

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. 1
Whole Number 3895

DETROIT, MICH., SATURDAY, JULY 1, 1916

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



The Michigan Farmer

Established 1843.

Copyright 1916.

The Lawrence Publishing Co.

Editors and Proprietors

39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 4625.

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 Editor
BURT WERMUTH.....Associate Editor
FRANK A. WILKEN.....Associate Editor
ALTA LAWSON LITTELL.....Associate Editor

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 advt. in series for less than \$1.20 each insertion. No objectionable 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 1, 1916

CURRENT COMMENT.

The National Holiday. On Tuesday next the youth of the land will celebrate the anniversary of the nation's independence. Our cover design depicts Young America dreaming of the exploits of the continental army in the struggle for the maintenance of our national independence, which was declared on that memorable July 4, 1776. The patriotic enthusiasm of Young America will be still more deeply stirred by the impending prospect of war with Mexico, and the mobilization of the national guard which has so recently taken place within the knowledge if not under the observation of impressionable youth. Under the stress of this excitement the small boy will naturally be more daring in what he deems the fitting celebration of our national holiday.

For some years a publicity campaign for the "safe and sane" observance of the Fourth has been carried on with gratifying results. Year after year there has been a notable decrease in the casualties resulting from Fourth of July celebrations, due largely to this publicity campaign. It will, however, require the watchful co-operation of parents to bring about a similar decrease in accidents this year. None of us would care to see the patriotic spirit of young America broken or diminished, and none would deprive the boyish heart of the joys which even a noisy celebration of the national holiday bring, yet all should co-operate to reduce the attendant dangers to the minimum. This can be accomplished by wise interest in the nature and handling of the explosives used to create the noise, and in the proper care of even trivial injuries which may harbor the deadly tetanus germ. The wise course is to call on the family doctor to dress even apparently minor injuries in the many cases where such will be sustained.

Milk Prices. In response to requests for authentic information regarding monthly prices paid for milk in the Chicago district, State Director of Markets McBride has just issued a bulletin containing this information, from which we quote as follows:

"The prices agreed upon by all dealers buying from the members of the Northern Illinois Milk Producers' Association for the six summer months, for milk delivered at the various stations and condenseries, per 100 pounds are as follows: April, \$1.65; May, \$1.45; June, \$1.25; July, \$1.55; August, \$1.70; September, \$1.70. These prices are for milk that tests 3.5 per cent butter-fat. If the test is above the standard, three cents is added to the above prices for each tenth of one per cent

that the test is above, and if the test is below the standard, a deduction of three cents is made for each tenth of one per cent that the test is below."

A comparison of these prices with those prevailing at Michigan shipping points should be an incentive for the early organization of a local milk producers' association in every dairy community.

The Annual School Meeting.

With the approach of the date of the annual school meeting, school patrons in the various school districts of the state should devote a little thought to educational matters, and not only be on hand at the school meeting, but take the trouble to get other school patrons in the neighborhood to attend and talk over with them vital questions of policy in advance of the school meeting.

The reader may at first be in doubt as to how he can aid in the betterment of the school, even if he is interested. One good way is through the improvement of the school plant so as to make it conform to the state requirements for a standard school. Write the Superintendent of Public Instruction for a copy of those requirements and study them over. They will be found to provide for proper sanitation and increased comfort for the pupils, yet to involve no extravagant expenditures. Every country school which conforms to these requirements and bears the official sign "Standard School" will be a far better and safer place for housing school children from a hygienic standpoint, and will go far toward promoting a degree of efficiency in school work which will be a source of pride and satisfaction to the parents.

It pays to be liberal in providing for the needs of the rural schools, notwithstanding the fact that the school tax is a large item in our annual burden of taxation. Good schools are worth all they cost, and poor schools are dear at any price.

Road Building Problems. On another page of this issue two important road building problems are discussed in detail. One of these problems is quite properly described as a local one. The community in which the writer lives finds it road building economy to use crushed stone in the permanent improvement of its highways, yet looking beyond the local phase of the problem the writer concedes that in a great many localities within the state where good gravel is right at hand, it would be poor economy to use crushed stone in road building.

In still other communities it has been found the best economy to use crushed stone for the foundation of the road-bed with a coating of screened gravel as a wearing surface. In many communities of the state this combination of materials would seem to contribute to the economical building of permanent roads. Michigan is fortunate in this respect, since fairly good gravel deposits are to be found in most sections of the state, while in a great many localities there is an abundance of stone which could be profitably used as a foundation for gravel roads and at the same time improve the appearance of the country by cleaning up the roadsides and eliminating stone piles from the adjacent fields.

The availability of material is unquestionably a vital factor in the progress of road improvement. Indiana, for instance, is conspicuous among the states for its large mileage of improved roads, yet no state aid has been extended in Indiana, and this improvement has been accomplished almost entirely by the townships. What can be accomplished in this manner is also well illustrated by the progress which has been made in township road improvement in certain townships of Hillsdale county which have been from time to time cited as an example in these columns.

The Problem of the width of the road-bed is also to some extent a local problem, yet not wholly so. Trunk line roads should unquestionably be improved in a manner which will insure adequate service for a long term of years under heavier traffic conditions than now prevail, since traffic is bound to increase. Experience has demonstrated that a very narrow road-bed is more quickly disintegrated because of the concentration of traffic in one place and it is probable that the public interest would be best conserved in cases like that cited in another column, by a compromise between extremely wide and extremely narrow road-beds.

With the building of trunk line roads the use of the auto truck for the marketing of farm produce from a considerable distance of points of general consumption is bound to increase materially, and it requires a good road-bed to stand up under that kind of traffic. It is, however, something of an injustice to the farmers of a township to have the entire burden of building trunk line roads through the township fall upon the local taxpayers. The adoption of the county road system and the making of the trunk line roads county roads would tend to distribute the burdens of road construction and maintenance, as well as the benefits, more equitably.

Vocational Training.

A referendum was recently taken by the Chamber of Commerce of the United States of America in which four recommendations were submitted to the members for approval. These recommendations favored liberal federal appropriations to promote vocational education in the United States, the same to be allotted among the states on a uniform basis and with uniform relation to appropriations made by states for like purposes, the creation of a federal board representative of the interests vitally concerned, which board should be required to appoint advisory committees of five members each, representing industry, commerce, labor, agriculture, home-making and general vocational education. These propositions, which we have briefly summarized, all carried by substantial majorities, averaging around seven votes for to one against. The units voting were the industrial organizations of many cities of the United States comprising the Chamber of Commerce of the United States.

The wording of the recommendations is such as to make clear the advocacy of federal support of vocational training all along the line, without committing the organization to any definite plan as to the scope or method of carrying out same. So far as agriculture and the mechanic arts is concerned the federal government is already lending liberal support to the several states through the land grant colleges for the promotion of higher education along vocational lines. Still more liberal aid is being given to general vocational education along agricultural lines through extension work projects carried out through the aid of the Lever fund and equal contributions by the states. The states are also making notable progress in the matter of vocational education along agricultural lines. Michigan has some fifty schools in which a full four-year course of agriculture is taught, while elementary agriculture is taught in all primary schools. The public schools of several cities also include vocational courses in mechanics and home economics, while our higher institutions of learning furnish admirable facilities for advanced technical training along every line.

Agriculture is our basic industry and federal aid for vocational training along this line is more fundamental to the nation's prosperity than along any other line. Even in this line federal aid for vocational training has been confined to higher technical education, experimental work and extension work

which is of immediate benefit to the industry, leaving to the states the task of training the youth of the country along both general and vocational lines. While it may be desirable to promote a more general development of vocational training through federal aid, it would seem a more desirable plan to enlarge the scope of the activities of established governmental departments, rather than to create new administrative machinery for such purpose.

HAPPENINGS OF THE WEEK.

National.

Mexican Affairs.—The attack on the American troops at Carrizal last week will probably result in war between Mexico and the United States, according to the most recent information. Officials at Washington look upon the attack as a hostile act on the part of the Mexican troops. As a result of the encounter, several men on both sides were killed and many wounded and 17 American soldiers were made prisoners. A statement has been demanded and is now being waited for by the United States government as to the course of action determined upon by the de facto government of Mexico. Orders have been issued to move 15,000 national guards to the Mexican border at once. The Michigan guard has assembled at Grayling and expects a call to the front at any moment. Two American cattlemen are reported to have been killed by Mexicans southwest of Nacozari in the state of Sonora.—Reports that the German legation in Mexico City has actively inspired Gen. Carranza to hostility against the United States, have been set aside as unworthy of attention by the German Imperial Chancellor.

The national committeemen of the progressive party are holding a session in Chicago this week to act on the declaration of Colonel Roosevelt to head the party ticket in the coming campaign. It appears that some of the committeemen are favorable to the support of the republican candidate, while others are desirous of putting in to the field a third party ticket.

Twenty persons were injured, five of them seriously, when a trolley jumped the track on Pine street, Lansing, last Sunday night.

Mrs. Hetty Green, known as the richest woman in the world, is seriously ill in New York City. She is 83 years old.

On July 14 a monster good roads meeting is to be held at Mackinac, at which time Governor Ferris will unveil the monument at the end of the Dixie highway.

The thirty-sixth annual session of the Farmers' National Congress will be held in Indianapolis, Ind., October 17-20 inclusive. The program is to be comprehensive and it is expected that a new record in attendance at the national conventions of the congress will be made at this session.

Col. L. H. Ives, of Mason, Mich., has been elected commander of the Department of Michigan, G. A. R. The national encampment of the G. A. R. will be held in Kansas City this summer.

Foreign.

The European War.—Russian forces now occupy all of Bukovina which lies between Czernowitz and the Carpathian mountains. The Russians have also massed troops in Volhynia in opposition to violent attacks by German forces at that point. While Berlin reports that these attacks have failed, news from Petrograd indicates that the offensive is being continued. On the western front the French are making vigorous attacks north of Verdun to regain lost ground, and trenches to the west of Thiamont have been taken and some progress made in the village of Fleury. A German attack in the Dead man Hill region has also been repulsed. The British forces have developed pronounced artillery activity along the part of the Franco-Belgian front from La Basse canal to the Somme river. There is nothing to report from the Balkan and Italian fronts. An Italian auxiliary cruiser and a French torpedo boat destroyer have been torpedoed in the Strait of Otranto.

Riots occurred during the elections in Panama on June 25. No Americans are reported among the casualties.

Mexican money has so depreciated in value in Spain that a peso is quoted at only ten centimes, which is equivalent to two and a half cents.

Information by way of Holland states that distress in German cities caused by food scarcity, has risen to such a degree that the church authorities at Munster at Cologne have asked the co-operation of the clergy to send the children of the cities to country places where the scarcity of food is less acute.

Gravel vs. Stone Roads

THE writer lives in the heart of a locality famous for its permanent road improvements. In the main, these improvements consist of crushed stone or macadam highway. With Fayette township as the pioneer in this kind of road building, the same system has been adopted by neighboring townships, in the northwestern corner of the county. The day is now past and gone forever, when permanent road construction can be limited to any particular township or group of townships. The whole county and neighboring counties have taken up the work with a will. In this widening of the field, with its varying problems in different localities and under different conditions, a discussion has arisen as to the merits of the two principal kinds of permanent highways—namely, gravel and crushed stone. In the consideration of this subject, some very important points are often overlooked.

Perhaps the most common and important factor in the situation, has to do with the kind of material at hand, for use in permanent road construction. In the writer's section, there may now be found a few stretches of first-class gravel road. Many automobile owners and others, contend that this is the preferable kind of permanent highway. They contend that it is not so hard on the auto tires, that it is more easily repaired when worn by travel, and that it is less expensive than the macadam road. Granting that all these claims for the gravel road may be true in limited localities, the fact remains that number one gravel is found only occasionally, and that its presence in the locality is necessary, if roads are to be constructed of it, at a price cheaper than that paid for the crushed stone road. Gravel roads in this county have, before now, failed to pass state inspection, because of the inferior quality of the gravel. A first-class gravel road requires first-class material, and in many sections, not a yard of this first-class gravel is available.

But, so far we have stated only one side of the question. Many advocates of the crushed stone highway, hold that this is pre-eminently the proper kind of permanent road to construct. They claim that taking the higher state reward into account, the stone road is as cheap as the gravel, and much more lasting. Here, again, oftentimes, the question of available material is lost sight of. To ship stone into a locality possessing excellent gravel for road construction, would be an expensive and short-sighted blunder.

A Local Problem.

The fact is, that excellent roads may be and have been built from both gravel and crushed stone. Each community or township must accept the kind of material available if the work is to be done without unnecessary expense—and all must admit that expense is an important item in road construction.

But someone says: How about those localities where neither stone nor gravel exist in sufficient quantities for road building? In these localities, the comparative merits of the two kinds of highway and the relative cost of each, should be considered. If gravel can be obtained much more cheaply than stone, this item certainly ought to count in favor of the gravel road. In some parts of Ohio where neither stone nor gravel are found locally, these permanent roads are being constructed at an expense that is unknown in Michigan. The residents in such sections, have a bigger problem to solve, and in any case, their permanent road improvements must cost more. Availability of material, in any normal case, is the first point to be considered.

In this section at least, permanent road construction is too new to prove anything concerning the real cheapness and lasting qualities of these two kinds of permanent highways. In the case of stone roads in particular, it is

probable that improved methods and new ideas will be introduced. The building of these roads in Michigan, is still in its infancy. It seems probable that the use of some kind of binder to be added to the top-dressing of these roads, will be one of the improvements. Such preparations are used with success in other states, and while this will undoubtedly add to the first expense of construction, it seems likely that the repair expense would be lessened by the adoption of such a preparation.

If the reader chances to live in a locality where good gravel can be had, let him boost for gravel highways, for

this is the practicable kind of road to construct in such a case. If he lives in a section where stone is abundant, macadam roads are the kind to advocate. Each of these kinds of permanent roads has its merits, but these are insignificant in comparison with the availability of material. Under proper management, an excellent highway may be constructed of either. Use what is at hand, and you will get more satisfactory results than in any other way. Permanent road improvement costs enough at best, and why make it more expensive by copying after some locality in which conditions are entirely different from those existing in your own?

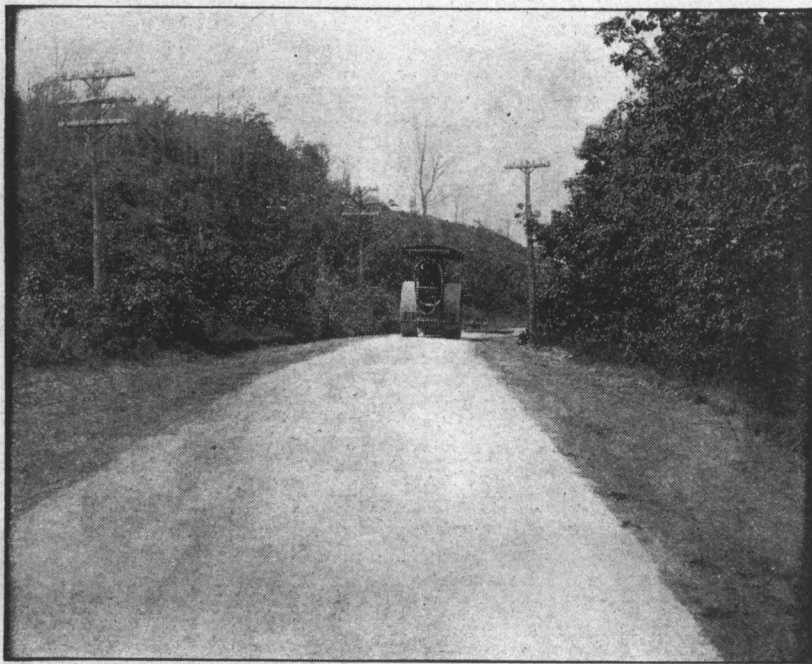
Hillsdale Co.

J. A. KAISER.

The Width of the Roadbed

JUST now the construction of the trunk line roads across Michigan in different directions is being urged and some consideration of this matter by the farmers who are now, and others who will be taxed for building them may be in order. These roads are run on general lines without reference to the needs or convenience of the people of the townships through which they pass, that being merely an incidental matter, and they are designed to have a roadbed of macadam or gravel 16 feet wide. A double reward is to be paid by the state for the construction of such roads upon their completion, and provision is made for payment of a specified amount for their maintenance annually thereafter. In townships in which there are cities or

sively wide roadway is necessary. The idea of a wide roadway is so that vehicles may have room to pass each other. Near large cities where there is a good deal of travel this is an important consideration, but in these country districts there is no likelihood that traffic will be large enough to be seriously inconvenienced in the next fifty years on roads of ordinary width. On roads already constructed with nine-foot roadbeds of macadam and an earth grade the proper width, vehicles find plenty of room to pass, so that there is not the slightest inconvenience on this account. Is it wise or fair, therefore, to ask the farmers to tax themselves to build these roads so much wider and more expensive than the exigencies of the case call for? The



Material and Width Important Factors in Road Building Economy.

villages of considerable size, especially where resort interests are considerable, the proposition seems to carry; but in those townships in which the farming interests more largely predominate it is having harder sledding.

Now, it would seem to be a practical and proper question if some modification or compromise might be considered which shall meet all of the needs of the case and at the same time conform more to the farmers' ideas of justice in the matter. In several townships with which the writer is acquainted along the line of the West Michigan Pike, one of these trunk line roads, the line of the road is close to one side of the township and on roads, which a considerable proportion of the farmers use but little or not at all. Furthermore, the roads are at present among the best in the townships. The farmers therefore ask, for reasons for the excessively heavy expense for improvement of these roads while others with equal or greater travel are neglected. It is probable that in several townships some concession will have to be made to this objection before the road can go through.

But in general the question may properly be raised if such an expen-

heaviest expense of construction is in the material and hauling, as the stone or gravel for surfacing all has to be shipped in, hence doubling the width of the roadbed adds enormously to the expense.

Counting the Cost.

Some figures that the writer has obtained throw some light on the question of economy as well. A representative of the state highway department gave as his opinion that to build a 16-foot roadway of macadam through one township along this line would cost \$7,000 per mile. There are seven miles of this pike through this township, so that the expense bill would spoil \$50,000. According to this same authority the state would pay upon acceptance of a 16-foot roadway, a reward of \$3,400 per mile, or for a nine-foot roadway \$1,700 per mile of macadam. Probably the expense of grading would be not far from \$1,000 per mile in either case, being slightly more for the wider roadway. If the township undertook the wider roadway at a total cost of \$7,000 per mile and received \$3,400 back from the state it would then have to put in \$3,600 on its own account. But should it build the nine-foot road at a total cost of probably \$4,000 per mile and re-

ceive back \$1,700 per mile it would have to put in \$2,300 per mile of its own money, a difference in the expense to the township of \$1,300 per mile, or a difference of \$9,000 for the entire seven miles of roadway. Now, why should the farmers of this township be asked to pay an additional charge of \$9,000 for a roadway, mainly for the benefit or convenience of auto owners and tourists of other sections and other states, when a road which would meet every need of traffic could be built for that much less, and when other roads in the township of equal importance to the farmers themselves remain unimproved? This township is farther from shipping points than some others so that the expense of hauling material would be larger, but this doubtless furnishes a fair comparison of the relative expenses in building the two widths of roadway. There are many townships in the state in which this matter may well receive consideration.

Allegan Co.

EDW. HUTCHINS.

FARM NOTES.

The Fertilizing Value of Sweet Clover.

I should like to know the fertilizing value of sweet clover as compared with red clover. When should it be sown and how much to the acre?

Ionia Co.

W. H. W.

The fertilizing value of clover or any other legume is two-fold, first, these plants have the power of adding actual plant food to the soil in the form of nitrogen appropriated from the air in the soil by the bacteria which make the clover a host plant. As both red clover and sweet clover harbor these nitrogen-fixing bacteria, it is perhaps fair to assume that they would have about the same value in this respect, although this is not definitely certain.

The other value of the clovers as soil improvers consists in the amount of vegetable matter added to the soil and the amount of mineral fertilizing elements brought from the lower strata of the soil for such purposes. In this respect sweet clover is somewhat superior to common red clover.

Henry's tables show the fertilizing constituents of the two plants to be very similar, but if the crop is plowed down for fertilizing purposes the sweet clover being a much larger producer of vegetable matter will add more humus and more mineral fertility brought from the lower strata of soil in the building of the plants, because of its more vigorous habits of growth. On some soils sweet clover has another marked advantage, in that it is better adapted to soils having a very low content of vegetable matter than is ordinary red clover. For general use in the crop rotation on the average farm, however, red clover is a much more valuable crop; it is only under special conditions that sweet clover should be substituted for it.

Sweet clover is preferably sown in the spring on a firm, well prepared seed bed, either without a nurse crop or in spring sown grain, depending upon the character and condition of the soil. It should be sown in about the same quantity as alfalfa, or eight to ten pounds of hulled seed per acre.

Seeding Clover in Buckwheat.

Have five acres of ground run down. Would 100 lbs. of fertilizer to the acre bring a fair crop of buckwheat? If not how much? By sowing clover seed in the buckwheat in August would I stand a chance of getting a catch so as to use for pasture next summer? If not what would be best to sow this fall?

Oakland Co.

J. B.

Buckwheat is a grain crop which will produce well on a thinner soil than any other crop which could be sown, owing to its vigorous habit of growth and the persistency with which it appropriates available fertility for a considerable depth in the soil. Due to this habit of growth, it also loosens up the soil and supplants weeds.

It is not a safe dependence, however, to seed clover in buckwheat, owing to the late date at which the clover must be sown, the likelihood of unfavorable

weather and the strong competition of the buckwheat plants for available fertility. Although clover may sometimes be successfully seeded in this way, if the desire is to use this land for pasture next summer, a better way would be to plow and seed in August with vetch and rye, inoculating the seed if vetch has never been grown on this land before. This will make a good pasture this fall, and again next spring, and will leave a residue to be plowed down for improving the soil, or clover may be seeded in the spring if desired.

A little phosphate fertilizer would no doubt aid in securing a good yield of grain from buckwheat, although little if any nitrogen should be used if the land is in even a fair state of fertility.

Burning Hardwood Stumps.

Is there any method for treating oak stumps which will permit burning them without waiting the indefinite length of time required for them to decay?

Genesee Co.

F. B. H.

Various methods of burning hardwood stumps have been practiced with success where this method of ridding a field of a few large stumps is chosen. Of these methods, what is known as the char pitting method is probably the most efficient. This method is available for use only on clay soils, since the heat generated is confined by clay covering, and slow combustion takes place, burning the roots to a considerable depth. This method is fully described in the Bureau of Plant Industry Bulletin No. 39, which may be secured from the Department of Agriculture, Washington, D. C.

A simpler method is to bore auger holes diagonally through the stump near the surface of the ground on one side into a hole previously dug one foot below the surface on the opposite side. When a fire is built in the excavation, some of the heat and flame pass through the auger hole, heating and drying the stump until it ignites and is finally consumed.

Another method is to bore intersecting holes into the stump, one horizontal and the other at an angle running as far up the stump as practical. A fire is started at the intersection of these holes by the use of oil or other highly combustible fuel which will finally ignite the stump. Another method is to split the stump by an explosive, when they can be more easily burned by the same method.

Seeding Vetch.

Please tell me whether vetches are annuals or not? Which is best, sand vetch or hairy vetch? Would it do to sow them with orchard grass, and how late could such a mixture be sown and still survive the winter?

Osceola Co.

I. T.

Sand and hairy vetch are different designations of the same plant which is also called winter vetch. It is a winter annual, ripening its seed within the year, but being best cultivated by sowing in the late summer.

Orchard grass would not be a suitable plant to sow with vetch, for the reason that orchard grass is a perennial, while the vetch would survive only a single season unless conditions were favorable for it to re-seed for a volunteer crop. It is best sown in rye in midsummer, as the rye will support the vetch vines, and will also add to the vegetable matter to be plowed down, or to the yield of forage, if it is cut for hay or pasture.

The Place of Vetch in the Crop Rotation.

Having seen in your paper some time ago about winter vetch as a green manure crop, I would like to know how it compares with mammoth clover to plow under. Will it stand as much wet or dry weather and how much to sow to the acre, if sown in corn at last cultivation?

Eaton Co.

D. H.

Vetch is a particularly valuable green manure crop to use as a catch crop, as for instance, after corn, sowing same with rye in the corn at the last cultivation, and plowing down as a green manure crop the following spring. Where so used on land which is adapted to this crop it furnishes not

only humus but nitrogen as well, the same as clover or any of the other legumes.

Varying amounts should be sown, depending upon the purpose for which the crop is grown. On land where vetch has never been grown, a comparatively light seeding is ordinarily used, say ten to fifteen pounds of vetch

seed with about three pecks to a bushel of rye. This will insure a good stand of rye and a sufficient growth of vetch, provided good inoculation is secured. Quite often vetch does not do well the first time it is sown on a field, for which reason too great results should not be expected from the first seeding.

Busy Land the Best Land

EVERY farmer should always think of the soil in his field as the home of untold millions of bacteria—there are many more forms of life in the soil than on top of it—many of which work day and night for our benefit, asking only that we provide them with food. The better we feed and care for them the more bountiful will be the crops we get as payment.

How do we know that the soil bacteria are essential to good plant growth?

First. The bacteriologists have proven by tests and experiments that sterile soil, even though having the chemical elements, nitrogen, phosphorous and potash in proper proportions, will not produce good crops. The bacteria seem to perform the function of making the chemical elements available.

Second. We have all observed that soil which has been continuously under water for several years will not produce a crop the first year; dirt taken from several feet below the surface will not produce the first years; also we have noticed that crops did not thrive when planted on ground over which a house has stood for many years, or on a hard packed road.

What conditions are necessary to aid the development of these bacteria in soils?

First. The soil must have air in it and circulating through it. Air cannot circulate in water-covered soil, hence the bacteria cannot live there. The harder a soil becomes packed by tramping or otherwise, the fewer bacteria in it, and the poorer the growth of vegetation it will produce. A hard-packed road-bed makes a poor crop. Conversely the loose, porous soil—not so loose that it will lose moisture abnormally—breeds most soil bacteria and hence produces best crops.

Second. The soil must be supplied with vegetable matter because this is the home of, and supplies the food for, most all of the soil bacteria. Without vegetable matter to be worked over by these bacteria—we call the work they do "rotting"—there would be no humus in the soil. Vegetable matter kept under water does not rot, simply because the bacteria which eat out and tear down its cells cannot live under water.

A good soil literally breathes, because it is teeming with life. If a soil is too wet, lacks humus, or is not turned over or stirred up frequently enough the bacteria languish and die and you say the soil is sick. At least the vegetation it produces looks sick.

If the soil, therefore, is well drained, kept from packing and has sufficient quantities of vegetable matter put into it in the form of stable or green manure, it furnishes the ideal home for soil bacteria and good crops are the natural result, granting that the chemical elements of plant food—nitrogen, phosphorous and potash—are properly balanced to make a "balanced ration" for the crop grown.

Making Plant Food Available.

How do the soil bacteria aid plant growth?

The chemists tell us that nitrogen as contained in dead plant and animal tissues cannot be taken up and used by growing plants. It must be transformed by soil bacteria two or three times until in the form of nitrate nitrogen or "nitrates" it is soluble in water and therefore can be absorbed by the root hairs of the growing plants. Somewhat similar transformations are necessary to make phosphorous and pot-

ash from animal and plant tissues available. That is, all of the chemical elements must become soluble in water. This process of change is going on constantly and remember that your good friends, the soil bacteria, are doing the work without charge. These faithful servants work constantly and most vigorously during the warm summer months.

Here is another important thing to remember: Since the nitrogen is converted into nitrates and the other chemical elements are made soluble in water it follows that when rains come this food is carried by the water directly to the root hairs, as they fill the soil, and taken thence into the plant tissues. But what if the ground is bare, as so many fields are left, during July, August and September? It means that every rain carries off large quantities of plant food which should be taken up by plants and held in the soil for future use. So keep something growing all the time. Better have weeds than nothing! Nature tries heroically to protect our land and grass, weeds, etc., are made to appear as if by magic. But better than trust to weeds put a catch crop or cover crop on all corn or other ground not already in a growing crop. Keep the soil full of growing roots all the time. Corn rootlets die about the time roasting ears harden, hence every corn field is much better off if a catch crop of soy beans, cowpeas, rape or turnips, or a cover crop of rye and vetch or wheat is put in at last cultivation.

Remember that busy land is the best land.

Mason Co.

I. B. McMURTRY.

LILLIE FARMSTEAD NOTES.

I am much interested in the criticism about my steer feeding as compared with dairying. Editor Waterbury did not criticize in cold type through the Michigan Farmer, but he did by letter and accused me of giving the cows credit for unusual prices or extra prices for butter-fat and the steers only ordinary prices for their grains. But I did not give the cows credit with extra prices. Only wholesale creamery prices for fat. Cow-testing records are compiled on ordinary market prices, and should be.

My esteemed friend from Lenawee county claims I should have fed these steers better, made much larger gains and should have sold them for nine cents instead of seven cents. Well, there may be something in that, but I was keeping them to get rid of some poor clover and alfalfa hay and had I fed them heavily of grain they would have eaten very little of this hay. The hay was unsalable. A very successful feeder in Shiawassee county told me I did not feed these steers, I just wintered them; and I guess he was right. I just wintered them. I don't figure I was out much for feed except the little grain I fed them.

But I don't think from the last of December to May is long enough to fatten thin steers. I doubt if any feeder could have finished them in that time so they would have brought nine cents. I was fairly well satisfied with my results, all things considered. My original intention was to run them on pasture until July. But I was afraid of dry weather and short pasture. Had I known grass would grow as it has I certainly should have kept them. But even with the best conditions all around I feel that cows are a better proposition than steers. If I did not

have a herd of registered cattle I would do some speculating every year by buying fresh cows every fall, milking them all winter and selling a lot of them every spring for beef. Just an ordinary cow can be fattened while giving milk if you feed her heavily, but the best kind of a dairy cow will not do this.

An interesting question was brought to my attention the other day by a remark a breeder of pure-bred dairy cattle made. He told me frankly that if he had to depend on the profits from milk from his herd he would go out of the dairy business. He must sell some breeding stock at high prices to get the profit he desired. Now if he is not satisfied, how will his customers be satisfied with their returns. If everybody must sell pedigreed stock to make a fair profit from their herds where are we coming to in the whole dairy business. If a breeding herd don't make a good profit what does the farmer want of them, anyway? If the dairy business is based on the selling of surplus stock the bottom of it will sometimes fall out, for everybody can not sell pedigreed stock. Somebody must get an actual profit from milk production. You can't fool all the farmers all the time into buying high-priced cattle, unless these cattle will bring good profits at the ordinary dairy business.

If this man was right then the whole dairy business will crumble and fall. But this man is not right. Good dairy cows will pay a profit and a good one, when they are in the hands of good dairymen. You don't have to sell any high-priced surplus stock to make a profitable business out of dairying. Of course, if one's stock is registered and superior in quality and can be sold for more than ordinary prices, well and good. That is added profit, and well merited and well earned profit, too.

A farmer is foolish to pay extremely high prices for simply finish and polish. Because an animal's horns have been trained to grow in symmetrical curves and because it is well groomed, etc., really makes it no more valuable. Anybody can do this sort of thing to any kind of an animal, and it is no better for it. We buy breeding stock to improve our herds in economical production. What we want is cattle that will make us better profits at the ordinary everyday work of dairying, and a breeder that does not make his herd pay a profit at the pail has a poor foundation, and a poor argument to offer for people to buy his surplus stock.

Tile Drainage Does Not Always Save Crops.

Even tile drains will not save crops when it rains all the time. You can actually drown crops right over good tile drains, if it rains often enough and hard enough. This is proved on my own farm this year. One of the best drained fields is a failure. The peas are actually destroyed in many portions of the field by too much water. I don't know how to help it.

This is June 17 and our sweet corn is not planted. Not only this, but the ground is far from being fitted as yet. If it doesn't rain any more now it will take several days to prepare the ground although it was fall plowed. The field is green with weeds. It has been disked only once and that made little impression on the weeds. Four times disk-ing will be necessary, at least. We top-dressed this field the past winter on the fall plowing. This was bad for this year, for this manure has acted as a mulch and kept the land from drying out quickly.

Corn planted now in a few days will, in my estimation, stand as good a chance as though planted earlier. We have had no corn weather. If the balance of the season is at all favorable corn will mature. One year, much like this, we did not plant till July 12. The corn did not ripen but it made splendid ensilage. It will do to plant corn any time in June for ensilage and chances are that this year it will get ripe. A cold wet spring means a dry hot fall.

COLON C. LILLIE.

Backyards and the Farmer

LOSSES due to fungous diseases and insect pests are great. In 1904 Michigan lost a third of its potato crop. In 1911, in the United States losses from wheat smut amounted to \$9,000,000. And so it is for all diseases and insects. Every year sees an epidemic on a certain plant due to disease or insect, which destroys millions of dollars' worth of crops.

The farmers in the United States spend millions of dollars annually, in fighting these enemies. The farmers spray, they treat the seed, they cut down alternate hosts, and they take all precautions in handling their crops. Yet under the best of these conditions, epidemics have been known to break out. What is the cause?

In explaining what I believe to be a cause, I do not maintain it is the only cause. But, I do claim that it is a very serious condition.

Breeding Places for Pests.

Every city has its numberless backyards. In these yards are planted fruit trees of all descriptions. Many of these yards are used for gardens. The owner, as a rule, has a vague idea of handling or caring for these crops. He does not take any steps in eliminating insects or diseases. He merely plows up the soil, plants the seed, and awaits results, whether good or bad. I have seen one of these backyard apple trees covered with enough curculio and scale to destroy the entire apple crop of Michigan. I have seen in this same yard several varieties of insects, and as many kinds of fungous and bacterial diseases. In such a yard, the embryo of a state-wide epidemic lies dormant awaiting its time.

Winged insects travel many miles. Spores from fungous plants have been known to be blown fifty miles by the wind. Birds, in their flight, carry the spores, bacteria and insects with them. Here in these yards the pestilents find an ideal wintering place. Here they breed only to leave in the spring for new goals.

The farmer, who has taken proper care of his crops, wonders at the cause of the outbreak. The backyards are overlooked.

Back Yards Should be Kept Clean.

Each state should make special laws governing this matter. The farmers come to the city for their clothing. The city men look to the farmer for their eatables. The farmer does not injure the goods he buys, but the city man wages war upon the crops he needs for his own consumption. He does this through his backyard. Laws should be made requiring the owner to care for his backyard under national, state, or city supervision. If the owner is unable to carry out these requirements, the work should be done by the city. In taking precautions against these pests, both the owner and farmer will be benefited. The farmer will be benefited by his larger and better yields and the city man by being able to get clean farm products, and clean products from his own garden.

Let us, then, wage war against the present system of handling backyards. Ingham Co. A. H. BAYER.

TROUBLE DEPARTMENT.

Peach Leaf Curl.

My young peach trees seem to be dying of some trouble with leaves. I am sending you some leaves and would like to know the cause and what to do for it. Have some older trees the same way.

Livingston Co.

G. H. B.

Your peach trees have what is called the "peach leaf curl." This is a fungous disease which becomes active early in the season just as the leaf buds begin to swell.

The only satisfactory method of control is to spray with lime-sulphur at winter strength, (one to eight), before

the middle of March. As it is the usual custom to make annual sprayings for scale, if the scale spraying is made in spring before the middle of March, it will also suffice for the control of this disease.

There is nothing that you can do now to control the disease, but undoubtedly during the summer months when we do not have so much rain, it will be checked to a great extent, and will therefore not do any serious injury to the trees this year. It is too late this season to do anything to keep the disease in check, but we would advise you to make the recommended application next spring, in order to keep the trees from the disease for that year.

Lice and Ants.

There are ants continually going up and down the trees, especially on the cherry trees, with the result that most of the leaves curl, and in the curled leaves we find what looks to me like lice. Now, I have used your spraying solution and that helps some, but I would like to know if there is anything in the line of glue or paste which I could put around the trunk of the tree? If possible, advise a home remedy, as we live quite a distance from town. Newaygo Co. A. R.

The ants crawling up the tree are in no way the cause of the condition of your cherry trees. But they go up the tree to get the sweetish liquid called "honey dew," which is secreted by the cherry tree aphids. You will usually find ants present wherever there are any plant lice. It is very hard to control aphids after they have become numerous, and as the time for their stay on the tree for this season is short, it will not be wise for you to use any methods of control now. These aphids are due to leave the tree some time during the latter part of July.

The best way to control the aphids is to spray with commercial tobacco extract such as Black Leaf 40, just before the blossoms drop. Spraying early in the season will kill the few aphids which become active then and thus prevent further increase. It is not possible to do thorough work in spraying after the leaves have curled, and as the spraying with tobacco extract is expensive, the results would not warrant the time and expense of putting on the application. Applying a sticky application around the tree to prevent the ants from crawling up would have absolutely no effect on the aphids on the foliage.

THE NECESSITY FOR ROTATING IN GARDEN WORK.

If one would preserve a balanced state of fertility, hold insect and weed pests down to a minimum, a systematic rotation in the garden must be practiced. The different vegetables draw unevenly on the fertilizing constituents of the soil, and if a soil carries the same vegetable, or vegetables similar in nature, season after season, it will finally become deficient in the particular fertilizing element on which the plant feeds the heaviest. Thus, cabbage, lettuce and celery draw heavily on the nitrogen in the soil, and in following a rotation, these should be followed by peas and beans, plants that are leguminous in character, and extract nitrogen from the air and store it in the soil.

The growing of the same vegetable in the same soil season after season, favors the multiplication of insect pests that feed upon that particular vegetable. When a vegetable is grown year after year in the same location, the soil becomes a veritable breeding place for the pests. The logical way to fight insects is to starve them out by growing the same crop, or crops similar in character, no two seasons in the same soil. T. Z. RICHEY.

When the new canes of the raspberries are two and one-half feet high clip back the tips to check the upward growth. This will insure stocky canes and low branching of the laterals.

Cut out the bearing canes after harvesting the fruit to prevent the spread of raspberry scab.

John Deere Implements

John Deere Inside Cup Elevator

THE grain elevator that is always protected from bad weather. With ordinary care will last as long as the crib.

Always ready for either ear corn or small grains.

Simple, and easily operated. Roller bearings in both head and boot sections.

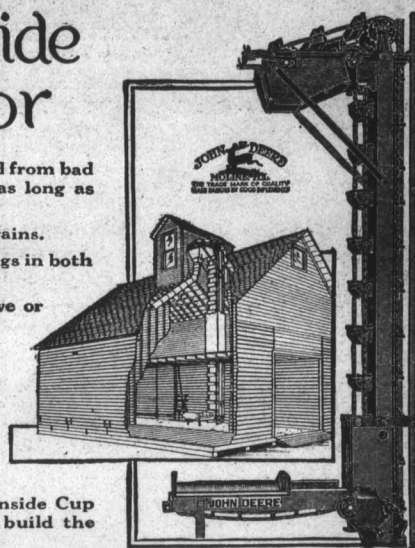
Receiving hopper can be placed either above or below floor of driveway.

Furnished in any length desired.

Elevator can be driven from either side.

Double chains have a carrying capacity of over three and one-half tons.

Write us for our free book of "Suggested Plans on the Way to Build a Corn Crib and Granary in One." It shows how this can be built and equipped with a John Deere Inside Cup Elevator, and for less money than you can build the ordinary style of crib.



John Deere Spreader

The Spreader With The Beater On The Axle

BEATER drive works on the principle of a horse power. No clutches, no chains, no trouble. Mounting the beater on the axle (a patented feature) does away with half the types of castings.

Only hip-high to the top—but has big drive wheels. Wheels out of way when loading.

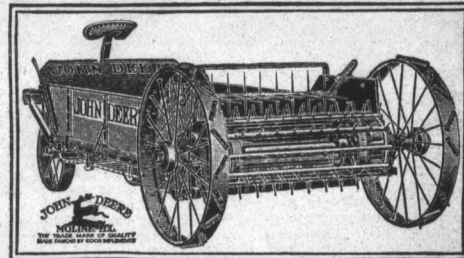
Here are three exclusive John Deere Spreader features—read them over and then be sure to see them on the spreader itself:

1. Beater on the axle—nothing else like it.

2. Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching.

3. Ball Bearing Eccentric Apron Drive—requires no attention.

If you want to distribute manure seven feet wide, use the John Deere Wide Spread Attachment. Write for free booklet.

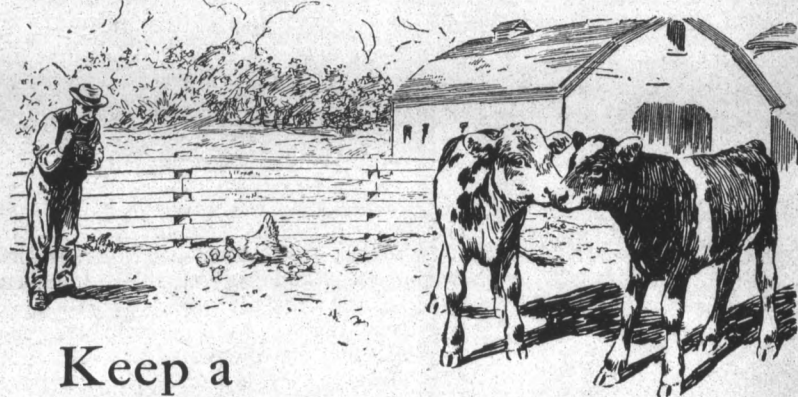


A Farm Book For The Asking

A Big One—168 Pages

Tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. This book sent free to every one who states what special implements he is interested in and asks for package No. X-5. Write for your copy today.

John Deere Moline Illinois



Keep a KODAK RECORD

Photographs showing the growth of your stock and crops, the conditions of your buildings and drains will prove more than interesting—they will prove valuable.

And when it comes to selling live stock a photograph is almost as good as showing the animal itself. And picture taking is both simple and inexpensive by the Kodak system.

Ask your dealer, or write us for a copy of "Kodak on the Farm." A beautifully illustrated little book that will interest the whole family. It's free.

EASTMAN KODAK CO., 389 State Street, ROCHESTER, N. Y.

ROSS Silo Fillers

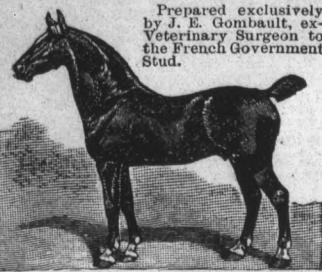
Produce the Best Ensilage Guaranteed for Life of Machine. The Ross is not an ordinary fodder cutter but a special made Silo Filler. Exclusive features including Steel Cutting Apparatus and Steel Blower. The Ross Nos. 18-20-24 are for the Threshermen who make a business of filling silos, also for silo users who want a partnership Silo Filler.

Buy Early and Save Money. If you intend to buy this year, write quick for special proposition. Delay means advance in price. THE E. W. ROSS CO. BOX 114, SPRINGFIELD, OHIO.



Horse Owners Should Use GOMBAULT'S CAUSTIC BALSAM

The Great French Veterinary Remedy.
A SAFE, SPEEDY & POSITIVE CURE.



SUPERSEDES ALL CAUTERY OR FIRING.

Impossible to produce any scar or blemish. The safest best Blister ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

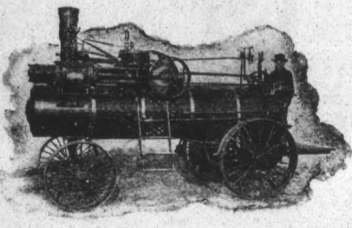
WE GUARANTEE that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin cure mixture ever made.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

COOK YOUR FEED

Steam, The Dependable Power



REBUILT and SECOND-HAND ENGINES, every standard make, that have been taken in trade for New Port Huron Machines. Many sizes and kinds give YOU a large assortment to select from. Prices according to quality—every one a good bargain. For Hauling Clover, Threshing, running Ensilage Cutters, Grinding Feed, Sawing Stove Wood, HEATING, and for COOKING FEED, they are just what YOU NEED. Use ANY KIND OF FUEL. Also have Rebuilt and Second-Hand Grain Threshers, Corn Huskers and Shellers, Clover Hullers, Silo Fillers and Portable Saw Mills. If YOU don't want to invest in a new machine here is YOUR OPPORTUNITY to get a good one at small cost. They're all fixed up right (not given a lick and a promise.) Ask for our REBUILT machinery list sent FREE.

Port Huron Engine & Thresher Co.
Port Huron, Michigan.

Hinge Door Silo

DOORS on hinges—easy to open and close—never bind, stick or freeze in. Better quality of silage because of air-tight doors always in place—prevents silage freezing in winter and drying in summer. Safe ladder, steel frame, perfect anchorage system. The Lansing Silo, same construction but with detachable doors. The chicken silo for the small farmer. Wood tanks of all kinds.

WOODS BROS. SILO & MFG. CO.
Dept. 15, Lincoln, Neb.
Lansing, Mich.
East St. Louis, Ill.

DEATH TO HEAVES

NEWTON'S Heave, Cough, Distemper and Indigestion Cure.

Some cases cured by 1st or 2nd \$1 can. Three cans are guaranteed to cure heaves or money refunded.



The original and the up-to-date Standard Veterinary Remedy for Heaves; free booklet explains fully. 34 years sale and veterinary use.

CURES HEAVES BY CORRECTING CAUSE—INDIGESTION. IT'S A GRAND CONDITIONER AND WORM EXPELLER

Safe. Most economical. Excellent for Cattle and Hogs. \$1.00 per can at dealers, at same price by parcel post.

THE NEWTON REMEDY CO., Toledo, Ohio

A 60 TON SILO No Scaffolding Erected One Day \$75 Thousands in use No Freight. Fully Guaranteed. Bonita Farm, RAYMORE, MO.

Evolution In Beef Production

TO an individual who has spent a larger portion of his life among the animals reared on the farms, watched their growth and development under varying conditions, noted the results obtained by different methods of breeding and caring for the animals, gradual though they be, developing from inferior to superior on one side, and refining from the coarse and awkward to symmetrical and well proportioned on the other, all have a charm that awakens in the mind of a stock enthusiast a deep grounded interest, unsurpassed by but few, if any, other topics that can be suggested. It is a story of the labors and sacrifices of the worthies of the last century who have been the beneficiaries of the human kind.

Eating of meat has been indulged in by the inhabitants of the temperate zone for so long a period of time that it is looked upon as a prime necessity. To deprive a large percentage of the people of our country of meat would be to narrow their possibilities for enjoyment of life to a point seemingly unbearable. A well marbled, well cooked piece of beef has a rich, delicious flavor and substance which meets the requirements of a hungry individual, and satisfies as well, or better, than any other kind of meat. Good meat is both stimulating and nutritious, giving courage and vigor to the consumer. The better the meat the better the results.

When Beef Improvement Began.

Originally the wild ox was large, coarse of bone and ungainly on account of lack of symmetry and harmonious proportions. If some of the representatives of our improved breeds were to be turned loose in the wilds of the great west, and left for a considerable length of time, they would grow slowly and develop into ungainly brutes and resemble some of their remote ancestors.

It was back in the eighteenth century, before men had discovered the methods by which they could yoke the steam and make it do their work, or harness lightning to do their errands, that the first steps were taken to improve the cattle to make them economical meat producers. The British Isles were well located for the purpose, and England had become the great center of population. The balmy sea breezes fanned the islands extending the growing season to late in the fall, and helped to loosen the grasp of the Frost King early in the spring. The constant benediction of nature, grass, grew with great luxuriance and furnished an abundance of that best and cheapest of all feeds that quickly promotes the growth of animals and makes the accumulation of flesh, both muscle and fat, an easy accomplishment.

At that time the people of that country learned to practice the community plan of carrying on their enterprises. They traveled to and from market in groups, "armed to the teeth," to be prepared to defend themselves against the numerous highwaymen that lay in ambush, ready to deprive them of their hard-earned, yet well deserved and much needed money.

At the time mentioned there existed a kind of cattle that had been developed largely by natural conditions in the fertile valley of the river Tees. They were first called the Holderness cattle which were distinguished by their large bodies, wide bags, and great producers of both meat and milk. They were profitable for the dairyman, grazier and butcher. They had reached that point when they might be termed a race of cattle. In order to make myself clearly understood I will define what is meant by a race of animals or men. Races are varieties molded to their peculiar type by natural causes, without the interference of man. Breeds are formed by selections made by men, and the blood so intermingled

and mixed by breeding with a definite object in view, until the characteristics of the breed are transmitted with a considerable degree of certainty.

Changes Begun.

Experimenters whose knowledge of breeding was crude and unscientific, began to improve the different kinds of stock that chanced to be in their hands. Without the example of well trained breeders to guide them, they were like sailors at sea without chart or compass.

Robert Bakewell, by methods unknown to his friends and acquaintances, accomplished results that not only challenged attention, but made a profound impression. It was quietly hinted that the great results were obtained by inbreeding. The Colling Brothers embarked in the business of stock improvement. The method of inbreeding was followed to an extent which might well cause a careful breeder to expect disastrous results. In the case of the bull Favorite (252), an animal that seemed to meet the approval of Charles Colling, he was bred to heifers of his own get to the fifth and sixth generation.

The cattle with which those first breeders were operating were coarse and slow in maturing. Some of them, when fed to the ripening point, reached enormous weight. The Durham ox that was bred by Charles Colling and traveled about the country as a special show, is said to have weighed 3,400 pounds.

The point toward which those early worthies were striving, was refinement. They chose the route toward the object to be attained known as inbreeding, which was contrary to the teaching of the wise ones of all the past as known to them. The results brought about by breeding and generous feeding, astonished their opponents as well as friends, and converted many who sought to improve their own stock by the same scheme.

Space forbids a discussion of the merits and demerits of inbreeding. The benefits claimed for the plan, is fixing and concentrating the desirable characteristics possessed by the animals so bred. The fact that inbreeding diminishes the constitutional vigor of the progeny seems to have been overlooked, and when followed very far, sterility and the extinction of the families have been met in noted cases which we might mention if it were necessary. Another point overlooked is the fact that faults will be fixed by inbreeding and in time may be too glaring to endure.

To the majority of modern breeders it seems that a more rational plan to obtain refinement and improvement is by careful selection and generous feeding to bring about early maturity. Such methods are safe for all to follow. The staunchest advocate of inbreeding can not claim that the organic quality of animals inbred is improved, while by the other plan the constitutional strength and vigor can be greatly improved and the aptitude to take on and accumulate flesh at a more economical rate can be greatly increased.

(To be continued.)

Wayne Co.

N. A. CLAPP.

FEEDERS' PROBLEMS.

The Chemical Analysis of Middlings.

Will you kindly enlighten me on the following subjects: What is the chemical analysis of pig middlings, white winter middlings, gray middlings and standard middlings and their relative value in price for hog feed?

Genesee Co.

F. B. H.

Not being familiar with the commercial grades of middlings, known as pig middlings, white winter middlings and gray middlings, this proposition was submitted to Prof. Andrew J. Paten, of M. A. C., in charge of feed inspection work for Michigan who makes the following reply:

"In our feed inspection work we did

not find any samples of middlings on the market under the name of either pig middlings or gray middlings, and we collected in all something like a hundred samples of middlings. The only grade of middlings recognized by the Association of Feed Control Officials of the United States are shorts or standard middlings which are the fine particles of the outer and inner bran separated from bran and white middlings, and wheat white middlings or white middlings which are that part of the offal of wheat intermediate between shorts or standard middlings and red dog."

"Up to date we have analyzed about 50 samples of middlings and have found the protein to vary from 13.75 per cent to 17.94 per cent, the average being about 15 per cent, and the fat varies from 3.50 per cent to 5.62 per cent, the average being about four per cent. In no case is it possible to say that the name under which the middlings are sold gives any indication as to its composition, and it would be practically impossible to place a value on any lot of middlings without knowing the composition."

The Best Way to Feed Skim-milk to Pigs.

Which is the best way to feed milk to pigs, warm and sweet from the separator or let it sour? What kind of grain would be best to feed with this milk? At present I am feeding ground oats.

Lapeer Co.

P. M.

The souring of milk adds nothing in the way of feeding value or digestibility to milk, consequently the best way is to feed directly from the separator, as you are doing. Skim-milk is a feed high in its content of protein, and should be fed in combination with some starchy grain such as corn, at the rate of one to three pounds of skim-milk to one pound of corn meal, depending upon the amount of milk available, and the age of the pigs. The skim-milk will have the greatest feeding value when used in combination with corn or other similar grain within the proportions above noted.

Owing to their bulkiness oats should not be fed as the sole ration to fattening pigs. In experiment station trials with oats as a feed, the best results were secured with a ration of one-third ground oats and two-thirds corn. Oats and skim-milk do not make a good combination where oats are fed as the sole grain ration, since the ration can be cheapened by adding some grain containing a larger proportion of starch where skim-milk is available as supplementary feed. Corn and oats ground together and fed in connection with skim-milk would make a very desirable ration for growing pigs.

LIVE STOCK NEWS.

Goats have been received in recent weeks in extremely large numbers in the Fort Worth and Kansas City markets from southwestern shipping points, and nearly all of them were sold to the packers. It is well known that goat meat is almost always sold in the retail meat markets of the country as lamb or mutton, and it brings high prices.

J. M. Walker, a veteran all-around farmer and successful stockman, now 83 years of age, and for a long period a resident of Macoupin county, Ill., has been regularly in the practice of feeding cattle winters for half a century, and he has made it pay well, although he has marketed prime beeves in the Chicago stock yards as low as \$4.12½ per cwt. He now owns over 100 head of high-grade Angus Hereford cattle which he bought in Missouri the first of May last year, when their average weight was around 1400 pounds. He expects to have them ready for marketing in July, when they are counted upon to weigh about 1600 pounds. Mr. Walker has also 400 head of immunized hogs which were bought in the St. Louis and Kansas City markets, and his death loss has been only about two per cent. His cattle are being fed on corn and blue grass. He attributes his success in fattening live stock for the market to the fact that he always forms a combination of cattle and hogs.

Pasture Plus Grain Feed

UNDER the advanced methods of dairy farming it has become recognized as essential to the greatest success to maintain the highest and most uniform flow of milk throughout the year. When a good pasture is available the change from barn feeding to pasture is, as a rule, highly beneficial, both as regards the milk flow and general health of the cows, but even when on good grazing grounds there are frequently parts of the season, usually in late summer, when the pastures are apt to become dry and thus make it a matter of much importance to find some means of keeping up the milk flow.

For this purpose the practice of feeding either grain or supplementing soiling crops, has been found satisfactory. The economy of feeding grain to cows on pasture has received considerable attention during the past few years in the various dairy sections.

In a recent test in which two lots of cows were fed alternately on rations consisting of pasture alone, pasture and bran, pasture and corn meal, and pasture and ground oats, for periods of seven days each, the conclusion was that although the grain feed added materially to the milk flow, corn showing the greatest increase, the increase returned did not pay the cost of the grain. In fact it was considerably less.

In experiments at the New York Cornell Station one lot of cows was fed, from June 8 to September 21, a daily ration of two pounds of cottonseed meal and two pounds of bran per cow, and another lot was fed from May 25 to September 17, six to nine pounds daily per cow of a mixture of wheat bran 100 pounds, cottonseed meal 100 pounds, and malt sprouts 15 pounds, in addition to good blue grass pasture. In neither case was there any profitable return in milk or butter for the additional grain fed.

To determine whether the profit from grain feeding would be greater in case of poorer pasturage, a herd of cows on light pasture was divided into two similar lots, one lot receiving only pasture and soiling, the other beginning May 23, was fed four quarts per cow daily, two feeds, night and morning, of a mixture of equal parts of corn meal, wheat bran, and cottonseed meal. On August 10, the pastures became dry, both lots began to receive a ration of green corn fodder of about 16 pounds per cow per day. On September 9 the corn fodder ration was changed to millet, which continued until October 1, when second growth grass was used; this continued until October 13, when pumpkin was fed. The grain feeding in this case resulted in a profitable increase in milk production and also in a considerable gain in weight of the animals. The beneficial effect of grain feeding was observed the following season, particularly in the development and performance of the younger animals, which were two and three-year-olds.

Taking into consideration the results of the various experiments at the stations and on dairy farms throughout the country, the conclusion seems to be that unless dairy products are especially high in price it is not a profitable practice to feed grain to cows at pasture. It is true that more milk is obtained and the cows hold up better in the yield and remain in better flesh when receiving the grain rations, but under ordinary circumstances there is no direct profit from the grain feeding as the increased production actually costs the farmer more than he is usually paid for the additional milk.

New York.

E. W. GAGE.

DAIRY PROBLEMS.

Early Variety of Corn Best.

I have a piece of ground that is loamy and wet. I want to put in corn, but as it is raining all the time I am

afraid that it will be too wet for corn. What can I sow on this ground to fill my silo this fall? I have some corn sowed but not enough. Would it be all right to sow Hungarian grass or mullet?

A. E. B.

An early variety of corn will, I believe, produce more silage and better silage than any other crop that can be planted late. If this land dries up so it can be planted along the first days of July, there is time enough for flint corn to mature sufficiently for good silage. I have planted as late as July 12 and got good ensilage. Flint, "smut nose yellow," is much earlier than the dent varieties and will do better planted late, yet it will make fine silage. If it should be frosted, if one is already and well put the corn into the silo at once before the leaves all dry up it will make excellent silage.

You can sow to millet, of course, but this is liable to be frosted, too. Besides, it will not make as good silage as corn. It is not as easily handled as corn, and cows do not like it as well. I would plant corn as late as July 15 in preference to anything else that can be grown now this season. You will be surprised how late planted corn will grow. If it only gets mature enough for roasting corn it will make fine silage.

The Retained Placenta.

Could you give me any advice as to what I could do for my cow? She dropped her calf about three or four weeks ago, but did not pass the afterbirth. She seems to be getting awfully poor but has a very good appetite for hay and green grass, but does not care for any bran or grain of any kind. Her milk does not seem to be as rich as other times but the quantity is there all right.

R. S.

Retaining the afterbirth, or placenta, occurs many times in cows. If the afterbirth does not come in a few hours, the best way is to remove it with the hand. A veterinarian should be employed for this. Sometimes it will come away after several days and apparently no harm is done. Again, I have known where it was retained until it became decomposed and apparently the most of it absorbed. Sometimes a cow in full vigor will accomplish all this and come out all right. It should never be left, however, to decompose if possible. It is a good plan to immediately upon the establishment of the fact that it is retained, to irrigate the cow with an antiseptic solution. This will assist in repelling it and will also cleanse the womb.

One should have a small rubber hose three feet long. Carefully insert one end into the mouth of the womb and then use a funnel on the other end. Hold the funnel high so the solution will run into the womb. If one has never seen this done he should employ a veterinarian, for the first time at least. Most any antiseptic disinfectant will do.

COLON C. LILLIE.

WEST MICHIGAN HOLSTEIN SALE SUCCESSFUL.

The consignment sale, held by the West Michigan Holstein Breeders' Association on May 3 at Grand Rapids, was very successful. Eighty-two animals were sold with the average price per head amounting to \$165.43.

Three breeders, John M. Tobin and H. A. Washburn, of Allegan county, and E. W. McNitt, of Kent county, sent in consignments of 13 animals each, the largest number for any consignment.

John Tobin got the high price and also the highest average price. The high price was \$500 for a year-old male, Wolverine Clothilde Hengerveld, which was bought by Henry V. Lenardson, of Allegan county. The average price for all of Mr. Tobin's animals was \$269.23. Mr. Lenardson also bought the top price female, Pearl Aaggie Ormsby, a three-year-old, from Mr. Tobin.

The National Dairy Show Association has appointed the following special breed days at "The National," which will be held this year at Springfield, Mass.:

Monday, October 16—Guernsey day.
Tuesday, October 17—Holstein day.
Wednesday, October 18—Ayrshire
Thursday, October 19—Jersey day.



You need a new DE LAVAL SEPARATOR NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREAT value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF the poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE AN IMPROVED DE Laval is so much simpler and more easily handled and cared

for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

THE DE LAVAL SEPARATOR CO.,
165 Broadway, New York 29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

GALLOWAY

SECOND EDITION NOW READY

Ask for your copy today. A postal gets it. The first edition of this big, 250-page book of Galloway bargains was exhausted. Second edition just off the press. It describes the famous Galloway line of Sanitary Cream Separators, the Galloway gasoline and kerosene Engines, the new, modern Galloway Manure Spreaders, our new 12-20 h. p. Farmobile; Galloway Farm Trucks, all kinds of farm machinery, hay tools, ensilage cutters, power house accessories, grinders, buggies, wagons, harness, fencing, roofing, saddles, Galloway automobiles, stock tanks, corn tools, automobile accessories, sewing machines, household goods, carpets and rugs, furniture, and a complete line of clothing for every member of the family.

I WANT YOU TO HAVE YOUR COPY OF THIS BOOK

You can get it for a postal. If it guides your summer and fall buying, it will save you from \$200 to \$500. It tells the truth about cream separators, it gives engine secrets and facts, it tells how and why the Galloway manure spreaders made Galloway famous, fully describes my new 12-20 h. p. Farmobile or tractor. A copy of this book should be in your hands even if you are not now in the market for a single one of our bargains. Printed in four colors, handsomely illustrated. Ask for your free Galloway copy today. Address

WM. GALLOWAY COMPANY, Mfg. Specialists
187 Galloway Sta. Waterloo, Iowa

Seven Styles: Farm trucks from 150 lbs. to 5 tons capacity. These Manure Spreaders made Galloway famous. Big, free book gives details of size and style.

Galloway's new 12-20 Farmobile. Low price. Equal to 8 men and 8 teams.

Air-tight Silo of long-life metal

Silage stored in air-tight ZYRO Metal Silos keeps sweetest, tastes better. The loss is less. ZYRO Pure-Galvanized-Iron or Black-Enameled Silos are proof against wind, fire, shrinking, swelling, collapse and repair. Anti-corrosive, rust-resisting. A sure investment in satisfaction.

ZYRO Costs less to erect

Flanged metal sheets fit easily and are positively air-tight and moisture-tight.

Free Booklet

tells whole story why ZYRO Metal Silos give best results. Write today for your copy.

The Canton Culvert & Silo Co.

Makers of ZYRO Corn Crib and Grain Bins
Box 808 CANTON, OHIO

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. 150 styles. 13c per rod up. Gates and Steel Posts, too! Write postal. **THE BROWN FENCE & WIRE CO.** Dept. 49 Cleveland, Ohio

BUILD AN EVERLASTING SILO

Glazed Vitrified Tile. Scientifically correct. Complete descriptive literature sent on request. Write today.

LEWIS McNUTT
23 South Walnut Street
Brazil, Ind.

Your Cow and Her Home

deserve more thought. Properly housed animals give more of better milk. This means bigger profits. Equip your barn with the fully guaranteed and patented

Harris Stalls

and Stanchions, valued for their strength, and lasting sanitary service. Easily installed, prices reasonable. Write TO-DAY for illustrated Catalog—it's FREE. **THE HARRIS MFG. CO.** 130 Main Street, Salem, Ohio

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 STONE COMPANY.** Muskegon, Mich., and Benton Harbor, Mich.

Finance and Investment

IT is a peculiar condition obtaining in this country of ours which permits a person to devote years of hard work and effort in accumulating a few thousand dollars and then put so little real thought or study in seeing that the money secured with so much effort is properly employed. But that this is true is evidenced by the ease with which so many fraudulent schemes are perpetrated upon a public made up of men successful along some certain lines but who have neglected posting themselves on the fundamental principles of finance or who seem unable to apply that sound common sense to the investing of money which was so skillfully accumulated. Those people are so often the victims of the delusion that the wiles of an oily-tongued salesman really indicate real merit in the security which he is offering whereas, as a matter of fact, the investment houses in good standing are prone to understate a fact rather than create false hopes or give a wrong impression of the bond or stock. But right at this point permit me to emphasize this fact, that the large majority of investment bond houses operating in this country are made up of men with a high standard of integrity and business honor and by confining your dealings to a firm recommended by your own bank you will secure the advice from men who have built up their business success by being correct in their judgment of securities and who recognize that their future depends upon a continuance of that condition.

This department has been instituted by this paper in the hope that its readers will come to look upon it as a sound source of advice along financial lines as well as concerning subjects with which it has been identified in the past. It will be the aim of your editor to devote some space in these columns each week in an effort to lay before you information of such a character that if carefully read will give you the general idea of the investment problem, also endeavor to answer your questions concerning any subject which may properly come under the subject of finance or investments. Bonds and stocks will be discussed at some length in future articles. The difference between investment and speculation will be carefully explained and recommendations to fit the needs of certain individuals will be given with no selfish motive other than to best serve your own particular requirements. It should be borne in mind that this paper serves no interests but those of its readers and this department has been instituted entirely for the purpose of providing information along lines which may have been neglected through lack of proper study.

In European countries the peasant and day-laborer is a bond-holder. He is educated in the principles of finance by his banker, his newspaper and his government. This situation has made it possible for foreign governments to so successfully finance this terrific struggle by resorting only to the money owned by the masses through the issuance of government bonds or treasury notes which are freely bought by the small investors instead of putting their money into the savings banks. In fact, the banks have always encouraged this practice much to the benefit of the treasury department and the investor as well.

A campaign of education along these lines is necessary in this country as well in order to permit us to maintain our position into which the war has thrown us. Money lying in the stocking or carefully hidden is a gross extravagance, and money deposited in the savings banks is lazy in that it does not produce as much return to the owner as it should.

Permit us through these columns to post you on a subject with which you should be familiar to the end that the fruits of your labor may be conserved (Continued on page 10).

MID-YEAR MODEL
73 New Ideas

Mitchell
SIX

\$1325 f. o. b. Racine
26 Extra Features

700 Improvements

Made by John W. Bate, the Efficiency Engineer

The Mid-Year Mitchell is the 17th model which John W. Bate has built. He has worked out in those models 700 improvements, and all are now found in this car.

A Lifetime Car

What he has aimed at is a lifetime car. His genius is efficiency as applied to machines. And he says that a car should last like a watch.

Instead of heavy castings he believes in light steel made three times as strong. There are 440 parts in this New Mitchell which are either drop forged or steel stamped.

He believes in Chrome-Vanadium steel, and he uses a wealth in this Mitchell.

He believes in making each part as strong as need be, and then adding 50 per cent.

He believes in utter simplicity—in a car almost trouble-proof.

One result is this: One Bate-built Mitchell has run 218,734 miles. Six Mitchells have averaged 164,372 miles each. That is more than 30 years of ordinary service.

He has certainly come closer to a lifetime car than anyone else ever did.

10,000 Savings

In our factory Mr. Bate has made 10,000 savings. He has reduced our costs 50 per cent in five years.

He has done this by building a model plant—a plant which covers 45 acres. He has equipped it with thousands of time-saving machines. He has invested in this factory about \$5,000,000.

No other plant in the world could build this New Mitchell at anywhere near our price.

That is why, years ago, we brought John W. Bate here. And why we paid him his price to make this factory and car represent the last word in efficiency.

26 Costly Extras

You will find in this Mitchell 26 costly extras—wanted things which other cars omit. Things like a power tire pump, reversible headlights, cane-handle control, cantilever springs, etc.

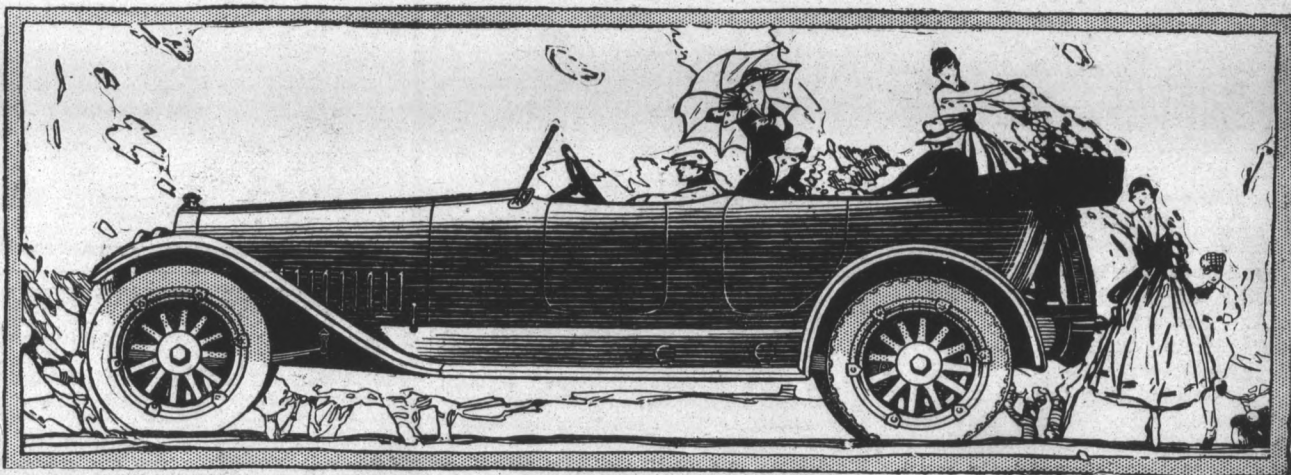
There are 26 of those extras—each something you want. In other cars they would cost you an extra price. In the Mitchell they are free. All are paid for out of factory savings.

257 Cars in One

The Mid-Year Mitchell is the latest model out. It was not completed until after the New York Shows. Our experts and designers there examined 257 this-year models. And all the best new ideas from all of them are combined in this single car. It brings out 73 new touches in body, finish and equipment. It is the most complete car on exhibit.

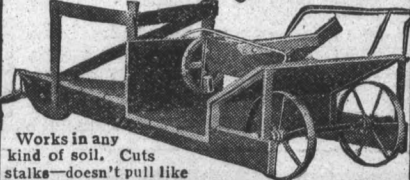
Mitchell dealers everywhere are now showing this new model. It is the only car with all Mr. Bate's ideas. It is the greatest value ever given in a high-grade car. If you don't know your Mitchell dealer, ask us for his name.

MITCHELL-LEWIS
MOTOR CO.
Racine, Wis., U. S. A.



The PERFECT CORN HARVESTER

Sold Direct \$1950 JUST the THING for SHOCK or SILO CUTTING



Works in any kind of soil. Cuts stalks—doesn't pull like other cutters. Absolutely no danger Cuts Four to Seven Acres a Day with one man and one horse. Here is what one farmer says: Loudonville, Ohio, Dec. 4, 1915 Love Mfg. Co.: Dear Sirs: The "Perfect" is all right. I wouldn't want to be without it for twice what it cost me. Some of our corn was very weedy, but the harvester did the work. Respectfully, Herman Fritz

SOLD DIRECT TO THE FARMER

Send for booklet and circulars telling all about this labor-saving machine; also containing testimonials of many users. Send for this circular matter today.

LOVE MANUFACTURING COMPANY
Dept. 36 Lincoln, Illinois

COLEMAN GAS LANTERN

Makes and Burns Its Own Gas

Gives 300 candle power of good strong steady light. Can't blow out or jar out. Nickered brass with mica globe. Stands all hard knocks. Use it in feed lots, barns, cow sheds, chicken houses, cellars, etc. Fill it only once a week—Clean it only once a year. No wicks. No chimneys. No danger even if rolled around in straw. Can't explode. Can't spill. Guaranteed 6 years. If not on sale in your town yet, write for catalog of 20 different kinds of Gasoline Lamps, Table Lamps, etc. Dealers or agents wanted in every locality.

206 St. Francis St.,	Wichita, Kansas
281 East 6th Street,	St. Paul, Minn.
1008 Summit Street,	Toledo, Ohio
402 Akard Street,	Dallas, Texas
40 South Clinton Street,	Chicago, Illinois

Ditching and Terracing

Made Easy—Bigger crops—better farms with

Martin Farm Ditcher & Road Grader

Cuts ditch to 4 ft. Grades roads. All Steel—Practical—Adjustable—Reversible. Cleans ditches, cuts and works out dirt at same time. Does work of big machines. Soon pays for itself. Write for free booklet and introductory proposition.

Owensboro Ditcher & Grader Co. Inc. Box 830, Owensboro, Ky.

THE FREEMAN ENSILAGE CUTTER

—The Cutter That Saves You Money

Costs less to buy—less to operate—less for upkeep. The Freeman combines the limit of quality and economy.

Runs easiest—on least power. Cuts clean and fast. Traveling force feed table—handles big bundles easily. Has extra strong frame, large feed rolls, adjustable knives, safety fly wheel, safety stop lever.

Steel Enclosed Carrier reduces running expense, prevents feed blowing away.

GET OUR FREE BOOK showing full line Ensilage and Feed Cutters, Carriers and Blower-Elevators.

THE S. FREEMAN & SONS MFG. CO.
212 Michigan St.
Racine, Wis.

We can furnish Blower or Enclosed Steel Carrier as desired.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

"Oh, sons of France, with roll of drum,
The dawn of glory's day has come!
Against us tyrants of the world,
Their blood-stained banner have unfurled.

"Arm! March! To their storming,
battalions swift forming!
Till our soil drink the foul blood, their
dastard hearts warming!"

THE singer was a slight, dark-eyed young man attired in rough garments, wearing a pit-lamp on his soft wool cap. He was leaning against the door of the engine room of mine 25, just across from the pit. Seated on a pile of lumber was another young man, attired in the same manner, ac-

companying the singer on an organ. The singer was Joe Brusier and the accordion man was Jaques—called Jack here—Lamar. These and two others were the shot firers of the mine waiting at the pithead for the signal to go below.

Soon the swiftly moving cage had brought to earth the last man from the mine and the four shotfirers took their position on the downbound cage.

The Fall of Verdun

By EDGAR WHITE

At the bottom the men separated, Joe and Jack taking the east half of the mine and the other two men taking the west half.

"Arm! March! To their storming, battalions swift forming—"

Joe hummed the war song as they made their way along the main entry toward the working places.

"Would you like to be there, Joe?" asked Jack.

Joe laughed.
"Not today. America suits me all right."

"But suppose they haven't enough men? Suppose they need us, Joe?"

The other quit smiling.

"True, Jack," he said. "They may need us yet."

"Would you go, Joe?"

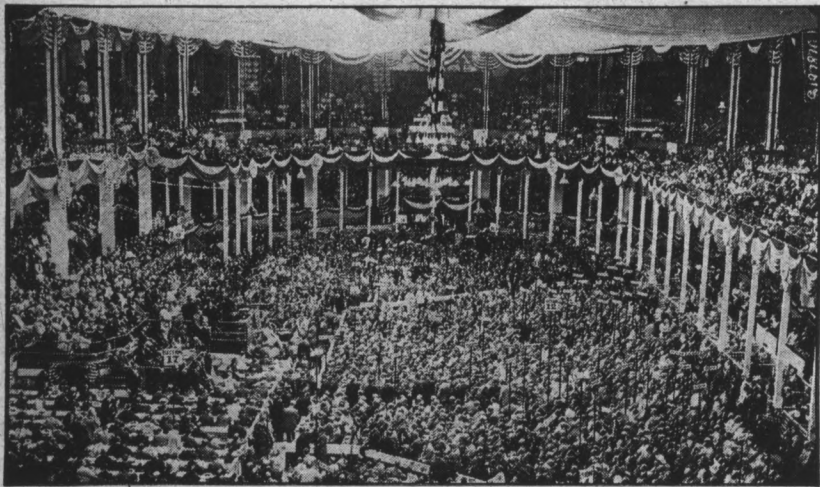
It was a hard question.

"I'm an American now," replied Joe.

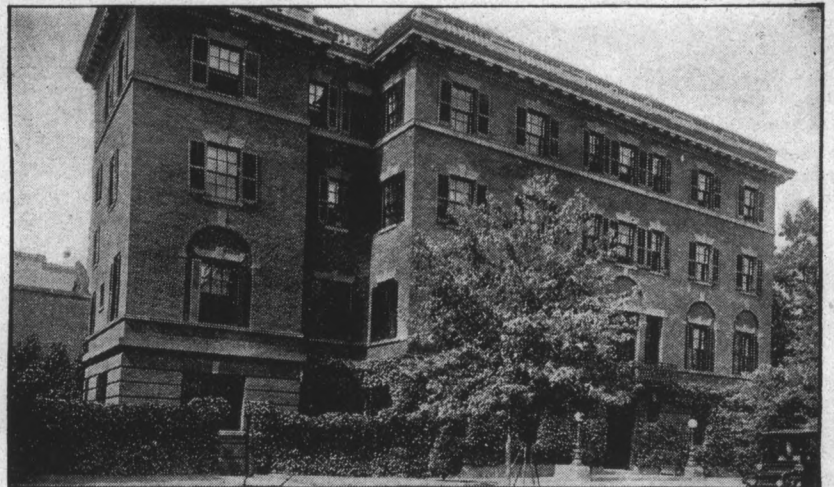
"I came here to stay. Still—"

They had now reached the cross-entires. Stooping low the two men entered the black hole and as they passed along they would hold their lamps

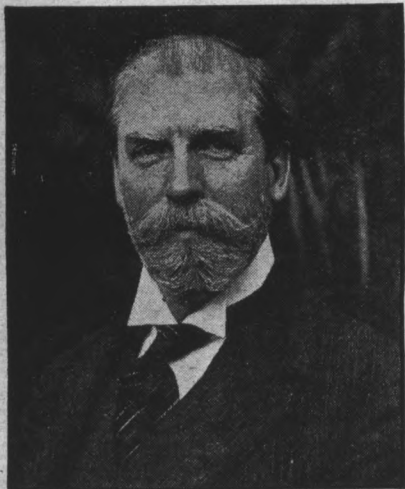
WORLD EVENTS IN PICTURES



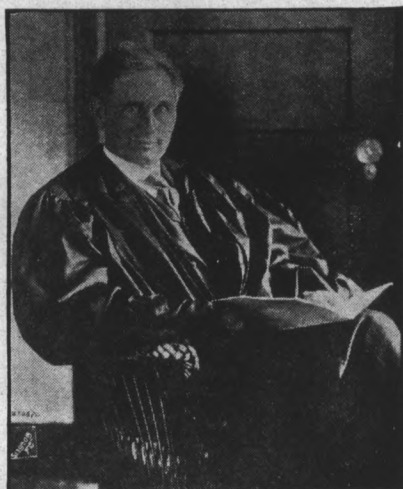
The Democratic National Convention in Session at Coliseum, St. Louis, Mo.



The Palatial Home of Charles E. Hughes in Washington, D. C.



Latest Photograph of Charles Evans Hughes.



Louis D. Brandeis, Our New U. S. Supreme Court Justice.



An Indian Woman Delegate at Progressive Convention.



President Wilson Marching in Great Preparedness Parade.



Harvard Varsity Eight in Final Training for Big Race with Yale on Thames.



Copyright by Underwood, & Underwood N. Y.

against the side where there was an entrance to a miner's room. At each room was a wooden tag numbered to indicate how many cartridges were to be fired in that room. Long, yellow fuses hung from the face of the coal. To these the shot-firer touched his torch, and then hurried out. Soon after leaving the room the detonation of the cartridges would be heard, and the crash of coal on the opposite wall. Joe fired the cartridges in the rooms on one side, while Jack did similar work on the opposite side. They hurried along the murky corridors, followed by the roars of bursting cartridges, like the thunder of approaching artillery. Violent gusts of wind swept through the mine at each report.

Then Joe's alert ears noted that from one room where he had ignited two fuses no sound came. As the custom was when anything went wrong, Joe called across to Jack and told him he was going back. Jack waited at the entrance of a room for his partner. Joe plodded back some fifty feet and re-entered the room. There were no sparks dropping from the fuses. He approached the place where the cartridges were. There was a vivid flash, and a great mass of coal swept across as if fired from a cannon.

* * *

"Weren't you one of the men singing the Marseillaise this afternoon at No. 25?" asked a large dark man, wearing a heavy mustache and imperial.

"I was singing at it," replied the young shotfirer, "if that is what you mean."

"Singing at it or singing it is all one," the dark man stated with some impatience. "What interests me is to know whether it was a Frenchman who did it."

"I'm a native of France," said Joe proudly.

"Good! Well, we need you right now."

"But I can't go—I've got a wife and baby. Besides, I'm now an American citizen."

The other looked at him with a shade of contempt.

"I thought I was talking to a Frenchman."

"You are talking to an American citizen who was once a Frenchman," returned the shotfirer angrily. "I served in the French army for three years, and did my duty well. Then I came over here, married and adopted this as my country. And I'm proud of it!"

The recruiting agent changed his tactics. Smiling genially he took Joe's arm, and said:

"Well, we won't quarrel, my friend. Let's step over to the cafe, and we'll talk of France—I've just come over. You'd like to hear how your countrymen are faring, wouldn't you?"

All of the young Frenchman's resentment vanished at the friendly tone, and he eagerly accompanied the man into the refreshment parlor, where they took seats at a table in a far corner. The dark man gave the order, and when they were served with lemonade he dropped a white powder in his glass, and then diverted his companion's attention while he changed the glasses. When the young miner came to himself he was in a great city, the streets of which seemed to be filled with soldiers. He soon recognized the place as Marseillaise, and hurried down to the dock to see if he couldn't get passage to America. The uniformed man to whom he spoke smiled, and signaled to a couple of officers. They approached and took charge of Joe, despite his protestations that he was an American citizen. He was virtually a prisoner, and soon became a part of that great system known as the army of the French republic. It was no use to protest—nobody paid much attention to him, except to see that he kept in the company to which he was assigned. Finally he was marched to a troop train and conveyed to Paris. Pretty soon, somewhat to his surprise, he caught the general infection—yellow

wanted to go to the front and die for France. That seemed to be the one thing in the mind of every man he met. The crippled soldiers he saw on the streets were venerated as heroes. The very air was charged with patriotism. Then came the news that the Crown Prince was massing for an attempt to break the line at Verdun. Instantly the whole city buzzed with excitement. The fall of Verdun meant that Paris would come next.

A report came that the enemy had already taken some of the first line trenches, and was bringing up the sort of artillery that had reduced Liege and Antwerp. There was urgent need for fresh troops and supplies for Verdun—at once. Then General Petain's genius began to be manifest. The motor line was established. Joe and his company were rushed to the threatened citadel, and immediately ordered to the trenches. For two days such an avalanche of shells came as the world had never seen, and with nightfall of the second day came a lull. The enemy was preparing for a massed attack. The captain, a bushy whiskered man, his uniform coated with mud, passed along the trenches.

"I want some men with eyes like a cat," he said—"men who can see in the dark."

He was looking keenly at Joe when he said it.

"I worked in a coal mine at home," replied Joe. "It's dark down there."

"Good!"

The captain found three other men, and to the group he gave this direction:

"One of you take this roll of wire and the other these stakes. Crawl close to the earth and get as near to them as you can. Then stretch this wire four inches above the ground—they'll be coming at us in a couple of hours!"

The four men climbed out of the trenches and started to obey the order, when flashlights from the enemy's side began sweeping the earth in front of the French trenches.

"Come back!" cried the captain; "they'll pick you off like birds."

The flashlight suddenly went out and star shells shed a ghostly glare on the land between the trenches. Then masses of men began to move forward by companies and regiments, like sands of the sea. The French batteries bark-

ed viciously overhead, and a line of bursting shells played in front of the advancing hosts, tearing great holes in their ranks. Still they came on and on like the shadow of fate.

"It's up to you, fellows," said the black-whiskered captain who seemed to take in everything; "the artillery can't stop 'em."

Joe glanced at the working parts of his gun, and idly wondered how many cartridges he could fire before the end came. He recalled that the miners had once held an animated discussion at the pithead of No. 25 as to how many shots an expert rifleman could fire in a minute, and how long it would be before the gun barrel got too hot to hold. And that while there was some disagreement on those points, all agreed that it was a lucky thing they lived in America, and didn't have to make the actual test. And here he was face to face with that very thing they all had dreaded!

And he thought of another thing about which they had talked over in happy, peaceful America, and this made him angry—the marvelous 75s of the French! If the 75 was such a wonderful piece of artillery how was it that it had fallen down tonight, and let the enemy in on the thin line manning the first trenches? Why, the 75s had hardly made an impression on that multitude now so fatally close; the gun barrels of the 75s were now elevated and shooting over the heads of defenders and assailants—making that over-rated curtain of fire he had read so much about! What was the good of a curtain of fire that let by that mighty stampede?

"Now, boys, don't get excited," said the whiskered captain as coolly as if he were instructing a class in mental arithmetic. "Make every shot count, and if they get to us give 'em the bayonet. Now—let go!"

Rifles and rapid fire guns rattled like hail against the charging waves of gray; the first line went down, but the second kept doggedly on, heads bent and clumsily staggering over fallen comrades.

Down went the second line. The fire of the defenders cut wide swaths through the assaulting column, but it never stopped, and for every man shot down there seemed to be another to take his place. Some of the machine guns jammed, and here and there a

man ran out of ammunition. The star shells looked down on the weird scene, a scene standing out like a cross section of hades.

"Now, men, the bayonet!"

It was the last words the captain uttered. The front line of the charging tide in gray fired point blank into the trenches, and the whiskered officer fell riddled. With a wild yell the assailants threw themselves on the men in the trenches, and there was a struggle like wild beasts in a cage. A burly sergeant, with clubbed musket, beat down Joe's gun, smashed heavily against his head and for him the shouting and the tumult were over.

* * *

The town was full of people. Bands played on the main street intersections. The houses were decorated with bunting and flags. Cheers rent the air. Now and then a cannon boomed in the distance. Dignitaries in glossy carriages led the procession through the streets of the city. A pale man, with head bandaged and arm in a sling, roused at the cheering and painfully pulled himself up into a sitting position, where he could look through the window. Far down the street he saw the long line of carriages, heard the band playing a martial air, and observed the decorations on the buildings.

"They've taken Verdun," he groaned.

A sweet faced young woman, who had come lightly up the steps, entered the room and running to the bed threw her arms around the invalid.

"Oh, Joe!" she cried, "you're back at your old self again, and I'm so glad."

He looked at her in a dazed manner, and then suddenly drew her face toward him and kissed her.

"It's good to see you, dear," he said quietly, "but this is not a happy day for France. We've lost Verdun."

"When did you learn all that, Joe?" "If you look out the window you'll see the enemy marching in."

The little wife went to the window, and saw the procession moving towards them. Then she returned and sat on the bed beside him while she ran a white hand through his hair.

"Joe, boy," she smiled through her tears, "those people are Americans and they're celebrating the Fourth of July just as we used to celebrate the fall of the bastille."

"Isn't that a procession of Germans?" he asked doubtfully.

"There are in that parade, Joe," she replied, "some men who were once Germans, some who were Irish and some who were French, but now they are all Americans, just like ourselves, and they are marching under the banner, the beautiful stars and stripes, their flag, Joe, and ours!"

She hesitated a moment and looked tenderly at the pain-racked face. Then went on:

"You have been having a hard time of it, boy—you've been talking about trenches and machine guns and star shells all night, but you're safe and sure in dear old America, your land and mine, Joe, thanks be to God!"

FINANCE AND INVESTMENT.

(Continued from page 8).

to the lasting benefit of your family and the greater prosperity of yourself. Recognize that a knowledge along these lines is part of the education of a well rounded business man or farmer and that you should deem it necessary to be well informed on financial subjects in order to hold the position which you should in the community in which you live.

J. R. MILLIGAN,
Financial Editor.

Enjoyed the Story.

Tekonsha, Mich., June 17, 1916.

The Michigan Farmer: I felt as though I must tell you how much I have enjoyed the story that is just ended, "The Light of Western Stars." I sincerely hope we may have more stories from the pen of the same author.—Mrs. E. A. Sebring.

A Memorial to Rix Robinson

Since publishing the account of the life of Rix Robinson, Pioneer, in the June 3 issue of the Michigan Farmer, an error has been pointed out in the last paragraph where it reads, "Without even a monument to mark his last resting place, he sleeps on the hillside near Ada where the river he so dearly loved ripples by."

Soon after the death of "Uncle Rix," as he was familiarly known, the Ada Pioneer Association, of which Mr. Robinson was the first president, started a movement to provide a suitable mark to the memory of this leader among the pioneers. This action interested another and larger society of which Mr. Robinson had also been its first executive, the Grand River Pioneer Association, which co-operated with the local society in raising funds among the early settlers from Portland to Grand Haven for the erection of a bronze monument at the grave in the Ada village cemetery on a hill overlooking the site of the old trading post managed by the pioneer.

The illustration on this page gives the readers a view of this memorial which recites the achievements of, and honors bestowed upon the man whom it commemorates. A fine life-size medalion also appears on one face of the monument. The following is the inscription: "Rix Robinson, Indian trader on Grand River 1821; supervisor of township of Kent 1834; supervisor

township of Ada 1840; associate judge of circuit court for Kent county 1844; state senator 1845; state commission



of internal improvements 1846; member of state constitutional convention 1850; born 1792, died 1875. Erected by the Old Residents' Association of Grand River Valley."

In Sequoia National Park

By ROBERT STERLING YARD

AND they said, Go to, let us build us a city and a tower whose top may reach unto heaven.

Thus is recorded, in the eleventh chapter of Genesis, the building of the Tower of Babel. While this tower was doubtless still standing, and a hundred years or two before the birth of Abraham, a tiny seed in the warm soil of a mountain slope on quite the opposite side of the world thrust into the light of day a slender green spike which was destined, during an existence of more than four thousand years, to become itself a lofty tower; noble in form, "with a physiognomy almost Godlike," as John Muir puts it, pulsating with life to its topmost leaflet more than three hundred feet above the ground, and giving forth a babel of bird song to the accompaniment which the summer winds played upon its many millions of tiny leaves.

On the stump of this prostrate sequoia tree, one of the noblest of the celebrated Big Trees of California, John Muir counted more than four thousand rings, a ring for every year of its life. Its trunk, exclusive of bark, was thirty-five feet eight inches in diameter. As the bark of the very largest sequoias is two feet or more in thickness, this giant must have measured forty feet in diameter when it was still growing on one of the slopes of the Kings River.

Largest of the Monsters.

In the Sequoia National Park, upon the upper slopes of the Sierra Nevada Mountains in central California, and in the little General Grant Park six miles away and under the same management, grow 1,166,000 sequoia trees, of which 12,000 are more than ten feet in diameter. Some of the others have these dimensions: General Sherman Tree, diameter, 36.5 feet, height 279.9 feet; General Grant Tree, diameter, 35 feet, height 264 feet; Abraham Lincoln Tree, diameter, 31 feet, height, 270 feet; California Tree, diameter, 30 feet, height, 260 feet.

How to Visualize a Big Tree.

It is extremely difficult to realize what the dimensions of these trees really mean. To visualize as best you can the greatest of those now standing, the General Sherman Tree, measure off and stake its diameter, 36 feet six inches, upon the ground in front of a church the height of whose steeple you can readily ascertain. Then stand back a distance equal to the height of the tree, 280 feet, and look hard at the stakes whose distance apart represents the thickness of the trunk.

Now raise your eyes slowly, imagining this trunk rising in front of the

THE SUMMER STORM.

BY T. G. MORRIS.

How dark the sky! the sun is lost to view;
The black clouds hasten on their murky way;
Unceasingly and louder moans the wind,
And gone is all the brightness of the day.

The fading flowers lift their drooping heads,
Beseeching Heav'n its quenching draught to send;
The birds grow restive, and their carols cease,
With weight of trembling leaves the tree-tops bend.

The torrents break their leash at last,
and rain
Descends to cool the fever of the land;
The diamond-pointed spears of lightning flash,
And thunder peals like organ-echoes grand.

But see, the storm has passed—its fury spent;
Bright rainbow tints adorn the sky and sea.
All nature smiles resplendent, grateful, green,
The sun returning beams anew on me.

church, tapering very slightly as it rises. When you are looking upward at an angle of forty-five degrees from the spot where you are standing (and this will not be difficult to calculate) you will be looking at the point where the top of the General Sherman Tree would be if it were growing in front of your church instead of in the Sequoia National Park. The known height of the steeple will help you verify this calculation.

It will help your comprehension of the great size of these trees to know that a box big enough to have easily held the ill-fated ship Lusitania, one of the largest ever built, could be made from inch boards sawed from any one of these great sequoias, with boards enough left over to build a dozen houses. Automobiles and six-horse teams have been driven up and down the fallen trunks of several great sequoias, and there are regular wagon roads running through gaps in the trunks of several others in our national parks. Two parallel street car lines and a driveway might be run through the trunk of several of the very largest.

The Oldest Living Thing.

But the age of the sequoia is still more difficult to realize. It is beyond comparison with the oldest living thing.

Several of the trees now growing in hearty maturity in the Sequoia National Park were vigorous youngsters before the pyramids were built on the Egyptian desert before Babylon reached its prime. Hundreds of them were thriving before the heroic age of ancient Greece—while, in fact, the rough Indo-Germanic ancestors of the Greeks were still swarming from the north. Thousands were lusty youths through all the ages of Greek art and Roman wars. Tens of thousands were flourishing trees when Christ was born in Bethlehem.

But with all its vast age, the sequoia today is the embodiment of serene vigor. No description, says Muir, can give any adequate idea of its majesty, much less its beauty. He calls it nature's forest masterpiece. He dwells upon its patrician bearing, its suggestion of ancient stock, its strange air of other days, its thoroughbred look inherited from the long ago. "Poised in the fullness of strength and beauty, stern and solemn in mien, it glows with eager enthusiastic life to the tip of every leaf and branch and far-reaching root, calm as a granite dome, the first to feel the touch of the rosy beams of morning, the last to bid the sun good night."

The sequoia is regular and symmetrical in general form. Its powerful, stately trunk is purplish to cinnamon brown and rises without branch a hundred or a hundred and fifty feet—which is as high or higher than the tops of most forest trees. Its bulky limbs shoot boldly out on every side. Its foliage, the most feathery and delicate of all the conifers, is densely massed. The bright green cones are about two and a half inches long, generating seeds scarcely more than an eighth of an inch across. The wood is almost indestructible except by fire. Fallen trunks and broken branches lie for centuries undecayed and almost unaltered.

The sequoias are the glory, as they were the cause, of the Sequoia National Park. Scattered here and there over great areas, they cluster chiefly in thirteen separate groves, and it is in these groves that they attain their greatest size and luxuriance.

But they are by no means the only attractions of this national park, which many frequenters declare nature has equipped best of all for the joys and pleasures of mountain living.

Ideal for Camping Out.

It is the ideal place to camp out. It is a country of magnificent mountain

scenery, easily accessible when once you are in it. Its peaks are among the loftiest, its canyons among the deepest and most romantic. Its summer temperatures are even and bracing. Its summers are practically without rain.

Across its borders north and east opens up a mountain region, on the crest of the Sierra, of unexcelled grandeur. Mount Whitney, the highest mountain in the United States, 14,501 feet, lies upon its eastern boundary. The Kings and the Kern Rivers have few scenic equals. These and its many other rushing streams abound in trout.

THE BOAT RIDES.

BY L. MYRTLE SOURS.

A boatman called my name one day,
"Come here and climb in," he said.
I trusted the boatman and answered the call
And found there were six of us there in all
To ride in the boat away.

He handled the oar with steady stroke,
With hand clasp firm and strong;
And we rode o'er the water, far out from the shore,
And heard the dip of each splashing oar
While the wavelets 'round us broke.

The water was, deep, and down below
So beautiful it lay,
In its tranquil depths and glistening sheen
I could see the tender things of green
That under the water grow.

The sun shone clear and the day was warm,
A perfect day in June;
And the shadows lay in the water bright
Where the willows grew in the sunny light,
And added their witching charm.

I went again with a fair haired girl,
In the evening of the day,
With some children too, but the sky of blue
Was clouded now, and some drops came through,
And fell 'mid the wavelets' curl.

We drew our boat 'neath a willow tree
And waited a little while
Till the sprinkle of rain had gone away.
It was pretty there where the willows play
All over the water free.

We rode to the place where the bubbling spring
Comes up from the depths below,
To drink of the water, clear and cool,
That gurgles and sparkles, a laughing pool,
From out where the big rocks cling.

Then we glided over the water slow
While the evening gathered on,
And we rode till we saw each twinkling light
Shine out 'mid the trees in the park,
all bright,
And down in the water glow.

And then we rode our boat to the shore
And went each on our way
'Mid the murmuring trees and the murmuring breeze
That helped each happy heart to please
Till the summer day was o'er.

THOUGHTS FOR REFLECTION.

If a man take no thought about what is distant, he will find sorrow near at hand.—Confucius.

When the heart is full it shows itself in action as well as speech.—David Starr Jordan.

But what is it to love one's country? Is it to carry a banner in a procession? Is it to shout as we see the flag? Vastly deeper than that is love of the country, deeper than any soldier's uniform, deeper than any pictures of battleships with which we adorn our walls.—Rev. W. H. P. Faunce.

Duty is a power which rises with us in the morning and goes to rest with us at night. It is co-extensive with the action of our intelligence. It is the shadow which cleaves to us, go where we will, and which only leaves us when we leave the light of life.—Gladstone.

It belongs to every large nature, when it is not under the immediate power of some strong, unquestioning emotion, to suspect itself, and doubt the truth of its own impressions, conscious of possibilities beyond its horizon.—George Eliot.

False friendship, like the ivy, decays and ruins the walls it embraces; but true friendship gives new life and animation to the object it supports.—Robert Burton.

Ford Comfort for \$5 with Paramount Snubbers

GET SOME PLEASURE and comfort out of riding in your Ford. PARAMOUNT SNUBBERS take all of the rough spots out of the road for you. The downward action of the Ford spring is the same while the rebound upward action is checked by the snubbers. You can't realize what a difference they make until you try them. THEY ARE EASY TO PUT ON. All you need is a monkey wrench and you can bolt them on in five minutes. SEND US YOUR ORDER with a five dollar bill and we will send you a set of the snubbers by return express. Put them on and try them out for thirty days; if you are not satisfied send them back and we will refund your money. YOU WILL WONDER how you ever got along without them, they make such a difference in the riding of your car.

Mail your order in today.

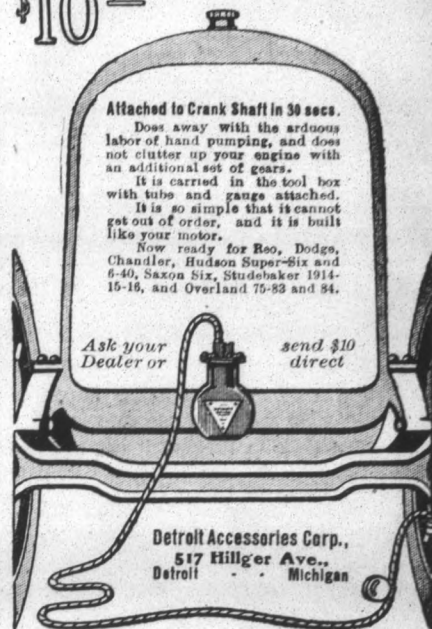
Detroit Engineering Products Company, Detroit, Michigan

Bank Reference—First and Old Detroit National Bank, of Detroit.

GEARLESS DETROIT MOTOR-DRIVEN TIRE-PUMP

PATENTED AUG-24-1915

\$10⁰⁰



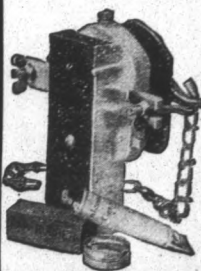
Attached to Crank Shaft in 30 secs.
Does away with the arduous labor of hand pumping, and does not clutter up your engine with an additional set of gears.
It is carried in the tool box with tube and gauge attached.
It is so simple that it cannot get out of order, and it is built like your motor.
Now ready for Reo, Dodge, Chandler, Hudson Super-Six and 6-40, Saxon Six, Studebaker 1914-15-16, and Overland 75-83 and 84.

Ask your Dealer or send \$10 direct

Detroit Accessories Corp., 517 Hillier Ave., Detroit, Michigan

Do Your Own Vulcanizing

SURE-CURE STEAM VULCANIZER



This handy, compact, portable Steam Vulcanizer will repair both tubes and casings of any size. Prevents danger of burning and over vulcanizing, because it HEATS BY STEAM. Burns gasoline, will not blow out in strongest wind. The heat is automatically controlled, making the operation simple, and insures a perfect job every time. Easily carried in tool box or under seat. Always ready for use.

\$2.25

THE NATIONAL MOTOR SUPPLY CO., 5620 Euclid Ave., Cleveland, O.

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.

NEW AND REBUILT MORTORCYCLES

Complete line from \$45.00 up. F. O. B. your Station. HARP BROS., 477 Grand River Ave., Detroit, Mich.

When Writing to Advertisers Please Mention The Michigan Farmer.

Woman and Her Needs

One Extreme as Bad as Another

THE man should be the head of the house," announced a Detroit judge when a wife haled her husband into court for spanking her.

Need I say, the judge was a bachelor? Married men in this year of grace, here in America at least, are learning that the ancient doctrine of one head to the family is hardly a fair one, and that team work is much more apt to insure a happy home. A home where one person's word is law is more apt to be run without friction than one where each individuality is allowed full play. But unfortunately such a home makes for the happiness of but one individual, the head.

Team work, the right of the wife to a share in the family pocketbook, a voice in the management of the household, these are the things on which women have been insisting, and have in most instances secured. To the shame of American manhood, be it said, there are still homes where the wife must beg for every cent, or steal it, and give strict account of every penny spent.

To counterbalance this, however, there are all too many homes where the pendulum has swung too far in the other direction. The women in their new liberty have gone just as far in the other direction and are determined to be boss. In a sort of panic lest they be downtrodden, they go to the other extreme and insist on their own way in everything, refusing a calm, sane discussion of matters with the husband, even where their better judgment tells them he is right and they are wrong.

"No man is going to dictate to me," is their favorite expression. "I've just as much right to have my own way as he has." So they go ahead and have their way, even when they know they are almost morally certain to come to grief.

Selfishness is at the root of the old doctrine, that one must be supreme. And the wife who refuses ever to give up her whims is just as selfish as the husband who takes the same course. The only way to bring contentment is the commonsense way, arbitration. Talk things over calmly, judiciously, and, above all, with even tempers and try to see whose way is best. Then take that course, no matter which thought of it first. No one is infallible in this world, and neither sex has a monopoly on good judgment. The only wise thing, then, is for each to admit that the other may be right, and follow what seems to be the wisest plan.

The great trouble with the average American home is the lack of balance in the average American individual. Eternally on the search for something new, we fly off on a tangent every time a new idea is presented. The doctrine of woman's freedom, of her right to do anything a man does, appealed to women, after centuries of homekeeping and submission, and with all their nervous intensity they have followed it far beyond its logical conclusion. Women undoubtedly have as much right to life, liberty and the pursuit of happiness as do men, but they have no more right to pursue these objects at the expense of the happiness of their family, than do the men.

The woman who insists that the family income shall be spent on pleasures and clothes for herself and children is as selfish and thoroughly tyrannical as the husband who robs the family to buy more land and build bigger barns. And if I dared I should say she is even more foolish, for the land and barns will provide for the living when working days are over, while clothes will

wear out and excursions will be forgotten.

Equally guilty is the woman who refuses to do her share of work, maintaining that she should be freed from drudgery and given time for pleasure and "the higher things of life." If women demand equality with men they should be willing to do an equal share of the work, as well as to spend an equal share of the money.

It is only in homes where equality really exists that true happiness is found. For equality means that each must be allowed liberty for self-expression, and so far most of us are all too willing to infringe on the other fellow's rights, if there is any disposition on his part to submit for the sake of peace.

DEBORAH.

CANNING, AND COMBINING FIRST FRUITS.

BY MRS. JEFF DAVIS.

More and more housekeepers are learning, and practicing the art of combining different fruits, and thus extend the flavoring powers of those high in price by using a cheaper fruit as base. Rhubarb is ideal for this, as it is so universally grown, and combines happily with so many fruits. If strawberries are combined with rhubarb the acid will be neutralized, and the fruit rendered more digestible.

A few essential points will be mentioned to impress upon the minds of young housewives the importance of detail in cooking, and absolute obedience to directions and accuracy in measurements.

All jars must be tested and the right tops provided for each jar, as well as new rubbers secured. Wash each jar, then sterilize jars, tops and rubbers by bringing to the boiling point in hot water. Drain the jars, but keep tops and rubbers in the water on the back of stove. Use only granite, aluminum or porcelain preserving kettle and aluminum or wooden spoons.

The following table of weights and measures will be found helpful, and the recipes given have been thoroughly tested.

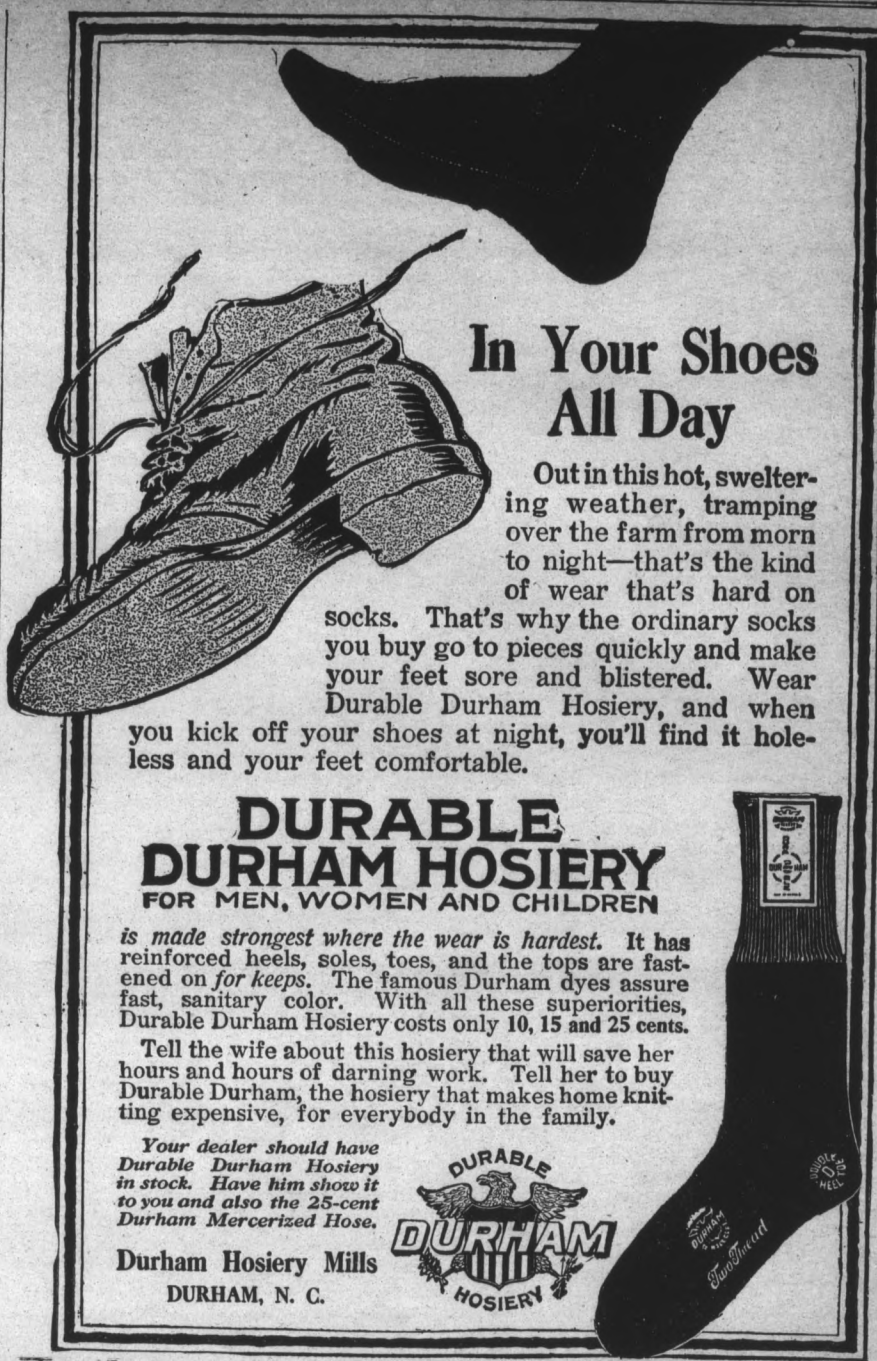
Table of Weights and Measures.

Four teaspoons, liquid, equal one tablespoon; four tablespoons, liquid, equal one wineglass; four tablespoons, liquid, equal one-half cup; one cup equals one-half pint; two cups equals one pint; four cups equals one quart. One cup granulated sugar equals half pound; one cup of butter, solid, equals half a pound; one heaping tablespoon of sugar equals one ounce; one tablespoon, liquid, equals half an ounce.

Rhubarb Marmalade.—Remove seed and white skin from six oranges; then chop the orange pulp and rinds very fine. Cut one quart of rhubarb into small pieces and add one and one-half pounds of sugar. Mix all together and boil until the mixture thickens. Seal while hot.

Rhubarb and Strawberries.—In combining these fruits use one part of strawberries to two parts rhubarb, allowing a large coffee cup of sugar to a pint of the cooked fruit. Cook fruit and sugar together until thick. If very rich preserves are desired equal parts of sugar and fruit may be used.

Rhubarb and Pineapple.—In combining these as above, use one part pineapple to two parts of rhubarb, allowing a large cup of sugar to a pint of the cooked fruit. Shred the pineapple and cook until tender in just enough water to cover it. Cut the rhubarb, skin and all, in small pieces and add to the pineapple. Cook until soft, then add the sugar, boil the mixture 20 minutes and



In Your Shoes All Day

Out in this hot, sweltering weather, tramping over the farm from morn to night—that's the kind of wear that's hard on socks. That's why the ordinary socks you buy go to pieces quickly and make your feet sore and blistered. Wear Durable Durham Hosiery, and when you kick off your shoes at night, you'll find it holeless and your feet comfortable.

DURABLE DURHAM HOSIERY
FOR MEN, WOMEN AND CHILDREN

is made strongest where the wear is hardest. It has reinforced heels, soles, toes, and the tops are fastened on for keeps. The famous Durham dyes assure fast, sanitary color. With all these superiorities, Durable Durham Hosiery costs only 10, 15 and 25 cents.

Tell the wife about this hosiery that will save her hours and hours of darning work. Tell her to buy Durable Durham, the hosiery that makes home knitting expensive, for everybody in the family.

Your dealer should have Durable Durham Hosiery in stock. Have him show it to you and also the 25-cent Durham Mercerized Hose.

Durable Durham Hosiery Mills
DURHAM, N. C.

One of the Big Reasons

for the great popularity of Lily White Flour is the excellent flavor of the bread, biscuits, rolls, pastries etc., baked from it.

The color and texture are fine, too, but the taste is delicious.

High quality and the right flavor cannot be put into the flour unless it is in the wheat.

Lily White

"The Flour the Best Cooks Use"

is made from the choicest wheat it is possible to secure.

Every bit of this wheat is cleaned three times, scoured twice and washed once before going on the rolls for the first break.

Every ounce of Lily White is clean, pure flour.

Another thing that you must not forget - Lily White Flour produces more loaves of bread to the barrel of flour.

And you can use Lily White Flour for every requirement of home baking.

Be sure to get Lily White the next time you buy flour. If your dealer doesn't carry it in stock, write us.

VALLEY CITY MILLING COMPANY,
Grand Rapids, Mich.



Edison
The Modern Farm Home
uses modern equipment, gas engines, and the
Thomas A. Edison ELECTRIC LIGHT PLANT
to operate lights and utilities. Economical and efficient.
Catalog tells the "how" and "why".
EDISON STORAGE BATTERY CO.
237 Lakeside Avenue - Orange, N. J.
2025 Michigan Ave., Chicago, Ill.
Distributors Everywhere



DAISY FLY KILLER
placed anywhere, attracts and kills all flies. Nest, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for \$1.
HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.



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

When writing to advertisers please mention the Michigan Farmer.

seal. This is a delicious preserve.

Strawberry Preserves.—Allow one pound of sugar to one of fruit and place over a slow fire with no water. Do not mash in stirring, and when skimming set on the back of the stove, allowing the scum to rise before removing it. When the sugar is dissolved, boil fast for 30 minutes, remove the fruit, place in jars, boil the syrup five minutes longer, pour over the berries and seal.

Canned Strawberries.—Prepare four quarts of strawberries, place in a large bowl, cover with one quart of granulated sugar and allow to stand over night. In the morning drain the fruit, being careful not to mash it. Boil the juice down one-half and add the berries, boiling a few minutes until the fruit is thoroughly scalded; seal at once. Any juice remaining may be canned to use in sauces, ices or cool drinks for hot days.

Strawberry Jam.—Choose small, ripe strawberries and allow a pound of granulated sugar to each pound of the fruit. Prepare the berries, place in large bowl, cover with sugar and let stand 24 hours. Put into preserving kettle, and stir to keep from scorching, being careful not to crush the fruit. Remove scum, and boil until thick, about half an hour. Fill jars and seal. Delicious combinations may be made by using equal quantities of gooseberries, figs, dates, pineapples, cherries, currants or red raspberries with the strawberries.

Spiced Strawberries.—After using the above recipe for jam, spices may be added to the strawberries.

Preserved Cherries.—Select ripe, sour cherries, wash and stone them. Take equal parts of fruit and sugar and allow one-half cup of water to each pound of fruit. Place alternate layers of fruit and sugar in preserving kettle and allow this to stand for an hour. Then add the water, and put over fire. Let the mixture simmer slowly until the cherries are clear, and the syrup very thick. Seal at once.

Canned Cherries.—Put one cup of sugar and one and one-half cups of water in a kettle and let come to a boil. Add three pints of cherries that have been pitted. Simmer ten minutes, or until the fruit is thoroughly scalded. Fill jars until juice runs over. Seal at once.

Cherry Butter.—Select fresh ripe fruit. Wash, stone and put through the food chopper. Allow equal parts of sugar and cherries, and allow one-half cup of water to each pound of fruit. Mix well, place over the fire and boil for 20 minutes, stirring constantly. This should make a thick, rich, delicious butter.

COOKING GREEN VEGETABLES.

It is most important when preparing vegetables to save the portion which gives flavor and that which provides body. At least 20 per cent of all iron the mineral matter needed by the required by the body has its source in vegetables.

Experiments have shown that flavor and mineral matter are lost in less or greater measure when vegetables are cooked in too much water which is later thrown away. It is best to use as little water as possible in boiling green vegetables and to keep this water to be used later in soups or sauces. The loss of mineral matter from vegetables through boiling may be as high as 36 per cent in spinach, celery, cabbage, Brussels sprouts, cauliflower, carrots and not more than six per cent when these same vegetables are steamed.

Flavor, when its source is from a products which is readily given off in steaming, may be retained by cooking at temperatures below the boiling point. For this reason peas, asparagus, celery, cucumbers, and carrots should be cooked at simmering temperature.

Strong flavor may be lessened by cooking rapidly in open vessels. This is true of cabbage, cauliflower, onion,

and pepper. Cabbage may be "cooked" at the end of twenty minutes. Longer time develops strong flavor and, in hard water, may darken the color.

Delicately flavored vegetables, as peas, string beans, squash, and rutabagas, may be served in their own juices, seasoned only by salt, pepper, and butter. Brussels sprouts are improved in flavor if cooked in meat broth made as for soup stock, or in water flavored with bouillon cubes. Carrots, celery, cucumbers and summer squash may be improved in appearance and flavor by first cooking in water, then draining and covering with white sauce.—Univ. of Wis.

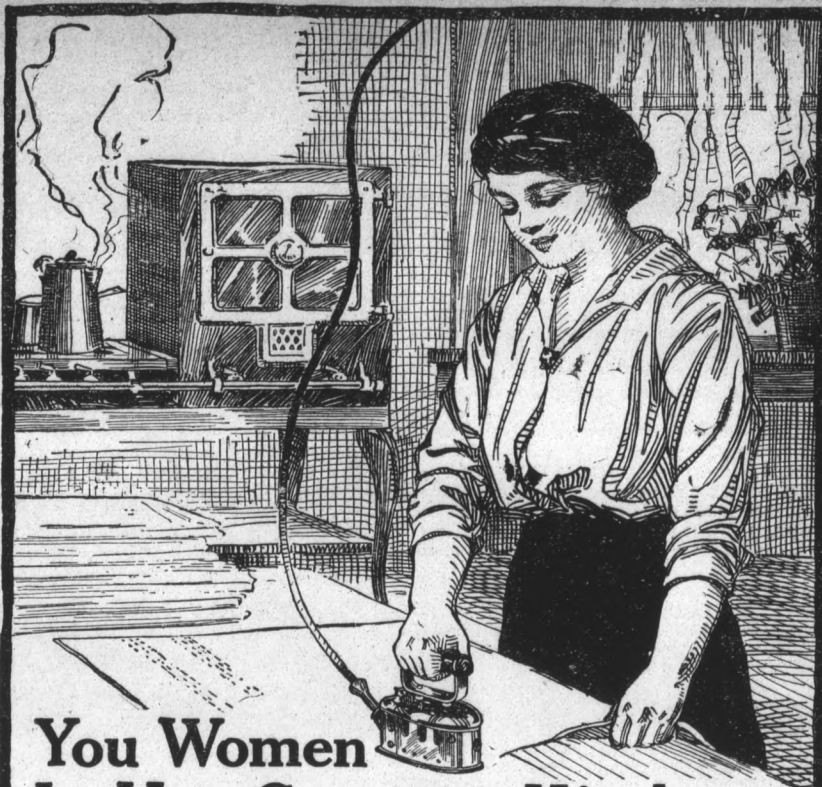
CLEANSERS AND RENOVATORS.

BY EMMA GARY WALLACE.

Cement for Glass and China.—One ounce of shellac dissolved in one-half ounce of oil of turpentine. Work into this two and one-half ounces of fine powdered pumice stone. Or a paste may be made of white lead mixed with half the quantity of pipe clay and moistened with boiled linseed oil.

Simple Disinfectants for Drains.—Dissolve one ounce of zinc chloride in a gallon of boiling water and add five ounces of carbolic acid.

A valuable disinfectant recommended by some boards of health for rendering harmless, discharges from the body in case of sickness and the disinfection of clothes also, is one pound of carbolic acid dissolved in two and one-half gallons of water, and stirred until thoroughly mixed; or, one ounce of bichloride of mercury in four gallons of hot water. It is recommended that a little bluing be added to indicate its exceedingly poisonous character. Make such a solution in glass or earthenware. This solution is what is known as "1 to 500." To make it "1 to 1000" strength, use one-half ounce of bichloride of mercury in the same quantity of water. Bichloride of mercury is another name for corrosive sublimate and should be kept out of the way of animals and children and plainly labeled. A ten per cent solution of chloride of lime for disinfecting closets, etc., is prepared by mixing one pound of chloride of lime with a gallon of water. This must be used as soon as made.



You Women In Hot Country Kitchens

These modern conveniences have been made expressly to save **your** time and labor and to increase **your** comfort and pleasure in your daily work.

A Real Gas Cook Stove—as convenient as gas stoves used for cooking in practically every city home in the world. Like city gas it does away with the bother and work of handling coal, wood and ashes. You have a fire that is always ready—lighted instantly, and which can be controlled to give a large or small amount of heat by a turn of the valve.

A Self-Heating Flat Iron—always hot. A convenience which cuts the work of ironing day in half—enabling you to do better work in quicker time and with greater comfort. No hot stove—no roasting kitchen—the heat is all concentrated in the iron itself.

Pilot-Carbide-Outdoor Lighting and Cooking Plants

bring these conveniences to country homes. In addition they supply the house, barns and outbuildings with an abundance of safe, bright, convenient light. The **Pilot** is supplying this up-to-date service to hundreds of thousands of other farm homes. To secure the same conveniences for your home will require only a moderate investment well within the means of every home owner.

Send today for our descriptive booklets and illustrated catalogs giving all the facts.

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

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



One of Our
New Dresses
Price \$10.00

Pretty Summer Dresses

Just the thing for the Summer Girl
Stylish—Attractive
Made from soft, sheer, cool, pretty fabrics
In a wonderful array of new colorings
and color effects
Velvet, Lace and Silk Trimmed
Two (2) Special Groupings at

\$7.50 and \$10

Send for Our New
Summer Catalog
Your Copy Is Now Ready

Newcomb-Endicott Company
Detroit, Mich.

WEAR YOUR OWN WOOL

Have it made up by the only complete custom and mail order woolen mill in Michigan. Write for prices today.
REED CITY WOOLEN MILLS,
Reed City, Osceola Co., Mich.

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.**

PATENTS That Protect and Pay
Send sketch or Model for search
BOOKS AND ADVICE FREE
Watson E. Coleman, Patent Lawyer, Washington, D. C.
When writing advertisers mention Michigan Farmer

Markets.

GRAINS AND SEEDS.

Wheat.—Bullish factors such as reports of black rust and other adverse crop conditions in the southwest, and the increased prospect of war with Mexico had little effect on the local market because of the large supply of wheat on hand and the anticipated early arrival of new grain. The arrivals of American wheat continue liberal in foreign ports, and Detroit dealers report no demand for Michigan wheat because the eastern millers are well supplied. Foreign buying has not increased as fast as anticipated, with the increased prospects of this country engaging in war with Mexico. This condition brought about the opinion that European interests were unduly depressing wheat values. A year ago No. 2 red wheat was quoted on the local market at \$1.19½. Primary receipts were 1,198,000 bu., as against 633,000 bushels a year ago. Detroit quotations for the past week are:

	No. 2	No. 1	Red.	White.	July.
Wednesday	1.07½	1.02½	1.09		
Thursday	1.07½	1.02½	1.09		
Friday	1.05½	1.02½	1.07		
Saturday	1.06½	1.03½	1.07½		
Monday	1.06½	1.03½	1.07½		
Tuesday	1.06	1.03	1.06½		

Chicago.—July \$1.01½; Sept. \$1.04½ per bu; Dec. \$1.07½.

Corn.—Continued unfavorable weather for this grain and an increased demand from shippers held prices steady during the past week. The demand for exporting purposes is increasing, but the local demand is quiet as most buyers are anticipating better weather to act as a bearish factor on the market. One year ago No. 3 corn was quoted on the Detroit market at 77c. Quotations on the Detroit market for the past week were:

	No. 3	No. 3	Mixed.	Yellow.
Wednesday	77½	79½		
Thursday	77½	79½		
Friday	77	79		
Saturday	76½	78½		
Monday	76½	78½		
Tuesday	77	79		

Chicago.—July 74½c; Sept. 72½c; Dec. 62c.

Oats.—Excellent crop reports have made the bulls timid regarding this grain, although good oats are in fair demand for shipping purposes. The market is very dull for the poorer grades. A year ago standard oats were quoted at 51½c on the local market. Last week's Detroit quotations were:

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

Chicago.—July 39½c; Sept. 38½c; Dec. 40c.

Rye.—Cash No. 2 quoted at 98c.

Beans.—The probability of war with Mexico has been a strong bullish factor in the bean market. Immediate, prompt and July shipment quoted at \$5. There are strong probabilities for higher prices. On the Chicago market stocks are light and prices firmly held. Hand-picked Michigan pea beans are quoted at \$5.25@5.50; red kidneys \$5.25@5.75, according to quality. At Greenville beans are being sold on the \$4 basis.

Seeds.—Prime red clover \$8.85; prime alsike \$9.35; 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 \$6.30; 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 market is active and liberally supplied. Prices ½c lower. Extra creamery 28c; firsts 26½c per lb; dairy 23c; packing stock 21c.

Eggs.—The market is easy and lower. Price for the week, based on sales is 28c.

Chicago.—Market is steady at current quotations which are ½c lower

than last week. Trading is brisk at the lower prices. Extra creamery 28c; extra firsts 27½c; firsts 25½@26½c; dairy extras 28c; packing stock 22@22½c per lb.

Eggs.—The demand is brisk and the prices are ½c higher. Current receipts are quoted at 22c; firsts 22½c.

Chicago.—The market is unchanged and the demand is good for fine eggs. Receipts holding up well. Firsts 21@21½c; ordinary firsts 18½@20½c; miscellaneous lots, cases included 20@21c per dozen.

Poultry.—Market steady with only slight change in prices. Fowls 18c; broilers 25@28c; ducks 18@19c; geese 12@13c per lb.

Chicago.—The demand is moderate at prices slightly lower than last week. Receipts of spring chickens are light; the heavy weights are in greatest demand. Hens 16½c; roosters 11@11½c; spring chickens, 2 lbs. and over 26c; 1½ lbs. 23@24c; turkeys 12@18c; spg geese 16c.

FRUITS AND VEGETABLES.

Strawberries.—Michigan berries in demand at \$1.10@1.15 per 16-qt. case. At Chicago the price ranges from 75c @ \$1.25 per 16-qt. case, according to quality. The demand is good for fancy berries.

Gooseberries.—Quoted at \$2.50@2.75 per 16-qt. case.

Potatoes.—At Chicago the market for old potatoes was quiet. Lower prices for new stock is a bearish factor. Michigan white are quoted at \$1@1.05 per bushel.

WOOL AND HIDES.

It is without doubt that the world is experiencing a famine in wool. It is not expected that the mills will have to shut down for the lack of wool, but if they can keep out of the market for three or four months it will raise great havoc. The Mexican situation will tend to boom the market, and though the trouble may last only a short time, it will be necessary to prepare for it and medium wools will be in great demand. Owing to high prices, the volume of business is light. In the producing sections prices continue to advance, and all over the world wool values are at a very high level. Following are quotations on the Boston market for the week ending June 22: Michigan unwashed delaines 30@31c; do combing quarter-blood 38@41c; do fine clothing 26@27c.

Hides.—No. 1 cured hides 18½c; No. 1 green hides 15c; No. 1 cured bulls 13c; No. 1 green bulls 10c; No. 1 cured veal kip 20c; No. 1 green veal kip 18c; No. 1 cured murrain 18c; No. 1 green murrain 16c; No. 1 cured calf 28c; No. 1 green calf 25c; No. 1 horsehides \$6; No. 2 horsehides \$5; sheepskins as to amount of wool 50c@2.50; No. 2 kip and calf, 1½c; other No. 1 hides 1c off.

GRAND RAPIDS.

Strawberries have a range of \$1.10@1.60 per crate for the week's opening, with crop tapering off rapidly and higher prices in sight. The berry crop has been lighter than was expected. Cherries are now coming in, with sour around \$1.50 and sweets \$1.65 a crate. The few old potatoes that are offered here sell at \$1@1.25. The bean market is on a \$3.60 basis to farmers. The egg market is steady at 21c; dairy butter at 23c. Hay is worth \$15@17 on the city market. Grain prices at mills are as follows: No. 2 red wheat 96c; rye 75c; oats 42c; corn 75c.

DETROIT EASTERN MARKET.

Trading was active at the Eastern Market on Tuesday with strawberries predominating. Prices on this fruit range \$3.25@3.75 per 24-qt. case; asparagus sold for \$1 per dozen bunches; peas \$2 per bu; onions 20c for a large bunch; radishes seven bunches for 25c; cabbage \$1.50 per bushel; eggs 30c; potatoes \$1.30 per bu.

LIVE STOCK MARKETS.

Buffalo.

June 26, 1916.

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

Receipts here today as follows: Cattle 154 cars; hogs 100 d. d.; sheep and lambs 6 d. d.; calves 1600 head.

Cattle trade today struck the worst snag of the year; buyers felt around gingerly and only a very few of the good cattle were taken up to noon. One load of choice brought \$11.25; two loads \$11.15 and two at \$11.10. After the top was picked up it was any price that could be obtained. The general market can be called from 25@50c off, and in some instances as much as 75c. The greatest takeoff was on commoner shipping steers, bulls and the common grass butchers. Some unsold tonight

and outlook bad for the week. Milch cows and springers \$5@7.50 per head off.

We had about our usual Monday's supply of hogs, about 100 double decks, and the demand was quite good; prices 10@15c higher than Saturday's best time. The bulk of the sales were around \$10.20, with a few choice loads at \$10.25 and one or two extra choice fancy a little bit more; pigs and lights generally \$9.75. Roughs ruled dull, with the bulk selling around \$8.50@8.75; stags \$6@7.25. About everything sold at the close and looks like a steady trade for the next few days.

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.

We quote: Spring lambs \$11.50@12; cull to fair \$6@11.25; yearlings \$8@10; bucks \$4.50@6.50; handy ewes \$7.25@7.50; heavy ewes \$6.75@7.25; wethers \$7.75@8.25; cull sheep \$5@6; veals, good to choice \$12.25@12.50; common to fair \$8@12; heavy \$6@10.

Chicago.

June 26, 1916.

Cattle. Hogs. Sheep.
Receipts today..15,000 33,000 16,000
Same day 1915..17,057 43,336 6,678
Last week.....48,052 156,166 67,180
Same wk 1915..38,742 139,780 55,987

Only 8,671 hogs were shipped from Chicago last week, comparing with 19,772 for the same week last year. Hogs received averaged 227 lbs.

Cattle were firmer and advancing to day, because of small Monday receipts, with desirable offerings selling a dime higher. Hogs advanced fully 15c, with an active demand at \$9.40@10.05. Buyers were bidding lower for sheep and lambs, and the outlook was that only the choicer lots would sell at unchanged prices.

Cattle prices have been showing a great widening out recently, with the best lots advancing because of their scarcity, while the common to medium kinds have suffered extremely large declines on account of their abundance. The bulk of the steer sales during the past week took place at a range of from \$9@11, with choice to fancy lots selling at \$11@11.50, the top being another high record. Good steers went at \$10 and upward, with a medium class selling at \$9.50@9.95, medium to fair light weight steers at \$8@9.45 and inferior grassy steers of light weight at \$7.25 and over. A few sales of prime yearlings occurred at \$11.25, with \$11.10 the late top. Butcher cattle shared in the sharp declines in prices, with cows taken at \$5.80@8.50 and heifers at \$5.80@9.90, the best little yearling heifers going higher than ever. Cutters sold at \$5.15@5.75, canners at \$4@5.10 and bulls at \$5.25@8.40. Calves sold at \$5@12 per 100 lbs., according to weight and quality, choice light vealers being largely wanted and going at further advances in values. Stockers and feeders were in good demand, with prices averaging lower in sympathy with the sharp declines in beef cattle, buyers paying \$6@8.90, and not many sales took place around the top quotation. Any further declines in prices for these cattle would stimulate the demand, many intending buyers of good feeders having held back on account of what they regarded as their excessive cost. Notwithstanding the promised large requirements of beef for the United States army and navy, all the cheaper kinds of cattle have had a big decline in prices, and it is expected that the market will go much lower later on, as large supplies of cattle from southwestern pastures are already moving marketward. Closing steer prices were 25@75c lower than the high spot early in the previous week, with a much greater decline in most cows and heifers.

Hogs had a sharp break in prices on the opening day last week, when the receipts amounted to 51,235 head, but on subsequent days the receipts were very much smaller in volume, and unexpectedly high prices were obtained, the top being \$10.15, or within 20c of the highest price of the year. That does not look like the predictions of the packers and certain live stock papers of a glutted summer market and a great slump in prices for June. Most of the hogs were slaughtered here, the packers' requirements being extremely large. Weight was greatly wanted, and for that reason heavy hogs showed the most action and the largest gain in prices. Even the heavy mixed lots, when they did not run down to too light an end, were good sellers at the ruling prices. Judging from recent experience, owners of healthy, thrifty young hogs are fully justified in finishing them off carefully, feeding them all the corn they will eat. Advancing prices swelled the receipts for the week to greatly increased proportions, and a late reaction in prices left quotations Saturday at \$9.25@9.90, with pigs selling at \$7.75@9.25.

Sheep, fed lambs and spring lambs started off last week largely on a low-

er basis, although prime native and Idaho spring lambs sold a little higher, with no large offerings. Later in the week there was such an active demand for prime live muttons that sellers obtained much higher prices, and the best Idaho springers brought \$11.80, the highest price of the season so far. Demand centered mainly on choice spring lambs, and they commanded a liberal premium over everything else. Most of the sheep offered were limited to native ewes and bucks. Closing prices for shorn lots were: Lambs \$5@10; feeding lambs \$6.50@7.75; yearlings \$7.85@9.10; wethers \$7.25@8; ewes \$3@7.50; bucks \$4.50@5.75; breeding ewes \$6.25@7.50. Everything came shorn except spring lambs, which were unshorn and closed at \$7@11.70.

Horses were marketed freely last week, but not enough were offered to meet the increased demand, with large supplies wanted for the United States army. Prices ruled firm, with inferior to fair animals going at \$50@100, while the desirable offerings in the drafter line sold at \$230@265, with prime extra heavy drafters scarce and mostly nominal at \$275@300. Chunks brought \$125@225 and desirable wagoners \$150@200, prime expressers selling up to \$210.

LIVE STOCK NEWS.

The appearance at last of \$11.50 cattle on the Chicago market makes the predicted \$12 beeves look nearer than heretofore, and so great is the production of strictly prime beef and so urgent the demand that the prophecy seems not unlikely to be fulfilled. The feeding districts are generally very well supplied with short-fed and grassy cattle, and undoubtedly there will be enough of these cattle to meet the demand for the remainder of the summer period, but it is plain that prime beeves are destined to be comparatively scarce and correspondingly dear. This being the case, does it not look like a sure thing for owners of well-bred cattle who have the corn to finish them off carefully? The men who have followed this course have made handsome profits, and experienced cattle feeders generally are following this method, convinced that it will pay out well in the end. The market has been much of the time of late an unsatisfactory one for sellers of grassers and short-fed cattle, and on a recent Monday, when the Chicago market received less than 22,000 cattle in all, the general run sold down from 15@25c per 100 pounds, while the top steers went higher than ever, the top price being \$11.50.

WANTED, A WOMAN

To work in the dining room and to help in the kitchen at the State Psychopathic Hospital at Ann Arbor. Good permanent position.

FERTILIZER

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

Seed Buckwheat \$2.25 Per 100 Lbs.
Bags Extra At 15 Cents Each.
YOUNG-RANDOLPH SEED CO., Owosso, Mich.

SOY BEANS Planted with ensilage corn greatly increase the quality of the feed. Write us for prices.
YOUNG-RANDOLPH SEED CO., Owosso, Michigan.

Farms and Farm Lands For Sale

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. Staffed Bros. (owners). 15 Merrill Bldg., Saginaw, (westside), Mich.

"ACRES OF OPPORTUNITIES."

An illustrated booklet FREE. Michigan has hundreds of thousands of acres of virgin land. \$5 an acre up. Healthful climate. Growing season for all crops. Ample rainfall. Write, W. P. HARTMAN, A. & I. Agent, Room 332, Grand Rapids & Indiana Railway, Grand Rapids, Michigan.

158 Acres. 10-room house, good barn 36x75; 2 hen houses; ice house; milk house; all kinds of fruit. School 1/4 mile. Everything convenient. Milk taken at door. Good home farm. Only \$4000. \$1000 cash, balance on time. Write for particulars. Good bargain and will please you. **HALL'S FARM AGENCY,** Owego, Tlogo Co., New York.

FOUR CROPS PER YEAR! Fertile lands combined with a better climate is what we offer you in the Palacios Country, South, Texas. Prices \$25 to \$50 per acre; terms to suit. Climate superior to California; schools, churches, highways, markets and society equal the best in America. No Negroes. Ask for 77 views and particulars.
IVAN MARTIN, LANSING, MICHIGAN.

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

FARMS and unimproved lands on easy terms. Real bargains in any State. Send for our free magazine. Services free to buyers. **WESTERN SALES AGENCY,** Minneapolis, Minn.

Wanted, Farm, 40 to 60 acres within 3 miles of a good shipping point. Send full description and lowest price in first letter. **H. W. Brown, Three Oaks, Mich.**

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.

June 22, 1916.

Cattle.

Receipts 2141. The local market opened this week with a large number of cattle on sale and nearly the entire lot were grassers and many of them of the common order, as was predicted last week all grass cattle took a bad slump and were fully 25¢/75¢ per cwt. lower than they were at the same period a week ago, the only grade to hold up being canners and bulls, which were steady. Quite a bunch went back for feeding at considerably lower prices. The close was very dull on Wednesday with a large number holding over and the same applied to Thursday. Quotations below are for grass cattle only: Best heavy weight steers \$8.50@9.25; best handy weight butcher steers \$7.50@8.50; mixed steers and heifers \$7@8; handy light butchers \$7@7.75; light butchers \$6@7; best cows \$6.25@7; butcher cows \$5.25@6; common cows \$4.50@5; canners \$3@4.50; best heavy bulls \$6.50@7.25; bologna bulls \$5.75@6.50; feeders \$7@8; stockers \$6.75@7.50; milkers and springers \$4@6.5.

Sandel, S., B. & G. sold Golden 1 cow wgh 1080 at \$6, 1 canner wgh 1000 at \$4; to Mich. B. Co. 19 butchers av 810 at \$7.50, 2 cows av 915 at \$5, 2 bulls av 890 at \$6.25, 31 butchers av 731 at \$7; to Breitenbeck 15 do av 910 at \$8, 1 bull wgh 990 at \$6.25; to Bray & B. 1 cow wgh 1270 at \$5.50, 3 do av 1247 at \$7, 1 bull wgh 1790 at \$7; to Kamman 6 steers av 1146 at \$8.75, 7 do av 817 at \$7.10; to Hammond, S. & Co. 1 bull wgh 1040 at \$6.50, 1 do wgh 720 at \$6; to Wallace 23 stockers av 612 at \$6.40; to Kendall 11 feeders av 764 at \$7.25; to Frutchey 1 steers av 725 at \$7.75; to Sullivan P. Co. 5 butchers av 816 at \$7.75, 2 cows av 980 at \$5.25, 6 do av 1055 at \$6, 6 steers av 865 at \$7; to Kamman B. Co. 26 do av 921 at \$8.65; to Bray & B. 5 cows av 1346 at \$7.60; to Kendall 12 feeders av 775 at \$7.25, 3 do av 887 at \$7.25, 8 do av 771 at \$7.25; to Brighton D. M. Co. 8 cows av 1150 at \$6.40; to Sutton 2 stockers av 775 at \$6.50, 24 do av 614 at \$6.50; to Hammond, S. & Co. 2 bulls av 955 at \$6.25, 2 do av 1085 at \$6.25; to Mich. B. Co. 1 steer wgh 940 at \$8.75, 2 do av 855 at \$6, 10 do av 858 at \$7.50.

Erwin & S. sold Fineman 1 heifer wgh 710 at \$6.25, 2 bulls av 665 at \$6; to Golden 2 cows av 930 at \$5; to Sullivan P. Co. 6 cows av 1011 at \$6.25, 3 do av 990 at \$6.25, 6 do av 1023 at \$6.25, 9 do av 920 at \$6.15, 13 butchers av 823 at \$6.85, 12 do av 816 at \$7.35, 6 do av 1030 at \$8, 4 do av 755 at \$7; to Fineman 4 do av 670 at \$5.75; to Frutchey 15 feeders av 800 at \$8.10, 6 do av 850 at \$8.

Haley & M. sold Bell 2 bulls av 950 at \$6.50, 1 cow wgh 850 at \$5.90; to Golden 3 do av 947 at \$5.50, 1 do wgh 920 at \$5, 1 bull wgh 1000 at \$6.50; to Kamman 1 bull wgh 1620 at \$7; to Rattkowsky 2 cows av 410 at \$6, 2 steers av 1230 at \$8.50; to Bray 4 cows av 1217 at \$6.30; to Feldman 2 steers av 915 at \$7.50; to Brighton D. M. Co. 9 cows av 1131 at \$6.40; to Mich. B. Co. 6 do av 1053 at \$5.85, 9 steers av 1092 at \$8.35, 2 do av 990 at \$7.

Veal Calves.

Receipts 1266. The veal calf trade was active at last week's prices, a few extra fancy selling at \$12.25, but the bulk of sales for the best was \$11.50@12; common and medium \$8@10.50.

Haley & M. sold Goose 3 av 160 at \$12; to Hammond, S. & Co. 11 av 170 at \$11.75, 22 av 160 at \$12, 12 av 160 at \$11.75; to Rattkowsky 2 av 220 at \$10.

Sheep and Lambs.

Receipts 958. The run of sheep and lambs was again very light and the quality not very good; the market was strong at last week's prices, selling as follows: Best lambs \$10@10.25; fair do \$9.50@9.75; light to common lambs, \$7.50@8.50; spring lambs \$11@12; fair to good sheep \$6@6.75; culls and common \$4@5.50.

Bishop, B. & H. sold Hammond, S. & Co. 12 spg lambs av 50 at \$12, 7 do av 75 at \$11.50, 14 sheep av 105 at \$6.50; to Newton B. Co. 15 spg lambs av 59 at \$12, 13 lambs av 60 at \$10, 4 sheep av 120 at \$6; to Olich 28 spg lambs av 65 at \$12; to Sullivan P. Co. 44 sheep av 125 at \$6, 9 do av 95 at \$5.25, 15 do av 110 at \$5.25, 30 do av 95 at \$6.

Hogs.

Receipts 8267. Hogs started advancing early in the week and kept going and on Wednesday the bulk of the good ones brought \$9.75; on Thursday they were 5¢/10¢ higher; yorkers and heavy \$9.75@9.85; pigs at \$9.25@9.35.

Veterinary.

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

Weak Heart.—I have a six-year-old horse that pants badly in hot weather, but appears to be all right when it is cool. M. S. M., Daily, Mich.—Give your horse a tablespoonful of tincture arnica, ½ dr. fluid extract lobelia and ½ dr. ground nux vomica at a dose in feed three times a day. Your horse should not be driven fast, or heavily loaded, or exerted much on a full stomach, or fed much bulky food.

Injured Shin.—I have a horse whose shin was injured some time ago and a bunch is growing which is quite hard and the wound is filled with a fungus. H. J. N., Luther, Mich.—Dissolve 1 dr. of permanganate of potash in one-half pint of water and paint sore twice a day.

Foot Sore.—I have a 14-year-old mare that is sore in both fore legs, her feet are flat and she has had some discharges from both fetlock joints. E. B., Rothbury, Mich.—Dissolve 1 oz. of acetate of lead, 6 drs. of sulphate of zinc and 1 dr. of tannic acid in a quart of water and apply to sores two or three times a day. She should be shod with a wide-webbed shoe that has a rolling motion and perhaps a leather sole with bottom of foot stuffed with tar and oakum would help her.

Barren Mares.—Unthrifty Colt.—I have two brood mares 14 years old that failed to get with foal last summer, but both of them have raised colts before. I also have a colt six months old that is not thriving. J. H. A., Rockford, Mich.—If your mares come in heat regularly, breed them to another horse, then they will perhaps get with foal. Feed your colt well, groom it once a day and give it 20 grains of sulphate iron, 20 grains ground nux vomica and 60 grains ground gentian at a dose in feed two or three times a day.

Warbles.—I have a cow that has bunches on back and when squeezed a grub-like worm pops out. H. A. M., Kent, Mich.—Squeeze out warbles and if necessary enlarge opening in hide with a sharp pen knife and be sure to kill the grub, or they may grow to be flies and infect more cattle in a similar manner next summer and autumn.

Calf-knee.—I have a seven-year-old mare whose knee bends backward too far, giving her leg somewhat the appearance of a cow. When she steps she stumbles. C. S., Davison, Mich.—Rub her leg with alcohol twice a day.

Impure Blood.—False Teat.—I have a three-year-old mare that is troubled with skin eruption which has bothered her for one year and she has the appearance of an animal that has been bitten by flies. I also have a four-year-old cow that has a sort of false teat on side of the other teat and milk comes from both. J. C., Central Lake, Mich.—The symptoms your colt show are clinical symptoms of farcy and I would suggest that you have her tested with mallein for fear that she might have glanders. This, of course, is work for a competent Vet. You had better apply a clamp or string to teat and slough it off, but understand it is not always an easy matter to close the opening in the fifth teat.

Veterinary Question.—I would like to have a good strong blood medicine, one that would work on the lungs if such a thing is possible. E. F. G., Thompsonville, Mich.—A very good and not very expensive blood purifier is Donovan's solution of arsenic and it should be given in two to four dram doses two or three times a day. Iodide of potassium given in 1 dr. doses is another very good blood remedy, but none of them have a direct action on the lungs.

Lice on Cattle.—I find that my cattle are troubled with lice and I would like to have an answer by return mail. G. E. H., Rockwood, Mich.—Apply one part coal tar disinfectant and 24 parts lard occasionally and it will kill them.

Acute Indigestion.—Have a calf that is nearly a year old which has several times bloated badly and if not promptly treated thought perhaps it might die. What causes it and what remedy can I use? T. J., Ada, Mich.—Certain kinds of food is apt to cause bloating, therefore, you had better feed carefully and about the least expensive remedy you can give is hyposulphite of soda in two or three ounce doses and do not hesitate to use the trocar and canula if you believe the calf in danger of dying.

Leucorrhea.—I have a cow due to come fresh next May which has had a slimy mucus discharge from vagina for the past year. What treatment do you advise? F. A. H., Middleville, Mich.—Dissolve 10 grs. of permanganate of potash in one quart of tepid water and wash out vagina twice a week.

The Wheat Yield Tells the Story

160 ACRE FARMS IN WESTERN CANADA FREE

of Western Canada's Rapid Progress

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions. The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th, upwards of four and a quarter million bushels being exported in less than six weeks, and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.

Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common. Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc. There is no war tax on land and no conscription. Write for illustrated pamphlet, reduced railroad rates and other information to

M. V. McINNES,
178 Jefferson Ave. Detroit, Mich.
Canadian Government Agent.

No Passports are Necessary to Enter Canada.

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.

RUFUS B. HOLMES CO.

High and Ropelle Sts. Detroit, Mich.

Commission Merchants

Poultry, Live or Dressed, Dressed Hogs, Calves, Sheep and Eggs. Reference, Peninsular Savings Bank, Sullivan Packing Co. Shipments Solicited. Satisfaction Guaranteed.

FARMERS—We will pay premiums whenever possible above the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. **American Butter & Cheese Co., Detroit, Mich.**

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 General. Ship Direct to E. L. **RICHMOND CO., Detroit.**

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us Ten Days before date of publication.

CATTLE.

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: 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 our stock over, they are of the Blackbird Trojan-Ericas, and K. Pride Families only. **U. L. CLARK, Hunters Creek, Mich. SIDNEY SMITH, Mgr.**

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

AVONDALE Guernsey bulls all sold. Sorry to disappoint those wishing our stock. Only registered bull calves left. **Avondale Stock Farm, Wayne, Mich.**

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

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. G. Son, F. L. 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 LaTetree of Maple Lane, No. 23192 and Sir Dena No. 36173. Prices reasonable. **THE JENNING'S FARMS, R. 1, Bailey, Mich.**

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.

GUERNSEYS—REGISTERED BULL CALVES Containing blood of world of 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.**

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. 6¼ 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.

(Additional Stock Ads on Page 18).

Lowest Prices Ever Made on World's Best ROOFING

Absolute "rock bottom" prices have now been reached on the greatest roofing. Don't invest a cent in new roof covering, siding or ceiling for any building until you first get Edwards' wonderful freight prepaid money-saving offer direct from the world's largest factory of its kind.

EDWARDS Tightcote Reo Steel Shingles

outlast three or four ordinary roofs—yet they actually cost less! No painting or repairs necessary; rot, fire, weather—rust-proof. Insurance cost is less because Edwards guarantee their roof against lightning. Easy to lay—no special tools needed. Every sheet of Edwards Galvanized Steel Shingles, Roofing, Siding, Ceiling or finish is extra heavy galvanized, piece at a time, by our exclusive Tightcote patented process after sheet has been stamped and resquared. Side and edges are as heavily galvanized as body of sheet. Means no weak spots to rust and corrode. Edges and nail holes can't rust.

Garage \$69.50 Up

Wide variety, many styles, all sizes of Portable, Fireproof, Metal Garages, \$69.50 and up. Lowest prices ever made. Postal brings 64-Page Garage Catalog—FREE.

Freight Prepaid Offer

on the lowest prices ever made on world's best roofing. We make and sell direct from biggest factory of kind, Edwards Reo Tightcote Steel Shingles, V-Crimped, Corrugated, Standing Seam, Painted or Galvanized Roofing at bed-rock bargain prices.

Write for Free Roofing Samples and your copy of Roofing Catalog No. 767.

The Edwards Mfg. Co., 717-767 Pike Street, Cincinnati, Ohio

Note construction of Patent Interlocking Device protecting nail heads from the weather and making the roof absolutely water-tight.



Reo Steel Cluster Shingles

Spanish Metal Tile

Edwards Patent "Grip Lock"

Corrugated

Garage

WORLD'S GREATEST ROOFING BOOK

SPECIAL OFFER COUPON

The Edwards Mfg. Co., 717-767 Pike St., Cincinnati, O. Please send FREE samples, Freight-Paid prices and World's Greatest Roofing Book No. 767.

Name.....

Address.....

Largest Makers of Sheet Metal Products in the World.

15 American CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$15.95. Skins warm or cold milk; making heavy or light cream. Bowl is a sanitary marvel; easily cleaned.

ABSOLUTELY ON APPROVAL Different from picture, which illustrates our large capacity machines. Western orders filled from western points. Whether dairy is large or small write for handsome free catalog. Address: AMERICAN SEPARATOR CO. Box 4061 Bainbridge, N. Y.



ELLIS CHAMPION THRESHERS

Get all the grain, are long lived, simple and complete. 3 to 10 H. P., use your gas engine. **SAVE THE GRAIN THIS YEAR.** Thresh at your convenience. Ask for catalogue 6.

J. M. PRESTON CO., Lansing, Mich. Also Bidwell Bean Threshers.

MONARCH CIDER PRESS

Here's the right outfit for working up the culls into profitable cider. Suitable for individual and merchant service. Our celebrated high pressure design with minute accurate construction, gets all the juice with low operating expense. Built in sizes from 15 to 400 barrels a day. 60-page Catalogue free. Write today.

A. B. Farquhar Co., Ltd., Box 112 York, Penna.

We also make Engines, Sawmills, Threshers, Implements. Ask for Catalogue.



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.

Improving the Fruit Trade

By R. H. ELSWORTH.

THE by-product side of fruit marketing is being carefully worked out in the Grand Traverse section of the state. It is generally conceded by those who have studied the economics of the fruit industry that it is going to be necessary, in fact, is already necessary, to utilize in some profitable form all that is harvested in the way of fruit. It is quite likely that the methods of the Chicago meat packers who sell at a profit every part of the hog, even to the "squeal," will need to be studied for marketing ideas, in order that the highly capitalized orchards now being created may yield interest on the investments.

Canning the Poorer Grades.

The management of the largest cherry orchard in the region, if not in the state, is already, although the 200 acres of orchard is only beginning to bear, safeguarding the future marketing program by the erection of a canning factory. The plant is located on the edge of the orchard and will have sufficient capacity to put into tin the entire daily harvest when the cherry season is at its height. The cannery is a sort of anchor to windward. The best of the crop will be marketed in the usual way so long as the consuming markets within reasonable distances are good, but on the first indication of a slump in prices or a glut in quantity the factory will be started and the daily yields from the trees will be canned for marketing at a later date. The plant will take the entire output only so long as it is less profitable to ship than to can.

Every season more or less of the Grand Traverse cherry crop has to be absorbed by the canners. There is a week or more when the season is at its height when the usual markets are unable to handle to advantage the full yield from the orchards. Then is when the canners get their raw material. Last season eight carloads went to the canners at prices ranging from 70 to 90 cents a 16-quart crate. These cherries were taken by the canneries at Grand Rapids, Frankfort and Traverse City.

The Prices Paid.

The 1916 outlook for cherries is promising and with the new orchards that are now coming into bearing it looks as if from 10 to 20 cars of cherries a season will have to go to the canneries to keep supply and demand equalized. Two canning factories were bidding for fruit early this spring and a number of the larger growers have made contracts for parts of their crops. One plant is offering the fruit growers three cents a pound for their sour cherries, another 85 cents a crate containing 24 pounds of fruit. In neither case does the grower have to provide the container. It is expected that a third plant will offer four cents a pound for the English Morello cherries as it has done for the past two years. The cherries for this concern have to be pulled instead of clipped, which means that the harvesting costs a trifle extra.

As has always been the case the fancy grades of cherries will go to private customers who are indifferent to high prices, and to the trade that demands the best; but the canning factories will get the bulk of the crop when Detroit, Cleveland, Pittsburgh and Chicago are overstocked.

It is not unlikely that through commercial organization of the region investigations will be conducted to see if the by-products from cherry pits can be obtained at a profit and to see what can be discovered in connection with the demand for cherries for soda water fountains.

Apples are now Well Provided for.

The utilization of the second and third grade apples is already largely provided for. Last season about 60 carloads of apples were used by the canning factories, evaporating plants

and cider mills in the Grand Traverse region. While the better grades of seconds were used by the canners and the apple drier, by far the greater part of the apples were converted into cider. These second and third grade apples brought from 20 cents to a dollar a hundred pounds. The Duchess variety, which is worth the least of all apples for cider purposes, were bought at the 20-cent figure. The greater part of the fall and winter apples bought for cider were obtained at 30, 40 and 50 cents a hundred pounds. The apples that went into cans and the apples that were dried brought the growers somewhat better prices.

Selling Farm Products In Season

By R. G. KIRBY

THE observance of "Apple Day" and "Orange Day" has undoubtedly brought these two fruits in to greater public favor and the custom might be carried out to even greater advantage in cases of other fruits like the peach and the cherry and also with vegetables like potatoes and sweet corn or with other farm products such as tomatoes and strawberries. The purpose of such days would not be merely a boom to enable farmers to dispose of their crops at high prices, but it could be used as a means of education.

Consumers do not Know when to Buy.

The average city man does not stop to think whether certain crops are in season or not. In the rush of business affairs peach season comes and goes and he scarcely realizes that the market is crowded with a product that is not sold in the fresh state at any other season of the year. The same is true of many other crops. Purchasing the products in season means that both the consumer and the producer find the transaction more profitable and satisfactory in every way. The quality of the goods is better when fresh and there is no added cost for storage. On "potato day" potatoes should be sold at a price which would give the grower a fair profit and allow the consumer to lay up a few bushels for winter use at a price much below their cost if purchased of the local store during the winter by the peck. Even if the grocer acted as a middleman on "potato day" he could afford to sell potatoes on a very small margin of profit for if the sales were large he would make a very good profit in the aggregate and it would mean a quick turnover of his capital which would not be possible if he had to purchase a large quantity of potatoes for cash and hold them in storage for the customer's convenience. In cities possessing a municipal market a plan of observing special days for crops in their season should be of great benefit to the farmers and city buyers.

Should be a State Affair.

The difficulty in observing national days in this manner is due to the fact that crops in season in one state have not matured in another. This difficulty could be eliminated, we believe, by putting the proposition up to the experiment station, allowing them to decide when would be the most profitable time to observe the maturing of any special crop in their own state. Plans of the kind submitted above are doubtless very theoretical and possibly they might have little effect on the general public. However, it is a well known fact that intelligent buyers who know the fruits in their season are able to save money in the managing of the home table. The cost of storing crops does not benefit the farmer when the middleman does the storing and it does increase the city man's cost of living. A wider education concerning the best time to buy certain fruits and

The cider apples were used to make sweet cider, canned cider, cider jelly, boiled cider and vinegar. The total output of the region last fall was in the neighborhood of 10,000 barrels, of 50 gallons each.

So completely has the utilization of the poorer grades of apples been worked out that there is no waste whatever. The pomace from the cider mills, which is all of the apple but the juice, is dried, and sold at a good profit to manufacturers of jelly and similar products.

The only problem in connection with the by-product feature of the apple industry is to get the growers to refrain from putting their second and third-grade apples on the market in competition with their No. 1 apples. However, considerable headway is being made in this direction.

Last Year's Peach Crop.

Last year the peach crop proved excellent in quantity but nearly zero in market value. Doubtless many housewives have scarcely any peaches on their shelves this winter because they waited to do their canning until the crop had been sold at a low price or allowed to rot. A general knowledge of the value of the peach as home dessert, coupled with a proclamation from the state experiment station stating a good day or week for ordering certain varieties of peaches for canning might enable the growers to obtain a fair price for their fruit, and not overcharge the ultimate consumer.

Onions, potatoes and cabbages have to be stored in expensive storage houses largely because the city man buys one cabbage at a time, ten cents worth of onions and a peck of potatoes. There are millions of homes with partially used cellars where storage bins for vegetables would decrease the cost of living in the winter. Then the city man who could purchase ten bushels of potatoes, thirty cabbages, and two bushels of onions, depending on the tastes and the size of the family, might buy these products when they are harvested and both the buyer and the producer would be benefited, and even the middleman, and there usually is one, could afford to cut down his profits because of the large quantity of goods he might handle without tying up his capital for an indefinite time.

Save Much Delivery Expense.

The streets of our cities are filled with deliverymen's wagons at all hours of the day and night. Where are many of them going? To Smith's with a can of tomatoes, one loaf of bread, a squash, ten cents worth of onions, and a little bag of apples. To Brown's with a peck of turnips and a bag of hickory nuts. To Jones' with a cabbage and a can of beans. Who pays the bill? Smith, Brown and Jones. and the farmer is in no way benefited because they have paid too much for the products from the farm. More buying in season will save money for the consumer and a general effort to interest the public in the fruits in their season might start with some special manner of observing a day when the harvest is ready. Unfortunately the farmer usually needs the returns from his crops as soon as possible. He also would be benefited by a system of disposing of a large part of the crop at a profit as soon after the harvest as it could be delivered at the homes of the city consumers. Farmers make no extra money from the fact that middlemen are willing to store the crops for them. The middleman exacts a good toll for his service, the consumer pays the bill and it certainly does not make farming any more profitable.

Oleomargarine and Butter

By FLOYD W. ROBISON.

(Continued from last week).

We see no real objection to the use of skim-milk, milk, or cream in the manufacture of oleomargarine. It may be considered a legitimate constituent of oleomargarine, but inasmuch as it is used in the manufacture of oleomargarine we think the oleomargarine interests are logically estopped from using the sanitary or unsanitary condition of milk and cream as an argument against the use of butter and in favor of their own product. We see no objection except on general technical grounds to the use of harmless coloring matter in oleomargarine provided it is not a coloring matter which will cause the product to look in any degree like butter. We suppose that the manufacturers of oleomargarine would not take kindly to the suggestion that they use pink coloring matter, for instance, for their oleomargarine, or green coloring matter for their oleomargarine, and it is possible to use both of these coloring matters which are classed as non-injurious and which will do much to give their product a distinctive color. The time may come when, if oleomargarine is a superior article of food, as it is claimed for it by some that they may be just as interested in keeping the dairy interests from imitating their product as the dairy interests now are concerned in preventing oleomargarine interests from imitating theirs, consequently we may expect that if oleomargarine interests should get together and decide to make their product with a pink or green color, for instance, when that time arrives when the public recognizes the greater dietetic properties of oleomargarine, dairymen will then begin to add pink or green coloring matter to butter.

Have Oleo Interests Been Sincere?

The history of food adulteration has shown all along that every effort is made by the manufacturer of a substitute article to put it up in such a shape that the consumer will have difficulty in differentiating between it and the genuine. Extracts furnish another splendid example of this. We have a vanilla extract which is of a certain standard and recognized merit. A manufacturer comes along with a substitute for vanilla extract. Instead of giving it an original, coined name, and a distinctive color of its own, and boldly advertising these facts, he colors it to make it look as nearly like vanilla extract as he can, and gives it a name which has some portion of the word vanilla in it. His whole business is established upon the idea of deceiving someone as to the real facts about his product.

If oleomargarine cannot be sold except that it is colored to look like butter, or except that it is made to taste like butter, or except that the public are deceived, thinking it is butter, it is our contention that oleomargarine should not be permitted in the market. We think, however, that it does have a legitimate field. It is a substitute for butter. Oleomargarine is a satisfactory name; butterine is not a satisfactory name. Butterine is an unfair name. It is not a fair proposition for the manufacturers of oleomargarine to claim a greater degree of wholesomeness than pertains to butter because its method of manufacture brings it into contact with milk, cream or butter itself, and it is quite difficult to maintain that oleomargarine containing 50 per cent of butter can be pure, and that same butter when sold in a tub to be itself impure. It is just exactly as absurd, on the other hand, for creamerymen and dairymen to claim that oleomargarine is unsatisfactory for food purposes because of a lesser degree of digestibility than butter. We do not believe that oleomargarine can be condemned from the

standpoint of its digestibility or wholesomeness. If there is any difference in digestibility this difference is not great enough to make the basis of a complaint against oleomargarine.

The physical substances of which oleomargarine is manufactured are in the main, butter, lard, oleo oil (or what is commonly known as refined tallow), and cottonseed oil. Any single one of these substances is used nearly every day by nearly every family, and the question of their digestibility or wholesomeness is not raised. Neither does the combination in which they exist permit of the question of their digestibility or wholesomeness. Of course, substances may be entirely wholesome in themselves and yet the condition in which they are mixed together may permit of the raising of the question of their wholesomeness. Take, for instance, the question of sausage. A common adulterant of sausage is starch or cereal. Now cereal itself would be considered perfectly wholesome. But a mixture of meat and cereal in the form of sausage without the consumer being specifically acquainted with the fact that starch or cereal is mixed with the meat may be unwholesome, because of the fact that it would not be prepared for the table in a way in which cereal foods should be prepared to make them wholesome.

We repeat what we said at the outset of this article, that there is sufficient reason for the marketing of both butter and oleomargarine as they are ordinarily manufactured.

If the various partisans in the case would come forward with an admission of the defects in their own product as well as the claims of its superiority it would be found that there is a desirable ground which will permit of the marketing of both products from the standpoint of their intrinsic value.

We believe that the government is perfectly within its rights when it levies a tax of 9¢ cents per pound on the production of oleomargarine in imitation of yellow butter, and we believe that the separate states are quite within their rights when they lay an embargo entirely upon the manufacture of oleomargarine which is colored in imitation of yellow butter.

Let Oleomargarine Stand on its Merits.

We think it is high time that the oleomargarine interests awaken to a realization of the great desirability of making their product stand upon its own merits, building it either with no color at all or with a distinctive color of its own, and undertaking an advertising campaign, frankly and clearly calling attention to the fact that its distinctive color or distinctive mark, so that it will not be confused with butter; and then divorce it absolutely from butter, taking the butter out of it, and taking the skim-milk, milk or cream out of it likewise, if they are to maintain with any degree of sincerity or any success the claims which they are now making against the wholesome qualities of butter.

Unquestionably some of the statements regarding the wholesomeness of butter are true regarding certain butters, but at the same time the same thing may be said of oleomargarine. But every effort is being made to improve the quality of food products and the time is not far distant when it will be impossible for anyone to make a statement truthfully that butter is unwholesome or that there is any opportunity for the carrying of tuberculosis or any other infectious or contagious diseases through it as a medium.

"Your continued stories are the best I read, and I read several good magazines, but I certainly think your last story is fine."—Ed. Hamlyn, Coral, Michigan.

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. L. red shorthorn Bulls—Roan calf 9 mo. old. Pol Angus Bull calf, 8 mo. old, not reg. Priced to move quick. CHASE'S Stock Farm, Marietta, 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. Male and female pigs born March 9th, also October boars and gilts, registered with papers. Satisfaction guaranteed. 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, Bloomington, 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 \$100. In Berkshires we have a nice lot of fancy fall boars, sired by Sensational Charters 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. I have 6 choice fall gilts bred for Sept. farrowing at \$25 each for immediate delivery. A. A. PATTULLO, 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 Bred sows and gilts all sold. Booking orders for spring pigs. E. D. Heydenberk, Wayland, Mich.

Duroc Jerseys—Fancy fall pigs (either sex). Buff Rock eggs \$1.25 per 15; S. C. W. Lechorn eggs \$1 per 15. John McNicoll, R. 4, Station A, Bay City, Mich.

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

DUROC JERSEYS—all sold out 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 Boars and gilts. Gilts will be bred for September farrow. 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, Grand Champion blood lines. Gilts bred for Sept. farrow. F. J. DRODT, R. 1, Monroe, Michigan.

Duroc Jerseys with breeding quality and size, fall already bred to farrow early ready to ship, express prepaid. J. ROBERT HICKS, R. 3, ST. JOHNS, 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 to 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 Moines, Big Knox Jr. and Giant Defender. Bred to Big Knox Jr. Smooth Wonder 3 and Big Junbo, four great boars in state. Come or write, W. E. Livingston, Farms, Mich.

Pig Type Poland Chinas, Sired by Big Type King. Bred 100 lb. boar. Spring pigs, sired by big type King, Fesenmeyer & 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 Chinas, Fall and Summer Pigs. Sows Bred, Eggs from big Bred Rocks \$1.00 for 15. ROBERT NEVE, Pierson, Michigan.

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

FOR SALE. Big type Poland China boar pigs nine weeks old, strong in the blood of Grand Champions. Pedigree with each pig. M. E. HESS, Lone Cedar Farm, Rt. 2, Pontiac, Mich.

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, PROP., KINDERHOOK, MICH.

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

Leicesters—Yearling and ram lambs from Champion stock of Thumb of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.

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.

FOR SALE—Percheron yearling Stud colt, Duroc pigs, E. J. ALDRICH, Tokonsha, Cal., Co., Mich., Bell Phone.

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 5277 who won more champions, defeated more champions than any boar show 1915. Abo 2nd, sire to our undefeated breeders young herd at 7 state fairs, Alien junior champion at Wis. State fair 1914, and Captain Jim 3361, under 6 months boar and Junior champion at every state fair show 1915. Then we have Le Dix model 2915, 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. 1/2 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. 3361, bred to Wonder 4th, No. 3337, he by Wonder 1869, 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, Marietta, Mich.

O. I. C. SPRING PIGS, Ready to Ship. Write for Prices. JULIAN P. CLAXTON, FLINT, MICH., R. 3.

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, Dorrr, Mich.

O. I. C's. 50 Mar. and Apr. pigs, pairs and trios not akin 50 bred gilts to farrow in Aug. 3 Holstein Bulls. Cloverleaf Stock Farm, Monroe, Mich., R. No. 1.

O. I. C. SWINE, CHOICE SPRING PIGS, BOTH SEX. HERBERT PIERSON, DAVISON, R. 3, MICH.

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 farrow. 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 to 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 Moines, Big Knox Jr. and Giant Defender. Bred to Big Knox Jr. Smooth Wonder 3 and Big Junbo, four great boars in state. Come or write, W. E. Livingston, Farms, Mich.

Pig Type Poland Chinas, Sired by Big Type King. Bred 100 lb. boar. Spring pigs, sired by big type King, Fesenmeyer & 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 Chinas, Fall and Summer Pigs. Sows Bred, Eggs from big Bred Rocks \$1.00 for 15. ROBERT NEVE, Pierson, Michigan.

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

FOR SALE. Big type Poland China boar pigs nine weeks old, strong in the blood of Grand Champions. Pedigree with each pig. M. E. HESS, Lone Cedar Farm, Rt. 2, Pontiac, Mich.

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, PROP., KINDERHOOK, MICH.

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

Leicesters—Yearling and ram lambs from Champion stock of Thumb of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.

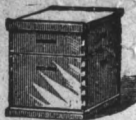
HORSES

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.

FOR SALE—Percheron yearling Stud colt, Duroc pigs, E. J. ALDRICH, Tokonsha, Cal., Co., Mich., Bell Phone.

BEE KEEPERS' SUPPLIES



Send for Catalog A for prices of Bee Hives, etc. We sell every thing 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.



ALLION VERMIN PROOF PERCH FARM, Willis, Mich.

POULTRY.

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

Barred Rock Eggs, Cock birds, hens. Three 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, \$2.50; 100, \$7.00. Select matings 15, \$4.30; \$7.00, all postpaid. Photos. Circulars. John Northon, Clare, Mich.

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

CYPHER'S TRAPNEST strain S. C. W. Leghorns. Breeding stock for sale from this year's pens. 12 one-year-old hens \$15. Thos. H. Barnes, Creston, Ohio

Strong Day Old Chicks Now \$8.00 Per 100 Laybilt 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. Kietzlen & Webster, Bath, Mich.

Hatching Eggs Buff, Barred, Columbian, Partridge, Silver and White Rocks. Pekin and Honan 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. Hostetler, 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, balance of season. Utility eggs \$1.75 for 15, \$1.50 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. Sunnyside Poultry Farms, Hillsdale, Michigan.

LILLIE Farmstead Poultry. B. P. Rocks: R. I. Reds. W. Leghorns. 15 eggs \$1; 25 eggs \$1.50; 50 eggs \$2.50. P. P. delivery free. Colon C. Lillie, Coopersville, Mich.

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

PINE Crest S. C. White Orpingtons—2 and 8 months old cockerels for sale. Hatching eggs and stock from pens, one half price. No baby chicks. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.

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

R. and S. O. 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

Farris 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 gives particulars. Write for it now. FARRIS LEGHORN FARM, 934 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 Comb Rhode Island Red Eggs, dark colored matings \$1.00 per 15. Utility eggs, laying strain, \$4 per 100. MRS. T. A. ETTER, Richland, Michigan

ROSE and S. O. 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.

IMPROVE your poultry. My Young's strain S. C. White Leghorns great money makers. Strong, vigorous, free-range stock. Baby chicks \$8 per 100. Satisfaction guaranteed. Free catalogue. W. Van Appledorn, Holland, Michigan

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 \$1.25, \$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.

Storing Incubators

WHEN the season for incubation is over the machine must be carefully stored to insure another year of good service. The best machines can be ruined by neglect but the poorest incubator carefully stored will be worth more next year than the best machine on the market which receives no attention from the owner.

First wash the egg trays with hot soft water and baking soda and then place them in the sunshine for two or three days. The burlap in the nursery under the egg trays will be badly soiled and should be destroyed and replaced with a clean strip. Spray the interior of the machine with a good disinfectant, close it up tight and turn up the lamp so that the walls of the machine will be thoroughly steamed. Then empty the oil lamp, clean it thoroughly, and throw away the old wick as a new one should be used for the first hatch next year. Wrap the lamp in a clean newspaper and store it in any convenient place but the egg chamber. It is impossible to clean a kerosene lamp to the point where it will not leave an odor in the incubator, at least no ordinary method of cleaning will be satisfactory.

A hot water incubator must be carefully drained. Any water left in the pipes may freeze next winter and cause a break which will not be discovered until after the machine is placed in use in the spring. Before moving the machine it will be best to remove the legs as they are easily broken if the heavy incubator weight is allowed to rest on one or two of the legs during the process of storing. The thermometer should be wrapped in cotton and stored where it will receive no mechanical injuries, the same is true of the damper. Neither part should be laid loosely in the egg chamber where more or less shaking around will result.

A clean dry attic will be an ideal storage place. A damp cellar is too frequently used for storing the machine and this often results in warped wood and rusted metal. Any necessary repair parts should be ordered in the fall, as a spring order may be delayed and cause serious loss when the egg trays are filled and ready to enter the process of incubation. Old eggs mean weak chicks and early hatched chicks make the most profitable flocks so it will pay to repair the incubator at the close of the hatching season and store it where it will keep in good condition for next spring's work.

Ingham Co. R. G. KIRBY.

TUBERCULOSIS OR ASPERGILLOSIS.

I have been losing hens for the last three or four years. The first symptom seems to be a limp in one leg. They seem to gradually get weak, but often live several weeks. They appear to have a slight diarrhea toward the last. What is the cause, and is there a remedy?

Ionia Co. F. H. B.
Your fowls have either tuberculosis or aspergillosis. These troubles have similar symptoms, and are often confused, and from the description you give, we cannot definitely tell which is attacking your chickens.

If your fowls have tuberculosis, a post-mortem examination will show the spleen, liver and intestines of the fowls to be covered with tubercles, which are small raised nodules filled with a cheesy substance.

As with tuberculosis in the human family, this disease is caused by unsanitary housing and insufficient ventilation. The disease is very hard to cure, and unless the birds are valuable, it would be most economical to get rid of the entire flock, starting anew on new ground and with new houses, unless the old house is in such shape that it can be thoroughly disinfected. If eggs from infected birds are used for hatching purposes, they should be

washed in a 95 per cent solution of alcohol.

Aspergillosis is not quite as serious as tuberculosis, and can be distinguished from it in a post-mortem examination by whitish or yellowish patches on the mucous lining of the air passages. This disease is also caused by improper housing or impure food. To prevent the disease, the house should be kept dry and well ventilated, and mouldy litter and grain should be avoided. Vigorous birds under sanitary conditions are fairly resistant to the disease.

If the birds are valuable, they may sometimes be saved by applying flowers of sulphur to the diseased patches seen in the mouth and throat, and by causing the birds to inhale the vapor of tar water or turpentine. As with tuberculosis, the method of cure is rarely economical, and the preventive means suggested are the most satisfactory way of controlling the trouble.

HOW TO FIND THE QUEEN.

I had a colony of bees given to me in a very bad condition. Mouldy, and hive old and rotten. I got a new hive, transferred them into it but could not find the queen. Could you tell me how I am going to find out if there is a queen or not?

Oceana Co. C. W. M.

The best way to know, for certain, whether a colony of bees contains a queen is to take out one or more frames of comb from the hive and if eggs, or larvae, are present then you can be certain that the queen is there, unless the colony has swarmed within three days. Queen cells are not usually found in a colony unless that colony is preparing to swarm or superseding the queen, or has in some way lost the queen they had. In these cases queen cells will be started.

In transferring bees from one hive to another if most of the bees were shaken out it is quite possible that you had the queen with the majority of the bees, but if they are black bees the queens are very hard to see and hence she may have gone into the new hive and escaped your notice. If, however, you see eggs present you will know that the queen is present.—F. Eric Millen.

THE RED MITE.

The red mite is the worst enemy the poultryman has to contend with, and the very hardest one to fight. This pest is very small and normally is grayish in color, but more often, it presents a deep red color, because of the blood with which it is filled.

Unless very numerous, the mites are seldom found on the hens. The pests work on the hens at night, filling their bodies with blood, and hide beneath the perches, and in cracks and crevices near the roosting quarters during the day.

Whitewash is not very effective in fighting the red mite. A better spraying material is coal oil emulsion. This is made by dissolving half a bar of laundry soap in hot water and adding half a gallon of coal oil. This mixture can be diluted with five gallons of water. The emulsion is best applied with a spray-pump for the reason that the pump will put the fluid in cracks and crevices that could not be reached with a brush.

The job of spraying must be very thoroughly done. Some of the mites will likely escape the first spraying, and for this reason it is advisable to repeat the spraying in a few days, and again in a week, to destroy the mites that hatch from eggs.

Indiana. T. Z. RICHEY.

Commercial ground feed may be fed or a coffee grinder may be used in cracking the grains. Never feed wet mixtures until the chicks are at least five weeks old. Use corn meal that has not heated in sack or bin and place a wire screen over it in the trough to prevent it from being scratched out and wasted.

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 535.36 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, Port Huron, Mich.

For Sale: Big Holstein Bull 2 yr. old. Good breeding. Reg. bulls and heifers 10 mos. old. Ferd. J. Lange, Sebawing, Mich.

\$75 gets Hazel-let grandson of Maplecrest De Kol Patchenosa and Pontiac Maid 30.2 lb. Born March 26. Dam Pontiac Hesperia 2nd, 14.88 lb.; 436.6 lb; her dam's sire brother to sire of world's record cow 3134 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 dividuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

"TOP NOTCH" 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. FISHBEEK, Howell, Michigan.

REG. Holstein-Friesian cows and heifers, some fresh and some ready to freshen \$125. Reg. bulls \$30 up. Frank Staffen, R. 3, Box 38, Howard City, Mich.

WANTED

Six good men to buy pure bred HOLSTEIN BULL CALVES. Good notes on a year's time accepted in payment. GEO. D. CLARKE, VASSAR, MICH.

BRAGGING NOW

My consignment of Holsteins at the Detroit sale the 8th and 9th, sold for an average price of \$220 per head, including 3 calves under six months of age. 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 35,000 lbs. milk, over 1000 lbs. butter record in mature class. Cherry Creek Stock Farm, M.E. Farmelle, Prop., Hillsdale, Mich.

FOR SALE Reg. Holstein females, Pontiac Kordyke 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 34.45 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, \$200 each, crated for shipment anywhere. Edgewood Farm, Whitewater, Wis.

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. Welner, R. 6, Allegan, Mich.

One Jersey Bull READY FOR SERVICE, and several heifers and calves for sale. NOTTEN FARM, GRASS LAKE, MICHIGAN.

Senior herd bull, Majesty's Wonder \$6717, for sale, sire Royal Majesty, Dam Mina's Dewdrop, his full sister Majesty's Butter cup produced 703.2 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 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. & I. R. Y. Address G. R. Schroeder 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 \$125. J. B. HUMMELL, MASON, MICHIGAN.

FOR SALE—Reg. Short Horn Bulls by Maxwalton 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.

Grange.

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

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby; Wm. H. Welsh, Sault Ste. Marie; N. P. Hull, Dimondale; Burr Lincoln, Harbor Beach.

STATE GRANGE EXECUTIVE COMMITTEE MEETS.

At a meeting of the executive committee of the Michigan State Grange, held in Lansing, Friday, June 9, several important matters were acted upon which should be of interest to the members of the order generally, and I have thought it wise to report concerning them.

There is now a bill before congress evidently drawn in the interest of the water power companies which practically takes from the hands of the people the remaining prospects for water power. True, there is a way provided by which the government can take back these utilities at the expiration of fifty years, but the way is so difficult and fraught with so much probable expense as to mean nothing beyond a sedative to put the public to sleep while the job is being completed.

Already this bill has passed the senate and it is up to everybody to get busy and try to prevent the parties interested from successfully working the lower house.

Very strong resolutions were passed by the committee opposing this measure and mailed to the members of congress from Michigan.

Another matter which received the attention of the committee is a measure which as yet has not passed either house, but which has the endorsement of the labor unions generally. This is a bill granting the privilege to any state to exclude prison made goods made in other states, whether such goods be imported in original packages or otherwise.

The members of the committee are unanimous in the opinion that our penal institutions should be so managed as to be reformatory in their influence upon the inmates, and not places where men are made worse. We believe that such reformation is utterly impossible unless the prisoners have regular employment. To limit the possible sale of prison made goods is to lessen the opportunity for labor in our penal institutions, or else to make it necessary to employ a larger proportion of the men in the production of goods for purely local consumption. This would mean the growing of more garden truck and perhaps increase competition in other lines, with those living near the institution.

We believe the right to labor in some useful employment is inherent in every man. Had these men not committed crimes and been deprived of their liberty, they would have been at work. They did not lose their right to labor when we took away a measure of their liberty, for their own good and that of society. Therefore, we are opposed to the limitation of the demand for prison made goods by law, believing that they should be put on the market and sold at their market value without reference to where or by whom they were made. A sub-committee with Worthy Master Ketcham as its chairman, wrote resolutions expressing our convictions in this matter which resolutions were passed and sent to senators and members of congress from Michigan.

At the last meeting of the Michigan

State Grange the executive committee was instructed to submit the tonnage tax measure and the bill providing for The Torrens System of Land Registration through the initiative. The question came up as to the advisability of submitting both of these measures this season. The real estate organizations will help in the fight for the Torrens bill which will make it much easier to secure the necessary number of signatures. There is no organization outside of the Grange which will help much in securing names to the petition for a tonnage tax.

On motion of the worthy master, a committee consisting of George B. Horton, W. F. Taylor and Wm. Welch was appointed to consider the matter and report at the August meeting of the committee.

(To be continued).

AMONG THE LIVE GRANGES.

Ionia County Pomona Meeting at Ronald, Thursday, June 15, was a success from every viewpoint. Over 150 partook of the sumptuous dinner and enjoyed a social hour, after which the programs were given by Belding, Berlin, Banner, Keene and Portland Granges. Keene numbers were especially interesting, including an officers' drill by six young couples. Mrs. Dora Stockman gave a helpful address on "Grange Farming." Grant Morse, of Portland, read an instructive paper on "Conservation of our Natural Resources." Seven of the ten Granges were represented. Keene again received the \$3.00 cash prize, having 38 members present, and Berlin the banner, with 22 representatives. Every Grange present is striving to become a standard Grange. Some have already filled the requirements, Belding, the youngest Grange in the county being one. July Pomona at Banner Grange. The young people have the program.—Mrs. Addie Daniels, Reporter.

The Open Meeting of Hopkinsburg Grange, held June 3, was quite well attended. Some interesting addresses were given by E. W. Stone, Mr. Bentall and L. C. Root, of Allegan, and Rev. Holman, of Hopkins.

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

SUMMER RALLY.

The Clubs of Central Michigan and all others interested, are urgently invited to participate in a rally at the M. A. C., Wednesday, August 16.

A good program is being planned. Dr. Frank Kedzie, the new president of the M. A. C. will give an address and others will follow. Hand bills containing the particulars will be sent to each Club secretary. Let every Club within reach of the College try and be present. With the railroad and electric road facilities and automobile parties, there ought to be a large attendance.

For further information write to W. L. Cheney, Secretary, Mason, Ingham county, Michigan.

HOME ACTIVITIES.

Paper by Mrs. Chas. A. Johnson, of the Bedford Club.

Let us imagine ourselves transported back, for a few moments, to the age of savagery. A bold member of our tribe has gone to a nearby volcano and, putting a stick into the melted lava, has brought back to our tribe a new servant—fire. He has used it to produce a genial heat in cold weather and has roasted some meat and chestnuts and corn and potatoes. Imagine how his discovery would be received by the tribe. The old people would declare the use of fire to be far too dangerous. The priests would explain that, while the ends desired were seemingly laudable, yet if the people were to be careful to furnish them, the priests, with enough delicacies to eat and warm robes to wear, there would be no lack of food, or suffering from cold throughout the whole tribe, but

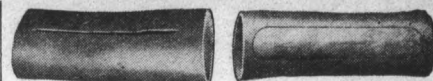
otherwise the tribe would suffer anyhow, so that the discoverer is simply striving against the inevitable. "Besides," they would declare, "the use of fire is reserved for the gods, and mortals who interfere with it are sure to come to an untimely end." It would also be objected that if fire were to be commonly used there would be little or no incentive to labor—that instead of climbing the trees for birds' eggs and scouring the woods for nuts, fruits, and small animals to eat, the members of the tribe might drift into the habit of lying, in a lethargic way, in front of the warm fires and subsisting entirely upon roasted potatoes. Those in authority would regard the discoverer as a common revolutionist and insist that he be dealt with accordingly. The young would make him the butt of their ridicule and, finally, he would find all the well-nourished members of the tribe against him, for these would have some secret place, (the whereabouts carefully guarded), where food could be more easily found, so that while their brethren were starving at home, they themselves could keep in full vigor. This would increase their power over their fellows. But they would object to the use of fire from its leveling tendency in providing digestible food for all. The discoverer is forced to flee to a spot far from his tribe, but he takes the magic fire with him and founds a new tribe, he being the hero, or fire-god of it. It is soon discovered that in order to have the new servant always available there must be one member of the tribe detailed to keep a perpetual fire. This person becomes the chief priest or priestess. As fires become more common, the original use of the perpetual fire is forgotten, and it becomes merely a ceremony—the altar of the tribe.

There are many new and new-old fires that now are being introduced into our civilization; abstinence from alcohol, the teaching of sex hygiene, woman suffrage, peace, consideration of the rights of the workers, and, among the mechanical victories of our times, the automobile and the good road, perhaps, hold first place. We welcome these new fires and should endeavor to assist their discoveries to adapt them to our conditions. Just as people have never learned to always control fire, so they may never learn to absolutely prevent auto accidents, but they can do a great deal towards it if they will try. Now to my subject, home activities.

The farm home is the proper place for almost all kinds of constructive activity. While saloonists and militarists vie with each other to destroy, they all look to the farms of the world for a continual supply of food, clothing and, most important of all, of reliable young men and women. While bookkeepers, collectors, drummers and advertisers do the useless work of the world in that delightful game known as competition they all expect the farmers and their wives to keep busy at the useful kinds of labor. Consequently, having such a large family to feed, it is not to be wondered at that the farmer's wife often finds little time for community life. If she has such time, though, she ought to smooth out any ruffled neighborhood affairs and so greatly promote the usefulness of the school and of the Farmers' Club. She can see to it that the church sewing society is not a place for retailing neighborhood scandal, and she can seriously try to make the Sunday school what the Master would wish. Other fields of usefulness might be the organization of speaking contests, spelling contests, parliamentary contests, cooking contests, and sewing evenings for girls, social evenings, debating clubs, fairs, and introducing good books wherever needed, also visiting the school. Our own Bedford Township Mothers' Club was the mother of the Bedford Farmers' Club, for the ladies claim the credit of its organization.

(To be continued).

LOCKTITE TIRE PATCH



Showing 8-inch Cut Repaired in 10 minutes

Do Your Own Tire Repairing

No matter how large the cut—puncture or blow-out—you can fix it in no time. Tools unnecessary, patch applied cold and guaranteed never to leak, pull loose or burn off. Thousands of farmers are carrying these wonderful little tire-repair kits in their tool boxes and never fear tire trouble. Complete sample outfit—enough for several repairs—10 cents. Your money back in a minute if you want it. Send today—coin or stamps—and mention dealer's name.

LOCKTITE PATCH COMPANY,
1024 Bellevue Ave., Detroit, Michigan.

AUTO INSURANCE

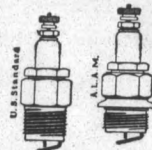
8,000 Members. \$16,000 of Cash in Banks to Pay Future Losses.

The Company has settled a great many claims for fire, theft, and liability. R. B. Waltrous, of Chelsea, was paid \$375 to settle damages in running down a thirteen year old boy, and G. A. Kinter of Edenville, was paid \$325 for fire loss this week, and Charles W. Janowski, of Ann Arbor, was paid \$173 damages by theft. \$320,000 saved in the pockets of our 8,000 members in comparison with the rates of stock insurance companies.

Every farmer should insure in this Big Mutual which has sufficient members and money on hand to protect against fire, theft, and all damage cases up to \$5,000.

The Company was started at the right time of the year and had the first pick of careful auto owners. Cost only \$7.25 on a Light Buick "Six"; others in proportion; that is the reason five hundred farmers and business men are joining each week. Write

W. E. Robb, Howell, Mich.
Citizens' Mutual Auto Ins. Co.



75c Spark \$1 Plugs 4 FOR 1

(GUARANTEED)
6536 SOLD IN MAY!

(The Reason for the Low Price)

GET YOURS TODAY

Well known make—retail price 75c at wholesale price—minus advertising cost—4 for \$1. J. D. Petticoat type—all styles—specify make and year of machine. Your own fault if you don't get 4 or more—prepaid. Send \$1 to

COCHRAN & PHILLIPS,
1406 Majestic Building, Detroit, Michigan

Standard length, standard strength

BINDER TWINE

9 1/2c

Immediate shipment
The Farmers' Wholesale House
HURST & CO.,
Indianapolis, U. S. A.

FACTORY to RIDER

Saves you big money. Buy direct and save \$10 to \$20 on a bicycle. **RANGER BICYCLES** in 94 styles, colors and sizes. Greatly improved; prices reduced. Other reliable models, \$11.95 up. **WE DELIVER FREE** to you on approval and 30 days trial and riding test. Our big **FREE** catalog shows everything new in bicycles and sundries. A cyclopedia of information which every person should have. Write for it. **TIRES**, lamps, wheels, parts and supplies at half usual prices. A few good second hand bicycles taken in trade \$3 to \$8 to clear. **Do not buy a bicycle, tires or sundries until you write and learn our wonderful new offers, low prices and liberal terms. A postal brings everything. Write now.** **MEAD CYCLE CO. DEPT. F-77, CHICAGO**

Tree Borer eradicated or money refunded. Treatment for 100 trees \$1.00.

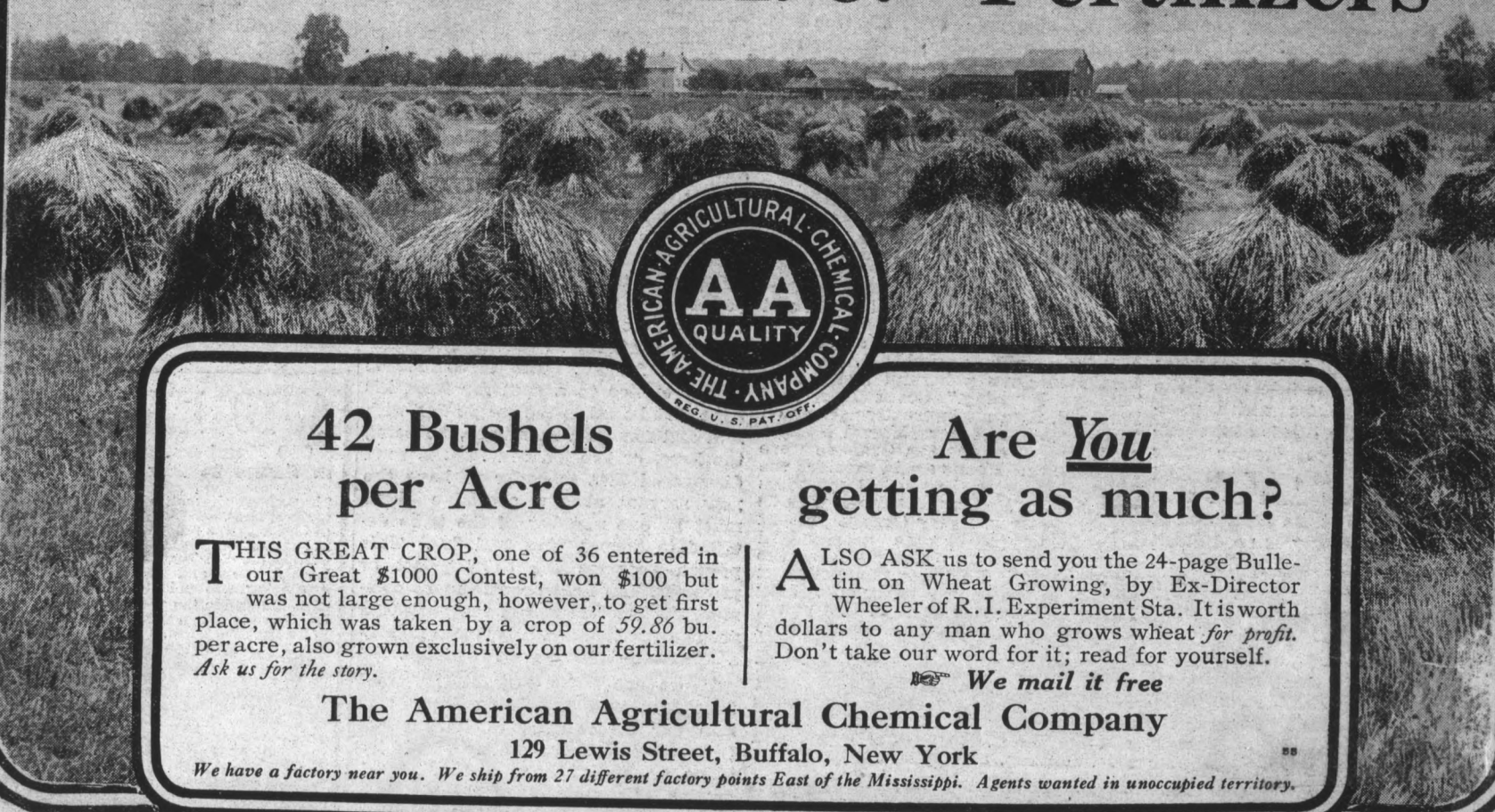
Wright Antilore Co., 602 Hlman Ave., Evanston, Ill.

When Writing to Advertisers Please Mention The Michigan Farmer.

Good wheat farming!

Land Brought Up — Crops Increased

with "A. A. C." Fertilizers



**42 Bushels
per Acre**

**Are You
getting as much?**

THIS GREAT CROP, one of 36 entered in our Great \$1000 Contest, won \$100 but was not large enough, however, to get first place, which was taken by a crop of 59.86 bu. per acre, also grown exclusively on our fertilizer. *Ask us for the story.*

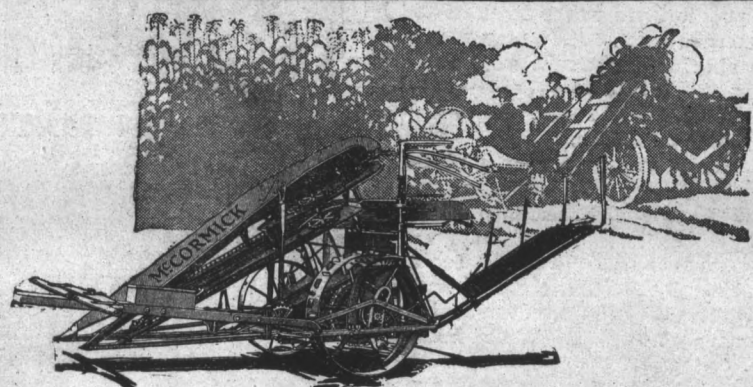
ALSO ASK us to send you the 24-page Bulletin on Wheat Growing, by Ex-Director Wheeler of R. I. Experiment Sta. It is worth dollars to any man who grows wheat for profit. Don't take our word for it; read for yourself.

We mail it free

The American Agricultural Chemical Company

129 Lewis Street, Buffalo, New York

We have a factory near you. We ship from 27 different factory points East of the Mississippi. Agents wanted in unoccupied territory.



Cut Your Corn With Horses or Tractor

OF all cornfield work, harvesting is the hardest. Your horses, or your tractor, prepare the seed bed. The cultivating is horse work. Let the horses or tractor finish the job. Let them draw an International Harvester corn binder through your cornfields, cutting clean and binding neatly the long rows that fall so slowly when you tackle them with a corn knife.

A Deering, McCormick, Milwaukee or Osborne corn binder, besides saving an enormous amount of hard work, makes possible an extra profit of from \$12 to \$15 an acre from your corn. It cuts 5 to 8 acres a day. It saves the wages of 4 or 5 extra men. It gets the crop in when the feeding value of the stalks is at its best. It does away with a lot of waste. It saves handling, whether the corn is delivered to ensilage cutter or husker and shredder. A corn binder pays.

Local dealers near you will show you anything you want to know about these machines, or, you can get full information by writing for corn binder catalogues to the address below.

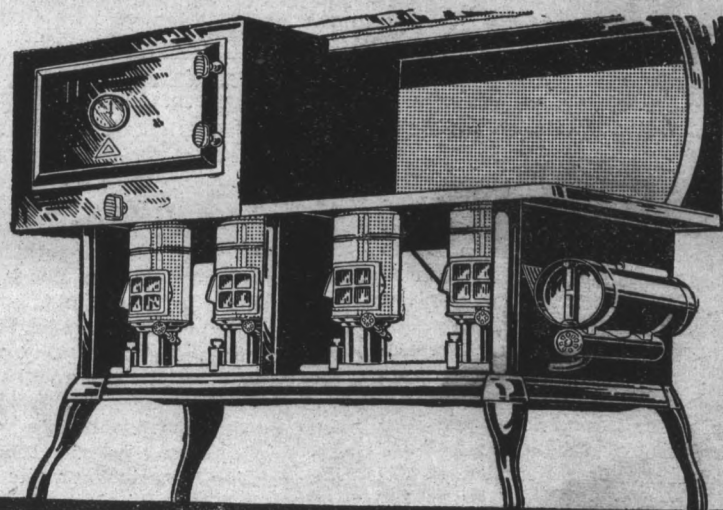
International Harvester Company of America

(Incorporated)

CHICAGO

USA

Champion Deering McCormick Milwaukee Osborne Plano



The Long, Blue Chimney

of the

**NEW
PERFECTION
OIL COOK STOVES**

is the key to perfect combustion. This most desired of cook stoves is easily filled and is always ready.

Think of the comfort of touching a match to a wick and in a minute having any kind of a fire you want.

Think of doing away with excessive heat of a coal or wood-burning range, and at about one-third the cost.

Think of no blackened cooking utensils to scour.

You can't afford to be without one this summer. Write for booklet giving full description and prices of the various types.

Standard Oil Company

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

For best results use Perfection Oil.

