

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL
ESTABLISHED 1843.

The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

VOL. CXLVII, No. 2
Whole Number 3896

DETROIT, MICH., SATURDAY, JULY 8, 1916

50 CENTS A YEAR.
\$2 FOR 5 YEARS.

Average Profits from Potato Spraying

By EARL W. GAGE

PROGRESSIVE potato growers have long appreciated that in seasons when the late blight is prevalent spraying will serve not only to check blight to a considerable degree, but also increase the yield, although many have questioned the advisability of spraying every season. Inasmuch as it is impossible to foretell the appearance of blight, since this disease does not appear each season, the tendency among the majority of practical potato men has not been to spray regularly in the belief that the aggregate gains do not pay the expense of spraying for a number of years.

The twenty years' potato-spraying experiments at the Vermont station and the ten years' experiments along similar lines at the New York station, ought to prove most interesting and profitable reading to the farmer growing this crop. The question as to whether it pays to spray is emphatically answered in no uncertain way. The figures show that no farmer can afford to permit other work to take precedence over his spraying.

At the Vermont station, in the early experiments comparative tests of different fungicides were made, and the superiority of Bordeaux mixture was soon apparent, which caused the exclusive use of this in the remaining years. The results showed conclusively that Bordeaux mixture very efficiently protected the plants from attacks of early and late blight and served in a degree as a stimulus to the plant, causing it to remain green from one to two weeks longer than unsprayed plants, and inasmuch as this lengthened the growing season (larger and firmer tubers were produced.

The effect upon the plant is shown by the fact that even early in the season the sprayed plants stored more starch in their tubers than those not so treated. While the plants themselves from the sprayed and the control plots were of approximately the same size, the weight of the tubers at this time was 24.8 bushels per acre in favor of the potatoes to which the Bordeaux had been applied. This would seem to indicate that during the months of July and August, while the tubers were growing, the unsprayed plants were not able to convert and store up as much starch as those that were sprayed.

The results of the Vermont twenty years' spraying experiment, therefore, showed that Bordeaux mixture, even in years like 1910 when no blight occurred, increased the yield of the plants to which it was applied. This increas-

ed yield is always sufficient to pay for the cost of spraying operations. Spraying is to be regarded as an insurance that pays for itself. If the blights are prevalent, the potatoes, if thoroughly sprayed, are practically insured against loss therefrom; if the season is a dry one and no disease occurs, still the crop will be enough larger to pay for all the cost of spraying. The careful potato sprayer wins either way, no matter what the weather or disease conditions.

The results with iron sulphate-copper sulphate mixture indicate that Bordeaux mixture in which part of the copper is replaced by iron has as great a stimulating effect as does the ordinary Bordeaux.

The increased yields from plots where the Bordeaux was applied only to part of each plant, indicated that even here there was a sufficient effect

cases all loss from these three causes could not be prevented even by thorough spraying, in every case there was a severe outbreak of blight enough good was accomplished to more than repay all expenditures, both of money and time. Generally speaking, spraying was very profitable. Of those whose tests were reported to the station, thirty growers made a net profit of \$10,000 from spraying.

In fourteen co-operative farm tests, covering 180 acres, the average increase in yield due to spraying was 62½ bushels per acre, the cost of spraying \$4.98 per acre, the cost per acre for each spraying 93 cents, and the net profit per acre \$24.86.

Not only were there gains in yields due to lengthening the time of growth by preventing foliage destruction by late blight, but the sprayed potatoes, being more mature, were of much

plants are six to seven inches high and to spray every ten days or two weeks thereafter as long as the plants remain green. If rain comes before the application is dry on the vines the treatment should be repeated, but spraying should not be stopped because it looks as if it would storm. We cannot hope for a matured potato crop unless the vines are kept alive as long as possible. If blight should kill the vines early, the tubers are certain to be undeveloped, soggy, a poor market or table product.

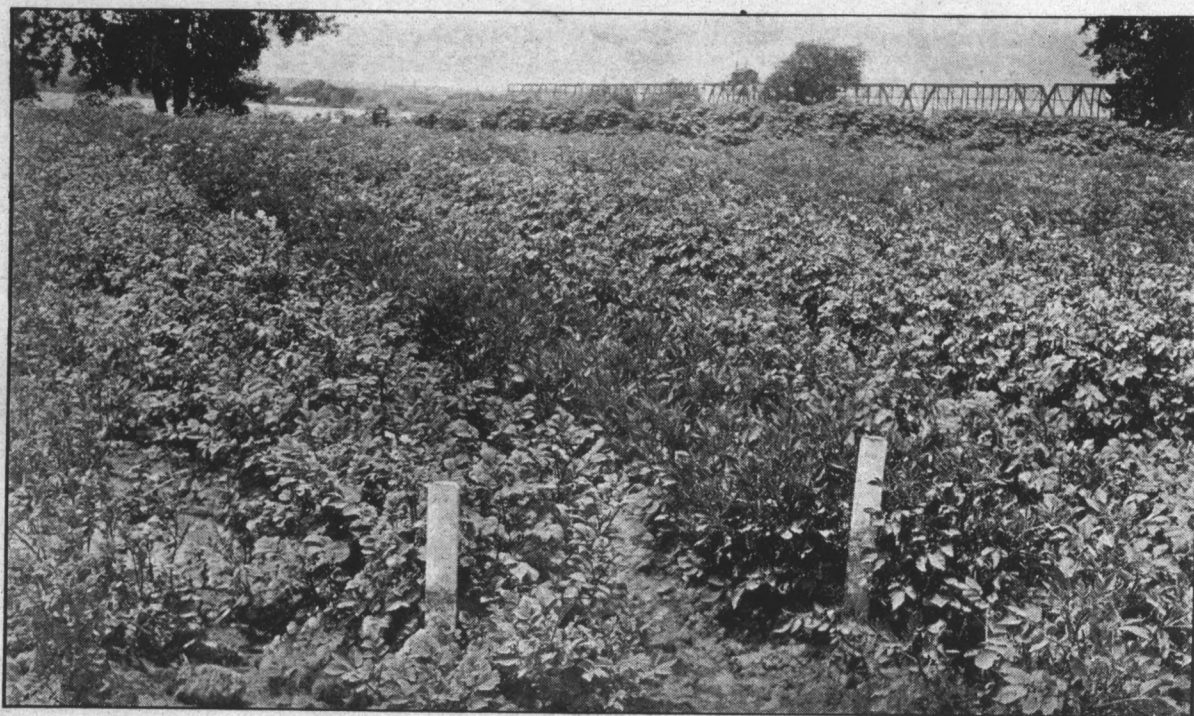
August marks the crisis of the potato crop. The tubers are usually about 75 per cent water, the quality depends largely on the amount of starch contained. No potato can be at its best unless the tubers are allowed to mature naturally, and in this month the crop may die a premature death. The quality of the tuber is determined by the starch content; the leaf is the starch-gathering agency. The size and quality of the potato depends upon re-

taining as long as possible, leaf health. If bugs eat off the leaf or if blight destroys it, the tuber cannot possibly obtain the starch needed to give quality and size. If the blight injures or ruins the leaf while the tubers are partially developed, they can never be anything but inferior grades. It therefore follows from these facts that the aim of the grower should be to keep his potato vine green and thrifty as long as possible, or until the plant has matured. This is the secret reason why farmers everywhere should spray, for there is no other method whereby this may be secured.

For ten successive years in the present series of experiments now being held at the

Geneva station, a profitable increase has been secured in each year of the ten; spraying three times during the season has resulted in an average increase of 69 bushels per acre, while spraying every two weeks, or five to seven times, has increased the yield of merchantable tubers 97½ bushels per acre. Michigan Bulletin 236 reports more than enough profit from spraying every ten days to spray the same acreage six times for three more years.

The farmer who insures his life, his buildings, breeds the best in cattle and hens, uses the best potato seed procurable, and then fails to properly spray his crop, is certainly a one-eyed farmer, and I trust will soon awaken to the real justice he owes nature by this simple method of co-operating with her in growing a crop profitable, by keeping the life blood in his plants as long as possible.



An Experiment Station Test Plot, Showing Marked Difference Between Sprayed and Unsprayed Rows.

produced to manifest itself in a yield of 28 bushels per acre more than that obtained on the plants left entirely untreated.

The result in an average acreage yield, with Bordeaux and control plots makes interesting data for the man who desires to make the most from his investment and labor. The yield per acre average for twenty years, on sprayed plots was 208 bushels, as against 163 for the unsprayed, a gain of 45 bushels per acre.

In general, it may be said, in all spraying operations where Bordeaux mixture is used, thorough spraying systems being employed, this is an effective agent against blight, rot, and flea-beetle. A co-operative experiment carried on under the supervision of New York State Station with farmers throughout the potato-growing sections reveals the fact that while in a few

better cooking and marketable quality.

Chemical analysis shows that there is about one-sixteenth more dry matter in sprayed potatoes, and one-ninth more starch. Cooking tests confirmed this analysis, as the sprayed potatoes were noticeably more mealy than those not sprayed, and were pronounced of much better quality by all who ate both.

The mixture recommended is Bordeaux of the 1-to-8 formula; that is, six pounds of copper sulphate to 50 gallons of water, the acid of the sulphate being neutralized by about four pounds of good stone lime. Paris green may be safely added to thoroughly neutralized Bordeaux, and this mixture has given satisfactory results, in fact, better than any other fungicide-insecticide treatment for potato pests.

If thorough spraying is the object, it is best to start operations when the

The Michigan Farmer

Established 1843.

Copyright 1916.

The Lawrence Publishing Co.

Editors and Proprietors

39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 4525.NEW YORK OFFICE—381 Fourth Ave.
CHICAGO OFFICE—604 Advertising Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
PHILADELPHIA OFFICE—261-263 South Third St.M. J. LAWRENCE.....President
M. L. LAWRENCE.....Vice-President
E. H. HOUGHTON.....Sec.-Treas.I. R. WATERBURY.....Associate
Burt Wermuth.....Editors
FRANK A. WILKEN.....
ALTA LAWSON LITTELL.....

E. H. HOUGHTON.....Business Manager

TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues.....1.00
Three years, 156 issues.....\$1.25
Five years, 260 issues.....2.00

All sent postpaid.

Canadian subscriptions 50c a year extra for postage.

RATES OF ADVERTISING:

40 cents per line agate type measurement, or \$5.60 per
inch (14 agate lines per inch) per insertion. No adv't in
serted for less than \$1.20 each insertion. No objection
able advertisements inserted at any price.Mem Standard Farm Papers Association and Audit
Bureau of Circulation.Entered as second class matter at the Detroit, Michigan,
postoffice.

DETROIT, JULY 8, 1916

CURRENT COMMENT.

In another column of this issue appears a description of a new settlers organization in an adjacent state, and some of the beneficial activities which are undertaken through this medium. This description points a lesson to Michigan Farmer readers which farmers living in the older agricultural sections of the state, as well as those who are helping to develop new country, may profitably peruse. In fact, it is in the older agricultural sections that the new settler is most likely to miss the warm welcome and friendly interest which is accorded him in an official way by the representative of the organization mentioned in this article. Quite frequently when a newcomer purchases or rents a farm in a community with which he is not familiar the neighbors are slow to call or otherwise manifest a welcome. If the matter is mentioned incidentally by any member of a nearby family or by a kindly disposed neighbor, the excuse is often heard that "they don't attend our church or belong to our Grange or our Farmers' Club." If there are young people in the newcomer's family the problem of getting a social standing in the new neighborhood is more easily solved, yet in many cases the newcomers in a farming community may live there for several years before they become well acquainted with the older citizens of the community and sometimes of the neighborhood.

In the newer sections pioneer customs more generally obtain and a more hospitable welcome is quite generally extended to the new settler, yet organized activity along this line is a new idea, and one well worthy of the emulation of every community where agriculture is in process of development and new settlers are constantly coming in.

In the older sections of the state a committee of the existing organizations, whether of church or Grange or Farmers' Club might well be appointed to perform the too often neglected office of extending to the newcomers a hearty welcome and, if need be, a helping hand.

Our leading article of this week gives authentic statistics regarding the profit derived from the thorough spraying of potatoes as a preventive of blight at various experiment stations and in co-operative trials on the farms of different localities. The conclusion is drawn that thorough spraying of the potato crop is in reality crop insurance which it is poor judgment on the part of a commercial potato grower to neglect.

The weight of experience and the

evidence of average results such as is presented in this article should overbalance the occasional instances of failure to increase the profit in potato growing through spraying which may have come under the observation of any farmer. It is undoubtedly true that spraying results have not always been profitable. Quite often this has been due to a lack of thoroughness in doing the work, or inefficiency in the equipment used, although this has not always been the case. In some sections of eastern Michigan where conditions were peculiarly favorable for blight development, uniformly profitable results from spraying were not secured last year. In other sections of the state where unsprayed potatoes were badly damaged, spraying was exceedingly profitable crop insurance.

Tile drainage is looked upon as crop insurance by every farmer who has improved an impervious soil by this method, yet instances have been noted in recent issues of the Michigan Farmer in which even thorough tile drainage has not served to save crops in this exceptionally wet year. This, however, does not prove that tile drainage is not successful or profitable. Neither do occasional failures prove that potato spraying is unprofitable or that any other operation which tends to make crop failures less probable does not pay in the long run.

The unprofitable results with the crop last year, coupled with the present labor shortage, is certain to have its influence on the acreage of potatoes grown this year, and with unfavorable weather conditions prevailing, it will be the part of wisdom for those equipped for the work to insure the success of this important cash crop by spraying as a preventive of blight, even under the unusual conditions now obtaining which make this operation much more than ordinarily expensive.

A New Opportunity for American Breeders.

The disturbed trade conditions brought about by the great European war will afford an opportunity to American live stock breeders which, if improved, will undoubtedly be of permanent benefit to the pure-bred industry of this country. Since the introduction of pure-bred live stock on American farms, there has been a general desire on the part of breeders and exhibitors to have imported animals at the head of their herds and for foundation stock. The annual pilgrimage to European countries for breeding stock has continued unabated until the outbreak of the war, when it abruptly ceased because of the unavailability of certain breeds and the difficulty of securing transportation for such as could be purchased.

This has, however, been no serious handicap as, due to the enterprise of American breeders, plenty of just as good animals in all of the improved breeds which are numerous in this country have been produced on this side of the water as could be secured abroad, and these have been available to the smaller breeders at prices which were probably considerably lower than they would have been obliged to have paid for imported animals of similar quality. At the same time this market has afforded a profitable outlet for animals of this class for the breeders who were so fortunate as to be able to supply them.

The achievements of the patrons of some of the improved breeds of dairy cattle, particularly the Holstein breeders, have demonstrated their ability to develop a large number of animals of high quality as determined by the standard of production. The sale recently held at Detroit, a report of which appeared in The Farmer, is sufficient proof of this fact. Likewise the patrons of the light harness horse have demonstrated their ability to found an improved breed of horses, an increasing proportion of which are possessed of phenomenal speed. The numerous breeds of hogs which have been estab-

lished or improved by American breeders to an exceedingly high point of uniform excellence is another example of the ability of American breeders and feeders to not only compete with their contemporaries in the older countries, but to excel in their line anything which has been produced on the other side of the water. Many other examples might be cited to prove the ability of American breeders when conditions are such as to make that work more than ordinarily profitable to them.

There has recently been little outside demand for American bred live stock. From present indications, however, this situation is likely to change in the near future. The management of the International Live Stock Exposition recently announced that two of the leading live stock breeders of the Argentine Republic had been secured to aid in the placing of awards at that show this year. In evidence of a desire to establish friendly relations between live stock breeders of the two countries, the management of the great breeding show of the Argentine, which is held in August, have asked that a quartet of American judges be sent there to judge the beef breeds of cattle, Lincoln sheep and draft horses. When it is recalled that the exhibit of Shorthorn cattle alone at this show frequently exceeds 1,000 entries, the magnitude and importance of the event is clearly manifested.

This interchange of courtesies is practically certain to lead to a considerable trade in the line of exportation of pure-bred live stock from the United States to South America. Once a market of this kind is established in South America the demand should be far greater than was the demand which created a profitable market for our sheep breeders in Australia and South Africa. It is to be deplored that many of the breeders of beef cattle, particularly Shorthorns, became discouraged at the outlook with the falling off in demand from the range country. Too many of our sheep breeders also missed an opportunity for a golden harvest in reducing their flocks or going out of the business as a result of a temporary depression in the industry.

These seasons of prosperity and depression are recurrent in every department of pure-bred live stock breeding, but in the end the breeder who keeps right on improving his flocks and herds and has animals of superior excellence at hand when the pendulum swings back, as it ever does, is the one who makes the greatest profit from the live stock industry. With an increased home market for pure-bred live stock of quality and a great foreign market about to be opened up, the future of the breeding industry in this country would appear to be exceptionally bright.

"Means" to an End.

Recent information is to the effect that Michigan milk producers are very generally subscribing to a guaranty fund to be placed at the disposal of the officers of the Michigan Milk Producers' Association to be used in their campaign of organization and subsequent operation in case the necessity should arise.

The need of the thorough organization of the milk producers of the state to the end that their product may be marketed in a manner to insure a more compensatory price is further illustrated and proven by the result of an investigation concerning the cost of producing milk recently made in one of the prominent dairy districts of the state and embracing 25 representative herds of dairy cattle.

This investigation showed the average cost of milk produced in March from 487 cows in 24 herds to be \$1.83 per cwt., while the average price received for same was \$1.52 per cwt. In April the cost of milk produced from 523 cows in 25 herds was \$1.85, while the average price received for the product was \$1.44. A like investigation

would doubtless show similar conditions in practically every other dairy section of the state, since authentic figures resulting from other investigations have all pointed in the same direction.

Why not take the initiative, Mr. Reader, in your own neighborhood and help this work along by taking the necessary steps for the organization of a local milk producers' association, if no such organization now exists in your community? General co-operation of milk producers is necessary for the relief of this unfortunate situation.

HAPPENINGS OF THE WEEK.

National.

Mexican Affairs.—General Carranza has complied with one demand of the American government in freeing the prisoners taken last week at Carrizal and the latest information would lead to the belief that he will meet the others in at least a conciliatory manner, thus avoiding, temporarily at least, war between the two governments. Generals Villa and Zapata and their followings are said to be surrendering to the defacto government according to war department reports.—The American forces are withdrawing to the northward.—Recruiting in the United States goes on and many of the states have already sent commands to the front.

To comply with the demands of the U. S. War Department, it will be necessary for Michigan to furnish as her quota for the national guard, six more troops of cavalry of 75 men each, another battalion of artillery and an additional corps of engineers. This entails the enlistment of 1,065 more soldiers than have already joined the colors since the call was made.

Both the United States Senate and House of Representatives have agreed upon the sundry civil appropriation bill carrying \$128,299,284. Provision is made for the construction of a new government powder plant or the enlargement of one of those now owned by the government.

Deputy State Labor Commissioner J. F. Hammell died at his home in Lansing last Thursday.

The Senate naval committee will ask Congress for \$500,000,000 for the construction of battleships during the coming three years. The army department is also asking \$15,000,000 for equipping the army with aeroplanes.

Nearly 1,000 refugees from Mexico, most of them Americans, arrived at Galveston, Texas, on June 29.

The judiciary committee of the house of representatives has decided that members of congress who enter the federal service with the national guard will automatically vacate their offices.

A tractor demonstration in which 11 tractors were entered was held at Wauseon, Ohio, recently. Ten acres of alfalfa land was completely plowed in three hours.

Ship owners on the Great Lakes are paying many fines this spring because of violations of the provisions of the new seaman's law. They are unable to secure the proper quota of men for lack of available help.

Colonel Roosevelt is behind a movement to re-organize the Rough Riders for service in Mexico.

Foreign.

The European War.—On the eastern front the Russians are following up their recent victories in both Bukovina and Galicia. In the latter province the railways leading to Limberg, the capitol, have been wrested from the retreating Austrians. To the north the Germans have begun a series of attacks along the entire front of Gen. Kuropatkin's army, presumably to relieve the pressure against the Austrians. The Italians are also pushing back the enemy and have taken many towns recently occupied by Austrian troops. Before Verdun the French continue their hold on the situation successfully repulsing all infantry attacks. The British on the Franco-Belgian front are violently bombarding a long stretch of the German lines and the casualties among the Teutons are reported as large.

Sir Roger Casement, an Irish knight, has been found guilty of high treason for his activities in the recent Irish revolt. The English court finding him guilty imposed the death sentence.

There is possibility of a U-boat controversy between the United States and Austria. Following the sinking of the Petrolite the state department at Washington sent a note to Austria in which demands were made for prompt compliance with its request for apology for "a deliberate insult to the flag of the United States." It is unofficially reported that Austria will deny the charge and urge Berlin to renew submarine warfare at once.

The Army-Worm

WILL the army-worm appear in Michigan this summer? We read in literature, and know from experience that, for the most part damage by this pest is more common following cold, backward springs, and many parts of Michigan have witnessed a late spring with its cool temperature and few real warm days. This is a condition which greatly aids this "worm." Ordinarily it is kept in check by the parasites which prey upon it but these insects need warm weather in which to multiply. The army-worm can thrive at a much lower temperature than its parasites, during this cold period, and gets a start before its enemies are able to check it.

A majority of them pass the winter as partially grown larvae, a favorite place being in low sod land. In June it becomes a moth which lays its eggs at the base of grasses, protected by the sheath of the leaf or by a little film of glue-like material. About the last week in June the newly-hatched caterpillars come forth and begin eating the lower leaves of grass or oats. They work at night hiding by day in stubble. When they become nearly full-grown they begin eating the ripening heads of oats and cause damage amounting to thousands of dollars.

Two years ago this pest put in its appearance and quantities of crops passed down their greedy throats before they were through. About the tenth of July they first appeared and lasted until the last week of that month. Many farmers witnessed a first-hand demonstration of what they could do.

The army-worm may not put in its appearance this year, but it is best to expect him and be prepared. "Preparedness" can be the watch-word as well as in national politics. Be prepared for this invading army by sending out scouts early to warn you of its coming. By this is meant to examine the lower leaves of oats and if they are slightly eaten to visit the place at night and catch the rascals at work. Usually we fail to see them until they have eaten the heads of the grain which is generally but a few days before they go into the ground to pupate. If these pests are caught while they are young it will save the farmer much damage to his crops.

Control Measures.

Control measures are as follows: If the army worm is noticed to be very bad in any one place, plow a furrow around them and then plow another furrow about six feet on the outside of the previous one. Post holes are often made in the bottom of the furrow and many of the worms crawling into the furrow fall into these holes and when full are covered with dirt. The use of a poison bran-mash has proven to be excellent against them. They are very fond of it if prepared in the following manner: Take 20 pounds of bran and mix with it one pound of Paris green, chop up skins and all, three oranges, and add to the above. Then mix half a gallon of cheap molasses in a gallon of water. Stir this into the poisoned bran, adding enough water to make a good mash. This will be enough to cover five acres if broad-casted. The best time to apply it is just before dark as it will be fresh for the worms and not dry out as quickly. Care should be taken to keep chickens away from the mash.

Mich. Ag. Col. D. B. WHELAN.

POTATO GROWING IN MICHIGAN.

Reports from Wexford county and other sections of northern Michigan indicate that the acreage will be fully up to the average this year. Frequent rains have interfered with planting on heavy soils but the planting on sandy lands has increased.

L. R. Olds, farm advisor in Muskegon county, has secured the co-operation of a number of growers in a movement to limit the varieties to Late Pe-

toskey, Green Mountain and Sir Walter Raleigh, growing these standard varieties in quantities for outside markets.

Growers of southern Wexford county have formed the Hobart Potato Growers' Association, with officers as follows: President, Thompson Nichols; vice-president, Ole Ipsum; secretary, James Loomis; treasurer, Frank Johnson. Seed is being treated and best cultural methods followed.

The Cloverland Potato Congress will be held November 1-3 at Escanaba. This is the third meeting of growers of the upper peninsula, the first congress being held in Menominee and the second in Marquette. A feature this year will be the exhibits made by boys' and girls' potato clubs. Marquette county alone has sixty members enrolled in these clubs and much interest is being shown.

Kent Co.

ALMOND GRIFFEN.

The Drain Law

AS a constant reader of the Michigan Farmer I have been particularly interested in the series of articles on drainage. There is a small body of men in Michigan who know more about the drainage of this state, and who are doing more for the farms of Michigan than the people appreciate and understand. I refer now to the county drain commissioners.

There is one point which has been mentioned in the articles and on which I would like to say a few words, "The Outlet." How many farmers of Michigan can give a definition of the outlet?

Here it is: (1) an outlet of sufficient capacity to care for all the water coming from the water shed flowing into the drain; (2) an outlet where there is no chance for any damages by such discharge of water. This question of outlet has caused more neighborhood trouble and lawsuits than any other one thing, in which farmers are interested. If it was not for the outlet the drain commissioner would be out of a job. And why so? Because there is hardly a farm but what the water flows from one farm onto another, and there the trouble begins.

In early days when land was cheap people did not care so much about the matter, but at the present time land is becoming too valuable to be covered by swamps and marshes and therefore the drain commissioners have a duty to perform which is of untold value to Michigan.

But to get back to the subject of outlet. One of the most frequent official questions asked me is: "Can I run a drain down to my line and stop?" I always say: "You had better see the fellows below you and ask them." Next thing I receive an application for a county drain and then it is up to the drain commissioner to get that outlet and sometimes we have to lay miles of drain before we can get it, which is generally some large stream. This brings me to a point the farmers of Michigan should know something about, viz: How far does this case of damages for increasing the flow of water extend? On the smaller drains we can generally tell where to stop, but on the larger streams and rivers the question of outlet is a complicated and serious one, in practically every drain contract. You may be surprised to know that there is no higher authority on these problems, technically or legally, than the drain commissioner.

Here is a comparison that will hold good in most agricultural counties: The county highway commissioner of Eaton county will spend \$30,000 for good roads for 1916. The drain commissioner will spend \$75,000 for drains in the county in the same period. The county road commissioners have a state highway department to tell them what they can and can not do. The drain commissioner has to use his own judgment. He may have an outlet in Grand river and consider it sufficient and spend \$1,000 on preliminary work on a drain and then have someone ten

miles below serve an injunction on him for damages. We then have a nice lawsuit on our hands.

In my opinion, the drainage system in Michigan has reached a point where it needs some radical changes and I recommend a state department patterned after the state highway department to handle all jobs costing in excess of a certain fixed amount, otherwise the system will have to stand still as the responsibility on the drain commissioner as an individual is altogether out of proportion with his remuneration as a public official. And then again, what about the outlet for the individual drains.

E. L. HUNTER,
Drain Com'r for Eaton County.

LILLIE FARMSTEAD NOTES.

There seems to be a change for the better in weather conditions. It only rained twice last week and neither rain was very heavy. They did not interfere so much with farm work. Last week was the first week in several that much could be accomplished on our farm. We got a 25-acre field fitted and planted to corn and the other field is dry enough to work and can soon be planted. This field is 10 acres, making us 35 acres of sweet corn for the canning factory.

Today, June 26, we began cutting alfalfa and orchard grass mixed. It ought to have been cut several days ago, but other work and the weather would not permit. One good thing, the Alaska peas are not yet quite ready to harvest. They were sown early but the cold weather has kept them back and the prospects are that they will not be ready until next week. This will be the latest we ever harvested Alaska peas. It seems to me that this would indicate that it is not too late for corn or beans. It is a late season and a late fall is very probable.

The old saying that there is no loss without some gain, is true of this season. Pastures are wonderful. Hay and clover are good and new seeding of clover is simply immense, never better, and I think the best ever. Wheat was put on its feet by cool, wet weather at first, but too much of a good thing injured it lately. However, it is a fair crop and with good weather for harvest it may net as much as it did last year. Oats are drowned in some places but otherwise they are simply fine. Only one field of sweet peas are nearly ruined, and what grieves me much is the fact that this field is the front field where everybody passing can see them. This is one of the best tilled fields on the farm, too. Well, we must grin and bear our humiliation. It is some satisfaction to know that they say this helps to develop character. It certainly lets one understand that he has little to do in controlling conditions. It takes the conceit out of one if he has any, humbles him, and makes him fit to inhabit the earth.

Again, if the weather has changed permanently for the better, and we have good weather for haying and harvesting, our clover and alfalfa will be enough better than last year to make up partially, if not entirely, for the loss on the pea crop.

Even if the season is late and the pea crop late, I shall sow the pea fields, that is, two of them, to buckwheat. It will probably mature. If not it will be pretty good to plow down, and buckwheat is a good plant to keep the soil mellow. It may be the middle of July, perhaps a little later, before we can get the field where late peas are growing, seeded to buckwheat, but I shall do it even then. We will stop when we have to, not before. The other field of peas is seeded to rape for hog pasture and we have a good catch which will make, to all appearances, a lot of feed for the hogs.

It never pays to give up and it never pays to worry. Keep plugging. It is the only thing that wins out in farming or in anything else for that matter.

COLON C. LILLIE.

Settlers' Agent

MARINETTE is one of the largest counties in Wisconsin. The greater portion of its lands are still unsettled. Like most Michigan counties it has much land which is as fine farming land as a deer ever browsed on, while Jack Pine Plains there present as discouraging a problem to the newcomer as they do anywhere in Michigan.

Great numbers of farmers from Illinois and Indiana have been buying land in Marinette county and moving there during the past eight years. Conditions are radically different in many ways, hence Illinois methods must be revised considerably to succeed. The tendency of every immigrant is to use the same methods, seeds, etc., with which he made money "back home." This alone has brought many a man to grief.

For several years the new settlers of Marinette county have been holding an annual "New Settlers' Picnic." Last year over 4,000 persons attended this "get together" picnic. So it is readily seen that there is a feeling of brotherhood and community helpfulness abroad. This has crystalized in the organization of The Marinette County Advancement Association and their latest move is to employ a practical farmer, who came from Illinois as a settler nearly four years ago, as Settlers' Agent.

Mr. S. E. Bennett, of Waukesha, was put on the job June 1 and is demonstrating the helpfulness of his position every day. His duties are not necessarily to promote scientific agriculture but to help the new settlers when they arrive with their carloads of goods and stock and get them located on their land, and get up some buildings to shelter themselves and stock. To aid in getting clearing and seeding under way in best manner and to aid in buying stock, feed, provisions, etc.

In these methods of helpfulness the new settler and his wife are made to realize that they are among friends who will aid them to succeed. Thus the new settler is at his best and the morale of the community is put at the top notch for efficiency. Any family wants to be good and make good when met by such a community spirit.

How different is the fate of the family dumped into a new community of strangers by a real estate dealer—no friends, no kindly calls and advice, no active assistance—only local grafters waiting at every turn to get their hard earned cash! Is it any wonder that such a large percentage of settlers fail to make good in their new home.

The settlers' agent in Marinette county expects to organize Farmers' Clubs, co-operative land clearing and plowing clubs and develop other helpful agencies as rapidly as possible.

Just imagine what a wonderful help it will be to a new settler to have the members of the Co-operative Land Clearing and Plowing Club come in on him thirty strong with their teams, stump pullers, plows, etc., and help him get his first ten acres into grain! Will he join such an association to aid other new settlers in the years to come? Will he and the good wife, in the privacy of their family devotions, call down the blessings of God upon such a community of real neighbors?

The idea and spirit of this movement are not new. In the days of our forefathers the spirit existed and was worked out in "log rollings," "house raisings," etc.

May more of our communities and farm organizations come back to the spirit of brotherly love and neighborly helpfulness as practiced by our grandparents and this progressive Wisconsin county! Michigan would settle up much faster and be a much finer state to live in if a large number of our county agents, Granges, etc., would get the vision from this movement and start such helpful agencies to work in their communities.

Mason Co.

I. B. McMurtry.

THOUGH the culture of orchards is often neglected, the benefit which may be derived from it in some form, such as clean cultivation, culture of cover crops, or gardening or small fruit growing between the rows, is recognized. This practice is receiving more and more attention each year for it is being more generally understood that under such conditions the system of culture has a decided influence, especially on the conservation of moisture during drought and on the ripening of the wood of trees in the fall so that they will withstand the winter cold.

In one western New York orchard, where apples, cherries, peaches, pears and plums are grown, an experiment was carried on to determine as definitely as possible the relation of clean cultivation and various systems of cropping, such as cover crops, vegetables, corn, oats, etc., and mulching to the moisture content of the soil and the growth of the trees, to winter killing, and to root injury. As this was carried on for a period covering several years, the ultimate result may be taken as conclusive for northern sections.

Clean Cultivation and Cover Crops.

The clean cultivation consisted of disking at least once in two weeks from March to October and harrowing as soon as possible after each rain to preserve the first mulch. Where ordinary cultivated crops were grown they received the usual cultivation, being kept free from weeds. The cover crops, oats, millet, and weeds, were allowed to remain on the ground during the winter and were worked into the soil the following spring.

The influence of the different methods of culture on the drought killing, winter-killing, and relation of moisture to tree development, clearly shows that the best all-around method of culture for young orchards is thorough cultivation in early summer, followed by a cover crop in the fall. A mulch of straw was found to keep the soil moist during the summer, as well as protecting tender roots in winter, but its use increased winter injury to tender tops of trees by prolonging fall growth. Besides, a mulch induces shallow root development, which may result disastrously in later years, and its use is out of the question in large orchards. Thorough cultivation not only protects trees against droughts as well as mulching, but keeps the roots from forming near the surface of the ground. When cultivation is given in early summer all that is necessary in order to furnish winter protection is to stop cultivating in midsummer, grow a cover crop which will dry up the ground in fall, causing the new wood growth to ripen early in preparation for winter, and which will, by holding the snow or by matting down to form a mulch, protect tender roots during winter.

Crops in the Orchard.

Good cultivation in early summer can often be given young trees by growing some cultivated crop in the orchard. Tender crops are best, since they can not be sown so early as to dry the ground seriously in spring, and are killed by fall frosts, thus preventing very late drying. Cropping with corn, for instance, insures fairly thorough early cultivation, and corn is a fair substitute for a cover crop in fall and winter.

The effect of cover crops on winter-killing was tested on 48 peach trees, set for the purpose in two blocks, one on moderately rich upland loam soil with northern exposure and the other on rich, well-drained bottom land protected on all sides by wind-breaks. Both blocks received clean cultivation until mid-summer, when each block was divided into three plants of eight trees each.

In one of each block oats was sown as a cover crop and in a second plot millet was similarly sown. The trees in the upland block stopped growing early in fall and their wood matured

Orchard Cultivation and Cover Crops

well before cold weather. No great difference was noticed between the trees that were cultivated and those in the cover-crop plots. In the block of trees on the bottom land striking differences were seen between the different plots. The trees in the cover-crop plots practically stopped growing by the middle of August, only one month after the cover crops were sown, and began to mature their wood. The trees in the plot given late cultivation continued growth much later. The cultivated trees had matured their wood and formed their terminal buds no more perfectly by the middle of October than the cover-crop trees had by the middle of August. By the first or middle of November, little difference could be seen between the trees of the cultivated plot and those in the cover crops, so far as maturity of the season's growth of wood was concerned. The wood of all trees seemed well ripened and ready for winter. The trees of the cultivated plot were considerably larger, as a whole, than those of the oats and millet plots.

Mulch as Protection.

The relation of soil moisture and soil cover to root killing of apple and cherry stocks was studied in a series of box experiments. The results showed that a straw mulch, or a cover crop that mats down like a straw mulch,

method of furnishing humus to the orchard soil, the kind of crop and time sown depending upon local and seasonal conditions. In dry seasons the cultivation should be continued later than usual in order to conserve the moisture. In dry seasons the cover crop should be sown early in order to check the vigorous growth of the trees usually made in such seasons. And on soils where trees will naturally make a good growth, the cover crops should be used earlier than in others.

Where the trees are making rapid growth it is advisable to use a legume as a cover crop, inasmuch as the nitrogenous fertilizer value of the legume causes the trees to make more growth. But in any case, the kind of crop will depend upon the general condition of the orchard. Where trees are making rapid growth, use a non-legume. Oats is no doubt most popular, rye being used extensively. But the disadvantage of rye is that it makes too quick a growth in spring, and therefore draws too much moisture, becoming too tall for easy plowing. But where the work will allow plowing at the proper time, rye will give good results.

Crimson, mammoth and common red clovers are popular legumes, while vetch is often used and becoming more popular. This is especially valuable in soils of a sandy nature which lack



Frequent Cultivation is Necessary to Produce Good Strawberry Plants.

tends to prevent freezing and alternate freezing and thawing, and thus reduces injury to the roots.

Any method of culture that leaves the ground perfectly bare in fall, thus favoring deep freezing and alternate freezing and thawing, should not be used. A cover crop is one of the best means of protecting the roots of trees. Likewise, any method of culture that leaves the ground moist in fall has an advantage over methods that leave the ground very dry. In this regard, clean cultivation might be expected to be superior to cover cropping. But as a matter of fact, during the three years that cover crop experiments were carried on, the soil under the cover crops that were killed early by frosts was as moist on the approach of cold weather as ground that was worked and given clean cultivation throughout the fall.

Too often we think of cover crops as a mere covering of the ground as protection during winter. But they are more than this, for cover crops give the most essential aid in fertilization, being the most important source of humus and an economical and valuable source of plant food, which old and young trees must have to gain best productivity.

Humus is Essential.

Humus is a most essential factor in orchard soil fertility. Soil without humus is dead soil, capable of producing scarcely anything. Humus makes possible life in the soil by producing conditions favorable to the development of soil bacteria. It is not a permanent factor in the soil but is likened unto food for the human body, something needed and which is constantly being consumed. It must be replaced annually, for humus not only furnishes plant food but aids in making available plant food already in the soil and is very important in the conservation of soil moisture.

Cover crops present the very best

humus content, for no legume will produce as much vegetable matter for plowing under or will gather as much nitrogen from the air as vetch.

Vetch and oats are becoming popular in combined cover cropping, for oats in conjunction with this legume give good results. Red clover and oats are satisfactory, the oats making a quick growth in the fall, which the legumes sometimes fail to do, and furnishing a good ground cover for the winter, as well as protecting the legume and keeping it from freezing out. In the spring the legume is in the right condition to make immediate growth, furnishing a splendid green manure.

Rye and vetch serve as a splendid combination to turn under, as a heavy stand of green matter is developed. As both make a quick growth in the spring, the orchardist should watch the crop closely and not allow it to grow too high for plowing under.

The Catch Crops.

In locations handy to a good market, catch crops as they are termed, comprise profitable crops for the orchard. Strawberries and vegetables, in proper quantities to form a marketable quantity, as needed by the local markets, are very paying, and the cultivation will insure moisture in the soil sufficient to insure good tree development. Many growers disk their orchards in spring instead of plowing, planting oats, buckwheat, spring vetch, Canadian field peas, the first two being the most common combination. Field peas and oats makes a good combination for catch crop purposes, but these crops are not advisable in orchard soils which lack proper humus content, as these do not furnish proper green manure for tree growth.

If the orchard, young or old, is to become a profitable portion of the farm, greater attention must be paid to the cultivation and care of the soil. Soil

is one of the contributing factors to orcharding which has not been fully appreciated in the past, but which is gaining in attention from those who would make farming most profitable. The little effort placed forth in these efforts is fully compensated for in better fruit, better trees, of longer life. The farmer who studies his orchard can determine best what the soil and trees most need, and will at once set about to supply this. **EARL W. GAGE.**

STRAWBERRY NOTES.

The work of setting our spring bed of strawberry plants, begun the middle of May, was finished the last days of the month. Above all things we like to get our berry plants out early, hence, all through the fore part of May prospects were pretty discouraging. We would no more than get the disk harrow going than it would up and rain, making it impossible to work the ground. The fact is that we finally concluded that it was necessary to risk considerable in working the ground when it is wet in order to get the plants out in any kind of season at all. The soil in some portions of the field was far too moist to work up well, but we took the chances, as there was no indication that there was to be any immediate change for the better. It was high time that the plants were in the ground, both for the good of the plants and that we might give our attention to tomato setting and other work.

Maintenance tillage was started as soon as the plants were in the ground and the condition of the soil permitted as is our custom. In both cultivating and hoeing the disadvantage of a poorly or indifferently prepared plant bed were in evidence. On that part that had been set first and the soil packed by rains, loosening of the surface was particularly irksome and arduous on those portions that were too wet to work up well when fitting. There, it was not possible to more than hack up the surface so as to prevent undue baking till subsequent cultivation creates a mellow surface soil.

Although conditions relative to the fitting of the ground and setting of the plants were so unfavorable, the outlook is good for a good stand of plants. So far as weather conditions are concerned the plants are getting a good start. No doubt late fall will show a bed of plants much like those we usually have.

Emmet Co.

M. N. EDGERTON.

TROUBLE DEPARTMENT.

Disposal of Surplus Small Fruit Plants.

I heard an argument this morning that it is unlawful to sell or give any strawberry or raspberry plants that have not been inspected.

Hillsdale Co.

H. K.

There is a state law which makes it necessary for anyone shipping nursery stock or small fruit plants to have the stock inspected by the state nursery inspector or one of his deputies.

The law also states that the agents of transportation companies are not allowed to accept any stock for shipment unless it has the certificate of the state nursery inspector on it.

However, the law makes provision for the interchange of small fruit plants between neighboring farmers by allowing them to give away or sell without inspection in their neighborhoods what surplus plants they may have on hand.

The Bureau of Plant Industry has been doing some extensive work in the way of spraying for the control of apple blotch and apple bitter-rot. The special feature of this work has been the discovery of the over-wintering of the bitter-rot fungus on various small and minor cankers and on cankers and injuries produced by other causes, and the demonstration that when these are removed full control of bitter-rot can be obtained.

Dairy Problems

How to Balance a Ration.

May a ration in which the hay is deficient in protein, as is the case with March hay, be proportioned and balanced by a grain of high protein value, as bran or oil cake meal? Is the record of a heifer in its first year's milking (two to three years old), a reliable indication of adult performance? In the case in view the first year's record was very good; the next year poor. Was it due to dentation? She did not eat nubbins very well. Feed otherwise the same. What is the cause of mucus in the separator discs and bowl? Parts are washed and boiled for some minutes.

Kent Co.

W. E. T.

Sure thing. That is the value of knowing how to compound a balanced ration. This is just the principle of the balanced ration. Feed most any kind of food but so compound them that the animal will get a sufficient amount of all the food nutrients—protein, carbohydrates and fat.

Very often if a heifer does exceedingly well the first year she does not do so well the next. This is so with all cows. They don't do their best all the time. Good ones always "come back," if they have not been injured.

Mucus, or slime, is nearly always found in a cream separator after skimming. It is simply in the milk and the separator takes it out. I can not tell you the cause. Possibly some cows have a mild case of garget. Possibly some are affected with rosy bacteria. But always remember milk is secreted from the blood, by a gland, like saliva and gastric juice, it may not always be normal. Perhaps one cow has a headache and her glands do not yield a normal product. I don't know.

Pasturing Sweet Clover.

Is it a safe proposition to pasture sweet clover? Would you cut it for hay before the blossoms show?

Montcalm Co.

D. D.

There is some little danger from bloat or hoven in pasturing any clover where it is of rank growth, and especially if it is wet with dew or rain. It should not get too great a growth before the cattle are turned in in spring nor is it advisable to turn on before it gets a fair start. If caution is used at the start, getting the cattle used to the clover gradually, there is not very much danger. Feed them a full feed in the stable in the morning at first, and wait until the clover has dried off. By degrees introduce them to this pasture and the danger is reduced to almost nothing.

When the field is fairly well blossomed out is about the right time to cut for hay. This is when the majority of the plants contain the largest amount of digestible nutrients and when you will secure the greatest amount of food per acre.

Rotation of Crops for the Dairy Farm.

Would you give me an ideal crop rotation for an 80-acre dairy farm carrying 20 cows? Good clay loam soil.

Wisconsin.

C. G. P.

On a dairy farm it is essential to grow some cereal crop to provide bedding. The cows must be kept clean and the liquid manure must be absorbed as well as the cows properly fed.

In arranging a rotation of crops for a dairy farm one must decide at the start whether he wishes to grow any a part or the whole of the grain to be fed to the cows. The grain ration can usually be purchased as cheaply as it can be grown on the farm, and then a cash crop can be grown with which it purchase the grain ration which is practically the same thing.

A good four-year rotation is clover, followed by corn and the corn ground sown the following spring to peas and oats, then this land prepared and sown to wheat to be seeded to clover. The peas and oats can be threshed for the grain ration or a part of it, or part of them made into silage or hay if needed. Then the wheat can be sold to purchase grain.

A good three-year rotation is clover, corn and wheat. The basic feeds for a dairy cow should be clover hay and

corn silage, then the proper amount of grain should be added. In this rotation the wheat can be sold and grain purchased, and the straw used for bedding. I think this a splendid rotation, almost ideal for a dairy farm. The land need be plowed only once during the rotation for the cow stubble after the corn is placed in the silo can be prepared for wheat without plowing. The manure should be spread on the clover sod and plowed down for corn. If the clover is cut early enough (when the heads are well formed) a crop of clover seed can usually be obtained which is always profitable. With this rotation if a little phosphorous is used on the wheat, say 200 pounds of acid phosphate per acre, the land will get better year by year. Enough corn should be kept to consume all the roughage produced, and if there is insufficient grain, buy more. If the clover seed is not desired, two crops of clover hay, and some years even three, can be produced if the clover is cut early.

COLON C. LILLIE.

DAIRY PRODUCTS TO BE ADVERTISED.

A fund of \$50,000 has been subscribed by men prominent in the dairy industry for the preliminary work of the big national advertising campaign to increase the production and consumption of milk, butter, buttermilk, cheese and ice cream.

Advertisements are in preparation and will shortly appear in the Saturday Evening Post, and other national magazines, in such newspapers as the New York Times, Chicago Tribune, Philadelphia North American, St. Louis Globe-Democrat, Boston Post, Cleveland Plain Dealer, Detroit Free Press, and others.

It is proposed to raise a total fund of at least \$750,000 to cover a complete campaign of three years and to expend in advertising, general publicity and organization work approximately \$20,000 a month for 36 months.

The godfathers of this extensive, powerful and beneficial project are enthusiastic in their belief that this step means the full realization of the object of the National Dairy Council, now counting 280,000 members, "to advance the cause of dairying in America by promoting the dairy cow and all interests dependent upon her, through co-operative and united effort.

All now depends upon the support given the execution of this plan by the individual members of the industry. And the broad-gauged underwriters to the preliminary fund are confident that their enterprise and liberality in financing the opening campaign will electrify producer, manufacturer, distributor and consumer alike and that the big fund of \$750,000 will be promptly subscribed.

It is believed that the wonderful results obtained through co-operation in the orange and raisin industries, in the lumber and cement industries and others will be equaled and surpassed, that the American cow and all dependent upon her, will at last come into her own, and that the dairy industry will quickly be placed in the very front rank of modernized, closely organized and highly efficient institutions.

The cow, the milk-producer, the butter-maker, the cheese-maker, the ice-cream manufacturer, the distributor will now have a sponsor armed to the teeth to combat inimical interests, stop misrepresentation, spread information and education, and heighten the standard, the prestige and profit of the industry at large.

And the great American people and public will be benefited in its health and its pocketbook.

Over and beyond all that, the success of the campaign must solve the nation's troubling agricultural problem—the fertility of its soil, and ward off the impending danger of its loss of standing among the nations of the world as the standard bearer of agriculture.

Battles are won not by wishbone, but by backbone—with men, money and machinery, and the dairy industry is to be congratulated upon the acquisition of a fighting machine to thwart its foes and secure its rightful place in the sun.

Better Cut Silage

Helps To Increase Stock Profits

THESE animals were fed on silage cut by Silver's "Ohio." Note their records. "Ohio" cut silage makes better feed than ordinary silage. Better because it's cut more uniform—picks air-tight in the silo—free from air pockets—mold-proof—ferments properly—gives the animal all of the good food value of the corn or silage material.

Silver's "Ohio"

The Logical Silo Filler

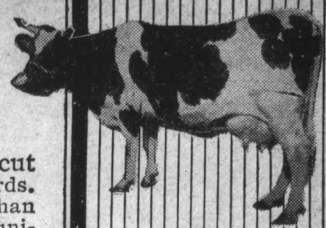
The secret of cutting Silverized silage is all in the construction of the "Ohio"—the pioneer silo filler. The strength of the machine, the giant grip feed rollers, and double-bearing, non-springing knife cylinder all combine to give you a fine, evenly-cut silage no matter how hard you crowd the machine. You can set the knives at half inch cut and you get half inch. With heavy bearings at both ends, they cannot spring away from the cutter bar. Silage is all mold-proof—no shreds nor leaves can work through.

But there are many other big features in the "OHIO." The beater feed, friction reverse, direct drive, single lever control, non-explosive blower, etc. Write and let us tell you about them—and why more "Ohios" are used by Experiment Stations and Colleges than all other fillers. Backed by 62 years' manufacturing experience.

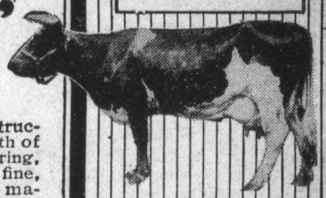
Two Books—FREE

One is our catalog. The other is our booklet on "Silverized Silage." Write for them today.

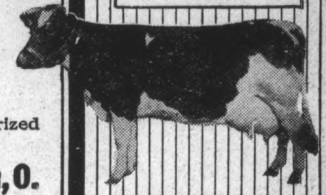
The Silver Mfg. Co., 390 Broadway, Salem, O.



High Lawn H. Dekol
25592.5 lbs. milk;
1247.92 lbs. butter
in 365 days



Banostine Belle Dekol
27404.4 lbs. milk;
1322.92 lbs. butter
in 365 days

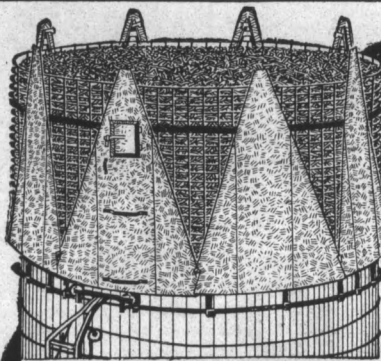
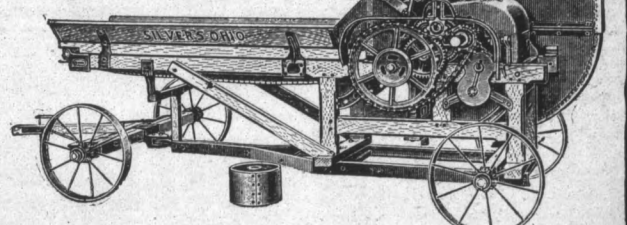


Maplecrest Pontiac Flora Hartog
25106.3 lbs. milk;
1232.64 lbs. butter
in 365 days

Animals illustrated here are owned by the Maplecrest Stock Farm Co., Kalamazoo, Mich. They have had an "Ohio" Cutter for about 12 years.

Silver's "Ohio" is made in seven sizes—fit any farmer's needs. 40 to 300 tons a day. Four horsepower up to big tractor power.

Special Light Draft Model—adapted for home silo filling. For four to eight horsepower gas engine. Write for three-color folder on these.



A Modern Silo Roof For You

WINNER OPENING SILO ROOF

For the farmer who wants big silo profits. Makes your silo bigger, increases capacity. Makes silo filling safe and easy. Permanent and efficient.

6 FT. MORE SILAGE

Fits any silo. Adjusts if silo is out of round. Enables you to put in six or eight feet more silage and have a full silo when ready to feed.

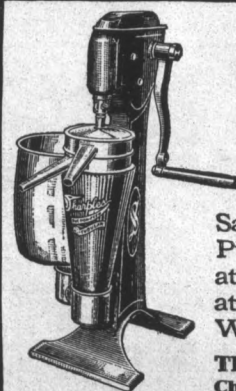
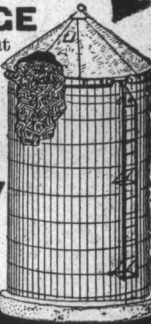
INVESTIGATE NOW!

Winner Opening Silo Roof costs practically the same—worth three times as much as ordinary roofs. Order through any silo manufacturer, dealer or agent or direct from us. We are also manufacturers of the famous Earl Safety Ladders for silos. Write us today for full information about this modern silo equipment.

SILO SPECIALTY MANUFACTURING CO.

610 Second St.
CLINTON IOWA.

A Full
Silo At
Feeding Time



SHARPLES

SUCTION-FEED CREAM SEPARATOR

Saves cream now lost by all other separators (see Purdue Bulletin No. 116) because it skims clean at widely varying speeds. Delivers even cream at all speeds. Simple Tubular bowl—no discs. Write for book "Velvet" for Dairymen.

The Sharples Separator Co. - West Chester, Pa.
Chicago San Francisco Portland Toronto S5

WRITE FOR BROWN FENCE BARGAIN BOOK AND SAMPLE

Over 25,000,000 rods Brown Fence already sold to 400,000 farmers. Factory Prices, Freight Prepaid. 160 styles, 13c per rod up. Gates and Steel Posts, too! Write postal.

THE BROWN FENCE & WIRE CO.
Dept. 49 Cleveland, Ohio

WANTED—AN IDEA. Who can think of simple things to patent? Protect your ideas, they may bring you wealth. Write for "Needed Inventions" and "How to get your Patent and Your Money." RANDOLPH & CO., PATENT ATTORNEYS, DEPT. 67, WASHINGTON, D. C.

LIME Pulverized lime rock for "sour" soils. Write for LOW PRICES DIRECT TO YOU and we will send sample and full particulars. Write to office nearest you.

LAKE SHORE LIME COMPANY,
Muskegon, Mich., and Benton Harbor, Mich.

AGRICULTURAL LIME Northern Hydrated Limestone, also pulverized burned lime, all made from high calcium limestone. Guaranteed to be the best on the market. Your inquiries solicited. Samples furnished on request. Northern Lime Co., Petoskey, Mich.

FERTILIZER

Muncey Cartage Co., shippers of horse manure and tobacco stems, 450 Grand River Avenue, Detroit Mich. Tel. Grand 821 and 4267.

When writing advertisers mention Michigan Farmer



The Proper Lubricating Oil for Your Tractor

is highly important. You have no single piece of farm equipment which costs more, or which performs such an important service. To use an inferior lubricating oil on these machines is poor management. Get an oil that is manufactured by reliable, experienced refiners, and made expressly for the lubrication of tractor engines.

Stanolind Gas Engine Tractor Oil

is the oil to use in tractors where kerosene is used as fuel. It is made to withstand high temperature conditions. It adds power and life to your engine. It eliminates the trouble of scored cylinders. It reduces friction to a minimum. Where friction is minimized, repairs and exasperating delays are minimized. It is highly efficient for lubricating the bearings of all harvester machinery, and for heavy gearings of tractors.

Standard Oil Company

72 W. Adams Street (Indiana) Chicago, U. S. A.

50

APPLETON Silo Filler

Actual records prove that Appleton Silo Fillers cost the least

per ton of silage put up or per year of life. Tremendously strong construction makes an Appleton practically proof against breakdown. Solid oak and steel frame, mortised, braced and bolted; impossible to pull out of line. Many exclusive power and labor saving features, such as independent belt driven blower allowing speed to be adjusted for minimum use of power for any height silo; frictionless feed table running on chilled iron rollers; knives spiraled to give clean shearing cut, requiring least use of power. (10 lengths of cut, 5-16 to 2 1/2 inches.) Both feed rolls and table controlled by single lever. Positive self-working safety device.

Two Books Free: One on silo building and silage crops; the other a complete catalog of Appleton Silo Fillers in four sizes for 4 h. p. gasoline engines and up. Write Appleton Mfg. Co., 420 Fargo Street, Batavia, Ill.

Guaranteed to do more and better work with less power than any other silo filler.



THE TORNADO SILO FILLER

If you want your Silo filled with silage, which will produce good, rich milk and plenty of it also silage which will produce fat rapidly, fill it or have it filled with a TORNADO, on account of the fact that the TORNADO reduces it to a very fine condition.

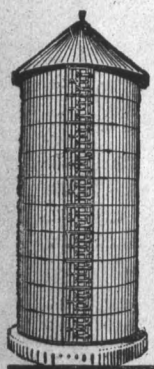
By having it cut fine, you get much more in the Silo, it will settle closer, eliminating mould pockets, thus resulting in a much better and sweeter feed.

Another reason why you should have it cut fine is that the cattle eat every particle, thus eliminating any waste. By cutting it fine, the cattle eat that part which contains the largest percentage of food qualities, which is the stalk.

The TORNADO will be the means of bringing about these results.

WRITE FOR CATALOG

W. R. HARRISON & COMPANY, Manufacturers, MASSILLON, OHIO



The Hinge-Door Silo

The most convenient and best equipped silo made. Doors always in place—swing open and shut easily. The hinges form a perfect ladder. Best material throughout. Makes perfect silage and that is what you want. We also make the Lansing silo with loose doors. The Chicken silo for the small farmer. The TORNADO will be the means of bringing about these results.

General Office: Dept. 15 Lincoln, Neb. Factories: Lansing, Mich.; E. St. Louis, Ill.

Easy Baling

Leverage does the work, quick, smooth running, low up-keep cost.

Free New catalog and economy records. Write for copy today.

Admiral Hay Press Co. Box 36, Kansas City, Mo.

Admiral Motor Press



A Wonderful FEED



THAT'S GUARANTEED

—to produce more milk than any other ration either home mixed or purchased and do it without giving your cows constipation or udder trouble. Ready to use right out of the sack without any mixing.

Larro-feed

Absolutely free from adulterants and fillers, just like the feed you would mix for yourself, is a special combination of choice cottonseed meal, dried beet pulp, gluten feed, corn distillers' grains, wheat bran, wheat middlings and a little salt, that's all; each ingredient weighed by automatic scales and all thoroughly mixed in huge power driven mixers, so that it is always absolutely uniform, and always good. An extra quart or two of milk daily from each cow may turn a loss into a profit. Try LARRO-FEED for more profits. Sold on "money back if not satisfied" plan, the decision being entirely up to you. LARRO dealers almost everywhere; write if none near you. THE LARROE MILLING CO. 1055 Gillette Bldg., Detroit, Mich.

Castrating Pigs

In the usual operation of castrating pigs on the farm there is an annual loss that could be materially decreased if the operation were done with a little more care and if a little more thought were given to the fact that it is a surgical operation of some importance in the life of such young animals.

Pigs are castrated when they are very young but it is preferable not to castrate them at the same time that they are weaned as this is a trying time for the pig anyway and he is liable to lose flesh under the best conditions, a bad thing to have happen in the case of growing animals. The pigs may be castrated either a few weeks before weaning or one should wait a considerable time after weaning, or until they have regained their equilibrium again. The best time is probably when they are from a month to six weeks old.

When a large number of pigs are to be castrated at one time it is best to confine the whole bunch in a pen which has lots of clean bright straw in it and the pigs removed to another pen for the operation and then returned to this pen afterwards. Feed should be withheld from the bunch for twelve hours before operating. This tends to relieve the distention of the abdomen and the operation is more easily accomplished.

The best instrument to use is a medium sized scalpel that is used only for castration and other surgical work on the farm. The most common means of infection of the wound under the ordinary way of castrating is the pocket knife. This knife is usually only sterilized by wiping on the pant leg or at best an old dirty cloth, and it is up to the pig to withstand the infectious material introduced or to die, the farmer has done his part.

One of the most important things to consider in such an operation is the sterilization and disinfection of the instruments used and the animal operated on. The instruments are best sterilized under farm conditions by keeping them throughout the operations in a five per cent solution of carbolic acid or of some coal tar dip or disinfectant. The scrotum of the animal should also be washed with the same solution just before operating. After operating the scrotum may be washed with a two per cent solution or it may be dusted with boric acid. Such precautions will do much to prevent losses due to infection of the wound before it has had time to heal over.

The most common complication of castration is infection of the wound by pus-producing bacteria. These may produce only a local infection or they more likely will invade the blood stream after a short time of growing in the wound. When they get into the blood stream blood poisoning sets in and the animal dies in a short time. The best remedy for this is to disinfect while operating and to keep the animals in a stall that has plenty of clean bright straw until the wound has had a chance to heal.

Indiana. W. E. WIECKING.

THE BREEDING QUALITIES OF SHEEP.

There is such a great variation in the number of progeny which sheep will rear that it would seem as though more attention should be paid to the breeding qualities of both ewes and rams. Many flocks produce only 50 per cent or less in lambs, while others average nearly 200 per cent. Do you wonder that we are led to believe that too much attention is being paid to show points many times, and not enough to the lamb crop. Many times it is this important crop that tips the balance between success and failure in the sheep industry—why not give it more attention.

We hear and read of many good records along this line, but we find very few which are authoritative which will compare favorably with that made by Cole & Hartman, of Three Rivers,

Mich. At least, we have not heard of anything in St. Joseph county which will beat it. These gentlemen have a flock of 44 ewes and have had a crop of 79 lambs. Of these one ewe gave birth to four, five had triplets, 22 had twins, and 16 in the flock gave birth to single lambs. This flock is made up of Grade Shropshires and consequently the gentlemen mentioned above have no pedigreed stock for sale.

St. Joseph Co. J. M. WENDT, County Agent.

EVOLUTION IN BEEF PRODUCTION.

(Continued from last week.)

Making Breeds Become Contagious.

The interest aroused in consequence of the wave of success attained by the Colling Brothers spread rapidly and others in several parts not only in Durham, York and Northumberland counties in England began to take a hand in making breeds, and the results were bringing forward the Shorthorn, Hereford, Galloway, Polled Angus, Devon, West Highland and other breeds that have not attracted sufficient attention to become universally known and recognized as worthy of adoption.

Through all the years of the nineteenth century the advocates of the different breeds have striven to bring their favorites into popular favor. For many years the Shorthorns were the most universally popular breed of cattle in all parts of the world where improved methods of agriculture have been adopted. They met the needs of general farmers who wanted a kind of cattle that would meet the family needs of milk and butter and at the same time produce an excellent quality of beef that would sell for the highest prices in the market. While the cows of the Shorthorn breed yielded a liberal supply of milk, the steers of the breed would convert the roughage feeds on the farm into good beef, thus meeting the needs of the farmers under the conditions which prevailed as long as general farming was followed in the sparsely settled portions of the country.

After the close of the war of the Rebellion, there was a general revival in all branches of agricultural pursuits, and on account of allowing the plains of the great west to be pastured by any and all who desired to engage in the "nomadic profession," there were great demands for cattle of all kinds with which to stock the ranches. It was during these and subsequent years that the battles between the breeds were fought to decide which was to be declared the best rustlers under unfavorable conditions, and which could bring to the owners the largest sums of money in limited periods of time. It was a struggle for the "survival of the fittest," or, in other words, it was a trial of breeds, and the results would in later years, make known to the farmers in the future the place for which each and every beef breed is best adapted. The word picture describing the moving and rapidly changing panorama may be interesting. I will undertake it in a subsequent article.

N. A. CLAPP.

(To be continued.)

THE HORSE COLLAR.

The horse collar should fit snugly. It should not pinch at the crest of the neck and there should be room enough between the collar and lower part of the neck to admit the hand freely when not pulling. The contact surface of the collar should be smooth and plastic and distributed over as much bearing surface as possible. The incrustations that form on a collar should be removed daily to prevent increased friction. Sweat pads or false collars should not be used except in cases where the animal has been galled or has a collar boil and in this case a window should be cut in the pad so as to prevent the bearing surface of the collar coming in contact with the injured part.—North Dak. Ex. Sta.

"Fair-List" Factors



YOU can pay 10% to 50% MORE than Goodrich Fair-List prices, for *other* Fabric Tires of no better quality,—without averaging 1% MORE actual Mileage out of them!

You can *accidentally* Puncture,—or *accidentally* Ruin,—the *highest-priced* Fabric Tire that ever was frilled into Extravagance,—in the **FIRST WEEK** you use it!

And,—you would have no more *recourse* (with such Extravagant Tires), than you have on these Fair-Listed Goodrich "Barefoot" Tires, which cost you *one-third to one-tenth* LESS, for self-same Service, plus *more* Resilience,—*more* Cling, Spring, and true Pneumatic quality.

Now,—consider *that* Message,—for Thrift.
Then note following prices:—

Goodrich "Fair-List" Prices

BLACK "BAREFOOT" SAFETY-TREADS

30 x 3	} - Ford Sizes -	\$10.40
30 x 3½		\$13.40
32 x 3½	- - - - -	\$15.45
33 x 4	- - - - -	\$22.00
34 x 4	- - - - -	\$22.40
36 x 4½	- - - - -	\$31.60
37 x 5	- - - - -	\$37.35
38 x 5½	- - - - -	\$50.60

GOODRICH

THE B. F. GOODRICH CO.,
Akron, Ohio

No Tires average "LARGER,"—
—taken Type for Type,—and
Size for Size,—than
Goodrich Fair-List Tires

"Black-Tread"

Tires

Finance and Investment

The Distinction Between Bonds and Stock.

IT is a peculiar fact well known in financial circles that the average person who has only a superficial knowledge of the vehicles of investment is more interested in and better informed concerning stocks, and looks upon bonds as a subject more suitable for the consideration of the banker or wealthy man. The reason for this situation is due to the fact that the newspapers read by the average person pay more attention to the stock market and conditions affecting it than to the more intricate conditions which have a vital and direct bearing upon the bond market. Likewise a great many situations leading up to the flotation of a big loan are kept secret from the great mass of readers and in many instances the only information that is given out to the public is that the bankers have announced an overscription to the bonds and the books are closed. Again the stock market has furnished a means for the employment of small sums of money which is closed to bonds, although of late the investment banking houses are taking pains to furnish bonds in denomination as small as \$100 in an effort to educate the small investor in the desirability of bond investment.

Of course, there is the speculator who has made his money in his regular business who is not content with the income derived from conservative bonds and is more interested in the chances for profit furnished by the stock market. The immense sums of money made in such speculations which have been successful has been the source of envy on the part of many and the desire to become a partner in future transactions of this character has forced many persons to familiarize themselves with the essential details concerning stocks and the machinery of the broker's office, to the utter neglect of bonds and the very important considerations concerning them.

The easiest way to understand the distinction between the two is to appreciate that the stockholder is a partner in a business and shares in the prosperity of that business as well as in its adversity, whereas the bondholder is a creditor and has a preferred claim in the corporation's earnings during operation and on assets in the event of liquidation. Of course, there are a great many degrees of importance to the position of the stockholder and bondholder brought out by the character of his holdings. For instance the preferred stock has been created and surrounded with safeguards which make it a very desirable investment in many instances, and superior to many bonds. Likewise there are many bonds "a long way from the ground," to use the slang of the street in speaking of certain railroad issues or debentures. But this article will not permit of much space devoted to an explanation of the different classes of bonds. This subject will be dignified in future issues of the Michigan Farmer. Just reduce the distinction to the simplest possible illustration. Suppose a man and his wife own a farm worth \$5,000. In order to further improve the property with more buildings or to tile it or to purchase machinery, a mortgage is put on the property to secure a loan from a neighbor of \$2,500. The mortgage, instead of being in one note for \$2,500 could be put in ten notes of \$250 each and be held by ten different people. Each note would occupy the same position as many first mortgage bonds. In the event of the farmer and his wife becoming unable to pay the interest on these notes, or the principal when due, the note holder could then foreclose and take or sell the farm, returning to the owner what was left, if anything, after their claims were satisfied.

The farmer and his wife who own the property either make a profit from
(Continued on page 35).



Will You Lose Your Boy, Too?

This is a true picture of what is happening on thousands of farms each year. Breaking home ties. Young men, and young women too—leaving home for the attractions and conveniences of city life.

Young people in country homes have plenty to keep them busy and contented during the day. Evening is their time of leisure and recreation.

It is then that the depressing gloom of their poorly lighted homes strengthens their desire for the pleasures and comforts of good light which all city homes enjoy, rich and poor alike. For young folks crave companionship—good times—pleasant homes—cheerful surroundings.

Thirty years ago, it is true, only city homes enjoyed the advantages of gas lights and gas cooking but for the past fifteen years progressive home owners in the country have also enjoyed this greatest of city conveniences—good light—until today

Pilot-Carbide-Outdoor Lighting and Cooking Plants

are supplying brilliant, inexpensive light to houses, barns, outbuildings and cooking fuel for the kitchen range on hundreds of thousands of up-to-date country places from the Atlantic to the Pacific.

These homes—situated just like your own—are lighted as well as the finest city house you ever saw.

The young folks in these homes are contented and happy. Their homes are cheerful, full of light and comfort, real homes of which young folks, and older ones too, can well be proud. City life has no attraction for them, because they know that with modern conveniences in the home, life in the country is better, happier and more enjoyable than the best the city has to offer.

What about your children? Are you doing your part to give them the advantages they desire and which their friends and neighbors enjoy? Or are you denying

them the simple comforts and conveniences which you can well afford?

They may be just approaching the time when they will decide for themselves—whether they too will leave for the city or stay at home.

They may never have said anything about these things to you—but what are they thinking? What will they decide?

Their decision is largely in your hands. An attractive home is the strongest magnet in the world. The greatest factor in making the home cheerful, bright and attractive is good light.

Find out about the PILOT today,—Just address

A. R. GRAHAM, Supervisor
810 Mason St., FLINT, MICH.

OXWELD ACETYLENE COMPANY, CHICAGO
Largest Makers of Private Lighting and Cooking Plants in the World.

Eureka Potato Digger

Gets the Potatoes and separates where no other digger can

A strong statement, but an actual experience many times, saving growers more than the cost of the Digger. Ask us for the proof.

The Eureka elevator and duplex shaker provide more separation than other diggers. Large wheels and main gears supply ample power. Mostly malleable and steel, avoiding frequent breakage and lost time. Growers report digging 80 or more acres without repairs. High clearance over shovel prevents weeds and vines bunching. Has vine-turner attachment.

6-ft. and 7-ft. sizes; several styles.
Prompt shipments from distributing points.

EUREKA MOWER CO., Box 1022, Utica, N.Y.



Write for catalog

When Writing to advertisers please state that you saw their ad. in The Michigan Farmer.

Rider AGENTS Wanted

in each town to ride and show a new 1916 model "RANGER" bicycle. Write for our special offer on a sample to introduce. DELIVERED FREE on approval and 30 days' trial. Send for big free catalog and particulars of most marvelous offer ever made on a bicycle. You will be astonished at our low prices and remarkable terms. 34 STYLES, sizes and colors in Ranger bicycles. Most complete line in America. Other guaranteed models \$11.95, \$14.75 and \$17.60. A few good second-hand bicycles taken in trade \$3 to \$8 to clear. Tires, lamps, wheels, sundries, parts, and all bicycle supplies at half usual prices. Do not buy until you get our catalog and offers. Write Now. MEAD CYCLE CO., DEPT. F-71, CHICAGO

CIDER Making Pays

With Mt. Gilead Hydraulic Cider Presses Thousands are making Big Money with our presses—why not you? Sizes 10 to 400 bbls. daily; hand or power. Cider evaporators, apple-butter cookers, vinegar generators, filters, etc. Fully guaranteed. All power presses have steel beams and sills. Catalog Free. **HYDRAULIC PRESS MFG. CO.** 131 Lincoln Ave. Mount Gilead, O.



Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

THE F. Barclay Newkins were what are known as "sports" in the woods of New Brunswick. Though they had been in the Right Branch country six times, after moose and caribou, never had they been of it. Their camp, with its up-to-date cooking range and its porcelain-lined bath, was the wonder of half a county.

Now the F. Barclay Newkins were on their way out to civilization, having steadied their jaded nerves with a month in the wilderness, and having killed moose, deer, and caribou to the limit allowed by law. The time of year was about the end of October. Early that morning, they had parted with

Falling In at Simpsey's

By THEODORE GOODRIDGE ROBERTS

their cook and their handyman. Of their two guides, one had started down the Moose-Leg at dawn, with a canoe-load of their kit, and Joe Coombes was still with them.

The shortest way out from their camp to the railway at Deever's Mills was by way of the Moose-Leg. But the Moose-Leg can only be run at a season of high water. In a dry time it will not float anything larger than a half-pound trout. Now the stream was fill-

ed to overflowing with the autumnal drainage of millions of acres of forests and the leakage of the big lakes to the north. It clashed and boiled and snored down its shallow, rock-studded channel.

It was noon; and for five hours Joe had "snubbed" the canoe down that clattering path. Yard by yard, in the sweat of his brow, he had eased her down from menace to menace.

"Snubbing" a loaded canoe down

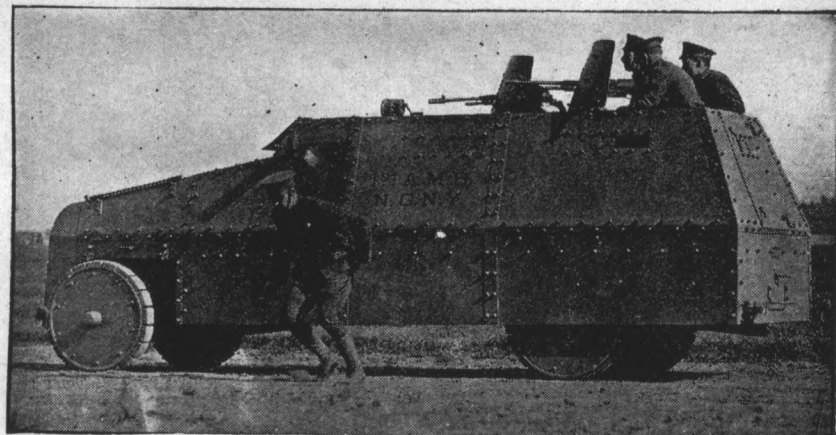
swift water requires nerve, skill, and strength; but the Newkins did not find it a difficult mode of progression. Mrs. Newkin sat on an air-cushion, facing the guide and the stern of the canoe. She was draped in a fur cloak and two blankets. She was mildly interested in watching the flashings and bendings of the long pole of spruce in Joe's crafty hands.

Mr. Newkin sat with his back against his wife's, facing the bow of the canoe. He, too, had an air-cushion under him, and fur and blankets over him. He smoked an excellent cigar. From beneath the lowered brim of his soft hat he watched the bow of the slender

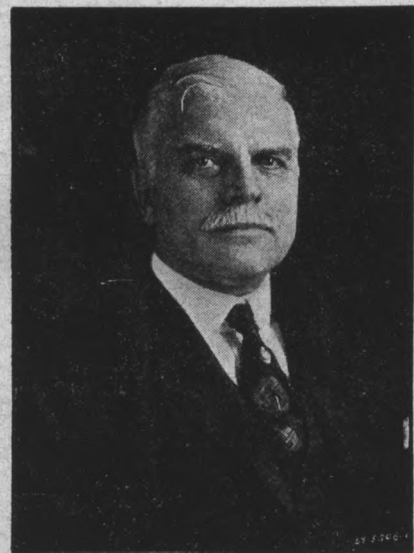
WORLD EVENTS IN PICTURES



U. S. Motor Truck Transports Enroute for American Camp in Mexico.



Armored Motor Battery Equipped with Machine Guns for use in Mexico.



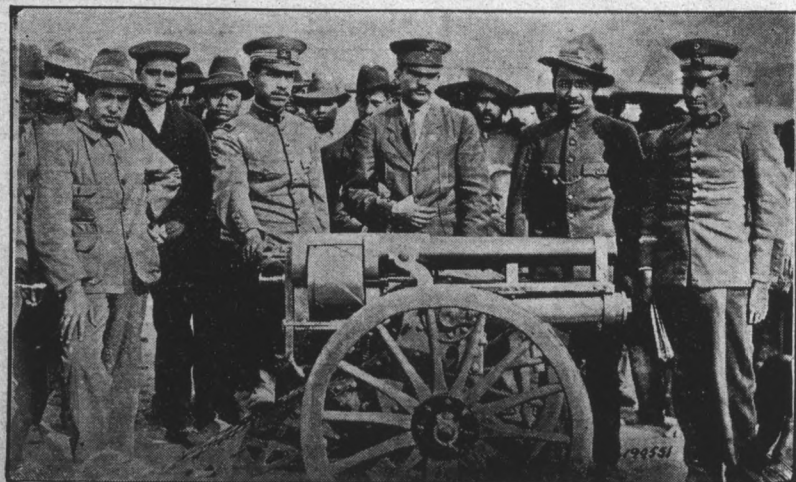
Locomotive Engineers' Executive Refuses to Arbitrate with Employers.



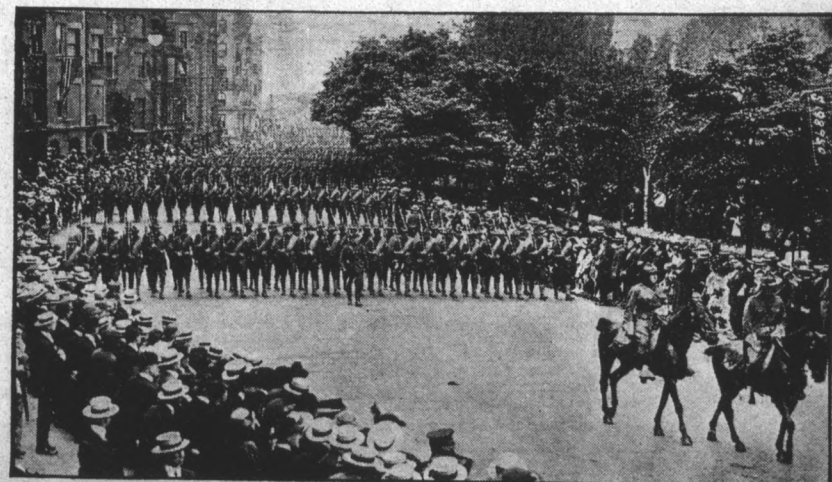
One-piece Gown (see Description on Page 32).



Grandson of Republican Candidate for Philadelphia Lawyer who Defends Sir Roger Casement.



Revolver Cannon Invention of Mexican Colonel may be used Against U. S.



Sixty-ninth Regiment New York National Guards Goes to Mexican Border.

Copyright by Underwood, & Underwood N. Y.

craft dart down as if to split itself upon some foam-tangled fang of rock, hang so for a few seconds, swing slowly and inquiringly to the right or left, then nose its way into some narrow channel and slip through to face and outwit the next lurking danger.

It was noon. Fifteen miles of the Moose-Leg had been safely negotiated. Then, quicker than you can read of it, the overtaxed pole broke fair in the middle—Joe lost his balance and plunged into the stream—the canoe righted itself and sprang forward, struck a snag with its bow, swung around and caught its stern in the roots of a cedar, broke its back, and rid itself of its load.

Joe came right end up with a snort, grabbed Mrs. Newkin by her swirling skirts and one trim ankle, and dragged her unceremoniously ashore. Then he reached for Mr. Newkin, and landed him by the collar.

The sportsman held a small wooden box in his arms. Two such boxes had been aboard the canoe, one containing a useful assortment of medicines, liniments, and plasters, and the other a diminished but still desirable store of cigars and cigarettes. As Mr. Newkin lay dripping among the cedar roots, he hoped that he had salvaged the latter of these two boxes; but he hadn't.

The air-cushions danced merrily away down the racing stream, followed by a small leather bag, the water-tight depository of choice tobacco, and a large, open box in which much excellent food, all ready to be eaten, had been stowed by the cook that very morning.

"Now that's too bad," said Joe, in a somewhat strained and artificial tone of voice—for he had remembered his company in time. "Bother that old pole, anyhow!"

"It is unfortunate, certainly," said Mrs. Newkin.

Mr. Newkin did not say anything just then. He was busy hooking fragments of a water-soaked cigar out of his mouth with the index finger of his right hand.

The guide glanced to the right, and immediately his dripping face brightened.

"Guess we've gone and fell in at Simpson's—at Bill Simpson's," he said. "Well, I call that luck! There ain't another clearin' on Moose-Leg, an' here we've gone an' bust the old canoe slap in front of Bill's door!"

A short scramble through black mud, black water, snakelike alders, and criss-piled cedars brought them to higher ground, a fringe of spruces, and a clearing. In the middle of the clearing stood a log house and a log barn. Blue smoke curled up into the gray air from the rusty stovepipe which protruded from the roof of the shack.

"Tish Ann's got the fryin'-pan het up, ye kin bet on that!" said Joe.

At that moment, as if in answer to the remark, the door opened, and a woman stood in full view of the castaways. A tousled head appeared on either side of her, one in line with her waist, the other not much above her knee.

"Bless my soul! Two children!" exclaimed Mr. Newkin.

"Four, sir," corrected Joe. "I guess t'other two is clawin' at the back of her skirts this very minute, tryin' to git their heads out somehow."

The F. Barclay Newkins halted like one man.

"I think we had better—ah—pass right on," said the sportsman.

"It would prove to be the wisest course, I am sure," said the lady.

Joe gaped at them in pained astonishment and pity.

"Pass right on?" he stammered. "But where'd ye pass on to? There ain't another house of any kind whatsum-ever inside fifteen mile of this here—an' the canoe gone, an' the woods full of water up to a moose's bell."

"True," returned Mr. Newkin. "We must make the best of it, Caroline, until Joe procures another canoe."

The three continued their advance upon Bill Simpson's farmstead. The

woman had left the cabin, and was now walking swiftly toward them, trailed by a boy of seven, a girl of five, and a yet smaller Simpson of uncertain sex. The fourth and last of the brood remained in the open doorway, fist in mouth, staring out upon the big world of the clearing like a young bird from its nest.

"For the land's sake!" exclaimed Mrs. Simpson, the moment she detected the dripping condition of her visitors. "Why, ye must hev fell in. So it's you, Joe Coombes? Well, I never did!"

"These here are Mr. an' Missus Newkin, the sports ye've heard about," shouted Joe, in reply. "My pole busted an' we got upstot into the drink, Tish Ann—an' the whole outfit gone on

"These here Simpseys are the trustiest fambly ye ever saw, sir," remarked the guide. "That's how Bill got the scar on his face. When he was a little feller, he was that trustin' in his nater he leaned up agin a colt's hind legs. Yep, that's the truth. Trust-in'! Well, I guess!"

"Is there a canoe here?" asked Mrs. Newkin.

"No, ma'am. Bill's took it away up north of the lakes with him," replied Joe.

"Where is the nearest? How long will it take you to get one?" she asked.

"Maybe there's a canoe on Paddle Lake, ma'am, an' agin maybe there ain't one this side Dave Paxton's camp on Middle Brook," replied Joe. "It'll sure take me a good few days, ma'am,

variety of dry, clean garments. She spread them about on the backs of chairs.

"Here's all ye need, Mrs. Newkin, to rig ye up snug an' warm from the skin out," she said. "An' here's all-wool linders an' sich of Bill's for Mr. Newkin, an' his Sunday suit that he ain't wore since Uncle John's buryin' down to the mills last June. As for ye, Joe, here's all-wool, dry an' clean, but nothin' fancy. Now, Joe, ye kin jist climb that ladder an' change yerself in the loft—an' mind ye don't come down agin' til these folks is ready. You two, ma'am, do the same right here by the stove. I'll take the young ones into the bedroom. Holler if ye want anything, an' give me a yell when ye're all changed."

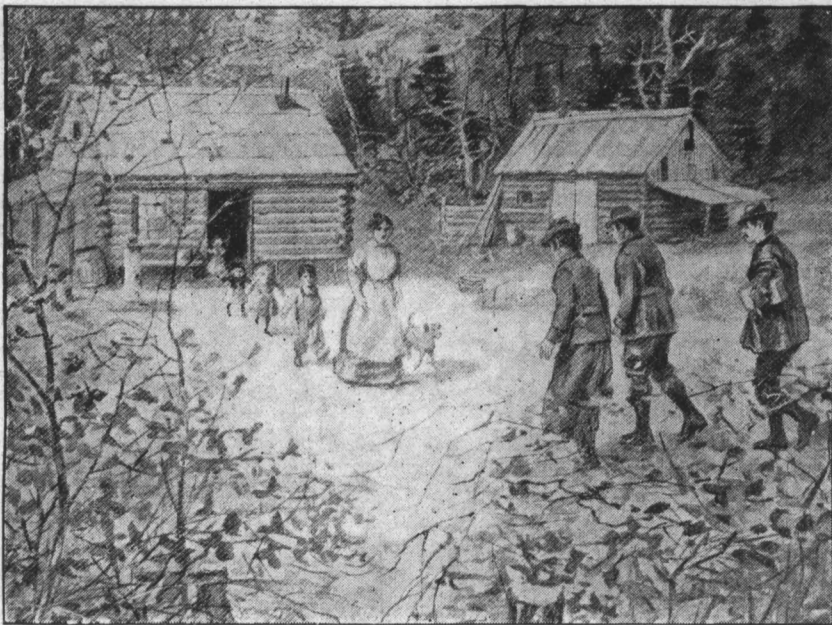
Twenty minutes later, Mrs. Newkin knocked on the bedroom door. Mrs. Simpson and the children entered immediately, and Joe descended from the loft.

The sportsman was seated uneasily in a rocking-chair. On his feet were purple woolen socks and low shoes, laced with rusty strings. Bill had worn these shoes at his wedding and at many a barn-dance. The black coat had been made by a dressmaker down at the mills. The trousers, which were also black, gripped the upper legs like tights and flared out at the ankles. Inside, out of sight, but not out of mind, the undergarments of all-wool did their worst. Never before in all his long life had F. Barclay Newkin felt his sartorial equipment as now.

Mrs. Newkin was more fortunate in her change—and more comfortable. The skirt of the home-made woolen dress stood out stiffly from her trim waist, giving her a quaint girlish, last-century appearance.

The dinner was of fried salt pork, boiled potatoes, and, in honor of the guests, a pot of coffee. Of course, all ate together at the kitchen-table. It was the first time the Newkins had ever eaten at the same board with one of their guides. Joe and Tish Ann used their knives as some people, including the Newkins, use forks.

(Concluded next week.)



"For the Land's Sake! Why, Ye Must Hev Fell In!"

down-stream ahead with Peter Sacobie!"

"Sakes alive! Ye don't tell me!" exclaimed Mrs. Simpson.

By this time the groups were face to face. Mrs. Simpson put out a hard, red hand and grasped Mrs. Newkin's dripping glove.

"Happy to meet ye, ma'am," she said. "Massy me, but ye surely do look like a drowned hen! And yer man, too—leastways, yer gent, as I should say. I've grown that rough in my talk ye wouldn't hardly believe it, livin' up here so far away from the settlements."

"Thank you, you are very kind," murmured Mrs. Newkin.

They pressed forward at a good pace, for already the wind was striking cold upon their water-soaked clothing. Mrs. Newkin shivered. Mr. Newkin sneezed. Mrs. Simpson grabbed each by an arm and increased their speed.

"Goodness gracious, but ye'll be lucky if ye don't both die with new-mony," she cried. "I've heerd tell how tender you city folks are—worse nor young turkeys, Bill says."

"I assure you"—began the sportsman, with cool dignity; but at that moment she pushed him into the kitchen, almost on top of the baby with the mouthful of fist.

"Stand up to the stove, the three of ye," commanded Tish Ann, "whilst I hunt out some dry clothes. Bill's away cruisin' timber for Sandy Fraser, an' won't be home afore the middle of nex' month, so ye'll hev to excuse him; but I guess I kin fix ye all up as well as Bill could, anyhow."

She entered the bedroom adjoining the kitchen, followed by the eldest of the four children. The Newkins and Joe crowded close to the stove, and steamed like wet socks.

Mr. Newkin was about to address his wife when he felt a tug at the left leg of his knickerbockers. Glancing down, he beheld the youngest of the four children moored to him trustingly, with a grubby hand just above his knee. He stared, shifted his feet uneasily, and forgot what he had intended to say. Both Joe and the lady noticed the cause of his uneasiness.

even if I hev the luck to find a canoe on the lake, for 'twill mean wading all the way."

"There seems to be nothing else to do, however," said Mr. Newkin. "You must start early in the morning."

Just then Mrs. Simpson returned to the kitchen with both arms full of a

Henry Bolieu—Pathfinder of Shiawassee

By MARY L. DANN

WHEN we say, "I am from Michigan," let it be with shoulders erect, chin high and in ringing tones of pride. We are just coming into our own and beginning to realize what a wonderful state is ours. Let us see to it that every child of ours knows something of its early history.

The story of those dawning days of Michigan is bristling with bravery, mellow with romance and melting with pathos. Prominent among our pioneers stands forth the personality of Henry Bolieu. The historian relates that he was the first white man to set foot on the fertile soil of Shiawassee county. A round hundred years ago, in 1816, he builded for himself and family a log house on the old Indian clearing of "Ketch-e-won-daug-o-ning," which in the Indian language signified "Big-Salt-Lick," thus called because of the numerous salt springs in the vicinity. However, the fanciful Frenchman gave to the region the high-sounding title of "Grand Saline." The particular location of Grand Saline is in the corner of what is now known as Burns and Vernon townships. Later this territory became a part of the reservation of three thousand acres granted to the Shiawassee Indians by the Saginaw Treaty of 1819.

Henry Bolieu had heard marvelous stories of the great brine springs to be found in a wonderful country, far up a great brawling river, in the territory of Michigan, and he was determined to find them. However, in making the trip, he became confused as to which stream he should take. Behind him followed several canoes filled with friendly Indians. "What wassee (run-

ning water or river) will best float She-mok-e-mon's canoe to the wassee of the Ketch-e-won-daug-o-ning?" he shouted. Back from the canoes of the dusky natives came the answer: "Shia (straight-ahead) wassee," the straight-ahead river, and Shiawassee it has remained to this day.

The Bolieu cabin was of logs, with an immense French chimney made of boulders taken from the river, and long after the cabin itself had crumbled in leisurely and dignified decay, the chimney still stood, a rugged memorial to the sturdy Frenchman. For twenty years this cabin was a landmark famous throughout central Michigan and northern Ohio. Its hospitable doors were always open, and, moreover, it indicated the exact point where the traveler could cross the turbulent Shiawassee in safety. Lucius E. Gould, in his historical paper, relates that if a stranger was about to leave Detroit or Toledo to penetrate the territory of Shiawassee, and inquired for directions, he would generally receive any answer about like the following:

"You must go through the woods to the north or northwest until you come to the seventh river. You will know it because the Shiawassee makes more noise than all the rivers in that whole country. Before you get within six miles of it you will hear the boom and roar of its rapids. When you reach the Shiawassee, you must search along its bank until you come to a large clearing, in which, at a short distance from the river, stands one of the cabins of 'Hank' Bolieu. You will know the cabin, for it has not only an outside oven but also a stone chimney. If you

are going on to the Looking Glass, you will find the cabin an excellent place to stay all night. Never mind if the owner is not there. Pull the latch-string and go right in. Build a fire on the great hearthstone and make yourself at home. If you are short of provisions and have not time to hunt, the rapids just above the crossing are full of fish. You can catch them with your hands. When you are ready to make the ford, be sure to go down the river on a line due west from the cabin door. On the other side you will notice a deep, narrow gully, which leads up from the water to the top of the hill. Don't make for the gully but for the tall maple with a blaze. Keep your eye on the blaze and you will get across."

Henry Bolieu and his family made frequent visits to the Chippewa Indians, at their village called by them "Che-as-sin-ing," or "Big Rock," and which we today know as Chesaning. The Bolieus were great favorites with the Indians and enjoyed their excursions over to the village, because there was located one of the old Indian orchards, for which Shiawassee county was famous among the Indian traders and trappers. Mr. Bolieu, through the generosity of the Indians, soon had a fine orchard of his own growing, they furnishing him the small apple trees to start it. These trees were of the variety known as the "Squaw Apple," whose skin was a delicate yellow, but the flesh a rosy pink. The apple known to us as the Surprise is a direct descendant of the squaw apple, and though we have given it a more fitting name, it probably tastes no better to us than it did to the dusky lad who laid down his bow and arrow, seized a golden apple and set his white teeth into the rosy, bleeding fruit.

The Christian religion had preceded Henry Bolieu to the wilds of Shiawassee. He found that the Indians maintained a Christian organization, the indirect result of the early efforts of Father Marquette, whose work did surely follow him. The historian states that these meetings were held in a large wigwam, in the center of which was a hole in the roof, under which burned a great fire. Over the fire hung an immense kettle of corn and beans, known to us as succotash. This boiled and sent out its savory odor during the entire service. Whether it was afterward served to the worshipers, the historian does not state. The fiery Indian preacher gesticulated wildly, raised and lowered his voice in the weird, uncanny manner common to the Indian, and held constantly aloft a small cross, after the custom of the Catholics, but he conducted his services according to the form of the Methodist Church.

Those early settlers had an ingenious substitute for our calendars and almanacs. It consisted in simply cutting a notch on the door for every day and a longer one for Sunday. The Adversary of human souls did not hesitate to set his cloven foot upon it, for it is related that one of the early preachers suffered great disgrace and humiliation when he was found working on a log heap in his clearing on Sunday, and he came dangerously near being deposed before it was learned that some wretch had wickedly cut an extra notch on the tally, throwing the reverend gentleman helplessly out of time and nearly out of his heavenly heritage.

Four years after Henry Bolieu settled at Shiawassee, Whitmore Knaggs arrived and established a trading post on the opposite side of the river, and the region was ever after known as "Knaggs Place." This trading post was also a store and tavern, and its fame spread to all the teamsters of the Grand River Road. One of the early settlers declared he would never forget the first breakfast he ate at Knaggs Place. It consisted of but two dishes—boiled raccoon and stewed pumpkin—which he avers was delicious. This trading post became a social center and Angelique, the daughter of Henry Bolieu, was the belle of that region.

Her education was completed at Detroit, where she acquired polish and poise, and upon her return as a finished product, she was very acceptable to the society of that pioneer region. Angelique had a remarkably clear, sweet voice, which she inherited from her Indian mother and she taught the young people of that region to sing the songs of the day, as well as the gay songs of the French. She was possessed of the true altruistic spirit, and made an effort to impart some of her culture to the French and Indian girls near her home, and the region became famous for its gleeful merrymakings.

Henry Bolieu was not only the Pathfinder but the Peter Pindar of Shiawassee, and used to tell many amusing stories, among which was that of the Indian, who inquired of a white man why it was that the white man's dog ran faster than that of the Indian. Upon being informed that it was because the tail of the white man's dog was shorter, the Indian exclaimed, "Me cut um off!" The Indian took the axe

and two white men held the dog. As the Indian was about to strike, one of the assistants gave a push and the other a pull, bringing the body of the unfortunate canine under the axe, which cut him in two in the middle. With a grunt of disgust, the Indian remarked, "Indian cut um too short."

History is silent as to who were the parents of Henry Bolieu, when and where he was born or the date when the curtains parted and he passed to the other side. The wigwam of the Indian has gone and there are fields and groves on the banks of the Shiawassee where stood his hospitable home, and where Marie Coutant, his Indian wife sang the little Angilique to sleep. Even Gitchee-gan-e, the muse of the turbulent Shiawassee, refuses to whisper the secret to our listening ears, but let us hope that Old Charon as cheerfully and skillfully guided Henry Bolieu across the dark waters of the Styx as he guided the pioneers across the brawling Shiawassee in the golden dawn of Michigan history.

Protecting our Native Birds

By ELLA E. ROCKWOOD

I WISH we might see a more extensive interest manifest for the protection and encouragement of our bird neighbors. Of course, nearly everybody is friendly to these little songsters which gladden forest and field as soon as the cold north wind has given way to the balmy breezes from the sunny southland, but a mere passive friendship and protection is not enough. Year by year their number is growing smaller and unless some united, systematic movement is established to encourage their increase natural causes, such as follow in the wake of an increased population, clearing away of forests and draining of low lands which remove their haunts and make rearing their young more perilous the time is not far distant when the birds, like the bison, will become well nigh extinct.

Laws have been enacted which call for the summary punishment of anyone found guilty of destroying nests or killing either young or older birds save in the case of such as are actually harmful. And in the light of an awakened understanding certain kinds, such as hawks and owls, are now recognized as belonging in the list of those which are beneficial in spite of the fact that they are guilty of repeated depredations in and about the poultry yard. But these laws are in many communities practically a dead letter, owing to local sentiment, or to a dislike to complain of a neighbor, thereby engendering hard feelings which may prove worse than the loss of a few robins.

Many of our foreign born population are even more lacking in appreciation for birds than some of our own nationality, and sometimes are ready with gun or snare to kill a bird as small as a red breast for the morsel of meat it affords. Irate at the loss of a few cherries even, an otherwise very good citizen has been known to take vengeance with a shot gun. This is rarely done nowadays, however, and for two reasons. Farmers are becoming more thoughtful and realize that the good done in other ways overbalances the loss of the cherries. Then, too, it means a fine if complained of to the proper authorities.

As one of the most striking examples of negligence in protecting wild birds which has led to almost the point of extinction we have but to mention the fate of the quail, one of the most beneficial of all birds to the farm. Other causes have been contributory. Depredations of the smaller animals which prey upon birds and their eggs have a share as also has the long cold winters which, when conditions are of a certain kind cause starvation.

Fortunate, indeed, is that locality which still has its flocks of quail now

protected by law. Protection in the shape of food suited to their need should not be withheld. Those gentle little creatures will soon learn to know their friends and come around the barns during winter, sometimes sharing the grain fed to the domestic animals on fowls. Many a man in parts of the state now without them would gladly give a good price in cold cash if a flock of bob whites could be induced to nest about his farm.

For some of those which nest nearer the home, the orchard offers suitable places. Others seek the low growing shrubs and bushes of the garden. The cunning little chipping bird, or chipping sparrow, always had a nest in the currant bushes when I was a child. And when it comes to providing for a family this same little bird holds the record so far as my observation goes. He will make more trips back and forth carrying insects to his nest in an hour than any other bird I ever saw.

Wrens will take possession of a bird house, even a very crude one, but the opening should be very small, else his enemy the English sparrow, will make trouble. In fact, this same English sparrow constitutes in his tiny person, a most serious menace to any bird neighbors and it is almost useless to expect them to nest where he abounds. Sparrows and cats are responsible for a good deal. Particularly when fledglings of the robin or other birds which build near the house are just beginning to fly, cats should be watched, and if necessary kept shut up for a few days until the most critical time is past. A dish kept filled with fresh water during the summer months will call a great many birds about the door. If you have not been one of the growing number who thus provide for their comfort, begin it this year. If set near the well it will not be hard to keep it freshly filled and the appreciation of the kindness will be promptly manifest. Robins will probably patronize this bath and drinking fountain, more than any others, but I have seen catbirds take advantage of it, also blue-jays, who, to be sure, have not much but a fine dress to their credit, and once a mourning dove. One can't well refuse a cup of cold water to even an English sparrow on a hot day and these birds will be first and last at the feast. There should be a good bird book in every farm home and it should be studied by young and old alike. We need birds. It is to our advantage to encourage them in every possible manner to nest about our homes. They destroy countless millions of weed seeds and harmful insects. Even the hawks and owls do their part by destroying gophers and field mice which sometimes do so much mischief.



SAVE 30%-40% GUARANTEED SOLD BY MAIL

Manufacturers of Standard-Make Tires give us choice of their over-production—the best in material, workmanship—and wear. We absolutely guarantee each tire for 3,000 miles.

Save 30% to 40% on each tire you buy.

HERE'S HOW:—

Send no money—simply state what size and style of tire you want. We'll send C. O. D. on approval. We know you'll be more than satisfied with our guaranteed tires—or we couldn't afford to make such offer. Now LOOK at these PRICES—TIRES and TUBES GUARANTEED.

	Plain	Non-Skid	Guaranteed Tubes
28 by 3	\$ 5.90	\$ 6.20	\$ 1.90
30 by 3	6.25	6.35	2.00
30 by 3 1-2	7.35	8.35	2.35
31 by 3 1-2	8.45	9.25	2.50
32 by 3 1-2	8.80	9.75	2.60
33 by 4	11.95	13.65	3.30
34 by 4	12.10	13.95	3.40
35 by 4	12.25	14.25	3.50
36 by 4	12.75	14.75	3.60
36 by 4 1-2	16.80	18.55	4.25
36 by 4 1-2	17.10	18.95	4.35
37 by 4 1-2	17.45	19.50	4.50
38 by 5	19.25	21.10	5.15
37 by 5	19.75	21.75	5.25

Start saving Tire Money Today—State whether Plain, Non-Skid, Clincher, Q. D. or S. S. and mail your order NOW.

Philadelphia Motor Tire Co.
240 No. Broad St., Philadelphia, Pa.

2% Discount for Cash With Order.
Reference:—Fairmount Saving Trust Co. and Southwark National Bank, Philadelphia.

PRICES LOWER NOW!



I have built this separator so good, after such an improved modern cream separator design, that one sells another and often a dozen or more in a single neighborhood. That's why the Galloway Cream Separator factories are working night and day right here in Waterloo. I sell you my new Galloway Sanitary Cream Separator on your choice of five open fair and square selling plans, and guarantee it for ten years against defective workmanship and material, backing up each sale with a \$25,000 bank bond.

GALLOWAY SANITARY CREAM SEPARATORS

Big, roomy, seamless, pressed steel supply tank, high crank shaft, short crank, oil splash lubrication, high carbon steel gear shafts, gear shaft bearings, very long, perfectly fitted, no spindly, wobbly legs, helical drive gears, large worm wheel, open sanitary base, sanitary drip pan, cream pail shelf hinged to be raised and lowered, strong, sanitary bowl, discs not fastened together, easily cleaned, perfectly sanitary, low speed crank, only 50 R. P. M.

THIS FREE BOOK Drop me a postal today for my big, 4-color book of separator facts FREE. Separators shipped from Waterloo, Iowa, Kansas City, Council Bluffs, St. Paul or Chicago.

WM. GALLOWAY CO.
Dept. 183 Waterloo, Iowa



Boston Garter

Velvet Grip

Fits smoothly—does not bind, slip or let go. Will not injure the hose. Light, easy and comfortable. Get the garter that gives the greatest satisfaction—ask for the "Boston."

Lisle 25 cents. Silk 50 cents.

GEORGE FROST COMPANY, MAKERS, BOSTON

Reliable Watches at Bargain Prices



Elgin or Hampden 7-jewel movements in 30-year gold-filled cases, 12 or 16 size. Regularly \$10 or \$12. My special prices open face \$8.25; Hunting case \$10. Money refunded if not satisfactory. Write today. Jewelry catalogue FREE.

J.W. DONLAN, 115 E. 1st St., Flint, Mich.
References:—Industrial Bank or National Bank of Flint.

When in Detroit Park Your Automobile With Davis, 140 First Street, (Telephone Cadillac 4118) and know they are safe. Right down town West of Post office between Lafayette and Michigan Aves.



Woman and Her Needs

At Home and Elsewhere



Teach the Weak to Be Strong

EVER since St. Paul wrote the words, "We, then, that are strong ought to serve the weak and not to please ourselves," thousands of well meaning, but mistaken, individuals have been busily engaged in filling the world with weaklings. In every family the self-reliant ones, with ingrowing consciences have been excusing the laziness and selfishness of less ambitious members and assuming not only their own burdens but the burdens of the rest with the fallacious idea that they were doing right. They have sacrificed their own happiness and pleasure and made parasites out of brothers and sisters, fathers and mothers, daughters and sons, thinking that thereby they were doing God service, when all the while common sense should have told them that no one is ever benefited by having someone else do what is palpably his work.

Just now I have in mind a mother who has lived and worked years enough to be now entitled to rest. Her life has been one long slavery to her children, especially the only daughter in the family of four. Dorothy was "never like other girls," she was always "a poor little thing," to fragile to do any housework, too refined to be subjected to sordid surroundings. Mother could get up at four and wash and scrub before setting out for a day's work in her shop to earn the money for Dorothy's luxuries, but Dorothy must not be awakened until she was ready. Dorothy was pampered and petted because she was not strong, with the inevitable result.

Today Dorothy is married, and you know what her home is like. She can't cook, she can't plan a meal, she can't sweep and she won't dust because the dust spoils her hands. Mother is getting too feeble to do the housework and then go to the store, so she has to help husband settle the bills that keep Dorothy in idleness. Dorothy might have been a strong, self-reliant woman, able to take her place in the world of workers, had not her mother taken the mistaken method of bearing the burdens of the weak, instead of helping the weak to get up and learn to carry their own share.

Cases of the same sort where the principles are reversed, daughter carrying the burdens and mother demanding everything, are equally numerous, as are parasitical husbands, who dump all unpleasantnesses on the wife and selfish wives who demand that the husband carry them about. And of the brothers and sisters who slip out of every duty, need I even speak.

Looking over the field it seems as though the weaklings were in the grand majority, and that only a few are struggling along bearing the burdens for the whole. Lately I have come to blame the burden bearers for conditions as much as the shirkers. It is so much easier to do the work than it is to make an equitable division of labor and insist on doing our share and no more, that we keep right on being the cart horse, even when we realize that we are really harming the other party.

No one is ever benefited by having his work done for him. The student who slips through examinations by means of "ponies" is the real loser, and the same thing holds true in the outside world. We grow strong by working, and the strong man or wom-

an who robs his weaker brother or sister of their chance to work on the theory that he is helping them is really doing a selfish act.

If you really want to help, help by leaving the other fellow to work out his own salvation. In your own experience you can see where hardships and struggles have made men and women of you. Give the other fellow the same opportunity. If you have started to make a weakling of someone, stop today. He'll probably be surprised and angry, but never mind. Give him his chance. If necessary tell him your new purpose. Ten years from now he will rise up and call you blessed.

DEBORAH.

CANDIED CHERRIES AND OTHER RECIPES.

Next to the first strawberry of the season, the first cherry pie holds favor in most households. Every housewife has her own recipe for a two-crust cherry pie, but have you ever tried the one-crust. These may be made in two ways, either of which is delicious.

A cherry cream pie is made by stewing one quart of stoned cherries with one and a half cups of sugar until the fruit is tender. Thicken with corn starch to the consistency of lemon pie and pour into a baked shell. Cover with a frosting made with the stiffly beaten whites of two eggs and three tablespoonfuls of granulated sugar and set in the oven until the frosting is slightly browned.

As a change, drain the cherries from the juice and fill the crust. Boil down the juice with more sugar until quite thick and pour over the fruit. Then cover with the frosting, or omit, as you choose.

Cherries preserved with loaf sugar are a novelty and easily prepared. For these Morello cherries are best. Stone

the fruit, allowing pound for pound of sugar and put in an earthenware vessel, covering with layers of fruit with half the sugar. Let stand until the sugar is well dissolved, then turn into the preserving kettle with the rest of the sugar and cook until the fruit is clear and the syrup thick, skimming frequently meanwhile.

To pickle cherries, wash and stone the fruit and weigh it. Then cover with cold vinegar and let stand for 24 hours. Drain off the vinegar and juice, add as many pounds of sugar as you had of cherries and let stand until all the sugar is dissolved, stirring frequently meanwhile. This may take several days. When the sugar is thoroughly dissolved, seal in cold cans and store in a cool dark place.

Candied cherries, so popular for salads and jellies, may easily be made at home. Wash and stone the fruit and boil until tender. Drain, put in a stone jar and cover with a simple syrup made by boiling sugar and water 20 minutes in the proportion of one quart of water to every pound of sugar. Let stand 24 hours, pour off the syrup and reheat it and again cover the fruit with the boiling syrup. At the end of another 24 hours drain the cherries and dry them in the sun on platters covered with cheesecloth. Leave them out only until dry. Then pour into a syrup cooked to the blow degree, or until you can put a skimmer in the syrup, hold it up, blow through it and see bubbles on the other side. If you have a syrup gauge this is 230 degrees. Stir the fruit until the syrup begins to grain, drain and dry.

The fortunate possessor of an ice house and ice cream freezer will find the following way of making cherry ice satisfactory. Crush one quart of tart cherries and add to them a handful of cracked pits and two cups of cold water. Squeeze all through a stout bag, add the juice of a lemon and two cups of granulated sugar and stir until the sugar is dissolved. Then freeze and serve in sherbet cups.

Regular Habits a Time Saver

By M. A. L.

"There is a time for everything under the sun," wrote the preacher several hundreds, or perhaps thousands, of years ago. And the mother who is meeting with success in bringing up to healthy youth the children in her charge, quickly subscribes to the truth of the remark.

A time, a regular time, for everything, is the corner stone of good health and good habits, and beginning with the first hour of the baby's life should be insisted upon. A regular hour each morning for the daily bath, regular hours for eating, regular hours for sleeping, a regular hour to be undressed at night, given the evening rub, and put away clean, warm and dry in a dark room for sleep. These are the first steps toward health and happiness for baby, and comfort to the family.

"It is easy enough to talk about regular hours, but when there is so much to do, how are you going to always do it at the same time each day?" complain busy, hurried mothers. Simply by planning to do it and sticking to your schedule. The reason so many women are always hurried and nervous is because they never know what they ought to do next. They have ab-

solutely no system to their work, no plan for the day, but scurry from one whether it is best to do this thing next task to another without regard to or not. A regular plan strictly adhered to would leave time to strengthen nerves, and with the baby it is an absolute necessity to secure best results.

Whether or not you adopt the new idea of feeding even the newborn infant every four hours, or stick to the good old schedule of two hours for the new baby, gradually lengthened out, feed it by the clock, and limit the time of a feeding to ten minutes. The older children who need a lunch between the three regular meals, should be as religiously held to schedule and given their lunch, in high chair or at the table, at the same hour every morning and afternoon. There is no more harmful habit than that of allowing children to lunch at any or all times of the day. Little children can scarcely be expected to get along without eating between meals, but the hour for such lunches should be as regular as the dinner and supper hours for the grownups.

The daily nap should always come at the same time, and the evening bedtime hour must be observed as regularly as meal-time. Six o'clock for the

baby, an hour later for the toddlers, and not a minute later than 7:30 or 8:00 p. m. even for the twelve-year-olds go far to insure sound nerves and rosy cheeks.

Play hours and work hours, these, too, must be planned and adhered to as the children grow older. For as all work makes Jack a dull boy, so all play makes him a lazy boy. He must be taught that he owes something to the home and given certain tasks to do at a certain time each day. Then insist on play in the open air in all except the worst weather. Fresh air, simple food, plenty of sleep, these are what the children need and what the mother must see they have.

A regular daily bath should be a part of the program if we look for best results. While this is hard in a home without a bathroom it is by no means impossible. Even the little ones can be taught to take a sponge bath each morning before dressing, and the habit established in early life will never be forgotten.

Regular hours for doing everything religiously insisted upon by the mother makes everything easier for all, for so much are we creatures of habit that it soon becomes second nature for us to do the same thing at the same time each day. We do the thing unconsciously because we have been doing it just then every day for weeks, months or years, hence we do the thing more easily. By regular hours, too, the baby is taught its first lesson of obedience, of yielding his will to a stronger power. And obedience is still, in spite of new doctrines of "self expression," the best lesson a child can learn.

ATTRACTIVE ONE-PIECE DRESS.

Simple frock made in one-piece, having only underarm seams and is without fastenings. The gown takes only two lengths of material to make, a dressmaker can put it together in a day, and when finished can be worn in summer or winter until it is in tatters.

The woman who wants the simple gown gets a few yards of wide material twice her length, doubles it, makes a hole in the top to put her head through, sews up the seams at the sides, puts in a tuck to make a sleeve, adds a little ruching on the neck and sleeves, adds a belt and a few pockets and the thing is done. (See illustration on page 29).

BREAKAGE OF JARS IN CANNING.

When breakage of jars occurs it is due to such causes as:

1. Overpacking jars. Corn, pumpkin, peas, lima beans, and sweet potatoes swell or expand in processing. Do not fill the jars quite full of these products.
2. Placing cold jars in hot water, or vice versa. As soon as the jars are filled with hot syrup or hot water, place immediately in the canner.
3. If top cracks during sterilization the wire bail was too tight.
4. In steam canner, having too much water in the canner. Water should not come above the platform.
5. Allowing cold draft to strike the jars when they are removed from the canner.
6. Having wire bail too tight, thus breaking the jars or glass tops when lever is forced down.

Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

STATE GRANGE EXECUTIVE COMMITTEE MEETS.

(Continued from last week.)

The sub-committee will write the Granges of the state, setting forth the conditions and requesting them to state their preference in the matter.

Past Master Geo. B. Horton, chairman of the sub-committee to draft articles of association and by-laws for adoption by co-operative organizations within the Grange, reported, and the draft presented was adopted without amendment.

The articles of association provide that members of the societies must belong to the order, that these organizations shall be for the purpose of selling farm products, particularly live stock, that non-members may sell through the organizations by paying such additional fees as shall be fixed by the association.

At the last meeting of the Michigan State Grange, the sum of \$500 was appropriated to be used in the campaign for "State-wide Prohibition." The State Grange did not give this money to any other organization, but will spend it in such manner as will appear to be most practical. The matter came up at our meeting and was quite thoroughly discussed. A committee consisting of Sister Jennie Buell and Bros. Bartlett and Welch, will consider the matter farther and report at the August meeting.

It has always seemed to the writer that these meetings of the executive committee might be made occasions of Grange revival in many instances, if we could hold them in connection with some important Grange gathering whenever it seemed practical to do so. It therefore gives us much pleasure to report that Jackson Pomona has given an invitation to hold our next meeting at Jackson on August 4, the date of its next meeting. The invitation was accepted and it is our plan to meet in the city in the morning, hold a short session, and then go out to North Leona Grange Hall, where the Pomona meeting is to be held, and remain as long as possible under the circumstances.

It would seem that this part of the program will add at least some interest, and that the experiment will prove well worth while.

In the meantime Brother Ketcham, Chairman of the Legislative Committee, with Bros. Lincoln and Bartlett, will meet the real estate men of Detroit and agree upon plans for the submitting of a bill providing for "The Torrens System." This bill will probably be much like the one of two years ago, but some slight changes may be made.

Taken all around, this meeting was one of the best of the year thus far.

Oceana Co. W. F. TAYLOR.

AMONG THE LIVE GRANGES.

Eaton Rapids Grange.—A good attendance was present at the regular meeting of Eaton Rapids Grange, held June 14. A flag day program was arranged by Mrs. S. M. and Mrs. M. B. Kieffer, which was as follows: Song, Grange melodies; reading, "The Birth of Flag Day," Mrs. R. H. Spencer; song, "America," by eight girls; recitation, Dail Kieffer; duet, "Oh, How I Love a Summer Day," Mrs. Mary Rockwood and son Clare. This called for an encore and "Shadow Time" was sung. Both were exceptionally fine. Flag drill by 16 children. Much credit is due the children for the ability shown in the drill, also their instructor Mrs. Bina Kieffer, for her efficiency in perfecting it. As our Worthy Lecturer, Mrs. Mildred Evans, had handed in her resignation the previous meeting it was necessary to elect another, and Mrs. Nettie Spencer was chosen to fill the vacancy the rest of the year.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—R. J. Robb, Mason.
Vice-president—C. B. Scully, Almont.
Secretary and Treasurer—Mrs. J. J. Brown, Howell.

Directors—Alfred Allen, Mason; C. T. Hainline, Alma; W. K. Crafts, Grass Lake; Edward Burke, St. Johns; Mrs. C. J. Reed, Spring Arbor; Roy E. Moore, Bellevue.

RALLY.

Clubs of Central Michigan and all others interested. Date, Wednesday, August 16, 1916. Place, Michigan Agricultural College.—W. L. Cheney, Secretary, Mason, Mich.

HOME ACTIVITIES.

(Continued from last week.)

Now, by way of illustrating some of the more strictly home problems, let me tell a true story. It is a delightful day in the spring of the year. Sunday dinner is over, and Young America, by way of keeping something going on, wants father and mother to come down to the pond and see the bees work on the willow bloom. We take our own private path instead of the public highway because we live on an automobile road leading from a city to a resort, and while many drivers are law-abiding gentlemen, others appear as if they were drunk, and run their machines at almost twice the legal speed. By the way, isn't it putting the cart before the horse to allow law-breaking machines to be made or imported, and then attempt to catch the law breakers afterwards? Good mechanics assure me that the speedometer of an auto could be made to shut off the gasoline supply when the legal speed should be exceeded. This might necessitate an army of inspectors, but I would rather have an army to prevent crime than an army to detect it. I recommend this matter to the attention of the resolutions committee, feeling that, even though farmers may be extensive users of autos, they wish, as a class, to be law-abiding and to have others so.

But, as I said, we take our way down the cow path and Young America wants to know why the bees first visit the trees that have yellow dust on their bloom, and then those that have no yellow dust. Ah, Young America, you have opened a big subject there! While you dance with delight to see the bees licking up the nectar from the pistillate bloom, father and mother are seriously considering this problem: Shall Young America be led to gradually develop in his mind the truth, and nothing but the truth regarding sex matters, by observation of the plants and animals about him, or shall he be let alone to gather foulness from those that are foul?

But a whistling sound is heard overhead. "What is that, mother?" Son, if you will cast your eye as far as the road you will see the cause. A lady and gentleman from the city are hunting, and as game is scarce, they are amusing themselves by shooting in our direction with their rifle. No use to chase them, they can and do escape in their auto without leaving word who they are. That is nothing. While living near the Kalamazoo river we had sheep and a valuable heifer shot without provocation.

We want a law making it illegal to hunt on another's inclosed fields without permission from the owner, or to fire over them, or to fire in the road next to them. There have been hundreds of ways proposed to use the roads, for this and for that, but the courts have always held that roads are primarily for people to travel in, and that all other rights belong to the owner who pays taxes on them. They cannot be used as hunting parks without creating a nuisance. "No trespassing" signs are simply marks to shoot at, and ought not to be necessary. There would still be three ways to hunt: to own the land, to get the owner's permission, or to find an unenclosed field. A Main street hardware merchant was caught in our vicinity cutting wire fence to let dogs through. A coal and lumber dealer disputed a farmer's right to order him off to avoid frightening stock.

I say to the gentlemen of the city: Would you allow promiscuous firing on your premises in town? We farmers and farmers' wives expect to feed you, but we are going to have our rights in our own property if we have to start a referendum to get them.

The Talk of the Town

Please note the delicious flavor as well as the attractive appearance of everything baked from

Lily White

"The Flour the Best Cooks Use"

And bear in mind you get more bread from a barrel of Lily White flour—as well as better bread.

Insist on having Lily White every time.

If your dealer hasn't it, write us.

VALLEY CITY MILLING CO.,
Grand Rapids, Mich.

Studebaker

Has Been Continuously Making

WAGONS—BUGGIES—HARNESS

for Every Farm Use Since 1852

SEE THE STUDEBAKER DEALER

HO-MAYDE BREAD IMPROVER

Saves Time Never Fails

More Bread Better Bread

PURE, WHOLESOME and DEPENDABLE

HO-MAYDE prevents failures on Bake Day! It makes the sponge rise sooner, and so shortens the time of bread making.

The same quantity of flour will give a larger, better and sweeter loaf, which will not dry out so quickly.

Ask your grocer, today, for a 15 cent package, sufficient for 100 loaves of bread. If he does not have it, send us his name and we will send you a generous sample FREE. Address Dept. H

HO-MAYDE PRODUCTS CO.
TORONTO, CAN. DETROIT, MICH.

GET MY NEW BUGGY BOOK FREE

The greatest vehicle catalog ever printed—a postal brings it—postpaid.

SPLIT HICKORY

Famous for beauty, comfort and quality. Nearly a quarter of a million now in use. My new catalog tells how I have split the price—now only \$39.25 and up. 150 styles to choose from. Write today. H.C. Phelps, Pres.

THE OHIO CARRIAGE MFG. CO.
Station 53
Columbus, Ohio

I Give 30 Days Free Road Test—Two Years Guarantee.

WEAR YOUR OWN WOOL

Spun and woven by the old homespun methods, just as the Pilgrim Mothers did it for the Pilgrim Fathers. We will make you pure wool blankets, campers, blankets, tweeds, fulled cloth, flannels, wool batting, yarn, and hosiery. If you will send us your wool. Write today for price list, and learn how to save money on the best woolsens.

REED CITY WOOLEN MILLS.
Established 1883. Reed City, Mich.

Kill All Flies! They Spread Disease

Placed anywhere, Daisy Fly Killer attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap.

Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

Daisy Fly Killer

Sold by dealers, or 6 sent by express, prepaid, \$1.00.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

The "Berlin Quart"

The White Basket

That secures highest prices for your fruit. Write for 1916 catalog showing our complete line and secure your baskets and crates at WINTER DISCOUNTS.

The Berlin Fruit Box Co.
Berlin Heights, Ohio.

OF KNOWN VALUE

STANDARD FARM PAPERS

BEST FOR THE READER

THEREFORE

BEST FOR THE ADVERTISER

Ohio Farmer, Cleveland, Ohio, (Rate, 60c per line.)	Guaranteed One 1,000 Circulation Line Lines
Michigan Farmer, Detroit, Mich. (Rate 40c per line.)	270,000 \$1.17 \$1.17
Pennsylvania Farmer Philadelphia, Pa. (Rate 30c per line.)	57,101 .25 .25
Indiana Farmer, Indianapolis, Ind.	174,121 .80 .80
The Progressive Farmer, Birmingham—Raleigh Dallas—Memphis.	90,000 .60 .60
Breeder's Gazette, Chicago, Ill.	100,000 .50 .50
Prairie Farmer, Chicago.	67,820 .40 .40
Hoard's Dairyman, Ft. Atkinson, Wis.	63,454 .30 .30
Wisconsin Agriculturist, Racine, Wis.	140,855 .60 .55
The Farmer, St. Paul, Minn.	750,000 3.00 3.00
The Farmer's Wife, St. Paul, Minn.	80,000 .40 .40
Wallace's Farmer, Des Moines, Ia.	61,253 .30 .30
Kansas Farmer, Topeka, Kan.	22,000 .16 .16
Pacific Rural Press, San Francisco, Cal.	

1,863,465 \$8.43 1/2 \$8.43 1/2

These publications are conceded to be the authoritative farm papers of their individual For further information address

GEORGE W. HERBERT, Inc.
Western Representative, Advertising Bldg., CHICAGO, ILL.

WALLACE C. RICHARDSON, Inc.
Western Representative, 41 Park Row, NEW YORK CITY.

Markets.

GRAINS AND SEEDS.

July 3, 1916.

Wheat.—The fluctuation of prices, the general attitude of dealers as well as statistical information and political conditions would indicate that present wheat values are not far from a working basis. At the close of last week Liverpool was bidding for wheat at a three cent advance, owing to an expectation of light world's receipts and a general increase in the world's demand. The bears are making capital of the improved condition of the American crop, the heavy primary receipts as compared with a year ago, and the large stocks at terminal points. Notwithstanding this, however, it must be remembered that even under abnormally favorable conditions this year's crop of both winter and spring wheat must fall far below the average for the past two years. A year ago No. 2 red wheat was quoted at \$1.33 a bushel. Prices for the last week are:

	No. 2	No. 1	White	July
Wednesday	1.05 1/2	1.02 1/2	1.06	
Thursday	1.06	1.03	1.06 1/4	
Friday	1.06	1.03	1.06 1/4	
Saturday	1.07	1.04	1.04 1/4	
Monday				

Corn.—There is a good domestic and eastern demand for corn and inquiry is also being made by European countries for this cereal. Warmer weather however, has improved the crop wonderfully during the past few days, thus offsetting to a considerable degree better trading conditions. A year ago No. 3 corn was quoted at 78c per bushel. Last week's prices were:

	No. 3	No. 3
	Mixed	Yellow
Wednesday	77	79
Thursday	77 1/4	79 1/4
Friday	77 1/2	79 1/2
Saturday	77 1/2	79 1/2
Monday		

Oats.—There is an increasing demand for this cereal from eastern shipping points. International troubles with Mexico is also giving some support to the trade. Crop conditions are improving, and while the grain was sown late, its development has been so favorable as to make up partly for the early handicap. One year ago standard oats were quoted at 54c per bushel on the local market. Detroit's quotations for the week are:

	No. 3	Standard	White
Wednesday	43	42	
Thursday	43	42	
Friday	43	42	
Saturday	43	42	
Monday			

Rye.—Cash No. 2 rye is steady at 98c per bushel. The market is inactive and firm.

Beans.—Bean values have been making new high records following the big advance of a week ago, \$1 more has been added to the price of immediate, prompt and July shipment. The present quotation \$6.25. On the Chicago market hand-picked Michigan pea beans are quoted at \$7.50@8; red kidney beans \$6@6.50 per bushel.

Seeds.—Prime red clover \$9; prime alsike \$9.45; prime timothy \$3.60.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$5.90; seconds \$5.70; straight \$5.50; spring patent \$5.20; rye flour \$6.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$24; standard middlings \$25; fine middlings \$30; cracked corn \$32; corn and oat chop \$29 per ton.

Hay.—No. 1 timothy \$20.50@21; standard timothy \$19.50@20; light mixed \$19.50@20; No. 2 timothy \$17@18; No. 1 mixed \$13@14; No. 1 clover \$10@11.

Straw.—Rye straw \$7.50@8; wheat and oat straw \$6.50@7 per ton in car lots, Detroit.

DAIRY AND POULTRY PRODUCTS.

Butter.—The supply is plentiful and the tone is easy. Prices unchanged. Extra creamery 28c; firsts 26 1/2c per lb; dairy 23c; packing stock 21c.

Eggs.—The market is easy and lower. Price for the week, based on sales is 27 1/2c.

Chicago.—Market steady at slightly lower prices. The demand is good but there is more coming than needed for present requirements. Extra creamery 27 1/2c; extra firsts 26 1/2@27c; firsts 25 1/2@26 1/4c; dairy extras 27 1/2c; packing stock 22@22 1/2c per lb.

Eggs.—The demand is brisk and the prices are 1/2c higher. Current receipts are quoted at 22 1/2c; firsts 23c.

Chicago.—The trade is good at present prices which are 3/4c higher than last week. Firsts 21 1/4@22 1/2c; ordinary firsts 20@21c; miscellaneous lots, cases included 20@22c per doz.

Poultry.—Market is firm with a good demand for broilers. Fowls 16@18c; broilers 27@28c; ducks 18@19c; geese 12@13c per lb.

Chicago.—Large offerings brought lower prices. The demand was good but there is a surplus left. Hens 15c; roosters 11 1/2c; spring chickens, 2 lbs. and over 24@25c; 1@1 1/2 lbs., 21@22c; turkeys 12@18c; spring geese 16c.

FRUITS AND VEGETABLES.

Strawberries.—Michigan berries in demand at \$1.10@1.25 per 16-qt. case. At Chicago the price ranges from 50c @ \$1.25 per 16-qt. case, according to quality. Lots of poor quality berries are being received. Demand fair for good stock.

Small Fruits.—Gooseberries \$2.50@2.75 per 24-qt. case; black raspberries \$4@4.25 per 24-qt. case; red raspberries \$3.75@4 per 24-qt. case.

Chicago.—Gooseberries 90c@1 per 16-qt. case; blackberries \$2.50 per 24-qt. case; reds \$2.50 per 24-qt. case.

Potatoes.—No old potatoes quoted at Detroit. At Chicago the new crop is crowding old stock. Offerings and demand only moderate. Michigan white are quoted at \$1@1.05 per bu.

WOOL.

Wool.—Trading continues on the same firm basis as it has for the past several months with prices looking upward. Wool for uniforms, blankets, etc., for the federal government has recently been purchased, thus adding to the bullish tone of the market. Keen observers of the trade also predict that consumers of wool are in a position to buy the material cheaper now than they will be later on. As yet there is very little of the new clip from the fleece states in the seaboard markets. Growers are holding their property unusually long this season, which action is undoubtedly wise. Boston quotations for Michigan unwashed delaines are 31@32c; do. combing 35@42c; do. clothing 29@31c.

Chicago.

July 3, 1916.
Cattle. Hogs. Sheep.
Receipts today.. 9,000 32,000 20,000
Same day 1015.. 16,830 26,142 9,253
Last week..... 37,450 125,898 70,671
Same wk 1915.. 44,267 141,525 63,707
Anticipating a dull week for cattle, shippers sent in only about 9,000 head today, and sellers succeeded in obtaining advances of 10@25c. Hogs advanced about a dime, with sales at \$9.55@10.20. Hogs received last week averaged 231 lbs. Buyers purchased lambs and sheep 10@20c lower, the least decline being in prime range spring lambs.

Cattle receipts fell off materially in volume during the last week, and while breaks in prices took place at times, on the whole, the trend of the market was in an upward direction at first, so far as desirable kinds were concerned. Next to the decreased offerings, the most noteworthy feature was the further decreased percentage of choice heavy beefs, and while the fancy lots went as high as \$11@11.50, the bulk of the steers offered went at \$9@10.65, with a bad market late in the week, even for choice cattle. The inferior to fair light weight steers brought \$7.25@9.25, with a medium class of steers going at \$9.50 and upward, while good fat steers sold at \$10 to \$10.45. Butcher stock sold at \$5.80 @9 for cows and \$5.80@9.60 for heifers at the best time, with lower late sales, while cutters brought \$5.30@5.75, canners \$4@5.25 and bulls \$5.25@8.50. Calves were active or slow according to weight and quality, with light vealers purchased at a range of \$10.75@11.75 per 100 lbs. for desirable offerings, while heavy calves found an outlet at \$5@10. The stocker and feeder traffic was usually animated at \$5.75@8.75 for inferior to prime lots, with demand running much the strongest on nice little yearling steers. In some parts of the country backward condition of corn is holding back the country demand for stockers, too much rain having fallen in Illinois and Ohio, states which have been doing the bulk of the buying here. Then the breaks in prices for beef cattle have had their natural effect in causing less interest in stocker cattle. Stock cows and heifers have met with a short country feeding demand at a range of \$5.60@6.75, with better kinds going as high as \$7.65. Moderate receipts of cattle for the near future will meet all trade requirements.

Hogs were in the usual good demand last week, but the eastern shipping demand continued extremely small in volume, shippers taking prime heavy barrows around top prices, while they

paid about 15c below top figures for prime light weights. Sales were made of hogs of all descriptions at extremely high prices, with sales at the best time not far below the highest time of the year, followed by reactions. Hogs are not averaging as high in quality as they did earlier in the year, as is usual along in the midsummer period, and weights are still less than in recent years, although averages are increasing gradually. Recent receipts have averaged 227 lbs., comparing with 231 lbs. one year ago, 238 lbs. two years ago and 240 lbs. three years ago. Provisions have advanced along with hogs, and pork sold a short time ago fully \$6 a barrel higher than a year ago, while lard and short ribs show similar advances, the exports of hog products being enormous. The outlook for the market appears bright, and stockmen should make their holdings as choice as possible. The greatly decreased receipts of hogs for the week made a better market for sellers, and at the close sales ranged at \$9.45 @9.82 1/2 for light bacon hogs and \$9.85 @10.10 for the better class of barrows, while pigs brought \$8@9.35. A week earlier the best hogs brought \$9.90.

Spring lambs have been marketed in rapidly increasing numbers, and the market has received fairly large supplies of fed lambs for these times of decreased mutton production. Naturally, prices have suffered material declines since the season opened for marketing spring lambs, but anything prime, whether lambs or sheep or yearlings, brings extremely high values still, quotations ruling far higher than in other years. Killers are discriminating strongly against poorly fattened offerings, and owners make a grave mistake when they let their holdings go to market only half fattened. Feeding lambs are meeting with a large demand at ruling prices, but very few are offered, and lots of buying orders go unfilled. The same is true of breeders, which are scarce and extremely high. Most of last week's receipts consisted of spring lambs, and they declined from 60@75c per cwt., the best fetching \$11.10. Very little change took place in sheep and clipped lamb prices. Spring lambs sold all the way down to \$7.50, and clipped lots closed as follows: Lambs \$5@9.75; feeding lambs \$6.75@7.75; yearlings \$5.75@8.75; wethers \$5@8; ewes \$3.50@7.40; breeding ewes \$6.75@8; bucks \$5@6.

Horses were offered in greatly increased numbers last week, and while army horses were as active as usual at firm prices, undesirable animals were apt to go lower. Commercial chunks sold at \$160@210 largely, while drafters of the better class were offered sparingly and were quotable at \$260 @300. Horses rejected for the cavalry sold as low as \$50@85, gunner rejects going at \$125@160.

LIVE STOCK NEWS.

The crop of spring lambs is moving to market freely at the present time, and the Chicago packers are receiving liberal supplies consigned to them direct from Louisville, thereby materially lessening competition in the open market. Prime springs and fed lambs sell extraordinarily high because of the serious shortage of live muttons, but offerings not grading well sell at declining figures much of the time, with a widening out of values between the best and the poorest lots. Feeders and breeders are scarce, much wanted and extremely dear. An Idaho sheep firm recently purchased 4,000 Cotswold ewes and rams of from three to five years of age for \$9 per head. Heavy losses of lambs in the far west are reported, ranging from 15 to 25 per cent, with the worst losses in Michigan.

In the vast territory lying west of the Missouri river stockmen are awake to the vast importance of increasing the production of beef cattle, and purchases of choice breeders of the several types have been increasing materially of late. States east of the Missouri are slower in seeing the need of increasing the beef supply, and it is strange that more breeders are not purchased by farmers of Ohio, Indiana, Illinois, Iowa, Michigan and Wisconsin. For years farmers have depended on buying feeders from the other fellows, but the supply of stockers and feeders is now running short, with desirable lots selling for \$8 to \$9 per 100 pounds.

Once more the predictions of wise packers are found to be worthless, the loudly promised enormous marketings of hogs for the month of June failing to materialize in the Chicago and other primary packing points. The prediction was based on the alleged huge pig crops of most parts of the corn belt. The country undoubtedly has large aggregate holdings of pigs and maturing hogs of various ages, but in view of the greatly unprecedented do-

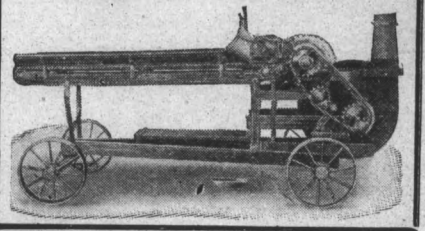
mestic and foreign requirements in the lard and cured hog meats line, there is not a superfluous hog in the whole United States. The war in the world is causing a demand for provisions never dreamed of in any former year, and this, together with home requirements, effectually prevents any uncomfortable accumulation of provisions in any of the packing centers. Then there is a very large demand for fresh pork chops and roasts, their relative cheapness as compared with beef and mutton stimulating their sales everywhere. Provisions have advanced since the outbreak of trouble with Mexico, the expectation being that the United States would have to be a large purchaser for its army and navy, and hogs have sold extremely high, even if they failed to sell at the highest point of the year. Eastern shippers have failed to make anything like large purchases of hogs, paying top prices for prime heavy barrows and taking the best light hogs at a discount of about ten cents. Evidently cheap hogs are still a long way off, current sales being far higher than in past summers. Stockmen persist still in marketing their hogs lighter in average weight than in former years, although the average weight is increasing gradually. Recent Chicago receipts of hogs have averaged 226 pounds, comparing with 222 pounds a week earlier, 229 pounds a year ago, 237 pounds two years ago and 284 pounds three years ago.

W. H. Firke, of Illinois, known widely as "the goose king of the world," having raised this year 32,000 geese, is also a large stock feeder, having marketed in Chicago 25 carloads of cattle, hogs and sheep within a month. A short time ago he marketed three carloads of fat cattle at \$10.10 per 100 pounds, and also a carload of prime hogs at \$10.

ROWELL "AUTOMATIC" SILO FILLERS

Designed for perfect efficiency and built for service by a pioneer organization of over fifty years' experience. Satisfied users all over America who claim the Rowell the perfect silo filler and urge its exclusive use. The Rowell is the most complete line in point of sizes and equipments in the United States. Complete stocks of machines and repair parts are carried at distributing points to insure quick delivery to all buyers. Send for our Free Catalog and see the features that have made "The Rowell Automatic" supreme.

The I. B. ROWELL CO.,
1114 Lincoln Ave., Waukesha, Wis.



For Sale Rebuilt Machinery

22 H. Pitts steam traction engine, 20 H. Rumley, 20 H. Port Huron, 18 H. Pitts, 18 H. Advance, 18 H. Peerless, 16 H. Pitts, 16 H. Gaar-Scott, 16 H. Huber, 15 H. Port Huron, 13 H. Pitts, 13 H. Nicholas and Shepard, 30 Aultman-Taylor grain thrasher, 30 Port Huron, 36 Case, and many others. Write us for complete second hand list.

The Banting Machine Company,
114 Superior St., Toledo, Ohio.

COFFEE From IMPORTER To CONSUMER

Regular 35c. Coffee at wholesale price (26c a lb.) parcel post prepaid. We will send 5 lbs. of our Colombian Blend Coffee for three days' trial. You may try 1-2 lb. and return balance at our expense if not entirely satisfactory. Otherwise remit \$1.30 for the 5 lbs.

COLOMBIAN COFFEE IMPORTING COMPANY,
Dept. 501, 417 So. Dearborn St., Chicago, Ill.

Why pay high prices for acid phosphate and mixed fertilizer?

Raw Rock Phosphate

Will do the work and save you money. Let us send you particulars.

Robin Jones Phosphate Co., Nashville, Tenn.

THE ROSE AUTO PULLER

Will pull your car out of the mud hole simply by turning a small crank. Write how to get one FREE.

ROSE BROS. ROSEMONT, NEBRASKA.

Wanted: Men to work in the woods. Wages for general work, \$80.00 to \$85.00 per month and board; teamsters, \$38.00. Mill located in the heart of Cloverland, and parties wishing to purchase land can do so on easy terms. Price is \$5.00 to \$15.00 per acre.

WEIDMAN & SON COMPANY, Trout Creek, Mich.

Farms and Farm Lands For Sale—Continued

For Sale, 120 acres general farming land in Mecosta Co. Mich. New 7 room house, barn 20x34, 10x24 silo, and other necessary out buildings, good well and windmill, small orchard, 2 1/2 miles from town, 1/2 mile from school. Price \$4,000. Box 64, Altona, Michigan.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.

July 6, 1916.

Cattle.

Receipts 1275. The run in all departments at the local stock yards was very light; all farmers are at present very busy with their crops and have little time to spare now for live stock. The cattle on sale were all of the grasser order and although there was little life to the trade, prices held steady with those of a week ago, had the run been any larger there certainly would have been a slump in prices, as the dressed meat trade is very dull. Nearly all the dealers are now getting western and southern cattle; the demand for stockers and feeders was hardly as active as for several weeks past. The milch cow trade was dull and the quality common. The close was dull as follows: Best heavy steers \$8.50@9; best handy weight butcher steers \$7.75@8.25; mixed steers and heifers \$7@7.50; handy light butchers \$6.50@7; light butchers \$6@6.75; best cows \$6.25@6.75; butcher cows \$5.75@6; common cows \$4.75@5.25; canners \$3@4.25; best heavy bulls \$6@6.75; bologna bulls \$5.50@6; feeders \$6.75@7.75; stockers \$6@7; milkers and springers \$4@6.5.

Haley & M. sold Sullivan P. Co. 2 cows av 1015 at \$6; to Newton B. Co. 3 steers av 1037 at \$7.90, 1 do wgh 1000 at \$7.50, 9 butchers av 190 at \$6.60, 4 do av 580 at \$6.25; to Kull 24 stockers av 510 at \$6.75; to Sullivan P. Co. 4 cows av 950 at \$5.80, 1 do wgh 1120 at \$6.50, 1 do wgh 930 at \$6; to Feldman 5 butchers av 706 at \$5.80. Kever sold Breitenbeck 23 butchers av 690 at \$5.75.

Erwin & S. sold Golden 1 cow wgh 680 at \$4, 2 do av 930 at \$4.75, 1 bull wgh 750 at \$6; to Bray & B. 2 cows av 1175 at \$5; to Sullivan P. Co. 3 do av 947 at \$6.25.

Veal Calves.

Receipts 540. The veal calf trade was active and strong to 25c higher than last week; bulk of the good ones brought \$12@12.25 per cwt; quite a sprinkling of choice at \$12.50@13.50; common and heavy \$8.50@11.

Sandel, S. B. & G. sold Thompson 9 lambs av 70 at \$10.75, 13 sheep av 95 at \$6.25; to Mich. B. Co. 6 do av 125 at \$6.50, 24 lambs av 75 at \$10.75.

Sheep and Lambs.

Receipts 550. The run of sheep and lambs was light and the market strong to 10c higher than last week on anything good. Culls and thin heavy grades are not wanted and are almost unsalable. Best lambs \$11@11.25; fair lambs \$10@10.50; light to common do \$8.75@9.25; fair to good sheep \$6@6.50; culls and common \$3@4.50.

Haley & M. sold Parker, W. & Co. 12 av 160 at \$11, 2 av 120 at \$12, 2 av 150 at \$12.50, 2 av 250 at \$11.50, 2 av 140 at \$12, 8 av 180 at \$11.50.

Hogs.

Receipts 3877. In the hog department the trade was active and 5@10c higher than on Wednesday; pigs bringing \$9.50 and yorkers and mixed grades \$9.75@10; the close was strong at the advance.

LIVE STOCK MARKETS.

Buffalo.

July 3, 1916.

(Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today are as follows: Cattle 110 cars; hogs 70 d. d.; sheep and lambs four d. d.; calves 1050 head. With 110 cars of cattle today there were around 15 to 20 cars of good shipping cattle here and there was a good demand for them, with the bulk selling 15@25c higher, and one load at \$11.50. The bulk of all the medium butcher steers, cows and heifers sold fully 25c higher, and in some cases 35c higher. We look for a fair run of cattle here next Monday and we ought to have a steady trade.

We had a light supply of hogs today, demand good for all classes and market strong 20@25c higher than the close of last week. A few selected loads of hogs sold at \$10.45 and \$10.50, but the bulk around \$10.40; pigs and lights generally \$10. Everything sold at the close and present prices are plenty high to operate on, in fact we believe it would be best policy to buy hogs to sell a little cheaper.

Market was active on sheep and lambs and prices steady with the close of last week. About all sold and we look for steady prices last of the week. Veals, good to choice \$11.75@12; common to fair \$10@11.50; heavy \$7@10.50.

FINANCE AND INVESTMENT.

(Continued from page 28).

its operation or else lose the whole or part of their equity and occupy the same position as stockholders in a corporation. Just as long as they fulfill the requirements of the mortgage they retain full possession of the farm with full authority in its management. In other words, they have full voting power and retain the profits during prosperity, but in order to make the loan attractive to their neighbor, consented to certain requirements in order to induce him to loan them his money at six or seven per cent interest.

If this simple illustration is applied to stocks and bonds the distinction may be clearly understood in arriving at an understanding of the more intricate organizations of the business world. Of course, in order to fulfill the requirements of the different classes of security holdings in the large corporations, such as the large railroad systems, many changes take place with many modifications in each, and future articles will explain in detail the position of different securities, and the privileges of each.

Permit me to add, however, that the above statements do not take cognizance of that great class of bonds known as municipals. There are no stockholders in a municipal corporation and municipal bonds occupy a somewhat different position from corporation issues.

J. R. MILLIGAN,
Financial Editor.

LIVE STOCK NEWS.

It seems strange that at such a period of scarcity and high prices for well fattened cattle, so many stockmen should persist in their policy of hurrying to market half-fattened yearlings and older cattle which would sell so much higher with a feed of from one to two months longer. Within a short time lots of yearling steers have been sold on the Chicago market for \$8.50 to \$9.25 per 100 pounds which would have sold for at least \$1 per 100 pounds more had they been fed long enough, and the same is true of older cattle. With the serious shortage of choice heavy steers and a good demand, competition for them is keen, and weekly high records for prices have been established. With fat beefs and corn selling at present prices it pays handsomely to fatten well-bred cattle, and the only excuse for failing to do so is lack of corn of good feeding quality. For weeks prices have been widening out between choice and inferior cattle, and the best information available is that good receipts of fat beefs are still some time off. News comes from the northwestern parts of the United States that grass cattle are to move marketward later than usual because of the backward season.

Never in the past has the production of hogs formed a more profitable occupation for farmers than at the present time, with prices far higher than in most past years, and it seems rather strange that owners should continue to market their holdings so much sooner than ordinarily, recent Chicago receipts having averaged only 222 pounds in weight, comparing with 231 pounds one year ago, 233 pounds two years ago and 244 pounds three years ago. For some weeks a fight has been going on between the men who produce the hogs and the packers who slaughter them to establish market prices, and both sides have done all in their power to accomplish their wishes. The pig packers have held back at times and allowed large numbers of hogs to accumulate in the stock yards, while at times bringing in liberal supplies of swine from other markets in order to lessen competition in the open market. On their part stockmen have frequently held back their hogs after bad breaks in prices, and this has worked in their favor, although the meager purchases of hogs made in the Chicago market for shipment to the eastern packing points was a bearish factor. Of late hogs have sold much below the high time of the year when the best lots topped the market at \$10.35 per 100 pounds, although prices still ruled far in advance of nearly all past summers. The sales of fresh pork products continue enormously large, while domestic and export purchases of lard and cured hog meats have vastly exceeded all former high records, despite their dearth, pork wholesaling for around \$5 per barrel more than a year ago and other lines of provisions showing similar advances.



Stock Without WORMS

I want you to try SAL-VET on my liberal 60-day test feeding offer. Tell me how many head of hogs, sheep, horses and cattle you have and I'll supply you with enough SAL-VET to last your stock 60 days.

SAL-VET

Will rid your stock of WORMS—the blood-sucking parasites that cause 90 per cent of all live stock losses. It will give your farm animals keener appetites, better digestion—make them thrive better—pay you bigger profits. When it arrives, pay the freight charges and feed it according to directions for 60 days. If it does not do what I claim, make a specific report in 60 days and I will make no charge. Address: SIDNEY R. FEIL, President.

THE FEIL MFG. CO., Chemists
Dept. 80 Cleveland, Ohio

Prices	
40 lb. pkg.	\$2.25
100 lb. pkg.	5.00
200 lb. pkg.	9.00
300 lb. pkg.	13.00
500 lbs.	21.12

Extra discount in larger quantities. No orders filled for less than 40 lbs. on this offer. Shipments for 60 days' trial are based on 1 lb. of SAL-VET for each sheep or hog and 4 lbs. for each horse or head of cattle.



"For two years I have been feeding SAL-VET. Before that, I tried many other remedies. I keep between two and three hundred hogs and seven horses. SAL-VET keeps stock well and prevents disease."

Frank D. Hall, Bloomfield, Conn.

"My shoats were very wormy. After other remedies failed, I fed SAL-VET which cleaned out the worms and put all hogs, sheep and horses in condition."

H. O. Norris, Route No. 1, Center, Mo.

PUNCTURE OR BLOW-OUT

Repaired in Five Minutes with

LOCKTITE
TIRE PATCH

You can easily repair punctures and blow-outs either on the road or in workshop. This original canvas back patch is applied—cold tools unnecessary—guaranteed never to leak, pull loose or burn off. It makes no difference how large the slit, how hard you inflate the tire or how hot the road, Locktite will stick. To prove the great convenience and money-saving value of the Locktite patch we will send you a sample outfit for 10c—coin or stamps.



—enough for several repairs. Give your dealer's name.
LOCKTITE PATCH COMPANY,
1024 Bellevue Ave., Detroit, Mich.

Filled in 12 hours

The picture is a scene on the farm of Frank Murray, Goshen, Ind., where his 10 x 33 silo was filled with a No. 9 Blizzard Cutter, pulled by a 4 1/2 h. p. engine, in 12 hours. The

BLIZZARD
Ensilage Cutter

combines big capacity with unlimited elevating capacity and easy running ability.

It filled the silo of Mr. E. G. Johnson, of St. Paul, N. C., with a 4 h. p. engine when the 6 h. p. engine he had engaged did not arrive.

Even cut silage—steady work—unusual safety—small repair cost—and long life—are other Blizzard features.

Write today for valuable information and FREE booklet—
"Making Silage Pay Better." What Users Say, 1916 Catalog.

The Joseph Dick Mfg. Co.,
Box 24, Canton, Ohio



Note self feed table

Sold mounted or unmounted

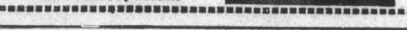
THE MOOSIER SILO
EXTENSION-ROOF

Make your silo 100% efficient. A full silo after silage is settled. Let us show you how to

Turn Waste Space Into Dollars

How to get more money out of your silo. Customers' say "Moosier Roof ought to be on every Silo." Write nearest office today for full particulars.

Sheet Metal Specialty Co.
307 N. Y. St., Goshen, Ind.
307 Savings Bank Bldg.,
Ann Arbor, Mich.



B-V-T-Silo

"The Gibraltar of Silos" will withstand the storms and destroying influences of ages. Built of vitrified Brazil fire clay tile, impervious to air and moisture. Reinforced with steel. The strongest and most permanent silo in the world. Absolutely air-tight and 100% efficient. Never needs painting, repairing or rebuilding. Write today for illustrated Silo Book D. Brazil Hollow Brick & Tile Co., Brazil, Ind.

MINERAL In use over 50 years
HEAVE COMPOUNDCURES
HEAVES

Booklet Free
NEGLECT Will Ruin Your Horse
Sold on Its Merits
SEND TODAY
AGENTS WANTED
Write for descriptive booklet
\$3 Package guaranteed to give satisfaction or money refunded
\$1 Package sufficient for ordinary cases.
Postpaid on receipt of price
MINERAL HEAVE REMEDY CO., 463 Fourth Ave., Pittsburg, Pa.

ROSS In-de-str-uct-o
Metal SILO

Keeps all your ensilage sweet, fresh and clean. Unavoidable loss reduced to about 1% due to no leakage or evaporation.
THE PERMANENT SILO can't blow down, buckle, twist or collapse. Stands rigid when empty. Fireproof, storm-proof. Capacity increased any time by adding to height. Guaranteed against silage acids. We also make the Ross Wood Silo. Write for free catalog.
AGENTS WANTED.
THE E. W. ROSS CO.
Box 314 Springfield, Ohio.

FILL SILOS QUICK
FREE FARMERS ACCOUNT BOOK

Three sizes, 6 to 18 H. P., direct drive to main cutterhead shaft, 2 1/2 in. in diameter, powerful 6-blade fan on same shaft. Emery wheel attached. Sold on trial

ROSENTHAL

SILO FILLERS

Backed by guarantee. Write for free Farmer's account and record book also catalog.
ROSENTHAL CORP.
Box 3 Milwaukee, Wis.

HAY Ship To The Old Reliable House
Daniel McCaffrey's Sons Co.,
623-625 Wabash Bldg., Pittsburgh Pa.FRUIT HIGHEST MARKET PRICE
Quick Returns. Write for
Stenell. Ship Direct to E. L.
RICHMOND CO., Detroit.

Farmers: We are now paying from two to four cents above the highest Official Detroit Market Quotation for eggs, shipped to us by express. Write us for information. It will pay you. AMERICAN BUTTER & CHEESE CO., Detroit, Mich.

EGGS, ETC.—Small consignments from producers in your territory bring very attractive prices. Returns day of arrival. Refer to Dun or Bradstreet. Zenith Butter & Egg Co., 355-59 Greenwich St., New York, N.Y.

I Buy Eggs and pay highest prices for the best. Write for information today.
A. L. FOSTER, 274 Mt. Vernon Ave., Detroit

Conference on Co-operation at M. A. C.

FIXING prices—will that be the ultimate purpose of farmers' co-operative institutions? Will these organizations, after the manner of labor unions, employers' associations, wholesale and retail organizations, finally become a means whereby producers of farm crops will determine the prices to be paid for their products?

This general proposition was among the important questions discussed at the marketing conference held at the M. A. C. last week. Both sides had champions and it would appear from the arguments that here is a fundamental question around which the future history of these organizations in America will be largely determined.

It was pointed out by Hon. Charles E. Bassett, of the Office of Markets of the United States Department of Agriculture that an attempt to federate local co-operative societies into large organizations for the purpose of setting prices would be contrary to federal laws and if attempted the courts would pronounce them as being illegal and in restraint of trade, and would force their dissolution.

Thinks Price Fixing Essential.

On the other hand, Hon. James N. McBride of the Office of Markets for Michigan, held that, inasmuch as other interests have found it expedient and possible to establish uniform and reasonable prices through organization, it was reasonable and equally right for farmers to do the same thing and in the same manner—in fact, he showed that this had already been done by bringing to the attention of the conference several cases in point, among them being the actions of the raisin growers of California, the milk producers of Chicago, the cranberry growers of the United States and also the bean growers of Michigan. He feels that sooner or later the utility of co-operation will depend largely upon the ability to set prices, such prices as will compensate farmers for the cost of production.

Mr. Bassett's contention was that the life of co-operative institutions is dependent upon the ability of the organizations to enforce contracts made with their members. If a member contracts to sell his goods through an organization and then disposes of these goods elsewhere and the organization is without power to enforce the contract or collect damages it becomes impossible to accomplish the purposes sought by co-operation. He pointed out that under the Clayton amendment to the federal law relating to farmers' non-profit corporations, provisions have been made for accomplishing this end. It is necessary, however, to comply with certain conditions; in the first place, all the members must be actual farmers; secondly, they must be organized for mutual help; thirdly, there must be no capital stock issued, and finally the purpose of the association must be to effect savings and not to make profits.

Organized Neutral Body to Conform to United States Laws.

He enumerated the difficulties encountered in federating local societies in the northwestern states where the United States solicitor found that not a single local organization complied entirely with the conditions of this law. Three general organizations were undertaken before they succeeded in satisfying the United States solicitor and were able to secure his approval. The final form which passed censor consisted of a neutral body of individuals and not of a large organization made up of the separate local societies as units.

Mr. Bassett elaborated upon the point that co-operative institutions should be constructed upon the idea of effecting a greater economy in the handling of products rather than on the idea of advancing prices, in other words, to effect a saving and not to

make profits. He illustrated this point by describing a retail store that handled a large business without clerks; customers walked into the store, picked up the articles they desired, carried them to a counter to be wrapped and then paid the cashier at the door as they passed out. This effected a saving in the operation of this store, and thereby increased the income of the owner, but the increase was a saving and not a profit. It is by increasing the income of members through saving or the elimination of waste, that co-operative institutions should justify their existence.

Here the speaker was confronted with the condition of Michigan milk producers who, according to the best information that can be gathered, are selling milk at a figure less than the actual cost of production. He contended, however, that his position would hold even in this situation, the difficulty here being that the middlemen are not efficient, and that the co-operative plant could be substituted and effect a saving by distributing the milk more economically.

Service Should Not Be Forgotten.

In his address on the federation of co-operative organizations, Dr. A. E. Cance, of the Massachusetts Agricultural College, urged that price fixing was only one feature of co-operative effort, and that service was quite as important. The dealers he found, would pay more for cranberries put up by the cranberry associations than they would for those offered by private individuals, the reason being that they found the product offered by the association to be clean, uniformly graded and properly put up in packages of guaranteed size. This service naturally made the product offered more desirable, and of course, indirectly enabled the associations to get a compensatory price for their offerings.

He declared that it is his best judgment that every local co-operative society should maintain its identity. One of the important things accomplished through organization is to standardize the practices of the members, both as to production and distribution. This work must be done almost entirely by the local organization.

Different Types of General Organizations.

After a time, however, the local units will find that they can accomplish more through the federation of a number of small societies. When they are working independently, these societies compete with each other; they will all attempt for instance, to ship their products to the same market and cut down the returns when it would be possible through proper distribution to dispose of the goods at satisfactory prices if each of these local organizations worked with rather than against the others.

There are different ways of organizing the larger body. It may be necessary to only organize for the purpose of gathering information, establishing uniform methods of accounting, to provide proper credits, etc., or it may be expedient to take over the products collected by the local associations and allow the general organization to sell the whole output and make returns to the local societies. In some cases the looser organization will serve the purpose, while in others it will be necessary to have a federation with sufficient authority to establish grades, make contracts and to carry on the general business of the organization with full power to enforce whatever measures they choose to use. The speaker stated that only those societies that are organized for a common purpose should affiliate in a federation.

Advertising Michigan Peaches.

In bringing this idea before the conference, R. H. Ellsworth, of the State Office of Markets, emphasized the fact that twenty-two peach-producing states market their crop before the Michigan

peaches are ripe. These states are offering peaches to the public from May to September. Some of the southern states that have a considerable crop to sell are well organized and succeed in getting their crop into practically every important consuming center of the country. Because of this long season, housewives are uncertain as to the proper time to buy peaches, especially for canning purposes. In many instances unscrupulous dealers have represented to their customers that they were handling Michigan peaches and that it was the proper time to put in a supply for canning, when in reality the peaches in question had been shipped from Missouri. Frequently dealers become over-stocked and take this means of getting rid of their supplies, all of which works to the detriment of the Michigan peach grower, as well as to the dissatisfaction of the consumer. Mr. Ellsworth therefore argued that if some means of financing an advertising campaign could be worked out, it would be a very desirable thing for the peach growers to do some publicity work. He believed that consumption of peaches could be greatly increased, that the superior qualities of the Michigan peach in particular could be brought to the attention of housewives, that the time when the Michigan fruit will be ready and that the kinds best suited for canning purposes could all be brought before consumers in a campaign of this kind.

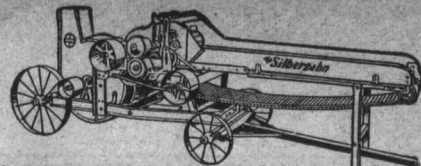
Mr. Campbell, of Detroit, an advertising man, was present and gave his views on the feasibility of such a campaign. He pointed out that there are more than enough people in the state of Michigan alone to consume the quantity of peaches grown in the state. Because of this, he felt confident that an advertising program such as was suggested by Mr. Ellsworth would go a long way toward solving the marketing of this fruit. He further suggested that inasmuch as Michigan peaches are ready during September and October, a feature of this advertising could be made by telling the housewives that they could can their peaches after returning from their summer vacations.

A committee was selected by the chairman to work out a scheme for financing such a campaign if considered feasible.

The Social Value of Co-operation.

Mr. Wm. B. Hatch, of Ypsilanti, who was a member of the American Commission that made a tour of Europe inspecting the co-operative institutions of practically every country of that continent, and whose articles on organized agriculture have appeared from time to time in the Michigan Farmer, stated that while the economic reason would bring our co-operative organizations into existence and keep them active, he believed the social value to be of even greater importance to a community than are the financial advantages. Despite the fact that earlier in the conference repeated assertions were made to the effect that co-operative effort could not be founded upon loyalty, Mr. Hatch insisted that the spirit of devotion to co-operation in European countries and the British Isles was remarkable indeed. Everywhere he found the people enthusiastic over the work and in numerous instances he had knowledge of how members were willing to sacrifice personal advantage for the interests of these societies.

The efforts of the Agricultural College and extension workers in arranging conferences upon this important agricultural movement are certainly to be commended. It is to be hoped that other meetings will be held so that now when the spirit of co-operation is being talked about so generally, the people of the state will have the very latest and most reliable information and the best experience at hand to guide them as they go about to establish co-operative institutions in their respective communities.



FORCE FEED LOW DOWN Silo Filler

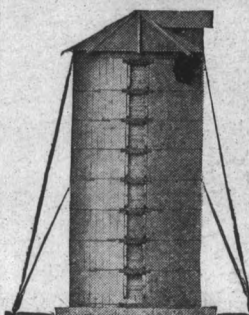
with six-fan blower means less power, less labor and trouble. The Silberzahn—the king of Ensilage Cutters—is the only cylinder cutter made with all steel frame. Guarantees longer life—more compact. Low down feed table makes feeding easy. Built for speed—can't be clogged. Has malleable knife heads, reversible feed rollers, positive safety device.

Write for new catalog
GEHL BROS. MFG. CO.
154 South Water St., West Bend, Wis.
Dept. 154, 2022 Horton Ave.,
Grand Rapids, Mich.

Light Running
Silberzahn

The Acme Creosoted Stave Silo

The 20th Century Development of Silo Perfection and Economy



The only wood Stave Silo absolutely permanent without cost of maintenance, is therefore the correct ensilage preserver and at a reasonable cost.

The staves being filled with Creosote oil under heavy pressure will not decay, shrink or swell and require no paint. The Strength and Simplicity of its construction combines with its

absolutely permanent material to make a silo that will stand unchanged for half a century. Write for particulars and prices. Some territory still open for Agents.

ACME TIE CO. OF MICHIGAN,
Reed City, Mich.

CHALLENGE

FREE SPECIAL CUTTER CATALOG

Makers of Silos, Engines, Wind Mills, Tanks, Pumps, Grinders, Etc.

Ensilage Cutters

Will do better work with less power and give longer service

BECAUSE

Driven direct to blower
Slant Cut
Auxiliary Feed Roll
Hot Riveted
All Steel Frame
Made in Three Sizes
Nos. 14, 19 and 25.
CHALLENGE CO.
153 River St.,
Batavia, Ill.

MAKE YOUR OWN CONCRETE

Requires only a 2 H.P. engine.

Drum 36-in. Dumps Clean Full Length

Save \$5 to \$10 per day

Weights only 400 lbs.



CLINTON POWER BATCH MIXER

Strongest, simplest, largest capacity, low-priced Cement Mixer ever sold. Drum capacity nine cubic feet. Mixes Concrete, Feed Fertilizer, etc. Guaranteed to satisfy or Money Refunded. HAND MIXER OF SAME PATTERNS FOR \$19.50. FREIGHT PREPAID ON ALL OUR PRODUCTS. Handsome book "Concrete in the Country" free with each mixer.
Silo Specialty Mfg. Co., 508 2d St., Clinton, Iowa

O. K. CHAMPION DIGGERS

4 Different Sizes and Types
Our machines are designed and built to meet all conditions under which they may be worked. They embody every point of

construction which insures freedom from breakdowns, costly waits and expensive repair bills. Saves time in harvesting and saves money on your crop of potatoes.

Make inquiry. Write today for our **FREE DESCRIPTIVE LITERATURE, ETC.** giving particulars of the O. K. Champion Line.
CHAMPION POTATO MACHINERY COMPANY
145 Chicago Avenue, Hammond, Indiana

Practical Science.

FEDERAL INSPECTION AND CONTROL OF DAIRY INDUSTRY.

BY FLOYD W. ROBISON.

For a number of years quite a bitter controversy has been waged between the representatives of the oleomargarine interests and the representatives of the butter interests. This controversy has been carried to the floor of congress, and nearly every session of congress has seen in resolution form or in bill form some measure either for the so-called relief of the oleomargarine industry or for the taxation of the dairy business.

Our readers will understand that the oleomargarine industry is classed along with certain other industries which come under federal inspection and supervision. The reason for this inspection by the federal government centers around the requirements of the law which says that all oleomargarine shall bear a tax of a quarter of a cent a pound to be paid to the federal government as an excise tax, and that all oleomargarine which is artificially colored or at least which is colored in imitation of yellow butter shall bear an extra tax of 9½ cents per pound, making a total tax on colored oleomargarine of 10 cents per pound. Around this question of the coloring of oleomargarine has hinged the bulk of the bitter controversy, and the warfare between the butter and oleomargarine interests has not ceased with the taxation of the colored oleomargarine, for even in those sections where coloring is prohibited by state law there has been an antagonism between the two products. But as may be readily understood, this antagonism has not assumed anywhere near the proportions which it assumes when the colored oleomargarine comes in direct competition with butter.

The oleomargarine interests have tried for years to secure the removal of this 10 cent tax. To offset the tremendous campaign which they have made, it has been necessary to have a very concerted organized defense on the part of the butter interests. The oleomargarine interests not succeeding in getting the tax removed have resorted to this and to that expedient to make the position of the dairy interests more uncomfortable.

The Linthicum Resolution.

Whether the Linthicum resolution has anything to do with this controversy in its inception we do not know, but at any rate it is one graphic illustration of the outcroppings of this controversy and regardless of whatever the real facts may be in the case many will assume that the Linthicum resolution is merely one effort of the oleomargarine interests to harass the dairy interests.

The Linthicum resolution, known as House Resolution No. 137, calls for the appointment of a committee of congress to investigate the truth of the charges that milk, butter, ice cream, and other products of milk are in many cases filthy, disease-breeding, and unfit for human consumption. This resolution was introduced by Representative J. Charles Linthicum, of Maryland, and in its essence demands in fact federal regulation and inspection of dairy products.

(Continued next week.)

Within a short time heavy steers of the old-fashioned class have sold on the Chicago market extraordinarily high, a carload which averaged 1745 pounds going for \$11.30 per 100 lbs., equivalent to \$197.28 per head, while light weight grassy steers were bringing from \$90@100 per head. Fat cattle have been bringing \$160 per head and upwards, and feeders have found buyers at \$80 per head or more, feeders bringing much higher prices than the average prices paid during the past 10 years for fat beef cattle.

PERE MARQUETTE

Why the Road "Went Broke"

The Pere Marquette Railroad is, I believe, after two years' study of the situation, not in bankruptcy for the reasons commonly accepted by those who have not given serious thought to the matter, but for the very plain and simple reason that it has not been able to earn enough during its existence to pay its way because of—

First, Light traffic density, and Second, Low rates.

Light traffic density—While the Road serves considerable territory which is well settled, and in those portions of the State the density of traffic is fairly heavy, half of its mileage is in branch and sidelines, most of which run through sections but sparsely settled. One half brings in three-fourths of the passenger revenue, for example, while the other earns but one-fourth.

The Pere Marquette is not a trunk line with an abundance of heavy traffic and long hauls. It is rather an originating and distributing line for other roads which handle the through business. For this reason it is impossible for it to make the same showing as trunk line roads operating in this territory.

Low rates—The freight rates in the section in which Michigan is located, are the lowest of any in the United States, the average being but six mills per ton mile. In other words, the Pere Marquette carries a ton of freight on the average one mile for six-tenths of a cent, or three miles for less than the value of a two-cent postage stamp.

Before the system was organized, the lines which were put together to form it were earning an average of nine mills per ton mile, but the decline of the lumber industry, which furnished about one-third the traffic at fairly good rates, forced the Road to look somewhere else for business, and now it is handling a third of its tonnage in coal, which carries a low rate. The average rate in Michigan, already low because based on the through rate from Chicago to New York, was reduced 33½% through this purely economic change.

Passenger rates were also lowered through legislative action in 1907 by the same percentage.

While the earning power of the railroad was being cut one-third, operating costs were going up, taxes, materials and supplies, wages, in fact everything the Road used or had to have jumped in price. The "high cost of living" hit the Pere Marquette as well as everyone else.

To me, it is no wonder that the Road "went broke." It would have been a miracle if it had not. Like any other business when "it costs more than it comes to," there is bound to be trouble.

Freight rates have been advanced somewhat (about 5%), and interstate passenger fares increased to 2½ cents per mile. These are steps in the right direction and have helped the situation. The next step should be to increase passenger rates within the state to 2½ cents to conform to the interstate rate.

What the Pere Marquette needs is business to support its mileage and fair rates for handling it. Then it will pay its way and stay out of bankruptcy, and be in a position to give more and better service to the people of Michigan.



Talk No. 6

Operating Receiver.

★ STAR ★
Self Feeder

Solves the labor problem—Saves time, money, feed. Matures pigs earlier and cheaper—5 compartments, corn, mineral, tankage—four sizes made for 30 to 80 hogs—adjustable feed control, filled weekly.

Special Introductory Offer
Write for our free booklet—"Self Feeders as Money Makers"—Get our terms before buying. Reference, City National Bank. Agents Wanted.

STAR SELF FEEDER COMPANY
302 Wallace Block La Fayette, Indiana

Farms and Farm Lands For Sale

NEW YORK STATE

Dairy, stock, grain and fruit farms are now the best farm investments in the United States. Farms located on improved highways, with productive soil, fine improvements, good water, best of home markets, near good schools, churches, and shipping points, at \$20. to \$60. per acre on easy terms.

Full information and free bulletin describing a large number of desirable farms will be sent on application, to

C. S. Wilson, State Commissioner of Agriculture, Albany, N. Y.

McClure-Stevens Land CO.

Successors to A. J. Stevens & Co. Established 1883. Farm, Fruit and Stock Lands. We own 18000 acres of choice unimproved land in Gladwin and Clare counties. Sold on easy payments. Interest 6 per cent. Write for information.

Gladwin, Michigan

New Land,

In Gladwin and Midland Counties, Michigan. Well located, low prices and easy terms. Staffeld Bros. (owners), 15 Merrill Bldg., Saginaw, (westside), Mich.

125 Acres. stock and tools; extra fine. 14-room house; 13-4 miles to nice town; 4 barns; plenty fruit; near High School. Cows, hens, tools. All for \$5000, part cash. Old man, nearly blind, must sell. Buildings insured for \$325; good location. Write for particulars. **HALL'S FARM AGENCY.** Owego, Tioga Co., New York

SOUTHERN FARMS
Mississippi, Arkansas, Tennessee. Send for booklet. **MARTIN & COLE, MEMPHIS, TENN.**

257 ACRE STOCK FARM on main road, all improvements. \$30 per acre. 100 others. Send for list. **Neville Farm Agency, Phelps Bldg., Binghamton, New York.**

FOR SALE

Cement Block Outfit, mixer, gasoline engine, block machine and moulds worth \$500 for \$200. Sell all or any part of this.

A. H. MURDOCK, 887 Loraine Ave., Detroit, Mich.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN ANGUS: We are now offering 15 head of Choice young bulls, one two year old Trojan Erica at \$200.00 if taken in 6 weeks, 14 head from 8 to twenty months old including the first and second prize, Senior bull calves at the 1915 State Fair. Write for Particulars, and come to the farm to look over stock, over they are of the Blackbird Trojan-Ericas, and K. Pride Families only. **U. L. CLARK, Hunters Creek, Mich. SIDNEY SMITH, Mgr.**

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. **TROJAN-ERICAS** and **BLACKBIRDS** only. Also breeders of **Percheron, Hackney and Saddle Horses.**

WOODCOTE STOCK FARM, Ionia, Mich.

Aberdeen Angus. Some exceptionally good bull calves for sale. **G. R. MARTIN & SON, BOX 244, CROSWELL, MICHIGAN**

Pure Bred Aberdeen Angus, a few bulls and heifers one year and older at \$100 each. **GEO. HATHAWAY & SON, OVID, MICHIGAN.**

AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. **White Leghorn** cockerels; **Duroc Jersey** swine. **Michigan School for the Deaf, Flint, Michigan.**

VILLAGE FARMS, Incorporated

Grass Lake, Michigan,

GUERNSEY CATTLE
BERKSHIRE HOGS

Reg. Guernsey Bulls, serviceable age, great grand sons of Gov. Chene, also grade Guernsey and Jersey heifers 6 wks old \$20 each. **Avondale Stock Farm, Wayne, Mich.**

Guernsey (May Rose) Bull for sale, born Sept. 5, 1913. G. Splendid animal in every respect, Dam 520 lbs. fat class F. J. K. Blatchford, Auditorium Tower, Chicago, Ill.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM

GUERNSEYS

Average yearly production 422.3 lbs. of fat, three-fourths of them making their records as two year olds. By the use of a pure bred sire, a big improvement can soon be attained if the right selection is made. The breeding of the Beach Farm Herd is as good as can be found, and we guarantee them to be free from contagious diseases and to be satisfactory in every way or money refunded. Write and let us tell you about them.

CAMPBELL & ANGEVINE,
Coldwater, Michigan.

BEE KEEPERS' SUPPLIES



Send for Catalog A for prices of Bee Hives, etc. We sell everything for bees, including beginner's equipments.

BERRY BASKETS

Send for catalog C for prices of Berry Baskets and crates. Special—200 Waxlined paper berry baskets postpaid for \$1.00 to any point within 150 miles of Lansing.

M. H. HUNT & SON, Box 525, LANSING, MICH.



POULTRY JOURNAL
Practical, Snappy, Instructive—YOUR PAPER. For the breeders of Mich., Ind., Ill., Wis., only. You should read it. 50c a year. 3 mo. 10c. Agents wanted. Big 4 Poultry Journal, Desk 26, Chicago.

POULTRY.

BARRED Rocks Parks 200 Egg Strain with records to 290 eggs a year—\$1.50 per 15. Delivered. By Parcel post. Fred Astling, Constantine, Mich.

Barred Rock Eggs. Cock birds, hens. Four pullets laid 950 eggs in one year. W. C. COFFMAN, BENTON HARBOR, MICH.

Cousins Northern King Strain Barred Plymouth Rocks. Have won many prizes. Eggs \$2. for 15. Both matings. Satisfaction guaranteed. David W. Cousins, North Port, Mich.

JOHN'S Big, beautiful, hen-hatched Barred Rocks. Eggs, 30, \$2.50; 100, \$7.00. Select matings 15, \$4; 30, \$7.00, all postpaid. Photos. Circulars. John Northon, Clare, Mich.

Chicks. Balance of season, Wh. and Brown Leghorns \$8.50, S. C. Reds, Anconas, Wh. Wyandottes \$11 hundred, prepaid. Freeport Hatchery, Box 12, Freeport, Mich.

Strong Day Old Chicks Now \$8.00 Per 100 S.C.W. Leghorns, large, great layers, pure white, hatch every week till Aug. 1st. Guaranteed delivery alive and lively. EVERFRESH EGG FARM, Ionia, Mich.

EGGS for hatching from pure bred White Plymouth Rocks and S. C. Buff Leghorns on free range. Kietzen & Webster, Bath, Mich.

Hatching Eggs Buff, Barred, Columbian, Partridge, Silver and White Rocks, Pekin and Rouen Ducks, Sheridan Poultry Yards, Sheridan, Mich.

Eggs for hatching—From pure bred White Plymouth Rocks, Pekin and White runner ducks, White African guineas, H. V. Hostetter, R. 1, St. Johns, Mich.

Eggs Delivered from S. S. Hamburgs rose comb White Leghorns, B. P. Rocks, white Indian Runner Ducks, fine Belgian hare bucks, \$3, \$4, \$5. Circular free. RIVERVIEW FARM, Vassar, Mich.

Fowlers' Buff Rocks Prices reduced one half. Utility eggs \$1.50 for 15, \$2 for 30, \$2 for 50, \$3.50 for 100. R. B. FOWLER, Hartford, Mich.

Breeding Cockerels White, Brown, Buff and Black Leghorn, Barred Rocks, Rhode Island Reds. Prices Reasonable. Sunnybrook Poultry Farms, Hillsdale, Michigan.

ORPINGTONS: —White, Single-Comb Kellers—strass 8 wks. old chix Cockerels. 75c., pullets \$1. up. M. E. THOMPSON, Redford, Mich.

Pine Crest, S. C. White Orpingtons. Bargain, 4 yearling hens and cock, \$8, \$12 and \$15, just one half what they will cost next spring. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.

N. I. Reds, Both Combs, Most Popular strain in Eggs for hatching, Baby Chicks. Write for catalog. INTERLAKES FARM, Box 39, Lawrence, Michigan.

R. and S. C. R. I. Reds, eggs and breeding stock for sale at reduced prices for bal. of season, Belgian hares very reasonable. O. E. Hawley, Ludington, Mich.

Rose Comb Brown Leghorns Kulp and Gale strains \$2.50 per 100 eggs. Cockerels 50c each. CLAUDIA BETTS, Hillsdale, Mich.

BUFF LEGHORNS: Big cut in prices for remainder of season. DR. WILLIAM SMITH, PETERSBURG, MICH.

Ferris Leghorns—200 Egg Strain—Eggs, chicks, 8 week-old pullets from hens with records up to 264 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list parts. Write for it now. FERRIS LEGHORN FARM, 334 Union, Grand Rapids, Mich.

RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 5 to 12 lbs., according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00; 100, \$5; 120, \$6. Mammoth Bronze Tom Turkeys, 8 to 38 lbs., according to age \$6 to \$25, 10 eggs \$3. A. E. Cramton, Vassar, Mich.

ROSE and S. C. R. I. Red eggs by mail \$1.50 per 15 or 20c per egg from special pens; \$5 per 100. Hens for sale. JENNIE BUELL, Ann Arbor, R. 8, Mich.

Buff Wyandotte and Barred Rock Cockerels \$2.00 each, eggs for hatching \$1.00 per 15. Mrs. R. W. BLACK, Caro, Michigan

SILVER GOLDEN and WHITE WYANDOTTES. Eggs from all matings, 150 per 15, \$2.50 per 30 until July 1st. C. W. Browning, R. 2, Portland, Mich.

White Wyandotte Cock & Cockerels. Eggs \$1, \$2, \$3, per 15, \$4 per 50, \$7 per 100. DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.

WHITE WYANDOTTES. Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100. From choice stock. A. FRANKLIN SMITH, Ann Arbor, Michigan.

White Wyandotte Eggs Half Price balance of the season. EGGADAY POULTRY RANCH, Marshall, Michigan.

"PREMIER" PARTRIDGE WYANDOTTES 80% winter layers. Eggs \$2.00 per 15. W. H. BACON, Petersburg, Mich.

Wanted Spring Chickens of White Breeds. W. R. EASTMAN, Harbor Springs, Mich.

M. BRONZE TURKEYS, toms \$5.00, hens \$5.00. July hatched hens \$3.00. RALPH WISE, Nurseries, Plainwell, Mich.

DOGS

Fox, Coon and Rabbit Hound Pups From the best of blood and broke hounds. \$5.00 each. Broke hounds at all times, stamp photos. H. C. LYTLE, Frederickburg, O.

HOUNDS FOR HUNTING—Fox, Coon and Rabbits, all ages. Send 2 cent stamp. W. E. LECKY, Holmesville, Ohio.

Controlling Hawks and Crows

DURING the summer and especially near the corn fields, the crow problem is a serious menace to the flock of small chickens. Hawks may have some friends, but their friendship does not extend to the producer of market poultry. The fact that there is no sure cure for these pests frequently leads farmers to give up the fight and figure on their annual loss from this source as unavoidable. The placing of scarecrows near the poultry houses and in the corn field will usually keep the birds away for one day. After that the crows and hawks learn the deception and the scarecrow must be moved every day and placed in a different position or it may serve only as a roosting place for the pests it is supposed to keep away. Attaching tin cans to the arms of the scarecrow and allowing the arms to swing in the wind will cause a tinkling noise that the birds will fear.

Trained Dogs Protect Poultry.

A well trained watch dog to watch the poultry houses will keep away the crows to a certain extent if it is taught to run and bark at them whenever they appear near the field. I have had some success this year with a Scotch Collie which has learned to spend all of his time near the colony houses and watch for intruders. After sending him down into the corn field after the crows for several weeks he learned that they did not belong there and seemed to enjoy going after them. The Airedale is also highly recommended as a watch dog for the poultry yard and can be taught to bark at crows and hawks, as well as chase them whenever they light on a nearby fence or in the poultry yard.

Small poultry yards can be protected from hawks and crows by driving stakes at various intervals and connecting them up with twine. The birds will suspect a trap and not fly under the network even to dine on the best of young chicks. Sunflowers planted thickly in the runs will give the chickens a chance to hide and often allow them to escape. At the approach of a crow or hawk little chicks usually squat down in the grass and remain still and for this reason they can be quickly gathered up and carried away. As the chicks grow older they will appreciate the danger and start for safety. Then dense foliage or shelters built near the colony houses will be of value.

Use a Gun to Scare Hawks.

The shot gun is probably the best insurance policy against loss of chicks. Seldom is it possible to bring down a hawk or crow, but they have a wholesome respect for a gun and the explosion will drive them from the neighborhood for several hours. It is best to begin fighting the hawks and crows early in the season before they have enjoyed many chicken dinners. After once finding out the source of supply they are persistent hunters and will make serious inroads in the poultry profits in the course of a year. In a flock of several hundred chicks the loss of fifteen or twenty per cent through hawks and crows may represent the bulk of the profit, "gone but not forgotten," and there is nothing more discouraging than to watch an ugly black crow carry off one of your best White Leghorn chicks and pick it to pieces in the distant corn field.

There is no sure way of keeping down these pests, but with the present price of poultry, eggs and corn, it would seem desirable to place a liberal bounty on both crows and hawks and give the farm boy a chance to earn some spending money by cleaning the pests from his community. Possibly they do kill harmful field mice and have some value, but on the other hand, the destruction of the birds of prey might result in an increase of song birds which have a great value as insect destroyers. I have seen many

people who respect the crow and love to see the hawk soar in the sunshine but none of them are engaged in the business of trying to make money from the mighty American hen.

Ingham Co.

R. G. KIRBY.

A HATCHING PROBLEM.

Could you advise what is the cause of chickens not seeming to mature right in the shell before hatching. I have set a lot of hens this spring and most of the eggs are fertile, but when the time comes for them to hatch they break through the shell all right. But there seems to be quite a little of the yolk still in the shell and the chicken is hanging to it and dies that way.

Tuscola Co.

G. C. Y.

I believe the trouble you are having is due either to lack of vitality in the germs or else to the hens sitting too closely, not giving the eggs ventilation enough in the nest. You probably know that this can be a result of the hens being kept on their nest too much. Some hens by sitting too closely and not turning their eggs enough, are apt to bring off as many cripples as will be found in a machine.

You may get the results you mention by placing the nest in too damp a location, but this is not probable.

J. C. GRAHAM.

SORE HEAD.

I discovered a hen in our flock that had a pale comb. I caught her and found purplish lumps a quarter to a half-inch in diameter, which seemed hard like tumors. These were on her neck, head and all over her body, on feet and legs; those on her legs were the tops of the lumps.

SUBSCRIBER.

Your hens undoubtedly have what is called "sore head," or chicken pox, which is a skin disease closely related to roup.

As long as the disease is confined to the skin, the birds seem apparently healthy and may recover without treatment in ten to twenty days, but in about fifty per cent of the cases, these swellings appear around the eyes and become so large that the birds cannot see to eat and in time die from the effects. Sometimes the mucous membrane of the mouth develops diphtheretic membranes, and when such is the case, death occurs earlier than in other forms.

As this disease is somewhat contagious, diseased birds should not be introduced in the flock, and as soon as sore head symptoms are noticed, birds having it should be isolated. When the disease is localized, a small amount of treatment will effect a cure. The crusts or nodules should be removed and the places treated with a two-ounce solution of creolin and then dusted with iodoform. Such treatment should be followed by a daily greasing with vaseline or lard.

As with roup, this disease is caused by dampness and unsanitary surroundings. It is more prevalent during the warm, wet weather. To keep the disease in check, I would suggest that you make sure that the coop is kept dry and clean, and also that you use care in giving the birds nothing but fresh clean food and clean water. The feeding and drinking utensils should be scalded frequently in order to keep them in a sanitary condition.

CORN FOR LAYING HENS.

Under usual market conditions corn is one of the most economical feeds for laying hens, and can well be used to a very large extent in their ration. However, corn must be supplemented with a nitrogenous feed, such as meat scrap or skim-milk, if good results are to be obtained from its use. Recent experiments show that hens fed a ration composed of 87.2 per cent corn and 12.8 per cent meat scrap produced eggs cheaper than hens given a greater number of feeds.

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

Guernseys, yearling bull, also a bull calf, Gr. & Son, Pauline Sottwood 745 lbs. fat, cheap enough so you can buy. J. M. Williams, No. Adams, Mich.

GUERNSEYS

We offer a choice lot of high grade Guernsey cows and heifers, bred to registered bulls La Ferrie of Maple Lane, No. 23192 and Sir Dena No. 36173. Prices reasonable. THE JENNING'S FARMS, R. 1, Bailey, Mich.

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

Herefords—One Bull Calf. ALLEN BROS. PAW PAW, MICH.

HEREFORDS: 7 Bulls, 10 Heifers. EARL C. McCARTY, Bad Axe, Michigan.



Purebred Registered
HOLSTEIN CATTLE

Holsteins, the best dual purpose breed. If your present dairy herd is not quite up to standard get a good purebred registered Holstein bull, and he will transform the poorest herd into a profitable one within four or five years. The purebred sire will always demonstrate his right to be called "The foundation of the dairy industry." There's a vast difference between keeping Holsteins, and just keeping cows. One purebred Registered Holstein will do the work of two and possibly three ordinary cows. You realize a saving in feed, housing, risk and labor. And moreover, Holstein cows milk longer, more per year, and more per life than any other breed. Investigate the big "Black-and-Whites." Send for FREE (Illustrated Descriptive Booklet). The Holstein-Friesian Association of America, P. L. Houghton, Sec'y., Box 164, Brattleboro, Vt.

Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 64% fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

HOLSTEIN BULLS FOR SALE

Four of them from 12 to 17 months old by 31 lb. sire dam's A.R.O. Price \$100.00 to \$150.00. Younger bull calves from \$50.00 up. BLISSVELDT FARMS, Jenison, Michigan

FOR SALE

SOME VERY FINE YOUNG BULLS Whose sires have as high as 31 lbs. of butter behind them. As they are young, will make a low price on them. BIGELOW'S HOLSTEIN FARMS, BREEDSVILLE, MICH.

HOLSTEINS, a nice straight deep bodied, blocky built bull calf, born Oct. 5th, 1915. His 7 nearest dams have A. R. O. records that average butter 7 days 23.36 lbs., milk 533.36 lbs. W. B. READER, Howell, Mich.

HOLSTEIN-FRIESIAN CATTLE

Herd headed by grandson of King Segis Pontiac, and tuberculin tested annually. A few choice young bulls from dams having official records. PEACELAND STOCK FARM, Three Rivers, Mich. Chas. Peters, Herdsman. C. L. Brody, Owner, Fort Huron, Mich.

30 lb. bull for sale, 2 years old, by a son of King of the Pontiacs. Dam sold for \$1000 in Detroit sale. Ferd. J. Lange, Sebewaling, Mich.

75 gets Hazel-let grandson of Maplecrest De Kol Parthena and Pontiac Maid 302 lb. Born March 25. Dam Pontiac Hesperia 2nd, 14.89 lb; 436.6 lb; her dam's sire brother to sire of world's record cow 3184 lb milk 1 yr. M. L. McLAULIN, REDFORD, MICH.

I Have Holstein Bulls, Bull Calves and Cows that I offer for sale. I can show breeding, records, in individuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

"TOPNOTCH" Holsteins

By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herd of wonderful quality has been established. We are selling young bulls of this "TOP NOTCH" quality, of serviceable age, at moderate prices. Information, pedigrees, etc., on application. McPHERSON FARMS CO., Howell, Michigan.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISHBECK, Howell, Michigan.

REG. Holstein-Friesian cows and heifers, some fresh and some ready to freshen \$25. Reg. bulls \$30 up. Frank Staffen, R. 3, Box 38, Howard City, Mich.

Registered Holstein Bull 4 months old. Dam has a sister. His sire dam made 32.94 lbs. of butter and 712 lbs of milk in 8 days. A bargain at \$50.00, delivered, safe arrival guaranteed. HOBART W. FAY, MASON, MICHIGAN.

CHOICE HOLSTEIN BULLS—all from A.R.O. dams Entire herd on Semi of test for yearly work. Jr. 2-yr. old just finished year's record of over 15,000 lbs. milk, over 1000 lbs. butter record in mature class. Cherry Creek Stock Farm, M. E. Farnelle, Prop., Hillsdale, Mich.

FOR SALE Reg. Holstein females, Pontiac Korndyke and Hengerveld DeKol Breeding. Price right. 1 to 5 years. John A. Rinke, Warren, Mich.

6 Holstein Bulls

Ready for service, at farmers' prices. All have high testing A. R. O. daughters from world Record Sire, nothing better at any price. LONG BEACH FARM, Gull Lake. (Kalamazoo Co.) Michigan.

For Sale, 3 pure bred Holstein Bulls, ready for service, vice. Sires, 2 nearest dams average 34.55 lb butter in 7 days. 1 bull and 2 heifers \$400. W. C. JACKSON, 719 Rex St., South Bend, Ind.

For sale nine head of Registered Holstein females from 4 months to five years old and one fall calf splendid breeding. Newton Bros., Freeport, Mich.

Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure, 15 weeks old, beautifully marked, \$20.00 each, crated for shipment anywhere. Edgewood Farm, Whitewater, Wis.

32.50 For Sale, Registered Holstein Bulls, age 3 months to 20 months, 32.50 sons and grandsons from a 32.50 Bull. D. E. DEAN, ROUTE 2, MILFORD, MICH.

Veterinary.

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

Barbwire Cut.—Last summer my 12-year-old horse cut foot down near the hoof on barbwire and it has discharged pus ever since. Our local Vet. told me that it contained a foreign body which he removed and prescribed a lotion which partially healed it. A. V. S., Deckerville, Mich.—Apply either tincture of iodine or iodoform every day or two.

Tumor.—I have a sow that has a bunch on belly which I have been trying to reduce with iodine, but fail. Will this bunch affect her pigs? L. A., Okeanos, Mich.—The bunch you refer to is a tumor and should be cut off. I do not believe it will affect her pigs.

Warts on Head and Neck.—I would like to know how to treat a heifer that has warts on head and neck. I first noticed these growths four or five weeks ago and am inclined to believe that they are enlarging. W. W. D., Clarkston, Mich.—Those that have necks should be cut off, then apply equal parts of powdered alum and tannic acid. Also apply a saturated solution of salicylic acid in alcohol to the other flat warts every two days.

Swollen Tendons.—The cords on the back part of fore legs of cow are swollen and tender. Part of the time she folds fore legs and stands on knee; she is quite uncomfortable when standing while I milk. I am not sure but her feet are sore. M. F. G., Alger, Mich.—Dissolve ¼ lb. of acetate of lead, 3 ozs. of sulphate of zinc in a gallon of water, bathe feet and legs three times a day.

Umbilical Tumor—Collar Boils.—I have a colt 40 days old that has a hard bunch at navel which I am certain is not a rupture, but I would like to know what to do for it. I also have a horse troubled with boils on the neck, and this is the fourth year that he has had them. Both the horse and colt are seemingly in good condition. C. S. C., Chippewa Lake, Mich.—Paint bunch with tincture of iodine twice a week. Also paint collar boils with equal parts tincture iodine and spirits of camphor every day or two and give him ¼ oz. of Fowler's solution at a dose in feed twice a day.

Strangles.—I would like to know what can be done for a horse that had distemper of a chronic nature. He has a nasal discharge, makes some noise when breathing, and I am afraid whatever ails him it will terminate in the heaves. L. D., Frederick, Mich.—Give horse 1 dr. of powdered sulphate iron, 1 dr. ground nux vomica, ½ dr. powdered lobelia and 2 drs. of ground gentian at a dose in feed three times a day. Dissolve ¼ lb. of baking soda in a gallon of tepid water and wash off nostrils twice a day. Rub throat with camphorated oil once a day.

Nasal Catarrh—Chronic Cough.—I have a black horse that has had a bad cough for the past six months, and when he drinks, white stuff discharges from his nose. I have doctored him all spring and he don't seem to get any better. H. H., Poland, Mich.—Give 2 drs. of dilute hydrochloric acid, ½ oz. ground licorice, ½ oz. ground gentian at a dose in feed three times a day.

Chronic Indigestion.—My cows seem to be inclined to chew rotten wood and rubbish in preference to eating good grass. H. R., Allendale, Mich.—Mix together one part powdered sulphate iron, two parts ginger, three parts of cooking soda, five parts of ground gentian, and give each cow a tablespoonful at a dose in feed twice a day.

Blocked Quarter of Udder.—I have two cows that came fresh about a month ago and we are unable to get milk from one quarter of udder. Last fall each of these cows had a bunch form in udder which seemed to prevent the milk flow. What can be done to clear out the bag and allow them to give milk, if not now, but when they come fresh again? R. E. H., Peacock, Mich.—Both of your cows suffer from infected udder and you will obtain the best results by applying one part iodine and nine parts fresh lard, or wool fat to blocked portion of bag three times a week. A recovery in these kind of cases is always very doubtful.

Indigestion.—Our milch cows are pastured on 20 acres of cleared land, and while driving them to and from pasture, they pick up sticks which are piled along the road. These sticks and rubbish were plowed up after some old buildings had been removed. F. E. K., Gladwin, Mich.—Mix together equal parts air-slaked lime, ground ginger, gentian and powdered charcoal—give each cow a tablespoonful at a dose twice a day. Furthermore, your cattle should be well salted and their food supply changed.

HOLSTEINS FOR SALE

Having sold my farm in the city for platting purposes, it will be necessary for me to dispose of the Holsteins before August 1st next, as I have agreed to surrender possession of the farm at that time.

These animals represent the highest type of the Holstein breed and are representatives of the best known families.

I shall be glad to have any one who anticipates starting a Holstein herd to come and see them. They are suitable for foundation stock and are the result of years of careful breeding.

I have on hand a number of young bulls of the highest type of the breed, ready for service, that will be sold at very reasonable prices.

I venture the assertion that a man can take four of these animals, retain them and their female offspring for six years, selling the males, and at the end of that period his pure bred Holsteins will be worth more than his 80 acre farm, provided he grows them and takes first-class care of them. In the meantime he has had the milk and the returns from the sale of the bull calves.

A year's time will be given to responsible parties, with interest at 6%.

D. D. AITKEN, Flint, Michigan.

Duroc Jersey Herd Boars

Special Offering of High Class Fall Boar Pigs. Breeding and Individuality good enough for breeders who appreciate the best.

Also some good farmer's boars. This is the best lot of fall pigs we have ever had to offer. A cordial invitation is extended to visit the farm and inspect the stock. If you wish one of the best young Jersey bulls in Michigan we have him for sale. For further particulars, address,

Brookwater Farm, Swine Dept., Ann Arbor, Mich.

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

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

Senior herd bull, Majesty's Wonder 90717, for sale, sire Royal Majesty, Dam Mina's Dewdrop, his full sister Majesty's Butter cup produced 732.2 lbs butter in 1 yr. Sons of Royal Majesty are scarce, here is a chance to get one reasonable, must sell to avoid too close inbreeding, write for particulars, also choice young bulls from above sire. Alvin Balden, Capac, Michigan.

Hillside Farm Jerseys A 10 mos. old, solid color bull now offered for sale, Dam is a R. of M. cow with record of 546 lbs. of butter as a 3 yr. old. He is a fine individual. Price right. C. O. Deake, Ypsilanti, Mich.

Maple Lane R. of M. JERSEY HERD offers for sale, tuberculin tested cows, heifers, bulls, and bull calves backed by several generations of R. of M. breeding. IRVIN FOX, Allegan, Michigan.

JERSEY BULL CALF FOR SALE

Ready for service. Majesty—Raleigh breeding. Meadowland Farm, Waterman & Waterman, Ann Arbor, Mich.

REGISTERED JERSEY BULLS FOR SALE

1 yearling, and Bull calves from 8 to 10 months old. Also 3 cows. Write your wants. SMITH-PARKER, R. D. No. 4, Howell, Michigan.

BIDWELL SHORTHORNS

For "Beef and Milk" Registered bulls, Scotch-topped roans, reds and white for sale. Farm at N.Y.C. Depot; also D. T. & L. R. Y. Address G. R. Schrader Mgr. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

Shorthorn Cattle of both Sex for Sale

W. W. KNAPP, Howell, Michigan.

DAIRY BRED Shorthorns of best Bates strains, young bull 7 months old for sale, price \$150. J. B. HUMMELL, MASON, MICHIGAN.

FOR SALE—Reg. Short Horn Bulls by Maxwellton Monarch 2nd, a son of Avondale, from 8 to 10 mos. old John Schmidt, Reed City, R. No. 5, Michigan.

SHORTHORN COWS FOR SALE: No Bulls at present. R. R. Station, Elsie. H. B. PETERS, Carland, Mich.

Shorthorn AND POLLED DURHAMS FOR SALE. Have red roan and white. Have over 100 head in herd. C. Carlson, Leroy, Mich.

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

Two yr. red shorthorn Bulls. Roan calf 9 mo. old. Poll Angus Bull calf, 8 mo. old, not reg. Priced to move quick. CHASE'S Stock Farm, Marlette, Mich., R. 1.

Dairy Short Horns for Sale. Herd Established Fifteen Years. M. A. BRAY, OKEMOS, (Ingham Co.) Mich.

Registered Shorthorn Cattle, young bulls and heifers \$100.00, bred cows and heifers \$150.00. Write. W. J. BELL, ROSE CITY, MICHIGAN.

Red Polled Cattle. Have a fine young bull and O. I. C. pigs for sale. John Berner and Son, Grand Ledge, Mich.

HOGS.

Royalton Bred Berkshires. Six weeks old pigs, both sexes, registered, nice shaped and marked. \$7.00 each. Order quick. D. F. VALENTINE, Supt., Temperance, Mich.

Berkshire Hogs. Sows bred to farrow in April, Best of breeding. Maple Place Farms C. S. BARTLETT, Prop., Pontiac, Michigan

Berkshires of best breeding, of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, R. 2, Bloomingdale, Mich.

SWIGARTDALE FARM

HOLSTEINS AND BERKSHIRES

We have for sale a fine bull calf born March 6th, nicely marked, dam a nineteen pound three year old, price \$300. In Berkshires we have a nice lot of fancy fall boars, sired by Sensational Chalmers Masterpiece 2nd, also spring boars, these are all large high class animals, of unsurpassed breeding, our prices are right, and we guarantee to please, or return your money.

Swigartdale Farm, Petersburg, Mich.

Berkshires. Of various ages, either sex, open or bred, prolific strains. Registered, at moderate price. Elmhurst Stock Farm, Almont, Michigan.

Berkshires. I have 6 choice fall gilts bred for Sept. farrowing at \$25 each for immediate delivery. A. A. PATULLO, R. 4, Deckerville Mich.

Duroc Jersey Boars and Red pigs, price, weight, etc., given. I guarantee satisfaction, express prepaid. J. H. Banghart, East Lansing.

Duroc Jerseys, some choice Jan. boars, spring pigs, pairs & trios not akin, a few sows for June farrow of leading blood lines. W. C. Taylor, Milan, Mich.

Duroc Jerseys—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN. CHERRY LAWN FARM, Shepherd, Michigan.

Duroc Jersey Sows and gilts bred for early Sept. farrow. Spring pigs, either sex. E. D. Heydenberk, Wayland, Mich.

For Sale, Duroc Jerseys, choice breeding spring pigs either sex. Prices right. John McNicoll, Station A, R. 4, Bay City, Mich.

Duroc Jersey—Sept. boars ready for service also open gilts and some sows bred for Aug. and Sept. E. H. MORRIS, MONROE, MICH.

DUROC JERSEYS—all sold out for the present. Wm. W. Kennedy, Grass Lake, Michigan.

DUROC JERSEYS—A few fall boars for sale. Carey U. Edmonds, Hastings, Michigan.

Duroc Jerseys I have some good last September bred for September farrow. Gilts will be H. G. Keesler, R. No. 5, Cassopolis, Michigan

DOBSON'S DUROCS Combine size, quality, breeding. Boars for sale. Pigs at weaning time. Registered Jersey bull. Orlo L. Dobson, Quincy, Mich.

Duroc Jersey Boars Ready for service. Big, smooth, lengthy fellows. Grand Champion blood lines. Gilts bred for Sept. farrow. F. J. DRODT, R. 1, Monroe, Michigan.

DUROC Jerseys with breeding quality and size, fall sows bred to farrow early ready to ship, express paid. J. ROBERT HICKS, R. 3, ST. JOHNS, MICH.



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 4 months old. Write for my plan—More Money from Hogs. G. S. BENJAMIN, R. F. D. 10 Portland, Michigan

Durocs, Sows to farrow Aug. and Sept., spring pigs either sex. Percheron Stud colt one year old. E. J. ALDRICH, Tekonsha, Cal. Co., Mich., Bell Phone.

CHESTER WHITES Sows bred for Sept. farrow, spring pigs in pairs, not akin. F. W. ALEXANDER, Vassar, Mich.

O. I. C. BRED GILTS, Also young boars shipped C. O. D. J. CARL JEWETT, Mason, Mich.



O. I. C. Swine—A nice lot of spring pigs. Write Farm, Holland, Michigan. R. R. No. 5.

O. I. C. October boars weighing 200 lbs. at \$25 each for April shipment. C. J. THOMPSON, Rockford, Michigan.

O. I. C's. Send me your order for choice spring boars, shipped C. O. D. and registered in purchaser's name. G. P. ANDREWS, Dansville, Mich.

O. I. C. Serviceable boars and bred gilts all sold. Booking orders for Spring pigs \$10.00 each. H. W. MANN, Dansville, Michigan.

O. I. C. Swine. I am booking orders for Spring pigs One yr. old Holstein bull for sale Elmer E. Smith, Redford, Mich.

O. I. C. bred gilts all sold, am offering Sept. boars and gilts, large growthy ones, and booking orders for spring pigs. A. J. Barker, R. 1, Belmont, Mich

400 Big Type O. I. C. and Chester White Pigs From Feb. Mar. and Apr. farrow sired by the five best boars in the state. School Master 52707 who won more champions, defeated more champions than any boar show 1915. Also 2nd, sire to our undefeated breeders young herd at 7 state fairs, Allen junior champion at Wis. State fair 1914, and Captain Jim 38161, under 6 months boar and junior champion at every state fair show 1915. Then we have Le Doux model 29015, first in class at Sioux City, Iowa, 1914. Get our catalogue, its free. We Register Free; Guarantee satisfaction in every way. **ROLLING VIEW STOCK FARM, Cass City, Mich.**

O. I. C's. A few bred sows to farrow in April, May and June. I have 20 last fall boars to offer, also gilts. Have them not akin. All good stock. Otto B. Schulze, Nashville, Mich. ¼ mile west of depot.

O. I. C's Some extra good fall boars; also gilts. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

O. I. C's Strictly Big Type Two Sept. boars, three 1915 July gilts, bred for July farrow, sired by Lengthy Prince, No. 38161, bred to Wonder 4th, No. 3327, he by Wonder 1508, one of the most popular boars of the breed. Have the finest lot of Spring pigs I ever raised. Can furnish in pairs not akin. **NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.**

O. I. C. SPRING PIGS, Ready to Ship. Write for Prices. **JULIAN P. CLAXTON, FLINT, MICH., R. 8.**

O. I. C. September pigs, both sex. Bred E. B. MILETT, Fowlerville, Michigan.

O. I. C. SWINE: If you are interested in you with a choice pair or trio, not akin, or a gilt, due to farrow about September first. A. J. GORDEN, R. No. 2, Dorr, Mich.

O. I. C's Pairs and Trios no akin. 2 Reg. Holstein bulls 6 and 8 months old. Cloverleaf Stock Farm, Monroe, Mich., R. No. 1.

Boars at Half Price We still have a few big boned, big type Poland China boars ready for service, weighing up to 250 lbs. not fat at \$20 & \$25 each. Registered in buyer's name. Also registered black Percheron Stallion 2 years old \$250.00. J. C. BUTLER, Portland, Mich., Bell Phone.

BIG TYPE Poland China sows bred for July and August arrow, Spring pigs. G. W. HOLTON, Route 11, Kalamazoo Michigan.

Big Type Poland Chinas—Boars of August farrow, booking orders for spring pigs. A. A. WOOD & SON, Saline, Michigan.

FOR SALE. P. C. Sows, "Big Type" bred for Sept. farrow. Extra good 7 months' boar. March and April pigs. S. C. B. Minorcas, R. W. Mills, Saline, Mich.

Poland China Spring Pigs

Our herd sire was Champion and Grand Champion at the State Fair last fall. Our sows are great big, stretchy, splendid individuals, with best breeding. Pigs from such matings will please you. Get our prices.

HILLCREST FARM

KALAMAZOO, MICH.

Large Strain P. C. A few choice fall boars ready for service, and 1 May boar. Gilts for early farrow all sold, a few choice Gilts for farrow in Aug., and Sept., bred to black Wonder and Oaklands Equal Jr. H. O. Swartz, Schoolcraft, Mich.

Large Type P. C. Gilts and sows. Bred for Mar. and April farrow. Sired by Big Des Moines, Big Knox Jr., and Giant Defender. Bred to Big Knox Jr. Smooth Wonder 3 and Big Jumbo, four great best boars in state. Come or write. W. E. Livingston, Parma, Mich.

BIG Type Poland Chinas, Sired by Big Type King, our 1000 lb. boar. Spring pigs, sired by big type King, Peconmeyer A Wonder Jr., and Mow's Big Bone. W. Brewbaker & Sons, Elsie, Michigan.

For Sale Poland Chinas either sex, all ages. Something good at a low price. P. D. Long, R. F. D. No. 8, Grand Rapids, Mich.

Heavy boned Poland China Spring pigs from large Prolific sows, also young and older sows bred for Sept. farrow. **ROBERT NEVE, Piersen, Michigan.**

Large Type P. C. Sows & Gilts all sold. Have 3 extra good spring boars. Sired by Big Defender. W. J. HAGELSHAW, Augusta, Michigan.

Large Yorkshires August and September pigs. 2 spring boars. Prices reasonable. W. C. COOK, Route No. 1, ADA, MICHIGAN.

GROWTHY	THE	DISEASE
PROLIFIC	"MULEFOOT"	RESIST-
PROFITABLE	HOG	ING
FOUNDATION STOCK FROM BEST BLOOD OF BREED		
THE CAHILL FARMS		
KALAMAZOO	- - -	MICHIGAN

HAMPSHIRE SWINE Spring Pigs, registered. John W. Snyder, R. 4, St. Johns, Mich.

Hampshire Swine. Bred Sows and gilts for August and September farrows. Spring pigs, both sex. FLOYD MYERS, R. No. 9, Decatur, Ind.

H. H. Halladay O. H. Halladay & Son Breeders of Hampshire Swine. Write your wants. Clinton, Mich.

SHEEP.

Kope Kon Farms Offers 100 Yearling Shropshire Rams. 100 Yearling And Aged Ewes. S. L. WING, PROPR., KINDERHOOK, MICH.

Oxford Down Sheep. Good yearling field Rams and ewes of all ages for sale. M. F. GANSSLEY, Lennon, Michigan.

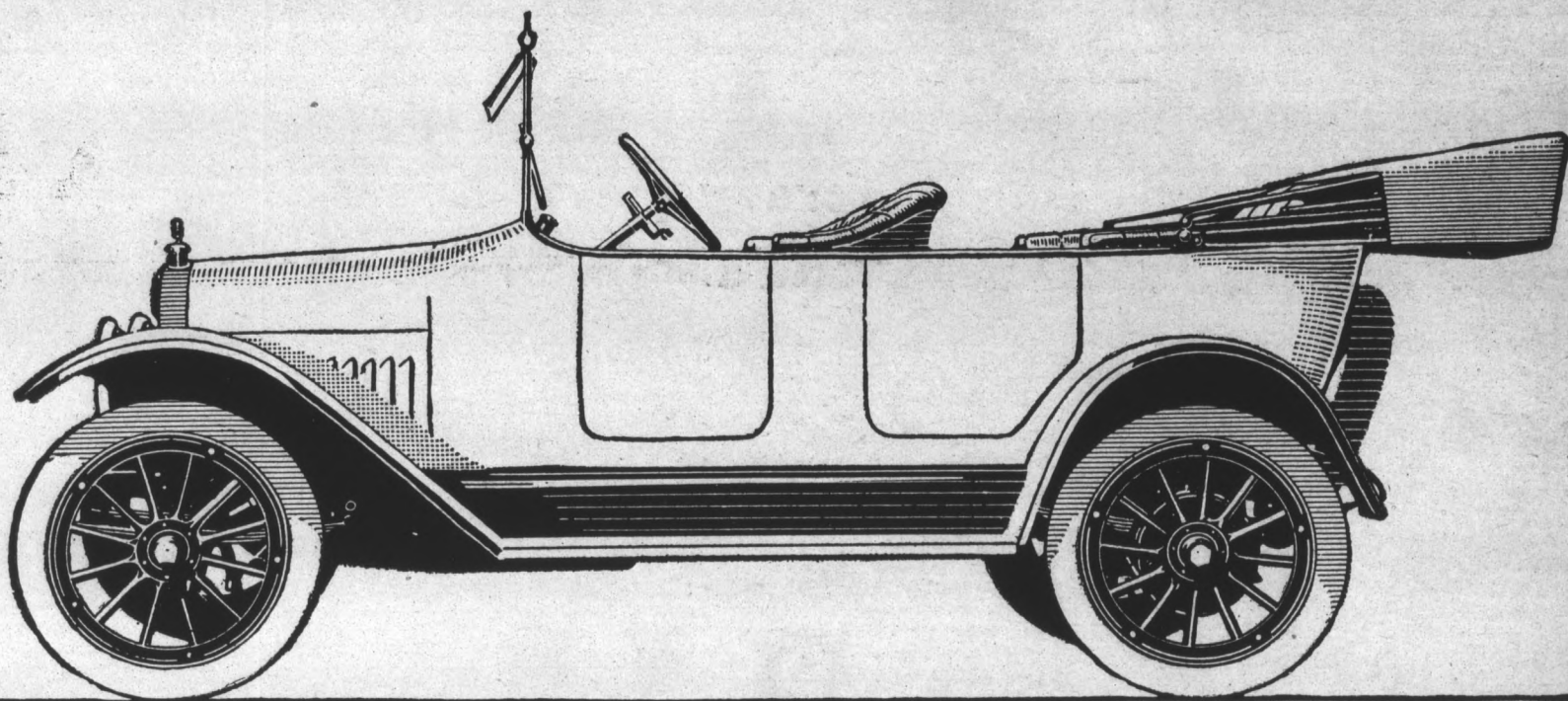
HORSES

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

FOR SALE—Registered Percheron Stallions, Mares and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Maxwell \$595

NEW PRICE



INCREASED PRODUCTION AND STANDARDIZED MANUFACTURING
PERMIT REMARKABLY LOW PRICE

THE prices of Maxwell Cars are again reduced—\$595 for the touring car and \$580 for the roadster—effective July 1, 1916.

Only the price is changed—not the car.

Greatly increased production reduces our manufacturing cost per car.

Standardized manufacturing—only one Maxwell chassis—makes possible further production economy.

By reducing the price we also reduce the selling expense.

Thus the Maxwell owner gets the most *actual intrinsic value* for his expenditure.

Bear in mind that the Maxwell is the World's Champion Endurance Car. Its genuine through-and-through merit has been established beyond question or doubt.

The Maxwell has lowered many records for gasoline and oil consumption. It is everywhere recognized as one of the most economical cars to maintain.

These facts, considered along with the remarkably low price now quoted, make the *Maxwell the one big automobile value of all time.*

This announcement will be read by hundreds of automobile dealers as well as prospective retail buyers. To those dealers who wish to know if there is any open territory, we will say that Maxwell sales contracts for 1916-17 are being signed now by our traveling salesmen. There will be some changes—particularly in the allotment of territory. Therefore, interested dealers, wherever located, should write us now.

WHAT THE MAXWELL PRICE INCLUDES

Long-stroke, high speed, four-cylinder motor; 20 to 25 miles to the gallon of gasoline (average).

Irreversible steering gear; automatic motor lubrication by splash and pump; 500 to 1,000 miles to gallon of oil.

Thermo-syphon cooling.

A running-in-oil clutch, so smooth as to make the driving of a novice as free from gear-clashing as that of a seasoned driver.

Tall, narrow, racing-type radiator, Maxwell-made.

Maxwell-made axles—I-beam front and semi-floating rear; heat-treated alloyed steel.

Gasoline tank in cowl; short, accessible gas line to carburetor.

Maxwell-made stream-line body, well finished in every detail. Deep, comfortable upholstery.

30 x 3½ tires all around, non-skid on rear; average life from 8,000 to 10,000 miles. Demountable rims.

Tire carrier at rear, with extra rim.

Substantial, Maxwell-made crowned fenders and linoleum-covered running boards.

Electric starter, electric lights, electric horn.

High-Tension Magneto, an independent source of ignition.

One-Man top with quick-adjustable; storm proof curtains.

Rain-vision, adjustable, ventilating windshield.

High-grade speedometer.

The Maxwell Touring Car is a full five-passenger car. Every Maxwell model seats comfortably the number of passengers which it is rated to carry.

Compare these Maxwell features with those of cars selling at higher prices.

SEND FOR NEW CATALOG—*This new book is different from the ordinary automobile catalog. It not only illustrates and describes Maxwell Cars but it also tells an interesting story about the Maxwell Institution. Just write (plainly) your name and address and send this clipping to Dept. S. Maxwell Motor Company, Detroit, Mich.*

Name _____

Address _____

City and State _____

(S)

Maxwell

Motor Company • Detroit, Mich.