramer Rotary Harrow Co. Morton, Dept. 62 Illinois

Tells why chicks die

E. J. Reefer, the poultry expert, 239 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 90 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

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We can furnish Chicks from the following breeds: Barred and Buff Plymouth Rocks; R. C. Rhode Island Reds; White Wyandottes; Black Orpingtons; S. O. and R. O. Black Minorcas; S. O. and R. C. White Leghorns; S. O. Anconas.

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Eggs for hatching, 'settings' or in quantities for incubators, from the foregoing breeds.

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of quality guaranteed to 1,500 miles. Eggs for hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free.

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

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Laybitt S. C. W. Leghorns Large, great layers. Pure white. Bargains in choice breeding hens now. Everfresh Egg Farm, Ionia, Mich.

Chicks that Live \$15 per 100 S. C. W. Leghorns MY SPECIALTY Send for catalog. SNOWFLAKE POULTRY FARM, R. 1, Grand Rapids, Mich.

Fowlers Buff Rocks Cockerels Pullets and hens for sale from two dollars up according to quality.

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R. HODE ISLAND REDS and plymouth Rocks Males \$4 to \$12 lbs., according to age \$2 to \$5; P. R. hens weight 6 to 10 lbs., eggs 15 for \$1; 100 \$5; 120 \$6. Manmoth Bronze Tom Turkeys 8 to 35 lbs., according to age \$6 to \$25, 10 eggs \$3. J. Morris & J. Barsan, Vassar, Mich.

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

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WHITE Rock cockerels for sale, \$3 to \$4. Also a few pullets. Prize winning stock. Only a few left. Write Mrs. ELSIE M. ROBINSON, Petersburg, Mich.

WHITE Wyandottes. I have a fine lot of April and May hatching cockerels for \$3.00 and \$5.00 each.

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White Wyandotte cockerels, good size, color. \$3.50; 3 for \$11. Reg. Swedish Select Oats free from smut \$1.50 per bu. 12 10 bu. lots released and bags free.

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White Wyandottes Eggs from heavy laying, extra choice breeding stock \$3.50 per 15. Milton E. Stewart, R. 3, Augusta, Mich.

M. B. Turkeys, Toulouse Geese and S. C. W. Leghorn cockerels. Also Berkshire, both sex. Stamps appreciated. Chase Stock Farm, R. 1, Marlette, Mich.

Giant Bronze Turkeys. A few young hens and one fine 15 lb. tom.

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The animals are destroyed and their cash value lost not only to the farmer but to the community, the State. This amazing sum of money can be saved to the farmers and the State if they (the farmers) will but avail themselves of

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organized expressly for the purpose of indemnifying owners of live stock against death from any cause. We want agents to carry this great message to every farmer.

Colon C. Lillie, Pres. and Sup. of Agts.,
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CATTLE.

WOODCOTE ANGUS

Trojan-Ericas and Blackbirds only Breeders of the dam and former owners of the sire (our herd bull) of the Grand Champion Bull at the International Chicago for 1917.

WOODCOTE STOCK FARM, Ionia, Mich.

Cloverly Angus Good quality bulls of serviceable age and younger. Inspection invited. Geo. Hathaway and Son, Ovid, Mich.

GUERNSEYS must reduce herd, so offer a few choice females of Glenwood breeding also bulls, all stock of A. R. breeding, herd tuberculosis tested. T. V. HICKS, Battle Creek, Mich.

Guernseys For Sale, four young registered cows. Tuberculin tested. Geo. N. Crawford, Holton, Mich.

Guernseys 45 Registered head, all tb. tested. Nora's heads on herd, 19 of his half sisters sold averaging \$1950 each. His bull calves are booked ahead at reasonable prices. Avondale Stock Farm, Wayne, Mich.

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3 choice Heifer calves, \$150 each. 1 choice 3 year old will freshen in March \$300. J. M. WILLIAMS, North Adams Mich.

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For Sale Registered Guernsey bull calves May Rose breeding. R. 2, Holland, Mich.

For Sale Guernsey bull calves from advanced registered dams ranging in age from 3 to 8 months. L. J. BYERS, Coldwater, Mich.

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100--REGISTERED HOLSTEINS--100
When you need a herd sire remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding.

Write us your wants.
R. BRUCE McPHERSON, Howell, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write, GEO. D. CLARKE, Vassar, Mich.

Parham's Pedigree Stock Farm offers Reg. Holstein cattle, Chester White Swine, extra bargains in calves and fall pigs. Bulls half price. R. B. PARHAM, Bronson, Mich.

A Few Fine Bulls For Sale

Bigelows Holstein Farms, Breedsville, Mich.

I Always Have Holsteins To Sell

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

L. E. CONNELL, Fayette, Ohio

Reg. Holsteins: Bull calf born Oct. 6. A splendid individual, well grown. A. R. O. records for seven nearest dams average butter 7 days 28.36 lbs. milk 53.27. Dams record 18 lbs. sr. 2 yr. old. W. B. Reader, Howell, Mich.

FOR Sale One registered Holstein bull calf. Sire's twenty nearest dams have 7 da. records av. 25.53 lb. butter. Dam to be tested. A finely marked, growthy individual. Long View Farm, R. 3, Box 10 A, Rochester, Mich.

2 CHOICE Holstein bulls nearly old enough for service. No. 1 born January 24, 1917, sire's dam, grand-dam and great grand-dam semi-official records average 842 lbs. butter. Dam of calf 18 lbs. butter 7 days senior 2 yr. old, average per cent fat 4.3. No. 2 Sired by 23 lb. bull and out of a 14 lb. junior 2 yr. old. O. L. BRODY, Owner, Fort Huron, Mich. Chas. Peters, Herdsman, Three Rivers, Mich.

3--HOLSTEIN BULLS--3

Ready for service at Long Beach Farm, Augusta, Mich.

For Sale Registered Holstein bulls ready for service and bull calves from 30 lb. sire and A. R. O. dams with records up to 25 lbs. Wm. GRIFFIN, R. 5, Howell, Mich.

Grange.

OUR GRANGE INSTITUTES.

In a recent letter I outlined in a general way the plan of our Grange Farmers' Institutes. Today I am able to report upon the practical application of this plan. At Charlotte the other day over three hundred farmers met in one of these gatherings. State Market Director McBride was present and rendered valuable service. He considered the farm labor problem and its influence in the cost of farm products in a most interesting and helpful way. He did more than simply talk—he took the names and addresses of many of the farmers, with statements of the wages they expected to pay their help. An estimate of the shortage of labor on Eaton county farms was made and the question of prices which should be paid for next year's crops of oats and wheat were considered. Mr. C. B. Cook, Assistant State Leader of County Agents, was present and gave two good talks. Hon. John C. Ketcham spoke upon the need of efficient farm organization and the writer contributed his part as best he could. The program was frequently enlivened by short periods of community singing, which exercise was heartily enjoyed. Mrs. Dora Stockman gave a forceful and practical talk upon the feeding of the family. At the close of the meeting many expressions of appreciation were heard. The following are some of them: "This was a great meeting." "We discussed things today that we wanted to talk about." "This has been the best institute held in Charlotte in ten years."

Within the next few weeks like meetings are to be held in nearly every county in the lower peninsula. The upper peninsula meetings will be held in the spring. Watch for announcements of the institutes in the several counties. The Grange, the Michigan Agricultural College, the dairy and food department, the department of markets, and the extension department of the University of Michigan are all going to help.

W. F. TAYLOR.

Farmers' Clubs

CLUB DISCUSSIONS.

The Boys and the War.—The Union Farmers' Club met at the new home of Alvin Balden, of Capac. It was the first time that the Club was held in their new home. Everyone was loud in his praises of the house with all its modern conveniences. The dinner that was served was undoubtedly one of the best that Hoover would allow. It surely put all the people in a proper frame of mind for the talks. Miss Crossley, of the National American Suffrage Association, gave a talk on the suffrage movement in Michigan. She entertained so well with her usual good jokes that all regretted that she had to leave early in order to get the train. Assistant County Agricultural Agent R. M. Shane, talked on "The Young People's Part in the War." In this he outlined the Boys' Working Reserve and Boys' and Girls' Club work for St. Clair county. Capac boys will be enrolled and placed on the farms near the city. A boys' club is being organized in Capac now. During the afternoon, Mrs. C. L. Broody rendered several pleasing vocal selections. In addition to the regular program, many of the visitors spent some time looking over Mr. Balden's pure-bred Jersey cattle. There was a spirited discussion on the relative merits of Jerseys and Holsteins, of grades and pure-breds, and the profits in dairy farming. Most of the discussions were satisfactorily ended when Mr. Balden showed by his cow-testing book that he is making money on them, that they produce butter-fat economically, even with present high-priced feeds, and that they pay a greater profit than the grades he used to own.



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The automatic air cushion clings closely without slipping or chafing. Guaranteed to comfortably retain the hernia. Draws and binds together the parted tissue and gives Nature a chance to knit them firmly.

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A horse with heaves can't do its full share of work. Cure the heaves and you have a horse worth its full value in work or in money. Send today for FLEMING'S TONIC HEAVE POWDERS (\$1.00 per package). Satisfactory results or money back. Fleming's Vast-Pocket Veterinary Adviser. Helps you distinguish heaves from other ailments. Write for the Adviser. It is FREE.

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When you think of good Holsteins, think of E. M. PIERCE & SON, Manchester, Michigan. We have a few good females and several bull calves at right prices. The latter from \$50 up. Excellent breeding.

"TOP - NOTCH" HOLSTEINS

"Milk production is an inherited ability. Good cows must be bred to good pure-bred bulls if progress in dairying is to be made." Extract U. S. Dept. of Agric. Bulletin.

Buy this young bull and give your milk and butter production a "push." King Colanthe De Oakdale, No. 182897, Born Nov. 4, 1915. His sire's 3 nearest dams average: Milk 7 days 30.97, 30.59, 30.59. His dam's 3 nearest dams average: Milk 7 days 30.59, 30.59, 30.59. Record: Milk 30 days 245.60, 245.60, 245.60.

(She heads one of the ten only combinations of three direct generations of thirty pound cows.) His dam's record at 3 yrs.: Milk 7 days 23.33, 23.33, 23.33. His five nearest dams average: Milk 7 days 22.90, 22.90, 22.90. (Including 2-3 and 1-4-5 yr. old.)

Ideally marked, about half and half. Price \$250. McPherson Farms Co., Howell, Mich.

OAK Leaf Farm. Herd sire Lenawee Pontiac Calmity King offer Registered Holstein bull calves from A. R. O. cows and the above sire whose dam holds the milk and butter record in the state of Ind. 7 days milk 796.3, butter 32.51—31.5 days milk 2372.3, butter 928.775. E. H. GEARHART & SON, R. 4, Marcellus, Mich.

HOLSTEINS of quality. Bull calves from dams with records high as 31 lbs. in 7 days. Also colic purges. E. A. HARDY, Rochester, Mich.

\$225 takes your choice of heifers of a 30 lb bull due in May to a 23 lb. son of Johanna Korn, D.K. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

LIVE STOCK NEWS.

The change in weather conditions brought about recently has been of great benefit to live stock interests, as well as to farmer-stockmen owning corn they were anxious to get marketed. With the disappearance of the big snow blockade, the food administration has been able to divert great numbers of cars to country shipping points, and this has increased the cash offerings so greatly as to force sudden big declines in corn prices, although values are still far above those of normal years. Naturally, farmers have been especially worried about their large holdings of soft corn, and many of them have been so fortunate as to use up such grain on their farms by feeding to live stock; but there are many others who have corn not of keeping quality that needs to be moved to the driers as quickly as possible. Fortunately, Chicago's regular drying capacity amounts to about 600,000 bushels daily, and it seems probable that this will be sufficient to meet requirements. With the much improved situation, eastern railroads have been turning over many empty cars to the western lines, and many points that had no cars for weeks past now receive fair numbers. By the last of March the corn-drying period may be expected to be about over.

The Chicago hog market of late weeks has been a highly sensational one, the unusual distribution of the hogs from country shipping points and the poor eastern shipping demand being mainly responsible for the remarkable fluctuations in prices. On some days enormous offerings caused declines of from 40 to 50 cents per 100 pounds, while on others equally large advances took place. During a recent week only 8,634 hogs were shipped from Chicago, comparing with 21,960 a week earlier, 48,463 a year ago and 37,978 two years ago. Hogs moving to market show up well in quality on the whole, their owners having followed the government's advice in making the wine good and fat, and it is a pity that hogs are marketed so irregularly. Recent Chicago receipts of hogs have averaged in weight 229 pounds, comparing with 223 pounds a week earlier, 203 pounds one and two years ago and 225 pounds three and four years ago. Farmers in many districts have been feeding their hogs to the limit, realizing that no better use could be made of their superabundance of soft corn. In marketing hogs, it seems better for large owners to divide their shipments up and have hogs on the market at different times instead of so many in a single day. Prices are far higher still than in former years, and low prices look a long way off.

Dr. Issa Tanimura, live stock commissioner of the Department of Agriculture and Commerce of the Japanese government, arrived in Chicago a short time ago, his visit to the United States being made for the purpose of promoting the Japanese sheep raising industry. He said that, although there is a large government owned woolen mill in Japan, which makes all the clothing for the Japanese army, as well as a number of private mills of larger capacity, one with a capitalization of \$6,000,000, and one manufacturing cloth as fine as any that can be found in the world, these are all suffering from lack of sufficient wool. His mission to this country is to obtain information for the purpose of finding out whether sheep growing can be successfully carried on in Japan. He is a Yale graduate of the class of 1891, and is the leading live stock authority of Japan.

The banks have largely financed farmers in buying cattle for feeding, and have also loaned a great deal of money on grain owned by farmers. Bad railroad service has stood in the way of marketing such holdings, and many country banks are loaned to the limit. Fortunately, such banks are assisted by the federal reserve bank and are encouraged to rediscount paper to adjust their loans. According to the Chicago Tribune, it is estimated that one-third of the banks in that district are now borrowing from the reserve bank. Some are borrowing part of the money needed to subscribe to treasury notes, while a few are borrowing the full purchase price of note subscriptions. When a banker writes in and says that he cannot subscribe to the current note issue, he is told of the possibilities of rediscounting notes to augment his cash.

W. K. Johnson, Vermillion county, Ill., was in the Chicago market a short time looking for a carload of fancy 800 to 900-lb. cattle for a short feed, his plan being to feed the cattle for about five months on silage, cottonseed and hay, and then to finish them on corn, straw and hay. Farmers in that vicinity are marketing their cattle after a short feed.

DO YOU KNOW

- How to get a horse from a burning barn?
- How to pick a good brood sow?
- How to feed your cows to give the right color to your butter?
- How to prepare cattle for shipment to avoid heavy shrinkage?
- How to get rid of worms quickly?
- How to pick a good dairy cow?
- How to tell when pregnant animals will drop their offspring?

These and many other valuable questions are answered in a new Live Stock Book we have just issued and which we will gladly mail, postpaid, to anyone who will write for a copy.

It also contains record forms for keeping track of service dates, due dates for mares, cows, ewes and sows. Gives causes, symptoms and treatment of diseases of animals. In fact, is a very useful and valuable book for live stock owners.

It is a thorough treatise on worms in live stock. Illustrates the various kinds of worms—tells how they rob the animals of their food nutrition—how they cause fatal diseases—why they are the direct and indirect cause of over \$200,000,000 live stock losses annually and 90% of all live stock diseases.

It tells why no farm or farm animal is free from these costly pests unless regular treatment is practiced. Tells how to get rid of them at very little cost and practically no labor.

It tells about SAL-VET—that wonderful "Veterinary Salt"—a medicated salt which has saved thousands and thousands of dollars for American farmers. How quickly it gets rid of stomach and intestinal worms; how it tones the blood and aids the digestion; how it helps every animal to thrive better, look better, grow and fatten faster and costs so little that it really is not an expense but a big profit maker for live stock owners.

"SAL-VET is all you claim for it. Have been feeding it throughout the winter, and never had my sheep get through in better condition. It is surprising how sheep will doctor themselves when given the opportunity. Have had equally good success in feeding SAL-VET to a bunch of hogs. Any one keeping stock, cannot afford to be without SAL-VET, even if it cost twice as much as you charge."

Wm. B. FARRAND, Munith, Mich.

Now, when feed prices are so high, you should get the most return from what you feed, but that is impossible when your stock have worms. They do not always show the worm symptoms plainly, so don't fool yourself by thinking your animals are not affected.

SAL-VET will more than pay its cost as a tonic and conditioner, and in addition get rid of the worms. Ask your dealer about our money-back offer. SAL-VET is the cheapest and best live stock remedy to buy. Write for Free Book, today.

SAL-VET Remedies include SAL-VET Disinfectant and Dip—SAL-VET Hog Oil—Gall-vet—SAL-VET Cow Remedy—SAL-VET Fly Spray—SAL-VET Heave Remedy—SAL-VET Poultry Tonic—SAL-VET Head Lice Ointment—SAL-VET Roup Tablets and SAL-VET Lice Powder. At your dealers and GUARANTEED

THE FEIL MFG. CO. Dept. 80 CLEVELAND, O.

Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers. Brookwater offers to sell a few choice bull calves of this kind. Our herd of Durocs has won more prizes at the State Fairs this year than any other.

Boar Pigs and Yearlings For Sale.

H. W. MUMFORD,
OWNER

BROOKWATER FARM

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Ann Arbor, Mich., R. 7.

CATTLE



FEED COSTS ARE UP; DAIRY PRODUCTS PRICES ARE NOT.

The only way to beat this combination is to get large-yield cows.

Pure Bred **HOLSTEINS** Are Paying Their Owners

Their enormous yields of milk and butter-fat make them extremely profitable despite high feed costs. They hold all records for production. Write for free information.

THE HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA, Box 164, Brattleboro, Vt.

FOR SALE a fine Holstein bull calf born Feb. 14, 1/2 white, a fine individual from a 3-year-old heifer whose dam has better than a 20 lb. record. Sires dam has better than 24 lb. record at 4 years old. Price \$35 if taken at once.
CHARLES L. COOK, Box 77, Fowlerville, Mich.

For Sale 4 young Registered Holstein cows, fresh, good producers. Herd under Gov. Test. \$25 each. Bull calves from A. R. O. Dams and 23 lbs. sire. JOHN HUTCHINSON & SON, Millbrook, Mich.

HOLSTEIN bull calves, eligible to registration, without papers, \$25 at 10 days of age, registered, \$50 to \$75.
Dewey C. Pierson, Hadley, Mich.

Registered Holstein bull calf, born Sept. 1917, dam daughter of 24 lb. cow, write for pedigree and price, F.O.B. your station.
E. E. STURGIS, R. 3, St. Johns, Mich.

Holstein cow 5 yr. old, due to freshen in Apr. has had 5 heifer calves, is backed by good A. R. O. records, and is right in every way.
A. F. LOOMIS, Owosso, Mich.

Holstein for sale a few choice females all ages bull calves 6 weeks old sired by 30.58 lb. sire. Priced for quick sale.
RIVERVIEW FARM, Vassar, Mich.

Parkside Holstein bulls. 8 and 16 mo. Both sired by noted bull. 37 relatives are 30 lb. cows. Priced to sell.
J. E. TIRRELL & SON, Charlotte, Mich.

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10 bull calves for sale, Perfection Fairfax and Prince Donald breeding.
ALLEN BROS.,
PAW PAW, MICH.

Herefords Bob Fairfax 49427 at head of herd. Stock for sale. Both sexes either polled or horned.
McARTY, Sec'y Mich. H. B. Ass'n, Bad Axe, Mich.

Lillie Farmstead Jersey Cattle, 3 bulls, ready for service, out of R. of M. dams. 10 heifers bred to freshen next fall. Colon G. Lillie, Coopersville, Mich.

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

ONE 11 mo. old solid colored gr. son of Royal Majesty whose dam as a 3 yr. produced 406.24 lbs. of butter 1 yr. First check \$90.00 gets him, registered, transferred and delivered any point in Mich.
FRED BRENNAN Sec., Capac, Mich.

Choice Bulls ready for service. Also heifers for sale. Strong in the Blood of Royal Majesty. Come and see them or write for particulars.
THE WILDWOOD HERD
Alvin Balden, Capac, Mich., Phone 148-5.

MAPLE Lane R. of M. Jersey Herd has for sale R. of M. cows, daughters of R. of M. cows, bull calves, heifer calves and bulls. All from 500 to 600 lb. dams.
IRVIN FOX, Allegan, Mich.

JERSEY bull and bull calves for sale from R. of M. cows, also heifers and cows of all ages.
O. B. WEHNER, R. 6, Allegan, Mich.

FOR SALE Registered Jersey bull calves
SMITH and PARKER, R. 4, Howell, Mich.

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

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

BIDWELL SHORTHORNS For Beef and Milk.

5 Bulls ready for service, 15 months to 2 years, for sale; also good Scotch-topped cows and heifers. Modern, sanitary equipment. One hour from Toledo, Ohio. N. Y. O. R. Y. Visitors Welcome. Write us.

BIDWELL STOCK FARM
Box B, Tecumseh, Michigan.

Francisco Farm Shorthorns
We maintain one of Michigan's good herds of Scotch and Scotch Topped cattle. They are well bred, properly handled and price reasonable. Come and see; we like to show them.
P. P. POPE, Mt. Pleasant, Mich.

Fair Lawns Shorthorns
Yearling bulls by Canada's best sires: Missie Augusta 60578 and Imp. Newton Frier 623429.
LAURENCE P. OTTO, Charlotte, Mich.

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.

Bates Shorthorns the original milk strain young bulls 8 mos. old for sale. Price \$150 to \$200. J. B. HUMMEL, Mason, Mich.

Shorthorns—Two bulls, 15 and 16 mo. By a grandson of Cyrus Clay.
COLLINS BROS., R. 2, Conklin, Mich.

Milking Shorthorns—Bull calf 5 mos., by a Grandson of General Clay, dam by a son of General Clay, \$150. A few females. S. E. BOOTH, Morris, Mich.

SHORTHORNS, Butterfly Sultan, half brother to International St. Champion, in service. For good bulls, cows, and heifers. W. B. McQuillan, Howell, Mich.

Shorthorns Maxwellton Monarch 2nd, 37332 half brother to 5 Grand Champions in service.
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Shorthorns—Four fine young bulls ready for service. Grandsons of Imp. Villager. Also bred heifer & cows heavy milking strain. Farmers prices. Free Catalogue. HOBBISSON FARMS, Hart, Mich.

SON of Harthorth Welfare heads our herd of milking Shorthorns comprising Chiffley of Clay bred cows, young bulls ready for sale and service. Write us Liddel Bros., R. 2, Clinton, Mich., Macon Phone.

Grand Traverse Shorthorn Asso. Reg. stock for sale.
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Milking Shorthorns and Polled Durhams, 20 head cows heifers and young bulls, Sultans Duchess and Sittytan Duchess included. M. B. Hallsted, R. 1, Orion, Mich.

Registered Bates Shorthorn bull for sale. 8 mos. old. Price \$100.
GEO. B. LINDSEY, Otsego, Mich.

Shorthorn bulls for sale. Two 10 mos., old, two six mos., old. Will make good herd bulls, both beef and milk strain.
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1867-1918 Maple Ridge Herd of Shorthorns Yearling heifers and bull calves for sale.
J. E. TANSWELL, Mason, Mich.

Three Bred registered, Shorthorns three yr. old heifers for sale. Also two bull calves.
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Scotch Shorthorns for sale, 5 bulls ready for service.
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Cattle For Sale
2 Loads feeders and two loads yearling steers. Also 2 can show you any number 1, 2 and 3 year old cows 600 to 1200 lbs. Isaac Shanstun, Fairfield, Iowa, R-3

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For Sale A pure bred roan bull calf sired by Silver King calved Nov. 10, 1917.
SMITH & BLACKMAN, Watervliet, Mich.

HOGS.

DUROCS Orion Chief Perfection No. 6945, and Jennings Pilot Wonder No. 7373. Two outstanding boars of big type and excellent quality. All selected large type smooth sows. Thrifty, smooth, large boned spring gilts from these herd boars and choice sows at very reasonable prices. The Jennings Farms, Bailey, Mich.

GREY TOWER FARM
Now offers for sale a few choice Holstein bull calves, from high testing dams, with good A. R. O. records, at farmers' prices, write us about them and our

Durocs & Berkshires
M. D. KITCHEN Mgr., Grass Lake, Mich.

Dobson's Durocs surplus stock all sold. Nothing doing till spring.
ORLO L. DOBSON, Quincy, Mich.

Duroc Sows & Gilts
guaranteed safe in pig. Fall boars and gilts not related. You want more size and feeding qualities; buy now. Cat giving breeding and description of 30 sows.
NEWTON BARNHART, St. Johns, Mich.

Duroc Jerseys—boars of the large heavy boned type, prize winning stock, prices reasonable, type and breeding considered, also gilts bred to Junior Champion boar for spring farrow. F. J. Drott, R. 1, Monroe, Mich.

Large boned Duroc Jersey September pigs either sex ready to ship. Breeding and prices on request.
J. D. CRANE & SON, Plainfield, Mich.

DUROC JERSEYS
E. D. HEYDENBERG, Wayland, Mich.

Additional Stock Ads. on Page 303

Markets.

GRAINS AND SEEDS

February 26, 1918.

WHEAT.—The millers are anxiously looking for carloads of wheat to fill their large orders for flour, which is wanted in every section of the country. The stocks of wheat in Detroit were 69,000 bushels on Monday as compared with 434,000 bushels a year ago. The American visible supply decreased last week 1,271,000 bushels. One year ago No. 2 red wheat brought \$1.90½ per bushel on the local market. Present prices are: Cash No. 2 red at \$2.17; No. 2 mixed \$2.15; No. 2 white \$2.15.

CORN.—Railroads are now moving corn freely from the Mississippi valley. Late last week and early, this week large trainloads of the grain arrived at primary markets. The receipts on Monday were 3,379,000 bushels compared with 1,167,000 bushels a year ago. The delivery of such large quantities of corn is naturally having a weakening effect upon prices. However, the trade is taking the shock with less price reduction than might be expected because of the large amount of waiting orders which are absorbing a large volume of the receipts. Farmers appear to be anxious sellers. There is a feeling that the coming crop may be limited through lack of good seed, and the scarcity of farm labor, which is causing many farmers to plan on a larger acreage of small grains than of corn. A wider margin between the prices for poorer grades and those fit for drying will no doubt develop as marketing continues. One year ago the local trade was paying \$1.06 per bushel for No. 3 corn. Detroit's present prices are: Cash No. 3 corn \$1.80; No. 3 yellow \$1.90; No. 4 do \$1.80; No. 5 do \$1.65; No. 6 do \$1.55.

OATS.—The movement of the oat crop is improving somewhat, although the increase has been less than that for corn. However, primary receipts are much above what they were a year ago, those on this past Monday amounting to 2,097,000 bushels against 964,000 bushels on the corresponding Monday a year ago. The Chicago Board of Trade has decided to place a maximum price of 93c a bushel on all oat contracts for future delivery. On Monday the Chicago price for March delivery was 87½¢@88¼¢, and for May 86½¢@87c per bushel. At this date last year standard oats sold in Detroit at 64½¢ per bushel. Present prices are: Standard 97½¢; No. 3 white 97c; No. 4 white 96c per bushel.

RYE.—This cereal is in active milling demand with offerings from country places very small. Millers want the grain for flour. Cash No. 2 rye was quoted at \$2.33 on Monday at Detroit.

BEANS.—The demand is showing considerable improvement, while supplies are in comparatively small volume. Further advances are noted in local quotations, cash beans now quoted at \$13 per cwt. The Chicago trade is operating on a higher basis with a firm undertone to the market there. Michigan pea beans, hand-picked, in sound, dry condition, are quoted at \$14@14.50 per cwt; red kidney, fancy \$16@17; do. fair to choice \$12@13.

PEAS.—Reports from Chicago show a firm tone to this trade, with the demand broadening. Field peas were quoted on Monday at \$7.10 per cwt.

SEEDS.—Prices declined from 60@90c on the Detroit market on Monday. Present quotations are: Prime red clover \$20; March \$18.80; alsike \$16; timothy \$4.

FLOUR AND FEEDS

FLOUR.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Standard patent \$11.10@11.15; straight winter \$10.80@11; spring patent \$11.20@11.30; rye flour \$11.80 per bbl.

FEEDS.—The United States Food Administration has fixed the selling price per ton of wheat bran (in carload lots) by millers at 38 per cent of the price paid by them for a ton of wheat—the average price paid for wheat during the preceding month. In selling to dealers in less than carload lots they can add fifty cents per ton. In retailing to consumers they can add to this price a retail profit of ten per cent. If sold in bags they can add the actual cost of the bags. For middlings they can add \$9 per ton to the price of bran. For "feed" (which is the entire product of wheat after the flour is taken out) they can add \$4 per ton to the price of bran.

The following will serve as guides to prices: If the average price paid for wheat is \$2.05, the millers' price for bran in carload lots should be \$25.96. To dealers in less than carload lots the price should be \$26.46 per ton. When sold to the retail trade the price per hundred should be \$1.46. If the average price paid for wheat is \$2.10, the milling price for bran in carload lots should be \$26.60 per ton. To dealers in less than carload lots the price should be \$27.10 per ton. When sold to the retail trade the price per hundred should be \$1.50. If any miller sells bran at prices greater than those fixed, please secure evidence of such sales and report the matter to the Market Department, Michigan Farmer, Detroit, Mich., and it will be brought to the attention of the proper authority.

HAY.—In carlots at Detroit: No. 1 timothy \$25.50@26; standard timothy \$24.50@25; light mixed \$24.50@25; No. 2 timothy \$23.50@24; No. 1 clover, \$21.50@22 per ton.

Pittsburgh.—No. 1 timothy \$32.50@33; No. 2 timothy \$30.50@31; No. 1 light mixed \$31@31.50; No. 1 clover, mixed \$31.50@32.50; No. 1 clover at \$31.50@32.50.

STRAW.—In carlots on track at Detroit: Wheat and oat straw \$11.50@12; rye straw \$12.50@13.

DAIRY PRODUCTS

BUTTER.—Butter is plentiful and slow. Fresh creamery firsts are quoted at 47½¢ per pound; fresh creamery extras 49c.

Chicago.—Market is dull and prices lower. Creamery extras 48c; extra firsts 47½¢; packing stock 37@37½¢.

CHEESE.—Michigan flats, 26¼¢@26½¢ per lb; New York flats 27c; brick 28¼¢@29¼¢; long horns 28¼¢; brick 28¼¢@28½¢; long horns 28¼¢; Michigan daisies 27c; Wisconsin daisies 27½¢; domestic Swiss 35¢@42c for the prime to fancy; Limburger 30¼¢@31¼¢.

DRESSED CALVES.—Fancy 18¢@20c; choice 17c; common 16c.

DRESSED HOGS.—Best 21c per lb.

POULTRY PRODUCTS

POULTRY.—(Live).—The Food Administration has ordered that poultry dealers shall not purchase, ship, sell or negotiate the sale of any live or freshly killed hens or pullets between February 11 and April 30 of this year. The object is to save all egg-laying chickens during the egg season for laying purposes. Fowls 22¢@25c; ducks 30¢@32c; fat geese 30¢@32c; turkeys 30¢@32c per lb.

Chicago.—(Live).—Offerings small and trading slow. Fowls 22¢@28c per lb; ducks 29¢@30c; geese 24¢@25c; turkeys, good 25c. (Dressed).—Fowls 26¢@30c; ducks, fancy 32c; geese 26¢@27c; turkeys 34½¢@35c.

EGGS.—Large lots of eggs from California and the southwest are arriving on the market, causing prices to decline rapidly. Fresh firsts 44c.

Chicago.—Prices are lower and supplies increasing. For fresh Michigan firsts 40½¢@41c; ordinary firsts 38½¢@39½¢; miscellaneous lots, cases included 38½¢@39½¢.

FRUITS—VEGETABLES

POTATOES.—The Detroit market opened Monday morning with seventeen cars of potatoes on track. The demand was slow and the market weak. Michigan offerings of good quality, sacked and conforming to U. S. grade No. 1 sold at from \$1.75@1.90 per cwt. to jobbers. Michigan offerings of the above grade sold in Cincinnati at \$2@2.10; in Columbus at \$2@2.10; in Pittsburgh at \$1.90; in Indianapolis at \$1.90; in Memphis at \$2.30@2.40; in Washington, D. C. at \$2.50@2.70. U. S. grade No. 2 sold to jobbers in Indianapolis at \$1.40; in Buffalo at \$1.50@1.75; in Cincinnati at \$1.50.

At Grand Rapids, Mich., the demand is light and movement slow, with f. o. b. prices, sacked U. S. grade No. 1 at \$1.70@1.80; in Wisconsin this grade is bringing \$1, while No. 2 is 50c from wagons at side track. The price to farmers in Colorado is \$1 per cwt; in Oregon 85¢@\$1, and in New York state \$1.40@1.55.

APPLES.—There were seven cars of apples on track at Detroit Monday morning. Baldwins sold at \$5.50@5.75 per bbl. to jobbers. The various apple markets show a moderate movement of the fruit and a steady tone to the trade. Michigan Spies and Greenings are selling in Chicago at \$6.75@7.50; Baldwins and Willow Twigs at \$5.50@6 per bbl.

WOOL

There is no change of importance in the wool situation, the market fully

retaining its former strength with the demand broadening and the supplies inadequate to take care of all needs. Interest in fleeces is more noticeable, with seaboard prices ranging from 58¢@85c for the sales of last week. Auctions in Australia and transactions in South America tend to give increased firmness to the market.

LIVE STOCK

BUFFALO.

February 25, 1918.

Cattle.—Receipts 90 cars; market 25¢@50c higher; best shipping steers \$13@13.50; fair to good \$12@12.75; plain and coarse \$10.50@11; native yearlings \$11.50@12; best handy steers \$11.50@12; fair to good \$10@11; handy steers and heifers, mixed \$9.50@10.50; light butcher steers \$9@10; western heifers \$8.50@9.50; best fat cows \$9.50@10.50; butcher cows \$7.50@8.50; cutters \$6@6.50; canners \$4.50@5.75; fancy bulls \$10@10.75; butcher bulls \$8.50@10.50; common bulls \$6.50@7.50; best feeding steers, 950 to 1000 lbs \$8.50@9; medium feeders \$7.50@8; light common at \$6.50@7; stockers \$6.50@7; best milkers and springers \$7.50@12.50; mediums \$6@7.75; common \$4@5.00.

Hogs.—Receipts 70 cars; strong; heavy \$18.15@18.25; yorkers \$18.25; pigs \$17.75@18.

Sheep and Lambs.—Receipts 50 cars; market 25c lower; top lambs at \$16.75@17; yearlings \$14@14.50; wethers \$13@13.50; ewes \$12@12.50.

Calves.—Receipts 15 cars; market 50c lower; tops \$17.50; fair to good \$16@17; fed calves \$6.50@8.50.

CHICAGO.

February 25, 1918.

Cattle. Hogs. Sheep. Receipts today...15,000 53,000 13,000 Same day 1917...16,430 60,502 18,671 Last week...65,010 245,179 59,732 Same wk 1917...61,212 196,237 77,274

With a small Monday cattle supply and a good general demand, prices are largely a dime higher, the choicer offerings excepted. A sale was made of four carloads of prime cattle at \$14.15. Hogs were advanced 15¢@20c, with the sales at \$17@17.70 and most pig sales at \$14.50@16. Hogs received last week averaged 232 lbs. Lambs are 10¢@15c higher, with the best lambs here bringing \$16.85. It was thought that some prime lambs would have brought \$17, had any been offered. Although the receipts of hogs last week were far larger in volume than a year ago, only 35,417 hogs were shipped from here, comparing with 60,529 for the same time a year ago.

Cattle receipts last week were ample, but not excessive as a rule, and under the influence of a good general local and shipping demand, prices for most descriptions were about 35¢@75c higher than a week earlier. The principal change in the trade was a marked improvement in the demand for the choicer steers of good weight, which were not offered at all freely at any time. These cattle were purchased at \$18.25@18.85, while steers grading as good went at \$12.60@13.20, with a medium grade selling at \$12@12.50 and sales down to \$8.75@9.60 for the common lots of steers of light weight. A better class of light steers had a good outlet at \$9.70@11.90, the bulk of the steers going at \$11@12.75. Good to choice yearling steers were taken readily at \$12.25@13.25, with choice lots scarce and worth up to \$13.50. There was an especially strong demand for fat butcher stock, killers looking for anything that would make beef, and fat cows were fully 25c higher. Butchering cows sold at \$7.50@12, although few were prime enough to go over \$11, while heifers sold at \$7@12. Canner cows sold at \$6.50@6.90, cutters at \$7@7.45 and bulls at \$7.25@11. Calves were in fairly active demand, with a rally in prices during the last half of the week, when ordinary to choice light vealers landed at \$12.50@14 per 100 lbs., while heavy calves sold at \$6.50@11. The stocker and feeder trade was active whenever any considerable numbers were offered on the market, sales being made at a range of \$7.60@11, although not many sold higher than \$10. Uneven distribution of cars in the country has been the cause of unusual irregularity in the cattle supply.

Hogs were in remarkably strong general demand during the past week, and declines in prices were followed by quick recoveries, quotations being higher than for a long time. On Thursday, when the receipts rose to 60,000 hogs, the market advanced 25c. There has been a very fair eastern shipping demand on the whole, although shipments from here continued on a much smaller scale than a year ago. Provisions advanced to fresh high records, and all of the influences governing the hog trade were very bullish. The highest prices were paid for prime lots of hogs weighing around 185 to 195 lbs.,

the receipts running largely to heavy lots. The top sale of hogs for the week was at \$17.70, with hogs closing on Saturday at \$16.75@17.50, comparing with \$15.90@16.90 a week earlier. Pigs closed at \$12.50@16.25, according to weight and quality.

Lambs were in fairly active demand last week, most of them being westerns but killers acted in a determined manner about holding down prices, submitting to higher figures only because of the moderate offerings. Ewe breeding lambs were especially wanted, and there was a good demand for the few offerings of choice light weight yearlings. During the latter part of the week lambs sold higher than earlier, buyers paying \$14.90@16.75. Yearlings closed at \$12.50@15, wethers at \$11.75@13.40, ewes at \$7@13.15, breeding ewes at \$11@16, ewe breeding lambs at \$16@16.75, bucks at \$9@10.50 and goats at \$7@10. A small lot of native spring lambs brought \$17 per 100 lbs.

Horses were in moderate supply and in good general demand last week at mostly unchanged prices. Drafters were salable at \$185@265, desirable farm workers at \$100@150, loggers at \$150@225 and good to prime expressers at \$150@210.

LIVE STOCK NEWS.

Legislative action, already accomplished and promised, is a potent influence in causing increased strength in prices for the different grains in the markets of the United States, and manifestly whatever concerns feed grains is a substantial factor in the live stock trade. Quite recently the United States Senate committee favored placing a minimum price of \$2.50 a bushel for wheat, instead of \$2 for the 1918 crop, and this was immediately followed by advances in prices for corn and oats. The well known shortage of corn and its consequent dearthness are making high record prices for that important feed everywhere, and recent sales were made on the Chicago market of corn for March delivery as high as \$1.27 per bushel, comparing with \$1.01 a year ago, while cash sales were made of No. 3 yellow corn at \$1.80 per bushel. The cost of drying the damp corn is a big factor in advancing its price to consumers, and a great deal of damage was done to corn not well dried during the recent spell of abnormally warm weather. Hay is a short crop and sells so high that its use as feed on farms is much restricted, much more straw than usual being fed to stock, and in Oklahoma farmers are reported as feeding wheat to their live stock, their corn having been all used up some time ago. Husking corn has been delayed in many districts, and some lively work is reported. A few weeks ago, according to a dispatch from Des Moines, Iowa, two hundred men husked forty acres of corn, yielding fifty-eight bushels to the acre, in forty minutes, this being thought to be a high record. Never in the past has there been such a wide disparity of prices for different grades of corn as there is now, and it is reported that from \$300 to \$400 has been made on single carloads of late. In parts of South Dakota farmers have no corn and are using oats and barley for feeding to their live stock. The disparity between terminal market prices and those paid to growers of corn is especially marked in districts of southern Illinois and Indiana. Up to recently the movement of corn from farming districts was extremely slow on account of the lack of cars, but at last this has been overcome, and during a single week the corn receipts in primary markets rose to a total of 11,214,000 bushels, being 4,597,000 bushels greater than a week earlier and 6,323,000 bushels more than for the corresponding week of 1917. The visible supply of corn in the United States is only 6,333,000 bushels, comparing with 12,709,000 bushels a year ago. That of oats is 13,987,000 bushels, comparing with 39,538,000 bushels a year ago. That of wheat is down to 11,818,000 bushels, comparing with 63,901,000 bushels a year ago.

A CORRECTION.

In the article entitled, "Growing Beans with Small Cost," which appeared in our issue of February 9, on Page 172, where it reads, "I planted with a two-row corn drill twenty-eight inches apart and dropped a bean every ten inches in the row," it should have read, "and dropped from six to ten beans in hills every ten inches," instead of "a bean."

AUCTION SALE DATE CORRECTED.

In the advertisement of the Auction sale of L. N. Olmstead & J. L. Spaans, of Muir, Mich., in last week's issue of this journal, the date was given as "Thursday, March 6," but it should have read "Wednesday, March 6."

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.
February 28, 1918.
Cattle.

Receipts 1418. All grades strong at last week's advance; trade very active from opening to closing; quality not very good.

Best heavy steers \$11@12; best handy weight butcher steers \$9.50@10.75; mixed steers and heifers \$8.50@9.25; handy light butchers \$8@8.50; light butchers \$7.50@8; best cows \$8.50@9.75; butcher cows \$7.50@8.25; cutters \$7.25@7.75; canners \$6.25@6.75; best heavy bulls \$9@9.50; bologna bulls \$8.50@8.75; stock bulls \$7.50@8; milkers and springers \$65@110.

Sandel, S. B. & G. sold Parker, W. & Co. 16 butchers av 674 at \$7.60, 1 heifer wgh 760 at \$9, 13 butchers av 483 at \$7.75, 11 do av 740 at \$8.75, 1 steer wgh 1200 at \$10.50, 1 do wgh 950 at \$9, 7 butchers av 730 at \$8.50; to Sullivan P. Co. 3 cows av 1027 at \$9, 4 steers av 1007 at \$10.50, 13 butchers av 888 at \$9.50, 10 do av 853 at \$8.50, 3 cows av 1110 at \$8; to Bray 4 canners av 970 at \$6.75, 2 cows av 980 at \$7.75, 6 canners av 875 at \$6.75, 1 bull wgh 990 at \$7.60, 6 cutters av 891 at \$6.90, 7 do av 980 at \$7, 4 cows av 1093 at \$8; to Mich. B. Co. 1 bull wgh 1320 at \$8.25, 2 steers av 985 at \$10.35; to Thompson 2 bulls av 1185 at \$8.50, 12 butchers av 873 at \$9.85, 2 steers av 765 at \$8.50, 8 do av 950 at \$10.80; to Applebaum 9 butchers av 800 at \$8.85; to Sullivan P. Co. 15 do av 790 at \$8.50, 3 do av 783 at \$6.75; to Thompson 1 bull wgh 1600 at \$8.60, 1 cow wgh 920 at \$8.25; to Newton P. Co. 4 canners av 862 at \$6.75, 8 cows av 867 at \$7.50, 5 do av 820 at \$8.75; to Hammond, S. & Co. 9 butchers av 776 at \$8.50; to Sullivan P. Co. 20 do av 904 at \$9.50, 6 do av 803 at \$8.25, 20 do av 817 at \$10, 9 cows av 1061 at \$7.60, 1 do wgh 1100 at \$8.30; to Parker, W. & Co. 16 butchers av 725 at \$8.10.

Erwin, S. & J. sold Hammond, S. & Co. 10 steers av 1190 at \$11.25; to Newton P. Co. 1 bull wgh 830 at \$8, 1 do wgh 1340 at \$10, 8 cows av 931 at \$7.85, 2 steers av 795 at \$12; to Thompson 5 do av 780 at \$9, 9 do av 820 at \$9.75; to Newton P. Co. 1 cow wgh 1070 at \$8; to Bresnahan & K. 1 do wgh 1570 at \$10; to Mason B. Co. 9 steers av 1070 at \$10.50, 2 heifers av 770 at \$8, 1 steer wgh 1150 at \$12, 2 bulls av 875 at \$8.50; to Bray 2 canners av 825 at \$6.75, 9 do av 792 at \$6.50, 2 cows av 1125 at \$8, 1 do wgh 970 at \$7.50; to Hammond, S. & Co. 22 steers av 980 at \$10.75; to Goodgold 5 do av 730 at \$8; to Mich. B. Co. 1 bull wgh 970 at \$9, 26 steers av 750 at \$9.75, 1 do wgh 920 at \$10; to Thompson 13 butchers av 883 at \$9.50, 1 heifer wgh 700 at \$8; to Reed 24 stockers av 545 at \$6.75; to Rattkowsky 5 butchers av 588 at \$7.80; to Sullivan P. Co. 16 do av 892 at \$9.50, 2 bulls av 1160 at \$8.60.

Veal Calves.

Receipts 821. Market strong and 50c higher on good stuff; common and heavy grades dull; best \$15.50@16; culls \$11@13.

Bishop, B. & H. sold Sullivan P. Co. 6 av 155 at \$15.50, 8 av 150 at \$16; to Rattkowsky 17 av 130 at \$15; to Newton P. Co. 12 av 150 at \$15, 2 av 165 at \$15.50, 6 av 145 at \$15; to Sullivan P. Co. 12 av 225 at \$8, 11 av 140 at \$14.50, 10 av 150 at \$13, 2 av 170 at \$15.50, 7 av 140 at \$14; to Mich. B. Co. 3 av 140 at \$15.75, 6 av 145 at \$16, 2 av 125 at \$15.50; to Thompson 20 av 130 at \$15.75, 7 av 125 at \$15.50; to McGuire 4 av 145 at \$13, 27 av 150 at \$16; to Sullivan P. Co. 61 av 130 at \$15.25, 33 av 150 at \$15.50; to Shipiro 4 av 145 at \$16; to Parker, W. & Co. 12 av 140 at \$15, 3 av 150 at \$15.75, 12 av 151 at \$15.50.

Sheep and Lambs.

Receipts 2220. Market very dull all the week and 25c lower on everything but prime lambs. Best lambs \$16.25@16.50; fair lambs \$15@15.50; light to common lambs \$13@14; fair to good sheep \$10@11; culls and common \$6.50@8.

Erwin, S. & J. sold Parker, W. & Co. 236 lambs av 85 at \$16.25.

Sandel, S. B. & G. sold Thompson 18 lambs av 75 at \$16 to Sullivan P. Co. 5 sheep av 95 at \$10.

Bishop, B. & H. sold Mich. B. Co. 97 lambs av 75 at \$16, 10 do av 71 at \$16, 7 do av 95 at \$16; to Thompson 10 do av 50 at \$14, 76 do av 75 at \$16; to Nagle P. Co. 564 do av 94 at \$16.50.

Hogs.

Receipts 3776. Market very dull and 25c lower than on Wednesday on mixed grades at \$16.50@16.75; pigs steady at \$16@16.50.

How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for \$50 and just ten days after sold her for \$175.00. A clear profit of \$125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid \$65.00 for him. After handling him only a few hours according to Beery's system I sold him for \$135.00."

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for \$35.00, and now have her so gentle, my little boy handles her. Wouldn't take \$200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth \$225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for \$17.50. Paid me \$40 to train it. He just sold it to a show company for \$150.00.

How I Work

The big source of my income is in buying up

"ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit—for which job I received \$50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc., etc. Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 468, Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.



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

EGGS: We are paying good premiums for new-laid Eggs, either Whites or Browns. Write us for particulars. AMERICAN BUTTER & CHEESE COMPANY, Detroit, Mich.

HOGS

Choice Duroc Jersey Gilts For Sale.

OAREY U. EDMONDS, Hastings, Mich.
Duroc fall boars bred by Crimmon Critic T. Satisfaction and Brookwater Principal, priced right. Bred sows all sold. M. C. TAYLOR, Milan, Mich.

Durocs Can spare two or three bred daughters of A. FLEMING, Lake, Mich.

Duroc Jerseys Why don't you order a pig and raise an extra good boar or gilt for yourself. E. E. OALKING, Ann Arbor, Mich.

BRED GILTS

O. I. C. To Wm. B. No. 4709, Longfellow No. 1875 sire of 1st prize young herd at Iowa State Fair. Fall pigs and breeding boars.
J. CARL JEWETT, Mason, Mich.

Chester Gilts bred for March farrow early fall pigs both sexes from best blood lines. F. W. ALEXANDER, Vassar, 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 my month old. Write for my plan. "How Money From Hogs." S. S. BENJAMIN, R. F. D. 10, Portland, Michigan

Big Type O. I. C.'s.

Stock of all ages for sale. We showed at four state fairs and won more champions and Grand Champions than all the other breeders together double, we were Premier Breeder and Exhibitor at every fair we showed. We breed the best. We sell the best. We guarantee them to be the best. Write your wants. Get our Catalogue. We ship on approval.
ORANDELL and SON, Cass City, Mich.

O. I. C. & Chester White Swine.
Strictly Big Type with quality. Bred sows & gilts are all sold, two boars fit for service good ones. Also have a few fall pigs left, either sex. I will ship O. I. C. NEWMAN'S STOCK FARM, R. 1, Marietta, Mich.

O. I. C.'s choice May boars & Sept. & Oct. pigs sired by First Premium boar Mich. State Fair 1917. Clover Leaf Stock Farm, R. 1, Monroe, Mich.

O. I. C.'s Registered serviceable boars. Bred gilts. Ang. Sept. Oct. pigs. Registered Shropshire ewe lambs. G. P. Andrews, Danville, Mich.

O. I. C. For sale a few extra good gilts bred H. W. MANN, Danville, Mich.

O. I. C.'s all sold except some fall gilts. Order C. J. THOMPSON, Rockford, Mich.

O. I. C. Nothing for sale but our tried sow and fall pigs. Mason, Mich.

O. I. C.'s. Last spring gilts bred for next spring farrow also last fall pigs either sex and not akin. Good growthy stock 1/2 mile west of Depot. Citizens phone 24. Otto B. Schulze, Nashville, Mich.

Big Type Poland Chinas.
Bred Gilts and Sows for sale.
HILLCREST FARM,
Kalamazoo, Mich.

BOARS-SOWS

Big type big bone. For the next 30 days we will sell Big type Poland Chinas at bargain prices. April boars weighing 300 lb. Open gilts. Summer and fall pigs everything goes. Get busy.
J. C. BUTLER, Portland, Michigan, Bell Phone.

LARGE Type P. C. Largest in Mich. Spring Boars ready to ship. The kind that make good. Come and see the real big type kind. Expenses paid if not as represented. Free delivery from Farms.
W. E. LIVINGSTON, Farms, Mich.

Large Type P. C. no public sale this year; 50 sows and gilts all queens of the breed go at private treaty.
W. J. HAGELSHAW, Augusta, Mich.

Large Strain P. C. Gilts bred to Smooth Jumbo large 2 yr. old in state, & grandson of Gushalls Smooth Big Bone for April & May farrow. H. O. Swartz, Schoolcraft, Mich.

Big Type P. C. Big boned fellows from Iowa's greatest herds. Special prices on spring boars.
E. J. MATHEWSON, Burr Oak, Mich.

POLAND CHINA GILTS Bred for March and April farrow.
G. W. HOLTON, R. 11, Kalamazoo, Mich.

Big Type P. C. bred for March & April farrow sired by Peter's Jumbo & Grand Superba and 2 or 3 yearling sows at bargain prices. C. E. Garman, Eaton Rapids, Mich.

Leonards' Big boned Poland China, sows and gilts bred for Apr. farrow. Fall pigs. Shipped C. O. D. Call or write. E. E. Leonard, R. 3, St. Louis, Mich.

P. C. Sows For Sale. Bred for April farrow. Prices reasonable.
A. A. WOOD & SON, Saline, Mich.

Spotted Poland Chinas Heavy boned stock. Bred of blood. L. O. OLAPP, R. 1, Adrian, Mich.

Large Type P. C. fall gilts, sire 800 lb. yearling to be bred to 1000 lb. 2 year old for July & Aug. 2 extra good fall boars. WM. J. CLARKE, R. 7, Mason, Mich.

Big Type Poland Chinas: Sows bred for April and May farrow and fall pigs.
L. W. BARNES & SON, Byron, Mich.

Large Yorkshire Gilts

Rod Poll Cattle. E. S. CARR, Homer, Mich.
Yorkshire Gilts Bred for spring farrowing. Bacon is high in price. Yorkshires make bacon; buy Yorkshires. Waterman & Waterman, Packard Road, Ann Arbor, Mich.

Hampshire boars at a bargain, bred gilts now ready to ship.
JOHN W. SNYDER, R. 4, St. Johns, Mich.

HORSES

Public Sale of Percherons

Thursday, March 7, I will offer for sale imported seven year old stallion, also two registered colts coming 3 years old, three registered brood mares and two colts. If interested write

Barney Giesken, R. 3, St. Louis, Mich.

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

LOESER BROS.

Belgian and Percheron Stallions for sale that will pass the Michigan Stallion Inspection. Have a few mares of both breeds. Shorthorn Cattle, we offer a choice lot of bulls and females. Write us.

LIGONIER INDIANA.

PERCHERON DISPERSAL

The entire herd of the late A. A. Palmer will be closed out; 25 pure bred percheron mares \$200 to \$400 except two; also young stallions

PALMER BROS., Belding Mich.

FOR SALE Black Percheron Stallion, registered & Licensed, well broken, 6 years old, weight about 2000 pounds. JOHN ENGEL, 1123 So. Church St., Hastings, Mich.

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

For Sale Three Percheron Stallions and three Percheron mares at farmers' prices.
E. J. ALDRICH, Tekonsha, Mich. Bell Phone.

Percheron Stallions and mares of reasonable prices; inspection invited.
F. L. KING & SON, Charlotte, Mich.

Notice Being in draft will sell or exchange for cattle or sheep 3 reg. Perch. mares.
J. M. HICKS & SONS, R. 2, Williamston, Mich.

FOUR YEAR old registered dapple gray stallion for sale.
F. J. WEBB, R. 6, Paw Paw, Mich.

Belgian Stallions. Priced to sell. State Licensed. Send for photos.
CHAS. M. SEELEY, Three Rivers, Mich.

Two Large young Jennets cheap, and some Shetland Ponies and several good fox hounds.
W. E. LECKY, Holmesville, Ohio

SHEEP

Will Sell at

PUBLIC SALE

At the Fair Grounds, Marshall, Mich.

On Saturday, March 2

At 1:00 P. M., Rain or Shine

400 2-year-old to 4-year-old ewes in lots of ten, bred to pure-bred Hampshire bucks, due to lamb March 15. 8 months time on bankable notes at 6% interest.

Conley Bros., Marshall, Mich.

AUCTION SALE

Having sold the farm, we will sell all of our personal property at Public Auction at the farm two and one half miles north-west of Muir, Ionia County, Michigan.

Wednesday, March 6th, 1918,
commencing at 10 o'clock A. M. Stock and tools; hay and grain; household goods; and

146 Thoroughbred Registered Oxford

Down Ewes
consisting of: 23 1 year old, 33 2 year old, 20 4 year old ewes and the rest are five, six and seven years old. They have all been bred to W. H. McCarty 77, Record No. 13231, and are due the latter part of March and the forepart of April. The sheep will be sold promptly at 2 o'clock and will be graded and classified according to age and will be sold by the head in lots of five. If you are interested in raising a type of sheep that is superior to any others, Be sure and attend this sale.

L. N. Olmstead } Proprietors

J. L. Spaans }

E. E. Slye, Ionia, Mich., Auctioneer.

KOPE-KON FARMS.

Coldwater, Mich.
Hampshires & Shropshires.
It's a wise man who orders his ram for August delivery now.

Shropshire Ram Lambs and one three year old stock header for sale.
ARMSTRONG BROS., R. 3, Fowlerville, Mich.

FOR Sale Reg. Shrop. ram and ewe lambs of good breed & quality; car lots or single. MILNE BROS., Station C. P. R., R. 1, Locust Hill, Ont.

Veterinary.

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

Indigestion—Worms.—Whenever I drive my 14-year-old mare she tires easily and she is in a run-down condition. I have seen her pass long round worms. She is well fed, fails to lay on flesh. C. G., Flint, Mich.—She should be given a tablespoonful of the following compound powder at a dose in feed three times daily. Mix one part powdered sulphate iron, one part ground fenugreek, one part of ground nux vomica and three parts ground gentian together and give as directed. Her grinder teeth may require floating, and I advise you to change her feed. A wormy horse should be extra well fed, or he will grow thin.

Tumor on Udder.—I have a three-year-old heifer that has a growth much the shape of a pear on back portion of udder. The skin of this bunch is rough and somewhat resembles a wart. What treatment do you recommend in a case of this kind? L. E. N., Mackinaw City, Mich.—Take a clean sharp knife, cut off bunch and apply boric acid to wound twice a day.

Barren Ewe.—We have a Hampshire ewe that had three lambs during cold weather and they all died. I am anxious to breed her again so that she will lamb this coming summer, but she fails to come in heat. J. C. G., Linden, Mich.—Give her 5 grs. of ground nux vomica, 15 grs. of ground capsicum and 20 grs. of ground ginger at a dose in ground feed twice a day. I fully believe it would be a mistake to breed your ewe, even if she comes in heat.

Indigestion—Looseness of Bowels.—I have a filly 18 months old that is usually too loose in bowels; besides, altogether too much gas accumulates in stomach and bowels. Her appetite could not be better and she drinks large quantities of water. She is inclined to rub root of tail. A. K., Montague, Mich.—Increase her grain ration, feed her good quality of well cured fodder, give her ½ oz. of ground gentian, ¼ oz. of ginger and ½ oz. of powdered wood charcoal at a dose in ground grain three times a day.

Weakness.—I have a small flock of sheep, am new beginner in sheep raising, but two of last year's lambs perspire on body back of shoulders; however, they do not seem to be sick. What shall I do for them? R. G., Wayne, Mich.—Give each of them 2 ozs. of castor oil, if their bowels are not active enough. Change their feed. Give each one 5 drops tincture of nux vomica at a dose three times a day, also give 10 grs. of acetate potash once a day.

Too Much Bowel Action.—I recently purchased a blocky 1200-pound horse, commenced to feed three pints of oats twice a day and let him have plenty of alsike clover hay to eat. Ever since I have owned him his bowel movements are normal while in stable, but after traveling a mile on the road he scours. I thought it might be the clover that purged him, but feeding timothy has the same effect. J. M. S., Buckley, Mich.—As you perhaps know, the bowels of a horse move four or more times as often, when exercised, than if standing still. This kind of a case can best be treated by food and water supply. Water before feeding grain, and limit his water supply for a few hours before driving him. Certain horses will usually purge more or less when driven faster than a walk.

High Colored Urine.—I have a nine-year-old cow due to freshen in about sixty days. She has been farrow for three years, giving milk up to one month ago. She is in good flesh but her urine is a reddish brown, or I might say about the color of blood. G. W. C., Atlanta, Mich.—Give her one teaspoonful of acetate potash at a dose in feed or drinking water twice daily; also give one teaspoonful of air-slaked lime and a tablespoonful of ground gentian in feed three times a day.

Infected Udder—Dropsy.—Have cow that has had three calves; after each calving her udder has caked; besides, she is swollen under belly. Will it be safe to breed her again? A. C., Pontiac, Mich.—Yes, breed her again, but milk her carefully by hand when she freshens. If such an udder was gently hand-rubbed and if her stall was thoroughly cleaned, disinfected and kept clean at time of calving, she would have less bag trouble.

Dog Has Mangs.—My dog has what neighbors call the mange, therefore I would like to have you prescribe a none too expensive remedy. Subscriber, Wayne Co.—Clip off hair and apply one part sulphur and four parts lard twice a week, or apply one part coal tar disinfectant and twenty parts water daily.



HUNGER With the waste and destruction caused by the war raging in Europe, nearly one-half the civilized world must necessarily look to America for their food supplies. Favored as we are with unbounded resources we can, by saving what we now waste, feed the world and still have ample left for ourselves.

WASTE We Americans, always favored with plenty, are the most wasteful. Moreover, today we are face to face with the fact that we must stop our wasteful practices—conserve our food production—in order that we, as well as the nations of the world, may be supplied with sufficient food and the necessities of life.

LOSSES Waste naturally means losses. To prevent waste and eliminate losses is now not only a patriotic duty, but a very profitable habit to form. Millions of dollars are annually lost on American farms as a result of small wastes.

DESTRUCTION Another big factor of loss to the American farmer, is the destruction of growing crops caused by stock breaking through poor fences and in a short time destroying several dollars worth of grain. You can help your country—help feed the hungry—save waste and destruction—by fencing your fields with

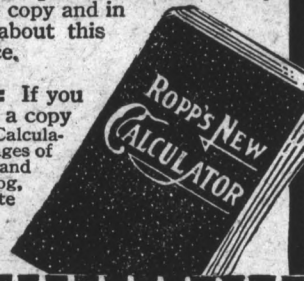
SQUARE DEAL FENCE

It is an investment that will pay you big profits. You can keep your stock where you want them—you can pasture fields from which crops have been harvested—save the fallen and scattered grain—turn it into profit quickly and avoid destruction of growing crops.

Be square with yourself—buy the best fencing—it is the cheapest in the end. **SQUARE DEAL FENCE** will prove this to your utmost satisfaction. It stays tight and trim year after year—requires least repairs—takes fewer fence

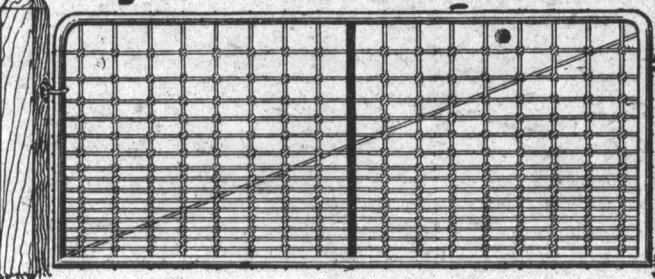
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Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

Work in Joint Effort the Soil of the U. S. and Canada—Co-operative Farming in Man Power Necessary to Win the Battle for Liberty

The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before the crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Production last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918, is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5 th. Wages to competent help, \$50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board, and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service,
Dept. of Labor.

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HORSE-HIGH, BULL-STRONG, PIG-TIGHT.
Made of Open Hearth wire heavily galvanized—a strong durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values:
26-inch Hog Fence—21½¢ a rod
47-inch Farm Fence—31½¢ a rod
48-inch Poultry Fence—34½¢ a rod
Special Prices on Galv. Barbed Wire
Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at reduced money-saving prices. It's free. Write today.
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Write for Greatest money saving fence bargain book ever printed. Brown fence is made of Heavy DOUBLE GALVANIZED WIRE. Resists rust longest. 150 styles. Also Gates and Barb Wire. Low Factory Prices, Freight Prepaid. Write for wonderful free fence book and sample to test. The Brown Fence & Wire Co., Dept. 149 Cleveland, Ohio

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Bigger than ever on full gauge, full weight, guaranteed fence. Don't buy until you have Mason's special direct from factory prices and **60 DAYS' FREE TRIAL OFFER.** Send for our new Free catalog showing fencing and gates for every purpose. It points the way to fence well and save big money.
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SCOTT'S FIELD SEEDS

Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalog including "How to Know Good Seeds" free. Write today. O. M. SCOTT & SONS CO., 56 Main St., Marysville, O.

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