

MICHIGAN FARMER

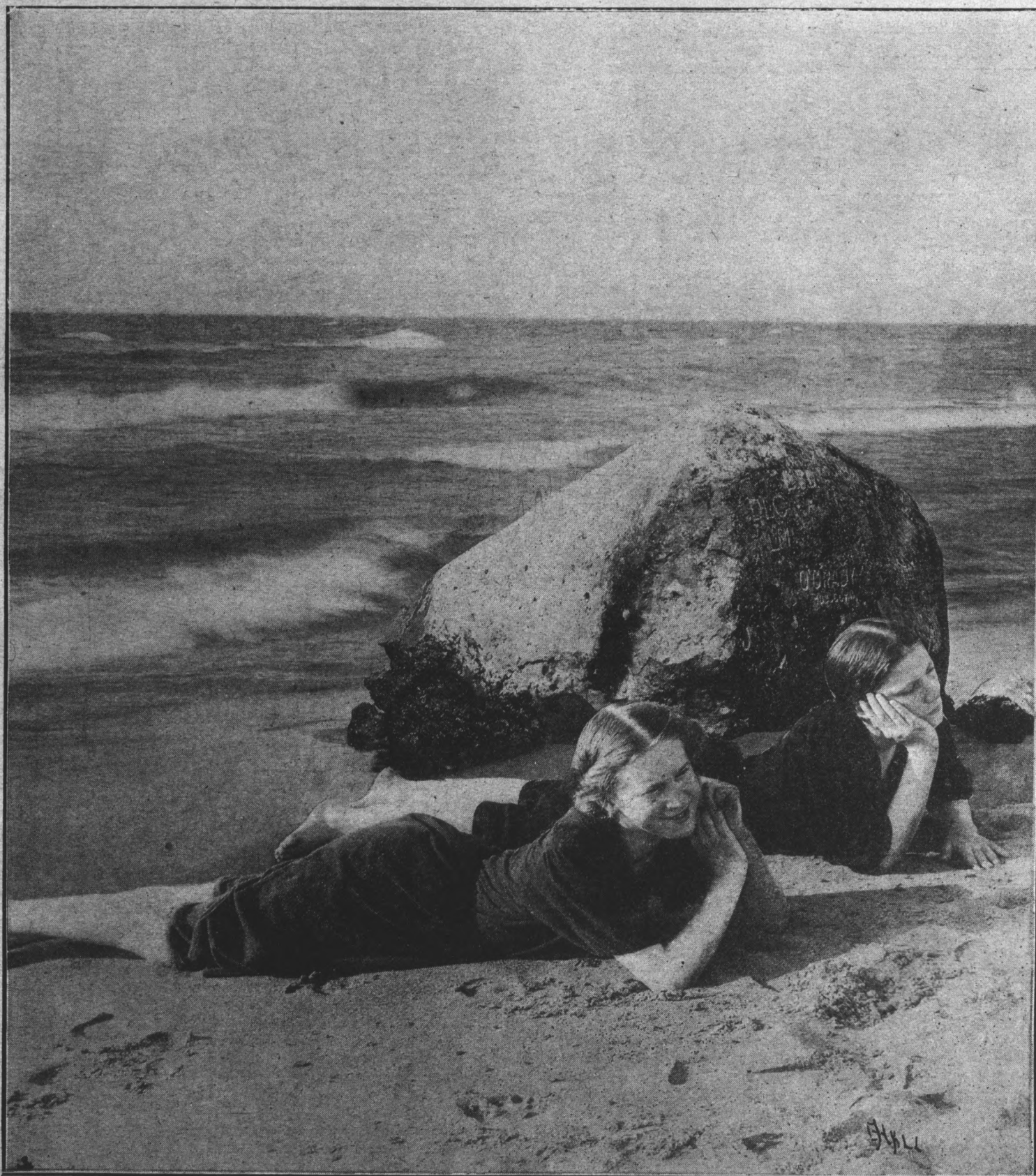
AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL
ESTABLISHED 1843.

VOL. CLIX, No. 8
Whole Number 4214

DETROIT, MICH., SATURDAY, AUGUST 19, 1922

ONE YEAR \$1.00
FIVE YEARS \$3.00





Published Weekly Established 1843 Copyright 1921

The Lawrence Publishing Co.

Editors and Proprietors

1632 Lafayette Boulevard Detroit, Michigan

TELEPHONE CHERRY 5384

NEW YORK OFFICE-95 Madison Ave.
CHICAGO OFFICE-1109 Transportation Bldg.
CLEVELAND OFFICE-101 1-1013 Oregon Ave., N. E.
PHILADELPHIA OFFICE-261-263 South Third St.ARTHUR CAPPER President
PAUL LAWRENCE Vice-President
MARCO MORROW Vice-President
J. F. CUNNINGHAM Treasurer
F. H. NANCE SecretaryI. R. WATERBURY Associate Editors
BURT WERMUTH
ALTA LAWSON LITTELL
FRANK A. WILKEN
I. R. WATERBURY Business Manager

TERMS OF SUBSCRIPTION

One Year, 52 issues \$1.00
Three Years, 156 issues \$2.00
Five Years, 260 issues \$3.00
All sent postpaid
Canadian subscription 50c a year extra for postage

RATES OF ADVERTISING

55 cents per line agate type measurement, or \$7.70 per
line (14 agate lines per inch) per insertion. No advertise-
ment inserted for less than \$1.65 each insertion. No
objectionable advertisements inserted at any time.Member Standard Farm Papers Association and
Audit Bureau of Circulation.Entered as Second Class Matter at the Post Office at
Detroit, Michigan. Under the Act of March 3, 1879

VOLUME CLVIX NUMBER EIGHT

DETROIT, AUGUST 19, 1922

CURRENT COMMENT

THE MICHIGAN FARMER SAYS

Good seed is the "ceed" in succeed.

In these days demand for the different lines of farm products has become almost as erratic as the weather.

Progress comes through the "alk" family. The members of this family are "Balk, Talk and Walk."

It pays to sell your poultry culls, but you lose your reputation if you market your fruit culls.

If you have trouble look yourself over before you lay the blame on other folks or things.

Clothes do not make the man, but a change is often a factor in mental recreation. Moral: Dress up whenever opportunity offers.

Farmers are not corporations and as a result each generation must start out anew, usually going through the three stages of hired man, tenant and farm owner.

Control of Production

THE marketing of farm products is made difficult largely because of the uncertainty in the size of each of our many crops from year to year. Were it possible to reduce to a nicety the amount of corn, wheat, apples, potatoes and other crops grown, then some of the problems of distribution would not be as formidable as at present.

To think that such a control over the production of agricultural crops could be had would be the height of folly. There are too many factors over which man has nothing to say. The amount of rain, frosts, sunshine, etc., are all given to the just and unjust in such varying quantities and times from year to year, and their influence on production is so great that it becomes impossible to reckon accurately how crops will turn out until they are actually harvested.

But any approach toward uniformity would aid in marketing, and it seems possible that the farmer can help an appreciable amount in this direction. There is little question but that production varies most on the more poorly farmed farms. The field lacking drains will not give the uniform yields that can be secured from land adequately tilled. Soil that has been intelligently handled and systematically fed stable manure, green crops, lime,

and where needed, commercial fertilizers, will respond more regularly than will soil lacking this attention. Then, too, the use of high-grade, carefully selected, disease-free seeds makes for crops with comparatively narrower production limits. The careless selection of seeds very frequently cuts into the crop yield twenty to forty or more per cent. It would appear therefore, that the general adoption of a higher standard of farming would result in a more uniform production which, in turn, would make easier the important matter of marketing and distribution.

Supplying Farm Coal

IN last week's issue of the Michigan Farmer we commented upon the necessity of securing a supply of coal to carry on essential belt power work on the farm, such as, threshing and filling the silos. We mentioned in that comment that we had written to the state fuel administrator calling his attention to this need. A letter has just been received from the secretary of the Michigan Public Utilities Commission, which reads as follows:

"We are today making arrangements with the Michigan Farm Bureau, under which we hope to obtain coal for threshing. If our plan can be carried through, the Farm Bureau will obtain coal sufficient for all threshing needs and will distribute it to the various county bureaus and through them to the farms and threshers."

It is hoped in the event that the ordinary sources of coal and other fuel fail that this arrangement will take care of the situation in this unusual emergency. Those in need should keep in close touch with their county agricultural agent as the above letter would suggest.

For Better Babies

IT seems that through the rapid progress of the past few generations, we have given attention to everything but ourselves. Wonderful mechanical developments and great progress in live stock improvement have been evident but when it comes to better folks the matter has been allowed to take care of itself.

Undoubtedly many have noticed prize live stock lead into the ring by their caretakers and have been caused to comment "What a superb looking animal but what a poor specimen of man." The contrast is great indeed and is an indication that a concerted effort toward better folks would undoubtedly bring results.

It is a world-wide truth that we look to everything else but ourselves for contentment and better living. But now that we have tried everything else we are coming back home to ourselves for a fuller and better life.

One great indication of this is the popularity of Better Baby Contests. In these we enter the pride of our heart in competition with other sources of family happiness and in our great anxiety to win out we bring into practice all the methods which will make our baby a better baby.

These contests are valuable because they create a certain interest in baby improvement. Michigan's premier endeavor in this respect is the annual Baby Show of the Michigan State Fair. Here babies from all over the state are judged and parents learn how close their babies come to the standard of physical perfection.

As the State Fair officials have provided a special class for rural babies we urge all Michigan Farmer readers who are fortunate to have babies up to three years of age to enter them

in the contest and thereby help make more popular this great movement for better humans.

Full information regarding this contest can be obtained from Geo. W. Dickinson, secretary of the Michigan State Fair, Detroit, Mich. Entries for this contest close August 30th.

Chance for Argument

be staid and perhaps our ability to converse one with another would become obsolete since there would be little incentive to talk over things and no entertainment whatsoever in our conversations.

So we must feel indebted to Professor Livingston when in comparing the use of northern grown seed potatoes with those produced at home he remarks that "If the seed of a given variety is of equal maturity, free from disease and of equal quality in other respects little difference in results will be noted."

Perhaps he is correct. Recent experiences of farmers in the states of the Ohio valley, however, do not seem to prove this. Pennsylvania farmers are convinced that seed grown in northern Michigan is of a decidedly superior quality to that grown in their own state. This has been so thoroughly impressed upon their minds through increasing yields on their own farms from twenty-five to forty bushels per acre, that these conservative farmers are sending orders for this Michigan seed for larger and larger quantities each year. In Ohio, Illinois and Indiana similar results have been reported.

There may be some angle to this situation with which we are not fully conversant. However, when without a single exception farmers in their practical field work report the outstanding advantages which have come from the above mentioned states during the past two years, we are inclined to accept the verdict of the farmers and permit the professor to continue his investigation. However, we repeat, he may be correct.

A Vision of the Future

BUT few men can conscientiously claim any ability in forecasting things that are to happen at some future date. Possibly the weather man is an exception. However, there are a few who have through careful study informed themselves on the general tendencies of the times and from this information they are able to calculate fairly accurately some of the things which are quite certain to come to pass.

Recently Mr. Charles A. Coffin, a man who has done large things in the industrial world during the past forty years, made the following statement: "The next big social change, as I see it, will be decentralization. Electricity made the great city. It may now be expected to unmake it."

Seemingly, up to the present time power, labor and capital can be coordinated more easily in our great industrial centers than in smaller places. But recent remarkable developments in the distribution and use of electricity appear to be changing the situation. This new helper promises to bring a most flexible power to all men, whether they live and work in the city, the village, or on the farm.

The "broadcasting of power" will gradually make it possible to process and manufacture raw materials near the source of production. If this can be done successfully, it will materially aid in cutting down a heavy and in many cases unnecessary transportation tax. The goods can also be de-

livered to the ultimate consumer at a lower cost.

The city has brought many social and economic troubles. But it has also developed conveniences and advantages which modern people will not forgo. Electricity is now making possible these comforts, opportunities and amusements in the healthful districts of our country sides. The effect this will have upon the agriculture of any community is difficult to foretell. There can be little question, however, but that the results will be beneficial, both in the way of supplying to the farmer seasonable labor and in improving the market for his farm products.

Sunshine vs. Moonshine

SUNSHINE is so necessary for the enjoyment of life that most folks never think of it 'cause it seems we like to think of things what ain't necessary more'n those what are.

Sunshine makes things grow and keeps them warm. Without it, things would be dead cold, but with it the worms of the earth and the greatest king what ever walked enjoy themselves in what you call ecstasy.

There's another kind of sunshine what is beneficial and what all of us folks have got, but don't use, and

that is the sunshine of the soul. We kin all be little suns throwin' forth rays of happiness and love if we'll just use what we got inside of us.

Doin' this sunshine stunt is easy if we have our inwards chuck full of the contentments of life and it kinda looks like it is up to each one of us whether we are filled with contentment or the weeds of discord.

Now moonshine is somethin' else. The moon is a mirror what reflects the light of the sun. It ain't got no heat and don't make nothing grow, but somehow it is intoxicatin' to human emoshuns at certain times. Moonshine has helped more'n anything else to make a good demand for marriage licenses.

There's another kind of moonshine what is also intoxicatin'. It is the juice of grain what has gone wrong. And when a feller drinks it he goes wrong, too. Moonshine has made more men do monkey shines than anything else. Kinda seems it is easier to make monkeys outa men than men outa monkeys, maybe because monkeys is got respect for themselves not to drink moonshine like some men do.

Now I like to be responsible for what I do, but nobody is when he drinks moonshine, so whenever anybody sets up the drinks or brings out treasures from his drink vault, I always take sunshine for mine. It is more invigoratin' and you feel like gettin' up the next mornin', which moonshine don't make you feel like.

Sittin' in the sunshine watchin' some moonshiners gettin' arrested made me think of this subject.

HY SYCKLE.

Now's the time that lady loafers leave well-managed farm flocks. Learn to cull; it's easy and it saves a lot of money.

A sample of milk, left uncooled and unprotected, developed 55,300,000 bacteria per cubic centimeter in an hour. Cool milk immediately after it is drawn.

If your local fair is a good one, support it. If it isn't a good one, help make a good one out of it.



Mr. Jones Visits His Wheat Field

The Approach of Seeding Time Raises a Number of Questions in His Mind

By Ove. F. Jensen

WHEAT is more generally fertilized in Michigan than any other farm crop. Most farmers are of the opinion that it pays better to fertilize wheat than the other crops of the rotation. Aside from the matter of profit, which must come from either

hunger. On such soils a fertilizer containing this plant-food will make a better stand of clover, larger plants that are not so easily heaved out by frosts,

there is no compulsion about them. The farmer who obtains increased yields from improved practices finds it difficult to go back to the old order. In any sound system of farm management, the use of fertilizer is likely to become a pretty well defined habit.

Effect of Fertilizer on the Soil.

The question, does fertilizer injure the soil, is as old and as definitely answered as the question, does wheat turn into cheat? Nevertheless, the claim is sometimes made that fertilizer causes the soil to lose its organic matter, and to run together. When this condition occurs, the fault can generally be traced to the farming system, and not to fertilizer usage. One of the best proofs of the value of fertilizer in keeping up the organic matter of the soil is in a plot at the West Virginia Experiment Station that received fertilizer without manure for fifteen years. Every crop grown was removed, and yet at the end of the period, this plot contained 15,000 pounds more per acre of organic matter than an adjacent plot which had received no fertilizer. Good farming practice in Michigan wheat soils requires the conservation and building up of the organic

sorrel, indicator of a sour soil. Because of the fact that there is apparently more and more sorrel each year, fertilizers have been accused of causing soil acidity. Probably the name of one of the principal fertilizing materials, acid phosphate, has had a good deal to do with this belief. There is very good evidence that fertilizers do not cause soil acidity. A plot at the West Virginia Station which received over two tons of sixteen per cent acid phosphate in fifteen years was actually less acid than adjacent plots that had received no treatment. In some laboratory tests at the Illinois Station, the application of as much as five tons of acid phosphate on an acid soil actually reduced the lime requirement of that soil. While the limestone requirement of a soil may not be increased by the use of fertilizer, it may be very desirable to lime the soil in many cases to get the full benefit of the fertilizer.

TUSCOLA PUTS ON EXHIBIT AT STATE FAIR.

TUSCOLA county grains and other farm products arranged in a most attractive exhibit will be shown at the State Fair this year, and also at the Saginaw County Fair the week following. First honors for grain displays of a certain class were won at Detroit, Saginaw and local fairs last year by Tuscola farmers.

The work of arranging the various selected grains which have been procured from leading farmers, is being done by Miss Mattie Graham, secretary of the farm bureau, and Miss Edyth Burl, clerk, both of whom are long experienced in the making of attractive displays. The farmers contributing selected grains are: Cleveland Neal, Akron; Robert Davis, J. C. Kirk, Joseph Davison, Edward Coler, Wylie Kirk, Fairgrove, on barley and oats; and Findlay Brothers, Watrousville, oats. Exhibits of alfalfa and corn also will be made.—M.

BULLETIN ON FARMERS' TOURS.

A FIELD representative of the State's Relation Service of the United States Department of Agriculture has made a study of various farmer tours in Michigan and Wisconsin and will prepare a bulletin giving his findings as to the educational value of these projects. He reports that he was especially impressed with the sixth annual tour of the Michigan Horticultural Society, which was completed on August 3.



A Better Seed Bed Follows the Generous Use of Packing Machinery.

increased yield, better quality, or both, there are a number of questions that arose in the mind of Mr. Jones as he walked across his wheat field.

Two Heads Instead of One.

Within certain limits, it makes little difference how many pecks of wheat are seeded per acre. The number of heads developing per square yard of ground is not so much dependent on the number of seeds planted as the ability of the soil to produce strong vigorous plants. For example, eight or nine pecks per acre of seed do not commonly produce a larger crop than do six pecks, although there may be more plants. In the case of the lighter seeding, the plants stool more until about the same number of heads are produced. The fertility of the soil apparently governs the stooling of wheat. Fertilizers promote a heavier root growth, and greater stooling with less winter killing. The quick start which fertilized wheat is able to make in the spring insures an earlier maturity, and, often, escape from destructive rusts and drought.

Fooling the Hessian Fly.

The Hessian fly is one of the worst of wheat pests, and yet it is fairly easy to control, if the habits of the insect are understood. In order to reproduce and cause destruction, the adult fly must lay its eggs on young wheat in the early fall. Apparently the wheat plant alone suits this purpose. The eggs develop into larvae which go down into the base of the young wheat plants and destroy them. To avoid the fly, wheat must be seeded late enough to escape the egg-laying season of the fly. Delayed seeding is more hazardous from the standpoint of winter-killing. Careful preparation of the seed-bed, and plenty of available plant food in the soil overcome the handicap of a late seeding and the fly is avoided.

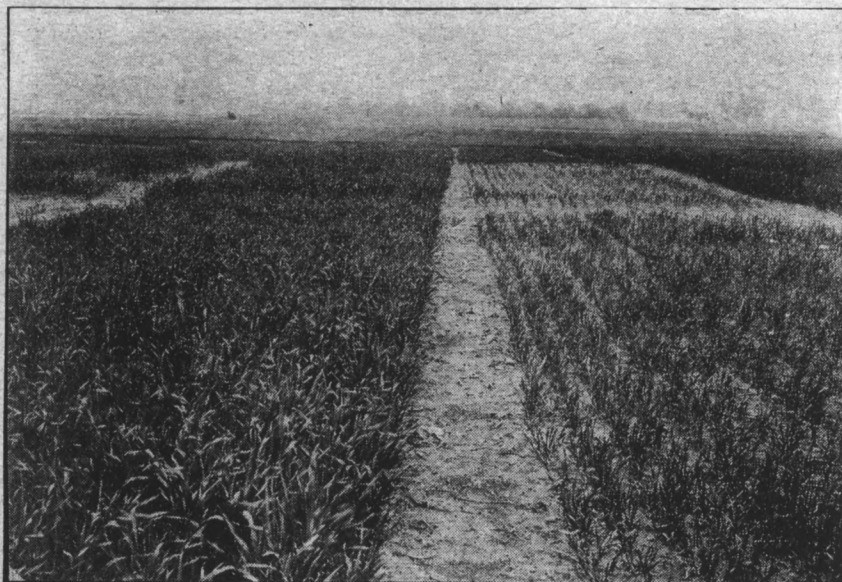
A Big Help in Growing Clover.

A common complaint is that it is harder to grow clover than it used to be thirty or forty years ago. This is undoubtedly true. When the land was first cleared, clover grew easily, abundantly, and luxuriously. But on our Michigan soils, crop after crop was removed without replenishing the plant-food supply of the soil. Furthermore, lime was rapidly removed from the soil by leaching as well as by the crops. Sour soils developed, on which clover does not succeed. Satisfying this need for lime is often the first requirement in successful clover growing. But there are also soils where clover fails because of phosphorous

and a consequent greater yield of hay.

Fertilizing for the Whole Rotation.

The effects of fertilizer on wheat in a rotation are by no means confined to the wheat crop. The influence may extend over several years, especially if clover follows wheat. The increased



Tests Show that Late Sown Wheat Will Escape the Hessian Fly, But Such Wheat Needs Abundant Plant Food to Grow a Good Crop.

clover crop is often very striking. The larger tops and root systems when plowed under have an accumulative effect on the corn, potatoes, or whatever crop follows. The question naturally arises: Is it desirable to make a heavy application of fertilizer for wheat, providing more plant-food than the wheat can utilize, or shall each crop in the rotation be fertilized with a smaller amount of fertilizer? There are certain advantages in the first method. Less labor is involved, and the indications from experimental work on this point are that greater returns are secured from the rotation as a whole. An increase of a bushel of wheat is as good as two bushels of corn or nearly three bushels of oats, and more easily obtained on most soils. Therefore, it may be profitable to make the larger fertilizer application on wheat, especially if followed by clover.

Acquiring the Habit

The statement, "if you use fertilizer once you'll have to use it always," has a grain of truth in it. If fertilizers are profitable it is, of course, good business to continue to use them, just as it is good business to continue spraying potatoes or testing seed corn. Any of these practices can be discontinued,

matter supply by tillage, rotation, legumes, and care of animal manure.

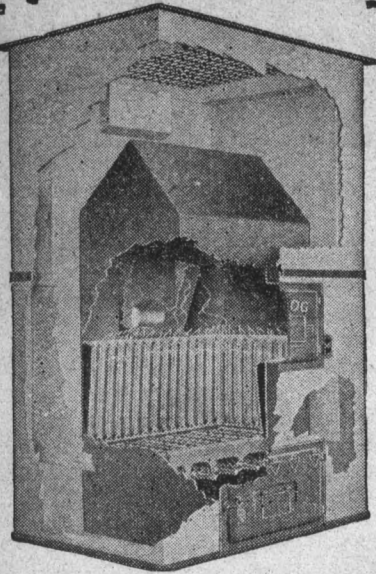
Red Fields and Sour Soils.

In the early summer months many fields from a distance present a rusty red color, due to the presence of red



Often Orchards are Illy Prepared for the Extremes of Winter Weather Because the Owner Continued Cultivating too Late in the Summer.

BULLDOG Pipeless Furnace



**Only
\$10⁰⁰**

Puts the Bulldog Pipeless Heater in Your Home

If you are even thinking of a pipeless furnace, or any furnace, write for our free catalog.

The Bulldog is one furnace you MUST investigate. The true pipeless furnace. Comes completely erected. A really extraordinary development in heating. A distinct forward step. Built on the foundation of common sense. Do not neglect to write for our catalog now before you forget.

Two Hours to Install

Any man knowing how to use a hammer and saw can make the installation in this time. Rectangular shape (one of the common sense principles) allows passage through any door. The man desiring a warm, cheerful home at the very minimum of installation and fuel expense cannot afford to consider the purchase of any furnace until he finds out about the Bulldog. So write.

Fits Any Floor Height

No matter what the depth of your basement or cellar may be — the Bulldog fits it. The adjustable casing (another common sense feature) takes care of this. When you read our catalog we think you will agree that this alone should be sufficient to influence you to choose the Bulldog.

So write today for our offer and our free catalog. Mail this coupon.

Babson Bros.

19th and California Sts., Dept. C-310 Chicago
Without obligating me in any way, please send me your free catalog and \$10 down offer on the Bulldog Pipeless Furnace.

Name.....

Address.....



Kalamazoo ENSILAGE CUTTERS

are known from coast to coast as the standard. Strong, reliable, speedy, trouble-proof, easy-running, with a successful record dating back over a quarter of a century. Backed by a Guarantee that means absolute satisfaction and protection.

Ten Superior Features

Unbreakable knife wheel, center-shear cut, triple feed rollers, no vibration, "lifetime" channel steel frame, reversible shear bar, and other features are explained in the book. Send your name today.

Kalamazoo Tank & Silo Co.
Dept. 123 Kalamazoo, Mich.

FREE
BOOK

Wanted Energetic man to take active part in large Garage and Authorized Automobile Sales in Detroit, some investment required. Holbrook & Pearce, 4317 Dix Ave., Detroit, Mich.

Late Agricultural News

MORE PICRIC ACID FOR MICHIGAN

NEGOTIATIONS during the last few days carried on by L. F. Livingston, land clearing specialist, with the Washington authorities, have resulted in an increase in Michigan's allotment of picric acid from 1,250,000 to 1,648,000 pounds, according to word received from Mr. Livingston's headquarters at Marquette. This entire allotment must be taken by Jan. 1, 1923, otherwise it will be distributed to those states which can absorb it.

Orders for Michigan's quota are being rapidly received, Mr. Livingston states. To date 88,000 pounds of the explosive have been ordered and twenty cars are expected to be shipped within the next ten days. The counties which have already placed orders are Cheboygan, Otsego, Wexford, Missaukee, Manistee, Mason and Delta. Prompt shipments are possible because a large supply has already been carted to provide for fall land clearing.—H

CHOICE MICHIGAN APPLES BRING HIGH PRICES

WHILE the quality of choice Michigan apples may be well known to people of this state and adjoining states, the question has arisen as to whether it is possible to sell Duchess apples, Michigan grown, for \$1 to \$1.25 a bushel on the glutted markets of the middle west. Most fruit growers who have a few or a great many Duchess trees in their orchards will most likely say "No."

But over near the Lake Michigan shore there is one exception. When other growers in fruit centers were selling their beautiful Duchess at 50 to 60 cents per bushel, Otto Welter, manager of a successful fruit exchange, was getting from \$1 to \$1.25 mostly the latter figure for his No. 1 ring packed fruit.

This was not because the fruit from this particular section was any better or choicer than the same variety grown elsewhere in Michigan. The premium prices were paid because the buyers know from past experience and dealings with Otto Kelter that fruit packed under label of the exchange is just what the manager says it is. The exchange has a reputation for quality and careful packing, and is selling its output at a nice profit.—M.

SENATE CONSIDERS SUGAR TARIFF

THE sugar tariff schedules have been under discussion in the Senate for several days, with Senator Townsend of Michigan leading the fight for adequate protection of the beet sugar interests. The beet sugar industry, he asserted, is more closely related to agriculture than most other industries. The struggle on the floor of the Senate, he maintained, is a contest between the great sugar refining interests of the East and that which are absorbing the sugar lands of Cuba and are in control of the sugar output, on one side, and the American sugar beet growers and sugar producers on the other.

The Cuban sugar costs much less to produce than does the sugar made in the United States, and according to Senator Townsend, unless there is an adequate tariff the Cuban sugar will ultimately supplant our domestic product. Cuba is now producing annually as much sugar as we consume each year. The only way to protect

our domestic sugar industry is by an adequate tariff imposed on Cuban sugar.

When the Senate came to a vote on the sugar schedules the sugar interest got an increase over the House rate, but not what they asked for. The rate of 2.3 cents a pound on sugar was adopted by a vote of 37 to 35, making the duty on Cuban sugar 1.84 cents a pound, a slight increase over the emergency tariff.

STUDY CAUSES OF GOITRE

AS is well known, goitre is a common affliction, particularly of women, in the northern country adjacent to the Great Lakes. It is now believed that this ailment is due to lack of iodine in the water and is perhaps related to other complicating circumstances. During the present year, experiments in the efficacy of sodium iodide in reducing goitre has been investigated at Marquette and Iron Mountain. At Marquette a large number of women students at the Northern State Normal School were subjected to this treatment by Dr. C. P. Drury, city physician. Dr. Drury has now tabulated the results and finds that some seventy-four percent of the cases showed beneficial results from this iodine treatment. It was found in the preliminary investigation that ninety percent of the young women had enlarged thyroid glands, while thirty-two percent of all school children examined were found to be in this condition. The investigations thus far carried on here and elsewhere are deemed by physicians to be so conclusive that it is recommended that a small portion of sodium iodide or iodide salt be added to the daily diet of children as a preventive measure and this is now being done in some families. It is believed that drinking water in the upper lakes region is insufficiently supplied with iodine in its composition.

LEAF HOPPER MAY BE SERIOUS THIS YEAR

M. R. KOTILA, potato disease expert of the Michigan Agricultural College Experiment Station at Chatham, Alger County, warns against the reappearance of potato leaf hopper again this season. It has already made its presence known, it is stated. "The injury done by the hopper," says Mr. Kotila, "at first appears as a slight discoloration at the tip of the leaf, which then extends along the margin, and eventually gives the leaves a curled, burned appearance. It appears late in July and is worse in August and September."

The adult leaf hopper is a pale green insect about one-eighth of an inch in length. The adult winters under leaves and trash in fence-rows and in woodlots. When the potatoes appear the adult deposit their eggs thereon. Weather conditions determine the emergence of the leaf hoppers in the spring and the length of their life cycle, says Mr. Kotila. Cold, wet weather in spring slows up the development of the hopper while dry hot weather hastens its activities.

Observations at the Chatham Station have shown that the wintering adults appeared on June 10 on this year as against June 22 last year. The cool wet weather of this season has retarded development of the hopper, it has been ascertained, but we are assured there is still plenty of opportunity for trouble from this source.

Experiments at Chatham have shown that the hopper can be repelled and the hopper burn controlled by spraying with 4-4-50 Bordeaux mixture. The first application should occur when the potato plants are three to six inches in height, it is stated; a second application should follow a week

later. Two or three subsequent applications should be made at a ten-day or two-weeks' interval. The hopper feeds on the under side of the leaf which must not fail to receive the mixture. A three-nozzle apparatus may be used to accomplish this. Under all conditions Bordeaux spraying will benefit potato yields.

EXTENSIVE LIME TESTS

THE relation of lime to particular soils will be demonstrated in 12 counties of southern Michigan over a period of four years through co-operative arrangements between the Michigan Central railroad, the France Stone Co., the soils department of M. A. C., county agents, farm bureaus and township supervisors. Announcement has just been made by Dr. M. M. McCool, head of the M. A. C. soils department. Work on the demonstration projects already has been commenced.

The lime company will furnish 1,000 tons of lime from its quarries at Monroe and transportation will be provided by the Michigan Central railroad. In every county it is planned to use a carload of lime to establish four demonstration projects of about six acres each. These four areas will be chosen by the county agent or by farm bureau officials to represent the main types of soil in the county.

Specialists from the soils department of the college will supervise the establishment of the projects. Varying quantities and qualities of lime will be applied to several different crops, so as to show the way to farmers in the vicinity who desire to use lime but are not certain concerning its exact place in their scheme of farm management. Commercial fertilizers will also be given some consideration.

Counties in which the demonstrations will be made are as follows: Washtenaw, Jackson, Calhoun, Van Buren, Ingham, Barry, Berrien, Oakland, Lenawee, Hillsdale, Branch and St. Joseph.

Establishment of these demonstration projects marks the beginning of one of the most extensive land fertility drives ever waged in the state. Other railroads and other commercial lime producers are expected to co-operate in similar campaigns in other sections. This program, according to Dr. McCool, is in line with the soil survey which is now being carried on. The nine men now making the survey expect to complete five more counties this summer—Kalamazoo, Van Buren, Berrien, Manistee and Ottawa.

Field meetings will be held at the project areas as soon as they are under way. Dr. McCool plans to emphasize the practical side of the lime question and to make the utilization of lime an actuality on all Michigan farms which are lacking in it.—H.

DRAINAGE TOUR

WE are notified that a drainage tour has been planned by County Agent C. M. Kidman, of St. Clair County. The tour will start August 31 on the farm of P. M. Stein, six miles west of Port Huron on the Lapeer Avenue road. From there the tour will proceed to the farm of H. J. Vogt and Sons, Columbus Township, where dinner will be served and a short program will follow. Clark L. Brody, Secretary-Manager of the State Farm Bureau; H. H. Musselman, professor of farm mechanics of the M. A. C.; C. V. Ballard, assistant county agent leader, and others will give short talks. The tourists will then inspect the drainage product of Peter Distelrath in China Township, from there will go to the farm of Robert Radike, thence to North Westbrook's farm, near Marine City. Everyone interested in tile drainage is urged to take in this tour.

The World's Wheat Market Outlook

Every Producer and Consumer of Wheat Will Be Interested in Prof. Gusler's Analysis of Crop and Market Conditions

WILL the surplus wheat in the principal exporting countries be sufficient to meet the needs of the importing nations in the next twelve months? The conventional remark that "World conditions establish wheat prices," implies that this ratio between the supply of surplus wheat and the demand for it by importers determines the world level of wheat values which sets the price at terminal markets, and then on back to the country elevator, mill or loading station.

Under normal conditions the average level of wheat prices during the spring months may be enough higher than during the heavy movement after harvest when much is sold direct from the threshing machine, to pay the cost of extra handling, interest, and to cover shrinkage in weight, and possibly more. However, when a farmer puts wheat in his bin to hold it for a higher market at a distant date in the hope of large increase in returns, he is putting his faith primarily in this "world's situation."

Other factors enter in, of course. A country may over-export in the early part of its crop year, as Argentina did in 1920, with the result that wheat prices rose high enough to attract imports. Or a shortage of box cars may cause artificial scarcity at central markets while abundance exists in the country, as happened in the United States early in 1920. A wide-spread holding policy such as occurred following the sharp drop in wheat prices two years ago could have a similar effect while it lasted. The general drift of commodity values, whether toward a higher or a lower level, is another factor to consider, although it seldom is of great importance within a single crop year.

The central question, whether the importing nations will be able to find enough wheat to supply their needs in the next ten or eleven months is far from simple, and opinions are not unanimous. It involves knowledge of innumerable factors, practically every one of which is an estimate and subject to change upon receipt of later data. It involves the outcome of crops which are still in the lap of Providence. Final returns are not yet in on our own winter and spring wheat. Some of the acreage in Canada and in Northern Europe is still subject to damage by frost if nothing else—and the crops of Argentina and Australia, just emerging from the winter season, and to be harvested from November to January, must be taken into the reckoning. Finally, the crop now being planted in India will be ripe next April and a part of any surplus from it can reach Europe before the European harvest in 1923 is started.

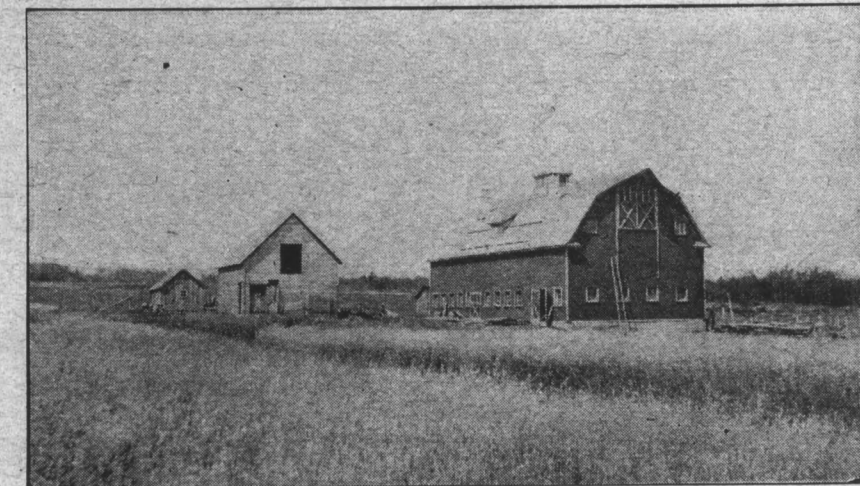
Estimates are at variance as to just how much wheat the importing countries will need. European crop reporting systems are woefully inadequate so that official estimates have not been made in many important countries and those which have been made public lag two to four weeks behind the actual facts which are changing constantly with the weather.

The available material as assembled from a variety of sources, including comprehensive private foreign crop reports points to a yield per acre about equal to or slightly below the average whereas last year's crop was above the average. The loss compared with last year appears to be about one bushel per acre in European states, which usually have a joint acreage of about 100,000,000 acres. In addition there is

a slightly smaller acreage than last year. These conditions point to a total yield in the chief importing area of 100,000,000 bushels less than that of last year, with a possibility of even greater loss. This means that if all other conditions remain the same, import requirements will be increased 100,000,000 bushels over the preceding twelve months.

An analysis made by the Depart-

ment of Commerce shows that wheat consumption in central and western Europe fell off sharply in the early years of the war but that it increased rather steadily from 1,200,000,000 bushels in 1917 to 1,850,000,000 bushels in 1921 when it was still about 150,000,000 bushels below the pre-war normal. If another increase in consumption occurs in the present year it will necessitate a further addition to the amount which must be imported.



Even the Yield of Other Cereals in Out-of-the-way Places Has an Influence on the Wheat Market

But there are counter-influences. Oriental countries which were heavy importers last year have better crops and are not expected to take so much this year. Russia, which has been an importer in the last twelve months is expected to take care of its own needs, although recent reports have been

rather pessimistic. Europe substitutes rye for wheat and the rye acreage is larger than a year ago, both in Europe and North America. Last and most important, is the European pocketbook which may not permit the purchase of all the wheat needed. Germany, Austria, Italy and France all could use large quantities of outside wheat, but their finances are in a deplorable state and are apt to be the limiting factor.

Under the circumstances a further increase in per capita consumption looks doubtful, especially since the use of substitutes is already being extended. Summarizing the situation, the conditions as outlined point to some increase in import needs. This may be estimated conservatively at 50,000,000 to 75,000,000 bushels. If the increase indicated above occurs it will mean 700,000,000 to 725,000,000 bushels for the present year. Broomhall apparently expects greater limitation, due to financial conditions and places the "effective demand" from importers at 656,000,000 to 672,000,000 bushels.

So much for the demand. To supply it, reliance must be placed in the surpluses of the United States, Canada, Argentina, Australia and India, with

small amounts also from the Balkans.

This year's crop in the United States and the carry-over of old wheat makes a total supply about the same as a year ago, so that if domestic consumption is not larger than last year there should be about the same amount for export as in the year ending July 1, 1922, when net exports over imports were approximately 263,000,000 bushels. But last year's crop is believed to have been underestimated. Using average domestic disappearance in the last seven or eight years, our exportable surplus from this year's supply would be only about 215,000,000 bushels. The latter seems to be the more reasonable figure.

Canada has the second largest crop on record, present prospects indicating a yield of about 345,000,000 bushels, which means an exportable surplus of 255,000,000 bushels.

So far as Argentina, Australia and India are concerned, it is necessary to assume average crops, since they are now some distance from maturity and even the acreage has not been reported upon. Conditions as a whole in those countries are fairly favorable, however, so that the assumption looks safe.

The average crop in India in the last seven years has been about 325,000,000 bushels in round numbers, of which approximately 25,000,000 bushels have been exported. Argentina has raised 165,000,000 bushels and exported 100,000,000 bushels, while the Australian crop has averaged 105,000,000 bushels, with 60,000,000 bushels sold abroad.

The combined export surplus, from the five countries for the present year as arrived at in this way amounts to 655,000,000 bushels. In addition, small amounts may be available from Roumania and Bulgaria in the Balkan region. Those countries exported about 6,000,000 bushels last year and reports indicate that they may do better this year. Manchuria and Siberia are expected to furnish some wheat to other Oriental countries. Altogether the exportable surpluses from the harvests in the 1922-1923 crop year add up to about 675,000,000 bushels. This is slightly less than the estimated import requirements.

If importing countries take the full amount credited to them and exportable surpluses do not exceed the foregoing estimates, then the difference must be made by cutting into the carry-over at the end of the crop year.

There is always some old wheat on hand in all countries when the new harvest starts. A few producers hang on and there is enough in distributive channels to keep the stream moving. A careful analysis shows that the carry-over, or remaining exportable surplus on July 1 this year in the five chief exporting countries, was approximately 170,000,000 bushels, compared with an average of about 177,000,000 bushels. The figures for this year, however, include an allowance of 25,000,000 bushels in India which has prohibited exports and 40,000,000 bushels in Argentina and Australia which is larger than most estimates so that the total carry-over or surplus of old wheat after all may be only 130,000,000 to 140,000,000 bushels. If it develops that a further reduction is to be made in the coming year it means a strong statistical situation which should maintain a fairly satisfactory price level.

The body temperature of poultry is way up and an abundance of shade and cool drinking water (unless milk is supplied) is necessary this weather.



Analysis of the Muscle Shoals Proposal

The proposal made by Henry Ford, for the development and operation of the great water power project and Nitrate plants which the government started at Muscle Shoals, Alabama as a war measure, is of general interest at this time when it is before congress for final consideration. This proposal has secured the endorsement of the American Farm Bureau Federation, the National Grange, The Farmers' Union, and the Agricultural Conference called by President Harding. The following analysis of the proposal was made by officials of the American Farm Bureau Federation:

Section I. Forms a company with \$10,000,000 paid in capital stock, this company to be controlled by Mr. Ford.

Comment:—This \$10,000,000 paid in capital stock is a guarantee of the fulfillment of the contract.

Section II. Will complete Dam No. 2 at cost and without profit.

Section III. Will lease Dam No. 2 for 100 years and pay 4% interest on the cost of completion. For the first six years the interest payment is only \$200,000 annually.

Section IV. Will pay annually \$35,000 for repairs, maintenance and operation of Dam No. 2, its gates and locks. The company to maintain power house and machinery.

Section V. Will furnish free 200 horsepower to operate locks.

Section VI. Will construct Dam No. 3 at cost and without profit.

Section VII. Will lease Dam No. 3 for 100 years and pay 4% interest on entire cost including lands and flowage rights. For the first three years the interest payment is only \$160,000 a year.

Section VIII. Will pay annually \$20,000 for repairs, maintenance and operation of Dam No. 3, its gates and locks. The company will maintain the power house and machinery.

Section IX. Will furnish free 100 horsepower for the operation of the locks.

Section X. Establishes a sinking fund by the semi-annual payment of \$23,373.

Comments on Section II to X, Inclusive:

Construction—Both dams are to be built at cost and without profit in accordance with specifications of the United States Army Engineers. Coupled with the lease provisions in which the company agrees to pay 4% interest on the cost, this makes an agreement that guarantees both quality and economy. The company is to use the property for 100 years and is therefore vitally interested in the quality of the work. The company further agrees to pay 4% interest on the cost and the resulting arrangement is exactly opposite to the much criticized cost-plus method of construction.

Financing of Cost of Dams—No appropriation need be required from the Treasury to complete Dam No. 2 and to build Dam No. 3. The proposal agrees to pay 4% interest on the cost of constructing both dams and further provides a sinking fund which if invested at 4% will, at the end of the lease period, retire \$49,071,935, which is more than will be required to finish Dam No. 2 and build Dam No. 3. These semi-annual payments invested in Farm Loan Bonds at 5% interest will retire at the end of the period \$100,868,642. With these provisions a United States bond issue floated at 4% will finance the necessary expenditure without any appropriation from the Treasury, and the interest on the bonds and the retirement of the bonds are both provided for in the proposal. The American Farm Bureau Federation advocates this method of financing the expenditure required.

The Lease of the Dams—The lease for 100 years is justified from the standpoint that at the end of the lease period the development, without recapture payments, has all capital charges against it wiped out and from then on the cost of the power is free from all charges save maintenance and depreciation. When it is realized that interest on capital invested is 80% of the cost of electric power from a hydraulic development, the vital importance of this method of amortizing the investment and relieving the power of interest charges is at once made clear.

It must be borne in mind that with the completion of the dams there is only 140,000 horsepower available all the year round. The generating equip-

ment at the two dams is to be 850,000 horsepower. To secure any large amount of this power, the company must of necessity install large storage reservoirs on the upper river to equalize the flow of the river. The chief engineer of Mr. Ford testified that this was their purpose. To do this will require the expenditure of many millions additional by Mr. Ford. When the size of the obligation assumed by Mr. Ford in the maintenance and operation of

removes the last great obstacle to the successful navigation of the Tennessee River. Unless both dams are built, no navigation at all is provided, and an area as large as England, rich in mineral deposits, remains cut off from water transportation.

Under the Ford plan the Government secures this permanent navigation improvement free of cost. Power for operating the locks is furnished free and a fund of \$55,000 annually

tween the Government and the Alabama Power Company and will assume all obligations and liabilities of the Government under that contract.

Section XIII. Agrees to pay \$5,000,000 for the above property in five payments with 5% interest on deferred payments.

Section XIV. Waives depreciation on the property and does not require an inventory.

Comments on Sections XI to XIV, Inclusive:

The purchase price of \$5,000,000 has been criticized as too low, but when it is understood that the proposal provides for the operation and maintenance of the plant at its present capacity, this sale must be looked at from a different light. (See Section XV.) The purpose for which the Government built this plant is fully protected by the provision of maintenance and operation of the nitrate plant. The plant is always available in efficient operating condition for the use of the Government in time of war. A low estimate of depreciation, maintenance and guarding charges against this property is \$2,450,000 a year. This annual saving is made for the Government by the acceptance of the offer. Furthermore, this \$5,000,000 payment for the property purchased at Muscle Shoals compares favorably with the price obtained by the Government in disposing of other war-time investments in which when disposed of the Government lost all equity and all value for which these properties were built. Old Hickory Powder Plant cost \$79,204,000, allowing credit for materials sold or transferred prior to sale, and then sold for \$3,505,000, and is lost to the Government for all time.

A modification of the original proposal has removed complication regarding the Gorgas Steam Plant, as the proposal now agrees to accept what the Government can transfer under the contract with the Alabama Power Company, thus relieving the Government of all obligations or liabilities.

Section XV. Agrees continuously throughout the lease period to manufacture nitrogen and other commercial fertilizers using the most economical power. This fertilizer to have a nitrogen content of at least 40,000 tons of nitrogen.

(a) Agrees to research fertilizer production and to employ such improved methods as may be found successful.

(b) Agrees to maintain Nitrate Plant No. 2, or its equivalent, for explosive manufacture in case of need.

Comment:—This section guarantees the full operation of the nitrate plant in the manufacture of fertilizer. The 40,000 tons of nitrogen that the fertilizer will contain is equal to the average annual amount of nitrogen obtained from Chile and used by farmers during the five-year period just preceding 1914—that is, it is equivalent to 250,000 tons of nitrate of soda. The company agrees to make "other commercial fertilizers" and to supply "mixed or unmixed" goods according to the market demands. The phosphate fields of Tennessee are practically at Muscle Shoals (just 50 miles away), and to furnish mixed goods phosphate fertilizer must be furnished by the Company. Subdivision (a) of this paragraph furnishes the farmers a complete commercial investigation of fertilizer methods with the certainty, as testified by Dr. Whitney, Chief of Bureau of Soils, Department of Agriculture, of establishing the production of high-grade phosphate compounds—as high as 72% acid phosphate equivalent. The freight saving on such a compound alone will be a great saving to the farmer. The company agrees to use such processes when determined by research to be successful. Sub-

(Continued on page 187)

Mr. Ford Offers at Muscle Shoals

1. To complete Dam No. 2 and build Dam No. 3 at cost, and without profit. (For explanation see Sections 2 and 6.)
2. To lease the project for 100 years under a plan that will complete the project without further Government appropriation. (See Sections 3 and 7.)
3. To amortize the cost of building the dams so that the project is returned to the Government at the end of this lease period freed from interest charges. (See Section 10.)
4. To pay the Government 4% interest on the cost of completing this project as above, whatever the cost may be. (See Sections 3 and 7.)
5. To pay annually \$55,000 for maintenance and depreciation of locks and dams and furnish power to operate the navigation locks free of cost to the Government throughout the lease period. (See Sections 4 and 8.)
6. To purchase Nitrate Plant No. 1 and Nitrate Plant No. 2, together with their steam plants, transmission lines, etc., for \$5,000,000. (See Section 11.)
7. To maintain Nitrate Plant No. 2 or its equivalent throughout the lease period, ready for immediate use in the manufacture of explosives. (See Section 15-b.)
8. To operate Nitrate Plant No. 2 to its full capacity in the manufacture of nitrate fertilizers and other commercial fertilizers (other commercial fertilizers are phosphate and potash), using the most economical source of power available. Full capacity is 40,000 tons of fixed nitrogen annually (equivalent to 250,000 tons of Chilean nitrate, which is the amount of Chilean nitrate used annually by farmers in normal times.) (See Section 15.)
9. To market these fertilizers produced at a profit not to exceed 8% on the fair, actual annual cost of production. Products to be marketed, mixed or unmixed, with or without filler, according to demand. (See Section 16.)
10. To commercially research the most advantageous methods of fertilizer manufacture and to adopt such improved methods as are found successful. (See Section 15-a.)
11. To set up a board of 9 voting members, 7 of whom are representatives of the principal farm organizations with the privilege of examining the books, determining whether his cost data are fair, and regulating the price and distribution of fertilizers produced. (See Section 16.)

the nitrate plant, the interest payments guaranteed, and the additional investment required to manufacture mixed fertilizer and to build the necessary storage reservoirs, is considered, no period of less than 100 years would be reasonable to carry out these obligations and to amortize the capital cost. The crux of the situation does not lie in the length of the lease, but in regulation. The dam remains the property of the people, is subject to regulation, and at the end of the period the capital investment is wiped out and the power freed from all charges save maintenance and depreciation.

A low interest rate is also the moving reason why the Government should loan its borrowing capacity to finance the building of power dams. Since interest charges are so important a factor in the cost of hydro-electric power, the lowest interest rate obtainable should be utilized in developing our great water power resources. Since these waterpowers are regarded as belonging to the people, the collective borrowing capacity of the people through their Government should be utilized to finance the development of these waterpower resources. This is especially true since it puts no expense on the Government nor on the people and greatly reduces the cost of the power developed.

Navigation—The completion of Dam No. 2 and the building of Dam No. 3

for maintenance and operation of the lock and maintenance of the dams is provided. This amount has been approved by the United States Engineers as ample for the purpose.

The Ford offer provides a new principle in the improvement of inland power streams, whereby the power development pays for the navigation improvement.

In addition to the navigation feature, Dam No. 3 can undoubtedly be built more cheaply by constructing it as workmen and equipment are released from Dam No. 2 than it could be if built separately at a later date.

Tying in of Power—To obtain the fullest possible development of the potential power at Muscle Shoals Dam No. 2 and Dam No. 3 should be jointly operated and co-ordinated so as to supplement one another. Unless both dams were so operated, one would hardly be justified in making the additional investment in storage reservoirs in the upper river to equalize the flow of the river, as is indicated in the hearings is the purpose of Mr. Ford.

Section XI. Purchases (a) Nitrate Plant No. 2, (b) Nitrate Plant No. 1, (c) Waco Quarry, (d) the ownership of the Government in the Gorgas Steam Plant.

Section XII. Will accept right, title, etc., of the Government in the Gorgas Steam Plant under the contract be-



One of the First Steps in a Practical Forestry Program is the Protection of Growing Timber from Fire.

The Busy Farmer's Page

BLIGHT has been found in the bean crops in Saginaw county by Dr. B. S. Rands, United States pathologist in charge of bean disease elimination work, who spent two days last week with the county agriculturist inspecting some of the largest fields in the county. How extensively the disease has obtained a foothold in Saginaw county cannot be definitely determined for two or three weeks. The federal specialist expects to return about that time to again visit the same fields.

Because of the need of research work in developing a bean variety that will be resistant to diseases, and because Saginaw is near the center of the Michigan bean growing industry, it is possible that the federal government may re-establish a laboratory in the city under the supervision of Dr. Rands.—M.

ROUND-UP AT CHATHAM.

THE fourth annual round-up of Upper Peninsula farmers is taking place this week at the Michigan Agricultural College's Upper Peninsula Experiment Station at Chatham, Alger county. The first day was devoted to meetings of county agents and home demonstration agents and other officials associated with the Agricultural College's extension work in northern Michigan. The live stock and poultry judging contests for boys and girls was held on Friday.

MILK PRODUCERS ORGANIZE.

THE milk producers of Marinette county, Wisconsin, and Menominee county, Michigan, have formed a joint association for the purpose of making better terms with distributors of the Twin Cities, terms that will enable farmers to provide a high-grade quality of milk. It is stated that the present rate of \$2.37 per hundred pounds now paid entails a loss of one cent per

quart. The farmers ask a profit of at least one cent per quart and therefore demand that the price of milk be fixed at one and one-half times the running wholesale price as determined on the butter-fat basis. It is shown that similar arrangements have been made in other neighboring cities of Wisconsin and that retail prices have not had to be advanced there.—Chase.

JERSEY BREEDERS MEET.

THE members of the Michigan Jersey Club have arranged to hold their annual summer picnic on the farm of Corwin Trust, near Shelby. The date of the meeting will be August 31, according to County Agent Pickford, of Oceana county. We are informed that state and national speakers will appear on an unusually attractive program.

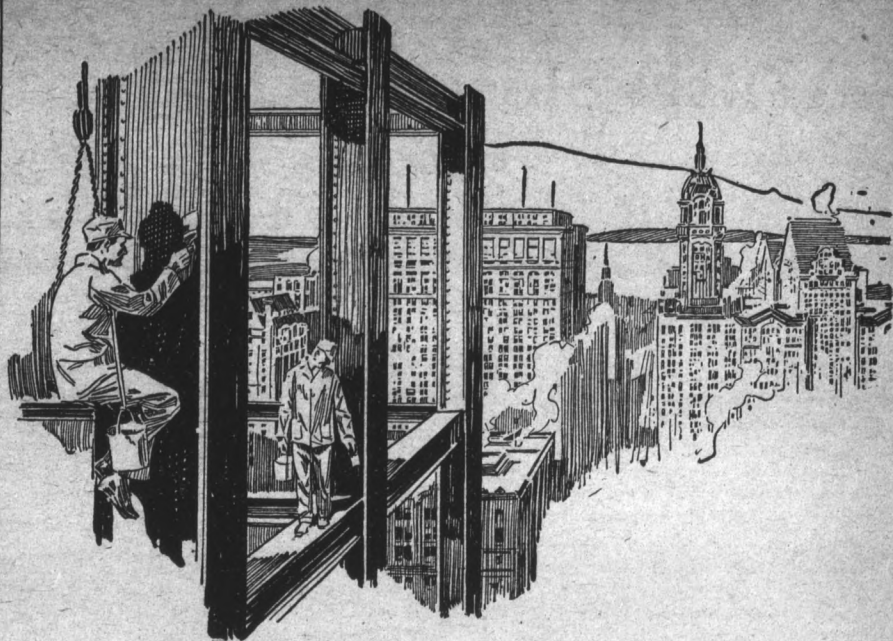
MICHIGAN LEADS.

THE following paragraph from a report made by the Federal Department of Agriculture indicates the attitude of the people of this state toward the eradication of tuberculosis in our cattle.

"Michigan seems to be leading in the amounts of money appropriated by county authorities to assist the federal government and the state in eradicating the disease. To date the largest appropriation made by any county in the country is the \$15,000 fund voted by the county commissioners of Huron county, Michigan. Other appropriations in the state are as follows: Eaton county, \$8,000; Calhoun county, \$9,000; Oceana, \$4,000; Clinton, \$8,000; Muskegon, \$5,000 and Monroe, \$5,000. Hillsdale county, the first in the country to have all cattle tested, has made an additional appropriation of \$3,500 to continue the work through the second year. A number of other counties have made additional appropriations of \$1,500 each."



But Few Agricultural Colleges Have Accomplished as Much Along the Line of Crop Improvement as Has Our Own State School.



Why are skyscraper skeletons fiery red?

ONE day there is a towering framework of steel beams, looming black and gaunt against the sky. A few days later the same steel skeleton is a flare of brilliant orange-red.

Along the railroad, flashes of the same vivid hue greet your eye—here a bridge, there a tank; every piece of exposed iron or steel construction puts on, now and then, its coat of red.

Only one 200th of an inch thick, this flaming coat, yet it is an armor that wards off decay and destruction.

~ ~ ~

The very words "iron" and "steel" are synonymous with strength and permanence; nevertheless these structural materials, when unprotected, fall an easy prey to nature's destructive forces. Let iron or steel remain exposed one day to the air, and rust begins. Rust is decay—and decay is ruin.

The orange-red armor that prevents rust and decay is red-lead, an oxide of lead, which, when mixed with pure linseed oil, makes a paint impervious to the attacks of the weather.

Here is one way in which lead enters into the daily life of civilized man. There are hundreds of other ways. Do you know that electric-light bulbs contain lead as an element in the glass? Do you know that there is lead in the hard rubber of fountain pens? Do you know that cans for meats, fish, fruits, vegetables, as well as those containing oils and other products, are sealed with solder that contains lead?

~ ~ ~

There are hundreds of other important uses of lead. And of them all, the most important is the use of lead in good paint. Through all time, men have found no paint that so thoroughly protects metal as does red-lead paint, no paint that so thoroughly protects wood as does white-lead paint.

People are coming to realize today as never before that poorly painted surfaces decay, well-painted surfaces endure. Millions of dollars in property values are being conserved yearly by a general heeding of the maxim, "Save the surface and you save all."

National Lead Company makes red-lead of the highest quality. This product is mixed with pure linseed oil, to give it paint consistency, and is sold as

Dutch Boy Red-Lead

Write to our nearest branch office, address Department J₂ for a free copy of our "Wonder Book of Lead," which interestingly describes the hundred-and-one ways in which lead enters into the daily life of everyone.

NATIONAL LEAD COMPANY

New York
Cleveland

Boston
Buffalo

Cincinnati
Chicago

San Francisco
St. Louis

Save the surface and you save all—*Dutch Boy's Lead*

JOHN T. LEWIS & BROS. CO., Philadelphia
NATIONAL LEAD & OIL CO., Pittsburgh

Some Products Made by National Lead Company

Dutch Boy White-Lead	Bar Lead
Dutch Boy Red-Lead	Litharge
Dutch Boy Linseed Oil	Glassmakers' Red-Lead
Dutch Boy Flattening Oil	Lead Pipe
Dutch Boy Babbitt Metals	Battery Red-Lead
Dutch Boy Solders	Orange Mineral
	Die Castings

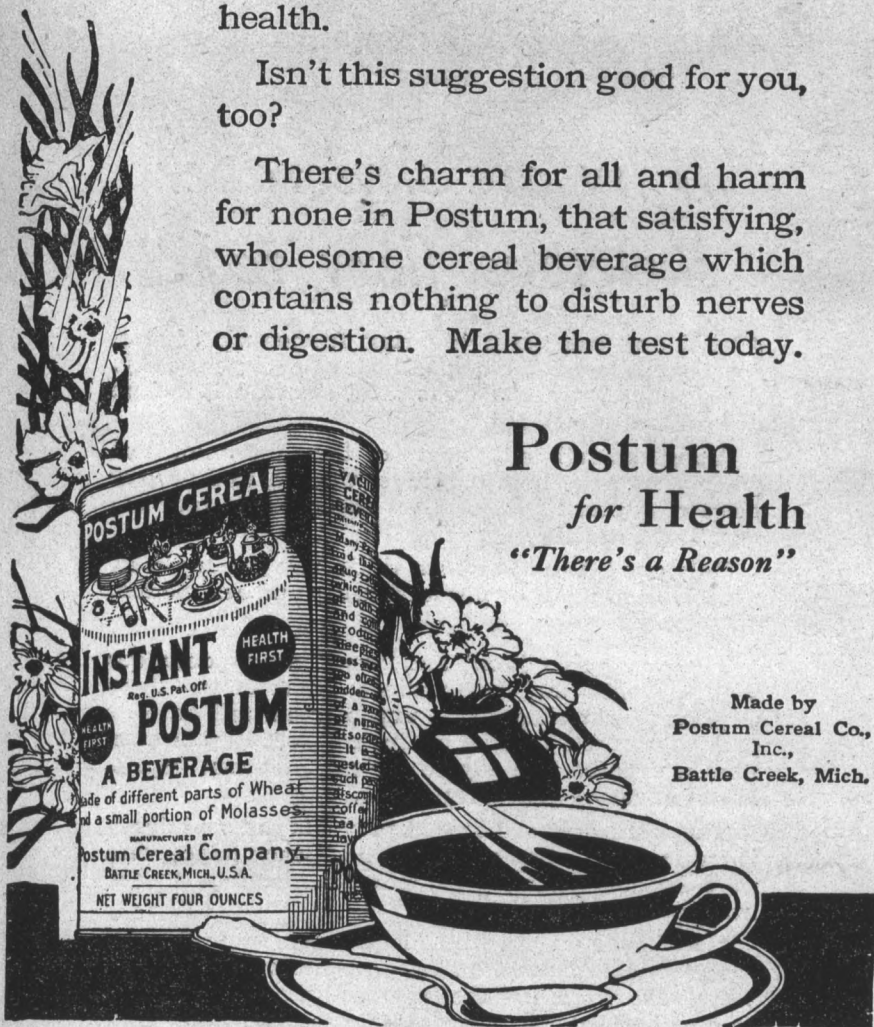


Are your nerves sound?

HEALTH authorities agree that children should let coffee and tea alone, that their nerves may be kept free from the caffeine drug disturbance, and grow up in natural health.

Isn't this suggestion good for you, too?

There's charm for all and harm for none in Postum, that satisfying, wholesome cereal beverage which contains nothing to disturb nerves or digestion. Make the test today.



Postum
for Health
"There's a Reason"

Made by
Postum Cereal Co.,
Inc.,
Battle Creek, Mich.

Get This Free Book on Manure

YOU can save several hundred dollars for yourself each year by studying this book and putting the ideas to work on your farm. They are thoroughly practical ideas, worked out by the leading farm men in the United States and fully explained and illustrated in this 48-page book.

Your dealer has a copy of this book for you or can get it. If not, drop us a line and we will send it FREE.

The Ohio Cultivator Co.,
Bellevue, Ohio

MONEY in MANURE



FAMOUS Ohio SPREADERS

Because of its great capacity, its long life and its thorough work this spreader will handle manure at a lower cost per acre than any other machine or method.

Our Service Department

Always Give Name and Address When Sending Inquiries

WHO OWNS LAKE?

A owns a farm on which there is a lake, in which the state hatcheries have put fish. It has an outlet, but no inlet. Has A complete control of the lake? Or has the public a right to fish there?—H. M.

If A owns the bed of the lake (which is the case where it has not meandered) and all in his land, and the outlet is not a navigable stream, the public has no right to fish there, any statute to the contrary notwithstanding.—Rood.

FENCING—DOCTOR BILL

Does a large land and lumber company have to fence their share of land connected with a private owner if the private owner fences his share and wants them to fence theirs?

If I had a neighbor's horse or cow for winter and was paid to keep it, would I have to pay a doctor bill that incurred during that time, or would the owner have to pay me for getting it doctored?—J. R. V.

Adjoining owners are not required to pay any share of the line fence unless their lands are enclosed.

One who hires another to keep his horse or cow is liable only for such service as he hired.—Rood.

TELEPHONE CONTRACT

I ordered the telephone company to take out my phone. They told me a man would be out the following Monday to do it, but no one has ever come. Can the company collect rent for the intervening time? Can they collect rent for time phone was out of order?—L. E. J.

The right of the Telephone Company to collect for service depends upon the terms of their contract, which are not given in the question. Presumably they required the subscriber to sign the contract at the time the telephone was put in and have a written contract on file.—Rood.

RIGHT OF WAY

I would like to know a farmer's right on his half of road, which includes 33 ft. They are putting an electric line past our place and the company claims they can put the line any place they like on this 33 ft. Furthermore, they want the right-of-way of four more feet of my land, and in case I am forced to move my fence back they will be under no further obligation.—C. W. A.

The highway can be used to set up poles for any line of communication as one of the purposes of a road is to enable communication and travel. Nothing out of the highway can be used without condemnation and payment.—Rood.

PLOWING UNDER POTATO TOPS

I wish to know if ploughing potato stalks under is correct, as some farmers say it poisons the land for a future crop of potatoes. I have about 8 acres of high land, sandy soil, that was seeded to red top and clover after an oat crop two years ago. The clover is poor. I wish to know the best way to improve it.—M. Mc.

It is a mistaken idea that the land will be injured by plowing down potato tops. They furnish a limited amount of vegetable matter and are worth plowing down. However, it is not a good practice to plant potatoes on the same land two years in succession. It is better to have a rotation of crops. Follow potatoes with wheat, oats, or barley and seed to clover.

Your plan is very good for your five acres of sandy land. Give it a good covering of manure, if you have the manure, and then use commercial fertilizers, also when you plant the potatoes. If you can get the potatoes

off early enough, say early in September, you can seed to wheat without plowing and then seed to clover the following spring. It will improve your chances for a crop of wheat also for a good stand of clover to use a phosphate potash fertilizer on the wheat when you sow it.

This sandy soil may need, and probably does need, lime. This should be applied at time of harrowing the land for wheat after the potatoes have been harvested.

DESTROYING WILD MORNING-GLORY

How can I get rid of wild morning glory? Also what causes mould on clover while still uncut in the field?—G. A.

You can get rid of wild morning glories the same way as any other plant that grows. Hoe them up. Give clean cultivation, practice a three or four-year rotation and give the hoed crop in the rotation thorough cultivation. If the hoed crop is kept free from all weeds or obnoxious plants, this system of farming will take care of all weeds, etc., so they will not interfere with the crops grown.

A small patch of morning glories can easily be taken care of with a hoe, a larger one with horse tools.

The mildew on clover is something new in this state; in fact, this is about the first it has appeared in the central west. No one knows how much it will injure the clover, but those familiar with it in other sections do not apprehend that it will cause any great amount of damage.

FLAKY SUBSTANCE IN MILK

We have two Guernsey cows, fair milkers and produce about 4% butter fat. Both cows have been tested for tb. by county tester and declared O. K. When straining the milk nothing shows on the strainer but foam from fast milking. The cream is skimmed each day and placed in a jar to ripen. We churn about twice a week. When washing and working the butter we find a light flaky substance somewhat like the butter, but not so yellow, floating in the water, which quite readily separates itself from the butter and finally washes out entirely.

There is nothing to be alarmed at in this flaky film that is sometimes observed in milk. Many times this can be seen on milk after it has been separated, and some have thought it was cream, or fat and that the cream separator did not do a good job. But this film is not cream or butter-fat. It is a substance composed, they say, almost entirely of caseine, which is a constituent part of milk. It is simply a part of the milk and is perfectly normal and proper.

AUTOMOBILES ON HILL

Is it the law, or is it customary, when two automobiles meet on a hill, on a single track road, for the one to stop at the top and give the one coming up the right-of-way? In the event of two autos meeting on a hill, the one coming down getting in a rut, and rubbed close enough to bend and dent the front fender of the up-coming auto. Would the down-going driver be liable to any damage, other than to have fender straightened?—Subscriber.

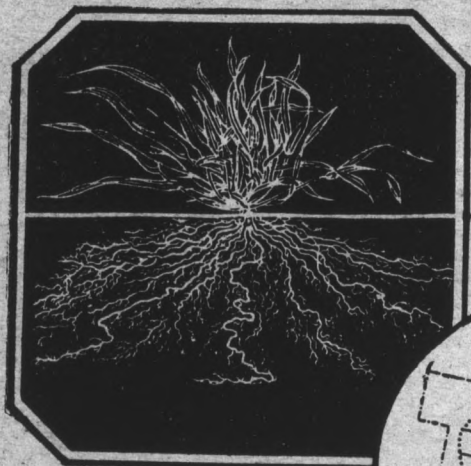
It would be a matter of courtesy for the automobile at the top of the hill to stop and give the one coming up the right of way. There is no liability except in case of negligence, and then only for the actual damage done.—Rood.

But this I say, he which soweth sparingly shall also reap sparingly, and he which soweth bountifully shall also reap bountifully.—II Corinthians,

When You Write to Advertisers Please Say "I Saw Your Ad. in The Michigan Farmer."

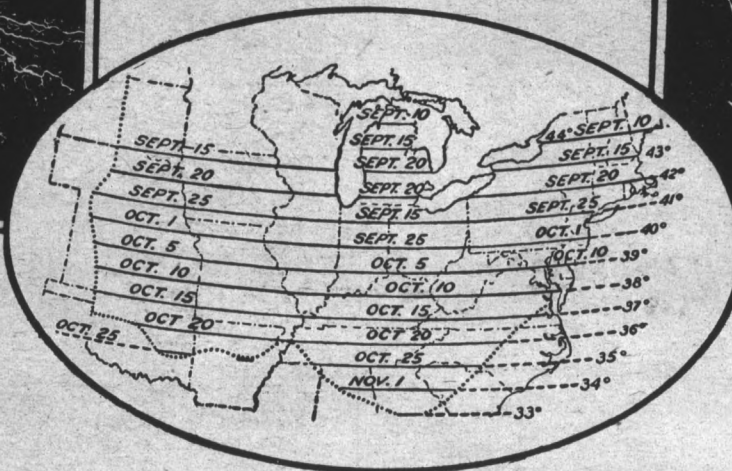
Get a good stand of wheat with Swift's Red Steer Fertilizers

*Fertilized wheat is better able to go through
the winter and resist insect pests and diseases*



Swift's Red Steer Fertilizers develop a strong root system and heavy top growth which helps the wheat plants to resist damage by heaving and winter killing

The map below gives planting dates recommended by the U. S. Dept. of Agriculture to avoid the Hessian fly. Late-sown wheat, particularly, requires Swift's Red Steer Fertilizers to put it in shape to go through the winter



In the spring the heavy top growth develops into numerous tillers. Swift's Red Steer Fertilizers supply the plant food which enables each of these tillers to bear a sound, well-filled head of wheat

MOST farmers follow the advice of their state Experiment Station and the U. S. Department of Agriculture and sow their wheat late to avoid the Hessian fly.

To get a good stand of wheat it is necessary to make sufficient fall growth to carry the plant through the winter.

Swift's Red Steer Fertilizers furnish available plant food to make sufficient fall growth and a vigorous spring growth that is better able to resist insect pests and plant diseases.

Fertilizers that are made right

For over fifty years Swift & Company has steadily maintained the reputation of making each Swift product the best of its kind. This reputation stands back of every bag of Swift's Red Steer Fertilizers.

The kind and amount of each plant food used is based on practical field results and scientific investigations. The red steer on the bag is your guarantee of highest possible quality.

Feed each plant

The use of modern mixing and grinding machinery insures Swift's Red Steer Fertilizers being thoroughly mixed. Huge storage facil-

ities enable us to cure and ship fertilizers in perfect drilling condition.

Swift's Red Steer Fertilizers are uniformly mixed and thoroughly cured. They distribute uniformly, assuring each plant its proper proportion of plant food. The well-fed plant makes extra tillers. Extra tillers mean extra heads per plant—extra bushels per acre and extra profits.

Buy Swift's Red Steer Fertilizers now

Experiments conducted by experiment stations of the leading winter wheat states show an average increase of 80 extra bushels of better quality wheat for each ton of fertilizer used.

You play safe when you buy Swift's Red Steer Fertilizers. On most soils use Swift's Champion Wheat and Corn Grower, 2-12-2, applying from 200 to 400 pounds per acre, to get the largest yields of best quality wheat and to help get a good clover catch.

On soils rich in available nitrogen and potash, see the local Swift dealer regarding the best brand to use.

Buy brands containing 14% or more plant food. The cost of freight, labor, bags, etc. is the same per ton regardless of the plant food content, just as your labor, interest on investment, taxes, etc., is the same whether you grow 15 bushels or 30 bushels of wheat per acre.

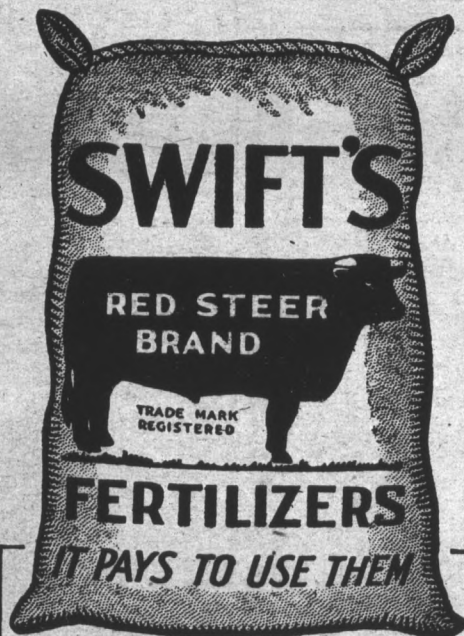
Buy from our local dealer or write us.

Swift & Company

DEPARTMENT 47

Fertilizer Works

Hammond, Ind.



Dealers: Above is reproduced the well-known Swift Red Steer Fertilizer bag. It is a mark of dependable fertilizers. We have a worth-while agency proposition to offer in territories where we are not represented. Write for details

"IT PAYS TO USE THEM"

A Profit-Maker with Roller Bearings and a Much Lower Price

WHEN the new-design International Manure Spreader came on the market in large numbers about two years ago, it immediately met with such an enthusiastic demand that dealers could not begin to fill orders. This machine marked a great advance in good spreader building and the farm public was quick to realize it.

Stop at the McCormick-Deering dealer's store and find out the reason for this pronounced success. Study in detail these great features:

1. Roller bearings at seven points.
2. Power delivered from both wheels.
3. Double ratchet drive with six feed speeds.
4. Short turn front axle; no pole whipping.
5. Rear wheels track with front wheels.
6. Tight bottom.
7. Two beaters and wide-spread spiral.
8. All-steel main frame.

The International Manure Spreader is a wealth producer; it will return extra bushels from the same land; it will return its price over and over and add to your bank account.

And its price has been cut down to an attractive low figure. That is another detail you will find to be true in connection with the International at the store of your McCormick-Deering dealer.

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA USA
(INCORPORATED)
92 Branch Houses and 15,000 Dealers in the United States



HICK'S DEVIL CAPSULES

Guaranteed to Kill and Remove Hog Worms in 24 Hours. Devil Worm Capsules are the quickest, surest, easiest and cheapest method. Used and recommended everywhere. Money back if dissatisfied for any reason. Send trial order now.

100 Red Devil Capsules, set of instruments, full instructions, prepaid to you, for \$5.75
Extra capsules sent prepaid; 25-\$1.50; 100-\$4.75; 500-\$20.00; 1,000-\$39.00.

CHAS. M. HICK & CO.
1018 S. Wabash Ave., Dept. 56 Chicago, Ill.

SHEEP

Shropshires

that will win at the State Fairs. I have them for sale. A big bunch of yearling rams as usual and priced reasonably.

KOPE-KON FARMS,
S. L. Wing, Prop., Coldwater, Mich.

Registered Shropshire Sheep. Yearling rams, ram lambs, ewes and two lambs, also 100 head high grade Shropshire ewes. Flock established 1890.
C. Lemen, Dexter, Mich.

FOR SHROPSHIRE yearling rams. Write or call on
ARMSTRONG BROS., R. 3, Fowlerville, Mich.

SHROPSHIRE RAMS Come to the farm or write
Dan Bocher, R. 4, Ewart, Mich.

Delaine Rams, extra fine ones bred for wool and mutton. Photos free.
F. H. Russell, Box 41, Wakeman, Ohio

HAMPSHIRE 30 grade breeding ewes \$300.
J. R. FRANK, Calumet, Mich.

FILLS SILO HUSKS CORN and SHREDS

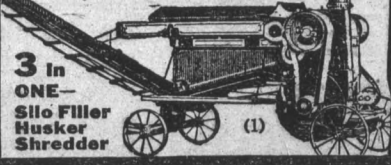
Three Machines in One

Here's a NEW, improved machine you will be interested to learn all about. It is the biggest labor-saver and money-maker ever offered the farmer. Think of it—3 machines in one—a silo-filler—husker and shredder.

Write for Free Book

Get the facts about this wonderful machine that enables you to get **DOUBLE** value from your corn crop. Postal brings it.

HALL MANUFACTURING CO.
Dept. A, Cedar Rapids, Ia.



ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. \$2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2 R Free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Strained, Torn Ligaments, Swollen Glands, Veins or Muscles; Heals Cuts, Sores, Ulcers, Allays pain. Price \$1.25 a bottle at dealers or delivered. Book "Evidence" free.
W. F. YOUNG, INC., 268 Temple Street, Springfield, Mass.

Fly-Free Dates for Michigan

How to Control the Hessian Fly

By R. H. Pettit,

Department of Entomology of the M. A. C.

THE hessian-fly causes losses of thousands of dollars to grain growers annually. Each year great numbers of farmers have witnessed the work of this insect and are anxious to know what methods should be followed to reduce such losses. On the other hand, however, the mere fact that grain is lodged or some heads are broken over should not always be taken to mean that the fly is present.

The fly attacks wheat primarily, but also works in winter barley, rye and some grasses. It causes the straw to lodge just before harvest and also prevents the grain heads from filling properly. The work of this insect also results in the death of some of the plants in autumn and winter.

Life History and Work of the Insect

There may be many generations of the hessian-fly, but two of them are of more importance than the others to wheat growers. The fly passes the winter as a larva inside its puparium (flax-seed), which is tucked in between the leaf-sheaths just above the root. In spring the larvae pupate and finally

There comes a time each year, usually in September, after which no eggs are laid, and if we can so time our seeding that the plants will not be suitable for receiving eggs until after the flies are through, then we escape the "fly" altogether. This time is called the "fly-free date" and varies with each season. It is, however, possible to compute the relative time between different parts of the State and to base the time for sowing on the average time observed during a period of 25 years over the entire United States. This study is based on an investigation made by Dr. A. D. Hopkins, of the U. S. Bureau of Entomology.

Following is a calendar setting the dates for the different counties in the Lower Peninsula. It is, of course, imperfect as yet because no one can forecast what the weather is going to be a month or so in advance. Furthermore the table deals with averages based on the weather of years past. It is based on a study of the advance of the season from the South to the North and the dates are determined by the latitude, the longitude, and the altitude. It should, as well, be corrected for character of soil and for the influence of bodies of water. Furthermore, some of our counties vary a good deal in altitude, and a high altitude hastens the date of seeding. No attempt has been made in this calendar to compute for areas smaller than counties, nor have we tried to allow for the influence of large bodies of water, although Lake Michigan undoubtedly lengthens out the period during which new seeding may get established and, therefore, makes it safe to delay seeding somewhat beyond the date set. This applies merely to the west coast for a few miles inland. Where the altitude varies considerably in a county, more than one seeding period is indicated, the earlier date for the more elevated part of the county. The elevations given are for the major parts of each county and do not include records of small areas.

While we do not have facilities for ascertaining the elevation above sea level of all points in the state, we do have many records and we shall be glad to furnish this information for individual locations on application, so far as we have it.

The above comment and the list of fly-free dates for sowing wheat in each county of Michigan, which may be found on page 191 of this issue, are from a circular published by the Michigan experiment station.—Eds.

Senate Hearing on Filled Milk

Review of the Interesting Discussion in Which Dairy Representatives Had Much Data on Tap

THE filled milk bill hearings before the sub-committee of the Senate closed with the friends of the bill having by far the best of the argument. The sub-committee will report their findings and evidence to the whole committee, which will cause some delay in reporting it out onto the floor of the Senate.

The opponents of the bill based their arguments largely upon the grounds that filled milk was necessary to supply the poor people who could not afford to buy pure milk, either whole or condensed. It was amply proved by the proponents of the bill that filled milk was being sold in Pennsylvania, New Jersey and other states at practically the same price charged for whole or condensed milk, showing that retailers and not the consumers absorbed the additional profit. There-

fore it is simply a case where if the manufacture of filled milk is continued unrestricted the dairy industry would be greatly injured, if not ruined, with no benefit to the consumer of milk.

An attorney for the filled milk manufacturers accused the proponents of the bill with having entered into a trade conspiracy to injure a certain manufacturer of filled milk, but when asked by witnesses on the other side to introduce their evidence of a conspiracy the filled milk lawyers failed to do so.

After the filled milk interests had closed their case, Charles W. Holman, executive secretary of the National Milk Producers Federation, pointed out to the committee that no evidence had been introduced to substantiate
(Continued on page 189)



Add Years of Life to Your Tractor

Chart of Recommendations

Trade Name	Motor Oil	Trade Name	Motor Oil
Akron.....	H.	Magnet B.....	H.
Allis-Chalmers—All Models.....	H.	Mark VI Once Over.....	H.
Allied.....	H.	Midwest.....	E. H.
All Work—Both Models.....	H.	Minneapolis, 12-25 and 17-30.....	H.
Andrews-Kinkade.....	E. H.	Minneapolis, 22-44 and 35-70.....	E. H.
Appleton.....	H.	Mogul.....	H.
Armington.....	H.	Mohawk.....	H.
Aultman-Taylor, 22-45.....	E. H.	Monarch-Industrial.....	H.
Aultman-Taylor, 30-60.....	E. H.	Nelson Junior & Senior.....	H.
Ayltman-Taylor, 15-30.....	E. H.	Ohio.....	H.
Automotive.....	H.	Oil Gas, 20-42.....	E. H.
Avery Model C.....	H.	Oil Gas, 25-50.....	E. H.
Avery, 8-16, 12-25, 25-50.....	E. H.	Parrett.....	H.
Avery Track Runner.....	H.	Peoria.....	E. H.
Bates.....	E. H.	Pioneer, 18-36 and 30-60.....	E. H.
Bates Steel Mule—All Models.....	H.	Plow Man.....	H.
Bear.....	H.	Porter.....	H.
Best Tracklayer, 30.....	E. H.	Port Huron.....	H.
Best Tracklayer, 60.....	E. H.	Prairie Dog, 10-18 and 15-30.....	H.
Big Farmer.....	E. H.	Quadpull.....	H.
Big Four, E-B.....	E. H.	Reed.....	H.
Biltwell.....	H.	Reliable.....	E. H.
Boring.....	H.	Rex.....	H.
Burnoil.....	E. H.	Rumely Oil Pull, 12-20.....	E. H.
Capitol—All Models.....	E. H.	Rumely Oil Pull, 16-30.....	E. H.
Case, 10-18 and 15-27.....	H.	Rumely Oil Pull, 20-40.....	E. H.
Case, 22-40.....	E. H.	Rumely Oil Pull, 30-60.....	E. H.
Case, 20-40.....	E. H.	Russell "Big Boss," 20-35.....	E. H.
Cletrac, 9-16 and 12-20.....	H.	Russell "Giant," 30-60.....	E. H.
Coleman.....	E. H.	Russell "Little Boss," 15-30.....	H.
Common Sense.....	H.	Russell "Junior," 12-24.....	H.
Dakota.....	H.	Samson Model M.....	H.
Dart Blue "J".....	H.	Savage A.....	E. H.
Depue.....	H.	Shawnee, 6-12 and 9-18.....	H.
Dill Harvesting.....	M. H.	Shelby Model C.....	H.
Eagle, 12-22 and 16-30.....	E. H.	Shelby Model D.....	E. H.
E-B, 9-16 and 12-20.....	H.	Square Turn.....	E. H.
E-B, 16-32.....	H.	Stinson Heavy Duty.....	H.
Farm Horse.....	E. H.	Titan.....	H.
Farquhar, 15-25.....	H.	Topp-Stewart.....	H.
Farquhar, 18-35 and 25-50.....	H.	Toro.....	H.
Fordson.....	H.	Townsend—All Models.....	E. H.
Flour City Junior, 20-35.....	H.	Traylor.....	H.
Flour City, 30-50 and 40-70.....	E. H.	Triumph.....	E. H.
Fox.....	E. H.	Trundar.....	H.
Four Wheel Drive Fitch.....	E. H.	Twin City, 12-20 and 20-35.....	E. H.
Frick, 12-20.....	E. H.	Twin City, 40-65.....	E. H.
Frick, 15-28.....	H.	Twin City, 60-90.....	E. H.
Good Field.....	H.	Uncle Sam—All Models.....	H.
Grain Belt.....	H.	Vim.....	H.
Gray.....	H.	Wallis.....	H.
Great Western.....	H.	Wallis Cub.....	H.
Hart-Parr—All Models.....	E. H.	Waterloo Boy N.....	H.
Heider—Model "C".....	H.	Wellington, 12-22 and 16-30.....	E. H.
Heider—Model "D".....	H.	Westmore.....	H.
Holt Caterpillar, T-35.....	H.	Western.....	E. H.
Holt Caterpillar (5 Ton).....	H.	Wheat.....	E. H.
Holt Caterpillar (10 Ton).....	E. H.	Whitney.....	E. H.
Holt Caterpillar (15 Ton).....	E. H.	Wichita.....	H.
Huber Light & Super Four.....	H.	Wilson.....	H.
Illinois Super Drive, 18-30 and 22-40.....	E. H.	Wisconsin, 16-30 and 22-40.....	E. H.
Indiana, 5-10.....	H.	Yuba Ball Tread—All Models.....	H.
International, 8-16.....	H.		
International, 15-30.....	H.		
J. T.....	E. H.		
Keek Gonnerman.....	E. H.		
Kinnard.....	H.		
La Cross.....	H.		
Lauson, 12-25 and 15-30.....	H.		
Leader, 18-36.....	H.		
Leader, 12-18 and 16-32.....	E. H.		
Leader, 18-35.....	E. H.		
Leonard Four Wheel Drive.....	H.		
Liberty.....	E. H.		
Little Giant A. & B.....	H.		
London Model S, 12-25.....	H.		

N. B. For recommendations of grades to use in automobiles and trucks consult chart at any Standard Oil Co. (Indiana) station.

KEY

M. L.—Polarine Medium Light.
M. H.—Polarine Medium Heavy.
H.—Polarine Heavy.
E. H.—Polarine Extra Heavy.

THE heart of your tractor is the engine. The life blood of the engine is the oil which lubricates it. When you give your tractor correct lubrication, you are adding years of life to the machine. There is no such thing as a second best lubricating oil or grease. There is only the right kind and the wrong kind. The right kind not only prolongs the life of the tractor, but gets more power out of it, and substantially reduces your fuel and repair bills. The wrong kind means "scored" cylinders, "burned" bearings, and a host of other expensive damages. Repair bills for such damages are simply inexcusable in the light of present scientific knowledge.

Use Polarine

THE PERFECT MOTOR OIL

Made in Four Grades

Seals Pistons Against Loss of Power

The correct grade for your tractor is indicated in the chart. Expert chemists working in the modern laboratories of the Standard Oil Company of Indiana have perfected these grades of Polarine after studying the design of the tractor, the type of lubricating system used, and the behavior of the engine both in the shop and on the farm.

There is nothing theoretical about Polarine Oils. They are scientifically correct and practically efficient. They take into account all the mechanical factors; for instance, clearance between the piston and the cylinder wall, method of cooling, lubricating system used, etc.

Polarine flows freely between the bearing surfaces, seals pistons against loss of power, leaving no dry spots which would rub together and score the cylinders.

Avail yourself of tested, scientific lubricants recommended by the staff of lubricating engineers of the Standard Oil Company (Indiana) bearing the name Polarine, The Perfect Motor Oil. Consult the chart to the left.

Standard Oil Company

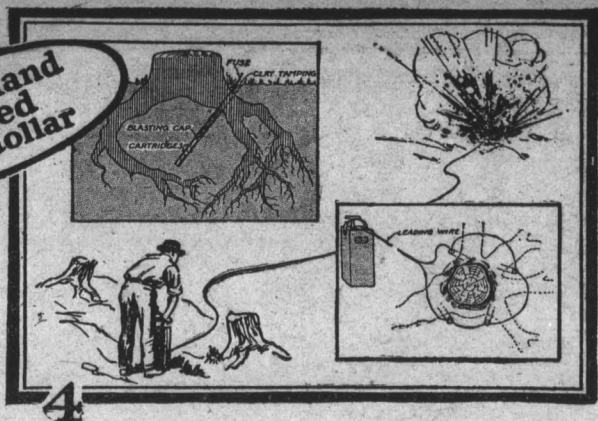
(Indiana)

910 S. Michigan Ave.

Chicago

**1/3 more land
cleared
per dollar**

—with DUMORITE
save still more
money by using the
latest, cheapest
blasting methods.



1 Driving the hole



2 Cartridge Prepared and Ready to Load



3 Tamping and Filling the Hole

Firing the Charge

THERE are two methods of firing a dynamite charge: (1) by means of cap and fuse, or (2) by means of electric blasting caps and blasting machine.

When the cap and fuse method is used the blaster must remember that the fuse burns at the rate of 32 to 40 seconds per foot, and must allow ample length of fuse to enable him to retire to a safe point before the explosion. Six inches of fuse out of the bore hole should be sufficient.

When blasting very large stumps, where it is necessary to fire several charges simultaneously under the anchor roots, electric blasting caps and an electric blasting machine must be used. The electric method can also be used, of course, to fire a single charge.

The diagram above illustrates these two methods.

Dumorite, the new du Pont dynamite, has greatly reduced the cost of clearing land. 135 to 140 sticks of Dumorite cost the same as 100 sticks of 40% dynamite. Stick for stick, they have the same strength and Dumorite possesses also the slower heaving power of 20% dynamite, which makes it a better farm explosive than either 40% or 20%.

Order Dumorite from your local dealer and write us for free 104-page "Farmers' Handbook of Explosives." It gives full instructions covering the use of dynamite for land clearing, ditching and tree planting.

E. I. DU PONT DE NEMOURS & CO., Inc.

McCormick Building
Chicago, Ill.

Hartley Building
Duluth, Minn.

NON-HEADACHE

DU PONT

NON-FREEZING

DUMORITE

CAPITAL BRAND PAINTS

No better paint made. Compare our formula with any other.

OUTSIDE WHITE

75% Pure White Lead
20% Pure Zinc Oxide
5% Magnesia Silicate
90% Pure Refined Linseed Oil
10% Cooked Oil and Shelac Drier.

OUTSIDE COLORS

70% Pure White Lead
20% Pure Zinc Oxide
10% Ground Colors
90% Pure Raw Linseed Oil
10% Cooked Oil and Shelac Drier.

We guarantee our paint. Write for prices and free color card. Agents wanted. Excellent proposition in unoccupied Territory.

Consumers Paint Co.

1600 Herbert St.
LANSING, MICH.

TIRES WITH 500 NAIL HOLES LEAK NO AIR

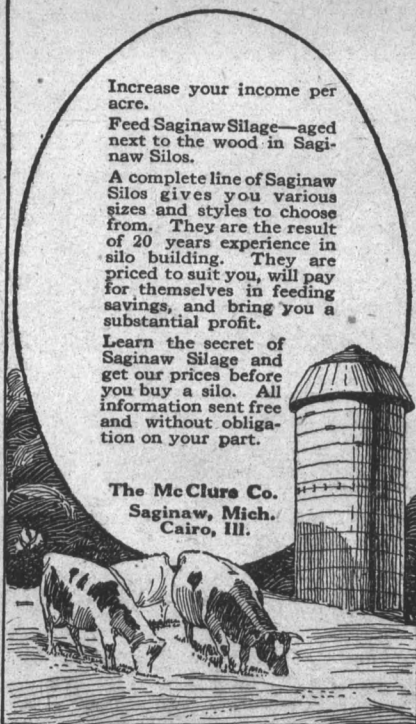
Mr. F. H. Coats of the Milburn Puncture Proof Tire Company of Chicago has invented a new puncture proof inner tube which in actual test was punctured 500 times without the loss of any air. It greatly increases your tire mileage. Many users have run from 10,000 to 12,000 miles without removing this wonderful tube from the wheel and the beauty of it all is that this new puncture proof tube costs no more than the ordinary tube and makes riding a real pleasure. Wonderful opportunity for agents. Write today. Simply send name—a postcard will do.

MR. F. H. COATS,
333 West 47th St., Chicago, Ill.

Wanted Working foreman on up-to-date 240 acre farm. Permanent position for competent man.
Fred H. Knox, Portland, Mich.

Please Mention The Michigan Farmer
When Writing to Advertisers

Feed Saginaw Silage



Increase your income per acre.

Feed Saginaw Silage—aged next to the wood in Saginaw Silos.

A complete line of Saginaw Silos gives you various sizes and styles to choose from. They are the result of 20 years experience in silo building. They are priced to suit you, will pay for themselves in feeding savings, and bring you a substantial profit.

Learn the secret of Saginaw Silage and get our prices before you buy a silo. All information sent free and without obligation on your part.

The McClure Co.
Saginaw, Mich.
Cairo, Ill.

Wanted Man & Wife To take charge of farm. Baldwin Mich. Located 75 miles north of Grand Rapids. Will furnish 2 hogs. Butter and Milk and all the garden stuff he can raise for himself. State nationality and wages expected, must be a worker and furnish references, also state how many there are in family. Address H. W. LEVERENTZ, 517 Mather St., Chicago, Ill.

Wanted Experienced married dairyman with \$1000. to take half interest in dairy. Land, tools and horses furnished. Write Box 53, Otter Lake, Mich.

Francisco Farm Notes

By P. P. Pope

Are You Stale on the Job?

AUGUST is the month for rest and recreation. We have always looked forward to August for a breathing spell, for a little relief from the rush and hurry of the planting and the harvest, and for a chance to build up a little in preparation for the busy fall season. This busy time begins with the corn cutting and lasts thru the harvest of the beans, corn and beets, the silo filling, bean threshing, wheat sowing, etc. In fact there will be little let up until snow flies and winter shuts down for good.

The farmer needs a little rest, a change, a building up of his reserve force and energy, just as much as the city man who works fast and furious in an office. A little vacation for the man or woman who works hard at any occupation can not be counted as time lost. Long continued mental or physical effort tends to pull down one's vitality, to lessen his efficiency, to dull his mentality. In short, to make him "stale on the job." When one reaches that point it is best for him to get away from it all for a time.

Rest at home will not get the best results. He needs to get away from familiar surroundings and forget them, then do something that is pleasing, something he wants to do.

The same kind of vacation will not do for all of us. Some of us are content to wander off amid the bushes in the huckleberry country and come home laden with the rich fruit, and the delicious sauce and pies that follow thruout the year will serve as a frequent reminder of the good time we had. Some of us prefer to just "go fishin'," or to spend a few days just a "lazyin" around the borders of some one of our numerous little inland lakes or streams whose waters are so delightful at this time of year. I loaned my tent to a couple of the neighbors the other day for this purpose. They were not so particular about the fish but wanted to get away from home and rest and "go fishin." Some farmers will want to visit the city, and still others will choose to pilot the "Oughto," as Hy Syckle calls it, out across the country and while he bolls along over the smooth roads, watch the rest of the world go by.

The form of vacation he may choose is of little consequence just so he gets the rest and change and comes back refreshed and ready to tackle the job again with mind alert and body quick to respond. He will accomplish more in one day than he would in three when he gets what I call "stale on the job." I recently heard a conversation between two farmers that illustrates the point. It ran thus: "Do you ever get all balled up with your work, when it seems everything needs doing at once and you hardly know which way to turn?"

"Oh yes, every once in a while."

"What do you do then?"

"Just hitch up and go to town. Forget it for a while and next morning things will not look half so bad and first thing you know they will straighten themselves out." That is what an alert mind does, and the quickest way to clear the mental vision oftentimes is to get entirely away from the work for a time and enjoy a complete change. Change rather than idleness is rest, and furnishes that variety

which adds spice to life and makes it enjoyable.

And while on the subject of vacation, let me add a word in behalf of the good housewife. Everything I have said here applies to her with equal if not greater force than to the farmer himself. Her work is more monotonous, more exacting, more confining than his. It would never do for her to get "stale on the job" or let anything on the job get stale so let him not forget to take her along and see that she has a rest, a change and a good time.

THE BALDWIN APPLE.

DURING the severe winter of 1917 to 1918, many Baldwin trees in northern latitudes were seriously injured or completely killed out. This winter-injury has been brought home to the growers in the past two or three years thru a decline in their Baldwin plantings and, as a result, the popularity of the variety has suffered somewhat in certain apple regions.

The Baldwin is entirely too good a market apple to lose favor with commercial growers in general. It is evident, however, that the variety is not adapted to localities where the winter temperatures drop as low as they do in northern New York, and that in such regions varieties developed under more severe conditions, such as the McIntosh, should be substituted for the Baldwin.

Horticulturists at the New York Experiment Station assert that the Baldwin is an apple of location and that its tendency to winter-kill is probably its most undesirable characteristic. The McIntosh, on the other hand, is adapted to low temperatures; but since it is a late fall or early winter apple, it will never compete seriously with the Baldwin on the market. However, McIntosh can undoubtedly be grown to advantage where the Baldwin is dying out from winter-injury.

PUBLIC SPUD DIPPING TANK.

SO far as known the only public potato dipping tank in the United States and possibly in the world is the one located at the farm of Thomas Buell, president of the Michigan Potato Growers' Association, at Elmira. The tank which was erected by the local Co-operative Marketing association was used last spring to dip over four thousand bushels of seed potatoes. The erection of this tank was Mr. Buell's idea. He believes thoroughly in encouraging growers to produce better potatoes, not only by planting certified seed, but also by taking every precaution to keep the seed free from disease.

The tank is elevated on a little platform so that the patron can drive closely, set the crates filled with his seed potatoes into the solution, allow them to remain there thirty minutes and then lift out and place on the drain board. Later they are reloaded and taken back to the farm for planting.

From the experience of the growers in this locality, it would seem that the public dipping tank offers the most economic method of treating seed potatoes. It is believed by these practical and progressive farmers that in only a short time this method will be universal throughout the Michigan potato-growing districts. The cost of the tank is small, while it greatly facilitates the work of treating and reduces the amount of material and labor needed to the lowest terms.

KEEP RECORDS ACCURATE.

DURING the rush season on the farm there is a tendency to let the records and accounts slide until a more convenient season. This usually results in inaccurate book-keeping. We are coming to realize the value of dependable records. They furnish the basis for good farm management.

These records are worth the time it requires to keep them. It may be a little inconvenient and at times no doubt requires a great deal of exertion to post the books daily. However, when the books are closed at the end of the year the farmer will have a feeling of satisfaction in their dependability if he has kept them up regularly.

GERMANY NEEDS MEAT.

IF the present lowered standard of living in Germany is not to decline still further, great quantities of imported meats will be necessary to prevent Germany's meat larder from running completely empty. One German company has just signed a contract with Argentina to deliver 50,000 tons of mutton and 60,000 tons of beef annually for a period of two years. The meat will be paid for in German manufactured goods.

LIVINGSTON FARMERS HOLD PICNIC.

FULLY twelve hundred people gathered in Gregory Grove, near Howell, to attend the Livingston County Farmers' Picnic on July 31. A splendid platform program was preceded by athletic contests covering a wide range of abilities. Country and city folks worked together to make the day a success.

SAVING HAND-WORK ON THE SEED CROP.

SO far as available farm help is concerned, we seem to be just as hard up in this community as during wartime. There seems to be plenty of hands loafing around the local towns but these will not work—and, if they would come out in the country, their skill would probably show to best advantage with the table fork. So we have to use every means possible to save hand-labor. Our method of handling the mammoth clover seed crop, and June also, when it gets a good growth, may be of interest, and helpful to some.

We take the grain binder, put the canvasses on as for cutting grain, take off the chain that drives the packers and take off one of the packers. The other packer will then drop down out of the way. Take off, also, the trip that regulates size of bundles. This leaves nothing in the way to stop or shell the seed. The clover will run off in a fine windrow which will not be in the way of the horses or binder on the next round. We find that by cutting in the forenoon, or afternoons, too, when the clover is not bone dry, we shell less seed than by any other method. The binder cuts faster than the mower. The saving in hand-labor comes in the bunching. For this we take one horse on a dump rake, drive him between two windrows, and rake up two rows at once in as neat piles as possible—doing this, of course, when the seed is a little damp. Then to turn the seed so as to dry the under side we take the rake and go over the seed just the opposite way and tip the piles over. This makes the piles more compact, as well as turning another side to the sun, and thus the seed is ready to be loaded for hulling without touching it with a fork.—C. S. Langdon.

Keep feeding the hens or they'll stop laying. Keep feeding the pullets or they'll stop growing.

Montgomery Ward & Co.

The Oldest Mail Order House is Today the Most Progressive

Don't You Miss
this Money Saving
Opportunity



Your Free Copy of This Golden Jubilee Catalogue Is Now Ready for You

Fifty years' experience in making low prices, in selecting worthy, serviceable goods, and offering them at a saving, has gone into the making of this big complete Golden Jubilee Catalogue.

Your FREE copy is waiting here for you. To write for it today is to learn the lowest price you need to pay for everything you need for the Home, the Farm and the Family.

There is a Cash Saving of at Least \$50 for You

Getting the right price today is a matter of choosing the right place at which to buy. To know the lowest price, to get the actual market price on everything you buy, will mean a saving of at least \$50 on your needs and your family's needs this season.

Montgomery Ward & Co. quote the lowest prices possible on new, fresh merchandise of serviceable quality. We do not sell cheap unreliable merchandise. We do sell good goods at the lowest cash prices of the year. To buy from Montgomery Ward & Co. is complete assurance of Satisfaction and Certain Saving.

Everything for the Home, the Farm and the Family

For the Woman. Are you interested in New York styles, the newest styles? Ward's own fashion experts have selected in New

York everything for you and for your children—coats, suits, dresses, hats and shoes, and all are offered to you at a big saving.

For the Man. Do you want full value for your dollar? All your personal needs, everything from clothing to a good cigar, is offered you at prices that bring you the greatest return for your money.

For the Home. Everything that goes to make the home modern and pleasant, rugs, wall paper, furniture and home furnishings are shown in this catalogue at prices that save many dollars.

For the Farm. Everything the farmer needs—tools, roofing, fencing, paint, hardware, of guaranteed dependable quality—at amazingly low prices.

Every item in this catalogue is guaranteed exactly as pictured and described. Your money back if you are not entirely satisfied with everything you order.

Your Orders Shipped Within 48 Hours

We announce a new perfected service for you.

After a year's work, and study, originating and testing new systems, and employing experts, we have perfected a new system that makes certain a very quick and satisfactory service to you.

Practically every order that comes to Montgomery Ward & Co. this season will actually be shipped and on its way to you in less than 48 hours.

Lower prices, better merchandise, and now a new service. True it is indeed that "Montgomery Ward & Co., the Oldest Mail Order House, is Today the Most Progressive."

Mail this coupon
to the one of our five houses nearest you

To MONTGOMERY WARD & CO., Dept. 37-H
Chicago, Kansas City, Saint Paul, Fort Worth,
Portland, Ore.

(Mail this coupon to the house nearest you.)

Please mail me my free copy of Montgomery Ward's Golden Jubilee Catalogue.

Name.....

Address.....

MONTGOMERY WARD & CO.

Chicago Kansas City St. Paul Fort Worth Portland, Ore.



AGRICULTURE---the foundation
of Michigan's Wealth---is the Back-
bone of the MICHIGAN State Fair

DETROIT
September 1-10

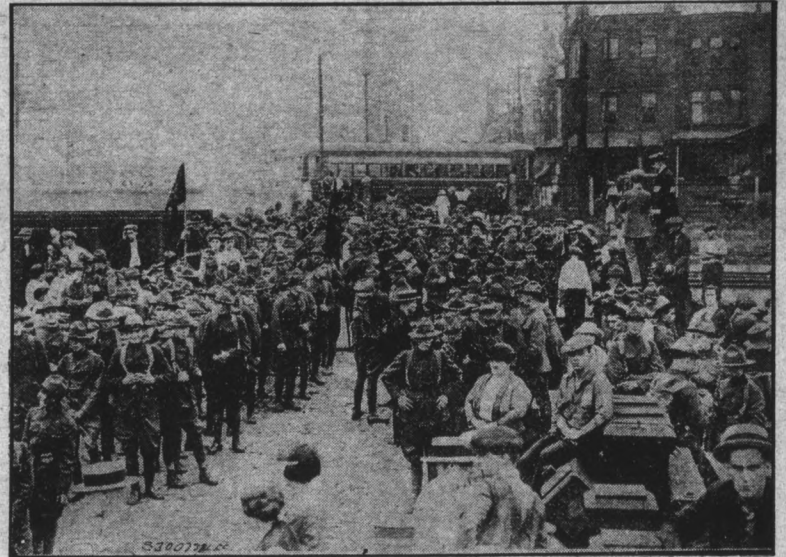
10 DAYS 10 NIGHTS

MICHIGAN STATE FAIR

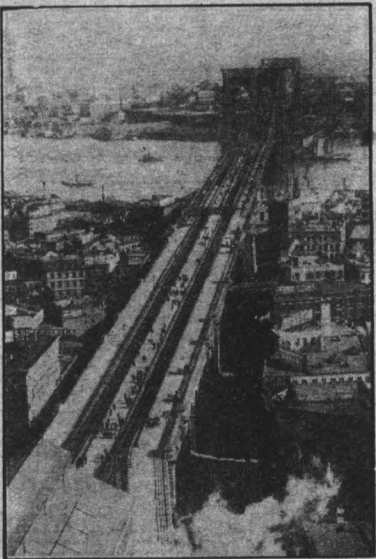
WORLD EVENTS IN PICTURES



Miners and families in strike district in Pennsylvania are forced to seek shelter in tents and crude huts after being evicted from their homes owned by coal companies.



Showing the Pennsylvania National Guard troops mobilizing in Philadelphia, bound for the coal regions of the State for strike duty.



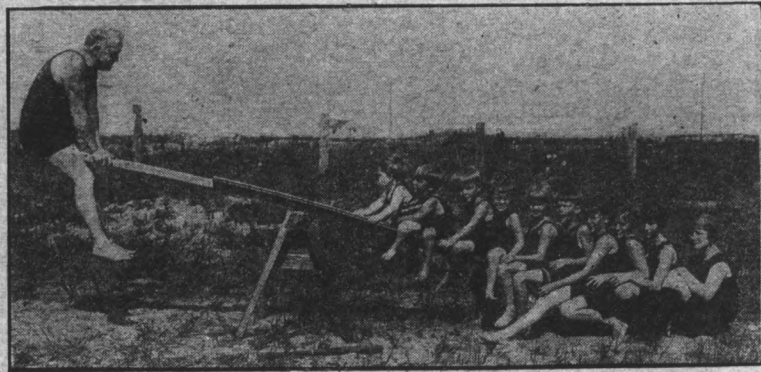
Giant cable slips on Old Brooklyn bridge, which is nearly 40 years old. No immediate danger appears.



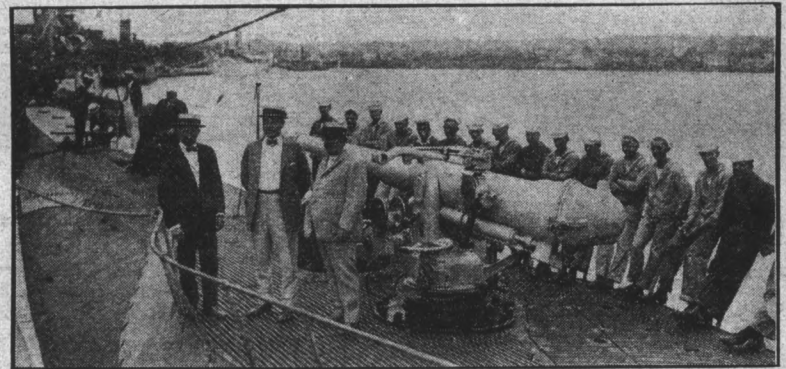
Heave Ho! The Bluejackets tugged the bridal car from the church at the wedding of Lord Mountbatten and his \$100,000,000 bride.



Mary Agnes Vitchestain, of Pittsburgh, Pa., a 14-year-old girl-preacher, who follows Billy Sunday.



Frank Bunker Gilbreth, of Fairfield, Maine, takes the ten little Gilbreths for a sea-saw ride. Both Mr. and Mrs. Gilbreth are noted for their books and writings on various subjects.



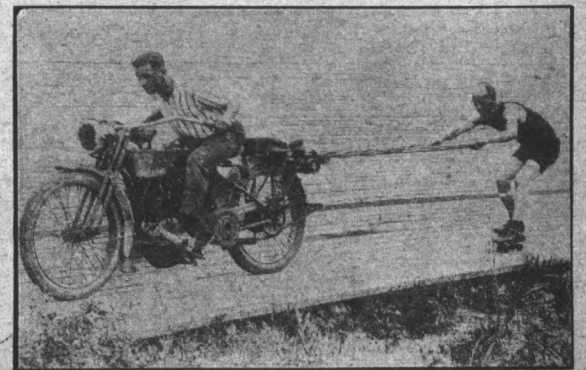
Senators inspect Uncle Sam's newest submarine with engines of 1800 horse power while on tour of inspection of Washington Navy Yard.



Prince of Wales was best man at the wedding of Lord Mountbatten, the most imposing affair since that of Princess Mary's.



Miss Lucy Buford Triplett, of Washington, D. C., has been voted fairest bobbed-haired beauty.



This Boston skating marvel wore out five pairs of skates while traveling at the rate of 40 miles an hour, over the race bowl in Miami, Fla.

THE CROSS-CUT —By Courtney Ryley Cooper

Copyright, 1921, By Little, Brown & Company

Fairchild whirled at a voice by his side and looked straight into the crooked eyes of Thornton Fairchild's enemy. The blue-white scar had turned almost black now, the eyes were red from swollen, blood-stained veins, the evil, thin, crooked lips were working in sullen fury. They were practically alone at the mouth of the mine, Fairchild with a laugh dying on his lips, Rodaine with all the hate and anger and futile malice that a human being can know typified in his scarred hawklike features. A thin, taloned hand came upward, to double, leaving one bony, curved finger extending in emphasis of the words which streamed from the slit of a mouth:

"Funny, weren't you? Played your cheap jokes and got away with 'em. But everybody ain't like them fools!" he pointed to the crowd just rounding the rocks, Harry bobbing in the foreground. "There's some that remember—and I'm one of 'em. You've put over your fake; you've had your laugh; you've framed it so I'll be the butt of every numbskull in Ohadi. But just listen to this—just listen to this!" he repeated, the harsh voice taking on a tone that was almost a screech. "There's another time coming—and that time's going to be mine!"

And before Fairchild could retort, he had turned and was scrambling down the mountain side.

That Old-fashioned Dance

IT was just as well. Fairchild could have said nothing that would have helped matters. He could have done nothing that would have damaged them. The cards were still the same; the deck still bore its markings, and the deal was going on without ever a change, except that now the matter of concealment of enmities had turned to an open, aboveboard proposition. Whether Harry had so intended it or not, he had forced Squint Rodaine to show his hand, and whether Squint realized it, that amounted to something. Fairchild was almost grateful for the fact as he went back into the tunnel, spun the flywheels of the gasoline engines and started them revolving again, that the last of the water might be drained from the shaft before the pumps must be returned to their owners.

Several hours passed, then Harry returned, minus his gorgeous clothing and his diamond ring, dressed in mining costume now, with high leather boots into which his trousers were tucked, and carrying a carbide lantern. Dolefully he looked at the vacant finger where once a diamond had sparkled. Then he chuckled.

"Sam took it back," he announced. "And I took part of the money and paid it out for rent on these pumps. We can keep 'em as long as we want 'em. It's only costing about a fourth of what it might of. Drowning's worth something," he laughed again. Fairchild joined him, then sobered.

"It brought Rodaine out of the bushes," he said. "Squint threatened us after they'd hauled you down town on the rail."

Harry winked jovially.

"Ain't it just what I expected? It's better that wye than to 'ave 'im snoopin' around. When I came up to the mine, 'e was right behind me. So I just gave 'im something to get excited about. It wasn't a minute after I'd thrown a rock and my 'at in there and let out a yell that he came thumping

mustached visage of Harry came nearer to the carbide. Harry looked up.

"Mother 'Oward almost slapped it off!" came his rueful answer. "For not telling 'er what I was going to do, and letting 'er think I got drowned. But 'ow was I to know?"

He went to tinkering with the big chiv wheel then, supported on its heavy timbers, and over which the cable must pass to allow the skip to travel on its rails down the shaft. Fairchild absently examined the engines and pumps, supplying water to the radiators and filling an oil chp or two. Then he turned swiftly, voicing that which was uppermost in his mind.

"When you were here before, Harry, did you know a Judge Richmond?"

"Yeh." Harry pawed his mustache and made a greasy, black mark on his

of my own father."

Harry nodded.

"So 'e was. And a good friend. But that was before things 'appened—like they've 'appened in the last ten years. Not that I know about it of my own knowledge. But Mother 'Oward—she knows a lot."

"But what's caused the change? What—?"

Harry's intent gaze stopped him.

"'Ow many times 'ave you seen the girl when she wasn't with young Rodaine?"

"Very few, that's true."

"And 'ow many times 'ave you seen Judge Richmond?"

"I haven't ever seen him."

"You won't—if Mother 'Oward knows anything. 'E ain't able to get out. 'E's sick—apoplexy—a stroke. Rodaine's taken advantage of it."

"How?"

"'Ow does anybody take advantage of somebody that's sick? 'Ow does anybody get a 'old on a person? Through money! Judge Richmond 'ad a lot of it. Then 'e got sick. Rodaine, 'e got 'old of that money. Now Judge Richmond 'as to ask 'im for every penny he gets—and 'e does what Rodaine says."

"But a judge—"

"Judges is just like anybody else when they're bedridden and only 'arf their faculties working. The girl, so Mother 'Oward tells me, is about twenty now. That made 'er just a little kid, and motherless, when Rodaine got in 'is work. She ain't got a thing to sye. And she loves 'er father. Suppose," Harry waved a hand, "that you loved somebody awful strong, and suppose that person was under a influence? Suppose it meant 'is 'appiness and 'is 'ealth for you to do like 'e wanted you? Wouldn't you go with a man? What's more, if 'e don't die pretty soon, you'll see a wedding!"

"You mean—?"

"She'll be Mrs. Maurice Rodaine. She loves 'er father enough to do it—after 'er will's broken. And I don't care 'oo it is; there ain't a woman in the world that's got the strength to keep on sayin' no to a sick father!"

Again Robert Fairchild filled an oil cup, again he tinkered about the pumps. Then he straightened.

"How are we going to work this mine?" he asked shortly. Harry stared at him.

"'Ow should I know. You own it!"

"I don't mean that way. We were fifty-fifty from the minute you showed up. There never has been any other thought in my mind—"

Farming Versus Agriculture

In former years, when men essayed
Good Mother Earth to tickle,
It was not counted as a "trade"
To wield the scythe and sickle.
To steer a plow and drive a nag
And, with the feet loam-weighted,
Plod back and forth behind a "drag"
As "Hopping clods," was rated.

He counted brawn ahead of brain,
The doughty son of Labor
Who daily toiled thru sun and rain,
As likewise did his neighbor.
He blindly fought the worms and flies
Which yearly were alarming,
And, tho he took the county prize,
His toil was classed as "farming."

But, in these days of modern tools
And more progressive seeding,
We learn our precepts in the schools,
And thru constructive reading.
A good farm paper fills the need,
And is a potent factor
In raising crops from fertile seed,
As much so as the tractor.

Where formerly we cast aside
All scientific data,
It now affords us joy and pride
To raise a smooth potato.
So, raising live stock, corn and peas,
In spite of pest and vulture,
Is a "profession," if you please,
And classed as "agriculture."

in, looking around. I was 'iding back of the timbers there. Out 'e went, muttering to 'imself, and I—well, I went to Center City and read the papers."

They chuckled together then; it was something to know that they had not only forced Squint Rodaine to show his enmity openly, but it was something more to make him the instrument of helping them with their work. The pumps were going steadily now, and a dirty stream of water was flowing down the ditch that had been made at one side of the small tram track. Harry looked down the hole, stared intently at nothing, then turned to the rusty hoist.

"'Ere's the thing we've got to fix up now. This 'ere chiv wheel's all out of gear."

"What makes your face so red?" Fairchild asked the question as the be-

face. "But I don't think I want to know 'im now."

"Why not?"

"'E's mixed up with the Rodaines."

"How much?"

"They own 'im—that's all."

There was silence for a moment. It had been something which Fairchild had not expected. If the Rodaines owned Judge Richmond, how far did that ownership extend? After a long time, he forced himself to a statement.

"I know his daughter."

"You?" Harry straightened. "'Ow so?"

"She sold me a ticket to a dance," Fairchild carefully forgot the earlier meeting. "Then we've happened to meet several times after that. She said that her father had told her about me—it seems he used to be a friend

AL ACRES—Al's Inventive Genius Solves Another Agricultural Problem.

—By Frank R. Leet.



"Fifty-fifty? You're making me a bloated capitalist!"

"I hope I will. Or rather, I hope that you'll make such a thing possible for both of us. But I was talking about something else; are we going to work hard and fight it out day and night for awhile until we can get things going, or are we just going at it by easy stages?"

"Suppose," answered Harry after a communication with his magic mustache, "that we go dye and night 'til we get the water out? It won't be long. Then we'll 'ave to work together. You'll need my vast store of learning and enlightenment!" he grinned.

"Good. But the pumping will last through tomorrow night. Can you take the night trick?"

"Sure. But why?"

"I want to go to that dance!"

Harry whistled. Harry's big lips spread into a grin.

"And she's got brown eyes!" he chortled to himself. "And she's got brown 'air, and she's a wye about 'er. Oh! She's got a wye about 'er! And I'll bet she's going with Maurice Rodaine! Oh! She's got a wye about 'er!"

"Oh, shut up!" growled Fairchild, but he grinned in schoolboy fashion as he said it. Harry poured half a can of oil upon the bearings of the chiv wheel with almost loving tenderness.

"She's got a wye about 'er!" he echoed. Fairchild suddenly frowned.

"Just what do you mean? That she is in love with Rodaine and just—"

"Ow should I know? But she's got a wye about 'er!"

"Well," the firm chin of the other man grew firmer, "it won't be hard to find out!"

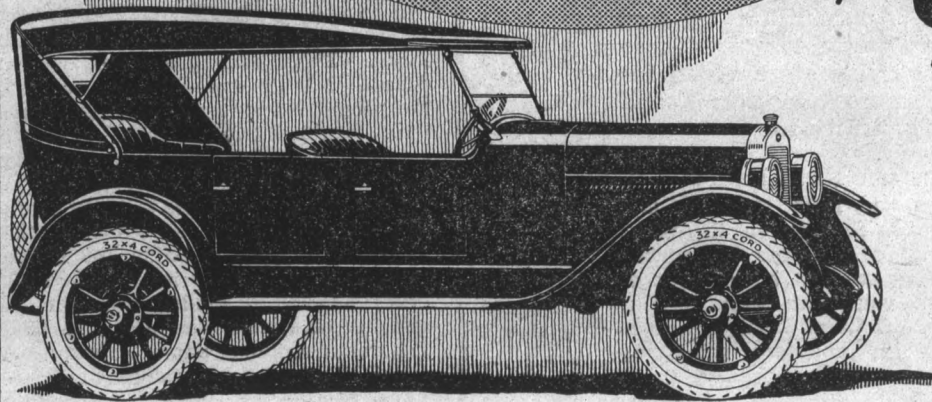
And the next night he started upon his investigations. Nor did he stop to consider that social events had been few and far between for him, that his dancing had progressed little farther than the simple ability to move his feet in unison to music. Years of office and home, home and office, had not allowed Robert Fairchild the natural advantages of the usual young man. But he put that aside; he was going to that dance, and he was going to stay there as long as the music sounded, or rather as long as the brown eyes, brown hair and laughing lips of Anita Richmond were apparent to him. What's more, he carried out his resolution.

The clock turned back with the entrance to that dance hall. Men were there in the rough mining costumes of other days, with unlighted candles stuck through patent holders into their hats, and women were there also, dressed as women could dress only in other days of sudden riches, in costumes brought from Denver, bespangled affairs with the gorgeousness piled on until the things became fantastic instead of the intensely beautiful creations that the original wearers had believed them to be. There was only one idea in the olden mining days, to buy as much as possible and to put it all on at once. High, Spanish combs surmounted ancient styles of hairdressing. Rhinestones glittered in lieu of the real diamonds that once were worn by the queens of the mining camps. Dancing girls, newly rich cooks, poverty-stricken prospectors' wives suddenly beaming with wealth, nineteenth-century vamps, gambling hall habitués—all were represented among the femininity of Ohadi as they laughed they wore and thoroughly enjoyed and giggled at the outlandish costumes themselves.

Far at one side, making a brave effort with the "near" beer and "almost there" concoctions of a prohibition buried country, was the "old-fashioned bar" with its old-fashioned bartender behind it, roaring out his orders and serving drinks with one hand while he

(Continued on page 179)

The New Oakland Six



Touring Car

\$ 995

Prices at Factory

Chassis	-	-	-	\$ 795
Roadster	-	-	-	975
Touring Car	-	-	-	995
Sport Car	-	-	-	1165
2 Pass. Coupe	-	-	-	1185
4 Pass. Coupe	-	-	-	1445
Sedan	-	-	-	1545

The GUARANTEED Car That Makes Good Oakland's Promise

Many months ago the Oakland Motor Car Company announced its purpose to build the finest light-six in the world. It was admirably equipped to undertake this difficult task.

As a permanent division of General Motors Corporation, it was enabled to utilize the technical genius of the General Motors laboratories, as well as its own six years of experience in manufacturing light-sixes exclusively.

Oakland held fast to its purpose. It built the finest motor car that the sum of this engineering and manufacturing genius could build. It called this car The New Oakland Six-44.

So certain was Oakland that its new car was *right*, that it placed upon it—in addition to the manufacturer's standard warranty—a special written 15,000 mile performance guarantee.

Many thousand New Oaklands are now in service. If you would learn whether Oakland has accomplished its high purpose—question any one of these thousands of owners.

They will tell you that they have never driven a car more powerful, more flex-

ible, more economical or more unwaveringly dependable.

They will praise its wonderful six-cylinder, overhead-valve engine, which insure such abundant power with all of the flexibility and quiet natural to a six.

They will tell you of its unusual pulling power through mud and sand; of its uncommon hill-climbing ability; of its troubleproof construction which makes it such an ideal car on the farm and in communities far removed from service or garage facilities.

Nor will they fail to tell you of the care and attention given to details of comfort and convenience: long, buoyant springs; unusually roomy body; door-opening curtains; genuine leather upholstery; cord tires, and other similarly high grade and complete equipment. Examine this New Oakland yourself.

Remember, it is the only car in the world that carries, in addition to the manufacturer's standard warranty—a special written 15,000 mile performance guaranty; and yet—at the reduced prices announced August first, it is one of the world's lowest-priced sixes.

OAKLAND MOTOR CAR COMPANY, Pontiac, Michigan
Division of General Motors Corporation

The New Oakland Six

SPENCER'S HAY PRESS

The Speediest, Most Durable Press Built

Full Line of Box and Power Presses. Write for Catalogue and Prices.

J. A. SPENCER FOUNDRY AND MACHINE WORKS,
Established 1881. DWIGHT, ILLINOIS Not Incorporated

Army Auction Bargains

NEW rope lariat with snap \$1.00
Army knapsack 75up Saddles \$6.50 up
LUGER pistol \$21.50 Cal. 30 rifle \$16.50
Full set Army steel loters and figures, \$2.00.
15 acres army goods. Illustrated cat. or
for 1922-372 pages—including full and highly
interesting information (specially secured) of all
World War small arms, mailed 50 cents. Circu-
lar 16 pages 10 cents. Established 1895.

FRANCIS BANNERMAN SONS, 501 Broadway, N.Y.

GET-A-WITTE
Kerosene Engine

Cash or Payments.
Save \$15 to \$50. Big
Catalog sent FREE.

WITTE ENGINE WORKS
2191 Oakland Ave., Kansas City, Mo.
2191 Empire Bldg., Pittsburgh, Pa.

FERRETS FOR SALE
N. A. KNAPP & SON, R. 2, New London, O.

WARNING!

Wheel Mounted
Easy to
Move

Buy Before
Price
Advances
NOW

Try 30 Days **OTTAWA \$69**

Log Saw saws 8-in. logs as well as 5-ft.
logs. Start or stop saw, engine runs on.
Use for belt work. Shipped from fac-
tory or 8 branch homes. FREE BOOK
—write today. GUARANTEE. CASH OR EASY TERMS.
OTTAWA MFG. CO., 15011, Wood St., OTTAWA, KANG.

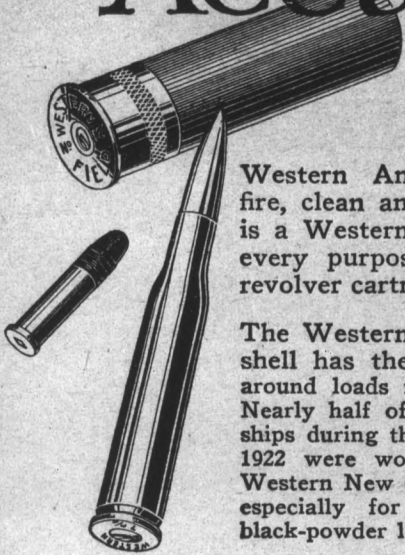
MILKBOTTLECAPS

WILL FIT ALL STANDARD MILK BOTTLES
PARAFFINED AND PRINTED RED LINE DESIGN
BOX CONTAINS 1750 LIP CAPS or 2000 WITHOUT
LIP. PARCEL POST PREPAID. — ORDER A BOX NOW! A BOX

NATURAL LEAF TOBACCO, CHEWING, 5 lb., \$1.75; 10 lb., \$3. Smoking, 5 lb., \$1.25; 10 lb., \$2.
Send no money; pay when received.
TOBACCO GROWERS' UNION, Paducah, Ky.

Natural Leaf Tobacco Chewing, 5 lb., \$1.75; 10 lb., \$3. Smoking, 5 lb., \$1.25; 15 lb., \$3. Send no money; pay when received.
FARMERS' TOBACCO ASSN., Paducah, Ky.

Accurate



Western Ammunition is sure fire, clean and accurate. There is a Western shot-gun load for every purpose and a rifle and revolver cartridge for every gun.

The Western Field steel-shell has the most reliable all-around loads for use on the farm. Nearly half of the state championships during the first six months of 1922 were won with Field Shells. Western New Chief Shells are made especially for shooters preferring black-powder loads.

See Your Dealer

Talk to your dealer about Western Ammunition. If you want, an extra long range load, ask him about Super-X or write us for the Super-X booklet. It will tell you how to increase the range of your shotgun as much as 40 per cent. Address Western Cartridge Company, Department M-8, East Alton, Illinois.

Western

AMMUNITION



Back to God's Country

Our Weekly Sermon—By N. A. McCune

THE Hebrews in the lesson of today felt that way. It was back to God's country. They were armed with a letter from the king, and the king had placed in their hands gold and silver for the temple which was to be built. In a book I read the other day called, "The Little Corner Never Conquered" it told of the welcome which the king and queen of Belgium received, when they returned to the cities from which they had been shut out all the period of the war. But this is not a monarch being welcomed to the land from which he had fled in war. It is something greater than that. It is the instance of a company of people, led by a man of God, returning to rebuild the nation, and once again set the tides of national life flowing. They were coming to "rebuild the waste places." It is significant that this was a movement that was religious in its origin and nature. Ezra and his compatriots believed that they ought to rebuild Jerusalem. A mighty obligation was laid upon them. It was a religious duty. A brand new book lies before me, "Causes and Cures For The Social Unrest," (Macmillan, New York.) It is by a western man who has written much on topics of a like nature. He is not a preacher, mind you, he is a professor of education, Dr. R. L. Finney.

I mention this because some of the following quotations might make one think he is a minister. He has a chapter called, "The Old Fashioned, Middle-Class Ideals." It is wholesome and inspiring reading. He believes thoroughly that the only way to a better form of modern life is by the religion road. "Civilization has been tragically slow in realizing that its foundations are really spiritual. But they are! It is increasingly recognized that the most important thing about a people is their philosophy of life." The religious life is far more than a mere harmless diversion, a mere plaything with which children can be amused, so as to keep them out of mischief. It is positively socializing in a score of different ways. This is emphatically true of the Christian religion." The author is honest in his approach to the modern man's view of life, and especially the view that his son may chance to have: "One of the symptoms of the present chaotic state of things spiritual is that vast numbers of people are without convictions as to why they should be good. Why keep the Sabbath? Apparently the majority think there is no reason. Why tell the truth? Many intelligent persons contend that the truth is frequently a gratuitous nuisance. Why bear hard burdens when they can be shifted? Why be steadfast in conjugal relations? Why practice self-denial? Christians must be shown how social solidarity ruthlessly loads pain, misery, disaster and even death upon the sinner's innocent associates and successors. People must understand that Christianity begins at home. Any minister may well preach ten sermons (if he knows enough sociology) on the social functions of the family, the virtues necessary to successful family life, and the consequences to society of domestic failure. If he is a real prophet of the new religion he will send his hearers home shuddering under their responsibilities and failures, as churchgoers have not shuddered since the days when they were 'hair hung and breeze shaken over hell'."

gether out of Israel chief men to go up with me."

As they went toward Palestine, they took no soldiers with them. When Nehemiah went, he had a military escort. Ezra did not. The circumstances were different. Ezra had expressly granted rights from the king, and he felt there was but one thing to do, namely, trust that no harm would befall them. "For I was ashamed to ask of the king a band of soldiers and horsemen to help us against the enemy in the way, because we had spoken unto the king, saying, 'The hand of our God is upon all them that seek him, for good; but his wrath is against all them that forsake him.'" It was right that Ezra should take no military escort. Would it have been wise and right for Washington and the other leaders of revolutionary times to have depended on prayer alone, without using an army?

BUT perhaps we have wandered away from the subject that should most engross us today, that of religious education. Is the author quoted above correct when he says that many people do not have any convictions on right and wrong? That they cannot give reasons why one thing is right and another wrong? Are the young taught the fundamentals? This may be answered emphatically one way or the other, according to one's viewpoint. The great number of churches and Sunday schools may be pointed to, as evidence that the children of America are thoroughly taught in the principles of morals and religion. On the other hand we know that while the churches are open vast numbers do not go to them. It is stated that something like twenty-six millions of youth and children receive no religious instruction. This at one time would have caused pious exclamations of horror, that people should be so wicked. And such ejaculations are in order now—but we know in addition to that, that such untilled soil is the breeding ground of all manner of social evil and crime. Many a man is restrained from a serious offense against the law, because deeply imbedded in his nature are the principles of right, that were planted there in years past. How shall the younger generation be more thoroughly taught? It is one of the biggest questions before the people. It is well to remember that Sunday Schools are to be found in America where atheistic doctrines are diligently taught—there is no God, no Christ, the church was organized to keep the people in subjection and fear, and all that. We have gone to the extreme of legislating against even reading the Bible in the schools, in some states. And as for teaching the Bible systematically, that is out of the question, in the minds of many citizens. But it is to be feared we will reap the whirlwind in years to come.

SUNDAY SCHOOL LESSON FOR AUGUST 20

SUBJECT:—The Second Return From The Exile.

LESSON:—Ezra 7:1 to 8:36.

GOLDEN TEXT:—The hand of our God is upon all them that seek Him, for good. Ezra 8:22.

NEW FISH HATCHERIES.

AN Iron River contractor will build the two new fish hatcheries which the State Department of Conservation is erecting at Cherry Creek near Marquette and at Sidnaw. The contract price is a little over \$8,000. An Ironwood contractor will erect the third new Upper Peninsula hatchery at Watersmeet.—Chase.

Nine-tenths of American farms, according to census reports, have no running water in the house.

Why Not PUT THIS NEW MILL ON YOUR OLD TOWER

ALBION

Albion steel and wood mills are quiet and powerful. One-third the working parts of any other mill. Only main frame bearing subject to wear. This is oilless, and easily replaceable. Covers by dependable weight without springs. Fits any 4-post steel tower. Why not shorten your chore hours now with a good Windmill? This is your chance—F. O. B. Albion. Erect it yourself. Ask your dealer, or write direct to:

Union Steel Products Co. Ltd.
No. 528 N. Benton Street,
ALBION, MICHIGAN, U. S. A.

CIDER Making Pays

With Mt. Gilead Hydraulic Cider Presses Big Money made on small investment. Demand for cider greater than ever. Quick, clean profits with little labor and expense. Sizes up to 460 bbls. daily. Also Hand Power Presses for Cider, Grape Juice, Fruits, etc., and a full line of accessories, such as juice evaporators, pasteurizers, etc. New Cider Press catalog gives full details.

HYDRAULIC PRESS MFG. CO.
196 Lincoln Ave. Mount Gilead, Ohio

Get Manufacturers' Prices Yourself

Pipeless Furnaces \$52.95 and up

Why be without a good furnace when you can get the finest furnace that can be made—shipped direct to you from Kalamazoo manufacturers—at a wonderful money-saving price.

Buy Now—Pay Oct. 1st

Send for Catalog

Send and get our Oct. 1st payment offer on a Kalamazoo Pipeless Furnace. Easy to install. Cash or easy payments—money-back guarantee. Also get prices on new designs of stoves and ranges and other articles.

Ask for Catalog No. 909

Kalamazoo Stove Co. Manufacturers Kalamazoo, Michigan

"A Kalamazoo Direct to You"

THE GUNN BEAN HARVESTER

AS STANDARD AS A HOE

1 MAN - 1 "GUNN" - 1 DAY can readily harvest 2½ acres of beans. Wet weather need not stop the bean harvest if you have a "GUNN." ROOTS are really left in the field. Beans dry much faster - threshing is cleaner. NO EASIER CHEAPER way to HARVEST BEANS.

F. D. BULLOCK, Sales Agent
1715 Palmer Avenue KALAMAZOO, MICHIGAN

DEALERS WRITE FOR TERMS

BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc.,
129 West 24th Street, New York

America's Pioneer Dog Medicines

Seed Wheat:—Hybrid No. 2 wheat (white bu. per acre, 60 lb. test, vigorous plant, medium growth straw, offering at \$1.50 per bu. bags extra, F. O. B. Vassar, Mich. Sample mailed upon request. Mail orders filled promptly.

GEORGE W. RIDGEMAN, R.I. Vassar, Michigan

GOOD FARMING PAYS

The WESTERN PULVERIZER, PACKER AND MULCHER, 3 machines in 1, saves labor, time and horse-power. It pulverizes and packs as deep as plowed, leaves a mulch on top to retain the moisture, and prevents baking, all in one operation. A perfect seed bed is the foundation for all crops and when prepared by a WESTERN, requires 1-3 less seed, and we GUARANTEE bigger and surer crops.

MADE IN 12 SIZES, 1 & 3 SECTIONS

Our FREE catalog describes our machine and its principle, shows the actual work it does in the field by pictures, proves results it produces by letters from many users; contains much other valuable information. "Worth its weight in gold." Send for it. Our low direct delivered price will surprise you.

WESTERN LAND ROLLER CO., Box 132, HASTINGS, NEBR.

THE CROSS-CUT

(Continued from page 177)

waved and pulled the trigger of a blank-cartridged revolver with the other. Farther on was the roulette wheel, and Fairchild strolled to it, watching the others to catch the drift of the game before he essayed it, playing with pennies where, in the old days, men had gambled away fortunes; surrounded by a crowd that laughed and chattered and forgot its bets, around a place where once a "sleeper" might have meant a fortune. The spirit of the old times was abroad. The noise and clatter of a dance caller bellowed forth as he shouted for everybody to grab their "podners one an' all, do-se-do, promenade th' hall!" and Fairchild as he watched, saw that his lack of dancing ability would not be a serious handicap. There were many others who did not know the old numbers. And those who did had worn their hobnailed boots, sufficient to take the spring out of any one's feet. The women were doing most of the leading, the men clattered along somewhere in the rear, laughing and shouting and inadvertently kicking one another on the shins. The old times had come back, boisterously, happily—and every one was living in those days when the hills gushed wealth, and when poverty today might mean riches tomorrow.

Again and again Fairchild's eyes searched the crowds, the multicolored, overdressed costumes of the women, the old-fashioned affairs with which many of the men had arrayed themselves, ranging all the way from high leather boots to frock suits and stove-pipe beaver hats. From one face to another his gaze went; then he turned abstractedly to the long line of tables, with their devotees of keno, and bought a paddle.

From far away the drone of the caller sounded in a voice familiar, and Fairchild looked up to see the narrow-eyed, scarred face of Squint Rodaine, who was officiating at the wheel. He lost interest in the game; lakadai-sically he placed the buttons on their squares as the numbers were shouted, finally to brush them all aside and desert the game. His hatred of the Rodaines had grown to a point where he could enjoy nothing with which they were connected, where he despised everything with which they had the remotest affiliation—excepting of course, one person. And as he rose, Fairchild saw that she was just entering the dance hall.

Quaint in an old-fashioned costume which represented more the Civil War days than it did those of the boom times of silver mining, she seemed prettier than ever to Robert Fairchild, more girlish, more entrancing. The big eyes appeared bigger now, peeping from the confines of a poke bonnet; the little hands seemed smaller with their half-length gloves and shielded by the enormous peacock feather fan they carried. Only a moment Fairchild hesitated. Maurice Rodaine, attired in a mauve frock suit and the inevitable accompanying beaver, had stopped to talk to some one at the door. She stood alone, looking about the hall, laughing and nodding—and then she looked at him! Fairchild did not wait.

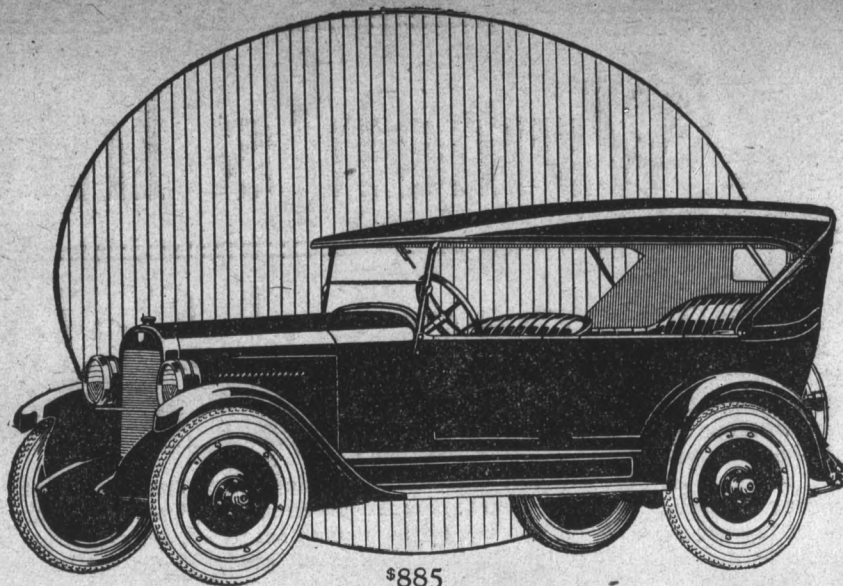
From the platform at the end of the big room the fiddles had begun to squeak, and the caller was shouting his announcements. Couples began to line up on the floor. The caller's voice grew louder:

"Two more couples—two more couples! Grap yo' podners!"

Fairchild was elbowing his way swiftly forward, apologizing as he went. A couple took its place beside the others. Once more the plea of the caller sounded:

"One more couple—then the dance starts. One more couple, lady an' a gent! One more—"

(Continued next week)



\$885

Outstanding in beauty, outstanding in the rugged reliability which is the farmer's first need in his motor car.

Cord tires, non-skid front and rear; disc steel wheels, demountable at rim and at hub; drum type lamps; Alemite lubrication; motor driven electric horn; unusually long springs; deep, wide, roomy seats; real leather upholstery in open cars, broadcloth in closed cars; open car side-curtains open with doors; clutch and brake action, steering and gear shifting, remarkably easy; new type water-tight windshield.

MAXWELL MOTOR CORPORATION, DETROIT, MICHIGAN
MAXWELL MOTOR CO. OF CANADA, LTD., WINDSOR, ONTARIO

The Good

MAXWELL



LEAD AND OIL PAINT for a \$5000
L frame house costs from \$20 to \$30 — about \$5 per year for *decay insurance*.

For best service thin 100 pounds
CARTER PURE WHITE LEAD
with 4 gal. of pure linseed oil—mak-
ing nearly 7 gal. of heavy paint. Ask
nearest paint dealer for prices.

For further particulars send for "Painting with
Lead and Oil"—a 16 page booklet of helpful in-
formation, and color card, mailed free on request.

Carter White Lead Company

12042 So. Peoria Street

Dept. 16

Chicago, Ill.

THE AUTO-OILED AERMOTOR**A Real Self-Oiling Windmill**

Oil an Aermotor once a year and it is always oiled. Every moving part is completely and fully oiled. A constant stream of oil flows on every bearing. The shafts run in oil. The double gears run in oil in a tightly enclosed gear case. Friction and wear are practically eliminated.

Any windmill which does not have the gears running in oil is only half oiled. A modern windmill, like a modern automobile, must have its gears enclosed and run in oil. Dry gears, exposed to dust, wear rapidly. Dry bearings and dry gears cause friction and loss of power. The Aermotor pumps in the lightest breeze because it is correctly designed and well oiled. To get everlasting windmill satisfaction, buy the Aermotor.

Write today for Circular.

AERMOTOR CO.

Chicago

Kansas City

Des Moines

Minneapolis

Oakland



Save \$10 to \$25 on Top Re-covers. Delivery Paid. Full Instructions Sent.

Chevrolet, Dodge or Maxwell; top, deck quarters and back with 7x14 beveled plate glass \$34.00. Long Grain goods, tacks, welts and fasteners; Roadster, \$10; Touring, \$14. Fords, 32 oz. Ford Rubber; Roadster will celluloid lights, \$3.20; Touring \$7. White 6x12 or two 5x8 beveled glasses, Roadster, \$7.30; Touring, \$9. Fords 6x12 or two 5x8 beveled glasses, \$2 extra. Send half price with gypsy style rear curtain. Give name of car, model and year to guarantee fit. For other cars ask for Bulletin T and samples. We pay war tax. **SOUTHERN CEDAR PRODUCTS CO.** 1221 Nicholas Bldg. Toledo, Ohio

Apple Barrels--Lumber

Now is the time to order your barrels to insure delivery. Can ship in carload lots or less, either nested same as baskets, with head and top hoops out, or in regular made up stock. Can furnish vinegar barrels or kegs down to ten gallons.

Let us have your inquiries for lumber, shingles, lath, oak and maple flooring. If contemplating building any barns or outbuildings, it would pay you to investigate our method of furnishing plans and blueprints. Ask our salesman to call on you.

BLISS & VAN AUKEN LUMBER CO.,
Saginaw, W. S., Mich.

FOR 50 YEARS

MILLER-BEAN HARVESTERS

HAVE LED ALL IMITATORS.

Write Le Roy Plow Co., Le Roy, N. Y.

THE HICKS LIGHTNING ROD CO.

Tecumseh, Mich.

More than forty years experience.

Work guaranteed.

Ten Extra Fine fox hound pups three months old. none better. males \$15, females \$10. **W. E. LECKY.** Holmeville, Ohio.

CORN HARVESTER cuts and piles on har-
vesting attachment. Testimonials and catalog FREE showing
pictures of harvesters. **PROCESS HARVESTER CO.,** Sells, Kansas



Woman's Interests



A Successful Salad Garden

By Mary M. Allen

LATE July and August drouths had always played havoc with our lettuce, radishes, table carrots and beets which we so much wanted for salads when we were paying up social obligations as the stress of farm work relaxed in August. The garden lettuce had always become tough and bitter, the radishes hot and pithy, the carrots and beets fibrous. Because we had spent ten years in the south where green things are obtainable all the year, we had acquired the salad habit and had come to believe that there is nothing so desirable or so dainty for an afternoon tea as a well-made salad, so we planned a salad garden.

We made it much on the plan of the city man's garden. Along the west side of the woodshed which adjoins the house and extends north and south, we spaded up a spot eight feet by twelve feet, extending lengthwise of the wood house. One end of the spaded plot adjoined the back porch. Well rotted cow manure was applied in the fall and another application was given the ground in the spring. In this, as early as the season would permit, we planted in rows about a foot apart, lettuce, icicle radishes, onions, French carrots and a small variety of round-table beet designated as the "Crimson Globe." These rows ended two feet from the end of the plot and across the end we set five tomato plants.

As the garden was an experiment, we were not much concerned over the seed selection. We bought it at the local grocery store but saw to it that we got Michigan-grown seed. The lettuce was designated as an early leaf variety and this we sowed quite thick in the two rows adjoining the woodshed. None of this space received the sun until after the middle of the day and we did not know what the outcome would be. Early it looked rather yellow and sickly. When we first began to use it, we pulled the plants until those left were two or three inches apart in the row. Care was used in pulling them not to displace those left and as fast as a part of the row was thinned it was given a thorough watering. We used the water from the cooling tank in which we cooled our milk and applied it after sundown or very early in the morning. As the days lengthened and grew hotter, the lettuce looked more thrifty. We always picked the lower leaves and the stems constantly lengthened until at present many of them are six or eight inches long recumbent on the ground and still producing lettuce at the tip as fine as in the early spring, though it is mid-August and we have had almost continuous drouth since the last of May.

The radishes were put next the lettuce. They were carefully thinned and watered after each thinning and as fast as used new seed was sown in. We still have fine radishes.

Two rows of beets, two of carrots and two of onions completed the garden. We began pulling the beets and carrots soon after the Fourth of July. They were then about as large as walnuts with the outside shell on. We still have three or four dozen in the ground. We pulled them all along the row, thinning as they grew larger. Of course, these were never served as a vegetable for the table as the quantity would not permit. We planted sets

for the first onions and as they were used put in transplanted seedlings.

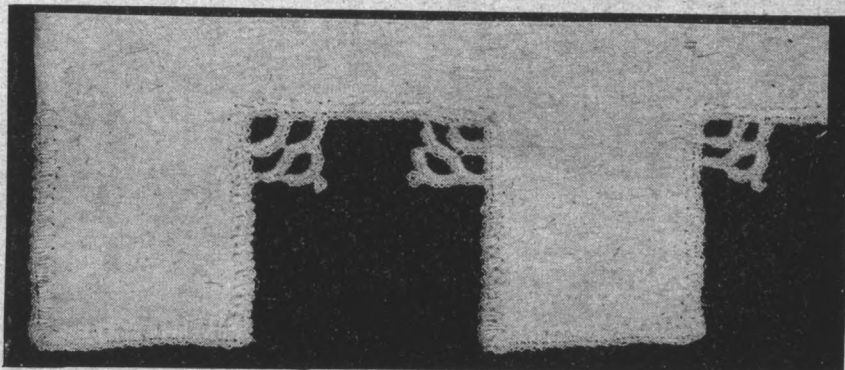
Along the end of the plot we set five tomato plants. The plants were greenhouse grown and on May 8 were about eight or ten inches high. We cut off all auxiliary stems and trained the main stem to a stake deep set. Every six or eight inches we tied the stem to the stake with a strip of cloth. The cloth does not cut the stem when it is in constant motion during windy days. The tomato plants are now nearly four feet high and one has thirteen tomatoes at least two and one-half inches across. They are perfectly

smooth and show no evidence of rot. The stakes furnish a fastening for the poultry netting surrounding the plot.

On the whole, we feel well satisfied with our experiment. The fact that the plants are shaded part of the time has been a benefit rather than a detriment to growth. While the growth has not been so large, the crisp fresh quality has more than offset that. The vegetables have been near the house, easy to cultivate and water and quickly available when needed. The favorable results were undoubtedly due to the liberal fertilization and the application of moisture when needed.

An Attractive Crochet Edging

By Helen Combes



Busy fingers on the porch on warm afternoons or at the club meeting may make this most interesting and decorative edging for use on towels, petticoats, pillow slips, sheets, linen covers, etc. It is very simple and if it is done with thread of a contrasting color the result is very pleasing.

Square Pattern.—The squares are cut $1\frac{3}{4}$ inches in size. They are worked round with s c with no ch between, 19 down the sides, 15 across the bot-

tom and 5 into the same hole at each bottom corner. At the top (nearest the material), work 1 s c into corner r s c, turn; 5 ch, sl st into 4th s c in side of square, turn; 8 s c into ch; 3 s c into top of opening turn; 4 ch, sl st into middle of 8 s c 4 ch, sl st into 7th st on side, turn; 8 s c into first 4 ch, 4 s c into 2nd 4 ch, turn; 5 ch, sl st into middle of 8 s c turn; 4 s c into 5 ch, p, 4 s c into ch, s c into top 14 times, 1 s c in corner, 4 s c repeat.

Household Service

I have a home-made, three-container fireless cooker which I would like to use more than I do at present. I have soapstones in it for holding the heat, but have not tried to cook anything but cereals, stews and meat. Could you suggest whole meals that can be cooked in a home-made cooker, and tell me how vegetables are cooked in it? I would like to go berrying and have my meals cooking during my absence, but I am not sure if anything besides stew can be cooked properly. I have four stone jars of different sizes for which I cannot get covers from our local store. Tin covers rust and wooden ones get moldy in our cellar. Could you tell me where or how to get the stoneware covers?—Mrs. E. G.

If you can successfully cook cereals, stews and meat in your fireless cooker, I see no reason why you cannot cook a complete meal successfully.

Vegetables must be cooked by placing them in boiling water and then putting immediately in cooker. The cooking period depends largely upon the efficiency of your cooker and the temperature of the stones.

Only a few days ago I saw a demonstration of a commercial cooker in which the demonstrator used no water in cooking the vegetables. Before

placing the vegetables into the cooker, she poured hot water over them and then drained, leaving only a slight moisture in the bottom of the container.

Puddings may also be cooked successfully in a fireless cooker. Rice pudding, tapioca, custards are a few simple ones which you may find successful.

If you will write any large department store, giving them the number of your stone jars, I believe they will be able to furnish you with covers for same.

In a recent issue of the Michigan Farmer I saw the notice, "Let Us Help You," so I am writing for help. We are having community meetings once a month. Of course, we are all farmers, and are pretty busy now to spend much time on getting up the programs. I thought perhaps you could tell me where I could find something suitable for such entertainments. We could manage some short plays or dialogs. I sent for two speakers but they were not suitable. Would like to find something short but comic. Any help or suggestions you could give me will be greatly appreciated.—Mrs. W. C. P.

The North Dakota Agricultural College has worked up the idea of plays for such community meetings as yours. They have a long list of plays, and books of directions for arranging the stage, etc. Write them. Community Service, 315 Fourth Avenue, New York City, also makes a specialty of community stunts, games, outdoor plays, pageants, and short dramas. If you write to North Dakota, simply address The Little Country Theater, Agricultural College, Fargo, North Dakota.

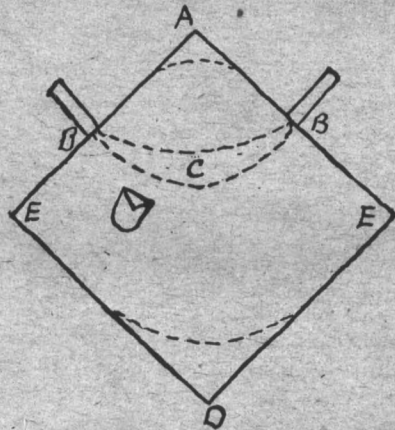
Can you give me any information about steam pressure cookers? What we want is something in a pressure cooker, but cheaper in price than the aluminum ones offered in the department stores. Do you know if there are any such cookers made, and if so who makes them?—C. R. K.

Upon investigating we find we can recommend no steam pressure cooker to you, other than those made of cast aluminum.

There is a steam pressure cooker put on the market for \$20 which can be used only for canning as the metal is boiler plate and gets rusty and cannot be used for cooking. One gets greater value out of a steam pressure cooker if it can be used for a two-fold purpose.

A SIMPLE APRON.

YES, this is a sack apron for it is made of flour or sugar sacks. It is easy to have a good supply of neat, white aprons if you do it this way.



Sugar sacks cost only five cents apiece and flour sacks about ten cents. Either one will make an apron or you can use a square of any kind of goods you have on hand. It can be only twenty-seven inches square for a small woman but should be thirty-six inches square for a large one.

Measure down one-half way between A and E and the same distance down the center to C. Then cut a strip from an inch above C to B on each side. Cut across again from B to an inch below C, taking out a strip two inches wide at C and pointed at B. Sew the two pieces, No. 1 and 2 together and finish on the right side with braid, plain stitching or a band. This is a low waist line.

Now fold the goods from E to E. Trim off rounding at top and bottom.

Make one or two small pockets and place as desired. Make two small strings or ties to place at B. Hem all around and attach strings.—J. L. F.

A warm dish of milk or vegetables served each noon at school save many of a mark of "absent-sick" on teacher's roll book.

"WHAT MAKES 'EM DEW SO?"

IN the Michigan Farmer of July 15, we noticed an article under the caption of "Present-day Modesty," which called to mind an old aunt who lived one hundred years ago, and commented thus on the behavior of the young folks of our day: "What makes 'em dew so?" Many old people seem to think because "we never done so" that the young folks are going to the dogs.

As a matter of fact, the majority, ninety-five per cent of our young ladies—and we are quite observing—are very comely in dress and action.

But because the five per cent—not including our bathers, who are simply ridiculous—are, or seem to be, inclined to indecency, the stigma is applied to all.

It is generally understood that a normal person has arms, legs and bosoms, also an instinct to cover their nakedness. Then "what makes 'em so?"

It is perfectly natural and proper for one to want to be attractive, and when a form of dress, or undress, draws a lot of attention, they conceive the idea they are attractive. Hence the shorter skirts and lower necks.

The remedy is for the press to cease to comment by picture or word. Young men, and older ones as well, would ignore rather than gaze upon and after them. Show the preference you have, or ought to have, for the young ladies who wear clothes and the subject for discussion and object for observation will soon be a thing of the past.—A. B.

THOSE "ROASTING EARS."

CORN is the most satisfactory vegetable to dry and to many cooks, dried corn is far superior to canned.

Select only well-developed ears, and prepare immediately after picking. If they are allowed to stand a part of the sugar is converted into starch and the good flavor is lost. Blanch in boiling water three minutes, then plunge into cold.

With a sharp knife cut the kernels off close to the cob, spread corn thinly on platters and dry in moderate oven. Do not try to dry corn in the sun, as the required temperature for drying it properly is higher than the sun can give. Turn the corn several times while drying, using a long, thin-bladed knife instead of a spoon. Dry until it rattles.

When wanted for use soak over night, or at least four hours, and cook in the same water, seasoning as you would canned corn.

To cold pack, select between milk and dough stage. Blanch on the cob five minutes, plunge ten seconds in cold water, cut from cob and pack to within one inch of top of can, allowing a teaspoon each of salt and sugar to the quart. Boil four hours.

The same directions apply to corn on the cob.

Be sure to can corn immediately after picking. Corn allowed to stand over night loses fifty per cent of its sugar.

TRY THIS CAKE RECIPE

Chocolate Cream Cake.

½ cake unsweetened chocolate.

½ cup milk.

1 yolk of egg.

2 tablespoons of sugar.

1 teaspoon vanilla.

Mix and cook over hot water.

1 cup sugar.

½ cup butter.

½ cup milk.

1 eggs.

2 cups flour.

3 teaspoons baking powder.

Mix loaf and add chocolate mixture last. Bake in a moderate oven.

Certified Electric Service



Why Not Now?

You and your family want to enjoy all the good things that the city family enjoys, but a taste of city life is more apt than not to confirm your conviction that, life on the farm makes for greater happiness.

You have your automobile—your tractor—your modern equipped barns and necessary farm machinery to do your work easily and quickly but unless you provide the advantages of electricity you are missing the most needed development available to the American farmer today. Sooner or later you are going to realize its vital importance.

WILLYS LIGHT Certified Electric Service is now available—the same dependable, electric light and power facilities your city neighbor enjoys. With it you can forever discard the fussy, mussy, dangerous oil lamps and lanterns. You can provide at the touch of a button, bright, white, steady light for every room in the home, in the barns and out-buildings and in the yards.

And, as important as bright cheery lights, WILLYS LIGHT Certified Electric Service provides power which lightens the labors of mother. She can iron in a cool room with an electrically heated iron. She can have an electric washer and save untold time and drudgery. She can have running water in kitchen and bathroom. It can be used for cleaning, churning and separating, running milking machines, turning grindstones and other farm machinery.

Why not investigate WILLYS LIGHT Certified Electric Service now? There's a painstaking, conscientious WILLYS LIGHT dealer-expert near you who will give you a demonstration on your farm without obligation and free estimate of equipment and installation suited to your requirements. The cost is amazingly low and easy terms of payment can be arranged to suit you.

Write today for illustrated catalog of full particulars. Address Dept. 341.

See Willys Light Certified Electric Service at your State and County Fair

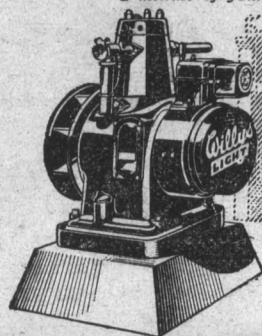
WILLYS LIGHT DIVISION

The Electric Auto-Lite Company, Toledo, Ohio.

Builders of over 3,000,000 electric lighting systems.

WILLYS LIGHT

Power and Light with the Quiet Knight



\$295
and Up

There is a size to fit your needs—as much or as little power as you may require and terms of payment you can afford.

Brunswick
PHONOGRAPHS AND RECORDS

Have You a Phonograph in Your Home?

If you haven't, do you really realize how much genuine enjoyment you would receive from a fine BRUNSWICK PHONOGRAPH? Do you know that the The Brunswick Shop offers the same unusual advantages to the resident of the Northern Peninsula as it does to the resident of Detroit? The difference is only one of distance.

WRITE TO US

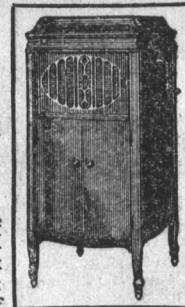
and we will send you a handsome new book of designs—and will also tell you how simple and easy it is to have the very best music in your home.

AT THE MICHIGAN STATE FAIR

the Brunswick Shop will have it's customary position—Stop for a few moments and listen to the BRUNSWICK.

The Brunswick Shop

127 Grand River East Detroit



One Year's Course in Nursing

The Michigan State Sanatorium is the first hospital in Michigan to offer a short course in nursing. Under the new State law governing the registration of nurses, graduates are entitled to registration as trained attendants. Applicants must have completed the eighth grade, and be 18 years of age. Course opens September 1, 1922. Apply to Superintendent of Nurses, M. S. S., Howell, Michigan.

A Fine Section of Wheat Land,

highly improved, in Williams County, North Dakota; bottom land, 520 acres in wheat and wheat is fine. For sale at \$40.00 per acre on good terms. Write J. R. BOSWORTH, Garden City, Kansas.

Lansing Conservatory of Music

Incorporated under Laws of the State of Michigan. (Formerly Wilde Conservatory, Established 1919).

Fourteen Artist Teachers.

School year 1922-1923 begins September 11.

Ask for Catalogue

RANSON E. OLDS,

Chairman of Advisory Board

Lois Bell, Registrar Hans Wilde, President

FARMS & FARM LANDS

120 acre farm for sale in North Eastern Michigan. Adjoining R. R. Station. Half improved. Balance timber. Spring creek and good pasture. Buildings. Orchard. Immediate possession with crop. \$2000.00 cash, balance to suit. Address ABC care Mich. Farmer

FOR SALE

"Shannon Mills"

A fine Virginia Farm of 560 Acres. "Shannon Mills" is a fine old Country Estate, modernized. Beautiful home, lawns, flowers, etc. 560 acres. Kind soil. Good out-buildings. Farm now in operation. All city conveniences. 75 miles South of Washington. On Railway and Highway. Beautiful and productive property. 8 acre lake. Terms. Descriptive booklet on request.

W. P. PATTERSON, Owner,
Box 20, Ruther Glen, Va.

\$1500 Gets Lake View Farm With 1000 Apple Trees

Big Fruit income; good profits potatoes, alfalfa, 160 acres on improved road close fine Michigan town; 100 acres loamy tillage, 30-cow pasture, about 800 cords wood; 1000 apple trees, pears, plums, cherries, etc.; fine 2-story 11-room house overlooking lake, 14-cow barn, poultry house; insurance \$3500. Forced sale includes horses, implements and crops. \$5000 only \$1500 cash, easy terms. Details page 95 Illus. Catalog 1200 Bargains. FREE. STROUT FARM AGENCY, 314 BO Ford Bldg., Detroit, Mich.

40 Acres; Edge RR Town

Horses, 4 Cows, Poultry
Vehicles, machinery, tools included if taken now; rich farming territory, pleasant living conditions; all loamy tillage, 2 tons hay per acre; good pasture, apples, pears, plums, cherries; substantial 9-room house, fine village view, 46-ft. barn, 46-ft. shed, etc. Owner retiring. \$5500 takes all, part cash. FETER SALOWITZ, 721-15th St., Strout Farm Agency, Port Huron, Mich. Catalog Free.

Will buy 15 to 30 Acres

Must be good soil, suitable for corn and small grain. Also must be part timber. Not more than 40 miles from Detroit. Need not be on a main highway, but if not road must be usable at all seasons of the year. Prefer rolling country with pond or stream. Advise location, acreage and price. Apply Box No. W819, Michigan Farmer, Detroit.

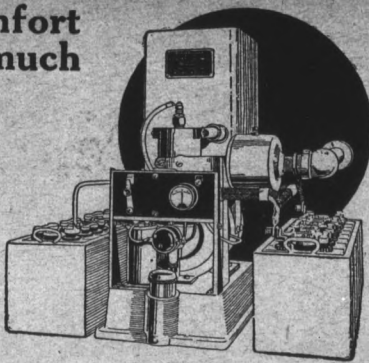
For sale. Not able to farm, will sell my fine farm, 3 miles from Lansing. Good buildings, best of soil 122 acres. S. W. Hempy, owner, R. 7, Lansing, Mich.

Additional Farm ads. on Page 191

Gives you every comfort and convenience of much higher priced plants

You've been wanting electricity for a long time—but felt that you couldn't afford it. Here, at last, is an efficient, dependable electric light and power plant that you can afford. It is the simplest, lowest priced plant on the market and will give you every comfort and convenience of much higher priced plants.

Made in Detroit—in large quantities—its remarkably low price—and low operating cost—places it within the reach of every farm home in America. Think of it—for only \$275 you can have all the clean, safe light you want to use and an abundance of power—for both house and barn, for running household appliances, such as milking machine, cream separator, churn, washing machine, iron, sweeper, and for pumping water, turning grindstone, etc.



Two Models

16-volt, for light only.....\$225
32-volt, power and light..... 275
Let us send you descriptive booklet. Write for it today.

Dealers' Opportunity

This machine is marketed direct from factory through dealers to user—no middlemen. Its low price is making it a wonderful seller. Ask for dealer proposition.

See our exhibit at Michigan State Fair, in Machinery Hall

Brevard Electric Corporation, Detroit, Mich.

BREVARD

ELECTRIC LIGHT AND POWER PLANT

SPECIAL OFFER IN PULLETS

We have an offer of Pullets that I know you will appreciate. There are yet left of the early hatched Pullets—

400 S. C. White Leghorns and
300 S. C. Superior English White Leghorns

Also limited number of Barred Rocks, Buff and
White Orpingtons, S. C. Reds.

These are now nearly 4 months old; large, well grown birds that should begin to lay in four or five weeks from the time you will get them. The Pullets will still be sold at the 3 months price, and at this price they are a genuine bargain. See price list in our publication, *Home-stead Farms for July*; or we will send you a copy.

If you want Pullets that will begin to lay in September, or the first of October let us send you some of these Leghorns. If you start them in right and if you keep them up to the best, they will give you enough eggs by January 1 to pay for themselves.

These 4 months Pullets at the 3 months price are a genuine bargain; if you are planning for laying Hens this fall and winter, you should buy some of these birds.

It will be necessary to order now: at 5 months the Pullets will be of laying age, when the price must be raised.

I am giving you a good chance to buy them now at the 3 months bargain price. We guarantee the Pullets to be entirely satisfactory. Your order will be filled promptly—while the Pullets last

State Farms Association

E. A. SEE, Manager

201 Chase Block,

Kalamazoo, Mich.

POULTRY

Barred Rock Cockerels

Parks' 200-egg strain. From stock from Parks' best pedigree pens. Vigorous, early hatched birds \$3 each. R. G. KIRBY, Route 1, East Lansing, Mich.

Barred Rocks egg contest winners, eggs from strain with records to 290 a year. \$2.00 per setting prepaid by P. P. Circular free. FRED ASTLING, Constantine, Mich.

WHITTAKER'S R. 1. RED CHICKS

CUT PRICES FOR JULY
Grade "A" Both Combs, \$20 per 100. Grade "B" Rose Comb, Hatched July 5th and 12th, \$15 per 100. July 19th, \$14 per 100. July 26th, last hatch, \$13 per 100. Single Comb one cent per chick less than Rose Comb. Add one cent per chick on all orders for only 25. Michigan's Greatest Color and Egg Strain. All breeding stock blood tested for white diarrhoea by Dr. H. J. Stafeth of M. A. O. Order from this adv. to secure prompt delivery, or write for free catalog and culling chart. NTERLAKES FARM, Box 39, Lawrence, Mich.

JUST-RITE LOOK! Baby Chicks

A Hatch Every Week All Year
POSTAGE PAID, 95% live arrival guaranteed. MONTH'S FEED FREE with each order 40 Breeds chicks, 4 breeds ducklings, select and exhibition grades. Catalog free, stamps appreciated. NABOB HATCHERY, Dept. 15, Gambier, O.

S. C. Black Minorca Hatching Eggs. Our choice strain, settings \$1.50; for 50 \$3.00; 100 \$5.00. G. J. DEEDRICK, Vassar, Mich.

Single Comb Buff Leghorn Early hatched okls. Willard Webster, Bath, Mich.

S. C. Anconas and S. C. White Leghorn yearling hens at bargain prices. Write your wants.

M. D. Wyngarden, Zeeland, Mich.

Sold PULLETS Out

This space belongs to Simon Harkema and Sons. Breeders of American-English Strain of S. C. W. Leghorns.

Chicks, Pullets and Breeding Cockerels in season. Sold out for season of 1922.

Simon Harkema and Sons,
Holland, Mich.

Pullets Cockerels Pullets

Barred Rocks From Proven Layers

Laying contest winners. Records 213 to 257. Write for catalogue.

G. CABALL,
R. 4, Hudsonville, Mich.

PULLETS & COCKERELS

Now Three Months Old
WHITE LEGHORNS AND MOTTLED ANCONAS Also Black Leghorns, Brown Leghorns, Buff Leghorns, Black Minorcas, R. C. Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Silver Wyandottes, White Wyandottes. WE HATCH eggs from Hoganized flocks on free range on separate farms. Where our chicks are raised. Send for Price List.

CRESCENT EGG COMPANY
Allegan Michigan

Additional Poultry Ads. on Page 191

Farm Poultry

Culling Improves Progeny

HENS that are born loafers usually begin by July to quit their job of egg laying and start moulting, taking most of the summer and fall to finish the replacement of old feathers with a new coat of plumage. This is one of the outstanding characteristics of the unprofitable hen, and the poultryman who keeps close watch of his flock may use it to his advantage in culling out the undesirable birds. But this is not the only dependable indication of what may be expected of the hens in a flock.

There are several things that the wide-awake poultryman looks for at this season. The low producer, having small demand for the yellow coloring matter manufactured by her body, puts it into her legs and beak, making them a rich yellow. The busy hen uses the color in touching up the yolks of eggs and her legs and beak become pale. These birds with pale legs and beaks may not look so well or so healthy as the others, but they are the ones it pays to keep. In fact, the hen that is most beautiful in summer and fall should always be under suspicion.

Other Marks of the Loafer.

On closer examination it will be found that the loafer has a scaly and shrunken comb, while the busy hen will have a plump comb of a bright red color. The hen that has stopped laying will have her pelvic bones considerably contracted and the distance between the bones of the pelvic arch and the lower end of the keel will be materially reduced. She should be an early candidate for the kettle.

The heavy layer will show no signs of moulting at this season, although she may have been producing since last fall, but will stick to business until late fall, sometimes rounding out a full year of continuous egg production. This year-round laying not only means more eggs, but also that a higher price is received for them as a large proportion of them are laid in winter, late summer and fall when prices are up. The early moulter lays most of her eggs during the flush season. The hen that can keep up production under the comparatively unfavorable conditions that obtain outside of the natural breeding season has outstanding vigor and stamina.

A Striking Experiment.

If the only result were to get rid of the poor birds in the present flock, it would pay to study these distinctive characteristics, but it pays even more in the improvement of the flock from year to year that is made possible by the selection of birds having the combination of prolificacy and vigor. A convincing demonstration of the improvement that may be obtained in this way was made at the United States Experiment Farm in recent investigations. The late moulters, selected

from a flock of 100 Rhode Island Reds in the fall of 1920, laid several more eggs per bird during their second year than the original flock as pullets. They were used as breeders the following spring, and the first Red pullets to begin laying in the fall of 1921 were found to be the offspring of these late-moulting hens. Their pullets, in a period of seven months, have already averaged about two dozen eggs per bird more than the original flock. The value of their product would be about \$1.04 per bird more than the value of the eggs from the original flock during the same time. It is probable that this large margin will be increased even more in the next five months. In the original flock the bulk of the production was in March and April.

The wise poultryman will lose no time in culling out these poor producers of cheap eggs. He will start this summer building the foundation for a flock of long-distance layers. The birds can be selected now and next spring, after a short rest in the winter, their eggs will produce a high percentage of strong, healthy chicks that are almost certain to make better records in flock production. If good sires are selected the improvement will be surprisingly rapid.

REGARDING TUBERCULOSIS.

WHEN hens become lame in one leg and rapidly emaciate and die it is usually a sign of tuberculosis. Perform a postmortem and note if the liver is covered with the spots which are an additional symptom of the disease. There is no cure, but the trouble must be controlled by prevention. Isolate any suspected birds as the disease may spread rapidly. If you have a valuable flock it is always best to consult a veterinarian and accept his recommendations after he has inspected the flock and the premises.

WEAK DUCKS.

DUCKS often become weak and die because their ration is too concentrated. Leg weakness in fowls of all kinds is not thoroughly understood and is difficult to treat but can usually be controlled by careful feeding methods and plenty of range. For ducklings a good ration consists of wheat bran and low grade flour with only about fifteen per cent corn meal. Then add a good sprinkling of green rye, cut clover and 10 per cent beef scrap and five per cent sand. The sand should be rather coarse. Many ducks receive too much corn meal and do not have a chance to range and exercise enough where the green feed is abundant. Plenty of shade during the heat of the day helps to keep ducks healthy. —Kirby.



This is the Season When the Turkeys Start Early in the Morning on their Long Hikes for Fresh Grasshoppers.

RURAL HEALTH

By Dr. C. H. Lerrigo

SUNSTROKE AND HEAT STROKE.

A GOOD driver is very tender of his horse in hot weather, for he knows that a very short stretch of work while the animal is overheated may be the ruin of it. This is just as true of human beings. We can stand a lot of hot weather and a lot of hard work, but there is a limit beyond which we are in very serious danger. Scores of persons die every hot season from sunstroke and heat stroke and almost all of these deaths could have been prevented. When you investigate such a case you will find that the man did not feel quite himself that day, or perhaps he had but recently recovered from an attack of "flu" or some other weakening disease. But the work was urgent, so he went out and kept at it "until he dropped." Poor judgment!

In sunstroke there is a severe congestion of the brain. The face is red and the skin is burning hot. The sufferer should be placed in the nearest shady spot, lying down but with the head raised. Cold water should be applied (ice if it can be obtained) and if the case is very serious it will pay to rush the patient to a hospital where he can have cold baths. But it is very important that the patient himself be kept from every exertion.

Heat stroke requires very different treatment. The patient is in a condition of shock or collapse. The heart is very feeble. The skin is covered with clammy sweat and the extremities are probably cold. The sufferer must be put at absolute rest, lying down in the coolest place available. He needs stimulation. The clammy skin must be rubbed; it may be necessary to cover him with a blanket while the stimulation is going on. If he is able to swallow, stimulants may also be given by the mouth, and instead of cold they should be hot. With both patients rest is very necessary and with either it is very important that he take time enough for complete recovery before being again exposed to the hazards of hot weather work.

QUESTIONS AND ANSWERS

We are writing you in regard to our infant son born with a cleft palate. He is fifteen weeks old now. His gums and lips are perfect. What information can you give us in regard to what age he should have an operation done to close his palate. Some surgeons suggested to wait till he is around a year old, others say the sooner the better. He is gaining and doing well.

Anxious.

Cleft palate should be operated at as early an age as possible. The success of the operation depends upon getting a good bony frame-work and this is done better early than late. Very good results are obtained but you must not expect the whole thing to be done at once. The surgeon has to do the operation in several stages. It may take four or five operations to get satisfactory results.

Please send me a remedy for my feet. I am a 100 lb. woman 32 years old. I wear shoes No. 8, low heels or no heels. My feet hurt me most all the time, worse in summer. They ache in bottom. It seems like the bone is what aches. I have a pair of arch supporters. They do no good.

H. H.

No internal remedy will help such a case. It is a mechanical defect and can be helped by muscle training and by proper bandaging. Your shoes should be built up along the inner border, you should walk toeing in rather than out, and throwing your weight on the outer edge of the foot. A stout bandage of adhesive plaster applied by a doctor who knows how to do it will be more helpful than arch supporters.



Steadfast as the Oak Tree—Time's Judgment on the Colt "Gas Well"

THE oak tree is a living symbol of solidity, sturdiness and durability.

Only after an amazingly long and sturdy existence does it bow to the will of Time.

Having read about the marvelous COLT Lighting and Cooking Plant, you doubtless have wondered how permanent it is. How long it will continue to shed its incomparably beautiful white light. How long your wife will have that delightful city convenience of cooking, ironing and heating water by Carbide Gas. How simple will be its operation. How economical. How much attention will be required. How often you will have to call for service, replace parts and units, mend and repair. In a word, how will the COLT weather the Test of Time.

Let COLT users speak. They know. They speak from experience—long experience. And there are legions of them. Altogether close to a half million farmers and others in rural communities light and cook with this wonderful, non-poisonous Carbide Gas. Here are three letters out of scores that testify to the oak-like durability and sustained perfection of the COLT.

Twenty-four years' Service, practically no repairs

April 28, 1919.

J. B. Colt Co., New York City.

Gentlemen:—Answering your letter of recent date, will say: We have used your Colt Generator for about twenty-four years. It is a 200-light machine and we have 200 lights hanging on it. The Generator has given us the best of

service in all this time. The machine has been doing its work at practically no cost to us for repairs of any kind. Very truly yours, (Signed) P. R. JOHNSON.

There is the test of time.

Another letter from Bradford Norman, 5 West Marlborough Street, Newport, R. I., reads:

"J. B. Colt Co., New York, N. Y.

"Dear Sirs:

"Will you please send me one felt filter for my machine? This machine was installed over twenty years ago and has given perfect satisfaction during that time and the above order is the first expense outside operating (an occasional drum of carbide) that I have had to make."

The test of economy—less than one dollar in twenty years for part replacement!

After Ten Years, Works Like New

Cheapest and Best Farm Light

Shiloh, Ohio, May 22, 1920.

To whom it may concern:—

Ten years ago I had a J. B. Colt lighting system installed in my former home at Lexington, O., for which we used continuously during that time for both lights and cooking, and never cost one penny for repairs, to-day my younger brother lives there and it works as well as the day it was installed.

One year ago I purchased the farm where I now live, and one of the first things I did was to buy another J. B. Colt light plant and have it installed. I have my house and barns both lighted with it and wouldn't do without it for several times the cost, after ten years use

I figure it the cheapest and best light for the farmer.

Very Respectfully Yours,

C. K. INK, Shiloh, Ohio

The Final Test

The Government needs for its beacon lights at the entrance of harbors and along rocky ocean shores the most dependable and economical lighting system it can procure. What light is used? CARBIDE LIGHTING! What generators? MOSTLY COLTS!

Simplicity and Economy

Feed the generator Carbide once in a while and run water into the water chamber—that's all you need do. The machine makes the gas automatically. No continual replacement of parts and power units. No service necessary. Your Colt is a lifetime investment in reliability, simplicity and economy.

The COLT comes from factory to farm—sold direct to you by COLT solicitors—no distributors or dealers to take a profit. This applies everywhere. A substantial saving here.

Don't Invest in Any System Until You Have Heard the Full Story of COLT

An investment in better light, better cooking, comfort, convenience and happiness indoors is the best investment you can make—Get the FULL STORY of the COLT before you make that investment. Send post card to address below today.

PAY IN
A YEAR
—
NO
MONEY
DOWN

J. B. COLT COMPANY

30 East 42nd St., New York

8th and Brannan, San Francisco

COLT
TRADE MARK

Oldest and largest manufacturers of Carbide Lighting and Cooking Plants in the World

CARBIDE LIGHTING-AND-COOKING PLANTS

ESTABLISHED 1891

Save one-fourth to one-half. Get Galloway's back to normal prices. Galloway cut the melon mere chandising has cut the heart out of farm equipment prices. Galloway machinery is away ahead in patented features and honest quality. 250,000 pleased customers—all farmers—say Galloway goods are the greatest value on the market. Satisfaction guaranteed. Cash or credit—30-day free trial. Send today for the Galloway sensational price-cutting buyer's guide.

Wm. Galloway Co., Dept. 487, Waterloo, Iowa

Mention The Michigan Farmer When Writing Advertisers

MICHIGAN FARMER PATTERNS

No. 3744.—Child's Romper. Cut in four sizes, 2, 3, 4 and 5 years. A four-year size will require 2½ yards of 32-inch material. Price 12c.

No. 3437.—Child's Dress. Cut in four sizes, 1, 2, 4 and 6 years. A four-year size will require 2½ yards of 36-inch material. Price 12c.

No. 3704.—Girl's Under Garment. Cut in six sizes, 4, 6, 8, 10, 12 and 14 years. A 10-year size requires 2½ yards of 36-inch material. Price 12c.

No. 3734.—Girl's Dress. Cut in four sizes, 8, 10, 12 and 14 years. A 12-year size requires four yards of 40-inch material. Price 12c.

Our Boys' and Girls' Department

My Trip to Detroit

And the State Fair

By Walfred Anderson

ONE Saturday afternoon in late June my parents, my brother, sister and I were in Iron Mountain. My father and I were walking along the street when we happened to meet Mr. O'Hara, a former Commissioner of Schools in this county. He greeted us and then said to me, "So you're the boy who's going down to Detroit." This surprised me very much and I did not believe it.

When we came home that night, I was down to the Post Office and there was a letter waiting for me. I hastily tore it open and found that the present Commissioner of Schools of this county had written and told me that I had won the trip to the State Fair and I was to represent Dickinson County as a member of the Boys' State Fair School.

On the night of September 3rd we left. For companions I had three Felch boys, who had won the trip for Handicraft work and also the County Agricultural agent as their leader.

We arrived in Iron Mountain about half past six, by car, when my brother brought us there as he was also to get my sister.

Well, Sunday night came after we had spent all day in the city of Iron Mountain. The train arrived at 7:25. We hurried on it, and went to the drawing room which Mr. Miller had acquired for us during the night. It was very comfortable in it as there was some kind of a couch by one side and two seats on the other, and we had that whole room all for ourselves.

About half past nine we called the porter, as he was to fix up our beds, which could be made out of the seats and couch. We went out to another sort of a room while he was fixing it. It did not take him very long before he came and told us that all was ready to get in bed.

When we got into our room everything was changed. Where there were seats before there were two beds one above the other and where the couch was was also a bed.

Albin and I decided to sleep in the lower berth so Arvid and George had to sleep in the upper. Mr. Miller slept on the couch. We fell asleep very quickly as the swinging of the cars just rocked us to sleep.

I don't know what time I woke up the next morning but it was already light outside as I could see through the window. We were then in the country some place in Wisconsin. We all had waked nearly at the same time. Albin and I were just watching the country scenery from our beds. After a while we all four boys got up out of bed and dressed.

At 10:05 we left Chicago and arrived in Detroit about half past six. We then took the street car up to the Fair grounds.

I registered and was assigned to sleep in tent S. Three other boys were in that tent also. They were from Wayne, Kalamazoo and Arenac counties.

The next morning every boy had to line up and then go and pick paper off the grounds. This was our work every morning during our stay there. Next we were lined up and marched to some restaurant for breakfast.

After breakfast the whole Boys' School went and visited the different buildings. Our squad visited the Educational, Agricultural, and Machinery and some other buildings. They had all sorts of agricultural products in the Agricultural building, machinery at the Machinery building and educational

and other things done in school at the Educational building. When it was dinner time we had to line up again and march to the restaurant. We had to do this all the time when we went to our meals or any other place.

In the afternoon again our squad visited some more buildings, among them being the Poultry and Automobile.

The next day again we went and visited some more buildings such as the Dairy barn, etc., and that night we went over to the Grand Stand. There we saw all sorts of vaudeville stunts, fireworks up in the aeroplanes and drills.

The following day we visited the Grand Stand again. The same stunts were performed but there were also stunts up in the aeroplanes and jumping down in parachutes and changing planes, etc.

On Thursday Mr. Miller had his new car at the fair grounds and he, Albin, George, Arvid and I went down to Belle Isle, which is an island in the Detroit river. Here they had some kind of a zoo where wild animals are kept and we also were in an aquarium.

On Friday morning we started for home, that is, Mr. Miller, Arvid, Albin and George and I. We went by the way of Chicago, Milwaukee, Green Bay and Iron Mountain, arriving home Sunday night after traveling nearly 700 miles.

For this wonderful trip I have to thank Mr. Miller, and his wife very



The Wind Up Of Our Successful Livingston County Club Tour

much and also Mr. Sweeney, the School Commissioner of this county, and Mr. Lawrence, the teacher I had last year when I was enrolled in the eighth grade.

Now those boys who are in the eighth grade this year ought to try real hard to win that wonderful trip for it sure was grand.

CLUB INTEREST IN LIVINGSTON COUNTY

THE growth of club work or the value of club work to the boy and girl cannot be measured alone by the money that is made on the project, but the most important part is getting the young folks acquainted with the business and social necessities of life.

Unfortunately, the parents do not see the value of this great work which means so much to the future farmer. Usually a few encouraging remarks by one of the community leaders is the "crank" that the club leader uses in getting a club organized.

A community's success depends entirely on the co-operation of the parents. This is, no doubt, one of the reasons that Livingston County has made such

strides in its club work. There are now 120 active club members in the county, the work having been started after June 1st. Holstein calf projects predominate, but many sheep, pig, canning and sewing club members are also active.

On July 21st, there was a tour of the County in the interest of Boys' and Girls' Club work, and the spirit of co-operation between the club members, parents and business men was quite evident. Short stops of thirty minutes each were made in each community where clubs were active, and a demonstration of some kind was conducted in each place.

Hon. D. D. Aitken gave a real educational talk after everybody had partaken of a real pot luck dinner.

Earl J. Cooper, National Club Leader

for the Holstein Friesian Association, conducted a very interesting demonstration at one of the stops. Nevels Pearson, Livestock Club Leader for Michigan, and T. L. Bewick, State Club Leader for Wisconsin, each gave a very interesting talk.

One of the unique parts of the tour was the welcome administered at each stop. Business men in each town passed out ice cream cones, candy and cigars, and in one community, the girls' canning club served sandwiches with iced tea.

There were as many as thirty-five cars in the tour, the picture showing the wind-up for the day, with one of the club members and his calf in the foreground. Some are still busy eating ice cream furnished by the County Holstein-Friesian Association.—C. L. B.

Our Letter Box

THIS letter box will be where the boys and girls can express their views, tell of themselves and things about the farm, or ask advice. The most interesting letters each week will appear here. Address your letters to me.—Uncle Frank.

Dear Uncle Frank:

I am hoping that I may become one of your nieces, too. I live on a forty-five-acre farm three miles east of Ionia. I am fifteen years old and will be in the tenth grade next year. We have taken the Michigan Farmer for quite a long time, but I have not paid much attention to the Letter Box, but the more I read it the better I like it. It is very interesting to read about people that live in a different part of your state or country.

We have a dog named Joe and we just sheared him the other day. Now

Somebody had forgotten to put her in the barn so she came to tell us about it. Don't you think she is clever? I do.

I think I am taking up too much time and space, so will close. I hope you will let me come again. Your niece, Elizabeth Stilber, Royal Oak, Mich.

You apparently have an educated calf. Tell us some more of Baby's tricks.

Dear Uncle Frank:

I have been reading the Boys' and Girls' Department for several months, and find it very interesting. I have been living in towns and cities most of my life. But now we have bought a farm.

But, say! I certainly do like farm life. A person has some freedom down on the farm. He can roam around in the forests, fish in the streams, have the first and best of ripe fruits.

With good wishes to all who try for the contests. Yours truly, John Grymiurck, Three Oaks, Mich.

I have also had both city and farm living experience and I thoroughly agree with you that the farm is the best.

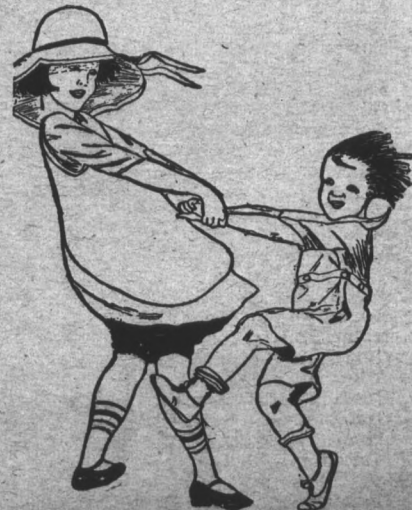
Dear Uncle Frank:

I am a farmer girl, eleven years of age. I like to read the Michigan Farmer Boys' and Girls' page and contests.

We have a forty-acre farm, and for pets I have rabbits, bantam chickens, and kittens. When the bantam mother left her chicks the little bantam rooster took care of them at night. They cuddled under him as if he was their mother.

I have a mile to go to school and am in the eighth grade. Your niece, Leona R. Rapp, Grand Rapids, Mich.

That banty rooster ought to get a medal for taking the responsibilities of a wayward mother.



Drawn by Viola Dankenbring

BETTER-BISCUIT CONTEST.

A STATE "Better-Biscuit Contest" was the special feature of the girls' cooking club work in South Carolina last year under the supervision of the extension worker from the United States Department of Agriculture and the State College of Agriculture.

The winner of the state championship was Pauline McCoy, of the eastern district. She joined the cooking club in February and did not miss a meeting throughout the year. During June and July she kept house and put up over two hundred jars of fruit and

A New Contest

THIS week we are going to have a contest to test your business ability. To begin with you are each to suppose you have five dollars with which you may do as you wish. For the best little story of not more than one hundred words, entitled "How I would Invest Five Dollars," a prize of one dollar will be awarded to each of the five best stories. This contest closes August 24. Please address all letters to Uncle Frank, Michigan Farmer, Detroit, Mich.

vegetables. She was selected as cooking-club representative to go to the annual short course at Winthrop. Her prize for biscuit making was a stove.

THE FUNNIEST THING I EVER HEARD

By Mary Hackley, Mattawan, Mich.

A little girl was sitting thinking and finally she asked her mother, "Mama, did you say papa was born in Missouri?"

"Yes, dear."

"And you were born in Illinois?"

"Yes, dear."

"And I was born in New York?"

"Yes, my dear."

"Well, doesn't it beat the Dutch how we all got together?"

By Dorothy Baisch, Monroe, Michigan.

Tommy had been out playing till he was very tired, and did not feel inclined to say his prayers, but his mother insisted. So Tommy began:

"Now I lay me down to sleep, I pray the Lord my soul to keep—

If, prompted his mother.

Tommy (sleepily), If he hollers let him go.

Ee'ny, meeny, miny, mo.

WANT TO CORRESPOND

The following boys and girls would like to correspond with other young folks who are interested in this department:

Mildred Seager, R. 2, Reed City, Mich.

Gladys Shinn, Nirvana, Mich.

Effie Stonerock, R. 3, Kalamazoo, Mich.

Betty Clement, Ionia, Mich.

Allene Day, Hartford, Mich.

Mable Sanderson, R. 2, Big Rapids, Mich.

Rex Ellis, R. 2, Reed City, Mich.

Minard Holst, Jenison, Mich.

Lyle Patterson, Alto, Mich.

Florence Derker, R. 1, Saginaw, Mich.

Leah Hatch, Okemos, Mich.

Hazel Evans, Alden, Mich.

Dorothy Thomas, Box 32, Steiner, Mich.

Doris A. Greene, Snover, Mich.

Neita Brown, North Star, Mich.

Gay Vance, Turner, Mich.

Melva Rendel, Britton, Mich.

Mayme Rusch, R. 6, Traverse City, Mich.

Alida Ann Rigel, Custer, Mich.

Ruth Wilson, Belleville, Mich.

Nona Smith, Roscommon, Mich.

Gertrude Witte, Fremont, Mich.

Alice Barr, Dundee, Mich.

Georgia Brown, R. 3, Hastings Mich.

Genevieve Burrell, Cheboygan, Mich.

Alma Venneman, Ada, Mich., R. 4.

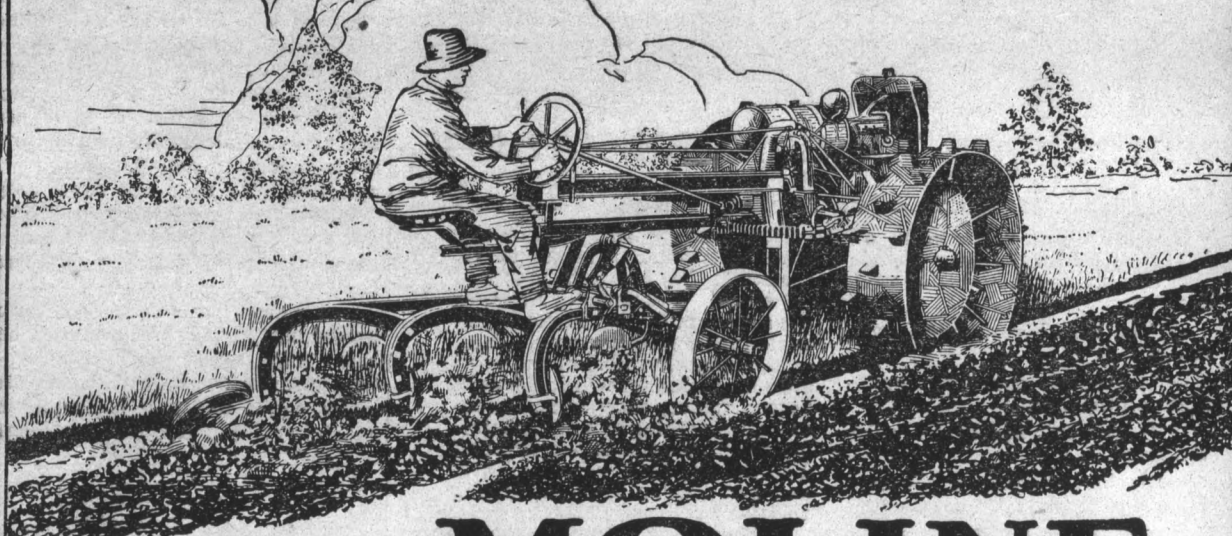
Magdalen Thompson, Goetzville, Mich.

Charles Ohhoggee, Midland, Mich.

Jeanette Crist, Deerfield, Mich.

Helen Haveland, Doster, Mich.

Was \$1325
Now Reduced To \$650



MOLINE

UNIVERSAL TRACTOR

Sold on "THE MOLINE PLAN"



Send for this booklet!

It tells how you can make big savings on the cost of your implements. It tells how the Moline Plow Co. Inc., is answering the demand of farmers for years by cutting out the terrific waste in getting implements to the farm. This is the biggest thing which has happened in the implement business for years. Inform yourself. Get ready to make your savings. Send for this booklet today!

Write Department 4.

Farmers who are buying on "THE MOLINE PLAN" are making savings which put implements on their farms at lowest possible prices.

Without question, the MOLINE UNIVERSAL is the greatest tractor value today, for it takes the place of five horses on an average 160 acre farm, larger and smaller farms in proportion. It furnishes power for all farm purposes, including cultivating. One man operates both the tractor and implements. He rides on the implement seat where he always has ridden, with his work in front of him where he can see it.

Moline Universal TRACTOR IMPLEMENTS also are low-priced. They include 3-2 bottom plows, double and single disc harrows, grain drills, 2-row cultivators, 6-foot mowers, 8 and 10-foot roller bearing binders, etc. "Drag-behind" tractor or horse drawn implements work just as well with the MOLINE UNIVERSAL as with any tractor.

Send for Literature on THE MOLINE UNIVERSAL TRACTOR which proves that—

1. The Cost Today of Farm Power Supplied by the Moline Universal Tractor is less than the Cost of the Power Supplied by the Horses it Replaces.
2. The Moline Universal Tractor Saves Man Power on the Farm.
3. The Power Supplied by the Moline Universal Tractor is better than Horse Power.
4. Moline Universal Tractor Power is Cheaper and Better Farm Power than the Power Supplied by Any Other Type of Tractor.

If you do not know the nearest Moline Dealer, ask us for his name.

MOLINE PLOW COMPANY INC.

Reorganized, Refinanced, Powerfully Capitalized

MOLINE ILLINOIS

You Can Make Money Milling Flour

One of the best paying and most dignified businesses you can get in, or put your boy in now—admits, is flour milling. On a comparatively small investment, and without any previous milling experience you can own and run the wonderful "Midget" Marvel Mill and make good money from the start.

"Midget" Marvel Self-Contained Roller Flour Mill

Saves the high freight on wheat out and flour and feed in. "The first eight months I made a net profit of over \$8000," says A. E. Ling, Jetmore, Kan.; "My profits from the 'Midget' Marvel average right around \$40 per day." Chas. M. McKinney, Cooper, Tex.: "Was \$8000 in debt when I bought my 25 barrel 'Midget,' and the little mill pulled me clean out of the hole long before I bought my 40 barrel mill from you," says M. A. Kamm, Oxford, Mich.

Capacities: 15, 25, 50 and 100 barrels of as fine roller patent flour a day as any mill can make. Write for free book, "The Story of a Wonderful Flour Mill," trial offer, terms, etc.

Anglo-American Mill Company, Inc.
2222-2228 Trust Building, — Owensboro, Ky.

HOOSIER STOVES & RANGES FREE

To try in your home 30 days. Should you not like it return at our expense. Million members of families now using Hoosier Stoves, best made, the latest design and guaranteed for two years. Ask your dealer to show you "Hoosiers" or write us for our big free book showing photographs. Large assortment and sizes at a big saving. Send postal today.

HOOSIER STOVE CO.
131 State St. Marion, Ind.

Double your Profits

from crops next year by putting on agricultural

LIMESTONE

this Fall. Ask us for booklet and price.

The France Stone Co., Toledo, O.

Buy Your Fruit Trees At Once

before you forget. Issue early, prompt delivery and special low prices. Our hardy, vigorous peach trees, apples, cherries, berries, guaranteed healthy and true to name. Order now—pay next Spring. Write for our beautiful catalog.

Celery City Nurseries, Box 206, Kalamazoo, Mich.



NEWTON'S

for Heaves, Coughs, Distemper, Indigestion. Use two cans for Heaves—if not satisfactory, money back. One can often sufficient. \$1.25 per can. Dealers or by mail. Newton Remedy Co., Toledo, O.

PAINT—\$1.17 PER GALLON

Get factory prices on all paints. We guarantee quality. We pay the freight. Write today. Franklin Color Works, Dept. M. Franklin, Ind.

MAPLEHILL FARM

Poland China Swine Pedigreed Field Seeds Spring boars and sows for sale. A few pairs and trios not akin. Certified American Banner wheat.

GEORGE WHEELER, Mt. Pleasant, Mich.

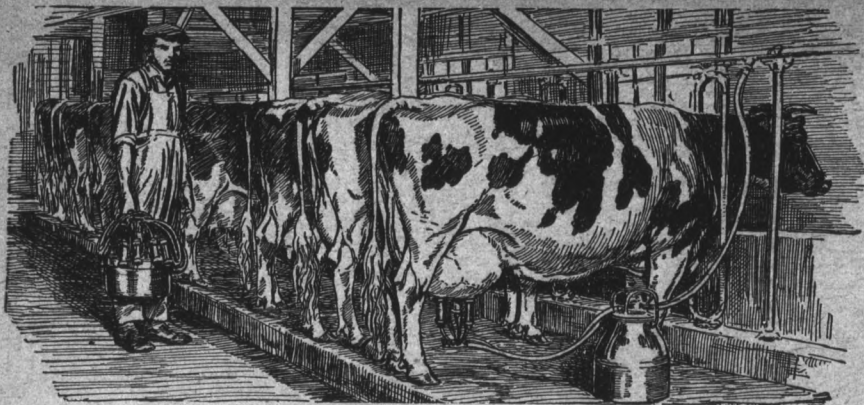
Please Mention The Michigan Farmer when writing to advertisers

ADDITIONAL PATTERNS



No. 3720.—A Smart Wrap. Cut in four sizes: Small 34-36; medium 38-40; large 42-44; extra large 46-48 inches bust measure. A medium size will require 4½ yards of 54-inch material. Price 12c.

No. 3728-3725.—Ladies' Costume. Waist 3728 cut in six sizes, 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 3725 cut in seven sizes, 26, 28, 30, 32, 34, 36 and 38 inches waist measure. To make the dress for a 36-inch size will require 5½ yards of 38-inch material. The width of the skirt at the foot is about 2½ yards. Two separate patterns, 12c for each pattern.



"I would quit the dairy business if I couldn't have a De Laval Milker"

Not one but hundreds of De Laval Milker users have made this and similar statements, such as:

—"the best investment I ever made."

—"the most profitable equipment on the farm."

—"I wouldn't sell it for twice the price."

—"makes dairying a pleasure instead of drudgery."

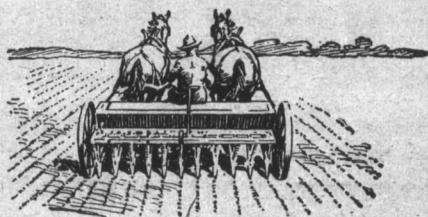
Strong words, and yet none too strong when you know what a De Laval Milker will really do.

How much wheat, corn or any other crop would be raised in the country if they had to be produced by hand? Not much. And yet the annual milk crop is more valuable than any other single farm crop. Then why milk by hand when a De Laval Milker will do the work better, faster, cheaper and cleaner, to say nothing of making dairying more pleasant and profitable? You are paying for a De Laval and not getting it by continuing to milk by hand.

Sold on easy terms so that it will pay for itself. Send for complete information.

The De Laval Separator Co.
NEW YORK CHICAGO SAN FRANCISCO
165 Broadway 29 E. Madison St. 61 Beale St.

Sooner or later you will use a
De Laval
Milker and Cream Separator



Wheat Winter Oats and Rye

should receive the right kind of fertilization if they are to be profitable under the present trying conditions on the farm.

Use a fertilizer containing

3 to 5 % POTASH

and 6% to 8% if these grains are to be followed by grass or clover. There is plenty of Potash in the country at much lower prices than last year, and if you insist on getting it, you will again find that

Potash Pays

SOIL AND CROP SERVICE, POTASH SYNDICATE, H. A. HUSTON, Mgr.
42 Broadway New York

On the Dairy Farm

Keep Cows In Good Flesh

GOOD dairymen recognize that cows kept in good flesh develop increased capacity for milk production and insure improvement in the upgrading of the herd. The production of large yields of milk places a heavy drain upon the physical vitality of a cow, and only by proper feeding can she continue to produce economically.

Pastures during the summer season are bound to decline and despite good management gradually become less nutritive. To keep the cows in good flesh and insure large yields of milk during the late summer and fall months require that the pastures be supplemented with other feed.

Dairy cows have been bred for milk producing purposes to such an extent that they will sacrifice their own bodies for milk production. Profitable dairy cows, like any delicately made machinery, can not for any length of

this particular day he was all in Kalkaska. While the ladies arranged for the dinner, the men spent the time in visiting, and in informal discussion.

At the beginning of the program hour, Mr. Rosenberg put into a few well chosen words the welcome that had been so evident all the while, and then Mr. Paul Hayward, Secretary of the club, took charge of the meeting.

County Agent Drake spoke upon the "advantages of pure-bred cattle," made a strong plea for the cow-testing association, and pledged his very best efforts to the development of the dairy business in the county.

H. E. Denison of the extension department of the college encouraged the people of the county in their efforts toward building up pure-bred herds.

The writer emphasized the value of good blood in the dairy, and the importance of breeding pure-bred cat-



Careful Breeding Increases Uniformity in the Herd.

time withstand heavy work unless well cared for and supplied with the necessary material for replacing the bodily tissues which are constantly wearing out.

A large number of dairymen plan to have their cows come fresh in the fall and early winter. With this practice the cows are on pasture when the pasture is on the decline. During the first few months of the gestation period the cow is not drafted upon for any large amount of nourishment for the coming calf, but as it gradually develops more nutriment is required. Cows several months along in pregnancy should be well fed to keep up their own bodies and give their unborn offsprings the necessary food for proper development.

It is the usual practice among dairymen to discontinue graining their cows as soon as they stop milking them. If the cows are in good flesh and on good pasture this practice is all right, but if the cows are in low flesh after several months of heavy milking, it is advisable to keep on with the grain for a time at least. The grain ration assists in balancing up the pasture.

Cows kept in good flesh reproduce strong heavy calves at birth and come to their milk in better condition for another year's work. I do not feel that feeding grain while cows are dry is an unprofitable practice. It prepares them for profitable production a little later on. Keep the cows in good flesh at all times and much less trouble will be encountered during the freshening and milking period.—Leo C. Reynolds.

GOOD DAIRY MEETING.

A SHORT time ago we received an invitation to address a meeting of dairymen in Kalkaska County, and planning to visit a number of granges in that part of the state, we accepted the invitation.

The meeting was held at the home of Mr. Douglas Rosenberg, a very successful farmer and a breeder of Jersey cattle. We rode to the Rosenberg Farm in company with the secretary of the Kalkaska Jersey Cattle Club, and found a goodly number there already. It was a highly representative company. Prominent farmers from nearly every part of the county were there. County Agent Drake is, in a general way, dividing himself between Kalkaska and Antrim Counties, but on

tle, and of not neglecting to register the young animals as they come along. He discussed the mixing of feeds in proper proportions to insure a balanced ration, and emphasized the feeding of each cow in the herd according to her performance. He gave illustrations of the value of a liberal ration to the good cows during the dry period.

After the formal program, all adjourned to the barnyard and the stable, for a look at a fine herd of Grade Jersey cows, twenty-six in all, with some promising calves. Here Mr. Denison gave an unusually strong lecture upon the subject of dairy conformation, illustrating with the cows chosen for the purpose. We have listened to many talks upon this subject, but have never heard one better calculated to give the average dairyman light upon this very important matter. It is not too much to say that Mr. Denison is a real teacher.

Kalkaska County is waking up to the advantages of pure-bred livestock. Already there are in the county three Jersey bulls whose dams have records of over seven hundred pounds of fat in a year, and there are many excellent cows. One may find good specimens of the Holstein and Guernsey breeds also; but as the farmers of this county find it necessary to market their cream instead of selling the milk, the Jersey cow naturally feels right at home.

Farmers in the county are taking a lively interest in legumes, and one may see many fine fields of alfalfa and sweet clover, while a considerable acreage of soy beans is in evidence. This crop is planted sometimes for hay, again for seed, and now and then, with corn to be put into the silo.

All this and more that we have not the space to tell, points to a prosperous future for Kalkaska County. May the dreams of her splendid people of a truly great tomorrow come true.—W. F. Taylor.

A BILL has just been introduced into the Canadian House of Parliament providing for the extension of the privilege to manufacture oleomargarin until August 31, 1923, and to sell until March 1, 1924. Recently the Canadian government enacted a law prohibiting the manufacture of this product. This new bill would give the oleo makers an additional year to operate.

Before You Buy A Silo Compare Quality and Prices



The first patent ever issued on a silo was awarded Kalamazoo over 30 years ago. Experience has again proved a good teacher.

Kalamazoo Tile and Wood Silos

are the standard of the world today. A Kalamazoo silo is a money-maker for you. A poor silo is an expense. Over 70,000 farmers can testify to Kalamazoo reliability and stability. Our Glazed Tile Silos are built of absolutely moisture-proof glazed tile—positively weather tight. Blocks have three dead air spaces—resist heat, cold, moisture, vermin. Need no paint or repairs. Will not warp, decay nor blow down.

Our Wood Stave Silos have stood the test of 30 years. Airtight joints, deeply grooved, tongued and splined. Shipped ready to erect. No nails or screws needed. Both tile and wood silos fitted with our famous continuous door frames of heavy galvanized steel.

Kalamazoo Glazed Building Tile has many uses about the farm. It is permanent, everlasting, economical construction. Reduces fire risk and insurance, beautifies the farm. There's a difference in tile. The book tells you how to judge tile. Write for a copy and our new low prices today.

Kalamazoo Tank & Silo Co.
Dept. 223 Kalamazoo, Mich.
Ask us about our Ensilage Cutters



When Writing to Advertisers Please Mention
The Michigan Farmer

BUT FEW DAIRYMEN USE OLEO

TO determine accurately how extensively farmers were using oleo, a survey was made among the 3,517 members of 127 cow-testing associations in Wisconsin regarding the use of butter substitutes. It was found that when good butter could be obtained at 35c to 40c per pound only five families out of the 3,517 were using oleo. The survey was made by A. J. Cramer, state leader in cow-testing work.

BOYS TO JUDGE LIVE STOCK.

ARRANGEMENTS have been made for a stock-judging contest for boys in five counties of the Grand Traverse region. The contest will be held late in August and specialists of the M. A. C. will have the affair in charge. It is expected that at least sixty farm boys will participate. The prize Holstein herd of the State Hospital at Traverse City will be one used in the contest. The boys will also judge hogs on the Zimmerman farm, and beef cattle at Sunny Slope Farms. Other herds will be visited during the contest.

HALF THE FLOCK.

EVERY thoughtful farmer who is keeping sheep recognizes that a good ram is really more than half the flock, especially where they are used upon grade ewes.

It is a poor investment to put money in an inferior ram. In fact, one who is looking for the maximum of results cannot afford to invest in a fair to good ram. What he needs is the best. Increased weight and better quality of lambs have resulted from the crossing of pure-bred Southdown rams to western range ewes at the Wisconsin Experiment Station.

Mr. Kleinheinz, who had charge of this work, declares that a high class flock of sheep may be established by securing a high grade of western ewes and mating them to an excellent ram of any of the mutton breeds. In selecting the ram, he states that a well-developed, low-set and smoothly made

ram with a lot of masculinity should be chosen to mate with western ewes in order to correct the rangy type common to that class of sheep. This makes a comparatively inexpensive way to establish a flock that should give satisfactory results.

COMPLAIN OF UNJUST CHARGES.

PRODUCERS of live stock through their cooperative organizations charge that unjust, unreasonable and discriminatory rates are demanded for the sale and purchase of live stock at the more important live stock exchanges of the country at a hearing in Chicago recently. It was represented that live stock commission charges are one hundred per cent higher than those prevailing in 1905. Other charges have been advanced to a point far beyond that warranted by the service rendered. The producers contend that the live stock commission business has been over-done and is over-manned.

WIDE SPREAD IN HOG VALUES.

RECEIPTS of hogs declined about 18 per cent from the record level of the final week in July and prices recovered. Light hogs again scored an \$11 top but the average at Chicago including packing sows is below \$9.50 and the lower grades are selling at lowest prices of the year.

Receipts during August are not likely to come up to the July level which were largest for that month of any recent year in addition to carrying more than the usual avoirdupois per head. But the country still has a lot of packing sows to unload and arrivals will be far from a famine. In addition, with cheap old corn the new crop of pigs will probably be hurried to market earlier in the fall than usual.

It cost \$161 to keep a tractor in one Ohio county in 1920, and only \$111 in 1921. Operating costs decreased twenty-seven per cent in the same period, according to a study just concluded at the Ohio State University.

Build first on paper. It's cheaper to rub out than to tear out.

Muscle Shoals

(Continued from page 166)

section (b) maintains the full purpose for which the Government built this development—namely, adequate domestic supply of explosives—and relieves the Government of all maintenance, depreciation and obsolescence charges.

Section XVI. Limits profits on all fertilizer products to 8% of fair, actual annual cost of production. Agrees to and provides a Board of nine, of which seven are farmers nominated by the American Farm Bureau Federation, the National Grange and the Farmers Educational & Co-operative Union, appointed by the President and confirmed by the Senate. Two members represent the company. There is an advisory member from the Department of Agriculture. This Board is to determine cost and regulate price to limit the profit to 8% as above, and shall have access to books at any reasonable time. This Board also has power to regulate the sale and distribution of fertilizer products. The Federal Trade Commission is given final power to settle any disagreement that may arise in the Board.

Comment:—The farmer is taken into full confidence as to costs, methods of production and distribution, and asked to co-operate in working out the solution of this fertilizer problem. Profits are limited to 8% of fair, actual annual cost, and the farmer is to determine what this fair, actual annual cost has been. This section is a guarantee to the farmer of a square deal and honest intent to make cheaper fertilizer. Any other contention in the face of the wording of Sections XV and XVI is absurd.

This section received especial criti-

cism from President McDowell in his recent address to the annual convention of the National Fertilizer Association and denounced as a violation of the Clayton Act and the Federal Trade Commission Act. Needless to say, the interests he represents have never tested these acts in this respect—namely, a fixed maximum profit, costs open to the consumer, and regulation of distribution by the consumer.

Section XVII. Gives Government full right in time of war to use of plant and personnel of the company, and also free access to plant at all times for confidential study and inspection.

Comment:—None.

Section XVIII. Provides for negotiation only at end of lease period under terms to be prescribed by Congress.

Comment:—None.

Section XIX. Provides procedure in case of violation of any of the terms of the contract.

Comment:—None.

Section XX. Sets out that the proposal is submitted in whole and not in part, and upon acceptance is binding upon the United States and upon Mr. Ford, his heirs, representatives and assigns, and upon the company, its successors and assigns. Contracts, leases, deeds and other instruments to be duly executed and delivered.

Comment:—Mr. Ford, in addition to the \$10,000,000 in Section I, obligates not only the company to be created, but also his entire personal and corporate estate, and not only for his life but also obligates his heirs and assigns that this contract be carried out in good faith.

NEW LOW PRICES

recently issued on

Pennsylvania
VACUUM CUP
TIRES

Known Pennsylvania Quality Rigidly Maintained

AND NOW—

FREE!

A "TON TESTED" TUBE

with each regular Vacuum Cup Tire purchased

Compare these NEW prices with those asked for ORDINARY makes:

30x3½

VACUUM CUP CLINCHER
FABRIC TIRE

\$11.95

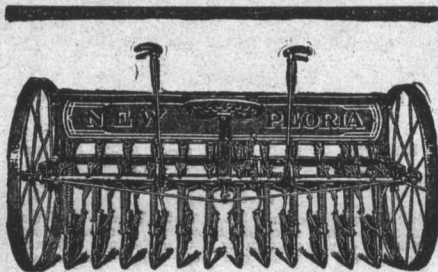
VACUUM CUP CLINCHER
CORD TIRE

\$13.65

32x4 VACUUM CUP CORD	\$29.25
33x4 VACUUM CUP CORD	\$30.15
32x4½ VACUUM CUP CORD	\$37.70
35x5 VACUUM CUP CORD	\$49.30

Shipped direct, prepaid, anywhere in the U. S., if yours is one of the few communities where there is not, as yet, a Vacuum Cup Dealer. Send for complete price list.

Pennsylvania Rubber Co. of America, Inc.
Jeannette, Pa.

Opens the Furrow—
Drops the Seed at the
Bottom

This means a better yield—more profits for you. No seed is wasted—none left exposed to birds and wind. Every seed is laid in the bottom of a packed seed bed and covered.

The New
Peoria Drill
For YOUR Farm

can pay back its cost quickly.

If you don't work your farm yourself, give your men this wonderful drill. Do it even if necessary to discard some other make. They can show you better results. You stop wasting seed and get bigger crops.

Every Seed Is Covered

No other drill can duplicate the work of the New Peoria. It works in any soil. Use it for any of the small grains—or peas, beans and corn. Can not injure the seed. Write for catalog and full information.

PEORIA DRILL &
SEEDER CO.

2420 North
Perry St.

The Peoria
Famous
Disc Shoe

Cut Ditching
and Terracing
COST

Get My 30-
Day Special
Fall Demon-
stration Offer

Write for FREE Book and Prices Farm Ditcher, Terracer and Road Grader. From 10-Day Trial. Cuts new ditches or cleans ditches down to 4 ft. Builds best field terraces, dikes, levees. Horses or tractor. Works in any soil. Great money-saving story for you now. Do not take chances on loss of crops. Write. Owensboro Ditcher & Grader Co., Box 515, Owensboro, Ky.

You'll Get
A Year's Wear or more,
when you buyNu-Way
STRETCH
SUSPENDERS

No rubber to rot. Phosphor Bronze Springs give the stretch. Nickel trimmed, 60c. Satin brass trimmed, 75c. Nu-Way Wide Web Garters, surprisingly easy and comfy, 50c. Ask Your Dealer for Nu-Way Suspenders, Garters and Hose Supporters. If he hasn't them, send direct, giving dealer's name. Every pair guaranteed. Nu-Way Stretch Suspenders Co. Dept. A, Adrian, Mich.

ATWATER KENT

SCIENTIFIC IGNITION
Easily Installed Improves Performance Automatic and Hand Spark Advance

FORD

Atwater Kent Mfg. Co. Dept. Q. Phila.
SYSTEM COMPLETE INCLUDING CABLES AND FITTINGS TYPE LA price \$11.75

Small Size Buckeye Ditcher and 32x54 Case Thresher for sale. J. J. HOUGHTBY & SON, Milan, Mich.

BREEDERS' DIRECTORY

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



Edgar
of
Dalmeny

George
Henry

They possess the Marked Degree of
Inimitable Quality

They are Distinctly Handsome.
They are Obviously High Class.

The Name

Edgar of Dalmeny

is an assurance of quality in the world of Angus cattle just as the name

George Henry

presupposes excellence in Belgian Draft Horses. The services of our Grand Champion Stallion, George Henry are available. Your Correspondence and Inspection are invited.

Wildwood Farms

ORION, MICHIGAN

W. E. SCRIPPS, Prop. SIDNEY SMITH, Supt.

Registered Aberdeen Angus cattle for sale. Everything sold until fall. Watch for our ad later. Come and inspect our stock. Inquire of F. J. WILBER, Ohio, Mich.

Brookwood Guernseys

Birmingham, Mich.

During the past year, we have completed Advanced Registry with 7 Guernsey Cows—two of which were heifers with their first calves.

The average butter-fat production of these cows was 650 pounds, and three of them, were leaders of their respective classes for the State of Mich.

We have for sale a number of good bull calves from these cows and their daughters, sired by Rosetta's Marshall of Waddington, No. 54420, Grand Champion Bull at the Michigan State Fair last year.

Our herd is not large, but it is select. Visitors are always welcome at the farm. Prices are reasonable, considering the quality of the stock.

JOHN ENDICOTT, Proprietor

Registered Guernseys

Another crop of calves. Choice bull calves \$75, their breeding and records will please you. J. M. WILLIAMS, No. Adams, Mich.

GUERNSEYS—REGISTERED BULL Calves. Containing blood of world champions. A. R. cows. Federal inspected. HICKS' GUERNSEY FARM, Saginaw, W.S. Mich.

GUERNSEYS

3 fine heifers, 1 bull, all registered, \$400, if sold this month. W. W. BURDICK, Williamston, Mich.

Registered Guernseys tuberculin tested and free from contagious abortion for sale. John O. Chalmers & Son, 1224 Olivia Ave., Ann Arbor, Mich.

WINNWOOD HERD

Registered Holsteins

It was through the daughters of
**Flint Maplecrest Boy that
Sir Ormsby Skylark Burke**

Our Junior Herd Sir.

produced the Junior Champion and Reserve Grand Champion Heifer, at the Michigan State Fair this year, in a class of 38.

His get won first in Calf Herd, also first in get of sire, in a class of 13.

A son of either of these great bulls will help the individuality and production of your herd.

We have bulls at dairymen's prices, and we also have bulls at the breeder's price, from dams with records up to 38 lbs. of butter in seven days, and 1168 lbs. of butter in one year.

Ask us about a real bull, a Maplecrest or an Ormsby.

JOHN H. WINN, Inc., Rochester, Mich.

The Traverse Herd

We have what you want in BULL CALVES, the large, fine growthy type, guaranteed right in every way. They are from high producing A. R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

For Sale King Segis Breeding

Bulls of show type that are out of A. R. O. Dams.

Grand River Stock Farms

Cory J. Spencer, 111 E. Main St.
JACKSON, MICHIGAN

\$75.00 Buys A yearling bull ready for light service. The six nearest dams of sire average 33.34 lbs. butter for 7 days. Dam has 18.33 lb. record made at three years old. OSCAR WALLIN, Unionville, Mich.

Friesian heifer and bull calves, purebred registered and high-grade. Price \$20 up. Splendid individuals and breeding. Write us your requirements. Browncroft Farms, McGraw, N. Y.

Ache?

Gombault's Balsam touches the spot. It quickly relieves pains and aches. At your druggist's or by parcel post. \$1.50 per bottle. Lawrence-Williams Co., Cleveland, Ohio.



GOMBAULT'S BALSAM

The Imported Liniment
HEALING and ANTISEPTIC

Registered Holstein Bulls

M. S. D. Michigan Ona Weg, Born Nov. 1, 1921. Sire's dam 29 lbs. Dam, 23 lbs. as a Jr. 2 year old. Her 6 nearest dams average 28 lbs. M. S. D. Michigan Butter Boy, Born Oct. 27, 1922. Sire Veeman Pontiac Lake Side Lad. Dam Thornapple Veeman Pride. A 24 lb. daughter of a proven 25 lb. sire. Write for further particulars and prices. Michigan School for the Deaf, Flint, Mich.

32 Lb. Bull, \$150

Pure bred, registered, federally tested. Dam, a daughter of King Segis Pontiac, 37 lbs. Good individual, mostly white, 1 yrs. old. Guaranteed healthy and breeder. Priced to sell quickly. Pedigree on request. ALBERT G. WADE, White Pigeon, Michigan.

Holstein-Friesia—pure-bred bull calves, tuberculin tested herd. Prices are right. Larro Research Farm, Box A, North End, Detroit, Mich.

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

Reg. and high grade Holstein cows and heifers due to freshen this fall, priced reasonable. Bulls all ages priced to sell. B. B. Reavey, Akron, Mich.

856 lbs. butter 1960 lb. milk largest 4 yr. semi-official record made in Wayne Co. For yearly production get a Hazellet, Federal tested. M. L. McLaulin, Redford, Mich.



Money-Making HEREFORDS

At St. Clair, for sale and ready for immediate delivery.

Registered Cows and their Sucking Calves

Registered Bred Heifers—Registered Yearling Heifers—Grade Cows—Unregistered and their Sucking Calves—Good Bulls, various ages.

Our Detroit Packing Co., Hereford Baby Beef Contract and the Sotham Hereford Auction System guarantees our customers profitable cash outlet for all increase and we can help finance responsible purchasers. Come, wire or write, right now.

T. F. B. SOTHAM & SONS,

[Cattle Business Established 1835]

Saint Clair, Michigan Phone 250

HEREFORDS for sale. A few extra good fall calves for sale. RALPH CALHOON, Bronson, Mich.

Herefords

Repeaters, Beau Donalds, Fairfaxes, and Farmers represented in our herd. Repeater 173rd, a son of old Repeater, at head of herd. Both sexes and all ages for sale.

ALLEN BROS.,

(Farm at Paw Paw, Mich.)

Office 616 So. West St., Kalamazoo, Mich.

Brookwater Farm

JERSEYS and Duroc JERSEYS Bred sows and gilts, boar pigs. Jersey bulls from tested dams. Tuberculosis free herd.

Come to the farm or write for prices. BROOKWATER FARM, Ann Arbor, Michigan H. W. Mumford, Owner, J. B. Andrews, Lessor.

Jersey Thoroughbreds

Few cows and bull calves. Best breeding line. Guaranteed. Tuberculin tested twice a year. If you have no money will take bankable note. E. W. Vasey, 509 Free Press Building, Detroit, Mich., Main 1267.

JERSEY BULLS nearly ready for service. Springfield Owl breeding. Herd tuberculin tested. FRED L. BODIMER, Reese, Mich.

BUTTER BRED JERSEY BULLS FOR SALE CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

For Sale Jersey Bulls ready for service: Lad, Majesty breeding. WATERMAN & WATERMAN, Packard Rd., Ann Arbor, Mich.

Lillie Farmstead Jerseys For sale, 12 heifers bred to freshen this fall, 6 bull calves, 6 to 9 mo. old. Colon C. Lillie, Coopersville, Mich.

Stock Farming

RAISING THE RIGHT TYPE OF HORSE.

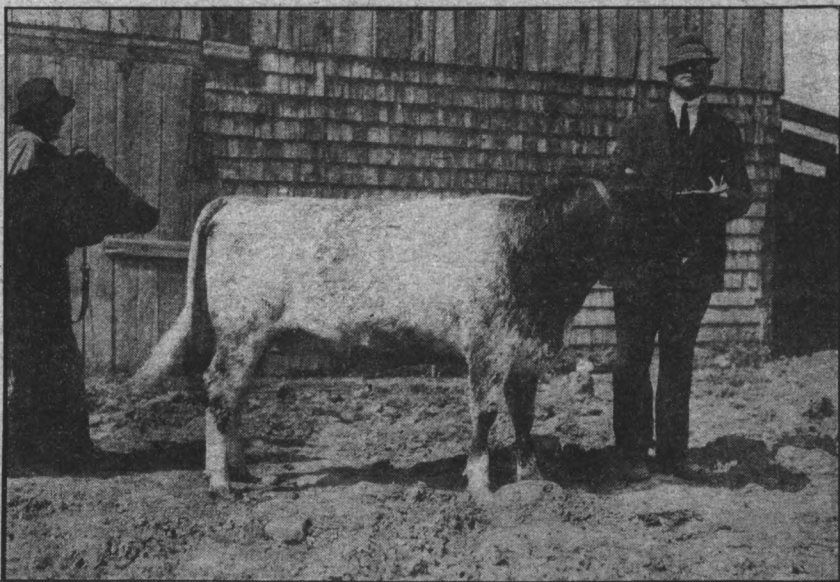
THERE is a great need today for more efficiency in horse-breeding or better, perhaps, for the production of horses that will attain the highest point of efficiency in the work they are to do. The manufacturer of motor trucks and tractors has in view at all times the efficiency of his product. His constant aim is to so perfect his product that it will perform the work required of it in the most efficient and economical manner. The horse producer should have this same incentive in view.

Ten or fifteen years ago we were more efficient in horse production than we are today. Breeders had ideals before them which they aimed to attain. There were ideals in heavy drafters, in light drafters, in wagon horses, and in lighter types, which farmers en-

weight consistent with good quality, the better.

The same reasoning holds true in the production of other types. The type next to the heavy drafters in demand today and which commands good prices, is the sound, well-built wagon horse. This kind should weigh from 1,100 to 1,300 pounds. For heavy delivery work, such as delivering milk, a horse must have weight enough to haul from 2,000 to 2,500 pounds, and get away with it at a reasonably swift gait. The lighter delivery type does not require so much weight, but must be well built, sound and active.

There are other types more or less in demand, such as saddle horses, and animals suitable for military purposes. These cannot be secured at hit and miss breeding, though in years gone by there were sufficient left-overs from the production of other types that met the needs of the military de-



Geo. A. Prescott of Richland Farms and one of his Shorthorn Heifers, Bred in the Purple.

deavored to follow in their breeding operations.

There were certain districts where a large measure of efficiency was shown in producing the drafter; other sections were known for the lighter types of horses. This cannot be said today. There seem to be no centers that can claim distinction in producing any particular horse type.

True, the number of types of horses in demand now is fewer than in former years, yet even in types most in demand today, such as good draft horses, there are practically no sections where the buyer can go and be sure of having his wants supplied.

It seems to be too much of a hit and miss proposition, this horse production business. If one hears of a good big draft gelding for sale in one part of the country, one may have to travel one or two hundred miles to find a mate to match him. There seems to be no continuity, no co-operation in producing to meet the demand today.

What constitutes efficiency in the heavy draft horse? To be thoroughly efficient a draft horse must with its mate be able to pull a heavy load, on level ground, with ease and quickness. To do this a horse should be, at least, 1,700 pounds in weight, though 1,800 or over is better. Along with this weight he must be well muscled, have a good set of feet and legs, be well built and well proportioned, and should be sound in wind and limb.

To get these elements of efficiency in the draft horse the breeder must not trust to chance in his breeding operations. If he has the right type of mare, he must see to it that the stallion used will get the right type of offspring. It will pay to go to considerable trouble to secure the right type of stallion, as the heavier his

mand. But there does not appear to be many of this kind today, and military horse buyers report a general shortage.

But whatever type one aims to produce, he must see to it that it will perform the work it is called upon to do in the most efficient manner possible. Horse breeders must pay particular attention to this, if they are to successfully compete with the motor truck and tractor men.

Good breeding must be supplemented by good feeding and care of the colt from birth to maturity. No matter what ideals have been followed in breeding the draft horse, if the colt is not well fed and kept in a thrifty, healthy, growing condition from birth, it will not have the weight and size needed in the ideal draft horse. There must be no "stunting" period, as is too often the case, during the growth of the colt. As soon as the colt is weaned, it should be kept in thrifty condition. Just here is where many horse breeders fall down. After the colt is taken from its dam it is often left to shift for itself, and soon becomes unthrifty and stunted in growth. If the colt once receives a serious set back, it rarely recovers the lost ground.

To get size and weight in the draft horse, the breeding must be right and so must the feeding. A good big draft mare bred to a stallion that is a ton or over in weight, providing he is sound and has a good set of feet and legs under him, will produce the right type so far as breeding is concerned; but if the colt is neglected and not kept growing from birth to maturity, the type of heavy drafter most in demand today cannot be secured.—E. W. G.

SENATE HEARING ON FILLED MILK

(Continued from page 170)

conspiracy, and in expressing the resentment of the dairy farmers at such tactics, read into the record the following telegram from Congressman Edward Voigt, of Wisconsin, author of the bill:

"The Voigt bill was not introduced as the result of any trade war between Hebe and Borden or any one else. I introduced the bill after the evils involved in filled milk manufacture and sale were brought to my attention by the President of the Wisconsin Equity Society, an organization of farmers, and after getting considerable information from John D. Miller of the New York Milk Producers' Federation and others. No one representing Borden or any other producer of evaporated milk ever approached me to urge introduction of the bill. It was introduced by me for the purpose of protecting producers and consumers and this talk about trade war is an afterthought on part of the Hebe people."

Appearing for the National Grange and the National Dairy Union, A. M. Loomis gave a severe indictment of the filled milk advocates in making charges which they were unable to prove.

J. D. Miller, representing the Dairy-men's League Co-operative Association, gave evidence showing that there is practically no waste of skim milk that could be saved by filled milk manufacture. He called attention to the testimony of the filled milk manufacturers that only an inconsiderable amount of skim milk is bought as such by them, the practice being to purchase the whole milk and separate it, emulsifying the skim milk with the foreign vegetable fat within an hour after commercial separation takes place.

Mr. Miller read into the record a statement from Commissioner Berne A. Pyke, of the New York Bureau of Farms and Markets, saying that coconut oil in large quantities was being shipped into New York state, presumably to be manufactured into filled milk. Investigations by the New York authorities and the analyses of more than fifty samples had showed that products consisting of coconut oil and skim milk were being sold for evaporated milk. Already more than \$3,000 in fines had been collected and other prosecutions were pending. It was estimated that the sale of 6,000,000 pounds of butter fat in the form of evaporated milk had been lost to the farmers of the United States by the blending of coconut oil with skim milk in the production of compounds sold in the semblance of milk.

Evidence and affidavits were submitted by R. W. Balderston of the Interstate Milk Producers' Association, showing that filled milk had been bought and advertised for milk.

A witness for the opposition testified that with the available amount of material, skim milk, and available cheap fats the filled milk industry ought to be multiplied 1500 per cent, which was possible. Mr. Holman replied that this was what dairymen feared would be the result, putting the dairy industry on a Coolie basis.

Senator Gooding, leader of the agricultural tariff bloc, has evidently heard from the farmers on the vegetable oil tariff joker. The senator called a conference of every one interested in the vegetable oil tariff to discuss this feature of the tariff bill.

Secretary A. M. Loomis of the National Dairy Union, has written a letter to every senator in which he says that the serious danger to American farmers engaged in producing oil bearing products has not yet been properly appreciated by the members of the senate in their consideration of Section 50-a of the pending tariff bill.

Mr. Loomis says further that it is not a matter of chief interest to the dairy industry, despite the activities of this industry in behalf of a proper

tariff on vegetable oils. It is a matter which vitally affects the corn grower, the peanut grower, the new and valuable soya-bean growing industry, the flax industry, and the livestock industry, more especially hog raisers and dairymen. As it affects the live stock industry vitally, it secondarily but no less vitally affects every producer of grain and hay. This single free trade proviso in the vegetable oil schedule as the bill now stands will injuriously affect nine out of ten farmers of the entire nation.

STRIKE BOOSTS CATTLE MARKET.

RAIL strike conditions were partly responsible for a loss of 10 per cent in receipts at the leading live stock markets last week. The clause "at owners risk" inserted in freight bills has deterred some shippers and the movement of cattle put on the rail has been retarded. An advance of 25 to 35 cents and even more on some of the intermediate grades of steers was the result.

A fancy load of steers probably would bring \$11 at Chicago, but the position of medium and common grades is not strong and the plainer the cattle the more likely they are to sell lower later on. The stuff of all kinds was relatively scarce last week but the trend is toward a larger supply and greater competition from low grade steer beef. Bulls on the other hand were numerous as it is the weeding out season on the range. Well finished veals are becoming scarce and advanced sharply last week but heavy grass calves are numerous.

Cattle feeders have not begun an aggressive purchasing campaign but the movement is up to normal in spite of the rail strike, and the scarcity of suitable cattle. A big corn crop, an abundance of fall pasture and roughage and the profitable outcome of recent feeding operations promise to maintain a broad outlet for thin steers this fall.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Advice through this column is given free to our subscribers. Letters should state fully the history and symptoms of each case and give name and address of the writer. Initials only are published. When a reply by mail is requested the service becomes private practice and \$1 must be enclosed.

Scours.—I have a calf eight weeks old that has just recovered from bad case of scours; now she has a mucus discharge from the eyes, is stiff, and chills. E. P., White Cloud, Mich.—Give calf four grains of quinine at a dose four times daily. Dissolve a teaspoonful of boric acid in half a pint of water and apply to eyes three times a day.

Failure to Come in Heat.—I have a Durham heifer that had a calf one year ago. Since then she has not been in heat. J. C., Grawn, Mich.—Give her one dram of fluid extract of nuxvomica and two drams of ground capsicum in ground feed three times a day. Yohimbine hydrochloride is the best drug to give her, but rather expensive.

Shy Breeder.—We have a Holstein cow eight years old which comes in heat regularly; has been bred many times but fails to get with calf. Since I have owned her she has raised two calves and as she is a fine cow I am anxious to get her with calf. W. E. B., Paris, Mich.—Dissolve a cake of compressed yeast in one quart of tepid water, let it stand for two hours, then with fountain syringe, flush vagina, using the whole quart. Before commencing treatment clean vagina with soap and water. The yeast treatment should be applied daily. Have the kindness to let us know the result of this treatment.

Sow Fails to Come in Heat.—Have a sow three years old which fails to come in heat. On May 11 she had sixteen pigs. We weaned these when six weeks old. Sow is in good condition. Can you suggest anything that will be helpful? E. A. W., Dansville, Mich.—Give her one-sixth grain of yohimbine hydrochloride at a dose in feed three times a day and it will very likely bring on heat. Please report result to us, for we like to know.

CATTLE

10 o'clock A. M. Hereford AUCTION



at Bad Axe Fair Grounds, Bad Axe, Mich.

Friday, Sept. 1st, 1922 (Last day Bad Axe Fair.)

5 Bulls 20 Females (Many with calves by side.)

T. B. TESTED. Registration papers with each animal. These cattle are exceedingly well bred. Being of Perfection Fairfax, Anxiety, Disturber, Perfection, Prime Star Grove and Dale breeding. Are of young ages and in good thrifty condition that will do the purchaser most good. Are consigned by progressive breeders who produce Hereford Baby Beef under T. F. B. Sotham & Sons, EARLRIPE BEEF CONTRACT, for consumers who purchase it from Detroit Packing Company.

The Sale Managers will be glad to mail you catalog and full particulars. Write now. Address

T. F. B. Sotham & Sons,
Saint Clair, Michigan

The Maple's Shorthorns

Kirk Levington Lad, by imported Hartforth Welfare, in service. Bulls and heifers for sale.

J. V. Wise, Gobleville, Mich.

WANTED REGISTERED SHORTHORN AND HOLSTEIN BULLS

Twelve to eighteen months old. Describe as to conformation, breeding, condition of flesh, color and price. Box P. B. 4, Michigan Farmer, Detroit, Mich.

BIDWELL SHORTHORNS BUY A BULL

that will put weight on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-copped yearlings, reasonably priced. We guarantee every animal to be a breeder. Federal Test. One hour from Toledo, Ohio, N. Y. C. R. R.

BIDWELL STOCK FARM,
Box D, Tecumseh, Michigan

Clayton Unit Shorthorn Breeders' Assn. Scotch, Scotch Top and Milking Shorthorns for sale all ages. W. J. Hinkley, Sec'y, Flushing, Mich

FOR SALE

Polled Shorthorn Cows & Heifers in calf and calf by side. Also a few young bulls. Herd headed by Victor Sultan and Royal Nonpareil.

We can please you in richly bred cattle with quality at farmers' prices.
GEO. E. BURDICK, Mgr.
Branch County Farm, Coldwater, Mich.

RICHLAND SHORTHORNS

We are offering two splendid white yearling bulls by Imp. Newton Champion and a few extra good heifers and young cows at very attractive prices. For full particulars write to

C. H. PRESCOTT & SON,
Herd at Prescott, Mich.
Office at Tawas City, Mich.

Claradale Milking Shorthorns

We invite the discriminating breeder and farmer, who is in need of a real bull, that will transmit the combine qualities, beef, milk, high in butter fat, type, character, beauty. We do state official milk testing. Come and see us or write for circulars and reasonable prices. F. W. Johnson, Ouster, Mich., Mason Co. Box 26

Central Mich. Shorthorn Breeders' Assn. offer for sale both milk and beef breeding, all ages. Write M. E. MILLER, Sec'y, Greenville, Mich.

Milking Shorthorns of best Bates breeding, bulls, cows and heifers for sale.
E. H. KURTZ, Mason, Mich

Shorthorns for sale. ENTIRE herd just passed State Tuberculosis test.
J. A. BARNUM, Union City, Mich.

Don't you want a good Shorthorn, priced in keeping with the times?
ROBERT MARTIN, R. 3, Woodland, Mich.

Milking Shorthorns Bull calves for sale. Also 2 cows.
ROSEMARY FARMS, Williamston, Mich

Milking Shorthorn Bull Calves 1 to 12 mo. old. Best Clay breeding. These are good calves priced to sell.
IRVIN DOAN & SONS, Croswell, Mich.

HOGS

DUROCS WITH QUALITY
Spring pigs by Walt's Orion, First Sr. Yearling
Detroit, Jackson, Cd. Rapids and Saginaw 1919
Phillips Bros, Riga, Mich.

DUROCS Extra Sow pigs, March 1st and later. 125 lbs. down; big bone, big litters, 75 to select from. \$10 up. Satisfaction or money back. B. E. Kies, Hillsdale, Mich.

Sows & Gilts

bred for July, Aug. and Sept. farrow for sale at reasonable prices. Also a few high class spring and fall boars ready for service and one 2 yrs. old boar, a grandson of Panama Special, at a bargain if you can use him. We guarantee satisfaction. Write for prices and description or better come and see them. Visitors always welcome. Sows bred for spring farrow all sold.
Thos. Underhill & Son, Salem, Mich.

Collinsdale Duroc Farm, Lyons, Mich., R. 1. Greatest Blood Lines in Duroc Hogs

Herd Boars by Great Orion Sensation, Pathfinder, Duration and Great Wonder I Am. Now have for sale three yearling boars by Wolverine Sensation. For sale at all times, sows, gilts or boars registered. Sold under a positive guarantee and worth the money. Write for prices.
L. A. BURHANS, OWNER

You Want One of the best Duroc sows obtainable. We have them for sale. Fall gilts and tried sows. Our herd boar headed 2nd prize aged herd at 1921 Illinois State Fair. MICHIGANA FARM, Kalamazoo County, Pavilion, Mich.

AM SELLING

a great offering of bred Duroc sows and gilts March 4th. They are mostly bred to Orion Giant Col. son of Ohio Grand Champion. Get on mailing list for catalog.
W. C. TAYLOR, Milan, Mich.

Woodlawn Farm Duroc Hogs

A well kept herd, best of blood lines, with size and breeding qualities, stock of all ages for sale at reasonable prices.
W. E. BARTLEY, Alma, Mich.

DUROC JERSEYS: A few choice bred gilts for sale.
CAREY U. EDMONDS, Hastings, Mich

Pure-Bred Duroc Jersey Hogs; we usually have good boars and sows of all ages for sale. Reasonable prices. Larro Research Farm, Box A, North End, Detroit, Mich.

Duroc Jerseys heavy boned, low down type breeding stock for sale.
CHAS. BRAY, Okemos, Mich.

Westvie v Duroc Bred Sows

all sold. Have two spring boars left at a reasonable price. Will book orders for April & May Pigs.
ALBERT EBERSOLE, Plymouth, Mich

Duroc Jersey Bred sows and gilts bred for Aug. and Sept. farrow. A few choice ready for service boars. Shipped on approval. Satisfaction guaranteed.
F. J. Drott, R. 1, Monroe, Mich.

Oakwood Farm offers choice gilts of Orion Cherry King and Walt's Top Col. breeding bred to Pathfinder Orion for Aug. and Sept. farrow.
RUSH BROS., Romeo, Mich.

DUROC-JERSEYS

We offer a real herd header in Brown's Prince Orion 159149. Type and breeding all that could be desired. All stock immune. Priced to sell.
WHITNEY FARMS, Whitney, Mich.

DUROC-JERSEYS Do you want a good Pathfinder boar pig?
E. D. HEYDENBERG, Wayland, Mich.

BIG TYPE CHESTER WHITES

The prize winner kind from the best prize winner bloodlines. Early developers, ready for market at six months old. I have started more breeders on the road to success than any man living. I want to place one hog in each community to advertise my herd. Write for agency and my plan.
G. S. BENJAMIN, R. F. D. 10, Portland, Mich.

Big Type Chester White March boars. Sired by Model's Giant and Hill's Big Buster. Out of granddaughters of Alfalfa Wonder.
LUCIAN HILL, Tekonsha, Mich.

O. I. C. and Chester White's. Strictly big type with quality. I have nothing to offer at present, as I have sold my largest herd and entire herd I was fitting for the large shows, to Earle Morrish, of Flint, Mich. I am confident Mr. Morrish, now has one of the very best herds in the State.
ALBERT NEWMAN, R. 4, Marlette, Mich

O. I. C. December Gilts From Big Type Wonder's Dick. Bred to farrow in Oct. by Silver Horde. Extra good young boar direct from Silver's. Booking orders for spring pigs.
CHAS. H. STEEL, R. 8, Eaton Rapids, Mich.

CHESTER WHITES Start right with a Boar Pig from MONSTER No. 107335. They are hard to beat.
FRED L. BODIMER, Reese, Mich.

Chesters We are sold out of Boars. Choice spring pigs. For immediate shipment of spring pigs, write WEBER BROS., Royal Oak, Mich., 10 mi. and Ridge Rds., Phone 408.

O. I. C. fall gilts ready to breed. Orders booked for spring pigs. Write or call and see our herd. We ship C. O. D. and Register free.
GEO. M. WELTON & SON, Middleville, Mich.

O. I. C. Gilts to farrow in Aug. and Sept. CLOVERLEAF STOCK FARM, Monroe, Mich.

O. I. C. Bred gilts all sold. Orders booked for spring pigs.
A. J. BARKER & SON, Belmont, Mich.

O. I. C. Bred sow's all sold. Booking orders for spring pigs.
H. W. MANN, Dansville, Mich.

O. I. C. pigs at very reasonable prices for June and July shipment.
O. J. THOMPSON, Rockford, Mich.

O. I. C'S. Last fall gilts due Aug. and Sept. Spring pigs not akin. Big type. 1-2 mile west of Depot. Citizen Phone.
OTTO B. SCHULZE, Nashville, Mich

O. I. C'S Spring Pigs. Good ones—Write
G. N. DEMERELL, East Lansing, Mich.

L. T. P. C. Boars ready for service also gilts, bred sows out of best of blood lines. They are right, so is the price. Nut seed.
M. M. PATRICK, Grand Ledge, Mich.

L. T. P. C. Fall Boars

at bargain prices. Fall gilts open or with breeding privilege. Write or see them.
A. A. FELDKAMP, R. 2, Manchester, Mich.

Additional Stock Ads. on Page 191

LATEST MARKET REPORTS

GRAIN QUOTATIONS

Tuesday, August 15.

Wheat

Detroit—No. 2 red, \$1.05; No. 2 mixed and No. 2 white, \$1.03.
Chicago—No. 2 red, \$1.00½@1.02½; No. 2 hard, \$1.03@1.05½; September at \$1.00½.
Toledo—Cash \$1.08; September at \$1.07.

Corn

Detroit—Cash No. 2, 70c; No. 3 yellow, 69c.
Chicago—No. 2 mixed, 61½@61¾c; No. 2 yellow, 62½@63c.

Oats

Detroit—Cash No. 2 white, 38c for old and 35c for new; No. 3, 33c for new.

Chicago—No. 2 white, 31¼@33½c; No. 3 white, 30@33c.

Beans

Detroit—Immediate and prompt shipment, \$8.75.

New York—Choice pea beans at \$9.75@10; red kidney, \$8.90@9.

Chicago—Michigan choice, hand-picked, \$9@9.15; red kidneys at \$8.75@9.

Rye

Detroit—Cash No. 3, 75c.

Chicago—71@72c.

Toledo—76c.

Seeds

Detroit—Prime red clover cash at \$10.50; alsike, \$10; timothy, \$3.

Toledo—Prime red clover at \$9.50; alsike, \$9.60; timothy, \$2.70.

Feeds

Detroit—Bran at \$25; standard middlings, \$27; fine middlings, \$30; cracked corn, \$32; coarse cornmeal at \$29; chop, \$25; per ton in 100-lb sacks.

Hay

Detroit—No. 1 timothy at \$17@18; standard and light mixed, \$16@17; No. 2 timothy, \$15@16; No. 1 clover, \$14@15; rye straw, \$12.50@13; wheat and oat straw, \$11.50@12 per ton in car lots.

Fruit

Chicago—Currants, \$2.50 per 16-qt. case; sweet cherries, \$3 per 16-qt. case; pears, Early Clapps, \$1.25@1.50 a bu; peaches, small baskets, 10@15c; plums, per 16-qt. case, \$1@1.25. Above quotations are all for Michigan fruit.

WHEAT

The official August estimate upon the wheat crop was only 805,000,000 bushels or 20,000,000 bushels less than generally expected. The Canadian government's estimate upon the Canadian crop was 320,000,000 bushels or about 25,000,000 bushels less than private reports had indicated. These estimates mean an exportable surplus of 435,000,000 bushels from the two countries. This figure may be further reduced by later estimates but judging from present conditions it is more likely to be increased.

The demand for wheat has been distinctly lacking in urgency. This is the heavy shipping season from farms but primary receipts have been about a third larger than the average for the corresponding period in previous years. With neither exporters, domestic millers nor investors disposed to buy actively, prices have dragged to the lowest level of the season. Only a revival of demand from some source will reverse the trend.

Foreign requirements are believed to be large but with Argentina still exporting and with European crops now being harvested, the shipments immediately necessary from North America are not large. Foreign

RYE

The rye crop estimate was reduced slightly. The August forecast was 79,600,000 bushels against 82,000,000 bushels a month ago and an average of 66,000,000 bushels in the six preceding years.

OATS

The oats crop was placed at 1,251,000,000 bushels compared with 1,061,000,000 bushels harvested in 1921. Stocks of old oats on farms on August 1 were 78,170,000 bushels against 161,108,000 bushels a year ago. Counting both old and new, total farm holdings are 107,000,000 bushels more than last year. Stocks at terminal markets are but little less than a year ago. The Canadian crop is estimated at 510,000,000 bushels against 426,

000,000 bushels last year.

Oats prices are extremely low and producers are selling reluctantly.

FEEDS

Feed markets are a little firmer and prices in one or two cases have advanced at producing points while eastern markets are dull. Buying expanded at the levels established a week ago. Cottonseed meal from the new crop is being offered at low prices.

HAY

Hay prices are steady as a result of light receipts. Demand is light as forage and pastures are abundant in nearly all sections. The new hay crop is estimated at 110,000,000 tons, the largest on record.

BUTTER

An increase in receipts of butter, and issuance of a report showing 20,000,000 pounds or 25 per cent more butter in storage on August 1 than last year caused prices to drop to a new low for the year last week, but most of the loss was recovered before the close. The seasonal decrease in production is taking place although excellent pastures are sustaining it and the movement into storage remains fairly heavy.

Prices for 92 score fresh butter were:

Chicago, 33c; New York, 34c. In Detroit fresh creamery in tubs sells for 31½@32c.

POTATOES

The white potato crop was estimated at 440,000,000 bushels on August 1 and sweet potatoes 112,000,000 making 552,000,000 bushels of both kinds, the largest crop on record. The combined crop last year was 446,000,

000 bushels and the average of the five preceding years was 462,000,000 bushels. Total shipments of potatoes up to August 7 were 49,864 cars compared with 42,421 cars to the same time last year. Irish Cobblers are quoted at \$1.60 to \$1.70 with Early Ohio at \$1.40 to \$1.50 per hundred pounds sacked in wholesale markets.

APPLES

The apple crop improved during July, the August 1 forecast bring 202,000,000 bushels with a commercial crop of 33,400,000 barrels, which is nearly as large as the record crop of 33,905,000 barrels in 1920. Last year's crop was 21,200,000 barrels. Apple shipments to August 7 were 3,879 cars against 1,896 cars last year. High grade Duchess and Wealthy apples are quoted at 75 cents to \$1 per bushel in middle-western markets.

BEANS

The bean acreage in the United States is estimated at 1,093,000 acres, an increase of 41.8 per cent over last year, while the crop is 12,829,000 bushels or 40.7 per cent more than last year. The five-year average crop is 12,997,000 bushels. The Michigan acreage is 429,000 bushels compared with 163,000 acres in 1921.

DETROIT CITY MARKET

There was a good demand for melons, green corn, plums, peaches and pears, but the market was draggy for vegetables such as cabbage, radishes, green onions and potatoes.

Duchess apples are bringing \$1@1.25 per bu for No. 1; Transparents are fifty cents less; blackberries, \$5@7 per 24-qt. case; green corn, 10@25c per doz; huckleberries, \$7@7.50 per 24-qt. case; muskmelons, \$2.50@4 per

bu; green onions, 15@25c per doz bunches; potatoes, 75c@1.35 per bu; peaches, \$1.50@3 per bu; pears, \$1.25@3.50; plums, \$1@2.50.

GRAND RAPIDS

Lombard plums began moving in small quantities this week and indications were harvest of the crop would be well advanced in Western Michigan next week. Growers were hopeful of getting \$1 a bushel. Cannery were not contracting and if they buy at all this season, it probably will be on the open market. Supt. Henry Houman of the city wholesale market was urging consumers to buy two year's supply as the large crops of Lombards usually do not come oftener than every other year. Prices so far this season have averaged low on plums. Burbanks and Bradshaws have been selling at 60c@1 bu. Slightly better prices have been netted on shipments made through the Grand Rapids Growers' Association. Duchess apples are not in strong demand, first selling at the market at 40c bu. Sweet Boughs, Red Astrachans, and Strawberry apples sold better, averaging from 75c@1 bu, with some extra fancy lots bringing \$1.25. Clapp's Favorite pears began moving late last week at \$1.50 bu. but this week they were easier at \$1. Bartlett's probably will move next week and buyers are reported to be bidding \$1 a bu. Cannery have been making a survey of the peach crop but no contracts have been reported. Indications are that they will buy on the open market. They are talking \$1 but not bidding. Potatoes continue their downward trend, selling at 60@80c bu. Cabbage and cucumbers were slow. Celery is selling around 25 cents a large bunch and onions at \$1 bu.

Live Stock Market Service

Wednesday, August 16

DETROIT

Cattle

P. M. R. R. stock arrivals very late.

Market slow and steady.
Best heavy str., dry-fed.. 8.50
Handyweight bu., dry-fed 7.25@8.00
Mixed str., hirs., dry-fed 5.50@6.50
Handy light bu., dry-fed.. 5.00@5.50
Light butchers .. 4.00@5.00
Best cows .. 5.00
Butcher cows .. 4.00@4.50
Common cows .. 3.00
Canners .. 2.00@2.75
Choice bulls .. 5.00
Bologna bulls .. 4.00@4.50
Stock bulls .. 2.50@3.50
Stockers .. 4.50@5.50
Feeder .. 5.50@6.50
Milkers and springers.. 40.00@75.00

Veal Calves

Market strong to 50c higher.
Best .. \$12.75@13.50
Others .. 5.00@12.00

Hogs

Market slow and 25c lower.
Mixed hogs, 220 lbs down 10.00
Roughs .. 7.00
Heavies, 220 lbs up..... 8.50@10.00
Stags .. 4.50@5.00
Pigs and light weights... 10.00@10.15

Sheep and Lambs

Market steady on good, slow on common lambs and heavy sheep.
Light to common .. 6.00@8.00
Fair to good sheep .. 5.00@6.00
Culls and common..... 1.00@2.00
Fair lambs .. 9.00@10.50
Best spring lambs..... \$12.00@12.50
Heavy sheep .. 4.00@4.50

CHICAGO

Hogs

Estimated receipts today 19,000; holdover 6,411. Market slow, steady to 15c lower. Bulk of sales, \$7.75@9.90; tops, \$10; heavy, 250 lbs up, \$8.40@9.55; medium, 200 to 250 lbs, \$9@9.90; light, 150 to 200 lbs, \$9.50@10; light lights, 130 to 150 lbs, \$9.40@10; heavy packing sows, 250 lbs up, \$7.60@8.40; packing sows, 200 lbs up, \$7.25@7.75; pigs, 130 lbs down, \$9.25@10.

Cattle

Estimated receipts today 10,000; market active, strong to 15c higher. Beef steers, medium and heavy weight,

1,100 lbs up, choice and prime, \$10.40@10.95; do, medium and good, \$8.10@10.40; do, common, \$6.40@8.10; light weight, 1,100 lbs down, good and choice, \$9.25@10.60; do, common and medium, \$6.25@9.25; butcher cattle, heifers, \$5@9.25 cows, \$3.90@8.50; bulls, bologna and beef, \$3.75@6.65; canners and cutters, cows and heifers, \$2.50@3.90; do, canner steers, \$3.75@4.75; veal calves, light and handy-weight, \$11.50@12.50; feeder steers, \$5.40@7.75; stocker steers, \$4.75@7.50; stocker cows and heifers, \$3.50@5.50.

Sheep and Lambs

Estimated receipts today 16,000. Market, fat lambs strong to higher; sheep and feeders steady. Lambs, 84 lbs down, \$12@13; do, culls and common, \$8.50@11.75; spring lambs, \$8.75@11; ewes, \$3.50@7.65; ewes, cull and common, \$2@4; breeding ewes, full mouths to yearlings, \$5@11.25; yearling wethers, \$11.50@12.

BUFFALO

Cattle

East Buffalo—Receipts, 15 cars; market is slow; choice to prime shipping steers, 1,400 lbs and up, \$10@10.50; good to choice shipping steers, \$9@9.50; heavy grass steers, good quality, \$8.50@9.25; light native yearlings, fancy quality, \$10.50@10.75; medium to good, \$9@9.75; best handy steers, \$8.50@8.75; handy steers and heifers, \$7@7.25; western heifers, \$6.50@7; light Michigan butchering heifers, \$6@6.50; best fat cows, \$6@6.50; medium to good, \$4.50@5.50; cutters, \$3.50@4; canners, \$2@2.50; best heavy bulls, \$4.50@5; heavy bologna bulls, \$4.25@4.50; common bulls, \$3.50@4; best feeders, 700 to 800 pounds, \$6@7; medium feeders, \$5@6; stockers, good, \$4.50@5; light common, \$3.50@4; best milkers and springers, \$8@9; common, \$25@40. Calves: Tops, \$13.

Hogs

Receipts, 20 cars; market steady; medium, \$10@10.25; heavy, \$9; yorkers and pigs, \$10.75@10.85.

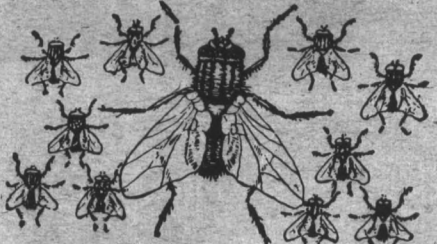
Sheep

Receipts, 5 cars; top lambs, \$13.25; yearlings, \$8@10; wethers, \$7.50@8.25; ewes, \$4.50@7.

EASY NOW TO RID YOUR PLACE OF FLIES

Widely Known Scientist Discovers Wonderful Chemical That Is Fatal to Flies. Not a Poison—Harmless to Stock.

Flies are one of the most dangerous and annoying things with which the farmer has to contend. Now, through the discovery of E. R. Alexander, widely known scientist, you can rid your house and barns and livestock of these pests almost instantly, and with no trouble at all. This discovery is in the form of an organic chemical that is fatal to flies, and similar pests, such as chiggers, mosquitoes and moths.



This new discovery which is called Alexander's Rid-O-Fly, is not a poison. Though it kills flies like magic, farm animals and human beings are not affected by it at all. In addition to killing these insects, Rid-O-Fly is a strong repellent. Flies will not come near stock or buildings where Rid-O-Fly has been used. Rid-O-Fly is particularly valuable for cows and horses, as it is a known fact that flies do untold harm to these animals.

So confident is Dr. Alexander that his discovery will rid your house, barns and livestock of these pests that he offers to send a \$2.00 supply for only \$1.00 on the guarantee that if Rid-O-Fly does not solve your fly problems it will cost you nothing. Two big Kansas City banks guarantee the reliability of this offer.

SEND NO MONEY—just your name and address to the name below and this introductory offer will be mailed at once.

ALEXANDER LABORATORIES,
1546 Gateway Station, Kansas City, Mo.

\$24.95 Upward **American CREAM SEPARATOR**

On trial. Easy running, easily cleaned. Skims warm or cold milk. Different from picture which shows larger capacity machines. Get our plan of easy **MONTHLY PAYMENTS** and handsome free catalog. Whether dairy is large or small, write today.

AMERICAN SEPARATOR CO.
Box 761, Bainbridge, N. Y.

Fly-Free Dates

THE computed "fly-free" dates as referred to on page 170 for the seeding of winter wheat at different altitudes in the various counties of Michigan by Prof. R. H. Pettit of the department of entomology of the Michigan Agricultural College are as follows:

County	Altitude above sea level—feet	Dates of seeding as computed
Alcona	600	Sept. 10-20
Allegan	1,000	Sept. 6-16
Alpena	600	Sept. 20-30
Antrim	800	Sept. 18-28
Arenac	600	Sept. 9-19
Barry	800	Sept. 7-17
Bay	1,200	Sept. 10-20
Benzie	600	Sept. 4-14
Berrien	800	Sept. 13-23
Branch	800	Sept. 11-21
Calhoun	1,000	Sept. 18-28
Cass	800	Sept. 19-29
Charlevoix	1,000	Sept. 17-27
Cheboygan	800	Sept. 22-Oct. 2
Clare	1,200	Sept. 19-29
Clinton	1,000	Sept. 7-17
Crawford	800	Sept. 3-13
Eaton	1,200	Sept. 8-18
Emmet	800	Sept. 12-22
Genesee	1,000	Sept. 9-19
Gladwin	600	Sept. 12-22
Grand Traverse	800	Sept. 9-19
Gratiot	1,000	Sept. 12-22
Hillsdale	800	Sept. 8-18
Huron	1,200	Sept. 15-25
Ingham	800	Sept. 13-23
Ionia	900	Sept. 16-26
Iosco	800	Sept. 15-25
Isabella	1,000	Sept. 11-21
Jackson	700	Sept. 14-24
Kalamazoo	1,000	Sept. 11-21
Kalkaska	600	Sept. 16-26
Kent	1,200	Sept. 13-23
Lake	800	Sept. 18-28
Lapeer	1,200	Sept. 16-26
Leelanau	700	Sept. 15-25
Lenawee	800	Sept. 14-24
Livingston	1,000	Sept. 11-21
Macomb	600	Sept. 18-28
Manistee	1,000	Sept. 16-26
Mason	800	Sept. 15-25
Mecosta	1,000	Sept. 12-22
Midland	600	Sept. 9-19
Missaukee	700	Sept. 14-24
Monroe	1,400	Sept. 5-15
Montcalm	600	Sept. 21-Oct. 1
Montmorency	800	Sept. 20-30
Muskegon	900	Sept. 15-25
Newaygo	800	Sept. 16-26
Oakland	1,200	Sept. 10-20
Oceana	800	Sept. 12-22
Ogemaw	1,200	Sept. 16-26
Osceola	1,000	Sept. 14-24
Oscoda	1,600	Sept. 10-20
Otsego	1,000	Sept. 4-14
Ottawa	1,200	Sept. 7-17
Presque Isle	1,000	Sept. 5-15
Roscommon	1,400	Sept. 6-16
Saginaw	800	Sept. 17-27
Sanilac	800	Sept. 8-18
St. Clare	1,100	Sept. 6-16
St. Joseph	1,200	Sept. 7-17
Shiawassee	600	Sept. 16-26
Tuscola	800	Sept. 14-24
Van Buren	800	Sept. 23-Oct. 2
Washtenaw	800	Sept. 21-Oct. 1
Wayne	1,000	Sept. 20-30
Wexford	600	Sept. 18-28
	1,400	Sept. 9-19

FARM MEETINGS

West Michigan Potato Growers' Tour, August 17-24.
West Michigan Pike Tour, August 17-30.
State Grange Rally at M. A. C., August 18-19.
State Grange Regional Meeting, Devil's Lake, Hillsdale, Jackson, Lenawee Counties, August 21.
State Grange Regional Meeting, South Haven, August 22.
State Grange Regional Meeting, Barry County, August 22.
State Grange Regional Meeting, Camp Lake, Kent County, August 23.
Home-coming, Morenci, August 24.
State Grange Regional Meeting, Scottsville, August 24.
State Grange Regional Meeting, Charlevoix, August 25.
State Grange Regional Meeting, Reed City, August 26.
American Legion Home-coming, Breckenridge, August 18-19.
Home-coming, Cedar Springs, August 19.
Saginaw County Field Day, Riverside Park, August 29.
Farmers' Community Picnic, September 4, Grand Ledge.



The most efficient Tractor in America
Crawler Traction
Quality Construction
Pulls 3 to 4 Plows
Handles 28" to 32" Thresher
Special Price now in effect.
Bates Steel Mule
Write today for full information
Washtenaw Motor Co., Ann Arbor, Mich.
Bates Machine & Tractor Co.
1256 Benton St. JOLIET, ILLINOIS

News for Shippers

Effective September 1st, we are pleased to announce a reduction in our commission charge. Write us for particulars.

Gunsberg Packing Company, Inc.
2460 Riopelle Street, Detroit, Mich.

Manufacturers of the Famous
"Star Brand" Fertilizers.

FRUIT SHIPPERS FOR HIGHEST PRICES
Quick Returns. Consign to The E. L. Richmond Co., Detroit, Est. 1893.

Farms and Farm Lands

One of Michigan's best. A.J. soil, 200 acres 180 clear. ed. House modern to minutes. 60x80 barn. Silo. Elevator, feed mill, good location. Sacrifice \$25,000. Easy terms. Frank Cain, Grant, Mich.

WANTED To hear from owner of land for sale.
O. K. HAWLEY, Baldwin, Wisconsin

VOTE FOR
HERBERT F. BAKER

Farmer

Progressive Republican

Candidate

for

United States Senate

A man of the people, who knows the people's problems. Fearless, Independent, Big-Hearted, Able. Progressive but not Radical. A Self-Educated, Self-Made Man.

Baker's Record

Born on a farm in Lenawee county; assumed charge of farm when only 15 years old. Worked his way through school. Settled in Cheboygan county in 1889; taught school, worked in woods, bought wild land and hewed a farm out of the wilderness. Now owns and personally operates one of the finest farms in Cheboygan county.

Member of Michigan House of Representatives for six years; Speaker in 1911. Member Michigan Senate for four years. Attained state-wide and even national prominence as debater and legislator. ALWAYS on the side of the people. NEVER with the friends of special privilege.

Mr. Baker was either author or militant leader in following legislation:

Law establishing binder twine plant in Jackson prison; law for ad valorem taxation of telephone, telegraph and express companies; election reform laws; all prohibition enforcement acts; good roads legislation; credited with adoption of initiative, referendum and recall laws; ardent supporter of equal suffrage amendment; passed through house after memorable fight his bill providing for interchange of service by

telephone companies; opposed all bills to provide for useless offices and fancy salaries; consistent fighter for economy in all public business.

Baker's Platform

Demands repeal of Esch-Cummins law, which is virtually a subsidy to the railroads and allows them to collect toll on seven billions of water stock.

Favors adoption of Woodruff resolution to uncover the war profiteers and make them return to the government the millions they have mulcted on war contracts.

Favors restoration of excess profits tax and a rapidly progressive tax on inheritances to pay the soldiers adjusted compensation.

Opposes ship subsidy bill now before Congress to sell government ships at about one-tenth their cost and to pay the purchasers a bonus of several hundred million dollars a year for ten years to operate them.

Favors a reduction in the standing army and navy.

Favors strict enforcement of the 18th amendment.

Opposes move of financial interests to force a sales tax through Congress, and other measures to shift burden of war debts to the back of the people.

IF YOU APPROVE OF THIS PROGRESSIVE RECORD
AND PLATORM, HELP TO ELECT BAKER

(This advertisement ordered and paid for by the Baker-for-Senator Committee.)

WANTED Two Blue Hen incubators, each 15000 capacity in good condition. Also get our price on April Hatched pullets and yearling hens, English Tom Barron White Leghorns. Village View Poultry Farm, R. 3, Zeeland, Mich.

POULTRY

Baby Chicks \$12.00 per 100 and up
Hatching eggs, \$1.50 per setting to \$15.00 per 100. We are listing 12 varieties of pure bred fowls; Chickens, Geese, Ducks, & Guinea, also breeding stock. Send for prices and circular. Booking now for early delivery. CLINTON HATCHERY & POULTRY FARMS, Wilmington, Ohio.

PULLETS

Barron Strain S. C. W. Leghorn.
8 weeks old \$1.00 each \$90.00 per 100
12 weeks old \$1.25 each \$125.00 per 100
Yearling hens \$1.00 each \$90.00 per 100
Good healthy selected birds, no culls or weaklings.
PINE BAY POULTRY FARM, Holland, Mich.

SINGLE COMB WHITE LEGHORN

baby chicks from our flock of high producing hens, raised on free range. Price \$9.00 per 100. Safe delivery guaranteed. Ralph S. Totten, Pittsford, Mich.

Bred-to-Lay White Wyandottes

59 hens laid 1170 eggs in Jan. Eggs \$2.00 per 15; \$10 per 100. EVERGREEN POULTRY FARM, Blanding & Sons, Greenville, Mich.

REGISTERED WHITE LEGHORNS
Lay 265 to 301 eggs per year. Winners at 50 shows. Chicks, eggs, pullets, hens and males shipped C.O.D. at low prices. Write today for catalog and complete information to the World's Largest Leghorn Farms. GEO. B. FERRIS, UNION, GRAND RAPIDS, MICH.

ANCONA PULLETS

I have 300,3 months old, utility selected Ancona pullets which I will sell at \$1.30 each. Order at once and avoid disappointment. Thomas Beyer, R. 4, Zeeland, Mich.

Cockerels, year old hens. S.C.W. Leghorn Barron's strain. Order now while they last. Start right and get the best from trap nested stock with egg records from 200 up to 279. BYRON CENTER POULTRY FARM, Byron Center, Mich.

Barred Rock and W. Wyandotte Breeding Stock at bargain prices now. HOWARD GRANT, Marshall, Mich.

Clark's American Leghorns: yearling and two year old hens \$1.50 and \$2.00. Pullets and cockerels \$1.00 and up. Glen E. Clark, Wayland, Mich.

RHODE ISLAND WHITES

win over all breeds at the egg laying contest. 30 eggs \$5; 50 \$8; 100 \$15 order from this ad. Some chicks, H. H. JUMP, R. 5, Jackson, Mich.

W.Chinese goose eggs 40c each. Pekin duck \$1.50 for 8. R. C. Br. Leghorn \$1.50 for 15. \$8.00 per 100. Mrs. Claudia Betts, Hillsdale, Mich.

WHITE WYANDOTTES
207 egg average. Eggs all matings, \$2.00 per 15, \$10.00 per 100 Cockerels, hens and pullets \$5.00 each. FRANK DELONG, R. 3, Three Rivers, Mich.

Bourbon Red Turkeys We have them. Order your Birds and Eggs now. SMITHBROS., R. 3, Augusta, Mich.

HOGS

Big Type Poland China Spring boars Sired by Glansman Buster and Hovers Liberator. Also gilts bred for Sept. farrow at \$40 each. All stock shipped on approval. Come and see them or write DORUS HOVER, Akron, Mich.

For 30 years we have been breeding Big Type Poland China hogs on the same farm. We have sold over 100 head each year for the last 15 years for breeding purposes. There's a reason! The Farmer has found our kind very profitable. We now offer 25 sows and gilts bred for summer farrow \$30-\$50. JNO. O. BUTLER, Portland, Mich.

L. T. P. C. Gilts bred for Spring litters all Summer Gilts bred for June and July litters also Fall Boars and Spring Pigs. Clyde Fisher, R. 3, St. Louis, Mich.

Francisco Farm Poland Chinas

Big, Stretchy Spring Boars as good as grow. Pairs and Trios not akin. Can spare two or three of our good herd sows bred for Sept. P. P. POPE, Mt. Pleasant, Mich.

L.T.P.C. \$15, \$20 & \$25

Spring pigs with real breeding at the above prices. We are also offering a few choice fall gilts bred for summer farrow. Hart & Cline. Address F. T. HART, St. Louis, Mich.

LARGE TYPE P. C.

Largest in Mich. Pig ready to ship, why not order from the herd that has given so many their start in the hog business, the kind that makes good, they have quality as well as size. W. E. LIVINGSTON, Parma, Mich.

Big Type Polands We have a fine bunch of spring pigs representing the best blood lines and all cholera immune. We raise them to sell. If in need of a real herd boar prospect, come over. Visitors are always welcome. WESLEY HILL, Ionia, Mich.

Big Type P. C. some very choice boars double im- mune, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E.J. Mathewson, Burr Oak, Mich.

Big Type P. C. Boar Pigs. Sows and Fall Gilts bred for Sept. to Big Bob Mastodon and Peter A. Pan, son of \$1075 Boar. O. E. Garnant, Eaton Rapids, Mich.

BIG TYPE Poland Chinas, leading strains at lowest prices. Both sex, all ages, and bred sows and gilts. G. A. BAUMGARDNER, R. 2, Middleville, Mich.

LEONARD'S B. T. P. C. Herd headed by Leonard's Liberator. Orders booked for boar pigs at weaning time. Call or write E. R. LEONARD, St. Louis, Mich.

Large Type P. C. A few spring yr. gilts bred for Aug. and Sept. farrow. H. O. SWARTZ, Schoolcraft, Mich.

P. C. Swine. Sows and pigs, sows bred for Aug. and Sept. farrow, spring and fall boars, best of breeding, satisfaction guaranteed. K.W. Mills, Saline, Mich.

Hampshires book your order for spring boar pigs now. A few gilts, now ready for summer farrow. JOHN W. SYNDER, R. 4, St. Johns, Mich.

Alcain Farm Tamworths. The long red bacon hog. Choices spring pigs of either sex for sale. Also a few yearling sows bred to farrow in Aug. and Sept. Everything registered and priced right. W. F. ALLEN, R. 2, Clinton, Mich.

**Lowest
Prices in
America
Guaranteed**

EXTRA VALUE for Every Penny You Spend

**Send
No Money
Pay On
Arrival**

We mean every word of this. When you buy from Sharood, every penny you spend goes farther than it would anywhere else in America. Don't send one cent now. Just letter or postcard brings any of these sensational bargains.

Merely give us number and size of each article you want. Pay nothing till goods arrive. Then only smashed bargain price and postage. If not satisfied, we instantly and cheerfully refund your money.



Richly Embroidered Gabardine Dress **\$2.98**

Sharood especially recommends this pretty model. A becoming style that is going to be very popular this fall. Has wide flowing sleeves, two new fashion panels. Embroidered at top of waist and on sleeves. Women's and misses; sizes 16 to 44. Order Brown No. 18E-5521, Navy No. 18E-5520. Send no money. Pay \$2.98 and postage. Money back if you're not satisfied. State size wanted.

Rare Value in Pat. Leather Strap Pump **\$1.98**

State Size



This smart pump in sizes 2½ to 8. In black patent leather—a stunning one-strap model with imitation shield tip and medallion, effectively perforated. Has medium rubber heel. Order by No. 18A273. Send no money. Pay \$1.98 and postage on arrival.

Popular Stitchdown Dark Brown Oxfords **\$1.98**

Give Size

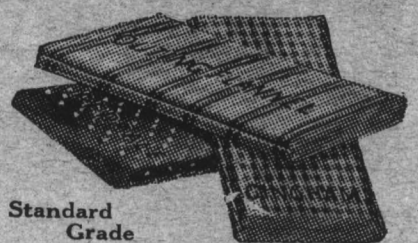


Classy stitchdown Oxford for women. Wonderfully comfortable and stylish. Uppers of dark mahogany leather. Smooth leather insole. Flexible stitched-down oak outsoles. Low rubber heels. Sizes 2½ to 8. Wide widths. Order by No. 18A268. Send no money. Pay only \$1.98 and postage on arrival.

Rich Black Sateen Apron **\$1.79**

This apron represents not only a neat saving, but a charming style for house wear. Send for your size today—quick!

The material is an excellent soft, lustrous black sateen with collar, cuffs and pockets of good grade fancy cretonne. Pockets are a novelty basket design with applique flower trimming. The same effect is carried out on one side of waist. Designed with wide self-material sash belt all around. Big value. Order by No. 7E6524. Send no money. Pay \$1.79 and postage on arrival. Money back if not satisfied.



Standard Grade 5 Yards Amoskeag Gingham [32 in.] **99c**

An almost unheard-of price for this famous gingham. Latest plaid, check and striped patterns in all desired colors, all fast and yarn-dyed. Order by No. 18F3414. Send no money. Pay 99c and postage for 5 yards on arrival. State pattern and color wanted.

10 Yards Fancy Out- ing Flannel **\$1.48**

Ideal weight for nightgowns and underwear. In fancy stripes, checks and plaids, white grounds and pink, blue or tan designs. 27-in. width. State pattern and color. Order by No. 18F3423. Send no money. Pay \$1.48 and postage for 10 yards on arrival.

10 Yards 36-inch Percalate **\$1.49**

Very choice patterns in fast colors. In white, gray, Calcutta and Indigo blue with neat stripes, figures or dots. State color and pattern. Order by No. 18F3406. Send no money. Pay \$1.49 and postage on arrival for 10 yards.

Soft Kid Slipper One Strap Model **\$1.59**



Beautiful soft kid leatherslipper. Stylish strap model with two buttons. Medium round toe. Cushion insoles. Medium rubber heels. Solid oak leather soles. Black only. Sizes 2½ to 8. Wide widths. Order by No. 18A228. Send no money. Pay \$1.59 and postage on arrival. State size.

This Stylish Oxford **\$1.98**

State Size



Women's black patent leather or Brown calf-finished leather, with imitation shield tip and medallion, perforated vamp, imitation circular foxing and lace stay perforated. Medium rubber heel and medium narrow toe. Sizes 2½ to 8. Order patent by No. 18A64. Send no money. Pay \$1.98 and postage on arrival. Order Brown by No. 18A65.

Beautiful Cleo Sandal **\$1.98**



Patent leather or Brown calf-finished leather, sizes 2½-8, wide widths. An unusually good looking sandal with one front strap, fancy nickel button and tassel. Imitation shield tip and medallion. Order patent leather by No. 18A296; order Brown calf by No. 18A295. Send no money. Pay \$1.98 and postage.

Durable Outing Bal

Men's scout shoe of soft, pliable brown leather. Absolutely guaranteed barnyard proof; reliable sturdy soles; low, broad leather heels; reinforced leather back stay. Guaranteed to stand hardest wear. Wide widths. Sizes 6 to 12.



\$1.99
Be Sure to Give Size.
Order by No. 18A733. Send no money. Pay \$1.99 and postage on arrival. Order little boys' sizes 9 to 13½ by No. 18A565. Price \$1.79. Order big boys' sizes 1 to 6 by No. 18A564. Price \$1.89. Pay bargain price and postage on arrival. State size.

Men's, Boys' and Little Boys' Gun Metal Blucher **\$1.79** UP

State Size



Don't fail to take advantage of this splendid offer in a practical blucher. Dress shoe for men, boys and little fellows, of heavy, genuine gun metal veal uppers and solid leather soles. Low, broad heels. Be sure to get your order in at once. Big value. Order same style for men, sizes 6 to 11, by No. 18A674. Price \$1.99. Order little boys' gun metal blucher sizes 9 to 13½, by No. 18A590. Pay \$1.79 and postage on arrival. Order same style for big boys, sizes 1 to 6½, by No. 18A589. Pay \$1.89 and postage on arrival. Always mention size.

Men's Hip Boots Bargains



Don't fail to make this big saving on Men's pure gum hip boots; friction lined; heavy corrugated sole and heel; guaranteed first quality. Made of the very best rubber. Usually retailed at \$5. Be sure to order your pair while this great saving offer lasts. Sizes 7 to 12. Wide widths. No half sizes. Order by No. 18A949. Pay \$2.79 and postage on arrival.

\$2.48 Give Size.



Black or Brown Kid Hi-Cut **\$1.98**

Send for this handsome rich kidskin shoe in black or brown. Note the medium toes with pretty imitation perforated tips, the perforation around vamp and on lace stays. Very popular model and really a sensational bargain now. Durable. Flexible soles. Sizes 2½ to 8. Wide widths.

\$1.98

Order black by No. 18A122. Pay \$1.98 and postage on arrival. Order brown by No. 18A103. Pay \$1.98 and postage on arrival.



Brown Leather Work Shoe **\$1.98**

State size.

Splendid brown leather work shoes. Heavy durable uppers; extra strong solid oak leather soles; leather insoles; low broad leather heels; and reinforced leather back stay. Roomy last. Sizes 6 to 12. Order by No. 18A758. Send no money. Pay \$1.98 and postage on arrival. Order boys' sizes 1 to 5½, by No. 18A554. Price \$1.89. Order little boys' sizes 9 to 13½, by No. 18A555. Price \$1.79 and postage on arrival. Mention size.



Brand New Standard Tires Guaranteed 6,000 Miles

30x3 Size Now only **\$6.48**

Brand new (not retreaded), heavy non-skid tires of live rubber, generously oversize, 6,000 miles guaranteed, but often give 8,000 to 10,000. We will apply credit on the purchase of a new tire for mileage less than 6,000 that you get from any tire selected. The world's greatest bargains in tires—30x3 size, in ribbed tread. Others are non-skid. Pay only the bargain list price and postage on arrival.

BARGAIN PRICE LIST.	
No. 18D40—30x3	\$ 6.48
No. 18D41—30x3½	7.69
No. 18D42—32x3½	9.98
No. 18D43—31x4	10.98
No. 18D44—32x4	12.79
No. 18D45—33x4	12.98
No. 18D46—34x4	13.98
GUARANTEED INNER TUBES.	
No. 18D20—30x3	\$ 1.09
No. 18D21—30x3½	1.39
No. 18D22—32x3½	1.49
No. 18D23—31x4	1.59
No. 18D24—32x4	1.79
No. 18D25—33x4	1.79
No. 18D26—34x4	1.79

Be Sure to Mention Sizes, Colors, Etc., and Send All Orders From This Page Direct to

SHAROOD CO.,

Dept. MINNEAPOLIS,
18 MINNESOTA