

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXL. No. 13.
Whole Number 3636.

DETROIT, MICH., SATURDAY, MARCH 29, 1913.

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

Breeding and Feeding Farm Horses.

MICHIGAN is known as a dairy state, she is known as a lumber state, she is a leader in the production of beans, her industries in fact, are more varied than are those of any other state in the union. Yet, of the states in the union, she occupies fourteenth place in the number of horses produced and thirteenth in the value of her horses. Why should this be so? Is it because there are not enough David Harms in Michigan or is it because Michigan farmers are too much interested in other lines of work and forget all about the team they are driving?

Practically every enterprise in the state is dependent to a certain degree, upon the horse. The bean grower must have horses, the manufacturer must have them. The lumberman calls for them in large numbers; the horticulturist cannot do without them, and so on down the list. This animal is more widely used and trade is more largely dependent upon him than upon any other product of the farm.

Yet, what do we Michiganders do when we are in need of horses? Do we produce them? No, we go into Iowa, Illinois, Indiana and Ohio for them, and gentlemen, we can produce them cheaper than we can buy them; Michigan's soil is as favorable to the production of horses as is that of Illinois or Iowa; Michigan's climate is equally as favorable, her markets are strong, just as much can be gotten for good Michigan horses as for Illinois or Indiana horses on Michigan markets. Statistics show that because of the grains and feedstuffs produced on Michigan farms, Michigan gets a greater per cent of her mares in foal and raises a greater per cent of foals produced than does Iowa, Illinois and Indiana, the states commonly known as the corn states.

The Best Type of Farm Horses.

The idea as to what constitutes the best type of farm horse has been too varied with farmers of Michigan. Neighbor Jones will say, "I like a horse that weighs 1,300 pounds for my farm horses, because I have to get to town in a hurry and can't let my team walk all the way." Neighbor Smith is breeding and doing his work with 1,150-pound trotting bred mares. He will tell you that he can do as much with three of them as you can do with your 1,700-pound horses and that "he can pass anybody on the road." Another neighbor breeds Hackneys for various reasons, but Farmer Brown says, "I am breeding and doing my heavy work with a pair of \$1,750-pound mares." These mares are doing my work and are raising me a pair of colts each season. True enough, I keep a light mare and "she can go along, too." I keep her to do my road work. The colts from these heavy mares sell readily at \$100 in the fall, while Farmer Smith has a hard time getting \$50 for his."

I am not sure but that Farmer Brown is quite right. Let us investigate a little more fully.

It costs Farmer Brown but very little more to keep his large mares and driver than it did Farmer Smith to keep his three light ones. It is not as convenient with some machinery to work three horses as two. Heavier machinery is coming into use more and more. The auto truck is doing away largely with the intermediate type, the 1,300-pound horse, in the city. The automobile is supplanting the light horse, the driver, and coach in a large way, so that the breeder of this class of horses is compelled to seek his market. The city market and the farm as well, are constantly calling for heavy horses of superior quality. In short, then, we must conclude that there is more money in the heavy horse for the farmer, by reason of greater efficiency at farm work, because of a stronger market, and because they are the best advertisement he can give his other business. Notice the crowd on the street as the farmer drives by with his 1,700 or 1,800-pound pair of well-mated draft mares. They say, "Look at that team. Beauties, aren't they? What farmer do they belong to? What, to Young Brothers? They

the low fee may be a valuable sire. The basis for our selection should be a difference of \$5 at the time of service may make a difference of \$50 or \$100 on the price of the colt, when it comes time to sell.

We often see trotting-bred mares mated with heavy draft stallions and draft mares mated with trotting bred or coach stallions, and the result in a few cases, desirable but in the greater number, disappointing.

Mate draft mares with draft stallions. If your mares are Percheron grades, mate with the best pure-bred Percheron stallion available. Keep the offspring and breed them in turn to a Percheron stallion. Greater uniformity will result in the offspring—hence greater prices, and if we pursue this policy a reputation will become established, and we will become known to buyers as producers of good horses. Pure-breds will do as much work as grades, and will sell for more money, the registry certificates doubling the price, other things being equal. How many sections are there in Michigan where a buyer can go in and pick up a

advise breeding a large healthy two-year-old and then turning her to a straw stack to shift for herself. I believe we make mistakes in over-feeding as well as in under-feeding. At this time, heavy feeding, especially of corn, will cause the animal to become too fat, and round out or mature at too young an age. An oversupply of oats and hay with too little exercise, is equally dangerous. A supply of grain and hay that just satisfies the appetite and is readily cleaned up, together with plenty of exercise, is the ideal combination for developing young mares.

Feeding an Important Factor.

Feed plays no small part in the successful growth, health, and fecundity of the horse. I will not go into a detailed study of feedstuffs for the horse. That should be a subject of itself. I wish, however, to make a few general statements in passing.

First.—Oats and timothy are safe feeds but not the only horse feeds.

Second.—Corn should be fed in limited quantities to brood mares and growing colts. Can be fed in larger quantities to the mature work horses.

Third.—Horses doing hard, steady work should not be fed too much succulent food. With idleness increase the succulency.

Fourth.—Increase the protein in the ration for brood mare and colt, using bran and roots to lighten it.

Fifth.—Straw, molasses, and silage can be fed with profit to all classes of horses if a degree of caution is used.

Sixth.—Regular feeding without abrupt changes in content not only is a saving in feed but decreases losses from indigestion, etc.

Seventh.—Water the horse when he is thirsty limiting the quantity when he is tired and hot.

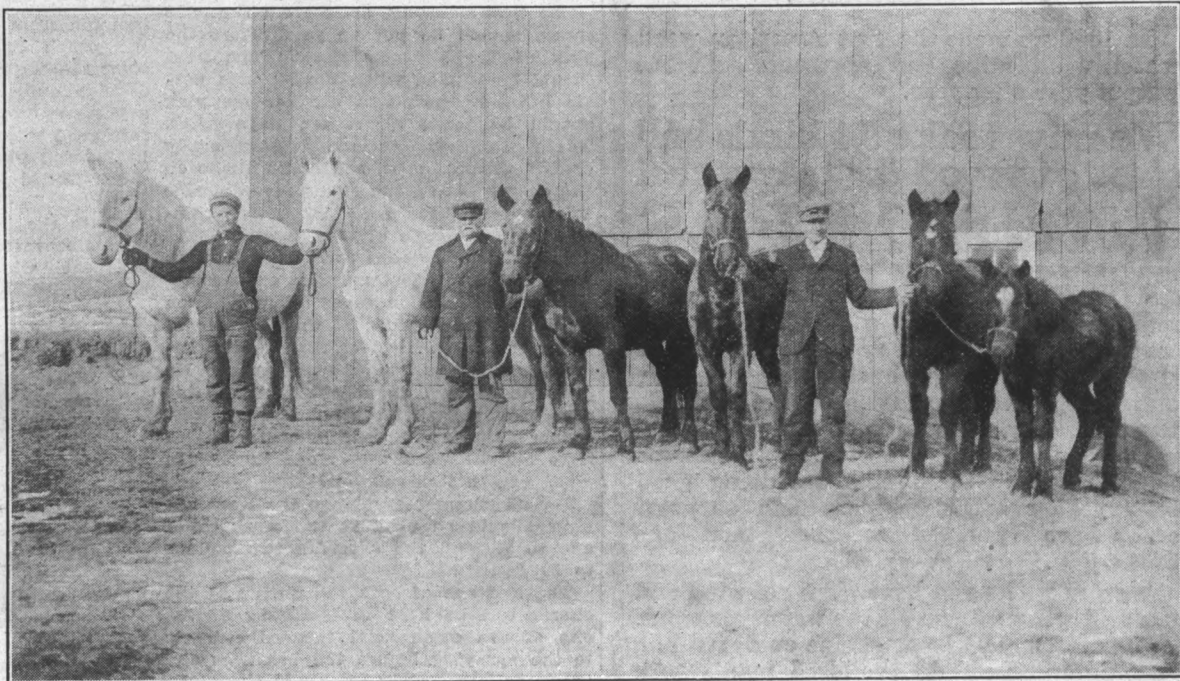
The feed during pregnancy has much to do with healthy development of the foetus and its delivery at the time of parturition.

A mixture of ground oats and corn, one-third being corn for the main grain ration, is good. For mature working mares four to five pounds, with two pounds of bran two or three times daily, makes an excellent combination. Ten or 15 pounds of corn silage or six or seven pounds of carrots daily make a valuable addition. Mixed hay twice daily with oat straw at night, or better still, a light feed of alfalfa at noon in place of the hay, makes a good roughage addition. Brood mares should be kept in good flesh but not loaded with fat. A straw stack with no grain is not conducive for success in producing healthy foals.

Exercise.

Exercise is one of the most important factors in the management of brood mares. Regular daily work in the harness for both stallions and mares will do more toward increasing the per cent of foals and normal births than any other one thing. Lack of exercise causes sluggish systems and is the direct cause of so many of the losses in young foals.

(Continued on page 411).



A Profitable Brood Mare and Five of Her Colts, Owned by S. Stevens, of Berrien County, Mich.

breed pure-bred Berkshires out here in the country. Guess they must have some good ones, all right."

Laying the Foundation Right.

Now comes the question, how shall we breed the best class of heavy horses?

First, study the draft breeds. Make up our minds which one appeals to us strongly. A great many of us will object to the Clydesdale and Shire because of the heavy feathering of the legs. Others will say that the Belgian would be all right if he was a little more active. And others will object to the Percheron, thinking him light-boned and curby at the hock joint. Each breed has its weakness yet each has also its desirable characteristics and we should be governed in our choice by the things which look best in our own eyes, providing the market is asking for that kind.

Second, we must give more attention to the mating and handling of our mares if we would produce better horses. The policy of so many farmers seems to be "Breed to the horse with the lowest fee." In some instances the horse with

carload of first-class draft geldings and load the car at one depot? Why not get together as neighbors, form an association and all breed one breed of horses? Buyers would be looking for the surplus and would visit that community because they know they can get two cars of Belgian draft geldings within a radius of a few miles of the depot. So much for the proper mating of mares.

At what Age Shall we Begin Breeding?

A great deal of difference of opinion exists as to the advisability of breeding mares at two years of age but in my opinion, it is as a rule, the correct policy to pursue. Breed a filly at two years so that she may produce her colt just about the time she is three-years old. Then, if she can be spared do not breed her for a year. The breeding at two years, develops the maternal organs and broadens the frame because it is at this age that the body begins to take its shape. This, of course, must be accompanied with plenty of food of the right kind. I would not advise breeding a little weak, stunted two-year-old, neither would I

Makes the
Plow Users
Hardest
Task Easy



One Nut to
Remove—
The
Job is Done

John Deere Shares Save You Time and Trouble

- 1st.—Save 80 per cent of time in changing shares.
- 2nd.—No tipping of plow or lying in the dirt.
- 3rd.—The simplest and strongest share ever made.
- 4th.—No lost, bent, or broken bolts or nuts.
- 5th.—Only one nut to remove instead of five.
- 6th.—Locks rigidly—Equalized strain on all parts.

Q-D means quick detachable—quick attachable, too. On and off quick is the idea. This new and exclusive feature is the latest development in the art of plow making. As soon as you see it you will want a plow equipped with it. Only new Deere sulky and gang plows have it. Don't waste your time and patience changing old style shares.

Every up-to-date farmer will be interested. We have a new free book. Write for "Q-D" Book No. QD5.

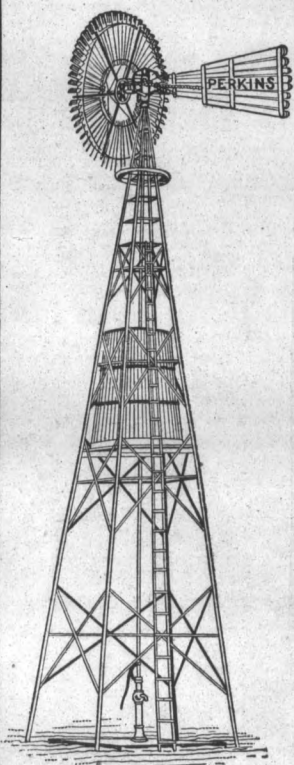
JOHN DEERE PLOW COMPANY,

MOLINE, ILLINOIS



GASOLINE GOING UP

Prudent Farmer is Economical.



In 1860 we made the first American wood wheel wind mills and have increased the output year after year.

We now make 54 kinds and sizes of wood & steel wheel WIND MILLS

and are familiar with all, but especially recommend the wood wheel mill for the central states, as it is not so noisy as the steel, will wear three times as long, lighter on bearings, requires less care, not so liable to wreck, only costs a trifle more to begin with. On a steel tower it is a handsome job. Many of these mills are doing good service after being up more than 40 years and have pumped for less than one cent a day.

Ten months you have plenty of wind and the mill will give you all the water you need. Two months one of our engine outfits will do your pumping and do the hired man's work the rest of the year.

ECONOMY IS WEALTH.

Steel Tanks, Feed Grinders, Wood Saw Frames, Gasoline Engines, all sizes, Jacks, Hand Trucks. Catalogs Free

PERKINS WIND MILL & ENGINE CO., 60 Main St., Mishawaka, Indiana

WHOLESALE PRICES

On \$1 worth and up. Strawberry, Raspberry, Blackberry, Bush Plants, Grape Vines, and Garden Roots. Extra heavy rooted, high grade stock. No better plants can be grown. Everything fully guaranteed. Catalog free.

A. A. WESTON & CO., Bridgman, Michigan

SEED CORN—Early white cap dent, fire dried, yield over 100 bus. to acre. \$1 per bus. on ear, order early. DR. C. S. LAYTON, Ypsilanti, Michigan.

Maloney's Home Maker Collection

10-TREES AND PLANTS—85c. 1 Hydrangea Shrub, 1 Gen. Jack Rose, 1 Yell. St. John's, 1 Peach, 1 Elberta L. Peach, 1 Red Ast., Summer, 1 Fall Pippin Apple, 1 Montmorency Cherry, 1 Maloney Prune, 1 Lombard Plum, 1 Bartlett Pear, summer. All first-class, 4-5 ft. for 85c. Write today for our FREE wholesale illustrated catalog, giving a description of varieties, season of ripening, etc. MALONEY BROS. & WELLS Co., 85 Main St., Danville, N.Y.

Spraying Cherries, Plums and Peaches.

Even the man who has only a few plum trees in his yard realizes the importance of spraying to get a crop. Many growers of cherries, however, seem to think that that fruit does not need spraying, or, at least, they can get along very well without spraying the trees. With the plums it is a case of no-spray, no fruit, while with cherries you get fruit even if you do not spray. A fearful carelessness has to be practiced, however, when eating unsprayed cherries to make sure that you are eating nothing but cherry. Worm meat has no value on the market notwithstanding the high price of other meats. It rather detracts from the value of the things in which it is found.

The early sprayings of the cherry and the plum are greatly alike, although the sour cherry is not attacked by the scale and therefore does not need the dormant season or scale spray. The sweet cherries and all of the plums are often infested by the San Jose scale and also the European fruit scale. An annual spraying, preferably in spring before the buds swell, of lime-sulphur at the strength of one gallon of it to eight of water, is almost necessary.

For the other sprayings there is considerable difference of opinion as to what is the best fungicide to use. Some of our best cherry growers believe that the lime-sulphur is not an efficient fungicide for that fruit, and rely entirely upon the Bordeaux mixture. We have tested the two, side by side, for several years and have found the lime-sulphur giving as good results as the Bordeaux. We would prefer to use the lime-sulphur because it is more economical and easier to mix and apply.

For the plum, we have all three of the common fungicides, boiled lime-sulphur, self-boiled lime-sulphur, and Bordeaux mixture recommended. Our tests of all of these have brought us to the conclusion that the lime-sulphur (boiled) is the best.

A poison should be used in each spraying and when lime-sulphur is used arsenate of lead is the only poison to use with it.

Time to Apply Sprays.

The first spraying, aside from the scale spray, should be put on just before the pink of the blossoms show. The next should be applied when the blossom petals have dropped, and another spraying should be made about ten days after. These three applications will generally control the leaf spot, rot, and curculio on the cherry but on the plum it is advisable to spray every ten days to two weeks until within a month of ripening time.

In bad seasons it is sometimes hard to control the rot on plums that are susceptible to it. In such cases an application of dilute lime-sulphur, at the strength of about one to 100, two or three weeks before ripening, will be of great value. No arsenate of lead should be used at this time as it will spot the fruit. If desired, copper sulphate diluted to one pound of it to 150 gallons of water can be used in place of the lime-sulphur.

For all summer sprayings the lime-sulphur should be used at the strength of one to 50, and the arsenate two pounds to 50 gallons.

The leaf lice of both the plum and the cherry can be kept in check by adding one of the commercial tobacco extracts to the spraying before the blossoms and the one immediately after. It should be added according to the directions the manufacturers give as the different brands vary in strength.

Should the slug trouble the cherry after the crop is harvested a spraying of arsenate of lead, two pounds to 50 gallons of water, will control them. For just a few trees, road dust or dust of any kind which will not injure the foliage will be effective in the control of the slug.

Jarring the plum tree for the curculio is a thing of the past. Spraying will control this insect more efficiently and economically.

Japanese Plums Require Weaker Sprays.

The Japanese plum has more tender foliage than the European and on that account many recommend the use of self-boiled lime-sulphur or a half-strength of Bordeaux mixture. Even when diluted the Bordeaux will injure the foliage. We have had very good success with the self-boiled lime-sulphur, using it at the strength of one to 50, and being careful to apply it in a fine mist and evenly over the tree.

Continually keeping at it and thoroughness are just as important factors in successful spraying of plums and cherries

as they are in gaining success in any other line of endeavor. They can not be given too much consideration.

Spraying the Peach.

The peach does not need as much spraying to produce good clean fruit as the apple does, but this does not make it true that the grower of peaches has only a few pests and troubles to confront him. The serious troubles which attack the peach orchard, little peach and peach yellows, can not be controlled or prevented by the application of spray material. A diligent use of the ax is the only method known to check the spread of these diseases.

Peach troubles controlled by spraying are the scale, leaf curl, curculio, mildew, peach scab, and rot. On account of the sappy nature of the tree the scale spreads quite fast on the peach. We are fortunate, however, in having the tree a comparatively small one and in having the bark of such a character that the spray material will readily adhere to it.

The Important Spray.

Spraying for scale on peaches should always be done in spring because, if the application is made before the first of April, it will also control the leaf curl if lime-sulphur is used. The strength of lime-sulphur to use for scale is about one to eight for practically all of the commercial articles.

If the spraying for scale should not be necessary a solution of copper sulphate in the proportion of two pounds of copper sulphate to 50 gallons of water will control the leaf curl. While April 1 is usually the limit of the time to spray for this trouble we occasionally have seasons when that date is too late to get good results. During the spring of 1911 all sprayings made after the 15th of March were not efficient in the control of the leaf curl because the unusual warm weather that spring started the buds early. To get good results the spraying has to be done before there is any swelling of the buds.

On most of the best peach locations, the high ones having plenty of air circulation and air drainage, in most seasons no more spraying will be necessary to grow good fruit. No orchard is entirely immune from the troubles which attack the peach during the summer, and in some seasons some of these troubles may develop quite seriously. As spraying is a preventative and not a cure, it is therefore good policy to spray every year even in favored places.

Self-Boiled Lime-Sulphur Needed for Peaches.

Up to the time self-boiled lime-sulphur was discovered we had no fungicide for the peach which would be both safe and efficient. Bordeaux mixture even when diluted so much that its fungicidal value was worthless for peach troubles, would injure the peach foliage by burning. While the boiled lime-sulphur has given good results without injury at a strength of one to 50 in some cases, in others it has caused serious burning at a strength of one to 120, and therefore is not safe to use.

To control the rot, mildew and black spot the self-boiled lime-sulphur should be applied about three weeks after blossoming time and again about one month before the period of ripening.

If the curculio is troublesome, and it often is, an application of arsenate of lead, using two pounds to 50 gallons of water, should be made after the blossoms have dropped and most of the shucks have fallen off, and the arsenate of lead at the same strength should also be included in the sprayings of the self-boiled lime-sulphur. The arsenate of lead is the only poison which can be used on the peach without the danger of burning.

Making Self-Boiled Lime-Sulphur.

Self-boiled lime-sulphur is a mechanical mixture of lime and sulphur and not a chemical combination like the boiled or commercial lime-sulphur is. While it is the most expensive fungicide we have in common use, and the hardest to make and apply, it gives better results on the peach than anything we know of. The best formula to use is eight pounds of lime, eight pounds of sulphur and 50 gallons of water. Enough for 200 gallons or more of spray can be mixed more readily and satisfactorily than smaller amounts on account of the more satisfactory action in slaking of the larger amount of lime. Should a small lot be made at a time the lime should be started slaking with warm water so as to keep from drowning it. The lime should be placed in a barrel or other convenient receptacle and started slaking with just enough



75c Per 108 Square Feet Buys Best Rubber Surfaced "Ajax" Roofing

Here we show the lowest price ever known for roofing material. This smooth surfaced roofing we are offering is our famous one-ply "Ajax" brand, and the price includes necessary cement and nails to lay it, and at this remarkably low price.

We Pay The Freight in full to any point east of Kansas and Nebraska and north of Ohio River. We also furnish 2-ply at 80c, 5-ply at \$1.05. This "Ajax" roofing is guaranteed to wear as long and give as good service as any Ready Rubber Surfaced Roofing on the market. It is put up in rolls of 108 square feet, and contains 3 or 4 pieces to a roll. Big value!

We are the world's greatest headquarters for Roofing! Our 40-acre plant is fairly stacked with millions of feet of genuine roofing bargains. Hundreds of thousands of people never think of buying roofing of any kind until they get our prices. It will pay YOU to write for special offers. Samples Free. Write for free Roofing Catalog.

Chicago House Wrecking Company, Dept. 42., Chicago, Ill.

water for that purpose. When the slaking begins add the sulphur, which should be put through a sieve to break up the lumps. The mixture should be stirred constantly and enough water be added to make thick paste. It should gradually be made thinner by the addition of water and when the slaking has ceased enough water should be added to cool the mixture. If it is not cooled soon after slaking some of the sulphur may go into solution and injury to the foliage may result. When loading this mixture into the spray tank it should be put through a sieve and all lumps of sulphur worked through the screen.

Self-boiled lime-sulphur settles very easily and therefore the arsenate of lead should not be added until just before spraying. A good agitator is very essential so as to keep the mixture in suspension as much as possible. Fine nozzles and good pressure will do much toward giving the trees an even coating of material.

Van Buren Co. F. A. WILKEN.

SOME TREE PROBLEMS.

I am desirous of some information about "Tree Surgery," which I cannot get, even after writing to several sources which should be able to furnish it. What is the best method of keeping air and moisture from getting behind the cement; and also the method best suited to retain cement in place while first hardening and before the final surface coat is applied. These are both important, and I, for one, would like to know the most suitable plan. Many articles are published on what to do to tree wounds, some say use one thing, some another, all agree that some paints are harmful but fail to tell why. What is the action on a healthy, growing or dormant cambium, of the following coverings: First, paint mixed with some turpentine in it, that is, white lead, linseed oil and turpentine? Second, Japan drier? Third—Asphaltum roof paint or varnish? Fourth—Rubber roof paint? Fifth—Coal tar or creosote? Sixth—The asphalt used for filling the space between sections in road concretizing? Seventh—What is the best covering to put over a large wound on a maple tree at this time of the year when they bleed so badly? Will pruning of maple trees in the winter injure them? I know that the position of the wound and the way the cut is made are important as to the length of time it will take for such a wound to heal. Do you think that it is possible to use a dry mix of cement for shallow cavities or even medium-sized ones, with small external openings and not use a form? Can water glass be used successfully to make cement used in filling cavities, waterproof? To sum up, if pure white lead and oil are used to cover the interior of all wounds—even out to and over the cambium—can asphaltum paint be used to seal the space between the cement and wood?

Clinton Co. J. B. C.

The repairing of shade and fruit trees by filling the cavities with concrete has often been mentioned in horticultural publications. The whole subject is new, in that too short a time has elapsed to determine just how efficacious this work is, and especially as the earlier work was very crude. Within the past five years much progress has been made toward perfecting the methods of treating cavities and perhaps we are justified in thinking that present methods are perfect. At any rate, we have examples of recent work that stand today in perfect condition.

There is no reason why a farmer cannot do this work as well as so-called "experts," providing he exercises common sense with mechanical skill, and the average farmer is possessed of each of these qualities. It is because of lack of this combination that the majority of failures can be attributed.

In the first place many attempt to save old trees that are not worth the expense of treating, and unless a tree has a particular value, either from a sentimental reason or from its position on the farm, it is questionable whether or not it is advisable to fill its cavities if they be large. This is particularly true of old fruit trees. Common sense would seem to say that it would be better to start a new orchard, and give the new trees the protection and care that the old orchard lacked; or, in other words, keep your trees from having cavities by avoiding bruises and keeping all exposed wood well covered with a water-proof dressing.

There are two agencies of decay, air and moisture, and to have perfect work, all the decayed wood must be carefully chiseled out and the cavity filled solidly with concrete so as to exclude the agencies above mentioned. This sounds comparatively easy but those who have tried it know that there are many obstacles to overcome.

In removing the dead and decayed wood one should be careful not to remove any more of the sap wood or that layer of wood directly in back of the cambium,

than is absolutely necessary, for it is through this wood that the sap flows toward the crown of the tree and every bit removed lessens the vigor of the tree. When all the decayed wood has been removed it is advisable to wash down the walls of the cavity with creosote or crude carbolic acid so as to kill any mycelium that may have penetrated into the wood. Copper sulphate has been recommended also but it is doubtful if this wash is strong enough to penetrate the wood.

The next step is to paint the inside of the cavity with a heavy coat of tar or some similar waterproof preparation. If the cavity is shallow it may be necessary to reinforce the concrete with nails and wire, which is done by studding the walls with nails and running wires from nail to nail. If the cavity is large it may be necessary to use steel rods such as are used in construction work. Care should be taken to anchor these rods in the wood as they make the tree more rigid when put in this way.

The concrete should be mixed thoroughly in proportions of three parts sand and one of cement and care should be taken not to have it too wet. When very wet it is hard to hold in place while setting and the more water the greater the contraction from the wood, a condition to be avoided. A good policy to follow is to have the concrete just moist enough so that it will stick together when pressed between the hands. A weaker mixture can be used if desired but the "three and one" recommends itself because it is possible to obtain a very smooth finish by troweling. If the cavity is large, bricks and crushed rock can be used in the back of it. This strengthens the concrete and saves cement. Care must be taken to have the concrete well packed so as to make the filling as air-tight as possible. When approaching the surface shape the concrete to conform with the contour of the trunk and see that in no place does the concrete extend beyond the inner bark or cambium, because it is here that the new growth will appear.

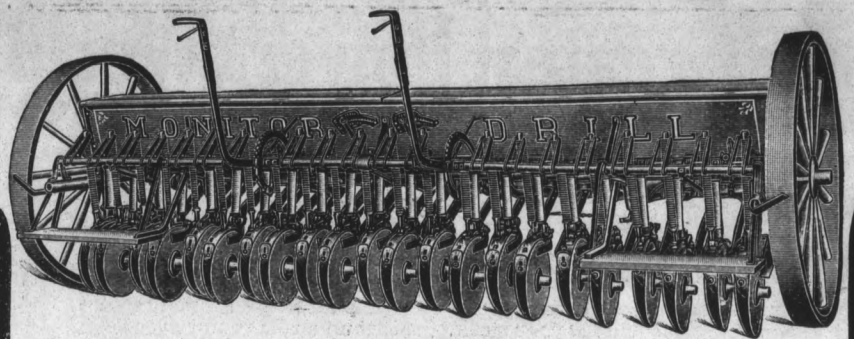
By carefully troweling the surface a very smooth and hard finish is obtained. This is especially important around the edges as it is here that water tends to seep into the cavity and troweling will reduce this trouble materially.

When the concrete has set thoroughly and has had time to dry out, paint the surface with a concrete paint and fill in around the edges with roofing paint or cement. This is quite elastic and will keep moisture out of the crevice between the wood and the concrete. In painting the surface of the filling do not allow the paint to touch the cambium as it is quite sure to kill it back. If concrete paint is not available, coal tar will do fairly well. At any rate it is superior to ordinary paint as it adheres much better and does not seem to disintegrate the concrete to the extent of oil paints.

Many methods for treating tree wounds have been published and while they undoubtedly have merit, yet perhaps the cheapest and best is coal tar. Coal tar is a natural preservative. It adheres well to wood and costs but a fraction as much as lead paint. Asphaltum is equally good but when dry it presents a shiny black surface which reflects the sun's rays in the early spring on the new wood and is apt to injure the same. It really does not matter so much what is used, as long as the wounds are kept covered.

Many people think that the only time to prune trees is during the month of March. This idea has become so common that probably 75 per cent of all the trimming is done during the early spring. There is really no good reason for this idea except that the farmer has more time to devote to this work at that time. It is usually conceded that the best time to trim fruit trees is during the dormant season and perhaps better weather can be expected in March than earlier in the winter, but shade trees can be pruned at any season of the year with the exception of sap flowing periods. The maples in particular should be avoided at this season as they bleed badly. Summer offers the best opportunity for the trimming of shade trees. When the trees are in leaf one can readily see just what the results are to be by removing certain limbs. Many fail to consider that a shade tree should appear natural. Avoid convention in this work and remove, first of all dead limbs, then interfering limbs or riders as they are sometimes called. When this has been done be careful about doing any more, as more trees are injured by too much trimming than by lack of it.

E. D. PHILBRICK,
Forester Dept. of Parks and Boulevards,
Detroit, Mich.



MONITOR DOUBLE DISC DRILL

Increases the Yield Raises the Grade Saves 20% of the Seed

Hundreds of farmers have carefully tested out the MONITOR DOUBLE DISC DRILL and in every case have found that it increases the yield, usually from three to seven bushels to the acre—raises the grade and saves at least 20% of the seed. It will actually save its cost in a single season.

THE MONITOR WAY IS THE ONLY RIGHT WAY

It deposits the seed on the downward turn of the disc—at the bottom of the furrow—in two rows, one inch apart and covers it with moist soil and not dry top earth as is done by other drills.

Owing to its uniform depth the seed all comes up at the same time—ripens evenly, insuring better grade—increased yield with less seed—it pays for itself.

The MONITOR DRILL cannot be clogged in any soil, mud, gumbo or in weedy or cornstalk ground, and its draft is one-third lighter than any other.

Our FREE Illustrated Book on Monitor Drills will interest you. Write for it today. The Flying Dutchman Dealer in your neighborhood sells Monitor Drills. Look him up.



MOLINE PLOW COMPANY

Dept. 26

MOLINE, ILLINOIS

SOLD BY HOME OFFICE AND ALL BRANCH HOUSES



SOY BEANS

We have tested every promising variety of soy bean that has been introduced into the United States. We are pioneers in this business and are glad to see today that farmers are easily succeeding with this great plant, and that they are securing fully as good results when our varieties are used as we have prophesied. Every day some one writes us that his soy yielded 25 to 30 bushels per acre. We have discarded poor ones and offer you simply the best there is anywhere. Write today for free catalog which tells all about the best seeds that can be grown.

WING SEED CO., Box 142 Mechanicsburg, Ohio.

Book on Grape Culture FREE

Instructions for planting, cultivating and pruning; also descriptions of best varieties for vineyard or home garden. Profusely illustrated. Issued by the largest growers of grape vines and small fruits in the country. Millions of vines for sale.

T. S. HUBBARD CO., Box 41, Fredonia, N. Y.

AGRICULTURAL LIME

Now is the time to place your orders for the Strongest Lime in Ohio to benefit your soil. The Government and experimental station advocate its use. Write for prices, samples and free booklet.

The Scioto Lime & Stone Co., Delaware, O.

SEED BEANS

Spring Rye and Buckwheat.

Northern Michigan Crown.

ASK FOR PRICES.

TRAVERSE CITY MILLING CO.

Traverse City, Mich.

PULVERIZED LIME ROCK

for correcting acidity in soil. We pulverize the genuine magnesian rock and ship direct to you from our new pulverizing plant at Muskegon, Mich. Write today for sample and interesting soil literature. Act NOW and double your crops this season. A postal will do.

LAKE SHORE STONE COMPANY,
MILWAUKEE, WISCONSIN.

GROW FENCE POSTS AND WINDBREAK.

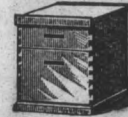
Hardy Catalpa 3 ft. to 4 ft. 100 for \$3.00
Norway Spruce, Transplanters.....100 for \$2.00
Blue Spruce, Transplanters.....100 for \$5.00
Delivered at your station. Nursery in Northern Michigan.

Peninsular Evergreen Tree Co., Harrisville, Alcona Co., Mich.

SPRAYERS.

Bargains in new and shop-worn machinery, all thoroughly overhauled. Everything guaranteed. Light engine, \$95. Large Power Sprayers \$139 to \$165. Get our circular and terms.

HIMES MFG. CO., 431 River Street, LANSING, MICHIGAN.



BEE SUPPLIES and BERRY BASKETS

Bee-Hives, Sections, Foundations, Smokers, etc. Beeswax wanted. Send for fully illustrated catalog.

M. H. HUNT & SON, 400 Condit St., LANSING, MICH.

Duncans Early Yellow Dent SEEDCORN

costs you but forty cents an acre to plant the seed. You will spend a lot of time and labor, fitting your fields for corn, why not plant a seed that has twice won the Michigan State Championship Prize, and be rewarded for your labor with a big yield of this beautiful Early Yellow Dent Corn?

Price \$3 per bushel, f. o. b. Vicksburg, Michigan.

OATMAN & MONFORT, Seedsmen, Cleveland, Ohio.

WEEDLESS FIELD SEEDS

Are what we are trying harder than ever to furnish our customers. FREE SAMPLES will show that we come pretty near doing it. In many varieties we DO IT. Red Mammoth, Alsike, Alfalfa, Timothy, Orchard Grass, Sweet Clover and all others. If seed of any kind to sell, send samples and price. Write today.

O. M. SCOTT & SON, 56 Main Street, Marysville, Ohio.

BIG SEED BOOK FREE

Just out. Contains 92 pages of valuable and useful information with prices on implements and ALL KINDS OF SEEDS including Alsike, Alfalfa, Crimson, White, Red and Sweet Clover; Timothy, Grass and Field Seeds, Barley, Seed Oats, Seed Corn, and a complete line of Vegetable and Garden Seeds. Simply send your name and address on a postal to

THE HENRY PHILLIPS SEED & IMPLEMENT CO., Dept. C. Toledo, Ohio

PURE FIELD SEEDS

Clover, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer; free from noxious weeds. Ask for samples.

A. C. HOYT, & CO., Fostoria, Ohio.

SEEDS—Flower, Vegetable and Farm, at half price.

Send list of wants for prices. ALLEN & SONS, GENEVA, OHIO

FOR SALE.

Common Red Clover Seed, true to name. Green Mountain Potatoes, great blight resistors. Black Victor Oats, a great feeding oat. Wing's White Cap Corn, thoroughly acclimated, fire-dried. COLON C. LILLIE, Coopersville, Mich.

Strawberry Plants—100 varieties—\$2 per 1000.

Early and late seed potatoes, asparagus roots. All as good as grow—at bargain. Catalog free. J. G. PRESTAGE, Allegan, Mich.

IF WE CAN'T SAVE YOU MONEY, don't buy but

I send for our Catalogue and see. Apple Trees 8c, Peach 3c, Cherry 3c, Pear 3c and up. All kinds of Shade Trees, Berry plants, Roses, Privet, etc. An Orange or Lemon plant that bear free with order. ERNST NURSERIES, Box 2, Moscow, Ohio.

500,000 TREES, APPLE, PEACH, ETC.

200,000 Strawberry plants. Catalogue Free. W. A. ALLEN, & SON, Geneva, Ohio.

OATS—Reg. Swedish Select and Imp. American. Two

best yielders. Also SEED CORN, Seed Potatoes, Clover, Timothy and GARDEN SEEDS. Samples and catalog free. THEO. BURT & SON, Melrose, Ohio.

REGENERATED Swedish Select Reclaimed Oats at

R 75c bu. Fine yellow dent seed corn \$2 bu. Bags Free. JOHN LOHMAN, Sr., Hamilton, Michigan.

Farm Seeds Corn, Oats,

Medium, Mammoth and Alsike Clover, Timothy, Grasses, Beans, etc.

O. C. SHEPARD CO., 9 M Ave., Medina, O.

Berry Baskets and 16 qt. flbe* beed Grates, the best yet. Hot-

Bed Bask made of cypress. Send for basket catalog.

M. H. HUNT & SON, 400 Condit St., LANSING, MICH.



The Greatest Power in the World

If all the winds of the world could be hitched to dynamos they would furnish heat, light and power enough to supply all the needs of the whole human race. It would be a big job to harness all of the winds for they are very numerous and decidedly restless. But it is easy to catch enough wind to pump all the water you require for your home and for your stock. Just set up an Aermotor over your well and your job of pumping is as good as done. The Aermotor will work away faithfully night and day with very little attention from you.

Power Without Expense

It costs nothing for power if you do your pumping with an Aermotor. The running expenses are trifling—just a little oil now and then is all. An Aermotor which receives reasonable treatment will require no repairs for 10 or 15 years. Many of them have run longer than that without a cent's worth of repairs. They just simply keep right on about their business day after day without bothering you in any way. For the past 25 years the Aermotor Co. has been supplying the world with efficient, durable and reliable steel windmills for pumping water, and has enabled hundreds of thousands of people to enjoy the comfort of a good water supply with a very small initial investment and with practically no expense for upkeep. Perhaps we can do as much for you. We surely can if you are in need of power for pumping.

The Windmill of Greatest Merit

Aermotors are built on honor and are sold on their merits. The great Aermotor factory of today has grown out of very small beginnings because of the superiority of the output. The Aermotor is the windmill with a record behind it. The record started in Chicago in 1888 and it has left its trail around the world. Aermotors are as numerous today in South America and South Africa as they are in Illinois. There are villages in the Argentine which are literally shaded by Aermotors. They pump all the water required for all of the needs of the community. Great herds of cattle depend entirely upon Aermotors for their water and they never go dry.

Running Water in House and Barn

We have a booklet—called "Water Supply Bulletin"—which contains a large amount of information in condensed form. It tells what size of Aermotor to use, what kind of pump is best under different conditions, shows various kinds of tanks and other things of interest to anyone who is planning for a better supply of water. The booklet is yours for the asking. Just write "Bulletin" with your name and address on a postal and mail it to us today.

AERMOTOR CO.,

2510 12th Street, Chicago, Illinois

1,001 Knights of the Spalding Deep Tilling Machine

have told us in dollars and bushels just what deep tilling means to them. They relate their *actual experiences*—not their *theories* of deep tilling. In this mass of evidence are several letters relating to soil conditions similar to *yours*. Below are a few of these letters. If you want more deep tilling facts, write us for the book entitled, "1,001 Knights."

These Men Saw the Light

Toledo, O. Oct. 31, 1912.

We hitched two of the deep tilling machines hitched behind an Oil Pull engine last fall, and plowed forty acres with great success, going down to a depth of 16 inches and laying the soil over in the nicest, finest shape we ever saw; it was simply the finest work that was ever done in our country.

We put this land in sugar beets and at the same time left a test plot of land that was plowed in the usual manner, and the result has been that the land plowed by your machine gave us an increased production of sugar beets of from two to five tons to the acre.

C. H. ALLEN.

Crowell, Mich. July 1, 1912.

We hitched on to the deep tilling machine with three horses and found it did a much better job than the walking plow.

We got some new shares and started the common plow in the bean ground; after two days we made up our minds that we either must use the Spalding Machine or give up putting in beans.

Although it was very hard and stony, the Spalding made a much better job than the plow. The ground was easier fitted and we know we don't have to wait for a rain to plow. One piece was stumped last year and rooty; the machine worked very well in that;

it is the hard ground plow all right.

JOHN L. DOUGLAS.

Lake Linden, Mich., 11-15-12.

We would not part with our Spalding Deep Tilling Machine for double the amount we paid, unless we were perfectly sure of being able to buy another.

Ground turned with the machine is three times easier to get in shape for seeding, than it is when turned with an ordinary plow—with the Tiller you get a regular garden seed-bed.

We believe that its only a case of a short time when a Spalding Deep Tilling Machine will be found on every good farm.

B. W. LEVEQUE.

Spalding Dept. 65, GALE MFG. CO., Albion, Mich.

The Acme Rotary Planter Drops Accurately

Absolute action is given in this rotary planter by two strong springs. With a thumb-screw you can regulate the number of seeds dropped. The center-hung, 2-qt. seed hopper gives balance in either hand. The planter is light, strong and well finished.

ACME
Rotary
Corn
Planter
\$1.75

ACME CORN & POTATO PLANTERS

An Acme Potato Planter reduces labor of planting two-thirds. You can plant at even depth, without stooping, without the labor of furrowing out and covering.

Any dealer can sell you an Acme Planter. For the whole line, write us for our free booklet "The Acme of Potato Profit." Then you'll see why 300,000 farmers have insisted on this planter with this trade mark.

Potato Implement Co., 311 Front St., Traverse City, Mich.

ACME
Potato
Planter
\$1.00

A RENTER'S EXPERIENCE.

On page 293 of the Michigan Farmer of March 8, A. S. of Muskegon county, inquires what share the renter should receive, the owner furnishing everything. If it would not be out of place I would like to tell him of my experience.

For the last six years I have rented a farm of 200 acres in Van Buren county, the owner furnishing everything and giving me one-third, and it has proved very satisfactory to both of us. I rented it four years as a grain farm. The owner furnished three horses, all the tools, feed, seed and paid one-half the threshing bills and one-half the road work. I furnished one horse and did all the work, paid one half the threshing bill and one-half the road work. Since then we have put on cattle and hogs. I get the same share of grain and hay as I did before, but I furnish one-half the stock and their feed and receive one-half the proceeds, increase and milk. Since we put on stock the owner pays two-thirds of the threshing bill and two-thirds of the road work.

Van Buren Co. W. C. WILCOX.

THE USE OF COMMERCIAL FERTILIZERS AND MANURES.

Prof. C. G. Williams, Agronomist of the Ohio Experiment Station, was called to the recent Round-Up Institute held at the Agricultural College, to deliver an address upon the above topic, which address was very highly appreciated by the large audience present. With the increased attention that is being given to building up the fertility of the farms, there naturally arises the question as to whether one should accomplish this through the use of the farmyard manure, or commercial fertilizer, or both. Prof. Williams attempted to answer this proposition in the following manner:

Since it has been proven that ordinary farmyard manure is one of the most useful and well balanced fertilizers, why should we not maintain our soil fertility by the use of live stock. This the speaker answered by showing that the amount of live stock in the country was altogether too small to ever hope to maintain the fertility of her fields through the manure secured from them. Statistics show that the live stock of the country, when reduced to the equality of cows, would amount to about 94,607,000 animals. Now this would mean that there would be an average of one cow to every 9.3 acres of agricultural land in the country. It is at once observed that this is altogether too small a number of animals to properly maintain fertility and therefore we must look to some other source for plant food elements to accomplish the end sought.

Three questions were then proposed, the answers to which will materially aid us in forming a policy, which, if intelligently followed should lead us to a higher success along this line than we have attained in the past. These questions were: What use can we make of commercial fertilizers? What returns may we expect from them, and how permanent are the results from their use likely to be?

Prof. Williams then gave the results of the work done at the Pennsylvania Experiment Station to show what can be accomplished by the use of commercial fertilizers. The work at this station has now been carried on over a period of 30 years, but tables had been prepared on 25 years of the work and furnished the basis for his conclusions. The rotation followed in the experiment consisted of the following crops grown in order: Corn, oats, wheat and hay. Everything was removed from the fields each year except the stubble and roots of plants. The following table shows the average annual results for the 25 years' work reckoned at these values: Corn, 50 cents per bushel; oats, 32 cents; wheat, 80 cents; straw and stover, \$2.50 per ton, while nitrogen was calculated at 18 cents per pound, potash at four cents and phosphoric acid five cents per pound.

Treatment given.	Corn. bu.	Oats. bu.	Wht. bu.	Hay. lbs.	Value.	Cost Fert.	Profit
Check (no fertilizer used)	42.1	32.3	13.6	2,783	\$63.00
48 lbs. nitrogen in form of dried blood	41.0	31.2	12.6	2,330	\$58.00	8.64	Loss
96 lbs. phosphoric acid	47.9	35.4	15.9	3,210	71.81	4.80	3.98
200 lbs. potash	41.1	32.0	12.0	2,489	60.17	8.00	Loss
96 lbs. phosphoric acid and 200 lbs. potash	54.0	40.0	18.5	4,138	84.51	12.80	8.68
96 lbs. phosphoric acid and 200 lbs. potash and 48 lbs. nitrogen	54.0	40.8	22.1	4,098	88.29	21.44	3.85
12 tons barnyard manure	57.5	9.7	22.7	3,875	88.99
20 tons barnyard manure	57.1	1.0	23.8	4,119	91.91

The above table shows clearly that fertilizers can be substituted for farm manure, provided, of course, they are used in the right way. It is evident from the figures that the greatest profit resulted

from the use of phosphoric acid and potash. In each instance where nitrogen was used in the commercial form it failed to return a profit upon the investment. A few days before the Round-Up Institute, Prof. Williams had received the figures for 30 years in this experiment, and the results of the last five years corresponded closely to those of the previous years. The following table shows the amount of dry matter grown upon the plots that had no treatment, those that received phosphoric acid and potash, those that received nitrogen, phosphoric acid and potash and those that received farmyard manure:

Period.	Untreated Plots.	Addition of Phos. & Potash.	Addition of Phos., Pot. and Nitrogen.	Addition of 12 tons Manure.
1882-1886 ..	14,679	16,577	17,976	16,913
1887-1891 ..	14,339	17,090	18,333	17,832
1892-1896 ..	12,611	17,764	18,825	17,967
1897-1901 ..	9,562	15,440	16,716	16,721
1902-1906 ..	9,848	16,368	17,895	17,487
1907-1911 ..	8,837	16,643	17,718	17,445

A review of these figures indicates that the fertilizers and the farmyard manure are giving practically double the results at the end of the 30 years' work that is produced from the land receiving no treatment. The table further shows that with the exception of the period from 1897 to 1901, when, as was explained, an off year caused a general falling off in all of the results for the period, that there is a great similarity between the results received from the use of phosphoric acid and potash, and the manure. It further indicates that where the three plant elements are used, that is nitrogen, phosphoric acid and potash, in the form of commercial fertilizer, that the amount of dry matter produced exceeds that of the area given the 12 tons of manure. It would seem therefore, that this work at the Pennsylvania Experiment Station proves quite conclusively that commercial fertilizers form a practical substitute for barnyard manure.

Work at Rothamsted, England.

The next illustration given was the work at Rothamsted, England, covering a period of 60 years. The rotation used in these experiments was turnips, barley, clover or beans and wheat. The beans were used where clover seedlings failed. All of these crops were removed with the exception of the stubble and roots in all cases where the natural handling of the crops would leave them on the ground. The following table presents the average for the different crops for three 20-year periods in all cases except the clover and beans, which crops, because of their intermittent use, could not be calculated on the same basis as the wheat, turnips and barley.

Periods.	Untreat- ed.	Miner- als.	Min. & Nitro.
Wheat, bushels:			
First 20 years...	30.8	30.6	35.2
Sec'd 20 years...	21.5	29.1	31.3
Third 20 years...	24.3	38.4	36.4
Turnips, pounds:			
First 20 years...	5,443	16,776	31,108
Sec'd 20 years...	1,576	16,388	31,856
Third 20 years...	967	25,275	41,731
Barley, bushels:			
First 20 years...	41.1	30.2	44.7
Sec'd 20 years...	22.1	23.7	35.9
Third 20 years...	13.7	22.2	29.2
Clover, pounds:			
First 20 years...	4,165	5,800	7,322
Sec'd 20 years...	1,266	4,762	4,602
Beans, bushels:			
First 20 years...	12.8	14.0	23.1
Sec'd 20 years...	13.8	22.5	20.9

So here again the proposition that barnyard manure can be substituted by the use of mineral fertilizers is clearly demonstrated and the long period over which this work has been carried brings added weight to the argument.

Prof. Williams used the results in this work to show that nitrogen purchased in the commercial form is not an economic element to buy for fertilizing our lands for the ordinary farm crops. An average of certain crops which were grown on soil fertilized with minerals and also on soil fertilized with minerals plus nitrogen,

showed that in the former the crops were calculated to be worth \$43, while in the latter they were worth \$51.52, but the cost of fertilizer on the former was \$17.88 (Continued on page 406).

FARM NOTES.

Fertilizer for Beans.

Does it pay to use fertilizer for a bean crop? I have a piece of timothy sod on clay soil, not in very poor condition but could be better, which I will put to beans. Now will it pay to use fertilizer? If so, what kind should be used and how much to the acre? How should it be put on? What per cent of crop should it increase? What causes the insects to eat the tops off from the young plants? Where do they come from?

Ingham Co.

SUBSCRIBER.

A good many of the most successful bean growers in the state consider that it pays to use a moderate amount of commercial fertilizer on beans, say 200 to 300 pounds per acre. This should not be applied in the row with the beans as the potash in the fertilizer is likely to injure the germinating qualities of the seed, or if a portion of it is run in with the seed the balance should be run into the drill hose on either side of the bean rows in order to avoid this difficulty. The percentage of the increased yield will depend altogether upon circumstances, such as the condition of the soil and the kind of season which prevails after the fertilizer is applied, but it is the belief of many who have tried it that a light application, such as mentioned, of a standard grain fertilizer, or one containing phosphorus and potash will prove a profitable investment and yield a good rate of interest on the money invested and cost of application.

Anthracnose.

Very often when young bean plants die and have the appearance of being eaten off close to the ground the trouble is no insects, but fungus disease of beans known as anthracnose, or some similar difficulty. In fact, beans are rather free from the depredations of insect pests, but very subject to fungus diseases, such as the one mentioned. The remedy is to plant clean bean seed which is not infected with the disease, the presence of which is denoted by colored spots on the pods which generally extend through the tissues of the pods to the beans themselves.

Planting Beans in Hills vs. Drills.

Can you give me any information as to planting beans in hills 28 in. each way with check-row planter. How many beans in a hill and how does the yield compare with the row beans?

Lapeer Co.

V. E. S.

Formerly nearly all the beans grown in Michigan were planted in checks from 23 to 32 inches apart, depending upon the style of cultivators used. When so planted six to eight beans were planted in each hill, depending upon the variety, the usual practice being to use about one-half bushel of seed per acre when planting in checks as compared with three pecks per acre when planted in drills. The writer has grown beans both ways but not the same season so as to afford a good opportunity for comparison as between the yield secured by the two methods of planting. However, some of the best crops we have ever seen grown were planted in checks, and there is probably little if any difference in the yield secured by the two methods of culture. The principal reasons for the general change in policy of bean growers in this respect were the convenience of the drill as a means of planting as compared with hand planters, as few had check-row planters during the earlier days of bean growing, and the fact that the modern bean pullers work a little better in drilled beans than in hilled rows. This is not important, however, as the improved bean pullers will do satisfactory work where planted either way.

Amount of Alfalfa Seed to Sow.

What can you say in regard to seeding alfalfa with a drill, rather than by broadcast seeding? How much can be saved in seed, etc.?

Jackson Co.

A. H. P.

There is probably no doubt that some less seed would be required where alfalfa were sown at just the proper depth with a drill, than where sown in the ordinary manner. At the Michigan Experiment Station may be seen a perfect seeding of alfalfa which was sown with a drill at the rate of six pounds of seed per acre. At the recent Round-Up Institute a Lenawee county farmer, who has met with signal success in the growing of this crop, stated that by making the seed bed as perfect as possible he had secured perfect results by using only from four to six pounds of alfalfa seed per acre. Where June clover was sown at even as low a rate as a bushel to 20 acres, the writer has seen very good stands of clover result under what might be termed perfect conditions for the germination and growth of the young plants. However, this does not allow any margin of safety. The writer has used about 12 pounds of

alfalfa seed per acre where sown broadcast and harrowed in, but believes that seven or eight pounds, or about the amount that one would use of clover seed, is sufficient where conditions are reasonably favorable and where a good distribution and even covering of the seed at about the right depth is secured, whether same is accomplished with a drill or in some other manner.

Sowing Alfalfa with Clover.

I have a seven-acre field of wheat that I wish to seed to alfalfa. Which do you think would be best to sow, about a quart of alfalfa seed with other grass seed this season and then plow it and sow all alfalfa next year, or to sow all alfalfa now? My field is clay loam. What kind of alfalfa should I sow and how much?

Kent Co.

J. A. B.

A good many farmers are now mixing a little alfalfa seed with their clover seed in seeding land which has never grown alfalfa, with an idea of getting the land inoculated with alfalfa. This is undoubtedly a good plan, and in some instances where this plan has been tried the writer has heard of the alfalfa coming on and making a surprisingly good stand after the first or second year when the clover disappeared. However, if it is desired to get a stand of alfalfa as quickly as possible it would be a better plan to sow a field to alfalfa alone, as in this way one will be more certain of success to be considered, however, it is undoubtedly a good plan to mix alfalfa with the clover seed, as the stand of alfalfa will be likely to be more successful when the land is seeded to this plant in the future. The common alfalfa seed is all right for this state, but seed should be secured which was produced in a northern location, rather than in states to the south of us. As seeding alfalfa with fall sown grain is in the nature of an experiment the writer would mix the alfalfa and clover seed.

Amount of Clover Seed to Sow.

What is the right amount of clover seed to sow per acre? I am a green hand at farming, and I find so much difference of opinion I don't know where I am at on the subject. The tables nearly all give the amount in pounds, while the drill and seeders are marked in quarts. How will I determine?

Mecosta Co.

A. H. W.

The ordinary amount of clover seed sown is about four quarts, or eight pounds, per acre. Some sow more and some less than this amount, but this probably represents nearly the average amount of seed used by Michigan farmers. Very much depends upon the germinating quality of the seed and the conditions under which it is sown. If the seed is good and evenly planted at the proper depth for germination, undoubtedly half this amount would suffice, but these conditions are sometimes difficult to govern, hence the wisdom of using sufficient seed to allow a margin of safety in this direction.

Destroying Ground Moles.

I have a field which is infested with ground moles. I planted it to corn last season and lost a large amount of it by them. I want to raise corn on it again this season. Do you know of any way to treat the seed so they will not eat it, without injury to the seed? Could plant with hoe if the treatment hindered the planter. What is the best way of destroying the moles?

Barry Co.

SUBSCRIBER.

Experimenters appear to have determined that about the most satisfactory way of getting rid of ground moles is by trapping them with spring traps made for the purpose. We do not know of any preparation with which the seed corn could be soaked that would prevent their depredations. Some years ago we have known of farmers smearing their corn with coal tar to protect it from birds and rodents, but cannot state with what success. The corn was rolled in plaster after being coated with the coal tar and planted by hand and covered with a hoe. A better plan, in the writer's opinion, would be to prepare the seed bed well and plant when conditions were favorable for the quick germination and rapid growth of the young plants.

When to Sow Sand Vetch.

Being a regular subscriber and a very interested reader of your paper, I take the liberty of inquiring for some information in regard to sand vetch. I have a field of light sandy soil which I would like to sow to vetch. Which kind would you sow, the winter vetch or the spring vetch?

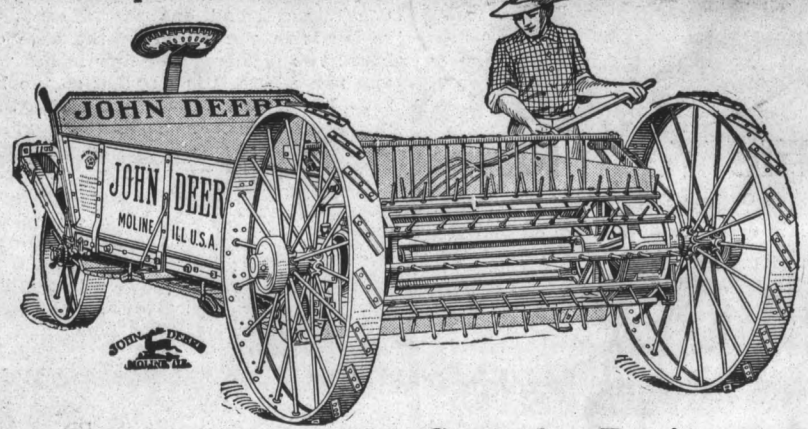
Mecosta Co.

H. B.

The winter vetch is preferable to the spring variety and should be sown in midsummer, preferably in August, with rye to be plowed down as a crop for green manure the following spring, or utilized as a forage crop, as may be desired.

John Deere Spreader

The Spreader with the Beater on the Axle



Revolutionizing the Spreader Business Simplest and Strongest Spreader

On the John Deere Spreader, the Spreader with the Beater on the Axle, two hundred working parts that continually give trouble, are done away with. This spreader is so simple and strong that it does not get out of order. It has no clutches, no chains, no adjustments.

The John Deere Spreader is the greatest improvement in spreaders since their invention. It is as much in advance of ordinary spreaders as the self-binder was over the old reaper.

The Beater on the Axle

Mounting the beater on the axle makes the John Deere Spreader possible. This feature is fully patented. You cannot get it on any other spreader. The beater on the axle does away with all chains and clutches. It puts the strain and stress of spreading on the main axle—where it belongs—not on the sides of the box or the frame of the spreader.

Mounting the beater on the axle makes the John Deere Spreader easy to load—low down.

Only "Hip-High"

Sides of the John Deere Spreaders are only "hip-high." The first three feet you lift a fork of manure are easiest of all. From there on to the top of the ordinary spreader is hard work.

You lift manure only three feet with the John Deere Spreader. You always see into the spreader, just

Valuable Spreader Book Free—Get this book at once. It contains reasons for using manure—how to apply it to the land, how to store it, and a description of the John Deere Spreader, the Spreader with the Beater on the Axle. Ask us for this book as Package No. Y 5

John Deere Plow Co., Moline, Illinois

where each forkful is needed. Wheels do not interfere with loading.

Few Parts

There are no clutches to get out of order, no chains to give trouble, and no adjustments to be made on the John Deere Spreader. On old style spreaders, ten to twenty adjustments are necessary before they will work at all. Any one of these, wrongly made, might put the spreader out of business.

To start spreading with a John Deere Spreader, move the lever at the driver's right back until the finger or dog meets the large stop at the rear of the machine—there is no clutch.

The John Deere Spreader does not get out of order. It is always ready for use.

Roller Bearings

Roller bearings, few working parts, the center of the load comparatively near the team and the weight distributed over four wheels, make the John Deere Spreader light draft. There are four sets of roller bearings, two between the main axle and the beater, and two in the front wheels.

Bridge-Like Construction

The substantial steel frame on John Deere Spreaders has high-carbon structural steel side sills. Like modern railway bridges it is built on the best known principles of steel construction. It is securely bolted, insuring rigidity and perfect alignment, even after years of use.

Biggest Stumps Pulled For 4c Each—In 5 Minutes!

E. C. Culbreath, Johnston, S. C., does it. Thousands of others doing it. Why not you? Pull an acre of stumps a day. Double the land value—grow big crops on virgin soil! Get a

HERCULES

—the only all steel, triple power stump puller made. More power than a locomotive. 60% lighter, 400% stronger than cast iron puller. 30 days' free trial. 3 year guarantee to replace, free, castings that break from any cause. Double safety ratchets. Free book shows photos and letters from owners. Special price will interest you. Write now. Address Hercules Mfg. Co., 137 21st St., Centerville, Iowa

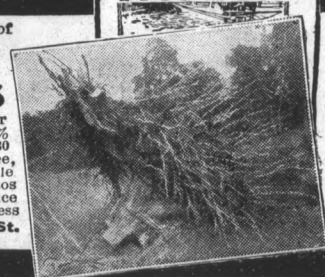
Kirstin ONE-MAN STUMP PULLER

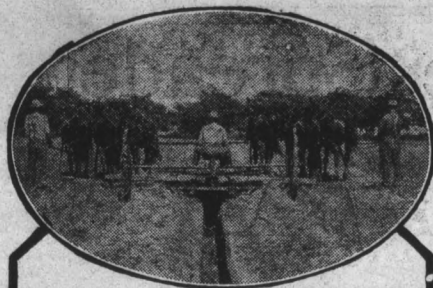
New—wonderful—powerfully effective. Only puller made that one man can carry, set up and operate without horses. Five pound pull at the handle means 600-pound pull at the stump. Pulls a stump in three minutes at cost of 2c. Also has hundred other farm uses. Handiest tool you ever owned. Absolutely guaranteed. Order now or send for circular. (Agents wanted.)

A. J. KIRSTIN CO.

4014 Ludington St., Escanaba, Mich.

Free Book





Tile Your Farm

with a Cyclone Tile Ditching Machine and end your ditching troubles at once. When you're through with the work on your land you can earn many dollars by cutting ditches for your neighbors. The

Cyclone

Tile Ditching Machine

—cuts tile drains quickly, easily, cheaply;
—cuts 300 to 400 rods of ditch in a single day;
—saves its cost every 10 days you use it;
—is guaranteed to live up to all our claims and save enough in cutting drains to pay for the tile you put into them;
—price places it within reach of the average farmer.

You know the benefits and advantages derived from tile drainage. Don't put the matter off any longer. Hundreds of farmers are using Cyclone Ditchers to dig their ditches. You ought to get busy with a Cyclone at once. A Cyclone will do for you what it is doing for hundreds of others.

Write A Postal

for full information that explains how you can make and save money with a Cyclone Ditcher. Address

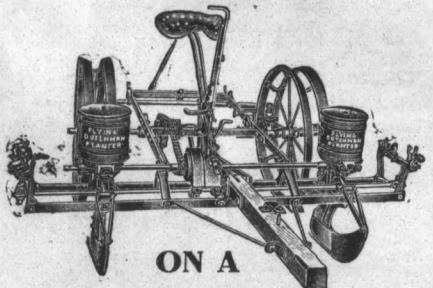
THE JESCHKE MFG. CO.

Box 111
Bellevue,
Ohio



Don't put it off,
but send for
book now.

Save \$7 to \$10



ON A

Corn Planter

and get the Word's Best Planter. You can go to any Dealer who sells **FLYING DUTCHMAN** Farm Implements and get this splendid Corn Planter for **\$35.00** Cash plus the Freight from the Factory or Warehouse in any of the following cities:

Bloomington, Ill. Indianapolis, Ind.
Kansas City, Mo. St. Louis, Mo.
Madison, Wis. Columbus, Ohio
Omaha, Neb. Minneapolis, Minn.
Des Moines, Iowa Sioux Falls, S. D.

The Flying Dutchman
"The Planter Without a Fault"

Now \$35.00

Never before has a high grade Corn Planter been offered at this low price.

The **Flying Dutchman** is the best Corn Planter that money and skill can produce—Variable Drop—Edge Drop—Flat Drop or Drill.

Write today for our **FREE BOOKLET** showing Planter in colors.

Moline Plow Co.

Dept. 26,
MOLINE, ILLINOIS

ANTI-SMUT

Will prevent Smut in all grains
Wheat, Oats, Barley, etc.

Sold by leading dealers everywhere or sent direct, prepaid on receipt of price, \$2 per bottle.

Will treat twenty acres under an absolute guarantee.

ANTI-SMUT CHEMICAL CO.,

Box B, North Adams, Michigan.

LEVELING TILE DRAINS.

After reading H. M. A.'s article in The Farmer of February 8 on leveling and laying tile drains, I thought I would give our way, which seems to me more simple. If you haven't a large spirit level, you can buy a small one for 15 cents and fasten it in the center of the edge of a board two feet long and four inches wide, and make sure it is on right so the bead says level, then change ends with board and set in the same spot. This will tell if you have it right. If not, raise lower end of level and try again, till it is right.

Now, if doubtful of plenty of fall, place level on two stakes at lower end of drain and sight along level to another stake set at any distance on line of drain that you can see plainly, and have someone mark the point your level strikes at this stake; then place level at this point and proceed as before.

When you have gone the length of the drain in this way, figure out the fall you have per rod. Now suppose it is one inch, place your two-foot level on a board and level the board, now raise one end of level one-eighth of an inch and note position of bead in level and keep it in mind while laying this drain.

Begin at lower end of drain and cut bottom to this grade by the level, the length of two tile and your tile scoop, lay the two tile, stand on them and grade for two more, and so on.

Advantages of this Plan.

First, no stakes, hose or measuring pole to bother with.

Second, you are grading bottom of the ditch and bottom of tile and that is where the water runs. The bottom of tile drain will be even, if tile themselves are not perfectly true.

Third, you can lay the tile as fast as you open the ditch and avoid much caving, if draining where an open ditch would cave.

I seldom run a level over the line of a drain, but begin at the lower end and carry nearly all of the fall till I get too deep, or where I see that there is some to spare, then gradually drop it. I have one drain which is laid on a dead level for many rods, in order to get two feet deep in a low spot. This drain has been laid nine years and I never lost a crop on low spot till last season, which was an exceptional one, and then it was because of the outlet, an open ditch which was kept full far above end of tile for several days, and even when the water was 18 or 20 inches above the tile you could run your hand down and feel quite a current from end of tile.

Berrien Co.

F. E. DOANE.

THE USE OF COMMERCIAL FERTILIZERS AND MANURES.

(Continued from page 404).

and the latter \$42.24. This leaves the net profit decidedly in favor of the use of the minerals only, the net profit from that land being \$25.12 as against \$9.28 on the land where nitrogen was added. Since nitrogen can be provided by the growing and turning under of leguminous crops it would seem that results would justify a larger use of such crops for that purpose.

Work at the Ohio Station.

The third and last illustration used was the work done at the Ohio Experiment Station at Wooster, and here the rotation consisted of corn, oats, wheat, timothy and clover. The rotation extended over five years and all crops were removed except the stubble and roots. The following table gives the kind of treatment applied to each of the soils, the average annual value of the crop produced, the cost, and the gain resulting from the use of the different fertilizers and the farmyard manure:

Treatment given plots.	Av. Value.	Av. Cost.	Gain.
Five-year Rotation.			
Check (nothing applied)	\$10.65	\$....	\$....
64 lbs. phosphate	14.05	.48	2.92
Acid phosphate and potash	15.65	1.65	3.35
164 lbs. acid phosphate, 52 lbs. potash, 96 lbs. nitrogen	18.55	4.30	3.60
96 lbs. acid phosphate, 52 lbs. potash, 48 lbs. nitrogen	17.72	3.13	3.94
4 tons manure	15.65	1.60	3.40
8 tons manure	18.68	3.20	4.83
Three-year Rotation.			
Check (nothing added)	\$12.35	\$....	\$....
8 tons yard manure	17.67	2.67	2.65
8 tons stall manure	19.70	2.67	4.85
8 tons stall manure and 107 lbs. phos. acid	24.65	3.47	8.83
Four-year Rotation.			
10 tons yard manure	\$17.80	\$2.50	\$ 2.95
10 tons stable manure and 400 lbs. phosphoric acid and 1 ton limestone and 400 lbs. complete fertilizer	29.30	5.25	11.70

This work added further testimony to the claim that commercial fertilizers can be used to maintain soil fertility, and since, as noted at the beginning of his address it is absolutely hopeless to ex-

pect to produce sufficient live stock to provide manure enough to maintain our land in good crop-producing condition it seems necessary that these fertilizers be used in conjunction with what manure we have at our disposal for rebuilding our farm land and maintaining its fertility as it should be.

LIME AND WHERE TO GET IT.

I have read with interest your experiences in farming of the last two years, in the Michigan Farmer, and think I see an article about lime and your experience with same. At that time I was not particularly interested, but now I am. Would you kindly let me know where you get lime, what kind, how much to use per acre, what it costs a ton, and what other information you can spare time to give me?

Eaton Co.

H. B.

If your soil is acid in reaction instead of alkaline, it needs lime. About the best and most practical test for this condition is clover. If the clover plant grows well without any trouble, if you have no trouble getting a catch of clover, it is a pretty good sign that there is plenty of lime yet in the soil. On the other hand, if the clover grows feebly, doesn't do well, it is pretty sure that you need carbonate of lime in the soil. Of course, you can make the litmus paper test or the hydrochloric acid test, but clover is about the most practical test. If your soil is acid in reaction the only way to neutralize it is by the use of lime.

Pulverized ground limestone, or hydrated lime, or caustic lime, or marl, will do the business. You can get these of a great many different firms. I advise you to look at the advertisements in the Michigan Farmer and you will find practically all of these different kinds of lime used. It doesn't matter so very much which kind of lime you get. You must remember, however, that hydrated lime is worth more than ground limestone because it has the moisture and carbonic acid driven off. It is the same way with caustic lime. It will take about a ton and a half of ground limestone or marl to be equal to a ton of caustic lime. Another thing you must figure on is, that where you buy the ground limestone or marl you have to pay freight on something that does you no particular good, and this must be taken into consideration. Buy the kind of lime which will give you the best net returns for the money invested.

COLON C. LILLIE.

CATALOG NOTICES.

The 1913 catalog of the Griswold Seed Co., of Lincoln, Neb., is an 80-page illustrated booklet, describing a full line of garden and flower seeds and ornamental shrubs as well as nursery stock and small fruits.

Burpee's Prize Supplement for 1913, published by W. Atlee Burpee & Co., seed growers, of Philadelphia, Pa., contains many cuts of prize-winning exhibits grown from the "Best seeds that grow," together with testimonials from satisfied users of this firm's goods who have won valuable prizes on their product.

"Clover the Great Cash Money Crop, and all About It," is the title of a manual on clover culture, by W. H. Pyre. This is a 100-page booklet bound in paper cover and contains chapters on every phase of clover culture and other legumes and is profusely illustrated with half tone engravings. Published by the Galloway Bros.-Bowman Co., Waterloo, Iowa. Price, 35c.

The American Sheet & Tin Plate Co., of Pittsburgh, Pa., recently issued a second edition of its popular booklet entitled "Better Buildings." It is fully illustrated and contains detailed descriptions of formed metal roofing and siding materials especially adapted for houses, barns, grain bins—practically every kind of building. Attention is drawn to the safety from fire and lightning, strength, durability and consequent economy in erection of buildings of steel. Throughout this booklet are facts and information concerning the latest ideas and most

THE KNOW HOW

To Feed Children and Get Good Results.

There are more nervous persons made so by undigested food lying in the stomach than the average individual would suppose.

If food remains undigested in the stomach, it begins to ferment, set up gas and a large portion is thus converted into poison.

That's why imperfectly digested food may, and often does, cause irritation of the nerves and stupor of the mind—brain and nerves are really poisoned.

"My daughter had complained for some time of a distressed feeling in the stomach, after eating, which set me thinking that her diet was not right," writes an anxious and intelligent mother.

"She had been fond of cereals, but had never tried Grape-Nuts. From reading the account of this predigested food, it seemed reasonable to try Grape-Nuts for her case.

"The results were really wonderful. The little brain that seemed at times unable to do its work, took on new life and vigor. Every morning, now, before going to school, she eats the crisp little morsels and is now completely and entirely well, she seems to have a new lease on life—no more distress in the stomach, nor headache, but sound and well every way." Name given by Postum Co., Battle Creek, Mich. Read the book, "The Road to Wellville," in pkgs. "There a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

BIG FREE BOOK ON ALFALFA

HOW TO GROW IT ON YOUR LAND

"Alfalfa—Wonder Crop," is the title of a new book just issued by us. It contains a fund of priceless information on alfalfa growing secured from many sources; United States Government, State Experiment Stations, the best posted authorities and successful growers. This information was secured at a great cost of time, money and research, and yet it is yours for the asking without cost. This book will convince you that your farm has some land on which you can grow alfalfa; it tells how to get results from the first planting, how to select the field and prepare the soil, including fertilizing, plowing, liming, and how to prepare the seed; when to plant, how to plant. It tells you what to do during the growing period, how to get bigger than average crops, and how to cut and cure. This book is worth many dollars to the farmer interested in growing alfalfa, but we gladly send it without cost or obligation of any kind if you answer at once. Don't put it off—write for free book today.

GALLOWAY BROS.-BOWMAN CO., BOX 644 S WATERLOO, IA.

DOUBLE QUICK Seed Corn Tester

Makes complete tests in three to five days. Adapted to the Saturation, the Saw-dust or Sand, and the Earth or Soil test. Six Sizes: 2 1/2 to 66 bushels. This machine is also the

DOUBLE QUICK Grain Sprouter or POULTRY SILO

For sprouting oats for laying hens. Also starts GARDEN PLANTS quickly. A useful machine for every farm. Send for free information. **CLOSE-TO-NATURE CO.,** Colfax, Iowa.

Make Money Growing Potatoes

O. K. Champion Line
Cutters
Planters
Sprayers
Diggers, Sorters
Descriptive matter free. Write for it.

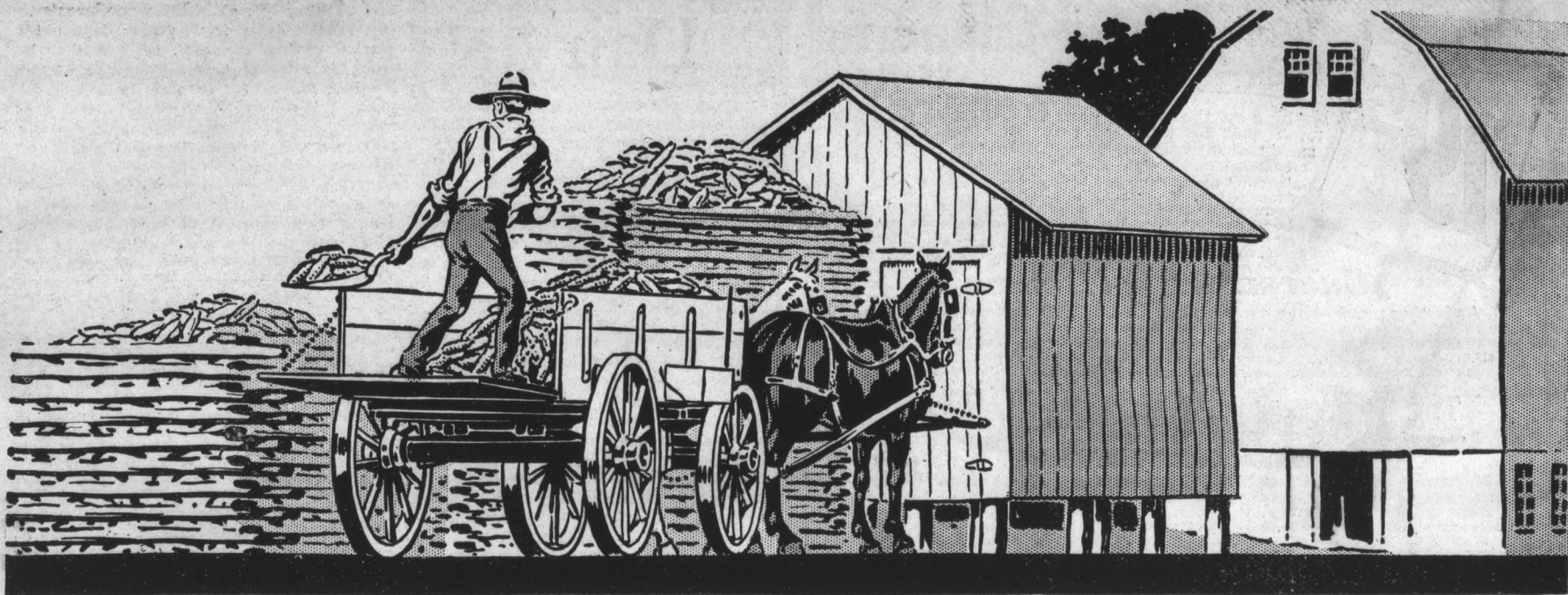
Our No. 22 Planter is automatic; one man and team plant five acres or more a day; Our No. 25 Planter plants absolutely 100 per cent correct, a seed place to every hill. **CHAMPION POTATO MACHINERY CO.** 145 CHICAGO AVENUE HAMMOND, INDIANA.

Duplex FARM Tool Grinder

Grinds your plow shares, cultivator points, axes, sickles, knives and all tools. Edge or side of wheel can be used.

No Engine too small for it. Will last a lifetime. Special attachment for grinding discs furnished free. Write for circular. **Duplex Mill & Mfg. Co., Box 408, Springfield, O.**

GREAT RESULT to users of SELF-CLEANING, Flexible **POUNDER HARROWS** 100,000 in use. If dealers don't keep them write for catalog and price. We pay the freight. **G. H. Pounder, 75 Ft. Atkinson, Wis.**



Corn is our greatest Crop

It is worth more than any other crop

It costs more than any other crop

A big item in this cost is over one hundred million dollars' worth of actual potash, which the corn crop takes from American soils every year—more than eight times the total importations of

POTASH

The corn plant uses over a pound and a quarter of potash for every bushel of ears produced.

It uses more than twice as much potash as phosphoric acid.

Supplement the manure or clover sod by 400 to 600 lbs. per acre of a fertilizer containing at least as much potash as phosphoric acid—0-8-8 or 0-8-10—or broadcast 300 lbs. acid phosphate and 100 lbs. muriate of potash per acre after plowing and before

harrowing, and drill in with the seed 100 lbs. per acre 2-8-8 goods. On muck lands broadcast 100 to 200 lbs. muriate of potash per acre.

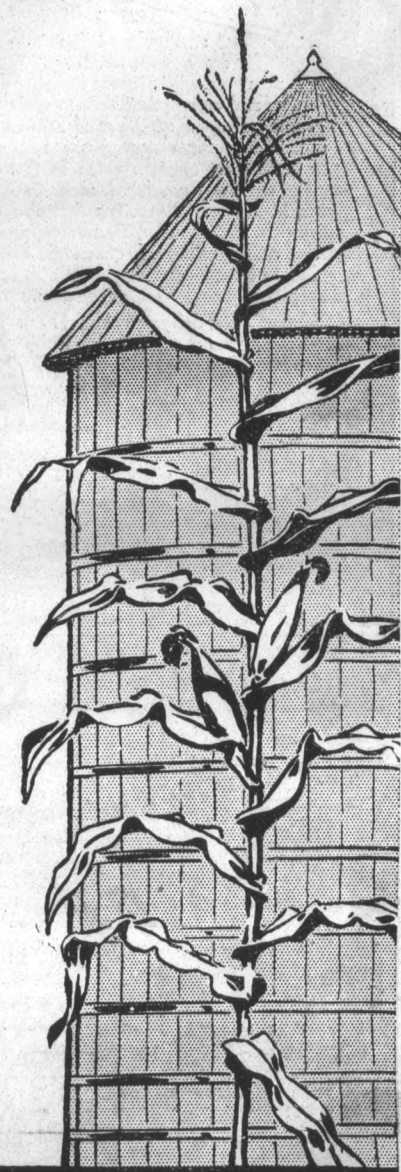
To drive away cut worms and root lice, drill in 100 lbs. Kainit per acre with the seed. Potash makes more sound ears in proportion to the stalks. It makes much more and much better corn for either crib or silo. **Potash Pays.**

We sell potash in any amount from one 200-lb. bag up.

Write for prices and for free pamphlets on profitable use of fertilizers

GERMAN KALI WORKS, Inc., 42 Broadway, New York

Chicago, Monadnock Block New Orleans, Whitney Central Bank Bldg. Atlanta, Empire Bldg. Savannah, Bank & Trust Bldg. San Francisco



CLOVER \$4.50
AND TIMOTHY Per Bu.

INVESTIGATE—Best and Cheapest Seeding Known. Alsike Clover and Timothy mixed, Fully 1-3 alsike, a big bargain. Greatest hay and pasture combination grown. Write for Free Sample and 76-page catalog and circulars describing this wonderful grass mixture. Beats anything you can sow and ridiculously cheap. We handle only best tested re-cleaned seed guaranteed. Write before advance. A. A. BERRY SEED CO., Box 531, Clarinda, Iowa

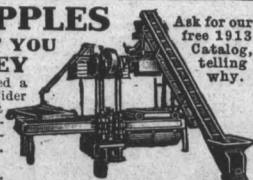
DO YOU NEED FARM HELP?

We have on our list a number of men wishing to obtain employment on farms. Many of them are without experience, but they are able-bodied and willing to work. If you can make use of such help write for an order blank. We are a philanthropic organization whose object is to assist and encourage the Jews to become farmers. We charge no commission to employer or employee. Address, Western Agency of The Jewish Agricultural and Industrial Aid Society of New York, 704 W. 12th Street, Chicago, Ill.

YOUR APPLES

WILL NET YOU MORE MONEY

After you have installed a Monarch Hydraulic Cider Press. We are the largest mfrs. of presses, apple-butter cookers, evaporators, etc., in the country. A. B. Farquhar Co., Ltd. Box 108, York, Pa.



Ask for our free 1913 Catalog, telling why.

THE LARGEST AND BEST LINE OF

WELL DRILLING MACHINERY

in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 14. Send for it now. It is **FREE**.

Austin Manufacturing Co., Chicago.

Only \$19.65 For a **200 lb Capacity** Full Size **CREAM Separator**

Nothing on the market can touch it at the price. Not a small "table" machine, but a Full Size cream separator with sturdy frame, complete with tool shelf, tools, oil can, etc.—everything ready to use. A separator that skims 1½ quarts a minute. Made of finest quality materials, by skilled American workmen. Sold at a price made possible by the latest, labor-saving, automatic machinery. The biggest separator value ever offered.

Guaranteed a Lifetime

As further proof of the unusual merit of this high-grade machine, we agree to furnish new parts at any time as long as you own the machine, should it prove defective in material or workmanship in any respect. Think of that! You take no risk whatever. Only \$19.65 for 200 lb. capacity. Four other sizes up to 600 lb. capacity shown here, all sold for much less than others ask—All Guaranteed a Lifetime, backed by a million dollars cash capital.

The Maynard

The Maynard Cream Separator has the simplest and greatest skimming device ever invented. Just one piece—made of aluminum. Milk slime and butter fat won't stick to it—light, rust-proof and easiest to clean. Has no discs—no "hard-to-get-at-places". It gets ALL the cream and does not chop or cut it as discs do. Bowl is self-draining—milk tank is low down. Ball bearings—bathed in oil; turns easily—runs smoothly. Milk and cream spouts are open—easy to wash. Closed bottom keeps oil from dripping on the floor. Catalog explains these and many other labor-saving advantages.

60 Days' FREE Trial

Just write a postal for our Big Special Separator Catalog TODAY. See for yourself the astonishing separator bargains we offer—the money you can save. See our wonderful "triple force" SKIMMING DEVICE (nothing like it). See how we gladly put any size Maynard Cream Separator in your home on **TWO MONTHS' FREE TRIAL**—let you test it and if you are not satisfied in every way, simply return the separator at our expense. You won't be out one cent—not even the freight. Thousands in use. Don't buy until you get our Free Catalog. Sending for this book does not obligate you in any way. **SEND TODAY.**

The Charles William Stores, Inc.
Dept. A-17 56 Pine Street
NEW YORK CITY
Quick Shipments from New York, Chicago and Kansas City Warehouses




KOW-KURE

The standard medicine for cows, used by dairy-men everywhere for the prevention and cure of the diseases peculiar to cows. Kow-Kure is not an experiment; for sixteen years it has proved its great curative value in thousands of cases of Scouring, Bunches, Red Water, Milk Fever, Lost Appetite; also a positive cure for Abortion, Barrenness and Retained Afterbirth. Its occasional use, according to directions, will prevent disease and keep cows healthy and productive.

Farmers and dairymen should have Kow-Kure on hand constantly; it is the best cow insurance. Sold by feed dealers and druggists, in 50c and \$1.00 packages. Free publication, "The Cow Book," by writing

Dairy Association Co.
Lyndonville, Vermont

2 Sizes
50¢ and \$1.00




Calves Without Milk

Cost less than half as much as the milk raised calves. Increase your profits by using

Blatchford's Calf Meal

The perfect milk substitute—Best since 1890. Ask for free book, "How to Raise Calves without milk." Your name and address on a postal is enough.

Blatchford's Calf Meal Factory
Waukegan, Ill.



WANTED FOR U. S. ARMY—Able-bodied, unmarried men, between ages of 18 and 35; citizens of United States, of good character and temperate habits, who can speak, read and write the English language. For information apply to Recruiting Officer, 212 Griswold Street, Detroit, Mich., Heavenrich Block, Saginaw, Mich., 1st and Saginaw Streets, Flint, Mich., 144 West Main Street, Jackson, Mich., Huron & Quay Streets, Port Huron, Michigan.

WANTED—Agents to sell Farmers Account Book. Easy seller, Home territory, big inducements. Address, Naylor Farm Book Co., 937 Ft. Wayne, Ind.

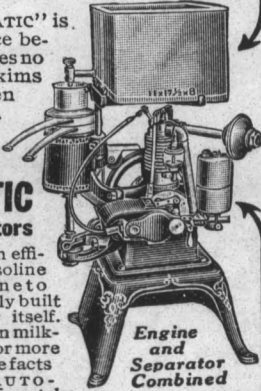
The Hand Cranked Separator is Doomed Wherever Ten Cows Are Milked

The "AUTOMATIC" is taking its place because it requires no cranking. Skims faster than ten men can milk. When milking is done skimming is done.

AUTOMATIC Cream Separators

are driven by an efficient little gasoline engine, magneto equipped, solidly built into separator itself. Every dairyman milking eight cows or more should have the facts about the "AUTOMATIC." Write for catalog 13.

Standard Separator Co. MILWAUKEE, WIS. Box D-33



Buy Your LAST Separator FIRST

If you have never owned a separator don't buy carelessly, only to find that you need and want a really good machine. If you have a worn out or unsatisfactory separator, let your next be a lifetime investment. Get a

Great Western

first instead of "working up to it." Get our free Art Book on Separating Cream and Handling Milk. Shows best methods, gives results of extensive experiments and information found nowhere else. Make

\$10 to \$15
more per cow per year. Our book tells how. Write for it at once. Address

Rock Island Plow Co.
245C Second Ave., Rock Island, Ill.



Pays for itself in cream saved.

BEATRICE Cream Separator

BEATRICE CREAMERY CO.
Chicago, Lincoln, Neb.
Des Moines, Ia. Dubuque, Ia.



A ROOF THAT PROOF AGAINST WIND LIGHTNING RAIN

We manufacture the world's best Steel Roofing in Roll Cap-Pressed standing seam and V crimp. Galvanized Conductor Pipe, Eave Trough and Fittings. It will pay you to send for catalog and prices. Free.

THE NILES IRON & STEEL ROOFING CO., Niles, O.

Dairy.

CONDUCTED BY COLON C. LILLIE.

TWO GOOD COWS AND WHAT BECAME OF THEIR SIRE.

In my story of the Odell herd last summer, mention was made of the fact that two more of our neighbors were testing their cows for the register of merit class, and a promise was given to report on these tests. The account of the testing of four of Mr. Anderson's cows has been already given, together with some reference to him as a dairyman, and now it remains to tell of the last of our neighbors who has been working successfully for a place among the great dairymen of the country.

Hendrickson Brothers have tested but two cows for the register of merit class, but the result in each case is extremely encouraging. Leta of Blue Ridge, 195-458, began the year's test at the age of seven years and ten months, and produced in all, 7,612 pounds and 14 ounces of milk, with an average test of 6.608, equaling 503 pounds one ounce of fat, or 591 pounds 14 ounces of butter. Dolly May of Elmhurst, 238165, began the test at the age of two years ten months, producing during the year, 8,719 pounds and eight ounces of milk average test 5.919, equal to 516 pounds two ounces of fat or 607 pounds three ounces of butter. Leta is the mother of Dolly May, also of Lucy, owned by Mr. G. O. Anderson. Lucy enters the register of merit class with 510 pounds of fat to her credit.

The sire of Dolly May is the sire of some of the best cows in Mr. Anderson's herd. This noble bull has been used here for a sufficient length of time to have a large number of daughters, and as their owners did not wish to breed them to him, Mr. Anderson sold him last spring to a butcher and he was promptly eaten up. Now he turns out to be the sire of some of the very best cows in the state, and we would all like to use him, but he is dead.

Examples like this emphasize the need of a co-operative breeders' association. Had the value of this animal been known when our association was formed, it is safe to say that he would not have ended his days in a slaughter house until the dairy world had gotten more out of his life.

But I wish to speak farther regarding these two cows. There is a prevailing notion that when a cow is fed for a record, she is never fed economically, but that everything else is sacrificed for a name. This may be true in some cases, but not in the one under consideration. The grain ration was never heavy. Hendrickson Brothers have but a limited area in pasture, and for this reason the cows were kept in the stable much of the time, and fed practically a winter ration. On their farm, the summer silo plays a prominent part. The grain ration was a mixture of cornflake siftings, bran, and gluten meal. The cows were given enough to keep them in good condition, and to furnish the energy to enable them to carry on their work, but they were not once over fed.

They ran in the pasture for a little while when the feed was at its best, and at that time the allowance of grain was six pounds daily, but when they were on a winter ration, which was true most of the year, the heifer ate from 10 to 12 pounds and the old cow a little more. This sounds like light feeding to the man who is used to feeding for a record.

Just a word about the men behind these cows. They are young men, very young, in fact. The oldest of them began work at the M. A. C. six years ago, and at the same time he commenced his task of herd building. He began with a poor grade herd, and bought now and then, a pure-bred animal. He used the best sire within his reach each year, and tested carefully each cow in his stable. He has some good grades now, although the pure-bred animals are fast taking the places of the grades.

Oceana Co. W. F. TAYLOR.

SUCCESS IN RAISING CALVES ON PREPARED CALF MEAL.

In regard to an inquiry of C. M., of Van Buren county, on "Producing Veal on Skim-milk and Grain," would like to state my experience. I sold a veal the sixth of March that weighed 160 pounds at four weeks and four days old, that

brought me \$14.80 at this age. This veal had nothing but skim-milk and prepared calf meal. After it was four days old I started giving the calf, after I took it from its mother, two tablespoons of the meal in six quarts of skim-milk and increased it to one teacupful in two gallons of milk. I take the milk directly from the separator and strain it and add the meal and give it to the calf. I can veal three calves on one dollar's worth of the meal, which is 25 pounds at this place. I know this is far more profitable than feeding whole milk.

Barry Co.

M. W. POLAND.

ADDITION TO BARN.

I wish to build an addition on my 40x54-ft. barn, 40 feet or lean-to on end of barn for horses and 40 feet along end of lean-to and along barn to threshing floor for cows, with a hip rafter turning around corner. Would like an alley in front of horses and cows, with heads to the main barn. Would like to know how wide you would suggest that horse barn and cow barn should be. If you would give me a plan or any suggestion, would be grateful for favor. I intend to put in cement floor in cow stable and would like to ask you if it would not be just as well to have floor back of trench in cow barn six inches lower than platform for cows, with trench about 12 inches deep, or six inches deeper than walk behind cows? Do you think an 8-in. concrete wall would be a satisfactory wall for those stables?

Alpena Co.

A. B. C.

For this lean-to addition to the barn 15 or 16 feet wide for cows, and it would be better to have it even wider for horses, you will want a four-foot feeding alley in front of the animals, and you ought to have a four-foot alley back of the gutter, and then there ought to be something like eight feet for the manger and the platform and the gutter. Fifteen feet would do all right for the cows but you certainly ought to have 16 feet or more for the horses. Again, your plan of having the cows stand on a raised platform with the gutter back of them and then the floor back of the gutter for the alleyway six inches lower would work all right if you have your gutter 12 inches deep, but a 12-inch raise from the bottom of your gutter to this platform is pretty high for cows. Sometimes cows get the habit of standing in the gutters and when they are deep the cows frequently injure themselves. I do not think it would be hardly necessary to have it as deep as this.

I take it for granted that you intend to have stanchions, and if you do it would be a good plan to have the platforms for the cows a little longer at one end than at the other so that you could put the young heifers or smaller cows at one end and the longer ones at the other, because with stanchions the cows ought to be lined up to the gutter in order to keep them clean.

I would certainly put a cement floor in the cow stable and also in the horse stable. It doesn't pay to make a stable now days without putting a cement floor in it. Horses will stand the cement floor just as well as cattle and you can save the manure so much more economically.

I am frank to say that I don't like A. B. C.'s plan for this stable. I don't like a lean-to on the barn, and if I was going to make this addition I would build a barn and end it up against the old barn on the 54-foot side, make it 36 feet wide. I would have the lower part of it a basement and the upper part of it storage for straw. Then he could use the old horse barn to store wheat in when he harvested the wheat and thresh and run the straw in over the stable. In this way if you kept your cows in the basement on one side you could keep the horses on the other and have a combined stable. Then you could leave the driveway between the horses and the cows wide enough so that you could back the wagon in and load the manure directly onto the wagon, which is the most economical way of handling the stable manure. Have the cows and the horses both face towards the outside. Put in plenty of windows and, while this will cost a little bit more, it will be worth considerable more. You will have storage for straw, your bedding will always be dry, you can have a much better arranged stable, and in my opinion after it is once built you will be glad that you didn't build a lean-to on the barn, but rather that you built an extra barn ending up against your present one so that you could have storage for your straw above and for your live stock below.

Dairy farmers are seeking a more economical and dependable source of feed for their cows, and gradually experience is directing them to a more liberal production of silage and alfalfa hay.

ROUGHAGE WITHOUT GRAIN FOR COWS.

I am feeding my cows ensilage morning and night and alfalfa hay noon and night but no grain. Is it a balanced ration? Would it pay me to buy beans that would pick half at 50c a bushel and grind them, or could I buy some other grain that would be better?

C. E. B.
Ionia Co.

You can make a balanced ration so far as food nutrients—protein and carbohydrates—are concerned, out of alfalfa hay and corn silage; that is, you can get about the right proportion of protein to carbohydrates and so have a balanced ration. But I do not believe that you will get good results out of feeding the roughage alone. While this ration is balanced it is so bulky the cow cannot consume enough of it to get food nutrients enough to do her best, or anywhere near her best. In all roughage there is a vast amount of crude fibre that is indigestible. When a cow's ration is entirely roughage so much of the energy goes to digesting the food that she cannot produce a maximum flow of milk on roughage alone. I simply would advise a grain ration in connection with the roughage.

Ground beans for a portion of the ration would be all right. While beans are not very palatable to cows, that is, they do not like them any too well, they are rich in protein and at the present price of cull beans are a cheap feed. They will eat them ground, but I would mix them with some other ration of grain. I don't think you can get anything better than corn meal. Your roughage ration is balanced so far as food nutrients are concerned and you can balance the grain ration by mixing 100 lbs. of ground beans to 200 lbs. of corn meal. Then your ration will be balanced two ways. First, so far as the food nutrients are concerned, and second, so far as the bulk and the concentrates are concerned, and a ration in order to be the most economical and the most profitable, ought to be balanced in this way. A cow ought to have a certain portion of concentrates in with the roughage.

MILK FEVER.

Will you please give me some information regarding my Jersey cow? About a year ago shortly after freshening she got the milk fever; as she is about to calve in a week or ten days and I am inclined to believe she will get the fever again, can you give me some remedy with which I can prevent it?

Kent Co.

L. D. H.

The way to prevent milk fever is to not milk the cow out clean when she first comes in. Milk only a small amount the first time; the second time milk a little bit more, but don't draw it all; the third time you milk still a little bit more but leave some in the udder. Don't get to milking the cow clean until the second, or even the third, day. It is believed now that milk fever is caused from the fact that when the milk is all removed at once it causes such a nervous shock to the system that the wrongly named disease is produced. If you do get a case of milk fever then the only thing to do is to inflate the udder with an air pump so that it is full, fuller than it was before the cow came fresh. If you never had any experience in this line the only thing to do if you get a case of milk fever is to call a veterinarian. Every veterinarian understands this treatment now and it is rare that a cow doesn't yield to the treatment, and it can be prevented almost entirely by doing as I have indicated above.

A STONE SILO LINED WITH SHIP LAP.

What is your opinion of a silo built of stone, to be 14 ft. in diameter by 30 ft. high from the floor of a basement barn? Expect to make the wall 14 inches thick at the bottom and to taper to eight inches at the top, having it straight on the inside. I have planned to line the inside with ship-lap by nailing it to 2x4 studding set against the stone wall so as to give an air space in the wall. I have plenty of stone and the best of sand on my farm and could do a part of the work myself. Would this be better than to build a stave silo?

Chippewa Co.

A. C.

One can make a good silo out of stone. This has been proven a long while ago. The only trouble is the first cost. While you have the material, the stone and the sand and everything but the cement on hand you will find out that a stone silo is expensive on account of the labor necessary to make it. It is quite a job to elevate the material to the top of a properly proportioned silo. It is also quite a proposition to break them, or trim them, so that they will fit when you are

up in the air on a scaffold. I know it can be done. If, however, you build a stone silo you want to reinforce it by laying in galvanized wire or barbed wire, or something similar in with the stone. If you build a stone silo, plaster it on the inside and make it smooth. But don't ever line it on the inside with ship lap. This would be an unnecessary expense and would be doing things that you would want to avoid. If you are going to have a stone silo have a permanent building, don't line it with lumber and have this lumber rot out and have to replace it. Build it up as smooth as you can on the inside and then plaster it with a good cement mortar. This will make a splendid silo.

The stave silo is all right. The stave silos that are made at the present time by different manufacturing concerns are good silos. You can also make your own stave silo by getting out the staves 2x6 and setting them up and buying the hoops of the manufacturer and putting them together in this way, and make a good serviceable silo. But if you build a stone silo don't think of sheeting it up on the inside with wood. This won't prevent it from freezing in cold weather. The only way to prevent a silo from freezing in real cold weather is to have a little oil stove or hang a lighted lantern in there, or something of that sort. You can't make a silo that won't freeze.

A SUBSTITUTE FOR MILK FOR CALVES.

I am raising some calves and all the milk that I feed them has got to be whole milk. Now would Mr. Lillie or someone else, tell me what I can feed in the place of that; the kind that would be the best and cheapest?

Wayne Co.

F. O. B.

I have never had any experience in trying to raise calves without milk. Of course, one cannot afford to feed whole milk to calves. It is worth too much at the present time. F. O. B. does not say why he would have to feed whole milk. This milk could be skimmed and the cream used for other purposes, for butter making, or the cream could be sold, and then the skim-milk used, and with flaxseed jelly in with the skim-milk one can have a pretty good substitute for whole milk. But, on the other hand, if he must use the whole milk then I would give the calves a good start on the whole milk. Feed them whole milk, or a small amount anyway, until they are four weeks old. You could gradually decrease the amount of milk and substitute warm water and grain. Oil meal is especially good for calves where they have a liberal amount of milk, and if you can get some oats ground real fine, or barley, and a little corn meal, and have it ground fine, and mix some of it with warm water to provide them a drink, and then get them to eating the grain dry as soon as possible, also get them to eating nice clover and alfalfa hay and roughage of all kinds, they should do fairly well. They will only eat a small amount of it at first but will gradually learn to eat more. In this way you can get them weaned from the milk and raise very good calves, at least, I have known of other people who have succeeded.

There are commercial calf meals on the market which are claimed to be a good substitute for milk for calves. I have never tried any of these but I am pretty sure that I would try them if I ever attempted to raise calves without milk.

BALANCED VS. UNBALANCED RATIONS.

A report showing the difference in value of a balanced and unbalanced ration for cows, according to experiments made recently by the Illinois station has reached the Department of Agriculture.

Nine cows fed for 131 days a nutritive ratio of 1:6 consumed 50.83 lbs. of digestible matter per 100 lbs. of milk. A similar lot fed a nutritive ratio of 1:11 required 68.14 lbs. of digestible matter per 100 lbs. of milk produced. The total amount of milk produced for the two herds was 39,393 and 26,339.9 lbs. of milk respectively. The first lot consumed 15.79 lbs. and the second lot 19.92 lbs. of digestible nutrients per pound of milk-fat produced. The rations consisted of corn silage, clover hay and ground corn, supplemented by gluten fed in the narrow ration and timothy hay in the wide ration. Because of the lack of protein in the ration fed lot two, the other nutrients were not used to the best advantage. This shows in a striking manner that an excess of carbohydrates can not be made to take the place of a deficiency of protein.

Is Oleomargarine As Good As Butter?

Because oleomargarine is colored like butter and looks like butter and even tastes like butter, is it as good as butter?

The makers CLAIM it is.

You KNOW it is not.

Now similar conditions prevail in the separator business.

The DE LAVAL is everywhere recognized by creamerymen, prominent dairymen and buttermakers as being by far the best cream separator on the market.

98% of the world's creamerymen use the DE LAVAL separators exclusively. That looks like pretty conclusive evidence that the men who make A BUSINESS of the separation of cream and the making of butter, the men who know, are not in any doubt as to which is the best cream separator.

The makers of inferior separators acknowledge that the DE LAVAL is best when they say to you "Our separator looks like the DE LAVAL" or "it's just as good as the DE LAVAL, but we will sell it to you for a little less money."

Why do they offer to sell their machine cheaper? For the very same reason that the makers of oleomargarine sell their product cheaper than butter—because they COST less to MAKE and are WORTH less to use.

The DE LAVAL has many imitators but no equal.

There is no substitute for the DE LAVAL any more than there can be a substitute for butter.

If you need a cream separator, why experiment with "near" or "just as good" imitations or substitutes? You will save yourself time, money and trouble by getting the genuine DE LAVAL and taking no chances with anything else.

For catalog and any desired information write to the nearest office of THE DE LAVAL SEPARATOR CO., 165 Broadway, New York; 29 East Madison Street, Chicago; 101 Drumm Street, San Francisco; 1016 Western Avenue, Seattle.

\$15.95 AND UPWARD
SENT ON TRIAL
AMERICAN SEPARATOR

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You

Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from Western points. Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address,

AMERICAN SEPARATOR CO., Box 1061, Bainbridge, N. Y.



Hy-Rib Concrete Silos

Economical in material and labor cost, absolutely waterproof, amply reinforced against every strain, Hy-Rib Silos answer all your requirements. No forms required—you can easily erect your own silo. In general use for years without a single failure.

A Hy-Rib Silo, 14 x 30 ft., including foundation, walls and roof requires 40 bbls. of cement and 16 yards of sand and gravel; can be erected in ten days. Lasts indefinitely.

For barns, houses, sheds, tanks and all other farm structures Hy-Rib makes rigid concrete walls, roofs, partitions, etc., without the use of forms.

Complete Silo Catalog Free.
Contains useful information, illustrations, testimonials, etc.—also examples of other farm buildings. Tell us what you plan to build and receive this valuable book, free, postpaid. Write today.

TRUSSED CONCRETE STEEL CO.
688 Trussed Concrete Bldg., Detroit, Mich.



Make Your Own Drain Tile

THE FARMERS' CEMENT TILE MACHINE

Makes tile 3 to 8 inches in diam., 12 1/4 inches long. One man or boy operates it by hand or power. 500 tile per day by hand, 1,200 by power. Tile thoroughly cured by patent process. No tamping or use of pallets. This machine and tile used by Experiment Stations of Agricultural Colleges and the U. S. Dept. of Agriculture. 5,000 farmers have doubled the yield of land by underdrainage, and saved 75% of cost by using our Machine. You can do the same. Save cost of hauling and breaking. Make perfect tile \$3 to \$5 per thousand. MACHINE SOLD DIRECT FROM FACTORY TO YOU. **TEN DAYS' FREE TRIAL.** SEND NOW for 36-page Illustrated Catalogue. Tells you about great benefits of underdrainage, how to take levels and get grades, make and lay your tile at low cost.

FARMERS' CEMENT TILE MACHINE CO.,

Box 307, ST. JOHNS, MICH.

Stock Raisers! Grab off This Astonishing Offer!!

Try 10 Pounds of Ringmaster Stock Tonic FREE—All It COSTS You is Postage

That's my amazing offer—an offer without a single string tied to it. Just send your name with the few cents necessary for parcel post (see table below for postage) and back comes a 10-lb. sample of the most remarkable stock tonic and cholera preventive yet placed on the market. No charge—no side offers—no future obligation of any kind! I'm giving it to you—just to get you to try it—to prove the almost startling merit of Ringmaster Stock Tonic—

A Conditioner, Blood Purifier and Worm Exterminator of Amazing Effectiveness

Ringmaster Stock Tonic

A FEW BIG USERS

Arden Dairy Farm
N. H. Gentry
F. W. Harding
Hurd Farm Co.
Leslie Smith
J. P. Cudahy
O. Harris & Son
D. R. Hanna
W. W. Brown
W. A. McHenry
W. J. Miller
The L. B. Silver Company

Following you will find rate postage from your point:	
Anywhere in Ohio	42c
" " Michigan	
" " Indiana	
" " West Virginia	
" " Pennsylvania	
" " Western New York (west of Oswego, Syracuse and Binghamton)	52c
" " Wisconsin	
" " Illinois	
" " Kentucky	
" " Tennessee	
" " No. and So. Carolina	62c
" " Virginia	
" " Eastern New York (east of Oswego, Syracuse and Binghamton)	
" " New England States	
" " Minnesota	
" " No. and So. Dakota	
" " Iowa	
" " Missouri	
" " Nebraska	72c
" " Kansas	
" " Arkansas	
" " Southern States	

If you think this Parcel Post rate is too expensive, I will send 10-lb. sample by express or freight, charges collect.

You can try this 10 pounds on one or two of your animals and note results. But whether it gets results or not, *there will be no charge*. Never has a more inviting offer than this been made. Never has a proposition been backed by such wonderful merit. No matter what experience you have had, accept it! Write me today!

Saves Hogs from Cholera

Ringmaster Stock Tonic is an absolute preventive of Cholera. I don't claim it *cures* it; what is worth a hundred times more, it *forever bars it out*! This tonic has protected, *kept well*, hogs literally surrounded on all sides by this deadliest of all diseases and not one of the herd has caught it.

More than that, Ringmaster Stock Tonic expels worms and parasites, and *keeps them out*. It tones up the digestive apparatus and other vital organs. It adds weight—sickens coats—purifies blood—increases milk yield—stimulates vitality and keeps diseases and pestilence of all kinds away from stock, young and old. *Not a single case of cholera* reported among our feeders this year.

Would I make this FREE 10-pound offer if I didn't know the *merit* of this conditioner—know what it would do—and what all the others would do, too? Well, hardly!

Please don't postpone writing for your free 10-lb. sample. If as a result you only get rid of *one nasty case of worms*, consider how many times over it has paid you for your trouble in writing. Consider the big feeders who are using this tonic! Then decide to try your free sample at once. With it, if you write at once, will be

Sent Also Free

"Champions and Grand Champions"—a splendid series of prize winners fed on Ringmaster Stock Tonic. According to Stock Raisers, the greatest series of pictures ever published! Write today. Tell me number and kind of your stock.

Ringmaster Stock Food Co. Dept. Cleveland, O.

Kalamazoo SILOS Last!

Construction is right, material is right. Only silo made with full-length, structural steel door frame heavily galvanized after the riveting. Not a crevice exposed to rust. Choice of seven kinds of wood. Inflexible guarantee. We prepay freight. Catalog shows many more fine points, write for it today. Address Dept. 30.

KALAMAZOO TANK & SILO CO.
Kalamazoo, Mich.
Minneapolis, Minn.
Kansas City, Mo.
No. Ft. Worth, Texas

THE ROSS SILO

Only silo made with these combined features. Doors on Hinges. Continuous Door Frame. Refrigerator type of Door and Door Frame. Oval Door Frame to fit exact circumference. Not a bolt in entire door frame or doors.

Extra Heavy Hoops and Lugs. Roof Rafter and Anchors furnished FREE. Backed up by 43 years of experience. Write for catalog which explains all. AGENTS WANTED.

THE E. W. ROSS CO.
Box 14
Springfield, Ohio

Ensilage Cutter

and Engine You Can Own.
Cuts and elevates 50 ton per day for less than \$1. Address ECONOMIZER, Box 95, Marcellus, Michigan.

Be Safe!

Don't take chances with spavin, splint, curb, ringbone, bony growths, swellings or any form of lameness. Use the old reliable remedy—



KENDALL'S Spavin Cure

Its power is testified to by thousands of users. At drug stores \$1 a bottle; 6 for \$5. Ask your druggist for book, "Treatise on the Horse." Write

Dr. B. J. Kendall Co.
Enosburg Falls, Vt.

Ear Tags FOR STOCK

BEST—CHEAPEST—MOST DESIRABLE

Certain means of identification. Can be stamped with any name, address or number. Catalogue and set of samples mailed free on request.

F. S. BURCH & CO. Dept. 7 64 W. Illinois St. CHICAGO, ILL.

APPLETON

RETURN APRON ENDLESS APRON AND LOW DOWN

MANURE
Solid oak, trussed frame; worm and worm gear apron drive, enclosed, runs in oil; wood or steel wheels.



SPREADER
So simple a boy can run them. Apron works over chilled rollers. Wide seat, comfortable foot rest.

Appleton Manure Spreaders always give long service; spread even, pull easy; because they are perfectly designed and honestly constructed. An Appleton Manure Spreader is a profitable machine for you to buy. Its use keeps your land healthy and in highest productive condition—that means paying crops. Write today for Free Catalog illustrating and describing our 10 styles.

A complete line of machines in stock in your territory.

APPLETON MANUFACTURING CO., 220 Fargo St., Batavia, Ill.

Live Stock.

FEEDING NURSING EWES.

An item in flock management of more than secondary importance is the feeding of the ewes while nursing their offspring to induce growthy bone and muscle development during the early life of the lamb crop. There is no other time in the life of a young animal when bone and flesh can be produced so rapidly and economically as during the period when the young are largely dependent upon their mother for sustenance. Most ewes are capable of producing sufficient nourishment for their rapidly growing progeny if properly fed and cared for to encourage their maximum working ability. Many ewes fall short in accomplishing their full working capacity, simply on account of injudicious management previous to and throughout the nursing period. Milk-feeding ewes, like dairy cows, must be fed and handled in such a manner as to promote the purpose for which they are being maintained. Neglect, improper feeding or any other factor tending to hinder the working functions of nursing ewes minimizes their capability and heads off the object to be attained.

It should be the aim of the flock owner in maintaining the ewes while nursing their progeny to encourage a rich, uniform milk flow and at the same time keep the ewes in a healthy active condition physically. Not infrequently a flock owner becomes over-anxious to promote bone and flesh growth in the lambs and injudiciously manages the ewes through methods not well adapted to the purpose. Forced feeding or feeding upon too highly concentrated feeds should never be practiced as they tend to destroy the working functions of the ewes. Most flock owners desire to prolong the usefulness of their flock and therefore should be very thoughtful in the employment of methods to attain their purpose. To encourage nursing ewes to do their best work in the production of milk for their sucking progeny need in no manner impair their breeding qualifications or curtail their future service if proper methods are used. The better care of the right kind the ewes receive the more likely they are to develop their greatest efficiency and transmit same to their progeny.

The work of the ewes after lambing is to keep in a thrifty physical condition and to supply an abundance of nutritious sustenance for nursing young. Some ewes in the flock are more capable of achieving the desired end than others and consequently prove more profitable. The suckling period affords the flock owner a splendid opportunity to study carefully the reproductive and nursing qualities of his flock. Some individuals respond to good feeding while others seemingly do not. Ewes that possess the tendency to take on flesh rapidly while nursing their young are generally inferior milk producing individuals and should be discarded. I have never known a ewe in my flock that was capable of taking on flesh rapidly and at the same time produce sufficient nourishment to promote maximum development in her nursing progeny. While I do not like to see the ewe losing flesh during the nursing period, yet I always feel that a ewe is doing her best when I notice she is inclined to sacrifice her stored-up energy for her young.

A most important requirement in feeding nursing ewes is to have the ration properly compounded with such ingredients as tend to induce a strong flow of highly nutritious milk. Some flock owners feed plenty of feed, but not in the right proportion to produce the best returns. The ewe produces a richer quality of milk than does the dairy cow, consequently must be fed a ration somewhat higher in protein. During the early stages of nursing a ewe's milk contains more than double the per cent of fat than the average cow's milk. To supply the necessary food for the production of ewe's milk it is essential that the ration contain practically twice as much fat-forming elements, in relative proportion, as is usually fed to an average milk-producing cow. Roughages do not contain sufficient milk making ingredients that they can be relied upon alone to compound a well-balanced ration for nursing ewes.

As early in the spring as possible the ewes should be turned to pasture. If the lambs were dropped while the ewes were confined to a dry ration care should be

exercised not to make the change too sudden as it affects the quality of milk produced and it, in return, affects the digestive system of the lambs. When time to turn the ewes to pasture it is a good plan to feed them well just before turning them out. They will then go to pasture with full stomachs and eat less greedily. If the pasture has made a thrifty growth it would be prudent to only leave the ewes on it for a short time until they become thoroughly accustomed to the change of feed. If the ewes after being turned to pasture will continue to eat a light ration of clover hay at the barn either in the morning or during the day, it will materially assist in counteracting the succulent effect of the pasture and possibly prevent scouring.

Do not overlook the vital necessity of providing the ewes with a grain ration while nursing their young. No matter how good the pasture may be it is not sufficient. Oats and wheat bran make a very economical and nutritive feed and can be fed liberally without danger.

Shiawassee Co. LEO C. REYNOLDS.

FEEDERS' PROBLEMS.

Silage as a Feed for Hogs.

Can ensilage be fed to shoats during the winter without any ill effects? If it can be fed to them, could they be fed as much as they will eat well, or should they have a certain number of pounds per day?

Osceola Co. A. C. S.

While ensilage is too bulky a feed to be made any considerable factor in the ration for hogs, there will probably be no ill effects from feeding a sufficient amount to provide succulency in the ration during the winter season, if the hogs can be induced to eat it while they are consuming sufficient grain feed to make profitable gains. Mr. Alvah Brown, who has for some years fed city garbage to hogs on a large scale on his farm near Grand Rapids, in describing his methods before the American Public Health Association, at Washington, D. C., made the following comment with regard to feeding silage to hogs:

"My farm is almost entirely devoted to the raising of corn which is harvested when the kernel is just passing into the dough state; this is run through an ensilage cutter and cut into lengths about three-quarters of an inch long and elevated into silos numbered 15 and 16; as we do not get a carload of garbage on Sunday, one of our cars is placed between the silos and sufficient quantity of ensilage is taken out to feed that day all along the track and the stock in the other buildings are fed with the same material, including buttermilk and meal, by wagons. In feeding ensilage but one day each week, the swine have quite a relish, not only for the grain but for the finer parts of the stalks and leaves, but there is more waste in feeding ensilage to hogs than to cattle."

Millet as a Horse Feed.

I would like to know if millet is injurious or weakening to a horse when fed instead of hay.

Antim Co. J. W. H.

If millet is fed to horses at all it should be fed in very limited quantities and in connection with other roughage. In many cases it has been found to be very deleterious in its effects upon horses. In the winter of 1891-92 it was demonstrated to have been the cause of the loss of a large number of horses in North Dakota. Repeated experiments at the North Dakota station have demonstrated its bad effects. The injurious symptoms were: First, an increased action of the kidneys; second, lameness and swelling of the joints; third, an infusion of blood into the joints; fourth, destroying of the texture of the bone. These symptoms were, of course, shown only in aggravated cases where the millet had been fed for a considerable time. It is not known whether this injurious effect is more marked in some localities than others or in some seasons more than others. It is generally considered, however, that if millet hay is fed to horses at all it should be cut and cured before the seed forms to any extent.

Conditions affecting the hog markets of the country are wholly favorable for the fortunate owners, and there appears to a year ago. Recent sales of wool in Boston include fleece at 24@34c, California at 14@24c, Texas at 15@24c and territory at 15@26c.

BREEDING AND FEEDING FARM HORSES.

(Continued from first page).

Heavy, steady hauling is not a hindrance to success with brood mares. It is the backing and side slips which cause the trouble.

When large numbers of brood mares are kept it is impossible, on the average farm, to keep them all busy at work. Where this is the case pick out certain mares for work and plan to run the rest in a good-sized field for exercise. By handling them in this way, the working mares can be kept on a good liberal feed suitable for work horses, and the mares in the field on a lighter, more succulent ration.

Brood mares not at work should have a dry place to be housed at night during the winter months, but should be turned into the field daily for their exercise.

A hay field with a good second growth of timothy and clover makes an ideal place. If this cannot be had, then draw a supply of bright cornstalks to the field for them each day. The idea is to give them something to do. It is a mistake to turn a number of brood mares into a small paddock with nothing to do but quarrel and kick. An ugly old mare may cause the rest to take plenty of exercise, but it is the kind that usually results in a case or two of accidental abortion.

Care at Foaling Time.

As foaling time approaches, lighten the work if possible, but keep the mare going. A mare will work all day and foal at night without any trouble. Some think it best to lay mares off ten days before foaling. No man can tell whether a mare will foal on time or go over time. The ten days planned on may amount to two or three weeks. In the meantime the udder fills and cakes and in some cases the milk may start eight or ten days before the foal is delivered. Keep the mare working and the udder down. It will fill when the time is right. Feed should also be changed somewhat at this time. The solid feeds, as oats and corn, should be decreased and the bran increased, the idea being to keep the bowels loose.

Mares should be watched closely as foaling time approaches. Waxing of the dugs, or nipples, is the most immediate indication, although this does not always occur. A clean box stall or grass paddock are the best places for mares to foal. Some disinfectant, and I have found tincture of iodine the most efficient, should be at hand and as soon as the foal is dropped, the navel cord disinfected and left untied. Navel infection and constipation cause nine-tenths of the deaths in young foals. The navel should be closely watched and disinfected every day until after the cord sloughs off.

The symptoms of constipation are a droopy, listless appearance, ears lopped over and a dull eye. If these symptoms exist after eight or ten hours, give the colt an injection, using water at blood heat, to which has been added a teaspoonful of glycerine. Two ounces at a time will be sufficient and should start peristaltic action. If action does not take place, the operation should be repeated in an hour.

The Care of the Foal.

Do not be in too great a hurry to help the colt to nurse. Better to let him get at it himself. If he is unable to get started after three or four hours, then give him assistance. Do not try this alone, get some help and get him started, when you first begin. Continued fussing usually causes the colt to get discouraged and frightened and he will quit trying. Go slow with the mare's feed after foaling, and do not give her all the water she wants at once. Small quantities given frequently is the better way. Bran mash is advisable for the first feed or two after foaling. Mares should have at least 10 days' rest after foaling. If the mare is to be worked keep her on dry feed, that is, do not turn her on grass one day and then give her dry feed and work the next week. Either work and dry feed all the time or grass and idleness all the time for the first four or five weeks. When working the mare leave the colt inside. If he is allowed to follow he will not only be constantly an annoyance to the mare and driver but will tax his own system beyond a safe point. Better keep him in a box stall with another colt if possible, or let him nurse five or six times daily the first three weeks. After three or four weeks he will begin taking a little grain if it is placed where he can get at it.

Feed the young colt liberally the first year and give him a good place to stay.

Let him run with other colts if possible, for he likes company. If he is a little backward about eating, he will come to it much more readily if allowed to be with others. Colts will imitate each other.

After the first season, a run on good pasture is the best possible method for growing him. Feed grain when the pasture gets short and brown. Keep him in good fair flesh all the time but don't fatten him by overfeeding or giving flesh producing foods. Bone and frame can be gotten only by the use of proteid foods with some succulence or laxative added. I will not go into the methods employed for training or as usually termed, "breaking" colts. It is with a large number a breaking process.

In closing I wish to draw this conclusion. If we are to have better farm horses in Michigan, we must keep in mind three important things.

1. Be methodical in selecting and mating.
2. Be methodical in feeding and exercising.
3. Be methodical in handling brood mare and foal.

Note.—Paper read at the recent Round-Up Institute by R. S. Hudson, Superintendent of Horses at M. A. C.

Veterinary.

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

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

Loss of Appetite.—I wish you would tell me what to give my cattle to produce more appetite. W. B. Lambs, Mich.—Give each one 1 oz. of ground gentian, 1 dr. ground nux vomica and ½ oz. red cinchona at a dose in feed, or as drench in water either before or after meals.

Seedy Toe.—I have a valuable horse eight years old that appears to have brittle hoofs at. If he is not shod his hoofs break off badly. He has worn shoes ever since he was three years old until last summer, when I tried using him on farm without shoes, but his hoofs do not appear to grow. Is there anything I can apply to hoofs to toughen them and hasten their growth? N. A. W., Port Sanilac, Mich.—Apply lanolin to hoofs once or twice a day and apply one part turpentine, one part aqua ammonia and six parts olive oil to coronet two or three times a week. It is important that his food supply should be of good quality and if he is kept in a healthy condition, his hoofs will be less brittle than if he has indigestion. Standing him in wet clay an hour or two a day will do him a whole lot of good.

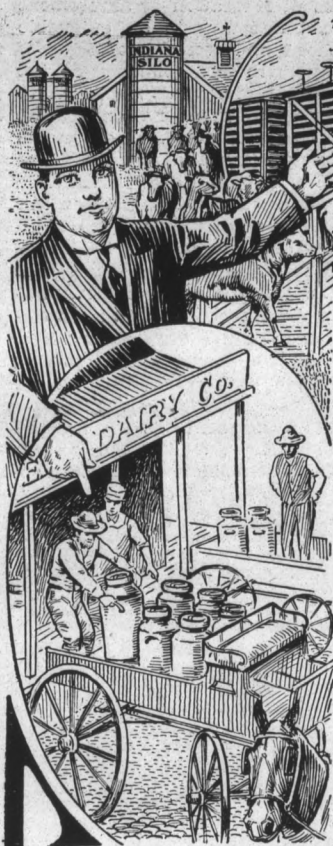
Chronic Sore—Stocking.—My seven-year-old horse met with an accident, cutting leg when two years of age; some time ago leg broke and wound discharged pus with offensive odor; now it is healed and he is not lame, but leg is stocked. M. J. E., Buchanan, Mich.—Give your horse a dessertspoonful of Fowler's solution and a dessertspoonful of powdered nitrate of potash at a dose in feed three times a day. If the sore is not quite healed apply one part iodoform and ten parts boric acid, covering it with oakum and bandage.

Loss of Appetite.—I have several pigs that weigh 125 lbs. each, that appear to have pretty much lost their appetite for corn, but they do not show symptoms of sickness. F. L. G., Jasper, Mich.—Give a teaspoonful of fluid extract of gentian, and a teaspoonful of fluid extract cinchona at a dose, either in feed or as a drench three times a week.

Lymphangitis—Capped Hock.—I have a mare that had lymphangitis three months ago; since then leg stocks. I also have another colt that kicked stall post and wall, bruising hock and a bunch came on cap. A. W. M., Wheeler, Mich.—Give your mare 2 drs. potassium iodide at a dose in feed three times a day. Wet leg with cold water; apply cotton and a bandage over it, leaving it on part of time when she is in stable. Apply equal parts tincture iodine and spirits of camphor to point of hock two or three times a week.

Sprained Leg.—One month ago my mare suddenly went lame. Leg swelled to body and has remained swollen ever since. The leg is not as large as it was, but she is still quite lame. She has been treated by a Vet., but nothing we have done seems to help her. H. D. B., Centerville, Mich.—It is possible that you have made leg sore from remedies you applied. Dissolve ¼ lb. acetate of lead in a gallon of cold water, adding one pint fluid extract of opium and wet lame leg three times a day. The bowels should be kept open.

Warts on Teat.—What causes small warts on cow's teats? What will take them off? D. H. S., Ewart, Mich.—Warts are supposed to be the result of skin abrasions, causing the growth of wart tissue. Those with necks should be cut off and acetic acid applied to flat ones once a day.



*We will double
the profits of your
dairy and feeding-pens*

During the past ten years we have showed 25,000 farmers how to make big money out of their milch cows and how to double their profits by proper feeding of cattle for the butcher's block. We have increased their net earnings, cut down the cost of feeding and made their farms as profitable in winter as in summer. The

INDIANA SILO

holds the record for fattening prize winning cattle and developing top-notch milkers. Look into the histories of the cows and steers that have walked off with the prizes at the Dairy and Live Stock Shows for several years back;—you will find that most of them were fed from Indiana Silos.

Not long ago a Western Rancher wired our Kansas City Branch for twenty Indiana Silos. There was no competition for that order because the purchaser knew the Indiana Silo materials and construction. He had seen Indiana Silos before they were erected and had studied the scientific method by which all two-piece staves are united by air-tight, all-wood, self-draining mortised joints. He had noted the perfect milling of tongues and grooves. He had been present at the erection of Indiana Silos and had learned first hand how easily they go up. And he had seen Indiana Silos in use and had observed the wonderful results they invariably produced. Not a point had escaped his western eagle eye. He knew. Hence his order.

Investigate thoroughly, as this Westerner did, and your order will come to us, too. Will ship it when you want it.

THE INDIANA SILO COMPANY

Factories:

Anderson, Ind. Des Moines, Ia. Kansas City, Mo.
382 Union Bldg. 382 Indiana Bldg. 382 Silo Bldg.

WRITE today for our catalogue and a free copy of the book "Silo Profits", which is the story of the Indiana Silo as written by scores of owners of Indiana Silos. And ask us for the name of our representative in your locality.

"You buy an Indiana Silo—but it pays for itself."

MAKE THE HORSE GLAD AND EAGER FOR WORK

The way to do it is to clip him before you put him at the spring work. Take off his winter coat that holds the wet sweat and dirt. He'll get more good from his feed, look better, rest better and give you better service. The best and most generally used clipper is the

Stewart Ball Bearing Clipping Machine

It turns easy, clips fast and stays sharp. Gears are all file hard and cut from solid steel bar. They are enclosed, PRICE protected and run in oil; little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart angle tension clipping head, highest grade. Get one from your dealer or send \$2.50 and we will ship C. O. D. for balance. Money back if not satisfied.

Chicago Flexible Shaft Co.,
115 La Salle Ave., Chicago, Ill.
Write for big new catalogue showing complete line of Horse Clipping and Sheep Shearing Machines.



CLIP ALL THE WOOL

YOU LOSE \$120 ON 6 SHEEP BY THE OLD METHOD

You know the size of your flock—figure how much more money you'll get if you use a Stewart No. 9 Ball Bearing Shearing Machine

It's the most perfect hand operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of the latest improved Stewart pattern. Price complete, including 4 combs and 4 cutters of the celebrated Stewart quality is only—\$11.50. Get one from your dealer, or send \$2.00 and we will ship C. O. D. for balance. Money and transport charges back if not satisfied.

264 Page Book On Silos and Silage

10c

1913 copyrighted edition just off the press. Most complete work on this subject published. Used as text book by many Agricultural Colleges. Gives the facts about Modern Silage Methods—tells just what you want to know. 264 pages—indexed—over 45 illustrations, a vast amount of useful information boiled down for the practical farmer. Tells "How to Make Silage"—"How to Feed Silage"—"How to Build Silos"—"Silage System and Soil Fertility"—"Silage Crops in Semi-Arid Regions." All about "Summer Silos" and the Use of Silage in Beef Production. Ninth Edition now ready. Send for your copy at once. Enclose 10c in coin or postage stamps and mention this paper.

Silver Manufacturing Co., Salem, Ohio

FRESH PURE AIR FOR YOUR BARN



will keep it dry and at an even temperature.

The best and most economical way to provide this ventilation is to place one on your buildings a

Buckeye All-Metal Cupola - Ventilator

The Buckeye not only does the work but lasts the longest. It is the only Cupola-Ventilator made entirely of metal having a heavy metal base.

A handsome weather vane mounted with horse, cow, sheep or hog free with each one.

Every owner or prospective builder should have our helpful book, The Ventilation of Modern Farm Buildings. It is free. Write today.

THE THOMAS & ARMSTRONG CO., 28 R.R. St., London, O.

You can Easily Blow Smoke through



That's how porous they are. That's how easy it is for air to circulate through them. And they absorb moisture like a blotter. It goes right through to the outer surface and quickly evaporates.

Ventiplex Pads

Keep the horse's shoulders and neck in good pulling condition. Prevent all sores, galls, etc., resulting from poor fitting collars. Ventiplex Pads are made of our patent Ventiplex fabric. It's soft, cool and comfortable on the horse and easily washed when soiled. Ask your dealer to show you the Ventiplex Pad. If he hasn't them in stock, write us.

BURLINGTON BLANKET CO., Makers of famous "Stay-on" Blanket Dept. 49, BURLINGTON, WIS.
Canadian Address—Windsor, Ont.

The Michigan Farmer

Established 1843.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan.

NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—600 First Nat'l Bank Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.M. J. LAWRENCE.....President.
C. E. YOUNG.....Vice-President.
E. H. HOUGHTON.....Sec. Treas.I. R. WATERBURY.....Associate Editors.
C. E. YOUNG.....Associate Editors.
ALTA LAWSON LITTELL.....Associate Editors.

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

TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues.....\$1.00
Three years, 156 issues.....1.50
Five years, 260 issues.....2.00Canadian subscriptions 50c a year extra for postage.
Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts checks and postoffice orders payable to, the Lawrence Publishing Co.

RATES OF ADVERTISING:

40 cents per line agate measurement, or \$5.60 per inch, each insertion. No adv't inserted for less than \$1.20 per insertion.

No lottery, quack doctor or swindling advertisements inserted at any price.
Entered as second class matter at the Detroit, Michigan, postoffice.

COPYRIGHT 1913

by the Lawrence Pub. Co. All persons are warned against reprinting any portion of the contents of this issue without our written permission.

WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit brought against any subscriber to the Michigan Farmer by the publisher of any farm paper, which has been sent after the time ordered has expired, providing due notice is sent to us, before suit is started. Avoid further trouble by refusing to subscribe for any farm paper which does not print, in each issue, a definite guarantee to stop on expiration of subscription. The Lawrence Publishing Co., Detroit, Mich.

DETROIT, MARCH 29, 1913.

CURRENT COMMENT.

The mid-winter meeting of the Michigan State Horticultural Society held at the city of Jackson last week in conjunction with the Jackson County Association, was a most interesting session of the society. Although the attendance was not as large as could have been expected, the interest of those present was inspiring to the speakers and all who participated in the program. Each subject was followed by practical discussions that brought the best information of our most progressive fruit growers in reach of students and others who are seeking to improve their methods and their fruit. Reviews of the different addresses and discussions will be given in The Farmer as space will permit, the address of Mr. Hale, of Kent county, on "The Difficulties in the Road of Co-operative Marketing," appearing in the Farm Commerce department of this issue.

Among the influences which are calculated to interest the country boys and girls in country life, there is perhaps none more important than the matter of recreation. If one were to ask any number of country boys and girls who have left the country and gone into city occupations, their reason for so doing we believe that only a very small percentage of them would give as a reason for their change the possible better economic advantages offered in the city industries. On the other hand, a very large percentage of them would say at once that country life did not afford adequate means for recreation and amusement. It does not necessarily follow that they will find open doors to wholesome places of entertainment and amusement in the cities, but the chance that they may do so appeals to them strongly, and is a very influential factor in inducing them to make the change.

In the city they may at least find more or less innocent amusement for the reason that amusement is a business in the cities and many people find it profitable to cater to this yearning of youth for recreation and amusement. Country parents do not appreciate the changed conditions in this relation to the extent which they ought. As a matter of fact, the opportunities for recreation and amusement are not so great in the country today as they were a generation or more ago. The old neighborhood forms of recreation and amusement have many of them passed and left little or nothing in their place.

The average age of country people has increased materially in recent years, due to the drift of the younger element to the cities and this again is a handicap to the spontaneous development of any

new features of recreation or amusement which are so necessary to an enjoyable young manhood and womanhood.

Fortunately there is a tendency at the present time to remedy this condition to some extent. The great national sport of baseball finds its youthful exponents in the country as well as in the cities and has done not a little to alleviate this dearth of recreation and amusement. Other outdoor sports are also partonized more liberally and generally in the country than was formerly the case, but there is a necessity for a greater development of indoor recreation and amusement. In some country communities where a hall is available basket ball is serving a good purpose as an indoor sport for the winter season. So far as mental recreation and amusement is concerned, there has also been a like unfortunate change. The old-fashioned debating societies have passed and country gatherings with their attendant social advantages are less numerous than was formerly the case. True, in some communities amateur theatricals have to some measure taken their place, but do not fill the entire want in this direction.

This is a work in which farmers' organizations, such as the Grange, the Farmers' Clubs and, to a greater extent even, the country church, should interest themselves, to the end that this feature of country life may be made more attractive to the young people, for without it economic reasons alone will not hold them in the country communities.

Duty vs. Rights of the Elective Franchise

The right of franchise is one of the most cherished rights of the citizens of every free country, but along with this right goes a duty which is incumbent upon every elector. Notwithstanding the effort which is made to "get out the vote" by all parties at every general election, there is a very large "stay-at-home" element of voters. But this is not the most obvious neglect of duty on the part of electors in this connection. Where important propositions such as amendments to the fundamental law of the state are concerned, the neglect of voters to avail themselves of the opportunity to express themselves is notorious. Many examples might be cited where such grave neglect of duty has been general on the part of Michigan electors.

It is only necessary to state, however, that under the old constitutional provision which required that a majority of those voting at an election were necessary for the adoption of a constitutional amendment submitted at such election it was almost impossible to secure such a vote on any proposition, for which reason a change was made in this provision of our constitution, so that at the present time a majority of those voting upon the proposition will secure the adoption of a constitutional amendment and make it a part of the fundamental law of the state.

A notable example of neglect of duty on the part of voters is brought to notice in a recent dispatch from Buffalo, N. Y., stating that in Erie county, in which that city is situated, a proposition for a bond issue for good roads, submitted at the last election, was entirely ignored by 84 per cent of the electors within the county. While this is undoubtedly an extreme case of neglect, yet by the general neglect of voters to inform themselves upon the provisions of proposed constitutional amendments and to express their carefully considered opinions on same at the polls, the aim of popular government is largely defeated, since popular government is founded upon the principle of the greatest good to the greatest number, or that the will of the majority shall prevail.

For this reason we urge upon every Michigan Farmer reader to discharge his duty in this respect as well as in the selection of the local and state officers at the coming general election in April.

Statesmanship and Western States would Build Silos.

However, there appears to be a very intimate connection between these two terms in some sections of the country. Recent information is to the effect that a bill has been introduced in the Nebraska legislature providing for the appropriation of a fund of \$300,000 to be used to loan farmers at four per cent, and in amounts not to exceed \$500 secured by first mortgage, for the purpose of building and equipping silos on their farms. Oklahoma statesmen have apparently become still more enthusiastic

in their belief that there is an intimate connection between silos and prosperity, it being stated that a bill was introduced in the Oklahoma legislature providing for the appropriation of a fund of two and a half million dollars for a similar purpose.

It is stated by the promoters of these bills that the plan is similar to one which has been successfully carried out in Germany, the object being to provide the small farmer with a way whereby he can build a silo at once and thereby secure the undoubted economic advantages which its possession would mean to him.

Fortunately, it is unnecessary to promote the progress of Michigan farmers by such means, at least so far as silo building is concerned, and in any event the constitution of Michigan would not permit legislation of this kind. This incident is mentioned simply to illustrate the fact that progressive farmers all over the country are realizing more and more each year that the silo is a necessary factor of equipment of an up-to-date farm, the economic benefit of which is out of all proportion to the investment involved. More silos were erected in Michigan last year than in many years previous, probably as many as in all previous years, and doubtless this record will be kept up until the farm which does not include a silo in its equipment of buildings will be the exception rather than the rule.

LEGISLATIVE NOTES.

Some weeks ago we sent to the editor of the Michigan Farmer some legislative notes, giving to its readers our ideas as to the work of our state legislature and outlining some measures which were before that body. Since that time some of these proposed measures have been enacted into law, and as the time of adjournment draws near perhaps the readers of the Michigan Farmer would be pleased to know what work had actually been done.

Naturally, the more important measures are left for the last few weeks of the session, but the resolutions submitting to the voters of the state at the coming April election the question of equal suffrage, the initiative and referendum, the initiative in constitutional amendments, recall of public officials and the short ballot have all been passed and will be submitted to the voters for their decision in a couple of weeks. We are not attempting to say whether these propositions are for the best or not, but surely the people have manifested a desire for their submission and it will be interesting to await their verdict.

As was suggested in our last article, the demands for appropriations have exceeded those made at any previous session of the legislature. Our state institutions are all growing, and naturally their wants will increase from year to year. We do not begrudge the amount spent for educational purposes as we consider these expenditures more in the light of investments and expect that the state at large will be amply repaid for the amount thus expended. But most of the money expended for the care of the insane, the criminals and the feeble minded cannot be expected to return to the state anything for value received, unless we view them in the light of humanitarian acts. If the increased demand along this line is ever to be lessened it will come from reformation along social lines.

Many bills have been passed amending our banking laws, which we trust will result in added security to the depositors. Our pure food laws have been so amended that that department may give us more efficient service guarding against adulterations in foodstuffs and short weights in food supplies purchased and thus will be enabled to render more efficient service to the consumers. The "Blue Sky" legislation is still in the hands of the committee. Much work has been done in considering these measures and many hearings have been granted to parties interested from all parts of our state, as well as from other states, and it is to be hoped that the result will be a bill protecting the purchasers of stocks and bonds from unprincipled dealers.

A number of bills amending the election laws have been reported from the committees and are now on the general order of the Senate. These laws relate to the conduct both of primary and general elections and are aimed to simplify existing statutes, making it easier for the ordinary voter to express his wishes and at the same time to guard against interference by those who wish to use politics for personal gain.

The question of the employment of inmates of our prisons has been given much attention during this session. As the reader well knows, a law was recently passed forbidding the extension of any contracts now existing in the prisons of this state, yet everyone admits that the prisoners should not be kept in idleness. Some have thought that the use of these men on farms would be a solution of the problem, but of late there has come a protest from the vicinity of Jackson prison against the use of prisoners on these farms and the claim is made that the presence of criminals in a neighborhood is undesirable from a social standpoint and that the price of real estate in the vicinity of these farms is sure to deteriorate. The proposition of moving the Jackson prison from its present locality to some place outside of the city has been

A Jolly Good Day

Follows

A Good Breakfast
Try a dish of

Post Toasties

tomorrow morning:

These sweet, thin bits made from Indian Corn are cooked, toasted and sealed in tight packages without the touch of human hands.

They reach you fresh and crisp—ready to eat from the package by adding cream or milk and a sprinkling of sugar, if desired.

Toasties are a jolly good dish—

Nourishing
Satisfying
Delicious

Fairbanks-Morse Eclipse Engines

Two Sizes: Furnished With or Without Pump Jack

A pint of gasoline will run the No. 1 Eclipse engine an hour and pump over 1000 gallons of water against 80 foot head. Adapted to running cream separators, churns, corn shellers, grindstones, ice cream freezers, etc.

Handy Reliable Low Priced

As simple as it is possible to make a practical, powerful engine. Manufactured in our immense factory on the latest automatic machines. Large, dust-proof bearings. Thorough lubrication. All like parts absolutely interchangeable. Starts easily at any time. No danger from freezing. No. 2 Eclipse Engine is twice as powerful as No. 1. Recommended for deep well pumping, wood sawing, feed-grinding, etc. State quantity of water desired in 24 hours and we will send catalog No. FB 601

Fairbanks-Morse & Co.

Chicago Detroit
Fairbanks Scales, Oil and Gasoline Engines, Pumps, Water Systems, Electric Light Plants, Windmills, Feed Grinders

"SURE CROP" SEEDS

Free for the Asking DON'T DELAY WRITE TO-DAY

Mentioning this paper and we will send you at once Large Package "FREE" Of Our New BEAUTIFUL CRIMSON CLOVE ONION

Know as World Beater, also our New BEAUTIFULLY ILLUSTRATED GARDEN and FARM GUIDE that tells you how to Increase Your Profits. CONDON BROS. Seedsmen, Rockford, Ill. Farm E



Regenerated Swedish Select Oats FOR SEED. LOUIS NORTON, Quimby, Mich.

LIME SPREADER—Spreads as evenly as a snow fall, any quantity desired, and does not balk. CLEMENT MFG. CO., Adrian, Michigan.

ATTENTION—LADIES—If you wish to eliminate the old and slow methods of washing and drying the hair, write us about "Dry Shampoo." Absolutely trustworthy. THE KNOTTS-BROWN CO., Urbana, Ohio.

WANTED—Railway Mail Clerks. Examination May 3. Splendid salaries. I conducted Gov't Exam's. Can help you pass. Trial Lesson Free. Write Oament 17 R. St. Louis

Tire Quality you can Bank on

Quality that you take some one's word for is pretty much of a lottery.

Quality that is clearly defined and assured in the form of a written guarantee is measurable in dollars and cents.

Ajax Tires (all types) are the only tires in the world sold with a written guarantee of 5000 miles, and they have been thus guaranteed for the past eight years.

Every Ajax Tire is built to run 5000 miles. The keynote of our production being *quality*—not *quantity*.

Ajax "built in" quality means a saving in dollars and cents of from \$4.00 to \$20.00 a tire.

AJAX TIRES

Guaranteed (in writing) 5000 Miles

Drop us a postal for Booklet "Figures That Don't Lie" and name of nearest Ajax Dealer.

AJAX-GRIEB RUBBER CO.

1797 Broadway New York City

Factories: Trenton, N. J.



HONESTY

in a dry cell is as necessary as honesty in a man.

COLUMBIA BATTERIES have a quarter of a century of honest effort and experience behind them.

For every purpose requiring batteries

For sale everywhere. Ask for COLUMBIA.

Cost No More; Last Longer

Manufactured by
National Carbon Co.
Cleveland, Ohio

Factories in U. S. and Canada
Fahnestock Connections without extra charge.

Try It This Year

Hire a Red River Special

To thresh your grain this year. You will save more of your grain than you ever saved before.

Jos. H. Roberts and five other farmers of Hughsville, Mo., say: "It saved so much of the grain that would have been wasted by any other machine that we practically got our threshing done for nothing."

It will do the same by you. We can send you hundreds of testimonials like above from all parts of the country. Insist upon a RED RIVER SPECIAL this year and

Save Your Thresh Bill

The RED RIVER SPECIAL is the only Thresher which *beats the grain out of the straw* like you would do with a pitchfork.

The Big Cylinder, "the Man Behind the Gun," the patented Grate and Check Plate and the Shakers which *beat the grain out* are found only in the RED RIVER SPECIAL. All other kinds expect the grain to drop out.

Hire a Red River Special this year and *beat it out*. It will *save your thresh bill*. Write for proof.

NICHOLS & SHEPARD CO.

Builders of Threshers, Engines and Oil-Gas Tractors
Battle Creek, Michigan

considered. A committee from the Senate will visit Jackson prison this week and hold a consultation with the board of trade and the prison board. It is hoped a satisfactory plan may be evolved.

The resolution to submit to the voters state-wide prohibition has passed the committee of the whole in the House and will be voted upon in a day or two. If it should be carried by that body it will then be taken up by the Senate. More petitions have been received asking for this legislation than for any other measure.

Many important bills are yet in the hands of the committees and the remaining days of the session will be busy ones. It is difficult at this time to say what measures will succeed and which ones will be defeated. Some useful legislation may fall by the wayside, but we hardly think that the state at large need to fear hardship either from too many bills being killed or any really important measure failing of passage.

A FARMER MEMBER.

HAPPENINGS OF THE WEEK.

National.

The past week will be long remembered as a season of disastrous storms over the territory east of the Rocky Mountains. On Friday, the 21st, a storm center which had formed in Colorado and moved toward Louisiana, suddenly turned northward up the Mississippi Valley, crossed the north central states and then moved toward the Atlantic along the St. Lawrence river. At Detroit the barometer fell over .60 of an inch below normal and the wind attained a velocity of 86 miles an hour, which is the record for the local weather bureau during its 42 years of history. The loss of life, the number of people injured and the damage to property by the storm, will be difficult to estimate. This disturbance was followed by another which raged over the north central states Sunday night and Monday. While not so general, this storm became a real tornado in Nebraska and Iowa and was far more destructive of life and property. The latest reports state that fully 225 persons were killed, the majority in Omaha, Neb., and around 700 hurt, while the property loss is variously estimated from \$5,000,000 to \$10,000,000. In Omaha, Neb., 152 persons are reported dead and 330 injured; at Terre Haute, Ind., 18 are dead and 250 injured; at Yutan, Neb., 15 are dead and 20 injured; at Council Bluffs, Ia., 12 are dead and 17 injured; at Chicago five are dead and 40 injured; at Berlin, Neb., seven are dead and 17 injured. At a number of other places deaths are reported, which bring the total to 224, while those injured aggregate 694. There are probably many unreported casualties that will increase the death toll of the violent wind beyond the above figures. Michigan also suffered severely from the Sunday night and Monday storm. The big dam at Mayfield went out and the watchman lost his life in attempting to escape. The river is running high at Flint and one man was drowned. Traverse City is partially flooded and Port Huron suffers from high water. There are washouts reported on the Ann Arbor and Pere Marquette railroads. A church in Grand Rapids was unroofed and the baseball park grandstand was blown to the ground. Several houses were wrecked at Benton Harbor and floods are reported at Reed City. The fruit belt along the western coast was hard hit and much damage done. It is estimated that the property loss in Michigan will exceed \$1,000,000.

Foreign.

Because the Belgian government refused to give consideration to electoral reforms in that country the congress of the labor party has ratified an order for a general strike to be called April 14.

A head-on collision at Kanauga Junction, four miles east of Gallipolis, Ohio, resulted in 18 persons being injured and the two locomotives and several cars being demolished. An open switch caused the accident.

King George of Greece was assassinated last week by an anarchist and the throne is now occupied by his eldest son who will rule as King Constantine.

Affairs between Turkey and the allied forces are little changed from a week ago. Turkey has made concessions from her former demands in order that the influence of the powers may be brought to terminate the war. The allies, on the other hand, seem anxious to continue the conflict, believing that they will gain important ground within a very short time and thereby be in a better position to exact their demands against Turkey. Skirmishing and fighting on the outposts are reported daily along the Tchatalja lines.

Reports indicate the development of a rather serious situation between Austria and Montenegro with regard to the action of the latter country in her military operations around Scutari. Austria has demanded that these operations be suspended until the entire civil population of the place has left the town, declaring that if such is not done arms will be resorted to. There are also religious questions entering into the controversy.

Differences between the liberals and conservatives in the Canadian Parliament at Ottawa have been temporarily mended by an agreement between the government and the opposition. The government has agreed to a closure bill, which will enable the majority of the Parliament to shut off debate at any time, in return for an interim supply bill, which it is believed will be passed without objection. This latter bill becomes necessary in that appropriations for carrying on the administration extends only to March 31, and the interim bill is to provide funds for government purposes through to the end of May, which will give time for passing some redistribution bill and the holding of an election should Premier Borden so decide.



KRIT

Are you a "K-r-i-t-Farmer"?

If you are not, we will send the K-r-i-t out to your farm and show you why you should be a "K-r-i-t Farmer."

You show us what you want a motor car to do. Show us your roads, your hills, your mud, your sand and the cost you can afford for up-keep, and we'll show you the car that can do it. It is the K-r-i-t.

Four thousand farmers are driving K-r-i-t-s. We want to show you why they bought K-r-i-t-s. We want you to ask them how they like their K-r-i-t-s. We'll put you in touch with them. Write us for names and addresses of K-r-i-t-farmers.

We know why they bought K-r-i-t-s. The three dominant reasons are—The K-r-i-t Motor, the K-r-i-t Transmission, the K-r-i-t Axle. Those are the Three Prime Essentials of the car that is Sturdy, Reliable, Durable and Economical.

The K-r-i-t has the ball-bearing unit powerplant; four-cylinder water-cooled motor, cylinder cast en bloc

of the highest quality grey iron casting. The K-r-i-t has the annular ball-bearing sliding-gear transmission with chrome nickel gears.

The K-r-i-t has axle and springs made of Vanadium Steel and steering arms of Chrome Vanadium. The K-r-i-t in every essential part has more durability, more construction strength, more power, more real sturdiness than a car of its rating actually needs. But that is what has lifted the K-r-i-t out of the \$1000 class. That is why four thousand farmers are driving K-r-i-t-s.

Write us for the name of the nearest K-r-i-t dealer and he will bring the K-r-i-t to your farm.

Krit Motor Car Company
1608 East Grand Boulevard Detroit, Michigan



Maintains Its Body at High Temperatures



212°

No matter how fast you go on hottest days, Polarine lubricates every part perfectly, maintaining the correct lubricating body at any motor speed or heat.

It saves friction, wear, upkeep cost and repair bills.

It flows just as well at zero.

Polarine insures the greatest resale value of your car.

Made by the World's Lubrication Specialists.

Standard Oil Company
(AN INDIANA CORPORATION)
Makers of Special Lubricating Oils for the Leading Engineering and Industrial Works of the World

Flows Freely at Zero



0

Polarine

FRICITION REDUCING MOTOR OIL

False Teeth Repaired

BY MAIL.

All plate Repair Work done the same day received. If your upper plate drops down it needs our Patent Suction. The cost is low. **BROKEN PLATES REPAIRED**, good as new. New teeth put on and matched with the old ones. Gold fillings and gold crowns put in the false teeth to make them look natural. Write at once for full particulars, prices, etc.

THE P. P. DENTAL LABORATORY.
211 Hancock Ave. East. Detroit, Mich.

WANTED to hear from owner who has good farm for sale. Send description and price. Northwestern Business Agency, Minneapolis, Minn.

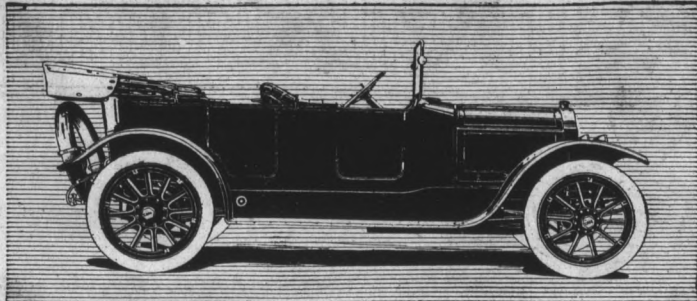
The Michigan Farmer One Year

The New York (3-a-week) World One Year

Both Only \$1.20

The New York World comes to you three times each week thus giving you practically a New York daily. The New York World is unexcelled as a newspaper and will keep you posted on the news of the world. Send all orders to

THE MICHIGAN FARMER, Detroit, Mich.



The Case "30"

The Car for All Roads



The sign of mechanical excellence the world over

Few men can afford a motor car as a mere luxury. But many cars are built for looks alone. Little thought of actual requirements of cars for use on country roads is put into their making. For seventy years we have studied the problems of machinery for the country highways. In the Case Thirty we build a motor car that is all that can be asked—in looks, as well as quality. We put into this car hundreds of dollars that do not show on the surface. We put them there for a reason. They give this car out-lasting qualities which few other cars possess. It conquers mud and rocky roads where other cars might flounder. It stands the wear and tear of hard, continued usage. Its superlative quality in its second and third and fourth years becomes more conspicuous than in its first.

Values That Are Hidden Every ounce of material in the Case Thirty is the best that money buys. We could make large savings on the cost of our motors by cheapening materials. We could save on our clutches, transmissions, drive shafts, wheels and other vital parts. We could cut our assembling cost in two.

Whose Word? Take our word for these things for one year. Then, for years afterwards, congratulate yourself that you did. Remember, you must take someone's word for the values in the car you buy. Whose word is safer to accept than ours? We have maintained an unbroken pledge to three generations of your family! Consider these vital hidden values when you gaze admiringly on the Case Thirty. Judge it, by face values, in comparison with other cars. Note that no other car has more pleasing lines, more refinement. But recall that in the Case Thirty you are buying more than really shows.

Get Our Catalog Send today for our catalog, featuring also the Case Forty at \$2,200.

J. I. CASE T. M. COMPANY, Inc.

641 State Street, Racine, Wis.

Send catalog and full information concerning the Case Thirty and Case Forty.

Name

Address

J. I. CASE T. M. COMPANY, Inc., RACINE, WIS.

Case Cars are sold through 65 Branch Houses and 11,000 Dealers in the United States, Canada, South America and Europe

Factory Branches at

Lansing, Mich.; New York City and Syracuse, N. Y.; Columbus, Ohio; and Indianapolis, Ind.

CASE THIRTY

34 x 4-inch Tires; 115-inch Wheel Base; Three-Quarter Elliptic Springs; 4 1/2 x 5 1/4-inch Cylinders; Remy Magneto Dual System Single Point Ignition; Rayfield Carburetor with Dash Adjustment; Full Floating Axle; Brown-Lipe Transmission; Westinghouse Electric Lighting System; Disco Primer for Easy Starting; Firestone Universal Quick-Detachable Demountable Rims; Rain Vision Ventilating Windshield; English Mohair Top with Side Curtains and Dust Hood; Extra Demountable Rim; Bulb Horn; Complete Set of Tools, Jack and Tire Repair Kit.

5-Passenger Touring Car, \$1,500

Practical Science.

SPECIAL ARTICLE ON FOODS.

BY FLOYD W. ROBISON.
Leavening Material.

The leavening agent used in the best bread is an organic fungus plant known as yeast. Technically, this plant belongs to the genus known as *Sacchromyces*. This plant is widely distributed through the soil, especially in vegetable matter, and likewise is quite abundant in the air. It grows by the budding process, similar to the way in which plants grow, that is, one cell on another. Its chief value, perhaps, may be considered in the production of alcohol, and it is through its properties by virtue of which it produces alcohol that it becomes most valuable as a leavening agent.

The medium on which yeast operates is sugar, and when the starch in the flour has been converted by enzymic action into maltose sugar, then the yeast acts on the maltose, producing a small amount of alcohol, at the same time liberating a gas, known chemically as carbon dioxide. During the liberation of the gas, at the desired temperature which is usually about the temperature of the human body, the flour mixture, or sponge, becomes porous and the phenomenon known as the "rising" of the dough takes place. This rising is due to the action of the gas in trying to escape; but the glutinous nature of the flour retards the escape of the gas, consequently the dough rises and assumes the shape of the loaf.

Yeast Varies in Value.

Yeast varies materially in its value for bread making purposes, depending first, perhaps, on the activity of the yeast, and secondly, on its purity. A pure active yeast will cause dough to rise very quickly under proper conditions, and, as a rule, is to be preferred over the slow, more or less inactive yeast, for the reason that if the dough is rising through a considerable period of time, souring is apt to result, due to the action of foreign organisms.

Compressed Yeast Most Common Form.

A number of years ago, the so-called yeast cakes, or dry yeasts, were common forms used, but at the present time compressed yeasts which are composed of fresh cultures of yeast are very much used. In all commercial bakeries, fresh yeast is always used. The prominence of the brewing industry makes the brewers' yeast very accessible, and some of the brewers' yeasts are very pure cultures indeed.

Value of Yeast Depends on Gas Produced.

The value of yeast for bread baking depends entirely on the amount of carbon dioxide gas which it is capable of liberating under definite conditions. There are various methods of estimating carbon dioxide gas, and one approximate way is to test the rising power under definite conditions on a standard flour. In the laboratory, the usual method is to determine the amount of carbon dioxide liberated from a standard culture media. The method of Meissel is a very desirable method, and is briefly outlined as follows:

Four hundred grams of pure sugar; 25 grams of ammonium phosphate; 25 grams of potassium; mix together.

A small wide-mouthed flask of 100 cc. capacity is fitted with a double perforated rubber stopper with two glass tubes, one of which is bent and passes nearly to the bottom of the flask. The other is a larger tube, known as a drying tube, which is filled with granular calcium chloride, so the gas, passing through, will be relieved of the water which accompanies it. Into this flask is now placed 50 cc. of water and 4.5 grams of the mixture given above is dissolved in the water in the flask. Then, finally, one gram of the yeast to be tested is added and stirred into the liquid. The flask is now corked, and the whole flask and contents, together with the rubber stopper and tubes, is weighed on a sensitive balance. After the weight is determined the flask is immersed in warm water, kept at a temperature of about 86 degrees, F. After six hours, the flask is taken out of the water, dried, and weighed again. The loss in weight is due to the carbon dioxide set free by the fermentation of the yeast.

Adulteration of Yeasts.

Compressed yeast very frequently contains added starch, corn or potatoes be-

ing generally used. Sometimes as low as five per cent of starch is used and at other times, from 40 to 50 per cent. Many samples of yeast contain no foreign starch at all, and it has been somewhat of a question as to whether the adding of small amounts of starch should be considered adulteration.

The Government Standard.

The United States Standard, established under Food Inspection Decision No. 111 is as follows:

1. The term "compressed yeast," without qualification, means distillers' yeast without admixture of starch.

2. If starch and distillers' yeast be mixed and compressed, the product is mis-branded if labeled or sold simply under the name "compressed yeast." Such a mixture or compound should be labeled "compressed yeast and starch."

3. It is unlawful to sell decomposed yeast under any label.

Chemical Leavening Materials.

The use of yeast for leavening necessitates a considerable period of time between the beginning of the operation of the dough mixing and the finishing of the baking. Consequently there has been a great demand for some agent which will hasten the leavening period. A chemical leavening agent has arisen to fill this demand. There is no question that the most desirable form of leavening is the one in which yeast is employed, but there seems to be a certain need for a leavening agent which will respond in a much shorter period of time. The modern baking powders fit into this classification. They have no food value, but are simply instruments or tools by which certain chemical re-actions bring about the liberation of carbon dioxide gas, and of a consequence, the accompanying leavening process.

Sour Milk and Saleratus the first Baking Powder.

In the making of biscuit and various cakes, baking powders find special application. Before baking powders were on the market, baking soda or saleratus, used in connection with sour milk, accomplished the same purpose as do the more modern baking powders. But there was no very accurate control of the leavening agent where sour milk and baking soda were used, for the amount of soda to be used should depend on the amount of acid in the milk, consequently there was frequently either not enough soda to combine with the acid in the milk, or too much soda was used, which overbalanced the acid in the milk, and a soapy or bitter taste followed.

The more modern baking powder is adjusted so the soda and acid ingredients are exactly balanced, so that the food should be neither too sour, nor over-supplied with soda. Baking powder, therefore, consists of, first, an acid ingredient, an alkaline ingredient. The acid ingredient may consist of a number of different substances; the alkaline ingredient is always bicarbonate of soda.

Three Main Kinds of Baking Powder.

There are three principal forms of baking powder on the market. The first is known as tartrate powder which is divided into two classes, cream of tartar powder and tartaric acid powder. The second class may be called phosphate powder. The third class may be called alum powder. We might add a fourth, or composite class, which consists of a mixture of the other three classes.

As with yeast, baking powders owe their first and greatest value to the amount of carbon dioxide gas they can liberate. Perhaps of secondary importance is the residual product left behind in the bread after the carbon dioxide is liberated.

We have taken the position that all baking powders, having in mind those that are in the market at the present time, are more or less injurious to health, by which we mean that they are somewhat antagonistic to the normal process of digestion. They seem, however, to be almost, if not quite, necessary, and as such, we have naturally been interested in the class of baking powder concerning which the least objections may be raised. We therefore place the different powders, according to their value, as follows:

First, tartrate powders. (a) cream of tartar powders; (b) tartaric acid powders.

Second, phosphate powders.

Third, alum powders.

Do You Want to Save

\$25.00 TO \$40.00
On Your New Buggy

Phelps says he'll save you \$25 to \$40 on a genuine Split Hickory. Is it worth a postal to find out? Is it worth a postal to see the 140 styles of vehicles and complete line of harness all shown in Phelps' new book. Is it worth a postal to learn the reasons why 167,000 other people bought

SPLIT HICKORY

vehicles? Phelps sells direct from his own factory—on 30 days' Free Road Test—2 years guarantee. You keep all the middle profits—you take no risk—everything is clearly photographed and accurately described and all guaranteed. Why not get Phelps' book so you can compare with others. Phelps pays postage if you write him a letter or postal. Just say "Send Book."

H. C. Phelps, Pres., The Ohio Carriage Mfg. Co.
Station 32 Columbus, Ohio



When Writing to Advertisers please mention the Michigan Farmer.

Poultry and Bees.

HOUSE FOR 100 CHICKENS.

A Washtenaw subscriber asks for Mr. Lillie's idea of a poultry house to accommodate about 100 chickens, and how it can be arranged so that the laying hens cannot lay in with the ones that are sitting.

A house for 100 laying hens ought to be about 15 feet wide and 60 feet long. I would divide this into two compartments, keeping about 50 hens in each. If you want to, and will take the necessary care of their quarters you can keep more than that number in a house of that size. Perhaps you might run it up to 75 in each compartment, or 150 in all, if proper regard is had for ventilation and cleanliness.

I would have this house face the south. Have it five feet high at the back and eight or nine feet high in front, with a sloping roof. It ought to be double-boarded so there will be no draughts. I would sub-divide the 30-foot compartment on either end into two compartments, one to be called the living-room and the other the scratching pen. Have the living-room made comfortable, with one window in it. You can have the two living-rooms together in the middle of the house, thus placing a scratching pen on either end. This won't cost as much as it will to make a warm compartment on either end. Have a platform at the back of the house, with the nest boxes under this platform. Put the roosts over the platform. The south side or front of the scratching pens can be simply woven wire—chicken fence—without any windows. It is a good plan to have a curtain, made of cotton cloth, that you can let down when weather conditions require it. During the coldest, most stormy days, you can feed the hens in the living-room, but in all ordinary weather feed them in the scratching pen. Make them get out into the fresh air.

You should have separate coop or house for the sitting hens, although you could partition off a portion of one of the scratching pens for their convenience.

COLON C. LILLIE.

MANAGING BROODY HENS.

There are many mistaken notions afloat about the best way of breaking up broody hens. It is true that ducking her head in water will make the hen think of other things, while taking her by the tail and throwing her through the window may jar her a little. But the only reasonable way of breaking up broody hens is by getting them to lay as quickly as possible. This dispels their desire to brood and means profit to you, for most of us keep hens for the eggs they lay.

A good many think that the quickest way of breaking up broody hens is that of shutting them in a coop for several days without either food or water—starving them to it. Then there are still others who let them sit on the nest all the time, and, incidentally, feed the lice.

A hen becomes broody, first, because it is heredity, and, second, because of a condition of nerve exhaustion after a long period of laying. The quickest and best way of relieving this condition is to take them from the nests and confine in a slat-bottom hanging coop as soon as the tendency to broodiness is noticed. If they are permitted to remain on the nests for a few days it takes much more to break up this desire. Place the hanging coop in a well ventilated and well lighted place and feed and water them as well or better than the other stock, because just as soon as they begin to lay the broody instinct will have departed. It is advisable to place a male bird with them.

In the spring I go through all of the pens twice a week and confine all hens that show an inclination to be broody in a specially constructed coop. They are fed well and cared for in the best possible way. After they have been confined about three or four days they are released, but any that go back to sitting are replaced in the coops for a few more days' confinement.

Where many hens are kept a special coop in each pen is advisable. In all up-to-date poultry houses the equipment is not considered complete unless each pen has a broody coop. Not only can these coops be used for breaking up broody hens, but also for extra male birds.

The thing to bear in mind in breaking up the desire to sit is to act promptly and to so feed and care for the hens that they will be filled with new life and vitality, thus forgetting the desire to sit and going to laying again. Feed them the same as you do the other hens, and do not forget the water and grit. If it is ever advisable and profitable to feed any kind of stimulating feeds it is when a hen shows a desire to sit.

New York.

F. W. KAZMEIER.

TRANSFERRING BEES.

To transfer bees from objectionable abodes to modern hives is one of the labors of old bee men as well as the beginner in bee-keeping. The easiest way to buy bees, although not always the most profitable, is to purchase from men who are anxious to sell; this means not the bee-keeper who keeps his bees in the modern and profitable way, but the farmer who has only a few colonies, which have never been given any attention and which, as he expresses it, "never did pay." Bees obtained in this way will be found housed in anything from a soap box to a cracker barrel. The new owner naturally wishes to remove them from such undesirable quarters, transferring them to modern and more profitable hives. An easy method of doing this is the following:

Blow a little smoke among the bees, sufficient to alarm them. Set the hive a short distance to one side and put in its place a modern hive of frames containing full wired foundation. Now turn the old hive, or box, or whatever it may be, upside down, remove the bottom and place a box over it. It will make no difference if the box is not close fitting so long as the bees are smoked sufficiently. With a stick or hammer rap on the hive for 10 or 15 minutes. The bees will fill themselves with honey and go with the queen into the box above the hive and cluster. If towards the last we set the box off once or twice, vigorously shake the hive and then replace the box we will greatly hasten the emigration of the bees and make it more complete. A few bees will remain in the old quarters and these will do no harm.

Next take the box which contains the queen and nearly all the bees and shake it in front of the new hive already placed on the old stand. The bees will go in at once and set to work drawing out the foundation in the frames in a surprisingly short time, giving us a set of combs which will surpass those obtained in any other way. Should they be unable to obtain honey, feed must be given them. This is a good thing to do, judiciously, even if they are able to get some nectar from flowers, as the latter only stimulates brood rearing.

Set the old hive aside for 21 days, when the young bees will have all hatched from the cells. If the weather is cold it would be well to see that the hive is protected or even brought into a warm room so the brood will not chill. At the end of this time drum the bees out as before, kill the queen which has been reared, and unite the bees with the others, or form a new colony as before. If a new colony of bees is wished the queen is not killed but allowed to go into the hive with the rest of the bees.

Now the old hive, log or box may be split open so as not to break the honey comb. The combs should be carefully cut loose, the honey extracted by use of a wire comb-holder, and the comb melted into wax. The only loss in this method is the time which the bees require to draw out the foundation, and this is more than made up in the superior worker combs secured.

If the hive which has been emptied has combs in it that are straight and are composed of worker cells, these may be fitted into frames and a wire bound around them to hold them in place until bees fasten them securely, after which the wire may be removed. Wire used must be very fine—about 30. This is not as satisfactory, however, as to melt up the comb and send the wax obtained to the supply houses to be made into foundation. The cost of making up this wax into foundation is from eight to 13 cents, according to the thinness, style, and amount sent.

Shiawassee Co.

N. F. GUTE.

Wins in the Two BIGGEST HATCHING Contests Ever Held



140-EGG Ironclad Incubator
Don't class this big, all metal covered, dependable hatcher with cheaply constructed machines—and don't buy any incubator until you know what it is made of. Note these Ironclad specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boiler, self regulator, Tyce Thermometer, glass in door and many other special advantages fully explained in Free Catalog. Write for it TODAY or order direct from this adv.

Both for \$10 Freight Paid East of Rockies

30 Days' Free Trial Money Back if not Satisfied.

140 Chick Brooder

IRONCLAD INCUBATOR CO., Box 65 Racine, Wis.

A NEW ROOF FREE

Or money back if rusting out or deterioration occurs in

INGOT IRON ROOFING

at any time within 30 years of purchase. No painting or repairs necessary. Our indemnity bond protects you. Costs no more than ordinary roofing. Easy to put on. Fire-proof, storm-proof, lightning-proof and time-proof. Look for trade-mark. Write for big illustrated book FREE.

The American Iron Roofing Co.
Sta. G ELYRIA, OHIO

Don't Pay Two Prices

Save \$6.00 to \$20.00 on

Compound Incubators and Zero Brooders

It pays to buy the best when you can buy at such low prices. Galvanized Iron Case, Double Walls, thoroughly insulated, equipped with Gas-Proof Heater, and Automatic Regulator.

All Incubators and Brooders Guaranteed
Send for free Circulars and Prices.

Warsaw Incubator Co., Warsaw, Ill.

140Chicks from 140 Eggs

This World's Championship Record is not uncommon with users of my Belle City incubator. Many are doing this right along. The United States government is one of my 201,340 Belle City users. Make Sure of Success by using my proof-backed Belle City. Write me for all of the proofs or order direct from this ad. Thousands of others do.

Jim Rohan, Pres. Belle City Incubator Company.

\$7.55 Still Buys

World's Champion 140-Egg Incubator

Double cases all over; best copper tank; nursery, self-regulating. Best 140-chick hot-water brooder. \$4.85. Ordered together, \$11.50. Freight Paid (E. of Rockies). No machines at any price are guaranteed.

Write for book today or send price now and save time. Jim Rohan, Pres. Belle City Incubator Co., Box 14, Racine, Wis.

BANTA

The Incubator that Gives Years of Hatching Service

Write for catalogue of high-class, low-priced machines. Sizes run from 50-egg to 300-egg capacity. You can inspect these incubators at dealer's in your town. We will send you his name and address.

THE BANTA & BENDER CO.
200 Third St., Elgin, Ill.

120PAGE POULTRY BOOK FREE

Tells how to succeed with poultry on the ordinary farm. How to make a first-class brooder out of an old piano box. What breeds lay best. Plans for poultry houses, how to feed, breed, etc. Describes

PRAIRIE STATE Incubators and Brooders

You will be surprised at the valuable information it contains. It's free. Write a postal for a copy today. (21)

Prairie State Incubator Co., 413 Main St., Homer City, Pa.

125 Egg Incubator and Brooder Both For \$10

Why pay more than our price? If ordered together we send both machines for only \$10.00, and pay freight charges East of Rockies. Hot water, double walls, dead air space between double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Incubator and Brooder shipped complete with thermometers, lamps, egg-testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money—if you wait to investigate before you buy. Send for FREE catalog today, or send in your order and save time. Money back if not satisfied. Write us today. Don't delay. (12)

WISCONSIN INCUBATOR CO., Box 126, Racine, Wis.

WHY INCUBATOR CHICKS DIE

The book entitled, The History of White Diarrhoea, or why incubator chicks die, will be sent absolutely free by return mail, to any one sending us the names of 7 to 10 of their friends that use incubators. This book can save you \$100 this summer. It describes white diarrhoea or bowel trouble. The cause and tells of a cure. **BOOK ABSOLUTELY FREE FOR THE NAMES.**

RAISALL REMEDY CO., BLACKWELL, OKLAHOMA.

You Can Earn a Good Living Raising Poultry

Cut down living expenses—raise poultry for your own use and for sale to neighbors. Thousands make money this way with

SUCCESSFUL INCUBATORS

SUCCESSFUL BROODERS

Why don't you do the same? Learn how easy it is to start. Booklet "How to Raise 48 out of 50 Chicks"—10c. Catalogue FREE. Write today. Address:

Des Moines Incubator Co., 368 Second St., Des Moines, Ia.

BEES WANTED—any style—any quantity.

A. W. SMITH, Birmingham, Mich.

WON SWEEPSTAKES

at Battle Creek Diamond Crystal Poultry Show Dec. 17-22-1912 on solid Am. varieties also 1, 2, 4, hen, 1, 2, 4, chl. 2, 3, pul. 4, chl. 2, pen and several specials on 12 birds, 8 brooders exhibiting W. Wyandottes. Stock for sale, Eggs and chicks by parcels post. Circular free.

BARRED PLYMOUTH ROCKS—Write us for prices on stock or eggs. Also Yorkshire Swine.

OSTRANDER BROS., Morley, Michigan.

CRYSTAL WHITE ORPINGTON

Eggs \$5-15, four grand pens, send for Mating list. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.

EGGS BARRED ROCKS—Large beautiful layers, great layers.

W. C. COFFMAN, R. No. 6, Benton Harbor, Mich.

Eggaday Barred Rocks, bred to lay, Eggs \$1.50 per 15.

Eggaday Poultry Ranch, Marshall, Mich.

FOR SALE—Eggs from prize winning R.C.R.I. Reds, \$1.50 per 15.

Eggs from standard bred fawn & white Ind. Runner Ducks, white eggs strain, \$1.50 per 15. Coy G. Brumm, Nashville, Mich.

MRS. FLORENCE HOWARD, Petersburg, Mich.

Only 12 females, 1 male Rose Comb White Leghorns left to sell \$1 each, Excellent stock.

S. C. B. Minorca Cockerels and P. C. Fall Pigs.

Satisfaction guaranteed. **R. W. Mills, Saline, Mich.**

Prize Winning Barred Rock, R. I. Reds, Mammoth Pekin and I. Runner ducks.

Stock for sale. Eggs \$1, \$2, \$3, per set. Utility \$5 per 100. **EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.**

Pure Bred Partridge Wyandotte Eggs—\$1.50 per 15.

A. C. FREEMAN, 219 Oak St., Ypsilanti, Michigan.

COLUMBIA Wyandottes, Winners at Chicago, Grand Rapids, South Bend and St. Joseph. Stock and eggs.

RICHARD SAWYER, Benton Harbor, Michigan.

OAK KNOLL POULTRY—Silver and Partridge Wyandottes and Ind. Runner Ducks. Eggs for sale.

E. H. & J. A. COLLAR, Coopersville, Michigan.

PLYMOUTH ROCK EGGS FOR SALE. Good winter layers 15 for one dollar, 50 for two dollars.

MRS. ARTHUR L. GREEN, Goodrich, Michigan.

ROSE COMB BROWN LEGHORNS from Mad. Square Gard in

Winners, eggs and day-old chicks on special. Also Mam, Pekin Duck eggs. **Claudia Betts, Hillsdale, Mich.**

STANDARD BRED R. I. REDS—Both combs, eggs from show

Stock \$2 per 15, fancy \$2 per 30, utility \$2 per 100 (by ex.) sent free by P. P. all wonderful winter layers. Also Mam, At, geese & Rouen ducks F. & W. runners, B. Red Turks, P. guinea hens. **French Fruit & Poultry Farm, Ludington, Mich.**

Silver, Golden and white Wyandottes, a fine lot of

Browning's Wyandotte Farm, R. 30, Portland, Mich.

WHITE ROCK, S. O. WHITE LEGHORN, BLACK Spanish and Indian Runner Duck eggs, 15, \$1.25; 30, \$2; 50 \$3; 100, \$5.

G. N. BURT, Okla. City, Okla.

WHITE WYANDOTTE—Famous Winter Laying Strain, Eggs for hatching; circulars now ready.

L. M. OLDS, Ypsilanti, Mich.

WHITE LEGHORNS—"Wyckoff Strain", stock

chick & eggs, circular free. **Maple City Poultry Plant, Box C, Charlotte, Mich.**

White Wyandottes—Noted for size, vigor and egg production. 1913 circular ready in February.

A. FRANKLIN SMITH, Ann Arbor, Mich.

White Wyandottes—April and May cockerels and eggs for sale. March 1st. Send for 1913 circular.

David Ray, 202 Forest Ave., Ypsilanti, Mich.

LILLIE FARMSTEAD POULTRY

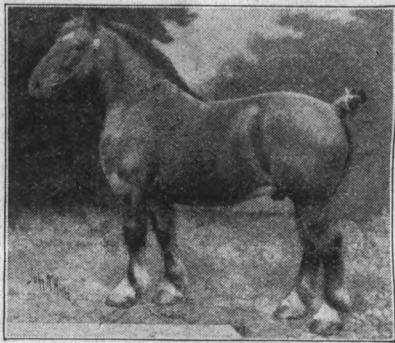
B. P. Rocks, R. I. Reds, and S. O. W. Leghorn eggs for sale. 15 for \$1.25 for \$1.50; 50 for \$2.50.

COLON C. LILLIE, Coopersville, Mich.

Saginaw Valley Stock Farm

Importers of
Belgian and Percheron
Stallions and Mares.

Formerly of Decatur, Indiana. 15 Years Importers.



Just arrived with an extra good importation of stallions from 2 to 4 years old, which we offer at very reasonable and attractive prices with guarantee the best. If you come with cash or bankable paper we will try our best to sell to you. We have our selling cloth on every day in week. Write your wants or come and see us.

ELI SPRUNGER & SON, Props.
Bell Phone 2921 J—2. Saginaw, W.S. Mich.



HEWO BELGIANS

NEW IMPORTATION

We have given more than a quarter century to importing breeding and distribution of the Belgian horse. We handle no other breed and believe we have now in this new importation of stallions and mares a class of horses that will please you, and all are for sale at prices not equalled by anyone in the business when merit is considered. Will be pleased to have you ask about them and to visit us at any time.

H. & H. WOLF
Wabash, Ind.
HEWO STOCK FARM



DUNHAMS' PERCHERONS

are today as for the past forty-seven years the

-B-E-S-T-

Fresh importation. Catalogue FREE.

DUNHAMS, Wayne, Du Page County, Ill.

FOR SALE The 3-year-old— PERCHERON STALLION Chapelle No. 62940

Sire Olbert. Sire of dam—Calypso. A black weighing 1800 lbs. Bred by the Michigan Agricultural College, and owned by

A. A. PALMER & SONS, Belding, Mich.

PERCHERONS

bred for utility as well as show quality. Stable includes several international winners. Young stock for sale. Come, or write

B. F. ANDERSON, R. No. 1, Adrain, Michigan.

For Sale —1 five-year-old— Belgian Stallion

Sound and right in every way. Also a 3-year-old JACK. Or will trade for other Live Stock and Real Estate. Address, W. G. Himmelwright, Frankfort, Mich.

PERCHERONS—BLACKS and GRAYS

We can show more bone and muscle than any breeder in Michigan. Young stock for sale from mares weighing 1800 to 2000 lbs. Imposant 79403 (79835) weight 2330 lbs. at head of stud.

CHAS. OSGOOD & SONS, Mendon, Mich.

2 STUDS, CHEAP.

One imported 13-year-old, weighs 1800 lbs., in breeding condition. One registered five-year-old, weighing 2000 in show fit. Both horses are black with star. Sound, big boned and getters of big, uniform colts, registered in A. P. A. J. C. Butler, Portland, Mich. Bell phone

SOME fine young registered Clydesdale Stallions for sale from 1 to 4 years old. In the spring some will make ton horses with lots of quality and good action. Must be sold before the first of April. F. A. PETZ, Capac, Michigan.

Imported and pure bred Stallions. We make a speciality of Belgian and Percheron Stallions, all of Quality, Bone and Weight. G. & H. LOCHER, Bluffton, Ohio.

Mention the Michigan Farmer when writing to advertisers.

Healthy Cows All The Year Round!

A natural food that strengthens and builds up is far better than any kind of tonic or medicine for animals, as well as for men. Scientists have proved that this new food increases the value of any kind of feed, when mixed with it.

Buckeye Feeding Molasses

helps make more milk, and keeps your cows in good condition. It is also a good fattener for beef cattle.

For Horses—Buckeye Feeding Molasses is relished by horses. It keeps their stomachs in perfect condition, aids digestion and besides saving feed, prevents kidney diseases, colds, etc.

For Sheep—Will keep your flock healthy and well; adds weight and makes finer wool and more of it.

For Hogs—Makes every hog a big hog—no runts. Larger profits in pork.

15 CENTS a gallon in barrels f.o.b. Detroit, or 17c freight paid to any point in the U.S.

Our Free Trial Offer:

Send this coupon today and get our test proposition.

W. H. EDGAR & SON,

562 Lafayette Blvd., Detroit, Mich.

W. H. EDGAR & SON,

562 Lafayette Blvd., Detroit, Mich.

I have.....head of cattle.....

sheep.....hogs and.....horses

Send me your trial proposition to prove that Buckeye Feeding Molasses will benefit all of them.

Name.....R. F. D.....

P. O.....State.....

ABSORBINE

STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. \$2.00 a bottle delivered. Horse Book 9 K free.

ABSORBINE JR. the antiseptic liniment for mankind. Removes Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, Old Sores. Allays Pain. Will tell you more if you write. \$1 and \$2 a bottle at dealers or delivered. Mfd. by

W. F. YOUNG, P. D. F., 268 Temple St., Springfield, Mass.

BUSY

EVERY DAY

SHOWING STALLIONS SELLING

AT THE

LOW DOLLAR

SEE THEM AT

GEO. W. SOUERS & SONS,

HUNTINGTON, INDIANA.

(Stallion Service Book, 10 cents.)

Reg. Shire Mares & Stallions For Sale reasonable price considering individuals. Address, Box 355, Capac, Mich.

Farm Commerce.

Difficulties In Co-operative Marketing.

Because of his experience in managing a co-operative selling association and of having gone through practically all of the obstructions usually found in the path of concerns that undertake to dispose of goods by the co-operative plan, Chas. F. Hale, formerly of Oceana county, but now of Kent county, was selected to present the above topic before the recent winter meeting of the State Horticultural Society at Jackson. For 14 years Mr. Hale successfully managed a co-operative fruit growers' association in Oceana county and because of this success was recently selected to perfect a similar organization, except that it is planned to ultimately make it more comprehensive, in Kent county.

Mr. Hale impressed his hearers with the fact that everywhere there is dissatisfaction with the present methods of marketing fruit and other farm products, and while he feels that there is seemingly an endless amount of preliminary educational work to be done, he is convinced that the solution lies in co-operation. The principles underlying neighborhood, instead of individual, dealing, are sound and when our people are so disciplined in mind and heart to undertake and loyally support such an organization, those principles will be rapidly substituted for the present expensive and wasteful methods.

Most Farmers Lack the Co-operative Spirit.

The first difficulty mentioned in the address was that farmers do not easily agree in matters of business. This situation has, no doubt, developed from the independent life which the farmer has, through these many years, lived. Naturally his business methods are elementary and crude for he has always depended upon his own judgment and worked out his own plan of procedure. For this reason the ways of doing business upon our farms are almost as numerous as are the sands on the seashore. To sacrifice this independence for a common scheme means a revolution, and while all are ready to admit that it would be a splendid thing to deal through a common agency as is planned by co-operative concerns, the actual laying aside of the old method and taking a chance with the new is greater than the courage of many will stand; hence, the failure to agree and work together.

Not only the experience of Mr. Hale but also that of practically every other manager of a successful co-operative selling organization, testifies to the necessity of binding the members together with strong contracts in order that in times of stress they may be compelled to stand shoulder to shoulder through the fight. During the early history of the Oceana co-operative concern outside buyers were eager to discourage the members with the plan; and to do this they would go to members who produced good fruit and offer them a premium over the price paid by the organization. Unless bound to the society by a strong contract these members were quite sure to yield to the temptation of selling to the outsider and forsaking the society. A few traitorous acts of this kind ordinarily sounds the death knell of co-operative efforts, but it happened that the Oceana society pulled through because of other members who stood by loyally. Now when organizing one of the features most strongly impressed is to make the contracts between the organization and the members who expect to sell through it, binding; yes, not only binding but they also attach a penalty to the breaking of the agreement so that this temptation to leave is to a large extent removed.

No Standard for Grading Goods.

Another difficulty is that there is no uniform methods of putting goods up for sale, this being particularly true of fruit. During the first year of the organization in Oceana county, each man packed his fruit at home, then brought it and loaded same onto the cars, while the organization looked up buyers and attended to the shipping. The plan brought trouble at once. What one person graded as No. 1 fruit would compare with another's No. 2's. Careful growers who gave their trees care would have a fair per cent of good fruit which they would designate as belonging to the best grade, and that

properly. Others, through carelessness or ignorance, would have fruit that uniformly graded low; but, as would be natural, their best fruit would also be graded as belonging to the best grade. All parties perhaps, meant to be honest in their packing. They did not plan to cheat, but some of them did, and this became apparent when the consignments were heard from. Purchasers of this fruit were disappointed, they could not depend upon its uniformity and consequently did not care for more. It, therefore, became imperative to have uniform rules for packing and to avoid disappointing buyers a careful system of inspection was installed.

To overcome the difficulty mentioned in the previous paragraph it becomes necessary to have the grading done where it could be properly supervised. This required a central packing house. By installing such an institution it placed the organization in a position where the fruit could be absolutely guaranteed as marked. This proved a long step forward, since the products could be readily disposed of at good prices when buyers learned the quality of the fruit put up and that they could rely on the information placed on the outside of the pack.

Inefficiency of Manager.

Many failures are the result of the selection of an incapable manager by the board of directors. Unless the man placed at the head of a business of this kind understands the usual method of disposing of the crop and has that business acumen and diplomacy that aid in making reasonably good sales he is quite certain not to succeed. A knowledge of crop conditions and the best markets for sending the goods, as well as an ability to open up new avenues for distribution are essential in a manager. Then, over and above all of these is that other quality which is more important than all the others, since it is native to the individual and not so readily acquired, and that is the quality of being absolutely honest, and loyal to the concern for which he is laboring. Many organizations have failed because of managers proving faithless to their duty.

Starting with the Wrong Attitude.

Another difficulty is that the average member approaches the association with the wrong attitude. Usually it becomes necessary, in order to get a sufficient number of persons in a community interested in a movement of this kind to picture its advantages rather highly. These pictures usually cling to their imagination and when it becomes necessary to take up the regular duties of co-operating they make no allowance whatever for deficiencies in human nature, with the consequence that should the manager or anyone else officially connected with the concern make a mistake such members are apt to be discouraged. Now, in order to make such an association a success the members who co-operate should go into it with the expectation that mistakes will be made. If they approach the real work in this frame of mind they will not be disturbed when things fail to move according to an ideal program. They will rather be encouraged with every success and thereby have an increased loyalty toward the institution.

A REASONABLE NOT AN EXORBITANT PRICE.

That the readers of this department may be better served, we have been watching closely the attempts of producers to secure customers in Detroit to which they can sell direct and while we have been highly pleased with the way most of the farmers have taken hold of the proposition, we find that many have lost out because they demanded too high a price for goods that had not had an opportunity to gain a reputation. Take, for example, eggs: At the present time the general farm price is around 16 cents per dozen. This low price and the great quantity produced just now enables practically all the stores in the cities to provide themselves with a good grade of eggs. These stores are selling the eggs to city people for about 25 cents per dozen. When sent in 30-dozen lots it costs about one and one-half cents per dozen

to have the eggs from a hundred miles out in the state delivered at a private resident in the city. In many of the letters sent to prospective customers the producers have been asking for the full 25 cents, expecting that the customers will pay the transportation charges and go to the trouble incident of distributing among his friends. The result is that they do not give the producer a chance to prove his goods. If in the case of the prices named above the producer would ask, say 20 or 21 cents, giving him a margin over his home market of \$1.20 or \$1.50 for a crate, then he would be well paid for his trouble and the buyer could see an advantage in ordering. At all other seasons of the year than from now till about the first of June there is a greater margin between the country and city prices and a greater difference in the quality of the eggs coming direct from the farm and those in the general stores, so that one can secure a larger margin on a shipment than just now, but to make direct dealing the success it should be it must prove an advantage to both the producer and the consumer. If the producer attempts to take all the margin then he will have up-hill work in building up a trade. But if he follows a "live and let live" policy he is certain to find himself with a much more satisfactory market than through the regular channels of trade.

THE NOMID SYSTEM—A PLAN FOR THE DISTRIBUTION OF FARM PRODUCTS.

Chapter VIII.—(Concluded). Apples.

There yet remains a discussion of how to handle apples before we have completed a list of the common products that are sold direct to the consumer by the producer. We shall give in these columns from time to time, descriptions of how other products can be handled to meet the requirements of the consumer and still prove of economical benefit to the producer to sell them direct, but will close the present series with this dissertation.

Good Fruit in Demand.

A study of the fruit business from every angle leads to the conclusion that there is profit in it only when a good proportion of the best grade of fruits is produced, and this conclusion has special application to the apple. To get a high grade of fruit means that one must give his orchard close attention and care from the beginning to the end of the growing season. The care includes spraying and cultivation, besides pruning and, in most instances to attain the highest results, thinning of the fruit right after the June drop. At harvest time increased vigilance must be shown to prevent even the smallest injury to the fruit for it is now being shown by our bacteriologists that all rots in fruits start from little injuries to the skin of the fruits. The point is to grow good fruit and pack it in such condition that it will keep well if handled properly afterwards.

Packing.

Packing may be done in boxes, barrels or baskets. In a recent issue were given different methods of packing in boxes so that further attention will not be given to that method here. Barrels may be packed as follows: Remove the bottom of the barrel and stand it with the head downward. Put a circular piece of paper in the bottom, cardboard is best if available, and on this carefully place a layer of fruit with the stem end toward the head of the barrel. This operation is done by putting a peck or a half-bushel order, after which more are put in and of apples into the barrel and placing in placed in the same manner. The arranging of the fruit in this manner is called facing. It is well to face two layers in the bottom. The barrel is then filled. Do this by sliding the fruit from a small measure, shaking the barrel after each measureful is put in. A half-bushel basket with a swinging bale is best for this purpose. Lower the basket into the barrel and allow the fruit to slide out to prevent bruising. When the barrel is filled nearly to the top then one or two layers are faced but this time with the stems upward. The last layer should extend up out of the barrel about two inches. Another layer of cardboard or paper is now put over the apples. The chime hoops of the barrel are loosened and the top one is taken off. The head is placed on the fruit and pressed down into position by means of a barrel press. The hoops are afterwards driven down and nailed. The lining hoops which fit on the inside of the staves against the

head are finally placed and fastened with small nails. The barrel is marked on the end that was down when packing with the kind and grade; also the name and address of the consignee is plainly written, together with that of the shipper.

Where the producer looks after his own delivery it is often desirable to deliver apples in baskets. One Oakland county grower who delivers on the Detroit market found it easier to make sales where he neatly packed two or three good varieties of apples together in a half-bushel basket. Mr. Farnsworth, of Ohio, who has at his disposal a car belonging to an electric company owning a line passing his farm, and who has the inside shelved off to receive baskets of fruit, finds that in disposing of his apples, 20-pound baskets make a splendid receptacle for carrying his best fruit. These baskets go to the consumer and they hold about the quantity that buyers usually wish to purchase. It must not be overlooked that the basket is a practical receptacle where the shipper has control over the situation as in the case of Mr. Farnsworth, but is not a desirable container when shipping by common carrier under ordinary conditions.

Shipment.

Local conditions will dictate to a very large degree the manner of shipping, but where apples are going by common carrier their bulk usually makes it necessary to send by freight. Perishable products are handled by the railway companies with greater dispatch than are other goods, and if the apples are picked carefully, packed properly and cooled well before shipped they will ordinarily reach their destination in good shape.

CROP AND MARKET NOTES.

Shiawassee Co., March 18.—Weather is moderate, with strong southwest winds having a drying effect on the land and roads. Very little snow on the ground. Frost about out. Wheat coming through the winter in splendid condition, although a large amount of injury has been done from standing water and ice. Farmers are beginning to see the necessity of better soil drainage and a number of car loads of tile have been unloaded. Two or three farmers have purchased a car each and intend to do a great deal of tile draining this spring. The farmers who have been withholding their bean crop are wondering what is coming next. Some farmers assert they will feed their crop out to hogs before they will sell them for less \$2. A large amount of building will be done in this locality in the spring. One building contractor has contracts for building nine large barns and two farm residences. Potatoes in the pit have been hurt badly and large loss is incurred. Sheep feeders are feeling good over their season's work, some feeders having made a fine thing. Farmers who have been feeding a few head of cattle are well satisfied.

Lapeer Co., March 21.—Very rainy; the spring equinox now upon us; frost is pretty well out of the ground. Farmers, if this weather continues, can soon get on their fields and commence spring work. The wheat plants at this date seem to be in good condition. The clover does not seem to be damaged much as yet. An unusual acreage of oats and beans will likely be planted, with less sugar beets than usual. Lots of auction sales thus far this year. Some farms have changed hands, others rented. The price of horses is away up and cattle bring good prices. Hay prices lower.

Genesee Co., March 15.—Season opening about normal as to weather conditions. Many farms changing hands both by sale and rental. Help scarce and wages high. Good roads work will be commenced as soon as the frost is out of the ground. The trouble is to build them as fast as they are wanted. Without doubt the work will be continued until all main thoroughfares are substantially improved. Marketing is rather quiet at present because of muddy roads. Many potatoes waiting shipment. Prices are: Hay, pressed, \$12; wheat, \$1; oats, 32c; corn, 51c; beans, \$1.65; eggs, 20c; butter, 29c; potatoes, 40¢@50¢. Work horses remain very high. Also milch cows. Tuberculin test enforced for all herds supplying milk for Flint market after May 1.

Ohio.

Hardin Co., March 20.—The weather is warm, with appearance of rain. Quite a number of public sales this spring and some real estate changing hands. Winter crops are looking fair, and we have had a couple of fine runs of sugar sap this spring. Some plowing has been done the past week in the sod fields. Horses are bringing a good round sum. Clover hay around \$5@7 per ton; timothy, \$10@12; hogs, 9c; cattle high; hard to buy a cow at any price.

New York.

Niagara Co., March 20.—Mild weather and bad roads owing to the thaw. Robins are plentiful and early flowers springing up. February saw much ice of fair quality cut. There is good demand for horses, teams selling for an average of \$450. Cows are a scarcity, ranging in price from \$60@150, the latter for Jerseys. Cabbage, after storing all winter and loading on cars, only \$2.50 a ton. Slump on beans, \$1.75 a bu., a drop of 35c in 10 days. Bran, \$24.50 per ton; middlings \$27 a ton; potatoes, 45c per bu; oats, 42c; corn, 40¢@60¢ a bu; hay, \$12 per ton.

Brownwall AIR-COOLED ENGINE

Meets every farming need. No engine made has less parts. Doesn't take an expert to operate it. Read the few directions, start it up and bring on your work. So simple **Your Wife Could Run It** if she wished. Nothing to get out of order; all parts standardized. Takes little space. Strong and durable. Thoroughly guaranteed. Costs almost nothing to operate it. Made in all sizes. There's one for your own individual use. Find out about it. Write today for special offer. A postal brings it.

THE BROWNWALL ENGINE & PULLEY CO., 536 Mich. Ave., Lansing, Mich.

SPAN OF MULES FOR SALE—Coming 3 and 4. Small but fine drivers. \$200 or will exchange for good cows. S. STANTON, Quincy, Michigan.

BREEDERS' DIRECTORY.

CATTLE.

For Sale—Horses, cattle, sheep, swine and poultry, nearly all breeds. Sires exchanged. South West Michigan Pedigreed Stock Ass'n., David Woodman, Sec'y-Treas., Paw Paw, Mich.

Aberdeen-Angus.

Herd, consisting of Trojan Ericas, Blackbirds and Prides, only, is headed by Egerton W. the GRAND CHAMPION bull at the State, West Michigan and Bay City Fairs of 1912 and the sire of winners at these Fairs and at THE INTERNATIONAL, Chicago, of 1912. WOODCOTE FARM, Ionia, Mich.

AYRSHIRES—One of foremost dairy breeds; young bulls and bull calves for sale. Berkshire swine. All pure bred. Michigan School for Deaf, Flint, Mich.

GUERNSEY BULL CALVES, YORKSHIRE PIGS. Good Stock. HICKS GUERNSEY FARM, Saginaw, W. S., Mich.

10 Reg. Guernsey Bulls, ready for service. Large Yorkshire hogs, the best yet. Come or write. JOHN EBELS, R. 10, Holland, Mich.

HEREFORD BULLS FOR SALE China Hogs. ALLEN BROS., Paw Paw, Michigan.

HATCH HERD HOLSTEINS—Choice sires from ARO dams. Reasonable prices. HATCH HERD, Ypsilanti, Michigan.

CHOICE Bull Calves from A. R. O. dams. Sired by our herd sire whose dam and sire's dam each made over 30 lbs. in 7 days. E. R. CORNELL, Howell, Mich.

A FEW CHOICE Holstein Friesian Bull Calves for Sale. A. R. O. Stock. GREGORY & BORDEN, Howell, Michigan.

REGISTERED HOLSTEIN Kordyke, Pontiac. De Kol 3-year-old cow. Mostly white, A. R. O. dam. Bred to son of Pietertje Heng. Count DeKol to freshen in fall. \$200 delivered. Write for pedigree. HOBART W. FAY, Mason, Michigan.

Holstein Bull whose sire has nearly 100 sisters dam was sired by best son of Pontiac Butter Boy. Price \$50. C. D. WOOLEBURY, Lansing, Mich.

FOR SALE—HOLSTEIN BULL CALF Born June 5, 1912, sire a son of the King of the Pontiacs from a daughter of Hengerveld De Kol. Dam of calf, an A. R. O. daughter of Sadie Vale Concordia's Paul DeKol, her dam a 20 lb. imported cow. **ED. S. LEWIS, Marshall, Mich.**

Purebred Registered HOLSTEIN CATTLE The Greatest Dairy Breed Send for FREE Illustrated Booklets Holstein-Friesian, Assn., Box 164, Brattleboro, Vt.

"Top-Notch" Holsteins. Yearling bulls all sold. Choice bull calves from 1 to 5 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. McPHERSON FARMS CO., Howell, Michigan.

Service Bulls and Bull Calves Sired by Johanna Corcordia Champion, whose sire's dam and dam's dam average 34.06 lbs. butter in 7 days, average fat 4.67%. Also cows and heifers bred to him. I can offer you bulls at bargain prices. Try me and see, and do it quick. **L. E. CONNELL, Fayette, Ohio.**

Bigelow's Holstein Farms Breedsville, Mich. Have for sale several fine young bulls out of cows with high official butter and milk records. Send for circular.

LONG BEACH FARMS, HOLSTEIN BULL CALVES WORLD RECORD STOCK, from \$75 to \$250 Augusta, (Kalamazoo Co.) Mich., F. S. Kenfield, Prop.

BULL CALF—\$50 Choicest breeding—Dam has 25 pound A. R. O. record. YPSILAND FARMS, Ypsilanti, Mich.

Holstein Friesian Cattle—young bulls from A. R. O. dams and sired by a bull with a 31 lb. dam. W. B. JONES, Oak Grove, Michigan.

Jerseys—Bulls ready for service, bred for production. Also cows and heifers. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

Lillie Farmstead Jerseys (Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed. **COLON C. LILLIE, Coopersville, Mich.**

Dairy Bred Shorthorns—No stock at present. J. B. HUMMEL, Mason, Michigan.

Dairy Shorthorns—Large Cattle—Heavy Milkers. No stock for sale at present. W. W. KNAPP, R. No. 4, Watervliet, Mich.

Scotch Shorthorn Bulls and Heifers For Sale. W. W. KNAPP, Howell, Michigan.

FOR SALE—7 Reg. S. H. Bulls from 8 to 14 months by Victor Robin sired by International Winners. JOHN SCHMIDT, Reed City, Michigan.

SHEEP.

"OXFORDOWN SHEEP"—Descriptive and illus. PARSONS, "The Sheep Man of the East," R. No. 1, GRAND LEDGE, MICH.

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

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2 1/2 miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

SHROPSHIRE & DUROCS KOPE-KON FARM, Kinderhook, Michigan

WOOL—MUTTON Shrop. Ewes bred to imported ram: Bargains. Also P.O. Brood sows. Write today for price list. Maplewood Stock Farm, Allegan, Mich.

HOGS.

Durocs & Victorias—A Desirable Bunch of Sows of Either Breed due April and May. M. T. STORY, R. R. 48 Lowell, Mich. City Phone 55.

Quick Maturing Berkshires—Best breeding; best type. Satisfaction guaranteed or money refunded. C. S. BARTLETT, Pontiac, Mich.

BERKSHIRES—Yearling Sows bred for April & May farrowing. Also a few open Gilts. A. A. PATULLO, Deckerville, Michigan.

THIS O.I.C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD

IONIA GIRL

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U.S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." C. S. BENJAMIN, R. No. 10 Portland, Mich.

O. I. C. SWINE Write me for price on Spring Pigs, pairs and trios, not akin. Have a number of service males of good type. Write me describing of your wants. A. J. GORDEN, R. No. 2 Dor, Mich.

O. I. C. Swine, both sexes. Males weighing 100 to 225 lbs. Herd registered in O. I. C. Association. GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

O. I. C. Extra choice bred gilts, service boars and spring pigs, not akin from State Fair winners. Avondale Stock Farm, Wayne, Mich.

O. I. C's—all sold. Orders booked for April and May pigs of the choicest breeding. C. J. THOMPSON, Rockford, Michigan

O.I.C's—Eight young sows to farrow in June, spring pigs pairs and trios not akin. FRED NICKEL, R. 1, Monroe, Michigan.

O. I. C's—All sold, will book orders for March pigs. ALBERT NEWMAN, Mariette, Michigan.

O. I. C's—All ages, growthy and large. Males ready, 100 to select from. Attractive prices on young stock. H. H. JUMP, Munith, Mich.

O. I. C.—1 extra quality last March gilt Wt. 395 lbs. due to farrow April 14th, price \$125. Bred to Scott No. 1 Grand Champion. If interested write, Otto B. Schulze, 1/2 mile west of depot, Nashville, Mich.

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. SPECIAL BARGAIN in summer pigs. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

MALES ALL SOLD BUT ONE—Fancy fall gilts for sale. JOHN MCNICOLL, Station A, Bay City, Mich. Route 4, Box 81.

Duroc Jerseys For sale—A few first class fall pigs of both sexes, weight 150 lbs. to 200 lbs., price \$25 each. M. A. BRAY, Okemos, Michigan.

Reg. Durocs—Bred sows \$20 to \$50. Boars \$20 to \$25. Pigs old enough to wean \$8 to \$12 satisfaction guaranteed. F. B. COOK, R. R. 2, Stanwood, Mich.

DUROC JERSEYS—Nothing For Sale at Present. CAREY U. EDMONDS, Hastings, Michigan.

Duroc Jersey SWINE. Spring and summer pigs for sale, both sexes. I pay express, 25 years experience. J. H. BANGHART, Lansing, Mich.

POLAND CHINAS—Both Western and Home Bred either sex, all ages. Prices right. W. J. HAGELSHAW, Augusta, Mich.

Large Type P. C.—Largest in Michigan. Bred gilts and Oct. pigs that have size, bone and quality. Write your wants or come and see. Expenses paid if not as represented. Free livery. W. E. Livingston, Parma, Mich.

A BIG TYPE POLAND CHINA BOAR—Cheap or will exchange for sow. A few light weight gilts left. ROBERT NEVE, Pierson, Michigan.

POLAND CHINAS—Either sex, all ages. Something good at a low price. P. D. LONG, R. No. 8, Grand Rapids, Michigan.

P. C. BOARS AND SOWS—large type, sired by Expansion. A. A. WOOD & SON, Saline, Michigan.

LARGE Yorkshires—Choice breeding stock, all ages. L not akin, from State Fair prize-winners. Pedigrees furnished. W. C. COOK, R. 42, Box 22, Ada, Mich.

Stop Raising Short Bodied Pigs—long ones weigh more. Yorkshires produce these. For sale. WATERMAN & WATERMAN, Ann Arbor, Mich., Meadowland Farm.

Yorkshire Swine—Aug. farrowed gilts for sale. Weanling pigs ready May 1st, akin to Champion York and 2nd best carcass at I. L. S. Breeders' Swine Show at E. Lansing, Jan., 1913. GEO. McMULLEN, Grand Ledge, Michigan.

Lillie Farmstead YORKSHIRES Spring bred gilts all sold. Gilts bred for next August farrow. September pigs either sex, pairs and trios not akin. Orders booked for spring pigs. **COLON C. LILLIE, Coopersville, Mich**

DOGS.

HOUNDS FOR HUNTING Fox, Coon, Skunk and Rabbits. Send 2c stamp. W. E. LECKY, Holmesville, Ohio

FOX AND WOLF HOUNDS of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale. Send stamp for Catalogue. T. B. HUOSPETH, Sibley, Jackson Co., Mo.

Markets.

GRAINS AND SEEDS.

March 26, 1913.

Wheat.—Although the trade has been considerably interrupted the past week by the destructive storms which have ravaged the central west, the general condition of the wheat market is a little more favorable to the bull side of the trade. The chief bullish features are the heavy decrease in the visible supply, higher prices at Liverpool, stronger market in Europe and a firmer situation in Argentina. At the Detroit market on Monday cash wheat dropped 4½¢ because no buyers were present to take it. On Tuesday the decline was recovered and the bulls forced an advance of three-quarters of a cent over Saturday's price. Flour is in poor demand and millers appear to be well supplied with wheat to grind. One year ago No. 2 red wheat was quoted at \$1.00½ per bu. on the local market. Detroit quotations for the past week are as follows:

	No. 2	No. 1	Red.	White.	May.	July.
Thursday	1.06½	1.05½	1.07½	92½		
Friday	1.06½	1.05½	1.07½	92½		
Saturday	1.06½	1.05½	1.07½	92½		
Monday	1.02½	1.01½	1.07½	93		
Tuesday	1.07½	1.06½	1.07½	92½		
Wednesday	1.07½	1.06½	1.08	93		

Chicago, (March 25).—No. 2 red wheat \$1.02@1.07½; May, 89½@89¾¢ per bu. New York, (March 25).—No. 2 red wheat, \$1.12 f. o. b. aboat; May, 95½¢; July, 96¾¢ per bu.

Corn.—Local prices have improved since last week, the average being about a cent higher. In Chicago the deal opened weak Monday, but the bulls were able to turn the market into one of strength, while on Tuesday the opposite occurred. On the latter day inquiries from eastern consuming centers showed that section to be well supplied. One year ago No. 3 corn sold here at 69½¢ per bu. Detroit quotations for the past week are:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	51½	52½
Friday	51½	52½
Saturday	51½	52½
Monday	52	53
Tuesday	52	53
Wednesday	52	53

Chicago, (March 25).—No. 3 corn, 50@51½¢; No. 3 white, 52@52½¢; May, 53¢ per bushel.

Oats.—Following wheat and corn, this cereal made a slight improvement during the week, a fraction of a cent being added to the quotations. There is a good local demand for oats and receipts continue light. At Chicago, however, on Tuesday the grain was without buying support. One year ago standard oats were reported on the local market at 57¢ per bu. Prices at Detroit the past week are:

	Standard.	No. 3
	White.	White.
Thursday	35	34
Friday	35	34
Saturday	35½	34½
Monday	35½	34½
Tuesday	35½	34½
Wednesday	35½	34½

Chicago, (March 25).—No. 2 white, 34½@36¢; standard, 34@34½¢; May, 33½¢ per bushel.

Beans.—The first evidence of a change in the bean trade was indicated here the past week, when an advance of 5¢ was offered for cash. Since the advance there has been a moderate demand holding the trade steady at the higher level. Present quotations are, for immediate and prompt shipment, \$1.85; May, 1.95 per bu.

Chicago, (March 25).—The best grade of beans are finding an open market, while lower grades move slowly. Pea beans, hand-picked, fancy, \$2.20@2.25; choice, \$2.05@2.10; prime, \$1.80@1.85; red kidneys, \$1.75@2.25; white kidneys, \$2.50@2.75 per bu.

Clover Seed.—There is an active trade in the seed market and prices are higher and firm. Cash clover seed is now quoted at \$12, an advance of 40¢ over last week. Alsike is down a little, now being quoted at \$12.40 per bu.

Toledo, (March 25).—Both common and alsike seed advanced on this market, the greatest increase being in the former. Quotations are: Cash and March, \$12.30; April, \$11.67½; alsike, prime, cash and March, \$12.55 per bu.

Timothy Seed.—No change on the local market, sales being made at \$1.70 per bu. The trade, however, is active.

Toledo, (March 25).—No change since the advance noted last week. Cash timothy quoted at \$1.75 per bu.

Rye.—The local market is dull and steady at 62¢ per bu for cash No. 2.

Chicago, (March 25).—Rye is a little lower, now selling at 58@60¢ for cash No. 2.

Barley.—Chicago, (March 25).—Market about steady with range of prices 45@68¢ per bu., according to grade.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.60; second, \$5.20; straight, \$4.90; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$23; coarse middlings, \$23; fine middlings, \$27; cracked corn, \$25; coarse corn meal, \$22.50; corn and oat chop, \$22 per ton.

Hay.—While quotations remain unchanged, the market is oversupplied and demand is sluggish. Carlots on track at Detroit, No. 1 timothy, \$13.50@14; No.

2, \$11@12; light mixed, \$12.50@13; No. 1 mixed, \$11@12 per ton. Chicago.—Market lower. Choice timothy, \$15.50@16.50 per ton; No. 1, \$13.50@14.50; No. 2 and No. 1 mixed, \$11.50@12.50; No. 3 and No. 2 mixed, \$5.50@9.50; clover, \$5.50@10.50; alfalfa, choice, \$17@18; do. No. 1, \$15@16.50 per ton. Straw.—Steady. Carlot prices on wheat and oat straw on Detroit market are \$8@8.50 per ton; rye straw, \$9@10 per ton. Chicago.—Lower. Rye, \$6.50@7; wheat straw, \$4.50@5.50; oat straw, \$5@5.50 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—While buyers are dealing more cautiously because of the approach of the time when production will be largely increased, the local market had strength sufficient last week to regain a loss of 1¢ in creameries. Dairy offerings unchanged. Detroit jobbing prices rule as follows: Fancy creamery, 35¢ per lb.; firsts, 33½¢; dairy, 22¢; packing stock 20¢.

Eggs.—The removal of the Easter demand has eased up the egg deal and prices rule a little lower. Supplies ample in all markets but buying on storage account promises to prevent a serious slump. At Detroit current offerings, candled, and cases included, are quoted at 17½¢ per dozen.

Elgin.—Market firm at 34¢. Chicago.—Market very irregular, being largely a hand-to-mouth affair with prices governed largely by supplies in sight. Top creameries are a shade lower while some of the under grades are steady to a fraction higher. Dairies have recovered last week's loss, while packing stock is firm and higher. Quotations are: Extra creamery, 35¢; extra firsts, 34@34½¢; firsts, 33@34¢; seconds, 31@32¢; dairy extras, 32¢; firsts, 27@28¢; seconds, 25¢; packing stock, 12@24¢ as to quality. New York.—Creameries and packing stock higher and very firm. Dairies unchanged. Creamery extras, 36½@37¢; firsts, 35½@36½¢; seconds, 34@34½¢; state dairy, best, 34@35¢; good to prime, 30@33¢; common to fair, 25@29¢; packing, 20@24¢ as to quality.

Chicago.—Market firm under a fractional decline. Receipts about double those of a year ago but being well taken care of. Miscellaneous receipts, cases included, are quoted at 16½@17¢; do. cases returned, 16@16½¢; ordinary firsts, 16@16½¢; firsts, 17¢.

New York.—Holding up well under heavy offerings. Feeling firm. Fresh gathered extras, 19½¢; firsts, 18½@18¾¢; seconds and lower grades, 17½@18¢ per dozen.

Poultry.—All kinds of poultry is still scarce and the record-breaking values recently established are still in force. Ducks on a par with turkeys and even outselling them in some markets. Quotations: Live—Spring chickens, 17@17½¢; hens, 17@17½¢; No. 2 hens, 15¢; old roosters, 12¢; turkeys, 19@20¢; geese, 15@15½¢; ducks, 18@20¢ per lb.

Chicago.—Chickens quoted lower; ducks higher. All kinds in moderate supply. The quotations on live are: Turkeys, good weight, 15¢; others, 10¢; fowls, good, 16¢; spring chickens, 16½¢; ducks, large, fat, 18¢; do., thin, ordinary, 15@16¢; geese, full feathered, 12¢; do., plucked, 8@10¢ per lb.

New York.—Dressed stock firm; fowls and turkeys quoted higher. Fresh killed western chickens, 14¢; fowls, 15@17½¢; turkeys, 15@24½¢ per lb.

Cheese.—Wholesale lots, Michigan flats new, 15@15½¢; old, 17@17½¢; New York flats, 18½@19¢; brick cream, 16@16½¢; limburger, 18½@19½¢.

Veal.—Detroit.—Scarce and again higher. Fancy, 15½@16¢; common, 12@14¢. Chicago.—Fair to choice, 80@110 lbs., 14@14½¢; extra fancy stock, 15¢; fair to good chunky, 13@14¢.

FRUITS AND VEGETABLES.

Apples.—Tone firmer with prices unchanged. The Detroit quotations now are: Fancy, per bbl., \$2.50@3.50; ordinary, 75¢@1.50 per bbl.

Chicago.—Deal unsatisfactory to sellers. Standard winter varieties, \$2@3.50 per bbl. Lower grades at buyers' prices.

Potatoes.—Ample supplies keep values down and give buyers control. Michigan stock in car lots, 43@45¢ per bu.

Chicago.—Receipts slightly larger this week, but prices remain steady. Fancy Michigan stock, 45@48¢ per bu; best Wisconsin, 42@48¢; Minnesota, 42@48¢.

New York.—Plentiful and easy. Western stock, \$1.70@1.75 per 180-lb. bag.

DETROIT RETAIL PRICES.

Eastern Market.—Tuesday morning's market was small because of the storms. Potatoes were selling at 50@55¢; apples, 50¢@1; parsnips, 30@35¢; carrots, 35¢; cabbage, 20@25¢; turnips, 35¢ per bu; lettuce, 75@85¢ basket. Loose hay slow at \$16@18 per ton.

Grand Rapids.

The city market will open April 15 and many of the stalls have been rented for the season. The potato market continues weak, with prices at outside stations ranging around 30¢. Hay also stays at a low figure, \$10@13 being the range for timothy and mixed. The egg market fluctuates greatly and while 18¢ was paid Tuesday, indications point to a drop of 3@4¢ before the week is over. Dairy butter is worth 26¢. Dressed hogs continue firm at 11½@11¾¢.

THE LIVE STOCK MARKETS.

Buffalo.

March 24, 1913. (Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York).

Receipts of stock here today as follows: Cattle, 120 cars; hogs, 60 double decks; sheep and lambs, 45 double decks; calves 850 head.

With 120 cars of cattle on our market

here today, and with a driving rain storm all the forenoon, our market, quality considered, was just about steady with last Monday, except on the common cows and heifers, which sold from 10@15¢ per cwt. lower. At the close, about everything was cleaned up, and the market closed in about a steady position.

We quote: Best 1350 to 1500-lb. steers, \$8.75@9; good to prime 1200 to 1300-lb. do., \$8.50@8.65; good to prime 1100 to 1200-lb. do., \$8@8.25; coarse, plainish 1100 to 1200-lb. do., \$7.50@7.75; medium butcher steers, 1000 to 1100, \$7.25@7.75; butcher steers, 950 to 1000, \$7@7.50; light butcher steers, \$6.50@7.25; best fat cows, \$6.75@7.25; butcher cows, \$5@6; best fat heifers, \$7.85@8.25; medium butcher heifers, \$6.75@7.10; light do., \$6@6.25; light butcher cows, \$4.25@5; cutters, \$4.25@4.75; trimmers, \$3.50@3.75; stock heifers, \$5@6; best feeding steers, dehorned, \$7@7.50; light common stockers, \$6.25@6.50; prime export bulls, \$7@7.25; best butcher bulls, \$6.50@7; bologna bulls, \$5.75@6.25; stock bulls, \$5@5.50; best milkers and springers, \$65@80; common to fair kind do., \$40@50.

With a moderate supply of hogs on sale here today, 60 double decks, the market opened active and mostly a dime higher than last week's close. Packers landed a few heavy hogs today at \$9.65, but the bulk of the crop that went with a packers' sort went over the scales at \$9.70, and the majority of the shipping grades sold on a basis of \$9.75. Roughs, mostly \$8.70; stags, \$7@8.

The sheep and lamb market was fairly active today on the handy kind but slow on heavy; prices about a quarter higher than the close of last week. Most of the choice lambs selling from \$9.15@9.25. Heavy lambs were slow sale; lambs weighing over 88 lbs. very little demand. Look for about steady prices the balance of the week, with moderate receipts.

We quote: Choice lambs, \$9.15@9.25; cull to fair do., \$7@9; yearling wethers, \$8@8.50; yearling ewes, \$7@7.50; wethers, \$7@7.25; handy ewes, \$6.25@6.50; heavy ewes, \$6@6.25; cull sheep, \$3.50@5.50; bucks, \$4@5; veals, choice to extra, \$11@11.50; fair to good, \$8.50@10.50; heavy calves, \$4.50@6.

Chicago, March 24, 1913.

Cattle. Hogs. Sheep.
Received today 18,000 38,000 20,000
Same day last year.. 20,248 55,421 36,556
Received last week.. 40,257 116,725 76,353
Same week last year.. 54,899 130,660 76,599

Early reports this morning made today's receipts much greater than later advices, for a bad wreck on the North-western Railroad in Tama, Iowa, delayed many consignments, many cars being unloaded there. Cattle at first were slow, but sold at steady prices for steers later, with butcher stock especially active. Hogs became active and firmer as the day advanced, with many sales 5¢ higher. Sales ranged at \$8.80@9.22½. Hogs received last week averaged in weight 238 lbs., compared with 231 lbs. a month earlier, 217 lbs. a year ago, 240 lbs. two years ago and 219 lbs. three years ago. Sheep and lambs started off with a slow demand, buyers bidding lower prices, but it was thought that sellers would be able to obtain former values, at least for fat desirable offerings, with such limited arrivals. The receipts consisted chiefly of Colorado-Mexican lambs, with the average quality poorer than heretofore.

Cattle have been settling on a lower basis for a week past in spite of the decreasing receipts, with the general demand of only moderate proportions. Only about 17,000 head arrived Monday and but 15,900 on Wednesday, yet only the best heavy lots sold up the first day, the rise being but 10¢, while two days later a sharp decline took place. Better evidence of the extremely limited consumption of beef everywhere could hardly be found. A large share of the beef steers marketed during the week went at \$7.75@8.85, with the commoner to fair class of light-weight, warmed-up cattle going at \$7.15@8 and the choicer class of corn-fed cattle of strong weight taken at \$8.70@9.20, the top being a nickel higher than a week earlier. Medium lots of short-fed steers sold at \$8.10 and upward, with good corn-fed cattle taken at \$8.40@8.65. Common to prime yearlings brought \$7.50@8.90, and there was a fair traffic in butcher lots of cows and heifers at \$5.10@8. A few heifers selling singly at \$8.25@8.50. Cutters went at \$5@7.40, bulls at \$3.25@4.45 and bulls at \$5@7.40, bulls selling relatively better than female cattle. There was a big smash-up in calf prices, sales ranging at \$5.25@11.35, the top comparing with \$12 a week earlier. Hogs continue on their upward course, and it has become a regular thing to see new high records for the year every week. A new top was reached last week when \$9.25 was paid for prime light hogs, the highest figure attained since last October. Of course, reactions follow these sharp advances, but the undertone is unmistakably in an upward direction, and the general opinion is that further advances are to follow before top is finally reached. Not only are swine coming to market averaging well in quality, but stockmen are making them heavier, and within a month there has been a gain of ten pounds in the average weight of the receipts.

Sheep and lambs have continued for still another week to sell much higher than in former years, especially lambs, although they failed to sell near the best prices of the season. They comprise the principal part of the daily receipts, Colorado lambs greatly predominating, with Colorado-Mexican lambs making their appearance in fair numbers. Prices for sheep and yearlings have been much better maintained of late as a rule than for lambs, as they comprised a moderate proportion of the offerings, while the high prices asked for lambs caused many slaughterers to turn to the lower-priced live muttons. Shearing and feeding lambs come high, and sales are brisk.



Paint that protects farm equipment

Some farmers neglect their vehicles and implements—fail to keep them well painted—and they are "worn out" before their time.

Every year such a farmer has to buy a "new binder," a "new wagon," or new something else.

It will pay you to keep your wagons and machinery painted with **Lowe Brothers' Wagon Paint**. It is especially adapted to resist the severe action of the elements and insures the maximum life and service from your equipment.

Lowe Brothers' Carriage Gloss gives a hard surface with perfect gloss, requiring no varnish to finish. Paint your buildings with

Lowe Brothers
High Standard
LIQUID PAINT

and you will have the best possible protection at most reasonable cost, for it works easier, goes further and wears longer than other paints. It is "the paint that gives best results."

Valuable Paint Books FREE

Let us send you our valuable illustrated books, "Homes Attractive From Gate to Carrot" and "Guide to Farm Painting," showing how to secure best results with vehicles, barns, house and interior decoration. Sent free on request. Write today.

The
Lowe Brothers Co.
499 E. Third Street
Dayton, Ohio
Boston New York Chicago
Kansas City
Lowe Bros. Ltd., Toronto, Can.



No Fear of Break Downs

You need an engine you can depend on when you're shelling.

The 5 h. p. Rumely-Falk Kerosene Engine

is well built, reliable and cheap to run. Burns cheap kerosene under all conditions. Throttle governed, even running. Belted to the

Rumely-Watts No. 2 Corn Sheller

you have a combination which gets all the corn in the shortest time. Capacity, to keep you more than busy. Both engine and sheller will stand the hardest usage in cross country shelling or elevator work. Larger outfits if desired. Rumely-Falk Kerosene Engines are made to fit any condition, skid-mounted, stationary or portable.

Write for Data Book No. 118a on Rumely-Falk Kerosene Engines, and Data Book, No. 351 on the Rumely-Watts Corn Sheller.

RUMELY PRODUCTS CO.
(Incorporated)
Power-Farming Machinery
Battle Creek, Mich.
Home Office: La Porte, Ind.
560

MAIN FEATURE
OF A SILO
Is a Good Door.
We Have It. Investigate.
Write us for our BOOK of SILOS.
BOURBON SILO CO.
BOURBON, INDIANA.

Mention the Michigan Farmer when writing to advertisers.

THIS IS THE FIRST EDITION.

In the first edition the Detroit Live stock markets are reports of last week; all other markets are right up to date. Thursday's Detroit Live Stock markets are given in the last edition. The first edition is mailed Thursday, the last edition Friday morning. The first edition is mailed to those who care more to get the paper early than they do for Thursday's Detroit Live Stock market report. You may have any edition desired. Subscribers may change from one edition to another by dropping us a card to that effect.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
March 20, 1913.

Receipts, 1314. Market steady at Wednesday's prices; 10@15c lower than last week.

We quote: Best steers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.50@8; do, 800 to 1000, \$7@7.50; do, that are fat, 500 to 700, \$6@7; choice fat cows, \$6@6.75; good do., \$5@5.50; common do., \$4.50@4.75; canners, \$3.75@4.25; choice heavy bulls, \$6.50@7.25; fair to good bolognas, bulls, \$5.75@6.25; stock bulls, \$5.25@5.75; choice feeding steers, 800 to 1000, \$7@7.60; fair do., 800 to 1000, \$6@6.75; choice stockers, 500 to 700, \$6.50@7; fair do., 500 to 700, \$5.50@6; stock heifers, \$5@5.50; milkers, large, young, medium age, \$5@7.50; common milkers, \$3.50@4.50.

Bishop, B. & H. sold Nagle P. Co. 15 steers av 1115 at \$8, 2 bulls av 1600 at \$7, 3 heifers av 600 at \$6; to Sutton 1 cow weighing 950 at \$5; to Hammond, S. & Co. 2 do av 790 at \$4, 7 steers av 963 at \$7.85, 3 do av 733 at \$6.75, 1 do weighing 1090 at \$8; to Rattkowsky 3 cows av 857 at \$5, 4 do av 992 at \$5.50, 2 do av 1040 at \$5.50, 1 steer weighing 590 at \$7, 1 canner weighing 940 at \$4.50, 2 bulls av 921 at \$6, 1 do weighing 1240 at \$6.25, 4 cows av 830 at \$4.10; to Kamman B. Co. 25 steers av 841 at \$7.25; to Goode 11 cows av 1045 at \$5.75, 1 do weighing 1030 at \$5; to Mich. B. Co. 22 butchers av 950 at \$7.45, 3 cows av 980 at \$5.10; to Newton B. Co. 14 steers av 801 at \$7.25, 3 do av 833 at \$6.50, 1 cow weighing 900 at \$4; to Breitenbeck 1 do weighing 960 at \$5.75, 5 do av 1000 at \$5.75; to Hammond, S. & Co. 1 bull weighing 1120 at \$6.25, 4 steers av 912 at \$7.25, 5 steers av 584 at \$6.25, 6 cows av 925 at \$4.50, 6 do av 936 at \$5.25, 5 do av 1164 at \$6.25, 3 bulls av 1293 at \$6.25, 1 do weighing 780 at \$5.75, 1 steer weighing 1050 at \$7.25, 7 heifers av 986 at \$7.65, 4 do av 610 at \$6.35.

Roe Com. Co. sold Newton B. Co. 1 cow weighing 1000 at \$4.50, 1 do weighing 930 at \$4, 1 do weighing 1060 at \$5.25, 7 steers av 654 at \$6.50; to Sullivan P. Co. 2 cows av 980 at \$5, 12 steers av 901 at \$7.25; to Kamman B. Co. 18 do av 914 at \$7.50, 1 cow weighing 1080 at \$6; to Nagle P. Co. 2 bulls av 1420 at \$6.75; to Hammond, S. & Co. 2 canners av 810 at \$4.25, 2 cows av 830 at \$5.25, 7 do av 1086 at \$5.85, 2 do av 945 at \$4.50, 2 do av 770 at \$5; to Newton B. Co. 14 butchers av 646 at \$6.50; to Gerisch 26 do av 938 at \$7.50; to Fry 8 do av 921 at \$7.50; to Nagle P. Co. 14 steers av 1112 at \$8, 3 do av 883 at \$7.25; to Thompson Bros. 3 cows av 883 at \$6.50.

Spicer & R. sold Heinrich 4 steers av 980 at \$7.65; to Holly 1 bull weighing 820 at \$5.75, 1 cow weighing 1100 at \$4.50, 1 do weighing 920 at \$5.50; to Sullivan P. Co. 1 do weighing 1050 at \$6, 4 do av 730 at \$4.50, 4 do av 830 at \$6, 9 butchers av 856 at \$6.85, 6 steers av 746 at \$6.90; to Newton B. Co. 2 cows av 835 at \$4.25, 3 do av 803 at \$4.25; to Applebaum 6 butchers av 708 at \$6.40; to Holly 3 stockers av 617 at \$5.75; to Hammond, S. & Co. 1 heifer weighing 500 at \$5.75, 2 cows av 865 at \$4.25; to Nagle P. Co. 12 steers av 978 at \$7.50, 5 do av 928 at \$7.50; to Hammond, S. & Co. 5 cows av 982 at \$5.50, 4 do av 850 at \$4.10; to Sullivan P. Co. 13 butchers av 852 at \$7; to Holly 5 cows av 940 at \$5; to Newton B. Co. 7 butchers av 714 at \$6.40.

Haley & M. sold Mason B. Co. 1 bull weighing 1210 at \$7.25, 6 butchers av 957 at \$7.25; to Sullivan P. Co. 1 bull weighing 1170 at \$6, 3 steers av 953 at \$7.35, 1 cow weighing 930 at \$5, 7 do av 1081 at \$6.10, 5 heifers av 762 at \$6, 3 do av 903 at \$7.40, 5 cows av 1006 at \$5.75; to Newton B. Co. 1 cow weighing 810 at \$4; to Bresnahan 3 heifers av 660 at \$5.50, 6 do av 800 at \$6.40; to Breitenbeck 7 cows av 1070 at \$5.75, 3 do av 883 at \$4.50, 1 do weighing 830 at \$4; to Hirschleman 2 steers av 625 at \$6.50; to Rattkowsky 4 cows av 965 at \$5.75, 1 bull weighing 1580 at \$6.75; to Kull 1 steer weighing 1000 at \$7.40, 8 do av 954 at \$7.20, 1 do weighing 1050 at \$7.75, 3 butchers av 687 at \$6.50, 1 bull weighing 1150 at \$6.50; to Mich. B. Co. 1 cow weighing 1050 at \$5.50, 3 steers av 683 at \$6.60.

Bennett & S. sold Hammond, S. & Co. 9 steers av 913 at \$7, 3 cows av 983 at \$6, 1 bull weighing 640 at \$5.

Weeks sold Waugh 13 feeders av 924 at \$7.60.

Veal Calves.

Receipts, 632. Market steady at last week's opening; 50c lower than on Wednesday. Best, \$10.50@12; others, \$5@9.50; milch cows and springers steady.

Bishop, B. & H. sold Mich. B. Co. 2 av 130 at \$12, 3 av 130 at \$11.50, 9 av 135 at \$12; to Goode 15 av 130 at \$11.50; to Parker, W. & Co. 23 av 145 at \$12.50, 4 av 130 at \$12, 5 av 145 at \$12.50; to Goode 11 av 125 at \$11, 17 av 135 at \$11.50; to Hammond, S. & Co. 6 av 150 at \$12.50; to Burnstine 1 weighing 130 at \$10, 2 av 190 at \$12, 1 weighing 170 at \$12.50, 3 av 115 at \$11, 4 av 150 at \$12.50, 1 weighing 190 at \$10, 19 av 135 at \$12; to Sullivan P. Co. 2 av 140 at \$8.50, 22 av 145 at \$11.50; to Burnstine 4 av 95 at \$10, 26 av 135 at \$12; to McGuire 19 av 130 at \$11.75; to Mich. B. Co. 2 av 140 at \$12, 1 weighing 170 at \$12, 5 av 125 at \$12; to Sullivan P. Co. 7 av 135 at \$12; to Goode 4 av 120 at \$9; to Kull 10 av 137 at \$12, 7 av 150 at \$12.

Haley & M. sold Mich. B. Co. 1 weighing 130 at \$12; to Parker, W. & Co. 3 av 160 at \$12.50, 9 av 135 at \$12.50, 1 weighing 140 at \$12.50.

Spicer & R. sold Sullivan P. Co. 3 av 165 at \$12.50, 1 weighing 110 at \$9, 1 weighing 170 at \$12.50, 1 weighing 110 at \$10; to Rattkowsky 1 weighing 120 at \$11; to Parker, W. & Co. 1 weighing 130 at \$12; to Thompson Bros. 5 av 150 at \$12; Haddell & C. sold Bray 11 av 150 at \$11.

Sheep and Lambs.

Receipts, 2983. Market steady at Wednesday's and last week's prices. Best lambs, \$8.75; fair to good lambs, \$8@8.50; light to common lambs, \$6.75@7.50; yearlings, \$7.75@8.10; fair to good sheep, \$5.25@6.25; culs and common, \$3.75@4.50.

Bishop, B. & H. sold Childs 240 lambs av 68 at \$8.25; to Nagle P. Co. 28 do av 80 at \$8.50; to Sullivan P. Co. 53 sheep av 88 at \$6, 35 lambs av 54 at \$7, 14 sheep av 120 at \$5.75; to Thompson Bros. 43 do av 88 at \$6; to Parker, W. & Co. 101 lambs av 90 at \$8.10, 97 do av 90 at \$8; to Mich. B. Co. 11 do av 55 at \$6, 8 sheep av 80 at \$6.50, 31 lambs av 70 at \$8.15, 27 do av 58 at \$7.65, 164 do av 70 at \$8.75; to Parker, W. & Co. 6 do av 68 at \$8, 31 do av 60 at \$8; to Hayes 12 do av 50 at \$6.50; to Nagle P. Co. 56 do av 85 at \$8.75, 69 do av 70 at \$8.40; to Hayes 13 do av 50 at \$7, 17 do av 40 at \$6; to Hammond, S. & Co. 2 spring lambs av 75 at \$13; to Swift & Co. 28 sheep av 90 at \$6.50, 2 do av 150 at \$5.75, 35 do av 105 at \$5.75, 23 do av 110 at \$5.75, 19 do av 130 at \$5.85, 53 do av 90 at \$6.

Spicer & R. sold Thompson Bros. 20 sheep av 75 at \$5.65; to Nagle P. Co. 83 lambs av 85 at \$8.75; to Mich. B. Co. 14 lambs av 60 at \$7, 19 sheep av 80 at \$5.75, 6 lambs av 50 at \$6.50, 4 sheep av 70 at \$5; to Thompson Bros. 28 lambs av 55 at \$6.60; to Mich. B. Co. 9 do av 50 at \$6.60, 9 sheep av 120 at \$5.60.

Sharp sold Mich. B. Co. 4 sheep av 120 at \$5.50, 39 lambs av 75 at \$8.50.

Glenn sold same 29 lambs av 65 at \$8.40, 20 sheep av 107 at \$5.50.

Haddell & C. sold Bray 11 lambs av 47 at \$7.

Bennett & S. sold Hayes 11 lambs av 60 at \$7.60.

Hogs.

Receipts, 3314. Market 10@15c lower than Wednesday or last week; none sold up to noon; below are prospects.

Range of prices: Light to good butchers, \$9@9.10; pigs, \$9.15; mixed, \$9; stags one-third off.

Bishop, B. & H. sold Parker, W. & Co. 1610 av 180 at \$9.10.

Roe Com. Co. sold Sullivan P. Co. 550 av 190 at \$9.10.

Haley & M. sold Hammond, S. & Co. 430 av 175 at \$9.10.

Spicer & R. sold same 415 av 170 at \$9.10.

Sundry shippers sold same 250 av 170 at \$9.10.

Friday's Market.

March 21, 1913.

Cattle.

Receipts this week, 1517; last week, 1695. Market strong at Thursday's prices. We quote: Best steers, \$8; steers and heifers, 1000 to 1200, \$7.50@8; do, 800 to 1000, \$7@7.50; do, that are fat, 500 to 700, \$6@7; choice fat cows, \$6@6.50; good fat cows, \$5@5.50; common cows, \$4.50@4.75; canners, \$3.75@4.25; choice heavy bulls, \$6.50@7; fair to good bolognas, \$5.75@6.25; stock bulls, \$5@5.50; choice feeding steers, 800 to 1000, \$7@7.50; fair do., 800 to 1000, \$6@6.75; choice stockers, 500 to 700, \$5.25@5.75; stock heifers, \$5@5.25; milkers, large, young, medium age, \$5@7.00; common milkers, \$3.50@4.50.

Veal Calves.

Receipts this week, 767; last week, 842. Market \$1.50 per cwt. lower; best, \$10@11; others, \$5@9.50.

Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 4047; last week, 4337. Market for sheep steady; lambs, 15 @25c lower. Best lambs, \$8.50; fair do., \$7.75@8; light to common lambs, \$6@7.50; yearlings, \$8; fair to good sheep, \$5.50@6.50; culs and common, \$3.50@4.75.

Hogs.

Receipts this week, 4171; last week, 4448. Market steady at Thursday's prices; few choice trifle higher. Range of prices: Light to good butchers, \$9.10@9.15; pigs, \$9.15; light yorkers, \$9.10; stags one-third off.

The remarkable boom that has taken place recently in the hog market was predicted earlier in the winter season, yet it has come as somewhat of a surprise to many farmers, who now express regret that they were so hasty in letting go of their hogs prematurely. In a way the packers and their press agents, who were a unit some time ago in predicting a slump to a much lower basis of prices have done a serious injury, not only to the stockmen owning the hogs, but also to the multitude of consumers of fresh and cured hog meats, as the source of supply has been savagely cut into. How high hogs will ultimately sell is a subject much debated everywhere, and the answer most reasonable is that hogs, like lambs and sheep, will sell as high as they can without materially disturbing consumption. Obviously, there must be Roe Com. Co. sold Hammond, S. & Co. 4 av 145 at \$9, 22 av 140 at \$12; to Thompson Bros. 2 av 145 at \$12.

We Want HAY & STRAW

We get the top price on consignments, make liberal advancements and prompt remittances.

Daniel McCaffrey's Sons Co.

PITTSBURG, PA.

Reference, Washington Trust Company, or any bank in City

Get A Canadian Home In Western Canada's

Free Homestead Area

Manitoba

For Grain Growing and Cattle Raising

This Province has no superior

and in profitable agriculture shows an

unbroken period of over a quarter of a

century.

Perfect Climate; Good Markets; Rail-

ways Convenient; Soil the very best, and

social conditions most desirable.

Vacant lands adjacent to Free Home-

steads may be purchased and also in the

older Districts lands may be bought at

reasonable prices.

For Further Particulars, address

M. V. McInnes
176 Jefferson Ave.
Detroit, Mich.

or write Superintendent of Immigration,
Ottawa, Canada.

FOR INFORMATION AS TO LANDS IN

The Nation's

Garden Spot-

THAT GREAT FRUIT AND TRUCK

GROWING SECTION-

along the

Atlantic Coast Line

RAILROAD

in Virginia, North and South Carolina,
Georgia, Alabama and Florida, write to

WILBUR MCCOY, E. N. CLARK,
A. & I. Agt. for Florida, A. & I. Agt. for Virginia
Alabama, Georgia, and the Carolinas,
Jacksonville, Fla. Wilmington, N. C.

Best Conditioner
Worm Expeller
"Guaranteed or Money Back."
Coughs, Distemper, Indigestion,
NEWTON'S Large for Horses.
At druggists' or sent postpaid.
THE NEWTON REMEDY CO., TOLEDO, OHIO

HAY

Ship your carload lots to us,
THE E. L. RICHMOND CO.,
Detroit, Michigan.

POULTRY FARM WANTED

Small established plant
near Detroit, Saginaw or
Bay City, or would build 10 to 20 acres unimproved.
CHARLES A. FITZGERRELL, Benton, Ill.

FARMS AND FARM LANDS

FOR SALE OR EXCHANGE

Widow Must Sell

560-Acre Stock Farm, \$6700

The four big barns on this New York State farm are needed to accommodate the cows it keeps and crops it produces. These barns are worth price asked for land, residence, barns and all; splendid location, only 3 miles to railroad town and market; 200 acres mostly level fields, great quantities hay and general crops; 125 fruit trees, spring and brook-watered pasture for 15 cows and 110 acres valuable timber; good 7-room residence, barn supplied with running water; owner a widow unable to care for it; if taken immediately a widow unable to care for it; if taken immediately only \$6700, easy terms. All details and traveling directions to see this and hundreds of other good farms from \$1000 up, many with live stock and machinery included, in all the best farming sections of the East, page 35, "Strout's Farm Catalog '13," just out, gives accurate, valuable information regarding climate, soils, crops raised, markets, schools, railroads, etc. Get the facts. Write today for free copy. E. A. STROUT FARM AGENCY, Station 101, Union Bank Bldg., Pittsburg, Pa.

For Sale Or Exchange

First class 237 acre stock farm in Allegan County, Michigan, 3 1/2 miles from Plainwell, 1 1/2 miles from interurban. Fair buildings, dark loam soil, lies level, no waste land. Price \$75 per acre. Will take good income property or stock of general merchandise for one-half its value.

HARRY THOMASMA, Owner,
433-438 Houseman Bldg., Grand Rapids, Mich.

Seeing is Believing.

I will sell my 160-acre farm, located within 1/4 mile of City of Gladwin, Mich. Soil of black loam, level, with 70 acres improved and stumped. Entirely fenced with woven wire, has a fine flowing well, new six-room frame house and log barn. Considered one of the best fertile farms in county. Wish to retire from farming and will sell for \$65 per acre. Call on or write W. B. TUBBS, Gladwin, Michigan.

"Kuhn California Project"

In the Sacramento Valley

The canal, drainage and road construction completed, these lands are now being sold in small subdivisions. The soil, a deep alluvial silt loam, the best in the valley.

RAILROAD PASSES THROUGH THE LAND

Towns, Schools and Churches Near At Hand

CROPS—All kinds of fruits (including oranges and lemons); vegetables, seeds, berries, alfalfa, cattle, hogs and chickens.

WATER SUPPLY—Unlimited. Water delivered to boundary of every 40 acre tract. Canal and drainage system perfect.

TRANSPORTATION—Both by rail and river to the great metropolitan centers.

LAND PRICES—Low, and terms of payment easy.

If you want to secure a home in California, where climate, soil and water combine to work for you overtime, fill in this advertisement, and mail to us for full particulars.

FARMS FOR SALE

Here is the best bargain in Michigan. 160 acres clay loam hardwood land just rolling enough for good natural drainage, 60 acres improved, fine 2-story house with 9 rooms and basement which cost \$2000 has hardwood finish inside. Two good wells, granary and shed, barn and stable. The unimproved land is easily cleared and affords excellent pasture nicely located with lands adjoining selling for \$20 to \$30 per acre. Owing to ill health owner will sell for \$6000. THINK OF IT only \$37.50 per acre. You will double your money in short time. We have other farms which are splendid values. Write or come at once.

FARM SALES CO., Gladwin, Michigan.

ALBERTA CANADA

For cheap improved farms in the best Mixed Farming section of Alberta, (\$15 per acre up). Also for good investments in City Properties, WRITE US. All available information free. We charge you no fee if you buy through us, as the seller pays nicely usual commission. WRITE US TODAY. ECKFORD & ATKINSON, ECKVILLE, ALBERTA, CANADA.

FOR SALE—TWO 80 ACRE FARMS.

One with small house and barn, 30 acres cleared, balance stump land, some fruit, trout stream through it, level lay, price \$1200, 1/4 down, balance yearly payments of \$100. THE OTHER, A good 8 room house, barn, granary, hog house, 1200 bushel capacity cement cellar, other needed buildings, 50 acres cleared, some fruit, 30 acres wood lot (fenced for pasture), all level good land and a bargain at \$2400. Terms: 1/4 down, balance to suit, can be paid with timber. Write or call on J. M. McFARREN, Rapid City, Mich.

Alfalfa Lands for Sale

Michigan hardwood cut over lands, some improved, most productive virgin soil out of doors, three bumper crops alfalfa per year, excellent for all grains and grasses and fruit. Terms and prices easy to attract quick development. Write

Thad. B. PRESTON, Onaway, Mich.

FREE

Literature will be sent to anyone interested in the wonderful Sacramento Valley, the richest valley in the world.

Unlimited opportunities. Thousands of acres available at right prices. The place for the man wanting a home in the finest climate on earth. Write to a public organization that gives reliable information. Sacramento Valley Development Association, Sacramento, CALIFORNIA

Western Canada Farm Lands.

The Canadian Pacific Railway offers you choice virgin farming lands throughout Alberta and Saskatchewan. Prices \$11 to \$20 per acre. \$2000 loaned by company for improvements, also \$1000 loaned for live stock. Settlers have 20 years to pay. A splendid opportunity to start in profitable farming. Special cheap excursions weekly from Detroit and Chicago. You must see and be satisfied before buying from us. Write for particulars.

C. P. R. Land Dept., Hammond Bldg., Detroit.

For Sale—For immediate 80 Acres

choice level black loam land, located just outside corporation, City of Gladwin, Gladwin County, Mich. 70 acres cleared, large 2-story ten-room frame house, new frame barn 40x60. A fine opportunity for enjoying farm life with all the city advantages. Price \$3000, is sure to bring \$100 per acre in a very short time. E. A. COAN, Gladwin, Michigan.

CANADA LAND

Write for our 32 page booklet containing 63 photographic views, and statistical and detailed information about our lands in east central Saskatchewan. It's free. The Walsh Land Co., Winnipeg, Canada.

BUY NEW YORK FARMS NOW.

Best Lands. Best Crops. Best Homes. Biggest barns. Finest schools, churches, roads and transportation. For list of New York farms address:

McBURNLEY & CO., Fisher Building, Chicago, Ill.

IF WE WOULD GIVE YOU A 40-ACRE FARM FREE

Along our line of railroad, would you be willing to tell your friends about our land opening? For particulars address Mr. J. B. Clark, Land Commissioner, Live Oak, Perry & Gulf Railroad Co., Box 139, Live Oak, Florida.

Fertile Farms

and unimproved lands in Delaware, diversified farming, live stock, delicious fruits and ideal homes. For information address, State Board of Agriculture, Dover, Delaware

FOR SALE—40 ACRES, 7 miles northeast of Lake-

view, near church, school and store. Buildings fair with silo, 30 acres cleared, 240 rods woven wire fence. Address C. W. FUNK, R. 5, Ionia, Mich.

OUR FARM LIST

saves you time and money in buying a farm. Ask for it. MICHIGAN FARM HOME CO., Greenville, Mich.

VIRGINIA farm and timber catalogue

just issued by

GEORGE C. POINDEXTER & CO., Richmond, Va.

211 Mutual Building, "SEND FOR ONE TODAY"

WHY PAY RENT

when you can buy the Best Land in Michigan at from \$12 to \$15 an acre.

near Saginaw and Bay City. Write for map and particulars. Clear title and easy terms. Staffed Bros., owners 15 Merrill Bldg., Saginaw, W. S. Michigan.

Cushion Shoes for tender feet

Many thousands now wear Mayer Yerma Cushion Shoes for comfort and for relief from ailments due to sensitive feet. These are scientifically constructed cushion shoes designed to conform to the shape of the foot, providing a perfect fit and giving extreme comfort. The pillowy cushion soles are built in, which holds them in place.

Mayer
HONORBILT SHOES

For Men—Women—Children

Mayer Yerma Cushion Shoes are now accorded first consideration among cushion shoes on account of their excellent style, comfort and wear. They belong to the Mayer Honorbilt line, which insures their high quality. If you have foot trouble, or want solid comfort, wear Mayer Yerma Cushion Shoes.

Ask your dealer for Honorbilt Shoes. If not obtainable, write to us.

WARNING—Be sure and look for the Mayer name and trade mark on the sole.

We make Mayer Honorbilt Shoes in all styles for men, women and children; also Drysox and Martha Washington Comfort Shoes.

FREE—Send name of dealer who does not handle Mayer Honorbilt Shoes and we will send you free, post-paid, beautiful picture of Martha or George Washington, size 15x20.

F. Mayer Boot & Shoe Co. Milwaukee



SEND FOR MOTOR CYCLE CATALOGUE *Pope quality has never been questioned*

3 great features
Overhead-valve Motor—more power and speed. Rear Spring Suspension, helical expansion type, insures comfort. Spring Fork absorbs vibration.

Model H "Lightweight"	\$165
Model K "The Big 4"	\$200
Model M "5 h.p."	\$215
Model L "Twin 1"	\$250

Get the details. Write today.
THE POPE MANUFACTURING CO.
491 Capitol Ave., Hartford, Conn.
Also makers of Pope Bicycles.
Catalog Free.



Rider Agents Wanted

In each town to ride and exhibit sample 1913 bicycle. Write for special offer.

Finest Guaranteed \$10 to \$27
1913 Models
with Coaster Brakes & Puncture-Proof tires.
1911 & 1912 Models \$7 to \$12
all of best makes.
100 Second-Hand Wheels
All makes and models, \$3 to \$8
good as new.
Great FACTORY CLEARING SALE
We **Ship on Approval** without a cent deposit, pay the freight, and allow **10 DAYS FREE TRIAL**.
Tires, coaster brake rear wheels, lamps, sundries, parts and repairs for all makes of bicycles at half usual prices. **DO NOT BUY** until you get our catalogues and offer. Write now.
MEAD CYCLE CO. Dept. 877. CHICAGO

BIG AMUSEMENT PACKAGE -- 100

63 SPLENDID GAMES, Checkers and Chess with Men, Dominoes, Fox & Geese, 9 Men Morris, Authors—48 cards, 22 Songs 19 Fun Cards, 48 Magic Tricks, 70 Great Puzzles 324 Jolly Jokes & Riddles 58 Money Making Secrets, 12 Love Letters, 175 Ways to Flirt, How to Charm Others, to Tell Fortunes and 500 other things to entertain the entire family all winter. This 50c Package sent for 10 cents.
S. Cooper & Co., Box 57 Horton, N.Y.

Chairs & Tricycles
For Invalids and Cripples
Worthington Co.
550 Cedar St., Elyria, O.

Women and Her Needs. At Home and Elsewhere.

WHY MOST WOMEN WORRY.

THAT women worry far more than do men is so obvious a thing that it no longer even holds our attention. Of course, women worry, we expect them to do so and think there is something wrong with the average woman if she isn't fussing about something. It never gets her anything except a headache, but she doesn't seem to realize that. Indeed worrying unfits some women for work and actually prevents their doing the very thing they wish to accomplish, yet in spite of it they worry along. So accustomed are some women to worrying that they become obsessed, and really believe that if they did not worry something would happen, but by worrying for fear it will, they kept it away.

Husbands, fathers and brothers scold and storm and set a better example. They absolutely refuse to get fussed up for fear something will happen day after tomorrow. "Let it come, we're here first," is the masculine attitude. And when women see what sound refreshing sleep and good digestion this frame of mind brings to men, isn't it queer they don't copy?

There must be reasons for the feminine attitude, such things don't just happen. And, of course, one of the most prolific causes of worry is ill health. A diseased condition of the body can not but act on the mind, and the woman who has some little chronic ailment which constantly irritates the nervous system, must make a tremendous effort to keep from becoming morbid. Unfortunately, few recognize the necessity for fighting the worry demon, and so we have the nervous, fretful woman; nervous because she is not in perfect health; fretful because she does not "keep her body under," to quote St. Paul, or, as the small boy misquoted, "keep her" soul on top.

But there are scores of women who can not plead ill-health as an excuse. And in nine-tenths of those cases the trouble is that the woman takes herself too seriously. That is one of the chief faults of humanity, with women as chief offenders. Women, especially housekeepers, get out so little that their view of life is necessarily limited. Unless they are voracious readers, which few housekeepers have a chance to be, life to them gets pretty well narrowed down to "my family," "my home," "my children," "my husband," "my church," "my club," and "my work." In many cases they even lose sight of their own township, county and state, to say nothing about the nation and the world.

It seems incredible, but there are some women to whom the putting over of a washday is of more importance than the wreck of the Titanic. They would give one thought to the poor souls who went down, and dismiss it with the reflection that they hadn't any friends on board. But the fact that they had to let the washing go from Monday until Wednesday would furnish them food for conversation until next washday.

Their clever children quite overshadow the fact that there are other equally clever children in the same town, and in all the other towns of like size in their state and in every state, and in Canada and even in China and Japan, those heathen countries which most of us think are far inferior to ours. Their church is the only one that is right, their club is easily the most important club in existence and their way of doing their housework could not be improved upon. Any slight to any person or thing in which this type of woman is interested throws her entirely off her balance, because she is so imbued with the sense of her own importance.

Life is a serious business, of course, but most of us take it and ourselves altogether too seriously. It would be well for all of us to remember that the whole world does not revolve around us, and that nations are not waiting with bated breath to hear the paper we read before a club, or to ascertain if our bread came out of the oven the right shade. There are millions of other people on the globe, each just as important as you and I, and each, probably, thinking himself a little more important than we. Why make such a fuss, then, because we fail to get all the notice we think we deserve,

or because our work doesn't go just as we planned or someone else's children are preferred above ours? To the One looking down from above we are all equal. The king on his throne and the woman in her kitchen each has a work to do which must be done right in order to work out the scheme of creation. You, personally, are of no more importance than the thread in the shuttle. Why, then, worry about the outcome?

DEBORAH.

FOLLOWING A COLOR SCHEME.

BY ELLA E. ROCKWOOD.

"Oh, what a pretty room!" impulsively exclaimed a caller being shown over the new home.

The living-room in question was all in green and brown. The walls were covered with plain oatmeal paper in green. The ceiling was of cream moire with a narrow gilt picture molding at the angle.

On the floor was a rug carrying out the two colors, green predominating. A conventional design in all-over pattern, much favored at present, was in shades of brown on the green background. The furniture was good of its kind, but not expensive. There were a few easy chairs of dark oak, one having a green cushion, a library table of the same wood, a simple couch or divan covered by a green and tan spread with one or two pillows in harmonizing tints. A few good pictures on the wall, hung flat at just the right height, and a bookcase like the other furniture, filled with selected volumes, stood at one side.

The large windows were supplied with green shades and over these hung in straight folds inside curtains of Arabian serim made to fall just below the ledge. On the plain oak mantle over the grate were a few ornaments, a tiny gilt clock, a photo or two and a small vase. That was all, except that the table held a good lamp, a few books in neat bindings, and some of the new magazines. There was nothing fussy, nothing glaring, but all seemed to breathe a spirit of restfulness to eye as well as body, an effect gained only by adhering strictly to the practice of limiting the colors to two and having these harmonious.

HOME QUERIES.

Household Editor:—Can someone please give me a recipe for making a small amount of peanut butter?—Mrs. E. J.

Put a half pound of peanuts through the food chopper, using the pulverizer attachment, season to taste with salt and a few drops of olive oil or a little melted butter. If you have no food chopper pulverize the nuts in a mixing bowl, using a wooden potato masher. This will be a slow, tedious operation, however. You can buy the butter so reasonably that it scarcely seems worth while to make it unless you have the food chopper.

Household Editor:—Can you suggest a new way for cooking asparagus? Something different?—Mrs. B.

If you like cheese, asparagus and cheese will be a welcome change. Arrange in layers in a baking dish in the order named, cooked asparagus, white sauce and cheese, and on top of all sprinkle buttered crumbs. Put in the oven until the cheese melts and the crumbs are browned, and serve at once.

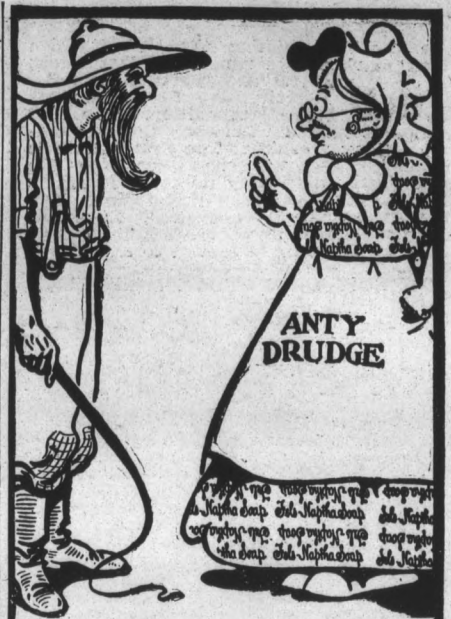
Household Editor:—How do you cook salsify?—X. Y. Z.

Scrape the stalks, cut in small pieces and cook until tender in boiling salted water, then drain and pour over it a hot white sauce. Or you may drain, pour on a quart of milk, bring to a boil, season with salt, pepper and butter and serve with crackers, as an imitation oyster soup.

RAG CARPETS.

BY MARY CLARK.

One profitable way I have found to earn some money at home, without neglecting my home work, or children, is to cut and sew my neighbors' carpet rags, for half the rags, and sell, or trade, the carpet I have woven. One winter I sewed enough to make 98 yards of carpet for my share, the weaving costing, warp included, about 18 cents per yard. Most of this carpet I sold for 35 cents per



Farmer Oxtream—"Well—I don't know as I hold with these new-fangled ideas about modern machinery and such. Old ways are good enough for me!"

Anty Drudge—"Yes! And look at your poor, overworked wife! I s'pose old ways are good enough for her, too! But from now on there's one new way she's going to know about—and that's the time-saving, easy Fels-Naptha Soap way."

Women can't afford to be behind the times, any more than the farmer who wants to be successful can afford to be without modern machinery.

Fels-Naptha Soap is the greatest labor-saver of the present day. It does its work with no fuss and bother, in cool or lukewarm water, and doesn't take all a woman's strength to help it get rid of the dirt.

It washes clothes quickly and easily, dissolves grease, and makes stains disappear.

Use Fels-Naptha Soap for everything about the home.

Follow the directions on the Red and Green Wrapper.

Fels & Co., Philadelphia.



You Cannot Get Away

from the March Winds, but you can keep your skin soft and white by the use of

Kelley's Carnation Cream

Will not soil gloves or veil, is delicately perfumed and immediately absorbed by the skin. Send 50 cents today for a jar of this Delightful Preparation.

Kelley Chemical Co., Detroit, Mich.

WANTED A man or woman, all or spare time, to secure information for us. Experience not necessary. Nothing to sell. GOOD PAY. Send stamp for particulars. Address M. S. I. A., Indianapolis, Indiana

yarn, wash, and traded the balance to a neighbor for a full-blood Poland China pig, which I kept for several years, and made several dollars each year from the sale of her pigs.

In making rag carpet, be sure to cut the rags fine, and of even width, or your carpet will be loose and uneven. Much quicker, better work can be done if the rags are sewed on a sewing machine. If rags are mostly light colored, use light colored warp for weaving, but if dark, use dark colored. The prettiest rag carpet I ever saw was made of dark rags with black warp predominating, and narrow stripes of orange and dark green.

BRAINS IN THE KITCHEN.

BY ELSBENE NISEWANGER.

Some varieties of brains are very attractive and delicious cooked with eggs and cracker crumbs and served on a pretty platter with sprigs of parsley. But the proper environment for the human variety, feminine, is within the sensible head beneath the neatly combed hair of the woman "behind the gun" of domestic warfare in the battle for healthier people and happier homes. There is serious thought of amending the poetic old saying, "The hand that rocks the cradle is the hand that rules the world," by inserting the words, "and prepares our meals," after "cradle."

Between the Mrs. Newlyweds, who have a tendency to spoil everything they attempt, and the Mrs. Professionals for whom, because of technical knowledge or natural ability, everything seems to turn out right, there is the horde of us, average mortals who are either moderately careful or phenomenally fortunate and are thus able to present a fair front but, behind the scenes, are wasting time, energy and materials because we plunge ahead carelessly and thoughtlessly, blindly doing as we have done without regard to the personal application of suitability to our own condition or environment. Here is a homely little example of pure lack of thought:

A housewife became the possessor of a fine new range, one of the good, expensive sort, and after she had used it more than a year a visiting friend asked, "How do you like the new range; is it a good baker?"

"I like it splendidly," was the response. "It heats up so quickly and holds its heat so well that I can get a meal much quicker than I used to be able to and it seems as though everything tastes better. It is too good a baker, though," she said ruefully; "it will waste enough in its lifetime to make it cost double its price. There is the thermometer but I simply cannot have the oven hot enough to bake bread or loaf cake, instead of drying it, without burning them black at the bottom."

The friend glanced in the oven. "Did you ever try putting your grate down on the bottom of your oven and setting the tins of bread and cake on that?"

The thoughtless housewife opened surprised eyes. "Why, no, but I will." She did, and found that even the thickest loaves baked perfectly, and will always bless her friend for the helpful hint she dropped, instead of blaming herself for not using her own brain to solve her own small problem.

An ignorant or careless cook, though she may be abundantly enthusiastic and watchful, may very easily spoil a good beef roast by giving it too much attention. Her oven may be all right, but instead of keeping it at that point, timing her roasting, and leaving the meat itself alone, she will ruin its juiciness and flavor by continually trying it to see how it is getting along. Every thrust of her long fork brings a quick flow of juice that adds to the gravy but, if persisted in long enough, and frequently it is, spoils the moist, rich delicacy of the meat.

Or our cook may have learned how to roast beef splendidly, have her oven hot enough to quickly sear the meat and keep the juices in, then lower it sufficiently to let the heat strike to the center without burning the surface, and cut tender, juicy, pinkish, not bloody, slices from her finished roast, and spoil her pork roast by following the same rule. Unless a pork roast is started with only a moderately hot oven so that some of the fat can run out, and the heat gradually increased till the whole is thoroughly cooked through and the best flavors brought out, a thin streak of liquid fat will follow the carving knife and cool in unsightly puddles on the platter.

"Circumstances alter cases," very frequently in the domain of the cook. For

example, the high degree of heat that is good in cooking the more expensive cuts of beef cannot be held very long when dealing with the cheaper, coarser cuts without hardening the fibres and making the result dry and tasteless. Sometimes we cannot afford the highest priced roasts and steaks, but if we use care and thought in cooking the cheaper ones the family will smile and ask for more.

You may think your kitchen—and your whole house—is just as neat, and your meals just as well prepared as your neighbor's, and she may be considered a model; but are you sure that you accomplished it with no more expenditure of effort than she? There is a difference in my neighbors. One has a mental map of her work a day or two ahead and, like a good general, stations her guards, plans her marches and arranges for possible retreats before a day really begins. In this way every step, coming and going, is made to count. Meals are not thrown together by chance and when interruptions and unexpected calls on time and attention come, she is ready to meet and handle them as their mistress because her mind has been trained to rule her muscles and make the best of circumstances.

The second neighbor rises just as early as the first, retires later, works all day, but never has her work done. She is never ready for company, even though it is invited, or recreation, and is always tired because she hurries heedlessly and aimlessly from one task to another, frequently having so many unfinished ones on her hands that her home looks like chaos and she the personification of untidiness.

Even the most willing muscles, undirected, are like a good machine without a governor and if there is anyone in this world that needs system and forethought as her right-hand helpers it is the busy housewife who has all the responsibility, and most of the work, connected with a home and family.

FASHIONS BY MAY MANTON.

Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of 10 cents.



No. 7726.—Fancy waist, 34 to 40 bust. With fitted lining, long or elbow sleeves, with or without stock collar.

No. 7714.—Blouse for misses and small women, 14, 16 and 18 years. With high or round neck, long or elbow sleeves, scalloped or straight edges.

No. 7728.—Semi-princess gown, 34 to 42 bust. With five-gored skirt and blouse that can be made with shaped or straight front edge, with long or elbow sleeves, with or without chemisette.

No. 7727.—Three-piece draped skirt, 22 to 32 waist. With high or natural waist line.

No. 7718.—Three or four-piece skirt, 22 to 32 waist. With underlying front panel, high or natural waist line.

The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer, on receipt of ten cents for each.

"Range Comparison" is the title of an illustrated booklet published by Majestic Mfg. Co., makers of Great Majestic Ranges. In this booklet the many superior features of Majestic Ranges are illustrated and described in a manner which makes comparison easy. Write for a copy of this booklet today, mentioning the Michigan Farmer.

A Willing Worker on the Farm

If the work is cleaning, in house, dairy and barn, nothing cleans quicker or better than Old Dutch Cleanser.

Many Uses and Full Directions On Large Sifter Can — 10c.



LOW FARES to CANADA

Settlers! Go to Canada via the Duluth-Ft. Frances Gateway or via St. Paul and Winnipeg, over the Canadian Northern Railway. Even if you have already selected your farm you have the advantage of traveling from 1550 to 2500 miles through Canada's richest farming country. Tickets on sale every Tuesday March 11 to April 29, 1913.

Just glance over these low rates—second-class, one-way fares for settlers. Tickets good for stop-over privileges.

ONE WAY	TO	From Chicago	Des Moines	Kansas City	Omaha	Minneapolis or St. Paul	Duluth
Dauphin, Manitoba	\$24.15	\$22.35	\$26.94	\$24.10	\$16.00	\$15.00
Regina, Sask.	24.15	22.35	26.94	24.10	16.00	15.00
Saskatoon, Sask.	24.15	22.35	26.94	24.10	16.00	15.00
Prince Albert, Sask.	24.15	22.35	26.94	24.10	16.00	15.00
North Battleford, Sask.	24.15	22.35	26.94	24.10	16.00	15.00
Edmonton, Alta.	26.70	24.90	29.49	26.65	18.55	17.55
Kindersley, Sask.	24.70	22.90	27.49	24.65	16.55	15.55

Rates from and to other points proportionally low. Tourist Car in operation every Tuesday from Duluth to Winnipeg.

"Settler's Guide" FREE Mail us a postcard or letter at once stating your destination. Ask for "Settler's Guide," a book filled with valuable information.

FERTILE FARMS FREE

to Homeseekers Write us to find how you can get a fertile 160-acre farm free in the very heart of Canada's richest grain and mixed farming region—located along or near Canadian Northern Lines. American farmers are getting rich on Canadian farms. It's your turn NOW.

Send at once for "Homeseekers' Guide" and "The Bread Basket of the World,"—telling all about free land, and specially selected lands at low prices—free to you.

R. P. BELL, Gen. Agent
66 West Adams St., Chicago, Ill.



CANADIAN NORTHERN RAILWAY



FREE ASTLEY'S TRIAL LAMP
In your own home. One cent per night gets a wonderful 300 c. p. light. The Rich Art Glass Dome, brilliancy, and economy make quick, easy sales—big profits. Agents coin money. Write Dept. 8 for Special Advertising Offer on first lamp sold in new localities. Numerous styles. Allen Sparks Gas Light Co., Lansing, Mich.



Hygienic Wool Batting
For Comforters: Made in one piece 72x84 inches, 2 1/2 lb. weight, strictly pure wool, a 3 lb. comforter is warmer than 6 lbs. of cotton, especially adapted to open air sleeping. Custom work done, send us your wool, will make it into batts for you, write for booklet. MONROE WOOLLEN MILLS, Monroe, Michigan.

When writing advertisers please mention The Michigan Farmer

CASH IN ON THE OLD STOVE

Do you realize that you can discard your old stove with advantage and profit?

Lasts Longer In construction, workmanship and design. The Monarch is years ahead of all other ranges. It is made of malleable iron and steel. It has complete triple walls—steel, asbestos and steel. Full protection against damage by corrosion. The top and oven heat quickly. Every seam is riveted tight—no bolts or stove putty to loosen and fall out. The Duplex Draft and Hot Blast Fire Box insure even heat and full use of all the fuel. The polished top never needs blacking.

Less Fuel or stove putty to loosen and fall out. The Duplex Draft and Hot Blast Fire Box insure even heat and full use of all the fuel. The polished top never needs blacking.

Less Work or stove putty to loosen and fall out. The Duplex Draft and Hot Blast Fire Box insure even heat and full use of all the fuel. The polished top never needs blacking.

Better Cooking or stove putty to loosen and fall out. The Duplex Draft and Hot Blast Fire Box insure even heat and full use of all the fuel. The polished top never needs blacking.



784 Lake Street, Beaver Dam, Wis.

When Spraying



Wear a
FISH BRAND REFLEX SLICKER
to keep you dry.

ROOMY
DURABLE
COMFORTABLE

Reflex Edges make it impossible for water to get in at the front, and inner sleeves protect the wrists. Our "Stayfast" Pockets will not rip.

\$3.00 Everywhere

SATISFACTION GUARANTEED.

If not at your dealer's, sent prepaid on receipt of price. Send for illustrated folder.

A. J. TOWER CO. BOSTON

413 Tower Canadian Limited, Toronto

A Few High-Grade MEN or WOMEN WANTED

to represent The Youth's Companion Subscription Department in Michigan.

Exclusive territory given for collecting subscriptions and increasing The Companion's circulation on a unique plan.

From \$15 to \$35 a week is earned by those working in other States. Only those who can work every month in the year need apply. Address

REPRESENTATIVES' DEPARTMENT
Perry Mason Co., Publishers,
Boston, Mass.



Stuff Birds And Animals Learn at home to mount birds, fish, tan skins; make beautiful rugs and robes. Decorate your home with your own trophies. Make big money mounting for others. Learn quickly during spare time. No guarantee success. Charges low. Write today for FREE illustrated book explaining taxidermy and showing beautiful mounted birds and animals. **Monarch School of Taxidermy** 51 Monarch Bldg., Omaha, Neb

A New All Fools' Day.

By Mrs. F. Nisewanger.

He was not handsome or young or kind, so it is a bit superfluous to add that he was not overburdened with friends; but he was a shrewd old fellow.

The neighborhood called him Daddy Stone and he was credited with being as hard as his name. He lived alone, at the cross roads, in a little house as dark and gloomy as himself, and had as little as possible to do with other human beings.

Having no love for children, and showing this attitude on every possible occasion, it naturally followed that it was the especial delight of the children of the community to try to annoy him in every way possible. Trying, however, was about as far as it ever got, for Daddy Stone soon showed them that he was not in his second childhood if his hair was white and his back beginning to bend.

His success at detecting their tricks and forestalling their pranks was only equaled by his delight in getting a laugh—a shrill, jeering one at that—on them on every possible occasion.

When Charley Ropes was thrown from his pony and got up spitting dirt and rubbing barked shins, Daddy Stone hung over the fence convulsed with mirth, and when Fred Black struck a stone with his coaster and went hurtling through the air like a catapult, Daddy's pointing finger and grimace-twisted face were the first things his surprised eyes sensed.

"You'd laugh at our funerals if you got a chance to go to 'em, wouldn't you?" the boy stormed. "But you—won't—get—the—chance!"

"Mebbe not, mebbe not," Daddy cackled, "so I'll enjoy ye all I can now."

According to neighborhood code, a boy could have all the windfalls he wanted without even asking for them—but not Daddy's; not even if they fell outside, in the road. The boys had tried it, too, but finally gave it up, defeated, declaring that the old man had a thousand eyes and that not one of them ever slept. It did seem, sometimes, as though he were in league with the Old Harry himself. A mortal was not entitled to so many lucky chances as fell to the lot of Daddy.

"He needn't be so mean to the girls, anyway," John Randall exclaimed in real exasperation when his little cousin, Pearl Cody, had come hurrying down the road with flushed cheeks and tearful eyes after Daddy's sharp, "Tut, tut, sissy, don't tech what don't belong to ye," when she had bent to catch the fragrance of a beautiful rose that strayed over the fence, without, she averred with trembling lips, having any intention of picking the blossom. And, although the girls merely tried to avoid Daddy and thus escape his venom, Pearl was not the only one that held a little grievance.

Seeing that the old man was well able to take care of himself, parents paid little attention to the attempted pranks of their progeny who considered Halloween and April first as especially dedicated to their service; but these, like more ordinary days, were branded as failures as soon as Daddy appeared, which was invariably at the most opportune moment for himself.

Only last Halloween, the carefully adjusted little tick-tack, at the end of its long string, had but fairly begun its persistent tapping just up out of reach of stiff-jointed old men, when from behind the woodpile, in whose shelter a group of boys crouched, there poured an endless, all-seeing stream of cold, soapy water. Straight into grinning eyes and snickering mouths, and down yawning shirt collars, it hissed and gurgled, while with choked, disgusted yells the again outwitted boys retreated—but not in good order or in good temper.

"We'll get even with you, yet!" Bert Lyon spluttered.

"Ha, ha, ha—" jeered Daddy, in a long, wavering, rising inflection that was particularly exasperating.

"Yes, we will!" Willie Cole roared, having finally gotten a good breath. "April Fool's day's a comin' and you'd better sit pretty tight!"

"April Fool's day, eh?" came back tauntingly, in just the tone to make a boy take a dare. "When ye April Fool Daddy Stone ye'll be a goin' some—and when ye do," he challenged, "Daddy'll take off his old hat to ye."

"All right, sir, all right! You can begin to get ready now," the boys raged in blind acceptance, not realizing until a

cooler moment that there was not one chance in a thousand of their succeeding. They might possibly have had one chance in a hundred if they had not foolishly mentioned April First; but Daddy unwarned being an army, Daddy forewarned would be an unconquerable host.

And yet the challenge rankled. They must do something—but what could they do? Each plan suggested followed its predecessor into the scrap heap, hurled there with a scornful, "Chestnut!" or "Molly-coddle!" At last, along toward spring, a grand council of war was held and the girls were called in.

There were half a dozen of them—sisters of the main plotters. They listened gravely, their feminine judgment endorsing the scrap heap of rejected plans when, suddenly, Alice Lyon had an inspiration.

"Fool Daddy Stone? Why, it will be the easiest thing in the world," she cried, with sparkling eyes.

"Easy!" scorned her brother Bert. "With Daddy counting on our breaking our necks trying to do it, and lying awake nights planning to get the best of us?"

"Why, don't you see, that is just it? He will be expecting big efforts; but if you will just listen a minute I'll tell you how we can fool him tremendously by just doing some unexpected little things that he never heard of being done on All Fool's Day."

That sounded just like what they wanted, of course, but how could a girl so easily solve the big problem when their best efforts had been but dismal failures?

When Alice began to explain she was greeted with a roar of protest. "You must think we are a lot of sissies!" Fred Black exclaimed.

"I don't think anything of the sort," Alice retorted. "You said you wanted to fool Daddy, and I am telling you the only way to do it. If you want to follow the advice we'll help you, won't we girls?"

Eager nods answered and a chorus of excited voices declared, "I know what I'll do."

Alice looked at the boys and delivered the ultimatum. "Take it or leave it, but make Daddy take off his hat yourselves, if you don't want our help."

The girls said but little more and finally, after wallowing around helplessly and hopelessly for awhile, the boys adopted Alice's suggestion with an air that suggested, "We can't any more'n fail and we'd a done that anyway," but in the end they became fully as enthusiastic as their sisters.

The course of Daddy's life flowed on smoothly but his shrewdness did not lose its edge. The lack of youthful attentions through March did not make him forget that every day brought a new month closer. On the morning of April first he was awake early and alertly ready for whatever the day might bring forth.

When he opened the front door of his little house the sight of a purse on the step made him laugh. He laughed loudly and scornfully for the benefit of lurking ears, gave the purse a disdainful shove with his cane and went indoors.

The sight, from his back door, of a neat parcel, from whose torn corner the soft sheen of silk was visible as it lay scorned in the spring sunshine, gave edge to his appetite for breakfast. A little later a series of calls followed, as the children of the neighborhood drifted by to school.

Alice Lyon came first. When Daddy came frowning to the door in answer to her knock, he was met by a smiling, "Good morning, Mr. Stone. I just stopped to leave a lemon pie for your dinner. I made it myself and hope you will like it."

"Thanky miss," Daddy returned, sourly. "I never eat lemon pie sence I took a good mouthful of one made of salt water, colored with butter color and flavored with mustard."

"Oh, really," Alice sympathized. "Then how glad you'll be to taste a good one. She set the pie down as though a doorstep was the proper place for it and turned away with a cheerful, "good-bye."

John Randall came next with a tempting little open basket. "Mother sent you a few fresh eggs," he greeted.

"Water and tissue paper is cheap, son," Daddy returned condescendingly, evidently remembering previous April first "boiled eggs" that were only empty shells filled with water and having the

ends pasted over with tissue paper. "Hope ye had a good omelette for breakfast."

"Bully!" John responded. "Mother is a dandy cook." The basket joined the pie and John turned away whistling.

Minnie Black soon followed with a little sack of tea cakes. "I thought maybe you would like a few for lunch," she smiled.

"Cotton is too expensive to eat," Daddy responded shrewdly. "Better take it home for your ma to put in a quilt."

"But the tea cakes," Minnie urged, as though she did not understand the insinuation. "I am sure you will like them."

"Oh, no, I won't," Daddy jeered, and the cakes joined the collection on the steps.

He was out in the yard when the small children returned from school. Little Pearl Cody, who had admired the forbidden rose, separated herself from her friends and advanced with a pleasant, "Won't you have one of my chocolates, Mr. Stone?"

"Not any with soap in 'em, thanky miss," Daddy replied grimly, beginning to get tired of the silly little tricks with which his sharp intellect had been regaled during the day.

"Not a one of 'em worthy of bein' tried on a idiot!" he fumed, summing up the day's attempts after Charley Ropes' call, just after dusk, on the pretense of having been to town and just stopping with the mail.

"Only a letter this time, Daddy," he remarked cheerfully.

"Throw it in the fire yourself and save me the trouble, will you?" Daddy stormed. "I don't have to put on my specks to see through to the blank paper inside with 'April Fool' on it! My stars, what do you consarned torments take me for, anyway? The kind of old fool you'll be some day?"

Charley tossed the scorned letter upon the table. "I wouldn't burn it," he advised. "Might be a legacy."

Daddy ignored the advice. "Don't step on the pie and eggs and cakes," he cautioned sarcastically, as Charley turned away.

Daddy Stone went to bed early, disgusted with life; but the scorned letter was the first thing that met his sight in the morning. He hesitated, then moved forward slowly and picked it up gingerly. After turning it over several times and studying it critically, he slowly tore it open. It couldn't do any harm to read "April Fool" when All Fool's Day was past. But this is what he read:

Dear Mr. Stone:
The pie was really good. Try it.—Alice Lyon.

The eggs are genuine. Some of Speckle's best.—John Randall.

The bill in the purse wasn't counterfeit. It is to pay for the apples we have eaten.—Fred Black & Co.

The tea cakes haven't any cotton in them. I know, for we ate their mates for supper.—Winnie Black.

The chocolates were of my best fondant, not soap. You will find a box of them on your step.—Pearl Cody.

It is a new silk muffler in the package; I earned it for you myself.—Willie Cole.

Did we fool you? You aren't to be given this unless we are pretty sure that we did. Will you shake hands and bury the hatchet?

Your friends,

The Cross Roads Boys and Girls.
The medicine was not entirely pleasant to take, but Daddy was game. Making a wry face, he presently swallowed it, bottle and all. He had fried eggs for breakfast and tea cakes and lemon pie for dinner, and when the children came home from school he stood bareheaded at his gate with a new silk muffler around his neck.

Captain Alice's army knew just what to do. It had been remorselessly drilled in the generosity maneuver and understood thoroughly that there was to be no gloating, no trampling on a fallen foe.

Quietly the boys and girls marched up. Sedately, with lids that were discreetly lowered to hide rebellious twinkles, they shook the hand that Daddy extended solemnly.

What might have happened next is a question, but just then Daddy's laugh got away from him and, somehow, it didn't sound jeering or sarcastic or taunting any more and the children joined in heartily, happily.

Then Daddy said, almost gently, to Pearl, "Hope you'll enjoy my roses this summer, sis, and I want ye all to enjoy the apples this fall."

Then, the surrender complete, he sighed, "I half believe I'm glad to call ye friends, but I'll be consarned if I know what in sense I'm going to have to amuse me now. I'll git old with nothin' excitin' to keep me young."

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

Associational Motto:

The skillful hand, with cultured mind, is the farmer's most valuable asset.

Associational Sentiment:

The farmer, he garners from the soil the primal wealth of nations.

ENDORSE FARM MANAGEMENT WORK.

At a recent meeting of the executive committee of the State Association of Farmers' Clubs, that body endorsed the extension movement as promoted by the Bureau of Farm Management of the Department of Agriculture in co-operation with the State Board of Agriculture.

CLUB DISCUSSIONS.

Discuss Uniform Text Books.—Peach Grove Farmers' Club held its regular meeting, Saturday, March 15, at the home of Brother D. W. Richardson and wife, with about 60 people present. A motion that every member act as a committee of one to secure votes favorable to equal suffrage for women, carried. The bill to provide a uniform school book system was taken up and discussed. Mr. Whitney gave an excellent talk. He took the opposition to the bill as now presented but said he favored a uniform system for the first eight grades of school work. This seemed to be the opinion of others that spoke on the subject. The program was further extended with songs and recitations, closing by singing Auld Lang Syne. Will meet third Saturday in April at the home of Brother Ellis.—Cor. Sec.

Hold Annual Meeting.—The Rives and East Tompkins Farmers' Club held their annual meeting at the home of Mrs. Monroe Perrine, Saturday, March 1. Meeting was opened by singing "Nearer My God to Thee," by the Club, followed by prayer by the chaplain. It was decided that anyone wishing any special topic discussed at the meeting should notify the literary committee and they would arrange for it. Six gentlemen members of the Club were appointed to go to Lansing to hear the reading of the state-wide prohibition bill. After the election of officers and appointing of committees, an excellent program was given, including many excellent musical and literary numbers and a paper on "Economic Value of Women's Clubs," read by Mrs. Eugene Perrine. After the usual interesting question box the meeting adjourned to meet April 5 when a local option program will be given.—Ina Stringham, Cor. Sec.

Discuss Torrens System.—The Wixom Farmers' Club held their March meeting at the commodious and hospitable home of Mr. and Mrs. David Gage. Mr. and Mrs. Gage are very popular people and royal entertainers. There was an overflow meeting, 100 being present. After a bounteous dinner, the meeting was called to order by the president and a very excellent program was rendered, consisting of recitations, vocal and instrumental music. The recitations were exceptionally fine. The question, "Resolved, that Michigan should adopt the Torrens System of land transfer," was ably presented by Messrs. Pittenger, Bogart and others. After quite a lengthy discussion it was laid on the table. "Leaks on the farm" was the topic assigned to R. D. Stephens, who said they were many; caring for and sheltering farm implements, waste of land and time, etc. He thought the greater waste was being behind at seed time, as that made several bushels difference in the crop. Mismanagement is another great leak. The farmer should strive to be just a little ahead of his work and success is sure to follow. The question box was next on the program and questions answered without being discussed as time was limited. Mrs. R. D. Stephens, Cor. Sec.

Will Aid County Agent.—The Charleston Farmers' Club, of Kalamazoo county, was very pleasantly entertained by Mr. and Mrs. A. P. Simpson and family at their home on March 8. A fine picnic dinner was served shortly after noon, followed by the business meeting of the Senior club. Each township is to have two men, who together will act as advisors to assist our county agricultural expert, Jason Woodman, and the Club was given the privilege of choosing one of the representatives for Charleston township. Mr. Woodman having previously chosen the other. Fred Barber was elected, and will act with Carey Rowland. Floyd Coville was appointed as a delegate to the agricultural meeting at the Normal Building at Kalamazoo on the 14th, and Miss Clare Palmeter was chosen as alternate. As Mr. Woodman was unable to be present and give his talk, the time was spent in discussing "The Pocket Money of the Children." Some excellent ideas were brought out upon this subject in regard to the different ways for them to obtain their money. The Club decided to meet on Friday, April 11, instead of Saturday, the regular day, as that is Mr. Woodman's office day and we want him to meet with us. The members will meet at that time with Mr. and Mrs. Floyd Coville, and the Junior Club will meet on the following day. They are planning to take a trip to W. S. Kirby's Orpington farm.

Grange.

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

THE APRIL PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Opening song.
Corn Culture. (Substitute beans or any other leading local crop).
Recitation, "Your Seed Corn."
Exhibit, relating to corn—seed, seed-tester, corn cookery, etc.
Gardening gossip.
Question, "What is better for a child educationally, a flower garden or a vegetable garden of his own?"
Exhibit of seed catalogs.
Solo.
Recitation, "When winter ends."
Mock town meeting, by the women, coached by a man.
Cookery samples served for refreshments.

Suggestions for Second Meeting.

Song.
The science and art of good plowing.
Discussion led by lecturer.
Recitation, "Plowed Under."
Plain potato pointers. (Substitute fruit or other leading money crop). Discussion.
Recitation, "Prayer and Potatoes."
Instrumental music.
My way of getting rid of rubbish, discussion by three women.
Entertainment by "African Human-phone."

AMONG THE LIVE GRANGES.

Prospective U. P. Pomona.—The subordinate Granges of Gogebic county will hold a meeting at Ironwood on Thursday, April 3, for the announced purpose of organizing a Pomona.

Vermontville Grange, of Eaton county, reports the addition of about a dozen members in the past few weeks, with a number of applications still to be acted upon. Interest in the purposes of the organization is also on the up grade, good programs being the rule.

The "Surprise Feature" of a most excellent program at the last meeting of Monroe Grange took the form of an Easter millinery competition. During the half-hour devoted to it the chief occupation was the trimming of hats, both ladies and gentlemen participating. A committee had arranged a table on which were displayed both trimmed and untrimmed hats of all degrees of antiquity, with colored ribbons, flowers, velvets, laces, feathers and ornaments resurrected from store-rooms and attics. Members were provided with necessary thread, thimbles, needles, etc., and invited to select a hat and display what skill they could muster in trimming the same. A committee awarded a prize for the most artistic and the most comical. Leo Ashley received first and Frank Hume second prize. This Grange will entertain Lenawee Pomona on Thursday, April 3.

Good Meeting of Western Pomona.

Ottawa Grange entertained Pomona recently in a highly satisfactory manner. Reports rendered by the various subordinates at the business session indicated that the organization in Ottawa county is in good condition and steadily growing.

At the afternoon session Ralph Wells presented the subject of "Farmers' Institutes." He said he had received many useful helps from attending them. D. M. Brown and John Preston also entertained the same opinion. Others were of the opinion that short courses in agriculture held at several points in the county would be of greater value.

The subject, "Beautifying the Farm and Roadside," was ably presented by John Jackson and D. M. Brown, who thought that if every farmer would spend a little time each season in cutting weeds and setting a few shrubs and trees, in a few years the change for the better would be great. "Sanitation in the House" was discussed by Mrs. Clara Root and others, advising that we look well to the cellars and that the back yard be kept just as clean and sweet as the front yard.

The subject, "Can a Young Man with Small Capital be More Successful at Farming in the West than in Michigan?" started a lively discussion. Clarence Dudley thought that, judging from his experience and observation while in some of the western states, there are today just as good opportunities in our home state.

The evening session opened with singing. Poultry talks were then given by Isaac Sider and Mrs. Root, who advocated the incubator for hatching and also dwelt upon the importance of selecting eggs only from the best layers. The question box was then opened and topics for serious thought and also some that caused amusement were brought forth.

COMING EVENTS.

Pomona Meetings.
Ingham Co., with Williamston Grange, Friday, March 28.

CATALOG NOTICE.

"How to Grow Alfalfa the Wonder Crop," is a hand-book for the alfalfa grower, by W. H. Pyre. This is a 64-page paper bound booklet fully discussing the problem of growing, caring for and feeding alfalfa. Published by the Galloway Bros.-Bowman Co., Waterloo, Iowa. Price, 25c.

FREE GOVERNMENT HOMESTEADS

160 ACRE HOMESTEADS

320 ACRE HOMESTEADS

320 ACRE HOMESTEADS

in MONTANA

There are still millions of acres of government land in Montana to be homesteaded. It is good land, too—land that will grow from 30% to 50% more Wheat, Oats, Barley, Potatoes, etc., to the acre than the best cultivated farms in the Middle West and East—proved by U. S. Government crop reports. These homesteads in some counties are 160 acres and in others 320 acres each.

Prove Up in Three Years

A recent act of Congress reduces the period of residence on homestead land from five to three years and permits a five-months' leave of absence each year.

Your Opportunity Is Now—Special Low Rates

Visit Montana—learn first hand of its splendid climate, bountiful crops and the boundless opportunities it offers to energetic men with limited capital. Daily from March 15 to April 15 one way Colonist and on every Tuesday from March 11 to April 29 one way Settlers' fares are in effect to points in Montana, via the

CHICAGO Milwaukee & St. Paul RAILWAY

Let me quote you fare from your home town and furnish full particulars—address

H. W. CANNHOFF, District Passenger Agent
212 M. Jessie Bldg., Detroit, Mich.

O. E. SHANER, Immigration Agent
750 Marquette Bldg. Chicago

F. A. MILLER
Passenger Traffic Manager

BIG FREE BOOK ON CLOVER

A gold mine of information

We have just published a wonderful new book entitled "Clover, the Great \$Cash Money Crop." It tells you how to get a sure "catch" first planting; how to keep clover in the rotation; about clover as a soil enricher; how to handle the crop for hay and seed production; how to grow clover that makes richer feed—that produces more beef and milk. It explains the cause of clover failures; how to avoid winter killing; how to prevent ground heaving; how to guard against the loss from heat and drought; all about the causes of "clover sickness" and how to deal with it. Hundreds of other questions, covering sixteen clover varieties, are fully answered. Ordinarily this book sells for 35c, but for a short time we will mail a copy free, or until a certain number have been distributed. Write at once.

GALLOWAY BROS.-BOWMAN CO., BOX 648 K WATERLOO, IA.

YOUR MONEY WILL NET 5%

if invested with this Society. Interest paid semi-annually. Let us have your name and address and we will tell you of the advantages offered by this Society which has been doing business for over twenty years.

The Industrial Savings Society,
219 Hammond Bldg., Detroit, Mich.
I. ROY WATERBURY, Pres. AUSTIN N. KIMMIS, Secy.

KITSELMAN FENCE

Get It From the Factory Direct

We make you the same price we would make the Dealer or Jobber. That is why we can save you money. Look at these very low prices.

14 CENTS A ROD

for 26-in. hog fence.

23¢ a rod for 49-in. farm fence.

25¢ a rod for 60-in. poultry fence.

\$1.55 for 80 rod spool of Ideal

Barbed Wire. Large free Catalog showing 100 styles of Farm, Poultry and Lawn Fence.

KITSELMAN BROS. Box 278 Muncie, Ind.

THE HATCHET WIRE SPICER

Wraps large or small wire in narrowest space in woven fence. Sample by mail post paid 50c. Agents wanted. Free illustrated circular. A. B. PROBACCO, Lebanon, O.

When writing advertisers please mention The Michigan Farmer.

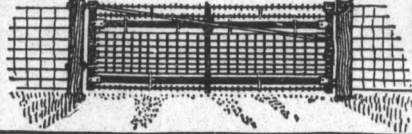
\$1.90 FOR THIS DANDY GATE

These gates are not a special lot built down to a low price, but are full of the same quality, satisfaction and durability which can be obtained in any of our triple-galvanized, high-carbon steel

Iowa Gates

The filling of this serviceable and ornamental gate is extra close diamond mesh. Gate has strong frame, patent latch, etc. Comes in all sizes; plain and fancy tops. Style E Farm Gate, illustrated below, is another leader sold at a much lower price than asked for other gates of its kind. Painted or galvanized. All sizes. The best lumber dealer in your town has these gates on sale. If you don't know his name, write us for booklet, name of dealer, special prices, etc.

IOWA GATE CO., 57 Clay St., Cedar Falls, Ia.



BROWN FENCE

For all purposes. Direct from factory, freight prepaid.

Bargain Prices—13c per rod up

Get our new fence book before you buy fence for horses, cattle, sheep, hogs, poultry, etc.

Also Lawn Fence and Gates

We save you big money—give us highest quality. Mail postal now for Big Fence Bargain Book

Dept. 49 THE BROWN FENCE & WIRE CO., CLEVELAND, OHIO

STRONGEST FENCE MADE

FROM FACTORY DIRECT TO FARM

26-inch Hog Fence, 14c.

41-inch Farm Fence, 21c.

48-inch Poultry Fence, 22½c.

80-rod spool Barb Wire, \$1.55

Many styles and heights. Our large Free Catalog contains fence information you should have.

COILED SPRING FENCE CO. Box 21 Winchester, Ind.

ALL BIG WIRES

That's the only kind of fence it pays to buy. Get our new book, convincing proof of quality and sensational new low prices.

EMPIRE FENCE

is sold direct from factory, freight prepaid—23 styles to choose from—for all purposes. Write us a postal note for offer.

New Book Free Bonus Steel Post Co. 16 E. Main St. Adrian, Mich.

I WANT EVERY READER of MICHIGAN FARMER to WRITE ME for MY CATALOGS

I want you—the man who is holding this paper in his hands right now—to write to me right away. I'm making a special appeal to readers of Michigan Farmer. I've got something special to offer every one of you. I know what kind of farmers read this great paper. They're my kind—the up-to-date, wide-awake kind—the kind I like to do business with.

You know what I've done in the past—saved more money for the farmers of this country and given them a squarer deal than any other manufacturer. That's why I've been able to build up a mammoth business here in so short a time. Now, this year I'm going to break all my own records. And I'm going to do it by putting some special propositions right up to the best farmers in the country. I'm going to make you some offers that are so amazing that you simply can't get away from them.

Over one hundred and twenty-five thousand farmers know by actual experience that

The Only Way Is THE GALLOWAY

And I want you to be the next one. I want to show you just what a man can do for you when he will sell you direct from his own factories to your farm. I want you to see for yourself what an amazing difference it makes in prices when you don't have to pay one single middleman's profit. Write me—you won't be under the slightest obligation. Just get this wonderful story. I'll show you how you can save hundreds of dollars in the next year alone. I'll give you the evidence—then let you decide. Send me the coupon, or a postal or letter, right now.

I'm Going to Tell You Some Inside Facts About My Business

I haven't any secrets about my business. The more my farmer friends know about my affairs the better I am satisfied. I've made good—but I know that every bit of my success is due to the fact that every single man who does business with me has found that he can trust me absolutely.

I'm a farmer myself—always have been and always will be. I was born and raised on a farm and I know what you're up against when it comes to buying right, because I've been through the mill myself.

That's why I got into this business. I used to sell farm implements for other people. I didn't keep at it very long because I saw with my own eyes every day the actual evidence that convinced me that the farmer simply couldn't get a square deal and his money's worth so long as he had to pay a lot of middlemen's profits which were always loaded onto the real value of the goods. Why, I could tell you of any number of cases where the profits were so much greater than the real value of the article that it seems almost unbelievable.

I made up my mind to see if the cheaper and better way wasn't to manufacture my own goods—making them just the best that they could be made—and selling them direct to the farmers at actual factory cost with only one very small factory profit added. I started out in a small way because I didn't have much money. But it didn't take long to prove that my faith in the intelligence and buying judgment of the men on the farms was founded on solid rock. My business has been tremendous right from the start. My profits have been small—smaller than almost any other manufacturer in the country. And I'm going to keep 'em that way. I'd rather make a small profit and sell a lot of goods than a big profit on a few goods.

Of course, I've made enemies among the other manufacturers who tell me I am "spoiling business." I'm sorry, because I don't like enemies—but I am working to help you get your goods at a fair price. Naturally the dealers don't like me very well, either, for I stand in the way of their big profits. That's why a lot of them have gone out of their way to misrepresent my business. They can't do that very well any longer, now, for I've made a \$5,000.00 Challenge Offer to any man or company in the world who can prove that every word of Galloway's story is not true right down to the last detail, or can disprove that my factories are not exactly as shown, or can disprove any statement or claim I make. I'll send you a copy of this challenge offer when you write me. Besides that, I protect every single man who does business with me with a \$25,000.00 Cash Guarantee Bond that makes it just as safe for you to do business with Galloway as with the United States government.

Now, I want you to find out just what all this means to you in cold, hard cash. I've enlarged my line tremendously for 1913. I am offering more bargains and bigger bargains than I have ever been able to before. I want you to get the proof for yourself.

Now Send for My New

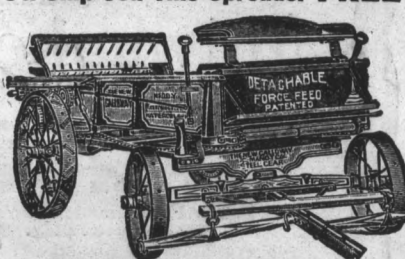


Book of Bargains FREE!

I'll save you money on practically everything you need for the home, farm or family. When you see the amazing bargains—hundreds of them—that I am offering in this big 144-page book you'll say: "Well, I didn't think such things were possible." Farm machinery, tools, buggies, harness, clothing, furniture, house furnishings—everything at the same amazing, rock-bottom prices and on the same wonderfully liberal plan. You can't afford to be without this book one single day longer. It's FREE. Send for it right away.

and on the same wonderfully liberal plan. You can't afford to be without this book one single day longer. It's FREE. Send for it right away.

Don't Send Me One Cent! I'll Ship You This Spreader FREE



Use It 30 Days On Your Own Farm FREE!

Not one cent down. No bank deposit. Keep your money in your own pocket. I just want you to TRY my new Spreader, that's all. Try it right on your own farm for a whole month FREE. Test it out as you wouldn't think of testing any other spreader in the world. Pile on the manure a foot and a half above the box. Put on all she'll hold! Take the fine powdered stuff or the toughest, heaviest, trampled-down, slough-bay kind from the calf-yard. If it's frozen, so much the better. Take it into your field, whip your team to a gallop and slam it in gear! Say, I know that's an awful test! So do you. A test no other manufacturer dares even suggest to you. But do you think for a minute I'd ship you a spreader and let you abuse it that way if I didn't know it would make good? I know what I'm doing. I've made the same offer for seven years, and the Galloway today is better than ever. 40,000 farmers have proved it. Besides giving you the best spreader made at any price

I'LL SAVE YOU \$25 TO \$45

Try the Galloway and see for yourself what it will do. The best proof of all is the machine itself. Eleven patented features all exclusive with the Galloway. Double drive chains furnishing power from both wheels alike direct to the beater and moving the load. The only endless apron force feed, roller bearing feed spreader built. Makes the Galloway worth \$25 more than any other spreader sold today. Low down; easy to load; light draft, two horses will handle it easily. Pull between wheels entirely on the reach, and many other special features. I can't tell them all. Just get my catalog before you buy any other make or style of spreader. Nine different styles and sizes to select from. You are certain to find just the machine you need most for your purpose. Write me. Get my free spreader, book and valuable FREE book of information, "A Streak of Gold." Write now, today.

Catalog and Regular \$1.00 Book



"A Streak of Gold" FREE

The only book of its kind in the world. It tells you, in clear, plain English, just the practical facts that every man ought to know about fertilizing. It tells how to handle manure, how to treat it, keep it and use it to the best possible advantage. Worth \$100 to any business farmer. Regular price \$1—Free to you when you write me. Be sure to send for this famous book today.

Three Months' Power FREE My Superb 1913 Galloway Engine Sent on Free TRIAL



1 1/2 H. P. to 15 H. P. FREE. Mean it? You bet I mean it! I'm going to make you an offer right now that you absolutely can not afford to refuse. Listen to this: I'll let you use a genuine, 1913 Galloway Gasoline Engine right on your farm for a whole month absolutely free. If that isn't long enough, just say so and I'll let you keep it for a month or even two months longer. I'll let you pick out any one of my nine different models you want, I'll let you put it to any test you want. I want you to compare it point by point with any engine on the market, and I don't care what the other engine costs. I'll put the Galloway up against any other engine, absolutely regardless of the price. But, remember, when you buy from me, I'll save you \$50 to \$200.

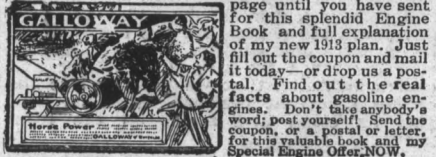
Can you beat that? Never! I'll put the whole thing right square up to you. You handle the engine yourself—make it do your work day after day for one month, two or three. I won't send any salesman or dealer around to help you make up your mind. I know I can bank on my engine and your judgment. Your word goes. After you have had the free trial if you think that there is one other engine on the market at any price that is anywhere near the Galloway in quality, workmanship or actual performance, just send it right back, and I'll pay the freight both ways, so you won't be out a single penny. Or, if you find that the Galloway is so far ahead of your expectations that you simply can't afford to get along without it, you may keep it and on the squarest, straightest and most liberal offer that you or anybody else ever heard of.

Now, you can't beat that offer anywhere. No man living can go further than I have to show my perfect confidence in my goods and insure the absolute satisfaction of every man I deal with. My engines have got to be so perfect in every way that they even sell themselves, that's all. My big, beautiful engine catalog is yours for the asking. FREE. Write today!

FREE SERVICE BUREAU!

I've got a bunch of engine experts that you can't beat anywhere in the country and their services are at your command absolutely without charge. They'll help you solve every one of your engine problems, tell you just which engine is best suited for your particular purposes, how to fit up your power house, how to handle your engine and use it to best advantage. This service is free to you always, whether you buy an engine from me or not.

Get My Engine Book and 90-Day Offer FREE!



Now don't miss this splendid offer. Don't lay down this paper—don't even turn the page until you have sent for this splendid Engine Book and full explanation of my new 1913 plan. Just fill out the coupon and mail it today—or drop us a postal. Find out the real facts about gasoline engines. Don't make anybody's word; post yourself! Send the coupon, or a postal or letter, for it valuable book and my Special Engine Offer NOW.

Let Me Send This New Galloway Sanitary Separator On 90 Days' TRIAL FREE



I'm not even going to try to tell you about the sensational new Galloway Sanitary Separator. I couldn't. It's so far ahead of anything in the separator line that has ever been placed on the market that there is simply no comparison. It's the latest and greatest product of my factories and I'm prouder of it than anything I ever turned out.

But I am not going to ask you to take my word or anybody else's word on the separator question. I am going to give you a chance to find out the real facts for yourself. Listen: Right at the start I'LL SAVE YOU \$25 to \$50.

Then, I'll let you try my New Improved Galloway Sanitary any way you want. I'll send you one of these wonderful new separators, any size you want, right to your farm for 30, 60 or 90 days' trial absolutely free. I want you to test it out every way that you can think of. Compare it with any other machine that you know of, no matter what the price. If anybody else is trying to sell you a separator, make them let you take their machine and set it right up by the side of mine. Take the skim-milk from one machine and run it through the other—that will tell the story! Then examine its wonderful patented features. See how simple it is—how easy to operate and how very, very easy to clean. See how perfectly it is made in every single part. And notice the new improved features that make it the most sanitary separator built.

Take a month if you want to or keep it two or even three months if you prefer. Then decide. I won't hurry or bother you in any way. If you think that there is any other separator in the world at any price that you would rather have than the Galloway, just ship it right back to me at my expense. I'll agree right now to pay all the freight both ways, so that you won't be out a penny or under the slightest obligation if you decide not to keep the separator after having had the free trial. If you decide to keep it, I'll guarantee to save you from \$20 to \$50, besides giving you a separator that absolutely has no equal in the world at any price.

Write for My Big 1913 Separator Book FREE



Get my new 1913 Separator Book right away. Pick out the machine you want—tell me and let me send it to you for three months free and find out I want you to have my new 84-page Dairy Cow Book. It's a check-up of valuable information that will help you make your dairymore profitable. Regular price \$1.25, but free to you if you send for my separator catalog. Just use the coupon or a postal or letter. Write me TODAY sure.

Fill Out the Coupon—Get My Four Great Books—All FREE!

I'm ready to put money right in your pocket. I'll prove that I can do it. You are going to buy something that I have to offer you, within the next few weeks. Get my prices—learn my plans before you spend another dollar for anything for the farm or household. I won't take a cent of your money until I have proved to you that every word that I have said to you is absolutely and positively true. You can use a postal or a letter if you want to, but the coupon is handiest. I'll send you any or all of my great books free.

GET MY SPECIAL 1913 PROPOSITION SURE!

I've been working on this plan for four years. It's the biggest, finest thing I've ever offered. I can tell you how you may actually get a Galloway Engine, Spreader or Separator either partly or entirely without a cent of cost to you. No canvassing or soliciting—no work at all. Just the cleanest and most liberal co-operative offer that you or anybody else ever heard of. I'll tell you all about it in a personal letter when you write for my free books. Get this sure! It won't take you a minute. It may mean hundreds of dollars to you this year alone. Write for the free books and my Special 1913 Proposition before you do another thing.

WM. GALLOWAY, President WM. GALLOWAY CO.

647 GALLOWAY STATION, WATERLOO, IOWA

We Carry Machines In Stock at Chicago, Kansas City, Council Bluffs, Minneapolis and Winnipeg, assuring prompt shipment.

Wm. Galloway, Pres. WILLIAM GALLOWAY COMPANY,
647 Galloway Station, Waterloo, Iowa

I want to know all about your Special 1913 Offer. Tell me all about it and send me the books I have checked below, by return mail, FREE.

- ☐ BOOK OF BARGAINS—A big 144-page book in two colors with a thousand or more bargains in implements, buggies, harness, furniture, rugs, carpets, etc. Everything for the home or family.
☐ MANURE SPREADER CATALOG—A valuable book of information.
☐ "A Streak of Gold."
☐ SEPARATOR BOOK—and my new, big, illustrated Dairy Cow Book, FREE.

☐ ENGINE BOOK—and my book "Proof of the Pudding."

Name

Town

R.F.D. State