

# MICHIGAN FARMER

AND  
**LIVE STOCK**  
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## FARM NOTES.

### The Summer Fallow.

I would like some advice in regard to sod ground for wheat. I have about  $4\frac{1}{2}$  acres of meadow which has been mowed twice. I want to know if it is advisable to summer-fallow and sow to wheat this fall? If so, what time should it be plowed? I want to seed with the wheat. The soil is sand loam.

Antrim Co.

HENRY MCGUIRE.

The summer fallow is again coming into favor in some sections of the state, owing to the better price which wheat has been bringing in recent years. The recent boom in the wheat market, and the probability that the new crop will bring a 25 per cent better price than wheat has brot in recent years, will further stimulate the farmers of the state to grow more wheat, and many of them will adopt the summer fallow method as the most certain of results. Then the extremely wet and backward spring has made it impossible for a good many farmers to get in the area of spring crops which they had planned to plant, and these will naturally turn to the summer fallow as a means of maintaining the crop rotation and getting the land seeded again in its regular order. So a good many farmers will, like the inquirer, find it expedient to plow sod ground for wheat this year who have not been in the habit of doing so in recent years.

Where the summer fallow is used as a preparation for the wheat crop the land should be plowed sufficiently early so as to insure the conservation of a maximum of soil moisture. This is one of the chief advantages of the summer fallow over the other usual methods of preparing the land for wheat. Another advantage is the killing of the weeds which may infest the field so treated. But perhaps the principal reason that summer fallow wheat yields better than that sown with less preparation of the soil is the fact that the frequent and thoro tillage given to the summer fallow not only prepares an excellent seed bed for the wheat, but it also liberates and makes available a large percentage of the plant food contained in the surface soil, so that it may be appropriated and used by the wheat plants. All of these reasons why wheat does better on the summer fallow are also reasons why the summer fallow should be plowed as early in the season as possible, and given frequent and thoro cultivation thruout the summer. If it pays to summer fallow for wheat at all it pays to do it well. If the plowing can be done before the hay- and harvesting season, so much the better, and in any event it should be done before the beginning of the summer drouth in order to secure the benefits from this system of wheat culture as enumerated above.

While summer fallowing can undoubtedly be profitably practiced under special conditions, some of which are enumerated above, yet it is not at all certain that upon the average farm this method of wheat culture should be followed as a regular practice. It is expensive, in that the preparation of the soil and the growing of the crop monopolizes the soil for practically two years. The cultivator of the summer fallow exhausts the humus in the soil to practically the same extent as would the cultivation of a growing crop which would bring a return from the land while it is being prepared for the wheat crop. Where the area of land is limited the question arises as to whether this is more profitable than taking the extra crop from the soil, and fertilizing liberally to make up for the additional plant food which is extracted from it. It is the writer's opinion that if we get plenty of humus into the soil and employ a short crop rotation, that

under average conditions the latter policy is the best one for Michigan farmers to follow. The wheat crop can hardly be made sufficiently profitable, even with comparatively high prices, to make it a special crop on the average farm and devote two years to its production. Of course, under special conditions such as have been enumerated it may prove profitable, but as a general practice we believe it to be of doubtful value to the Michigan farmer under present conditions. It will generally pay either to use a cultivated crop as a preparation for wheat, and make up for the greater drain on the soil by supplementary fertilization.

### How to Tell What the Soil Needs.

How can I tell whether my land needs lime, and what kind is best to use?

Branch Co.

SUBSCRIBER.

The best way to tell what the soil needs is to put the question directly to the soil. The usual way of testing the soil for acidity is to place a sheet of blue litmus paper, which can be secured at any drug store, in contact with moist soil for a few hours. If the paper changes to a reddish color upon such contact it is an indication that the soil is acid and would be benefited by lime. Extensive trials of this test which have recently been made at an eastern experiment station however, seem to indicate that it is not always dependable in regard to the soil's need of lime for special crops. But

also maintained by some authorities that the content of magnesia in the soil must be properly balanced by its content of lime for best results, hence care should be taken not to apply lime which is too high in its content of magnesia, especially too frequently.

However, it is quite impossible to give a general answer to an inquiry of this kind that is applicable to a special case. In fact, there is no sure way of telling what a soil needs other than by experiments conducted upon the soil itself. A few years ago agricultural chemists believed that an analysis of the soil to determine what elements of plant food were lacking and the supplying of these by special fertilization would solve the problem of soil fertility and maximum crops. But while the theory was fine it did not work well in practice, for the reason that the chemist could not tell what part of the actual plant food contained in the soil was in an available condition for the use of growing plants. Today many of our foremost scientists maintain that the average soil contains enough of the elements of fertility to last for many years, some of them almost indefinitely, provided they are made available for the use of the plants. One means to this end is thoro cultivation; another is an intelligent crop rotation; another is the maintaining of the soil humus at a high point, which will insure a good mechanical condition of the soil;

upon his own soil to learn if the general principles which may be thus evolved are applicable to his conditions.

## CONCRETE QUESTIONS.

### Using Lumpy Cement.

I would be pleased to know thru The Farmer if there is any way in which Portland cement can be treated to make it serviceable after it has become hard in the cloth sacks. I have a quantity on hand that has become very lumpy.

Eaton Co.

FRANK WELLS.

Portland cement, when it has "set" or hardened so as to make a solid cake in the sack, is hopeless; but in event it is simply "lumpy" these lumps may be crushed as fine as possible and the cement used for work which does not have to bear any great strain—also the use of about one-fourth more of this cement than usual is advised as it will be found impossible to crush with ordinary means to the fineness as it came from the mill, which gives it the advantage over natural cement, as only by evenly coating each particle of the aggregate and binding them together in one solid mass is strength in concrete work secured.

I have used cement that was partially "lumpy" in such work as did not require a fine finish or bear a great strain, with success, but as there is no treatment, other than to crush the lumps, its use is not to be recommended as it cannot be depended upon.

### Cement Blocks for Barn Foundation.

I am going to raise my barn and make a basement and am going to use cement blocks on three sides. What I want to know is, if 8-inch cement blocks are heavy enough. In my opinion it seems so, and the contractor that will do the work says so. If they are heavy enough it will save lots of material, and gravel costs me \$1.50 per yard.

Muskegon Co.

J. G. OLANDER.

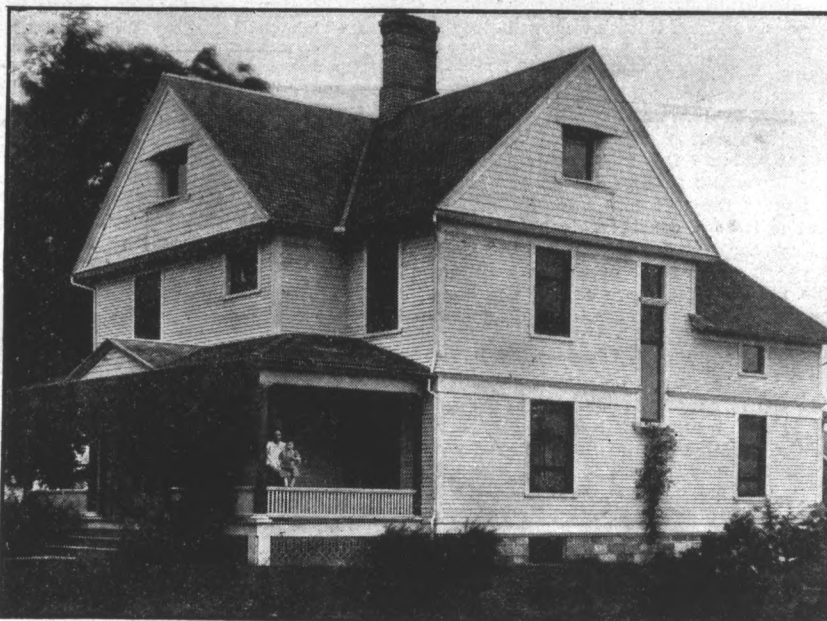
For a barn of ordinary farm size the use of 8 inch (in width) concrete blocks is perfectly safe, if the blocks are carefully made of a mixture of one part Portland cement to five or six parts of pit run gravel. This gravel must have nearly even proportions of sand mixed with the gravel at the ratio of about one-half as much clean sharp sand as it shows gravel—this will fill all voids and enable a concrete block to be made that will have the necessary density and strength.

Concrete of this mixture at one month old has a compressive strength of 1,000 lbs. per square inch with a tensile strength of 200 lbs. per square inch, so if the wall is not reinforced with iron rods laterally it should not be loaded beyond the tensile strength. In case it is practical to reinforce with one-half inch iron rods laid in each second course of blocks it would increase the tensile strength (pulling apart force) so it would equal the compressive strength (crushing force) and so bear a load of 1,000 lbs. per square inch. Whether this is necessary must be determined by the size of the barn.

Another point is the building of a secure footing for your wall so there will be no danger of settling and cracking same; this can be easily determined as to size by the fact that three tons per square foot of footing is a safe load in moderately dry clay soil or clean dry sand; in soft clay  $1\frac{1}{2}$  tons per square foot; gravelly soil about seven tons to the square foot while with quicksands three-quarters of a ton to the square foot is a safe load.

To get the greatest strength the footing course should be stepped up or battered up so as to distribute the load over the entire footing course. This footing may be laid so that the top edge of same will be even with floor of basement and thus save space.

I have emphasized the value of a se-



Home of S. B. Hartman, Nottawa Valley Fruit Farm, Calhoun County, Mich.

if a portion of a field is treated with lime and the results are carefully noted in comparison with those secured from the unlimited portions of the field, the results can be depended upon. Where the soil fails to grow clover, or where all other means to get alfalfa established have failed, it is a good indication that lime is needed. Or where the soil has gotten into a poor mechanical condition it may be benefited by the application of lime to almost as great an extent as tho applied for the correction of acidity. Clay soils are opened and made more friable by the application of lime. For such soils a caustic lime should be used, the commercial hydrated lime being the form most often advised, applied at the rate of 1,000 to 2,000 lbs. per acre. Sandy soils are rendered more compact and retentive of moisture by the application of lime, but a smaller quantity should be used, probably not more than half the amount needed by clay soils. Air slacked lime or even ground limestone are said to give excellent results on these soils where an acid condition is not present. It is

another is the application of lime or other indirect fertilizers, and still another is applying manures and fertilizers which contain actual plant food, but which also have the power to liberate plant food already in the soil thru the chemical action set up or thru the stimulus which they give to beneficial soil bacteria. What we actually know about soil fertility would make a very small book in comparison with what we do not know. Also, what may be true of one soil may not apply to another at all, hence the necessity of experimenting with our own soils and under our own conditions in order to learn what kind of treatment will prove beneficial to them.

The Michigan experiment station is conducting field trials and co-operative experiments this year along many lines, and the results may lead to a general answer to the questions relating to soil fertility upon our different soils, but the specific case will still need a special solution, hence the need of the individual farmer studying these questions for himself and experimenting in a small way

cure footing or foundation for your basement wall for the reason that many masons and contractors pay but slight attention to this most important point and then if the wall fails, they lay the blame upon the blocks as a convenient excuse, when the entire fault lies in the fact that they failed to provide a secure foundation or footing upon which to place the wall, and thus avoid all settling.

Wayne Co. A. A. HOUGHTON.

#### WET WEATHER.

Another hard rain just as we were about to venture on our low corn field with a cultivator. No doubt this experience is common to many of us. It certainly seems as if we were doomed to have grassy and weedy cornfields. This year we have an upland lot and a lot on the creek bottom planted to corn. We got both pieces planted during the fair weather about the middle of May. Two days later rains came and we have not been able to get on the low piece yet. We tried it once but the horses would go into the bottom of the furrow and we gave it up. By utilizing all the time that the ground was half-way dry enough to work we have cultivated the high piece three times and have it in fairly good condition. We have also managed to harrow a field we are getting ready for potatoes about once between each rain. Have had it fitted twice and will have to do it at least once more before planting we are following the proper theory to preserve moisture and it would seem as if there ought to be enough stored up to last all summer. We are getting the potatoes nearly all treated and cut and hope to hustle them in as soon as the ground is fit again.

I think that as soon as the ground dries off a little on top we will go into that low piece of corn with hoes and hoe and pull the weeds around the hills. This will give the corn a little lead and when the soil is dried out enough to cultivate we will try to get the grass out of the rows, putting on thistle shovels if necessary. It is too bad we did not have corn on this field last year, but we may get dry weather yet.

The wet weather has allowed farmers to do a good many odd jobs, so the time is not lost. It has been a fine time to set fence posts and repair fences or to do grading or haul dirt on high ground. Weeds have grown fast but they pull easy and dock can be spudded out easily. Much building and repairing is also being done.

Wheat is looking fine, the smut is reported in some fields. Clover looks fair where there was a good catch, but it has not made the growth it should have this spring, probably due to the weakening of the plant by the excessive drought last fall. Many meadows will not cut a ton to the acre. Oats are making a fair growth, but look rather yellow on low spots.

Calhoun Co. S. B. H.

#### SAVING TIMOTHY SEED.

As the hay crop promises to be abundant this year it is up to the farmer to dispose of it to the best advantage. It has been the practice in this section to bale a large part of the timothy crop and sell it either before winter or immediately after haying. While this method brings quick returns and is a very convenient way of farming there are some points not particularly in its favor. To begin with, it requires considerable teaming, often over bad roads when perhaps other work is pressing, and in view of the rather low price of hay for the past year I am inclined to think that the business is being overdone. The crop is a very exhaustive one; hence the expenses of maintaining fertility is considerable.

A better way, apparently, would be to save more seed. This usually brings a good price and insures the grower of having seed of his own instead of running the risk of buying seed so liable to be impure. Of course, the hulled seed will need a thoro cleaning before it is sown, but there are now so many moderate priced fanning mills in reach of the farmer that do the work equal to most of the elevators that he need not hesitate to undertake the work himself.

When timothy is left to ripen for seed it can stand until the other hay is cut. Do not make the mistake of cutting too soon; many fields are cut before the heads are fairly ripened, causing seed to shrivel, besides it does not hull so well. Cut with the binder the same as for grain.

The saving of timothy seed does not spoil the hay for commercial purposes,

it goes as second grade and when rightly cared for finds a ready market. A friend of the writer had a six acre field from which he saved the seed. It yielded five bushels to the acre of clean seed which sold in the market at \$2.00 per bushel, while the hulled hay yielding one and a half ton to the acre, sold for \$8 a ton in the stack, making the gross receipts of the field \$22 an acre. This, considering the amount of labor involved, gives a better showing than grain crops ordinarily do.

Ohio.

H. E. WHITE.

#### THE FARM WATER SUPPLY.

How to obtain abundance of pure water and convenience in supplying it to the stock and for household purposes are important farm problems. Since the days of the sweep or the windlass with its "old oaken bucket," the farm water supply has been in a state of transition. Their successor, the wooden pump, seemed for years the acme of perfection; now, it too, is following them to the scrap heap. Changing conditions in agriculture have decreed that more live stock be kept. Good business methods demand that the cost of labor be reduced. Hence the desire for a cheap, workable mechanical power to take the place of the expensive and laborious man power. The observation of sanitary principles is no less important. Wells that gave excellent water when first put down have gradually become impure by contamination from manure about the barns and from cesspools not sufficiently removed from dwellings. As a direct result, the health, and even the lives of both man and beast is at stake.

One good well with sufficient capacity to meet all requirements of the farm is better than the common way of having two. It should be located at a safe distance from the house and barn or any other possible source of contamination. Brick or stone up to within eight or ten feet of the top, and from that point to one foot above the surface with good concrete made from the best Portland cement, closing in the top with a tight cover. This will prevent surface water or vermin passing into the well. Instead of watering the stock here, which would in time give an unsanitary condition to the surrounding soil, have the water pumped with a windmill and forced to a place where it will be convenient to give them access to it. For any reasonable distance or height this power will prove very satisfactory.

Living springs are usually found along the lower portions of hillside, and if pure, and likely to remain so, will generally be the best source of supply. When of sufficient volume there is nothing better than a hydraulic ram to do the pumping. It will force the water to a long distance and raise it to a considerable height, the limit, of course, depending on the fall of the spring. In some cases the gasoline engine may be the more suitable power depending on the quantity of water needed.

In connection with a water system of this kind there should be a tank in order to assure a full supply at all times. If there is a hill convenient to, and higher than the buildings into which the water is to be finally required, it will make an ideal place for the storage tank. To guard against frost it should be placed in the ground in the form of a cement cistern and covered to keep out vermin. Falling an eminence of this kind, which will probably be the case in a majority of instances, it can be constructed of galvanized steel, wood, or concrete, and erected on a tower at some high point or placed in the buildings. If the former plan is adopted it will necessitate some protection of the standpipe against frost. A good plan is to dig what is known as a "dry well" and have the pipe pass up thru this to the tank. Then box it up with matched lumber, allowing about six inches of clear space. There should be four coverings of lumber with a one-inch dead air space separating them and several plies of building paper between each covering, the whole extending from the bottom of the tank to the top of the dry well. By this means the warmer temperature below the surface is conveyed up into the casing around the pipe supplying sufficient heat to keep the water inside from freezing. Hydrants should be placed in the stables and it will be no small convenience to have watering places provided in the fields where stock run.

There are several other uses for such a system that should not be overlooked. Many steps will be saved if means are provided for pumping the household sup-

ply directly into the kitchen. Have hydrants placed in the garden and on the lawn; a little irrigation is sadly needed at times and will amply repay the slight trouble involved. At threshing time, too, it is very desirable to have plenty of water at hand. A little planning will suggest the necessary arrangements for covering this point. In some sections of the country, good water is hard to find on each farm. In such instances, a number of farmers would do well to cooperate and install a system that would insure them an abundance of pure water at all times besides saving them the back-aching exercise of running the pump handle.

Canada. J. HUGH MCKENNEY.

#### BLUE GRASS.

Herewith I send a specimen of what is known here as June grass and I am anxious to know whether it is known by any other name. I think it is listed in seed catalogs as Kentucky Blue Grass. This grass thrives in this sandy soil, makes good pasture and is fine hay if cut early, being ready about the same time as red clover. I think a mixture of this, orchard grass and clover would be a good combination for this section.

Oceana Co. W. N.

Fifty to sixty years ago, the grass you send was called by the people of New England and New York, blue grass—a name to which it was well entitled, on account of its dark blue color. It came from Europe to America. After a time, the people of Kentucky, regardless of names used elsewhere, began to call our June grass by the name of blue grass, and by degrees the people of the north began to call June grass, Kentucky blue grass. At present there is some confusion in the minds of many farmers of the north as to the distinction between the two grasses. To make matters worse, within a comparatively short time, the grass under discussion has been called Canadian blue grass.

Flat-stemmed poa, Canadian blue grass, the blue grass of New England is Poa compressa; June grass, the blue grass of Kentucky, Kentucky blue grass, is Poa pratensis.

June grass is our best grass for lawns, and is common almost anywhere along roadsides and in old pastures. Unless the soil is very rich, the crop is light. The quality for pastures is excellent. The specimen enclosed, flowers about the time of timothy; the hay is extremely heavy and nutritious for its bulk; on the ground it is rather short and thin and gums the knives which cut it.

W. J. BEAL.

"Little drops of water, little grains of sand"—under certain conditions start little gullies. Cure these before they get to be big ones, by dropping in small brush with the tops pointing up-stream. These will arrest the silt as it washes down and automatically fill the washouts. Even good-sized gullies can be leveled up by this simple process. Be sure the branches are placed with their butts down-stream, otherwise little good will be accomplished.

Hundreds of exact tests have been made by the Department of Agriculture and the State Experiment Stations to show the value of the legume as a fertilizer. In addition to adding nitrogen to the soil, it supplies humus and improves the mechanical texture. These two features are also accomplished by plowing under or feeding such green crops as rye, buckwheat, etc., but these crops put nothing back into the soil that they have not taken out of it.

#### SELL GOODS

to farmers direct from manufacturer on remarkable free trial plan. Goods are better. Profits are better. If you can furnish team and wagon and give bond, address KKK Medicine Company, Keokuk, Iowa, Dept. E.

#### Ask Your Dealer About This.

The matter of roofing for house and buildings is one of the most serious questions the farmer of today has to consider. Shingles are going higher all the time; while the quality seems to be getting worse every year. Of all the prepared roofings, none has been more confidently offered to the consumer than Rex Flintkote Roofing, which has been so highly recommended in our columns by dealers of the best standing in this state and neighboring states. J. A. & W. Bird & Co., the manufacturers of this roofing, refer our readers to their respective dealers as to the quality and service of this roofing and are well content to abide by their candid opinions, knowing that the reliability of "Rex Flintkote" and their own reputation are known to the trade everywhere. We advise sending for samples of "Rex Flintkote" Roofing to J. A. & W. Bird & Co., No. 60 India Street, Boston, Mass., and post themselves on the quality and service of this roofing. We have never heard anything but praise of it.

#### Lightning Need Be a Danger No More.

Nature has no danger that threatens property as much as lightning—unless proper precautions are taken to guard against it. Millions of dollars worth of grain, stock and buildings have been burned by it every year. W. C. Shinn, the wizard of lightning, of Lincoln, Nebraska, whose copper cable lightning rods were already so widely noted for perfectly protecting farm and city buildings and barns has invented, fully tested and applied for patent on the telephone lightning arrester. Thus by means of these two devices of his there need be no more danger from the lightning's stroke, whether you have phone connection or not. The Shinn Lightning Arrester, which is automatic, gives absolute protection. It is guaranteed by Mr. Shinn. With this device attached to a phone it is impossible to be hurt or even shocked tho talking over the wire during a storm. The telephone can't "burn out." The scientific copper cable lightning rod also manufactured by Mr. Shinn has the highest endorsement of scientific men, colleges, farm paper editors and insurance experts. Insurance companies recommend a discount of 10 to 20 per cent on the rates on farm buildings fitted with this rod. Mr. Shinn has written a very interesting book, "Lightning and How to Control It." Your dealer in your own locality will supply you with it free or it will be sent to you without charge direct from the factory if you write W. C. Shinn, 128 16th Street, Lincoln, Nebraska, for it. This book tells all about lightning and the laws of nature in regard to it—how houses and barns take fire, how people and stock are killed and why water drains, stoves and iron beds are very dangerous during thunder and lightning storms.

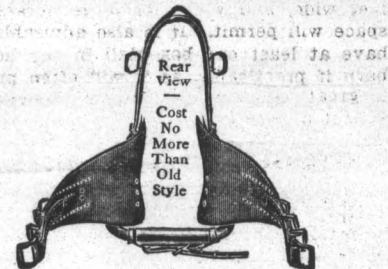
#### State Colleges and Farmers All Endorse Humane Horse Collars.

Don't use cruel "Sweat-Pads" and old-style, misfit collars which only make your horses' shoulders worse. Just try these collars, no risk to you, fit any horse, no pressure on shoulder-blade or bones where sores come—no pressure top or on windpipe—45 sq. in. pulling surface on each shoulder, properly distributed, while there is only 10 sq. in. on other collars. Read two endorsements here below out of thousands received by the makers. University of Illinois, Urbana, Ill., May 22, 1909.

We have used a pair of your Humane Collars for a year and a half with excellent results.—Yours very truly, (signed) R. C. Obrecht, Associate in Horse Husbandry.

Ohio State Reformatory, Mansfield, O., May 14, 1909.

Your collars I have been using for six or eight weeks on a team that always developed sore shoulders when the spring work began. They have given entire sat-



isfaction, not a sore or abrasion having appeared on either horse. I shall recommend the purchase of your collars for all our teams. Yours respectfully, (signed) A. N. Shaw, 101 Wood street.

Over 4,500 harness dealers carry Whipple Humane Horse Collars but if yours don't happen to have them in yet, just send his name and your name and address and the company will send you their free book and prices and see that you are supplied, freight prepaid, at no extra cost to you. Wherever you buy you get 15 days' free trial to prove satisfaction or money back. Address nearest factory, Humane Horse Collar Co., 1608 Lowe St., Chicago Heights, Ill., or 1964 South 13th St., Omaha, Neb. Write today and save your own time and your horse's time, and valuable horse flesh when you need it most.

#### Special Premium to Subscribers.

Knowing that many of our readers are largely interested in grape culture and that they have had more or less trouble from blackrot and other fungi, as well as from the various insects which attack the grape, we have arranged to secure for them a copy of the bulletin, "Diseases and Insects of the Grape," recently issued by the state inspector of nurseries and orchards. In addition to a description and remedies for the black rot, the grape mildews, the grape berry-moth, the rose-chaffer, and the flea-beetle are also given attention in the bulletin. It will be sent postpaid to any one who applies for it. Address L. R. Taft, State Inspector of Nurseries and Orchards, East Lansing, Michigan.

#### Secrets of Success.

Thirty-eight years is a considerable period to have done one thing better than it has been done by anyone else. Yet, such is the record of the Joseph Dick Manufacturing Company, of Canton, O. This concern has made the well known Blizzard Ensilage Cutter ever since ensilage cutters were in general use. Not only that, they have maintained from the beginning an unquestioned supremacy in their field. Blizzard Ensilage Cutters stand for reliability and the most advanced ideas. Mr. Joseph Dick is continually striving to improve our past performance. This is only part of the secret of his success. The other part is a steadfast adherence to quality. Better write for the catalog of this firm. Address Joseph Dick Mfg. Co., 1439 Tuscarawas St., Canton, Ohio.

# LIVE STOCK

THE HORSE STABLE.

I have taken out the inside of my horse barn, and will put in cement floors. Do you think it necessary to put down planks for the horses to stand on? Also, what is the best kind of manger in which to feed hay and grain, and how wide should the stalls be?  
Jackson Co.

O. S. LUDLOW.

No planking is needed on a cement floor for horses. In fact, the floor is much more sanitary and satisfactory in every way without the planking. The writer has used a cement floor with perfect satisfaction. With the use of plenty of bedding and some good absorbent in the stable, there is little of the rank ammonia smell which is unavoidable where a plank floor is used and has become soaked and foul with the liquid excreta of the horses. It takes little if any more bedding to make the horses comfortable on a cement floor than on a plank floor. They need a good bed when stabled on either kind of a floor, and it takes little more straw to provide them a good bed than it does to bed them scantily, where a little care is taken in cleaning the stables to save the straw. Of course, where plenty of straw is available it is desirable to use as much as possible as an absorbent in the stables, but it is always profitable to use sufficient to absorb all of the liquid manure, and this will insure a good bed for the horses to lie on, which is almost as great a factor in keeping them in good condition as is a proper ration when they are at hard work.

The best way to feed hay and grain to horses is from a feeding floor or alley in front of the mangers. Where this form of construction is possible the manger should be about two feet wide, inside measurement, at the top and about eighteen inches at the bottom, and about two feet deep, and with a feed box for grain built in one end. The manger and feed box should be constructed of plank and have the top edge protected with band iron. The stalls should be at least five feet wide, and wider for large horses, if space will permit. It is also advisable to have at least one box stall in the horse barn if practicable, as it will often prove a great convenience and is sometimes almost a necessity.

## COTTONSEED MEAL FOR HORSES.

Some time ago I read an article in The Farmer, written by Mr. Lillie, in regard to feeding cottonseed meal to horses. I cannot find the article again. How much do you advise feeding to horses? We are out of feed and have to buy, and corn and oats are rather expensive. If you do not use it what would you advise for a grain ration for horses with mixed hay?  
Genesee Co.

FRED HALL.

I have never fed any great amount of cottonseed meal to horses, altho I have some, and had good results in what I did feed. It is quite highly recommended in Henry's feeds and feeding for work horses, and you can feed as high as two or three pounds a day with good results, but I would not think of feeding cottonseed meal alone to horses. It wants to be mixed with wheat bran, or corn meal or with ground corn and oats, or something of that sort. If you are feeding corn and oats to your horses, you could reduce the amount of corn and oats fed and substitute a part of it with cottonseed meal. I would not feed over two pounds of cottonseed meal a day, certainly not to begin with. You will find that cottonseed meal is a strong food and that your horses can do a lot of work when fed a portion of their ration with cottonseed meal. If you do not wish to buy the corn and oats, you can mix cottonseed meal with wheat bran and feed it in that way. After gradually increasing the amount of cottonseed meal, you can feed as high as three or four pounds a day with good results. At the present time we are feeding to our work horses, ear corn and wheat bran. While wheat bran is too high in price, yet I think a little of it mixed with the corn is a splendid thing. It is very rare that you have a horse get off his feed if you feed him a quart and a half or two quarts of wheat bran at a feed. You can then give him what ear corn he will eat up clean three times a day without any bad effects, and I know of no ration that will give horses better power of endurance and keep them in flesh when working hard, than this ration. Corn and oats ground together make a most excellent ration for work horses. This can be varied by mixing in a little wheat

bran or a little cottonseed meal; but it is a good ration alone, especially if you have hay with some clover in it.  
COLON C. LILLIE.

## NODULAR DISEASE.

In The Farmer of May 29, on page 580, it is stated that a sheep-dip is a remedy, or rather preventive for nodular disease. Do you think that correct; or do the parasites get into the body of thru the mouth? If the latter way is the grass infested with the germs?  
Allegan Co.

W. E. THOMPSON.

Nodular disease gets its name from the appearance of the intestines of sheep suffering from this form of bowel parasite. These nodules are caused by a worm about the size of an ordinary stomach worm. It is not the full grown matured worm that produces the disease, but its embryo. Either the egg or embryo itself is taken in along with the food or water and on meeting with the heat and moisture of the body it passes on and makes its way into the wall of the bowel; there it becomes encysted, setting up an irritation which produces the nodules. Upon reaching a certain stage of development the embryo returns from the nodule into the intestine and here completes its development into a sexually mature worm, which no doubt produces eggs. Now these eggs pass out of the intestines along with the excrement, under favorable conditions, develop embryos which, in turn, are taken in by sheep and go thru the same cycle, or process of development such as I have mentioned.

Now, it is well to understand that old sheep are the ones which are affected with this disease most. A yearling may show some symptoms of infection; besides, younger lambs often have a few nodules, but not in sufficient numbers as a general rule, to interfere very much with their health. It is not always an easy matter to distinguish the difference between the symptoms of nodular disease and other ailments; however, the symptoms usually present themselves during the winter months or early spring. The writer has been very much astonished when visiting different slaughter houses, and especially those in Cleveland and Chicago, to find that very few sheep that are slaughtered seem to be entirely free from this ailment, but strange to say the few nodules that many of them have on the bowels could not have interfered but very little with their health, for if they had the sheep would not have thrived so well. I have no hesitation in stating that this disease extends all over this country and Canada and I am told that sheep are not troubled with nodular disease in either Australia or Germany. These small tumors on the intestines are filled with a greenish cheesy substance and when the bowel is pretty thoroughly covered with them they appear to become calcified, that is, so impregnated with lime salts, that they feel almost like stones. When this condition exists digestion is so interfered with that the animal soon dies from weakness.

Nodular disease is a hard one to cure, in fact, it is not possible to cure it at all after it has once become established. Prevention is about all that can be done. Ewes seem to affect their lambs only thru the medium of the pasture; therefore, it is good judgment to never allow the lambs to run on infected pastures. This disease does not appear to arise spontaneously. Now, regarding treatment, I am told by competent veterinarians and intelligent observing, sheep raisers, that the best results follow giving a teaspoonful of gasoline in either two ounces of sweet milk, or two ounces of sweet oil, one dose a week for three weeks. Some practitioners and sheep raisers believe that one dose is sufficient—I differ with them. Or give from two to 3½ ounces of a one per cent solution of coal tar creosote. This is made by adding one part creosote to 99 parts water and should be given one dose a week for three weeks. Now then, if the sheep suffers from stomach worms this treatment will help them. The cheaper grades of coal tar disinfectant are not active enough to do much good, unless the treatment is followed up. In my practice I have found fully as good results by giving sulfate iron and common salt, giving it to them daily in their feed. The dose of sulfate iron is from 15 to 25 or 30 grains and I prefer to use it finely powdered in order that it may be mixed thoroly with the ground feed, fed to the sheep. I very often add ground gentian and ginger.

In conclusion, let me say that lambs are much more apt to become unthrifty the result of stomach worms, than from

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nodular disease; therefore, I have no doubt that Mr. Reynolds found fairly good results by using the coal tar preparations internally in the treatment of stomach worms, but I am equally sure that he will find poor results from any remedy in the treatment of nodular disease when in the advanced stages, Ohio. W. C. FAER.

### TUBERCULOSIS IN HOGS.

Reports gathered from the various meat-packing centers of this country show tuberculosis of hogs to be on the increase and causing heavier loss to raiser and packer alike than any other disease.

Statistics show that a year ago there were over 56,000,000 hogs in this country and their value at that time was over \$339,000,000. Federal inspection at the abattoirs of the country show 2 per cent of the hogs slaughtered to be affected with tuberculosis. Reports from Europe show a far more widespread infection that runs as high as 5.5 to 7.5 per cent.

The small amount of money required to start in the hog raising business and the quick returns on the amount invested make it an attractive field for operations. Hogs will make greater gains on less feed than almost any other live stock and at the same time utilize profitably waste food products of every variety if properly prepared. As tuberculosis of hogs is chiefly contracted thru feeding, the significance of the latter feature is obvious.

Hogs from Arkansas, Oklahoma and Texas are remarkably free from tuberculosis, due to the methods of caring for them, or rather the lack of care. They are not restricted to feed lots, where disease is commonly found, but roam over large areas to shift for themselves. No prolonged feeding is practiced in narrow limits, but from birth to maturity they are pastured on alfalfa, oats, corn, rape, and peanuts. Hogs raised in the forest regions of Hungary are likewise rarely affected with tuberculosis. In striking contrast are the hogs slaughtered at three cities in one of the leading dairy states where there are a large number of co-operative creameries and the raw skimmed milk is fed. Samples from two of these creameries were injected into guinea pigs and in one instance virulent tubercle bacilli were recovered.

Buyers for packing houses are learning from bitter experience to avoid sections of certain states, and two firms will not buy hogs from one state known to be badly infected. In fact, many of the smaller packers in the central west buy subject to post-mortem inspection as a measure of self-protection.

An investigation carried on by the bureau of animal industry in a certain section of the middle west consisted of tagging hogs hauled to market in wagons. Of 3,420 animals tagged it was learned that all of the infected stock came from less than 6 per cent of the farms.

It is known beyond doubt that the majority of tuberculous hogs are produced by the following causes:

1. Feeding raw milk and slime from creameries.
2. Feeding hand-separated milk from tuberculous cows.
3. Feeding behind tuberculous cattle.
4. Feeding tuberculous carcasses.
5. Feeding slaughterhouse offal.

The danger in feeding hogs behind tuberculous cattle lies in the fact that such cattle discharge enormous numbers of tuberculous germs in their feces.

Sooner or later the packer will buy subject to post-mortem examination, as some are now doing with certain classes of female cattle. Then the hog raiser who persists in fattening with tuberculous material will be made to feel the cost of his indifference or lack of knowledge. Today the buyer makes his purchases with the knowledge that a proportion of his animals will be condemned and the price fixed accordingly, with the result that the careful breeder suffers with the careless one. This is not equitable. But when the packer buys subject to post-mortem results the painstaking and intelligent raiser will receive more than he does now and the ignorant or indifferent breeder will get less, when is more nearly a fair deal for all concerned.

### LIVE STOCK NOTES.

Word comes from Wyoming that plenty of rain has fallen on the ranges and grass is luxuriant at last after the cold, backward spring. Cattle are doing well, and Wyoming ranchmen expect to market a good number of fat cattle in the autumn, but grass got such a late start that marketing will be much later than usual.

Stock came thru the winter thin, sheep, as well as cattle. Good reports are also received from Colorado, where warm weather has prevailed since the first of March, and grass has made a good growth. Cattle there are on the summer range, and are fattening satisfactorily. Range cattle are still a factor in the market, of course, altho the cattle output is diminishing every year owing to the rapid settling up of the ranges. In the future plenty of cattle will be raised on the former ranges, but they will be bred and fed by farmers.

The dearthness of beef continues to check its consumption nearly everywhere, and anywhere near normal supplies of cattle cause quick breaks in prices. Much less prime beef suffices to supply trade requirements than in recent years, and there is a proportionately greater sale for the lower-priced cuts, but these also have advanced with the others, and rounds of beef cost in the retail markets within 2 cents a pound as much as porter house steaks cost several years ago. People are asking as a rule for small cuts of beef in place of the heavier cuts. Complaints are general that the retail markets are making excessive profits on beef, thereby seriously curtailing consumption, but there is no remedy.

A feature of the Chicago cattle market is the large runs of yearlings showing up in recent weeks. The demand for these times runs strongly on young fat heaves, and the tendency is for yearlings of the better class to sell much closer to the prices of long-fed heaves than in former years. Only a short time since a consignment of prime yearling steers was sold at \$7.95 per 100 pounds. They were Illinois horned Herefords that tipped the scales at 800 pounds, there being 24 head in the lot. Another noteworthy sale made just before the slump in butcher stock was that of 75 Illinois 732-pound heifers at \$7. Such a season of high prices for fat heifers was never seen before, sales at \$6.25@6.80 and even higher having been numerous. Producing "baby beef" is deservedly popular, as it requires but a comparatively short period of feeding, while profits are much greater than those received by most farmers who feed a long time and market heavy cattle.

The United States government has been prosecuting the railroads vigorously to compel them to observe the twenty-eight-hour law in shipments of live stock, and the roads are taking steps to aid in complying with the law. To this end they are now engaged in the construction of a series of small stockyards, at junction points in the suburbs of Chicago, where cattle and hogs may be unloaded, fed and watered before being reshipped to eastern cities, and also before being taken to the stock yards in Chicago. A fine of \$100 is provided by the federal law for allowing cattle to remain in the cars for over 28 hours without being fed or watered, but the time may be extended by agreement with the shipper. Shipments of cattle from the Missouri River are moved on a 33-hour schedule, and delays result in violation of the law.

Many stockmen have been making haste to get their fat heavy heaves marketed, realizing from past experience that with the appearance of hot weather buyers discriminate sharply against them and favor the handy weight kind. Besides, owners know that it is expensive to keep on feeding high-priced corn. Heavy steers have already had their usual early summer decline, with a fair call for choice long-fed lots, but the worst decline by far has been in grassy cows. Butcher stock had been selling at unusually high figures for several weeks, and prices had to be readjusted, with so many Texas grass cattle appearing in Missouri River markets. There has been a great widening out in prices between grassy and dry-lot steers and butcher stock, something that was easy to foresee. It is a good plan before marketing cattle off grass to place them in a dry lot and feed them corn, oats and hay for two or three days. By this simple method their shrinkage in transit to market will be materially lessened, and besides their appearance will be made more attractive.

Ohio has been putting in the largest acreage of corn in years, farmers having been impelled to do so by the high prices that have been paid for a long period and a belief that corn will never be cheap again. They are also following this course owing to the scarcity of stock cattle, and all over the state old sod ground has been plowed up for corn. A member of a prominent Chicago live stock commission firm, himself a cattle seller, who recently visited Ohio, found very few fat cattle in the state, the greater part having been shipped to New York and exported. He said that with the exception of a bunch of 140 head, he did not know of any large number west of Columbus. Similar conditions are reported in other states in the middle west, and cattlemen need have no fear about the future for well fattened heaves. No large marketings are expected during June and July, and there is every reason to look for high prices for consignments that are good and fat. Kansas and Nebraska are still furnishing the Chicago and other western markets with a large share of the best heavy cattle, and it is now expected that the future supply of such heaves will come from those states. Texas is marketing fair numbers of cattle that have been fed meal cake on grass, and distillery-fed cattle are marketed freely, recent prices being regarded as extremely good. It is understood that about 75,000 cattle were fed in the distilleries in Illinois and Kentucky this year, and the greater part will be marketed in June. Last year the market was at its best in June, and the distillery feeders, who generally guess right, expect to see the same condition of things this month. Decidedly fewer grass cattle are ready than in recent years, owing to the long drought in New Mexico and Texas, and fewer cattle by far will reach the Missouri River markets from that region in June and July than last year.

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# VETERINARY

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**Cribber.**—I have a five-year-old horse that catches the stall with his upper teeth and then pulls, uttering a noise. He has been this way for the past four months and is gradually getting worse. What can be done for him? A. H. M., St. Clair, Mich.—You will find this question answered in this paper.

**Cataract.**—I would like to know if you think there is any remedy for a mare that has been blind for about nine months. I am told her blindness is the result of periodic ophthalmia. The spots on the pupil are irregular in shape and do not cover the whole eye. A. S., Mt. Clemens, Mich.—I am sorry to inform you that there is no remedy for cataract in horses; therefore, you had better leave the eyes alone.

**Shoulder Sprain.**—I have a valuable horse that is quite lame in right fore shoulder; the muscles are quite sweened. Have applied a blister, but he seems to be gradually getting worse. The blister I applied has considerable iodine in it—it appears to hurt him to move the foot forward. M. S. D., Concord, Mich.—Preparations of iodine should never be used in the treatment of sweeney or atrophy of the parts. You had better apply cerate of cantharides or any of the liquid blisters that are advertised in this paper.

**Cow Holds up Milk.**—I have a good cow that will only let down about one-half the milk she should. Do you believe that she has been milked by a woman before I got her, or would that have anything to do with it? Have the kindness to tell me how to manage her? S. P. M., Ross, Mich.—It very often makes a great difference when a man milks a cow, if she has always been used to be milked by a woman; however, it is only a question of time when she will become accustomed to the change. Therefore, I believe you had better insist on milking her yourself.

**Obstructed Teat.**—I wish you would send me a milking tube 3 1/2 inches long for I have a cow that has one obstructed teat. This obstruction is up near the udder. Have applied iodine ointment. R. B. H., Howard, Mich.—Give your cow 1 dr. of potassium at a dose in feed twice a day and continue applying the iodine ointment. Each time before you use the milking tube boil it thoroughly for ten minutes or soak it in a solution of carbolic acid, 1 oz. to a quart of water.

**Diarrhoea in Chickens.**—Can you tell me what ails my chickens? They look real good, but about every six weeks they purge, growing very weak, besides getting very dirty behind. W. V. A., Grant, Mich.—It is possible that your fowls suffer from diarrhoea following constipation, this being an effort of nature to relieve them. Give each one of them a small teaspoonful castor oil, one dose only and mix some ground ginger and a small quantity of powdered cinnamon in their feed; besides, dissolve a little copperas in their drinking water, not more than 1 dr. to a quart.

**Crib Biting.**—I am anxious to know what can be done for a five-year-old mare that cribs, and I would also like to know if anything can be done for a horse that had a bad attack of pink eye and went blind? C. W. F., Pittsford, Mich.—Crib biting is a vice that a horse seldom gets rid of. If she sucks wind, buckle a strap around her neck, this will prevent air passing into stomach. When loss of vision follows severe attacks of influenza, causing total blindness, the eyes can never be restored to a normal condition. If you stable your five-year-old mare that cribs, remove all objects that she is inclined to bite, and feed off the floor, out of a shallow feed box with oval corners.

**Roarer.**—I have been a reader of the M. F. for a long time and have gotten valuable information from your department concerning the treatment of live stock. Now, I would like to know what to do for a mare that is apparently perfectly healthy, with a good appetite, but seems to be badly wind broken; when we try to work her she soon gets out of breath, but we are pretty certain it is not heaves. What had I better do for her? A. B., Hillsdale, Mich.—I am inclined to believe that your mare suffers from paralysis of the vocal chords or a stricture of larynx, causing her to choke when exerted. If she has heaves she will show it by expelling the air with a double sort of action of muscles, especially those of the flank; besides, she will have a dry hacking cough. A surgical operation will perhaps relieve your mare. If she is a roarer. The vocal chords should be removed or a tracheotomy tube can be put in wind pipe and let her wear it constantly. Your veterinarian can no doubt perform this operations as it is quite simple.

**Septic Poison.**—I have a colt two weeks old that is very stiff in its joints, especially those of hind legs. I am obliged to help him up most of the time. When this colt was born it was badly swollen at navel, there has been a leak of a watery substance ever since, but the swelling has gone down some this last week. Last week was very hot and the colt got a drink of milk while the mare was very warm. The stiffness dates from the day after this drink of hot milk. What can I do for it? W. E.

P. Brown City, Mich.—I am inclined to believe that your colt suffers from septic infection, the result of an inflamed suppurative navel. Had you treated the navel with antiseptics he would have escaped this rheumatic affection of the joints. Give 2 grs. quinine and 5 grs. sodium salicylate at a dose three times a day and apply equal parts spirits camphor, extract of witch hazel and alcohol to sore joints twice a day.

**Horse Slobbers.**—I have a horse that slobbers when he eats grain and lets some food fall out of his mouth. Have had his teeth filled twice—I am inclined to believe that his nippers are long; however, he seems to crack his corn all right. He is thin and refuses to lay on flesh. E. T., Stony Ridge, Ohio.—His mouth should be looked into quite carefully; there is perhaps a point or abnormal growth of some tooth that is causing all this trouble. The front teeth seldom interfere much with mastication. Better have your veterinarian look again at his mouth; also give 1/2 oz. ground gentian, 1/2 oz. ground ginger and 1 oz. powdered charcoal at a dose two or three times a day for three weeks.

**Malignant Distemper.**—I have a filly that has been sick for the past four weeks. She had been ailing for some time, suffering from what I thought to be distemper. On May 20th, I called our local Vet. and he thought it a case of distemper. Her limbs and lower portion of body has been swollen, but this dropsical trouble appears to have left her. Some days she appears to be quite bright, but other times quite dull and dumpy. Have been giving her medicine that the doctor prescribed and feeding her linseed meal to keep her bowels open. She has shown very little signs of getting better yet, but I wish to get your advice telling me what to do. C. G. F., New Boston, Mich.—If the dropsical swelling under belly and brisket fluctuates, puncture it in several places with a small pen knife, but be sure that it is clean. Dip the knife in one part carbolic acid and thirty parts water or else boil the blade in water for five or ten minutes before using it. Give the colt 1/2 oz. fluid extract gentian 1/2 oz. fluid extract cinchona, 1 dr. tr. nux vomica and 2 drs. Fowler's solution at a dose three times a day. Also give a dessertspoonful of powdered nitrate potash at a dose once a day. This treatment should be kept up until a recovery takes place.

**Indigestion.**—I have a valuable Jersey heifer nine months old that is quite thin and does not have much appetite. She usually drinks milk, eats a little grass—she is inclined to nibble at the bark of trees, chew on a dead limb, etc. In fore part of winter she was lousy, but seemingly got rid of them. After the lice were gone she would stand around, and lies with head at side. We fed separator milk, oats, hay, ensilage and oat straw, etc. Her bowels seem to be in about the right condition for the amount she eats. Would like to know what to do for her. D. P. R., Kalkaska, Mich.—Your heifer suffers from indigestion and acidity of stomach. Give her 1 oz. of bicarbonate soda, 1 oz. powdered charcoal and 1/2 oz. ground ginger at a dose in a quart of water as a drench two or three times a day.

**Inflamed Udder.**—Indigestion.—I have a cow that came fresh last March; she had udder trouble shortly after calving. I succeeded in reducing the inflammation in a few days and she seemed to be all right. Some three weeks ago her milk flow seemed to almost cease and the milk appeared to be of poor quality. In a few days she increased in milk flow, but a portion of the udder remained caked and the milk from this diseased quarter seems to be thin and watery. She discharges some from the eyes and is coughing. I have applied kerosene and lard and am giving a teaspoonful of gentian twice a day. G. W. H., Stanton, Mich.—If the inflammation has pretty much subsided, which I presume it has, you will get fairly good results by applying iodine ointment once a day. Also give 1 oz. hypo-sulfite soda once a day and enough epsom salts or grass to keep her bowels fairly active. It is well to keep in mind that a great many cows bruise their udders while stepping over fences or logs or out of ditches, or by being hooked by other cattle. Many other times cows suffer from bacterial infection; in these cases the udder should be thoroughly washed out with antiseptic solution, such as a 2 per cent solution of carbolic acid or one to 1,000 solution of bichloride mercury, or one to 1,000 solution of permanganate potash and warm water.

**Punctured Udder.**—I have a mare that foaled on May 19th; some three days later I discovered a small hole in the back part of udder; out of this hole she leaked milk; a few days later a bloody looking substance dropped out; now it discharges a stringy looking substance about the color of milk. I do not know how this hole was made, unless she run the fork in it. I kept the fork in a cubby hole behind her and when I went she had this down behind her. At first her bag was swollen quite badly; both teats are all right, but back part of bag seems to remain hard. The same morning I noticed she had a swelling on jaw, but this bunch is not very hard. What had I better do for it? F. E., Billings, Mich.—I am inclined to believe that your suppositions are right. The udder must have been either punctured or bruised; now you should make an effort to heal it as rapidly as possible. Inject some peroxide-hydrogen into wound twice a day; ten minutes later fill the sore with borac acid.

**Short Tail.**—Wart.—I have a three-year-old filly that has a very short tail. The hair does not appear to grow as rapidly as it should—the tail seems healthy enough and is quite bushy. Is there any hope of it being long again; if so tell me the remedy. This same colt has a wart on left fore leg below elbow. I applied some medicine that I obtained of our Vet. but it failed to remove it. I

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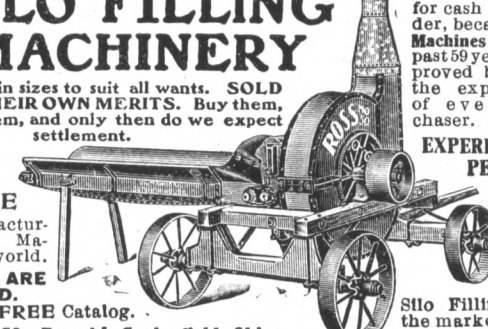
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## THE DAIRY

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### DAIRY BREEDS AND BREEDING.—II.

#### Similarity and Variation.

The most important law which governs hereditary transmission is that of similarity. It is by virtue of this law that the peculiar type, qualities and temperament of the parents, whether good, bad or indifferent, are transmitted to their offspring. Similarity is one of the most certain laws of nature, for within certain limits progeny always resemble their parents. Similarity maintains constancy of species by repeating in the offspring the instincts and character of the parents and never those of another species.

This law has enabled us to establish distinct breeds that are of uniform type, quality and temperament, but many breeders who are stuck in the one rut of similarity, or uniformity, have neglected to take advantage of another important law of breeding (variation) and have failed to improve the productive qualities of their cattle.

The principal end in breeding dairy cattle is the production of dairy products and we are making a mistake when we sacrifice the individual merits of our breeding animals for fancy points and similar markings. It is not necessary for me to reflect upon any breed of dairy cattle, for the same rule applies to all. The Jersey breeder who breeds for color of the hair, horns, tongue and switch at the expense of the dairy qualities of his cows is injuring the vitality and milk-giving qualities of the breed. When we speak of the production of dairy products we must also consider the calf as one of the products of the dairy, for the cow should be capable of producing a good, vigorous calf as well as milk. It seems to me that our leading breeds of dairy cattle have reached a stage of development at which we should not be afraid to sacrifice certain fancy points and color markings in order to produce animals that would give larger profits at the pail.

In order that they might obtain uniformity of color, size, form and characteristic markings in their herds, many of the breeders of pure-bred dairy cattle have neglected to take advantage of the law of variation in order that they might improve the dairy qualities of their cattle. It sometimes happens that an animal is unlike either parent in color, markings and appearance, but it may possess some qualities greatly superior to either. This animal should not be discarded for the reason that it does not possess the markings required by the set standard of the herd. This law of variation has played an important part in the improvement of dairy cattle, and we are rash if we reject a creative force in the shape of a sire or dam, discovered under whatever circumstances, which promises to bring about the results we are seeking.

Breeders of dairy cattle speak of selecting sires and dams that have strongly inherited tendencies to breed true to one type and transmit the inherited tendencies of the breed to their descendants, but if we have no variation in our herds, if all of the animals were of one type, temperament and capacity, and had been bred in this manner thru many generations until the variation had ceased, there would be no more benefits from selection than there would be from trying to select the most valuable dime or dollar from the money of the United States. Variation is the only means for making changes which can be brot into permanent improvements.

Now, as variation is the only means of improving a herd of dairy cattle, we can readily understand why a herd of uniform cattle which varies least is hardest to improve. For example, let us undertake the work of improving some breed of wild animals that, thru the habits of inbreeding for year after year, had so intensified its blood lines that the variation, if there were any, would be so slight that we could scarcely detect it. We would find it practically impossible to bring about any improvement.

Variations continually appear in breeding, and yet the average breeder (who is stuck in the rut of the idea of uniformity) lets these golden opportunities to improve the productive qualities of his cattle pass without taking advantage of them. He does not realize that every man who has made a lasting fame as a breeder of domestic animals did so by seizing upon and

holding in his herd some new and valuable variation.

Another feature about this law of variation is the fact that there is an affinity between variations—that is, the blood of a marked variation has an affinity for and will stimulate the blood of another variation and cause the progeny to develop into unusually superior (or occasionally inferior) individuals. While it must not be denied that multiplying these variations often results in producing animals that must be discarded, the resulting individuals more than pay the loss on the inferior ones. Do not understand me as advocating promiscuous breeding, or keeping scalawags as breeders, yet I do believe that while we are raising a uniform herd we should try to multiply variations to such an extent that we will have outstanding animals with which to improve our herds. We should not make an idol of uniformity.

New York. W. MILTON KELLY.

#### CHANGING THE PASTURE.

We are making a practice this summer of changing the cows from one pasture to another. Some claim that the cows do better and that the pasture does better if it is possible to do this. I do not know whether this is so or not. I think there is a chance for argument on the question. When cows are turned into a fresh pasture the first thing they do is to tramp all over it, trying to see what they can find, and I suppose for other purposes which they might be able to tell but which we cannot determine. At any rate, about the first thing they do when turned into a fresh pasture is to tramp over the whole thing. In doing this they destroy much of the fresh grass, tramp it into the ground and soil it so that they cannot eat it. In a pasture which they occupy regularly every day they do not do this so much. On the other hand, when you keep them in one pasture for two weeks let us say, then shut them out and put them in another pasture, the grass has a chance to recuperate and make a growth which is very appetizing and which I think is relished more by the cows than is the case where they are in the same pasture every single day. My opinion is that this practice is of more value to the pasture than it is to the cows.

#### PRESENT PRICES FOR BUTTER.

With Elgin quoted at 26½c in the middle of June, and with butter selling on the new Call Board in Minnesota at 27c f. o. b. shipping station or the creamery, commission men are wondering what the final outcome will be. Every butter man you see asks your opinion about the present prices for dairy products. One man will tell you that, in his opinion, butter, in going into storage at so high a price, will have to sell at such an exorbitant price next winter that people are going to turn it down and go to eating oleo. The consumption of oleo will therefore be greatly increased. Another man will tell you that people who are putting 27c butter into cold storage are going to lose a lot of money and go broke next winter. And so they are all at sea; but some of them are buying the butter and paying good money for it, and they, whoever they are, have faith in the future of the dairy market, believing that they will certainly come out all right and make some money or they wouldn't invest their good money in it at this time.

Butter certainly is higher than usual at this time of the year, but we must remember that the population of this country is increasing rapidly and the production of butter is decreasing. There is a great demand, and it will be greater in the future than it has been in the past. The prices of feed for dairy cows are greatly exorbitant, compared with what they were a few years ago. Labor is hard to get on the farm and it is high priced. Other farm products are selling for better prices than they used to. All these in no way help to increase the production of butter, but rather decrease it. Where the farmer is bothered to get good reliable help to run a dairy, if he can raise wheat and sell it for \$1 to \$1.25 per bu., he doesn't have to run a dairy. It is the same way with corn. If he can raise corn and sell it for 75c to 80c per bu. he doesn't have to feed it to live stock. He can sell it direct and make money. The case was different a few years ago.

Then, again, the dairymen of this country are culling out their poor cows. Never before was there such an interest taken in this question of culling out unprofitable cows. Now, while these unprofitable

# The Coming Universal Use of DE LAVAL CREAM SEPARATORS

The same economical considerations which have already brought about the practically universal use of creamery and factory sizes of DE LAVAL Cream Separators are absolutely certain to accomplish the same result in the use of farm and dairy sizes of such machines within the next five years. This is no mere advertising claim but the simple statement of a conclusion based on the logic of facts as positive as to outcome as the solution of a mathematical problem.

The same considerations of greater capacity; closer separation, particularly under hard conditions; better quality of cream and butter; more economical operation, and greater durability are bound to ultimately accomplish the same result in the use of small as of large sizes of cream separators.

But naturally it requires longer and is vastly more of an undertaking to educate the 2,500,000 present and prospective American users of farm sizes of separators as to the importance of separator differences than the 12,000 users of creamery separators. Naturally it is more difficult to make a user appreciate a difference of \$50 a year in results than a difference of \$1,500, even though the difference of \$50 may relatively mean more to the user than the difference of \$1,500.

Again, the users of factory or creamery sizes of separators have so much better sources of information. The use of the separator is a business with them. The results are known from day to day and year to year, and what one user accomplishes is readily comparable with the results of another. On the other hand, the great majority of users of farm and dairy sizes of separators know little of separators and cannot easily determine whether their results are as good as they should be or might be better under other circumstances. But the problem is bound to finally work out in the same way.

The DE LAVAL factory separator was invented 31 years ago and commenced to come into creamery use 28 years ago. Within a few years the original patents began to expire. 15 years ago there were a dozen makes of power cream separators on the market. Today the use of DE LAVAL factory machines exceeds 98% and is almost literally universal. It has been so for five years. No effort is longer made to sell any other make of power separator.

The DE LAVAL hand separator was invented 23 years ago and commenced to come into farm use about 20 years ago. As the earlier patents expired there were more than 30 makes of such machines on the market five years ago. Today there are less than a dozen and not more than five which have a sale worth counting at all. Each year the number decreases and their sales become fewer and more difficult.

What is true in America in this way is true in even greater degree elsewhere throughout the world. In many countries the sale of DE LAVAL machines is now almost universal. Dollars-and-cents differences in product mean more there than to American farmers. The sale of cheap "mail order" separators has not been attempted elsewhere, and would-be competing manufacturers and dealers have never been so unscrupulous in making the unjustified "claims" that so many American buyers have accepted as facts.

It makes an AVERAGE DIFFERENCE OF FIFTY DOLLARS A YEAR whether the farm user of a separator uses the DE LAVAL or some other kind. It will make that difference this year and go on making it until a DE LAVAL is used. A DE LAVAL catalog helps to explain this and is to be had for the asking, as well as an Improved DE LAVAL machine for practical demonstration of it to any intending separator buyer.

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cows were of no benefit to the farmer so far as profit is concerned, they did produce some butter and that butter went to help feed the people on this product. When those unprofitable cows are turned into bologna sausage they no longer produce anything and it tends to make a shortage in butter. The farmer is making money in two directions. He is getting rid of the unprofitable cows, and he is taking their product off the market, which tends to make a better market for him. Now the result of all this is that the demand for butter is increasing, while the production of butter is decreasing, and I cannot see but what the future for dairy products looks brighter than it ever did before. I believe that all the butter now going into cold storage at 26 1/2 and 27c per lb. will find a ready market at a sufficient advance to give the man who puts his money into it now good interest on his money and something besides next winter, because people must and will have butter. Of course, there will be an increase in the consumption of oleo. This cannot be prevented, because there isn't enough butter at the present time to go around, and we cannot object to the increased sales of oleo if it only sells for what it really is. If people know what they are eating, there isn't any objection.

### METAL VS. WOOD FOR A VENTILATING SHAFT.

I am enlarging my cow barn, and in the work the ventilating flue will have to be rebuilt. The present shaft is made of galvanized iron, and I believe is 14 inches in diameter. It has occurred to me that a shaft made of wood would be preferable, for the reason that wood is not as good a conductor of heat as iron; that the column of air in the shaft built of wood would not be affected as much by the outside atmosphere as in 'one of iron. I see that the M. A. C. horse barn is provided with sheet iron ventilators. A shaft of iron I think would be more easily built and put in place, but whether it would be as efficient is what I want to know. I caused the iron flue now in use to be grounded with a copper wire to protect the barn from lightning, as otherwise I thot it would act like a lightning rod without any connection with the ground. Will you please give me your opinion as to the relative merits of metal and wood as material for a ventilating shaft; and also whether the plan of having a shaft on each side of the building connecting together at the cupola has proved satisfactory.

Berrien Co. A. C. Roe. I think Mr. Roe has exactly the correct idea about the ventilating shaft. Wood is a better material for it to be constructed of than metal, and for the very reason which he gives. The matter of expense might lead one to choose the metal, but personally, I would prefer one constructed of wood. I have noticed in visiting a number of stables where metal ventilating shafts are used, that moisture condenses to a considerable extent upon this metal and drips down into the barn. In the wood shaft in my barn this never occurs. Some ventilating shafts are made of wood on the outside and then lined with metal. This makes it better than all metal, because the air in the shaft would be better protected against the outside. The metal on the inside makes the shaft air tight, which, of course, is a very essential thing; but the shaft can be made air tight by double boarding it, putting tarred paper between, and then it is better than a metal-lined shaft, or one made entirely of metal. If the shaft is metal lined, or made entirely of metal, I think it ought to be grounded with a copper wire, for the reason that Mr. Roe cites in his letter.

With regard to two ventilating shafts on opposite sides of the barn, the theory is not correct. One ventilating shaft is better than two for the very same reason that one good chimney in a room is better than two. If often occurs, where there are two chimneys in the same room, that a current of cold air will pass down one chimney into the room, and it would do the same thing in a barn where there were two ventilating shafts. For this reason one should be careful about getting the ventilating shaft too large. If it is too large you are liable to have a current of cold air come down on one side of the shaft while the warm air is going up on the other side. This is entirely done away with if your shaft is of the right proportions. I do not think it makes very much difference in what part of the barn the shaft is located, but one shaft will give better results in general, than more, in the same barn.

There is a lot of significance in the fact that the highest-priced lands in Europe—in the Netherlands and in the island of Jersey—are used for dairy farms.

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The lower picture shows 52 disks used inside one of the many "bucket bowl" machines which disgusted farmers and their over-worked wives are discarding for Tubulars. The maker attempts to sell it by saying it can be "washed as one piece." Tubular popularity has greatly decreased his sales, and he has commenced infringement suits against a catalog house and others who have been selling cheap his, for a number of years.

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**POULTRY AND BEES**

IN ANSWER TO INQUIRIES.

**More About Liver Trouble.**

Some weeks ago we referred to the prevalence of liver trouble in old hens at this season, stating that it is due to heavy feeding of starchy foods during the winter, accompanied, perhaps, by close confinement and unsanitary conditions. The hens emerge from the heavy laying season with constitutions weakened and more or less undermined because of improper feeding and lack of exercise. If they are given free range early and the grain ration is reduced or entirely cut off, as is customary upon many farms when spring opens, they may never show any bad effects from the conditions under which they lived and worked during the winter. But in many cases the change in conditions comes too late. The liver, the organ most quickly affected by lack of exercise and overfeeding, has become diseased and altho, under changed conditions, the hens may appear healthy and continue to lay for some time the disease gradually develops and the fowls decline in health.

A number of inquiries are at hand describing flocks which are in just the condition described above. In every instance, with one exception, the owners state that the winter ration was mainly corn, altho the hens now have the run of the farm. In the case noted as the exception the winter ration was principally barley—a grain that is practically as dangerous as corn when fed to excess, since the constituents of the two grains are about the same.

The fowls described by the inquirers have no doubt been ailing for some time but the early symptoms passed unnoticed. The first indications of trouble are a general sluggishness and a ruffling or standing out of the feathers on the neck and head. Gradually the comb and head change color, usually becoming bluish or dark purplish. Then a constant and very persistent diarrhoea sets in and in the later stages of the disease lameness in one leg generally develops. When this stage has been reached death is not long delayed and a post-mortem will show the liver much enlarged and mottled and warty in appearance.

Well informed poultrymen question whether it pays to give treatment for this disease. Certain it is that nothing can be done for fowls in which the disease has progressed to the later stages. A treatment often prescribed for fowls showing the first symptoms of this trouble is that of giving sulphate of soda (Glauber's salts) once a week, using about 1 lb. to 100 fowls, dissolved and given in soft food. Those that have passed the first stage had better be destroyed and, where the winter feeding is known to have been at fault, it would probably be advisable to dispose of all the hens that comprised the winter flock, as all are apt to be more or less affected and, while they may linger thruout the summer, they are not likely to prove profitable, nor can they be considered good material for next winter's laying flock. Neither would it be safe to take a chance on using any of these fowls for breeding stock next spring.

After the "hopeless cases" have been destroyed and all the "suspected" members of the flock have been weeded out and either remedied or disposed of, the quarters which they occupied should be cleaned up thoroughly.

**Feeding Skim-Milk to Poultry.**

Is it true that skim-milk, fed to poultry liberally, for a long time, will cause their death?

Lenawee Co. P. H. DOWLING.  
We cannot say whether it is possible to kill chickens by feeding them skim-milk indefinitely but we do not believe it is. It is likely that good results would not be obtained from feeding skim-milk in large quantities for a long time to the exclusion of all other feeds, but common sense would no doubt prevent any man from feeding his flock upon one feed exclusively for an indefinite period. Data upon the feeding of skim-milk to poultry are not plentiful but tests made by a few of the experiment stations have demonstrated that it can be used advantageously in almost any poultry ration. The Indiana station secured excellent results from feeding it to young growing chickens, both when given in connection with an otherwise well balanced ration and when used with the green stuff and such other food as chickens would naturally

get upon the range. At the Ontario station grain mixtures moistened with skim-milk were found much more effective than those moistened with water. This station has also used skim-milk as a drink for poultry in place of water, finding it far superior to water and reporting that it may be safely used in unlimited quantities for this purpose. It has also been utilized to a considerable extent by practical poultrymen in compounding balanced rations for laying hens, it being found that where skim-milk is plentiful and cheap it can be made to largely take the place of meat scrap or other forms of animal food now considered so essential to a good laying ration.

**Chickens Have Gapes.**

My chickens are taken with gaping; they open their mouths to breathe and shake their heads as tho something was in the throat. It seems hard work for them to breathe. Have lost three or four. Charlevoix Co. G. H. S.

Your chickens have gapes, a trouble which was described in The Farmer of June 5. The gasping and difficulty in breathing is caused by the presence of small worms in the windpipe. They are generally not fatal to mature fowls as they have the strength to overcome the trouble. Growing chicks, however, are apt to succumb after a time unless something is done to relieve them. Several methods of treating are described in the article referred to, to which we might add one reported in an earlier issue of this paper to the effect that an English poultryman reports good results from subjecting affected chicks to the fumes of carbolic acid. His method is to place the chicks in a basket over a pail containing carbolic acid. Then by dropping a hot brick into the pail the acid is volatilized and the fumes given off. The breathing of the fumes is supposed to do the work. Should you decide to try this treatment we shall be glad to have you report results.

**GROWING BUCKWHEAT FOR HONEY.**

In most clover and basswood sections there is little for the bees to gather after these cease to yield. Where asters, goldenrods and "stick-tights" abound, the flow from them commences along the latter part of August. There are many locations where there is practically nothing to gather, unless it is honey dew, and I don't banker after that kind of honey after the cessation of the white clover and basswood flow. If this long honey dearth can, in a measure, be reduced it is a great thing for the bees and their keeper. Enough to live on may be gathered, or even sufficient for winter stores.

It has not yet been found to pay to provide artificial bee pasturage unless it yields other profits. Plants that will do this are clover, buckwheat, alfalfa and others.

The one of these best suited to fill the honey dearth after basswood is buckwheat. It is a profitable crop to grow even if its honey yielding qualities are not considered, as its cultivation by non-beekeeping farmers testifies.

As shown by statistics, buckwheat is one of the crops the area of which is decreasing. But the price per bushel remains very steady. In this state, as well as in Michigan, considerable light, sandy land is being farmed. Here rye is one of the main crops for such soil. Buckwheat grows about as well and the yields per acre are larger, and, I thi for a series of years the price per bushel is as high if not higher. And I find that buckwheat is better fitted to practice green manuring with.

I have given some reasons for having buckwheat in the crop rotation and will say something of its cultivation. It works nicely in rotation with rye. Let us say a rye crop has been taken from a certain field. If the soil is light (the kind that is used for buckwheat growing here), I sow right among the stubble without plowing. If the rye is sown early enough, some rape and turnip seed can be mixed with it. The reason for this will be explained later. I like to sow as soon after the field is clear as possible. The rye will grow more and furnish more fall pasturage. Yes, I pasture stock on it during October. It helps the milk flow and saves hay. To increase the amount of green feed is one reason why some rape seed is mixed with the rye.

The following spring sheep can be pastured on the rye, but don't overdo the matter. When the rye commences to head out is the right time to plow it under. Don't wait until time to sow the buckwheat before plowing. Buckwheat does better on a settled seed bed. If the

rye is turned under at least two weeks before ready to sow the buckwheat, the soil will compact nicely if worked. Three pecks per acre is used broadcast; a little less if drilled. I rather think drilling is preferable.

Now, I will tell why some rape and turnip seed is to be mixed with the rye. Both plants, when in bloom, are eagerly visited by the bees. They come into bloom the last of May or the first of June, according to the season. At this time the fruit tree bloom is about over and there are few other flowers for the bees to work on until white clover opens.

The buckwheat can be cut with a self-binder. The soil will be in a loose, pliable condition, and I don't think anything can be gained by plowing it. If you have a disc harrow, work over the buckwheat stubble. Then broadcast or drill in rye. The rye is to be harvested the following season. It can, of course, be turned under and buckwheat grown again.

In from six to eight weeks after sowing the buckwheat will commence to bloom. As the honey is dark colored, the crop must be sown late enough so the white honey may not be discolored. Anyway, as soon as bees begin to work on buckwheat all white honey should be removed to prevent its discoloration.

If any buckwheat honey is stored in the sections, try to sell it direct to consumers. Owing to the belief that all dark colored honeys are inferior in quality, it does not sell well to retailers. Good, well ripened buckwheat honey, however, has a smack of its own, and a taste is easily acquired for it.

Seedsman have lauded to the skies the New Japanese buckwheat. This variety really is inferior to the Silverhull, both as to yield of grain and honey. It is now less grown than formerly. Silverhull is the variety to grow. Millers, too, prefer it to the Japanese as it is said to make more flour per given quantity of kernels.

Buckwheat is sometimes sown in corn at the last cultivation. This gives the bees something to work on. I don't like it, tho, for as some of the seed ripens a volunteer crop will come up among the spring sown grain. Such plants bloom while the bees are working on white clover and if this buckwheat also is visited the honey will have an amber tinge. It does not sell so readily then.

Wisconsin. F. A. STROHSCHNEIN.

**APICULTURAL NOTES.**

In practicing "shaken" swarming, which was recently described in these columns, the combs from which the bees are brushed or shaken may be used to strengthen other colonies or left to make new colonies; in the last case the superfluous queen cells must be cut out in eight to ten days, unless some were already started when the comb was removed from the parent hive, when it must be done sooner. The queen is, of course, left in the hive, and will, with the bees left her, proceed at once to rebuild and refurbish her old home. All thot of swarming will be forgotten until the new brood chamber is crowded with brood and larvae. Usually this will not be until after the honey flow is over and swarming is naturally at an end for the season. For comb honey production this method is preferable to natural swarming, as the greater number of bees will enable building and honey gathering to progress more rapidly. The reason why it cannot be practiced year after year is because the queens will, after one or two seasons become old and less prolific, and must be superseded. By this process there is no good time for supercedure.

The beginner is usually very timid about handling bees, manipulating the hives to the best advantage, and frequently leaves the work undone rather than to undertake it. This is when he fails to make a success of it, and it will be as well to never begin, unless he intends to master it. The beginner should never undertake to handle bees without a good bee smoker, and this article he should not fail to procure at the time he gets his bees, or previous to it. The smoker is the secret of mastership, and no one can fail if it is used properly. It requires but a little practice to allay all fears he has ever had of the inside of a beehive.

It is not an uncommon thing that a colony of bees in proper shape, costing ten dollars in early spring, store more than double their price in honey alone the first season. It depends upon the season, and also upon the location, as to the honey producing qualities of the same, but it is exceptional in almost any locality, that bees do not double in profits.

**Money in Minnesota.**

If deposits in banks are an indication of the prosperity of a state, then hurrah for Minnesota. Bank deposits have increased over 17 per cent in a year. This increase is not confined to any section of the state. With a few exceptions there has been an increase in every county. Bank deposits and bank clearings are always taken as an indication of good business and prosperity.

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DETROIT, JUNE 26, 1909.

**CURRENT COMMENT.**

In a recent special message to Congress The Proposed Corporation Tax. President Taft definitely advocated the passage of a bill providing for the levying of a tax of two per cent on the net earnings of corporations doing an interstate business, and urging an amendment of the constitution before an income tax measure is passed. It is said that this phase of the message was prepared after a full meeting of the cabinet in which the delicate legal phases of the proposition were carefully considered, in the light of the supreme court decision bearing upon it. The president plainly stated that the power to tax incomes is one that the government ought to have, and that an amendment to the constitution is the proper course for the full establishment of such power, in view of the dictum of the court regarding the act of that character previously passed. He points out that in view of the litigation sure to arise if an income tax provision is enacted at once, no revenue would be received from it until the case has been reviewed in the courts, and that as a majority of the people of the country are apparently in favor of an income tax there should be no trouble in getting the approval of three fourths of the states to such a constitutional amendment. In the meantime he is informed that a tax of two per cent on the net earnings of corporations would produce a revenue of not less than \$25,000,000, which he regards as "an excise tax upon the privilege of doing business as an artificial entity and of freedom from a general partnership liability enjoyed by those who own stock." Another merit is mentioned in the message advocating this tax, in that it involves the federal supervision of the accounts of corporations doing an interstate business, thus giving the government a knowledge of the transactions of such corporations and their profits and preventing an abuse of corporate power.

As might be expected objections have been advanced against the plan, in that the tax would be difficult to collect, as corporations would find a way to reduce net earnings; that it would prove an indirect tax upon the consumer; that the tariff bill as framed would produce sufficient revenue without further taxation provisions; that it would indefinitely postpone

the consideration of a direct income tax, etc. Preparations have, however, been made for the introduction of a bill, or an amendment to the tariff bill, incorporating the provisions advocated in the President's message, and all indications seem to point to the passage of a corporation tax provision in accordance with his recommendations, artho there is talk of a compromise fixing the tax at one per cent instead of two. Whatever the outcome it is apparent that the introduction of this feature will prolong the discussions of Congress at the special session for days if not weeks, but in the meantime it is reported that Senate leaders have agreed that the tariff schedules will be finally fixed before other tax legislation is taken up. There seems to be a general feeling that in the final compromise substantial reductions will be made in some of the schedules, in which case it may be necessary to provide for an increase in the revenue, from other sources, which this plan is calculated to accomplish. The outcome will be watched with interest by the people of the country, since it will be reading into our national law a new principle of taxation for national purposes.

The movement on foot Oleo Tax Safe. by the packing interests of the country to have the tax on colored oleomargarine removed or reduced, was commented upon in these columns several months ago. At that time the statement was made upon good authority that a bill containing such a provision would be introduced at the special session of congress, in order that the people of the country might become familiar with such pending legislation before the regular session of Congress, in case it was not that possible or expedient to pass the bill at the special session. Apparently, however, the proposition appealed to Secretary of the Treasury McVeagh for the apparent reason that it would increase the government receipts from this source to so reduce the tax as to greatly increase the consumption of the product. Accordingly it was recently reported that he had in preparation a bill providing for a reduction of the tax from ten cents to two cents per pound. Pursuant to this report Rep. Tawney, of Minnesota, and other influential members representing districts in which dairying is a large industry, interceded with the president to have the matter held up for the present and later, upon conference with the finance committee of the Senate in which it was made clear that a fight would be precipitated in the House which would greatly prolong the session, it is reported that an agreement was reached that no such bill would be reported at this session of Congress, in case it should be introduced, which does not now seem likely.

This heading off of the contemplated legislation is a matter for sincere congratulation to the agricultural interests of the country, of which dairying is so important a branch. The increased prosperity of this industry in Michigan as well as in the country at large within recent years, makes this outcome particularly satisfactory to the agricultural interests of our own state. Certainly the farmers of the country would protest in no uncertain terms against any action which would strike at the foundation of this great industry, and we do not believe that the Congress would be deaf to their appeal. However, it is much more satisfactory to have the matter disposed of without a contest which would stir the whole country.

The establishment of a National Consular School. a consular or diplomatic school at Washington, which was announced in our news columns last week, is a move which will attract little public notice, but which may be fraught with good results for the future. The idea has long prevailed that trained men should be available for the consular service in foreign countries since men who are well fitted by special training could be of much more aid to our citizens in foreign countries and serve us better in the still more important work of extending the market for American products in all parts of the world. While there are very many able men in the consular service at the present time, yet many of our foreign representatives are not trained to the service as they should be. We educate our army officers at West Point and our naval officers at Annapolis, and the feats of our army and navy in recent years demonstrates the value of such training. Without doubt it is equally as important that we should "train our soldiers of commerce for the warfare of

trade, in a governmental school established especially for this purpose." This is certainly a step in the right direction, for with the educating of men for positions in our foreign offices will come an elevation of the services performed by those offices, which in time will insure a better consular service thruout the world, and a consequent growth and development of American trade with foreign lands which will be reflected in an increased prosperity of our nation.

The Rat Nuisance. damage done by the much despised brown rat would be represented by an array of figures which would astonish not only the conservative reader, but as well the few people who, by reason of more than ordinary affliction from this nuisance, are more appreciative of the capabilities of this rodent in the way of destroying property and doing even more serious damage. We Americans have been too busy trying to increase our production along various lines to note, much less stop, this small (?) leak. As a consequence we have no reliable estimates touching the damage done by rats in this country, but the occasional experience of almost every individual and the frequent reports from sections where this pest is for a time particularly prevalent would indicate that the destruction by rats is no less startling in this country, than in some of the older countries, where general and official recognition has been taken of the depredations of this pest.

Here, again, as in many other economic undertakings, especially of an agricultural nature, the people of the little country of Denmark have forged ahead of us. The first campaign on record to be organized against rats originated in Denmark, and was organized thru the efforts of one Emil Zuschlag, a civil engineer. This local movement grew into an international society for the destruction of rats, embracing Denmark, Sweden, Saxony and other countries, the influence of which has already resulted in increased activity in the fighting of rats in the countries covered by the society. But perhaps the greatest lesson to be drawn from this source is contained in the record of the extermination work actually done. In order to accomplish the destruction of rats a small bounty, ranging from 1 1/2 to 2 1/2 cents for each rat, is paid for their destruction, appropriations being made by the Danish Parliament to ail the various municipalities in paying for this work of destruction. General supervision of the work is in the hands of the above mentioned society, and from the reports received Mr. Zuschlag recently reported that during the first year under the Danish law appropriating public funds for this purpose, ending July 1, 1908, 1,141,293 rats were destroyed. As a basis for figuring the enormous saving from the destruction of this vast number of rats, it might be mentioned that from early investigations of the society, which has been in existence nearly a decade, it was estimated that in one year 100,000 rats would commit depredations upon property amounting to \$94,370.

The Danish Society for Rat Extermination has a membership of over 2,000 of the leading citizens of the Kingdom, and has enlisted the support of leading men thruout Europe. The spreading influence of this society has been recently manifested in the organization in England of the Incorporated Society for the Destruction of Vermin. The objects of attack of this society, include not only rats, but mice, sparrows, ticks, fleas, mosquitos and flies. However, the immediate activities of the society are to be directed against the brown rat, of which the society's experts believe there are 40,000,000 in the United Kingdom. Further interesting estimates prepared by the society are contained in a report recently received by the department of Commerce and Labor from Consul Maxwell Blake, containing an extract from a Scotch newspaper on the destruction caused by rats, as brot out by a deputation from the Incorporated Society for the Destruction of Vermin. Headed by Sir James Crichton Browne and the Duke of Bedford, they waited upon Lord Carrington at the offices of the board of agriculture to urge him to appoint a commission to inquire into the subject of the destruction caused to crops by rats. The extract which was recently forwarded to us by our Washington correspondent reads:

The deputation pointed out the enormous damage done by rats, which amounts on a most moderate computation, to 15,000,000 pounds (or \$75,000,000) per annum in Great Britain. This is arrived at by allowing only one rat per

cultivated acre of land. Assuming that each rat does damage to the extent of one farthing per day, this works out on the 40,000,000 acres of land at the figure mentioned. Sir James Crichton Browne incidentally stated that 2,000,000 people died of plague in India, and said it had been proved that the rat was the chief cause of the spread of infection. It was also stated that the expenditure on rat poisons in the United Kingdom amounts to 250,000 pounds (\$1,250,000) per annum, which is considered many times more than would be required properly to exterminate the vermin if the campaign were systematically conducted.

Statistics of rat destruction in Sweden and other countries are almost as startling, and contribute to the fund of information touching the possible control of this pest in an interesting way. The bounty paid for the destruction of rats in the city of Stockholm was only about half that paid in the city of Copenhagen during the early years of the work of destruction, and from the reports of the number of rats destroyed it appears that it averages about 100,000 per year in this city during the past seven years, thus showing that under a moderate stimulus toward destruction, the rate of increase of the pests almost if not quite keeps pace with their destruction.

While no statistics or reliable estimates are available touching the prevalence of this pest or the work of destruction wrot by it in this country, it seems reasonable that in the more thickly populated portions of the country at least, the damage would at least approach the estimates given above for European countries. At least many of us who have had experience with the destructive habits of rats can readily believe that a single rat may destroy and damage property to the value of a dollar in a single year, especially when we consider not only the damage done to edible grains in the field, the barn or the granary, to fruits vegetables and other edibles in the cellars, and to buildings by gnawing thru walls and burrowing under foundations, to say nothing of the carrying of disease germs, the setting of fires thru the agency of matches, etc. Whether the policy of extermination adopted in the thickly populated countries of Europe is practicable for this country at present is a matter of doubt, but the influence of their example in an educational way is without doubt a beneficial one. The problem has already attracted the attention of the U. S. Department of Agriculture, and a bulletin entitled the Brown Rat in the United States has recently been published by the Biological Survey of that department, to which we are indebted for many of the facts noted above. In this bulletin is summarized the important aids in limiting the number of rats and lessening the losses from their depredations, some of which are applicable to country and some to city conditions. Of the former, perhaps the more important are the protection of hawks and owls, and some of the smaller predatory animals, such as skunks and weasels, which are the natural enemies of rats; care in the construction of buildings so as to make them rat proof; the early threshing and marketing or storing of grain in rat-proof warehouses; the keeping of effective rat dogs and cats; the cleaning up of litter, about the buildings, etc.

Various suggestions are offered for the making of buildings rat proof, but the basis of the best construction is the concrete foundation and floor, which makes it impossible for the rodents to enter the building at that point. Then by the use of rat proof screens in the walls of granaries, corncribs, etc., and by a proper protection of all receptacles in which grain is stored, such as feed bins, the local infestation can be greatly lessened by reducing the supply of feed. The cellar windows should also be provided with screens, and the pests persistently fought whenever and wherever they make their appearance. Perhaps there is no solution for the problem in the crowded cities, except by organized and systematic effort such as is being directed against the pest in the countries of the old world as noted above, but by the use of every available means, they can generally be kept fairly well under subjection about the farm. But this requires persistence, and any neglect is sure to be followed by a rapid increase of the pests. Sometimes, too, there seems to be a general neighborhood invasion of rats. In such cases the rat hunt may profitably be resorted to as a means of reducing their numbers. The bulletin above noted states that in the fall of 1866 a rat hunt was organized at New Burlington, O., in which sides were chosen, and each of the two sides killed over 8,000 rats, the beaten party serving a Thanksgiving dinner to the other side,

thus combining pleasure with profitable business in the way of partially ridding the community of rats. In the editor's home community, a farmer killed several hundred rats during the process of building over his barns, over fifty being shot in one day, which illustrates the need of reducing the rat nuisance in some instances. But probably the best remedy is prevention, by making the cellars and granaries rat proof, compelling the pests to seek other pastures, which will help to make the problem a municipal, rather than an agricultural one.

**HAPPENINGS OF THE WEEK.**

**Foreign.**

Manila learned the first of last week that a mutiny of the native constabulary had occurred in Mindanao Islands on June 4. Gov Walker had rallied the few Americans and others in a barricaded church where they withstood an attack until reinforcements came when the rebels escaped into the mountains.

The British Radium Institute, founded recently by the generosity of two titled Englishmen, has given an order for seven grams and a half of radium, which will cost \$150,000. At this rate this rare and precious substance is worth something more than \$9,000,000 a pound.

The Brazilian government is now planning for the building of a huge drydock to accommodate her merchant vessels, and more particularly for the new battle-ships of the Dreadnaught type now being built for her in Great Britain. The dock is to be built at Rio de Janeiro.

Three new cholera hospitals have been opened in St. Petersburg to accommodate the increasing number of patients. There are eight hospitals now open to victims of the disease.

Lucien Napoleon Bonaparte Wyse, to whom Colombia granted the original concession for a Panama canal in 1878, died June 15. Wyse ceded his concession to the late Count Ferdinand de Lesseps, promoter of the ship canals of Suez, Corinth, and Panama.

The report is out, the not taken seriously, that Spain will prefer a claim against Cuba for the recovery of money expended by Spain in Cuba before Cuba attained independence. The Spanish government has informed the United States as well as Cuba that it wishes to discuss the matter. The contention is that Cuba should bear a part of the Spanish colonial debt. The sum involved is about \$300,000,000.

**National.**

Pittsburg manufacturers suffered fire losses aggregating \$100,000 when the plant of the Michigan Furniture Co. and several smaller factories burned Monday night.

Prof. George Burman Foster, of the University of Chicago, whose denial of the divinity of Christ in a recent book has stirred Chicago Baptists to a high pitch of resentment, was dropped from the Baptist Minister's Conference after a stormy session of that body held in Chicago, June 21.

The Wright brothers, of aeroplane fame, are in Washington for the purpose of making some tests arranged for by the government. Their contract calls for two tests to be made at Fort Myer before June 28—one for distance, a flight of five miles straightaway and return, with one passenger; the other a speed flight of at least one hour, with a passenger, at a minimum rate of thirty-six miles an hour. The contract calls for a recompense to the inventors of \$25,000 for the successful meeting of all the tests. For every mile per hour attained above forty they will receive \$2,500 additional up to forty-four miles.

A trolley collision on the South Shore line near Chesterton, Ind., last Saturday night, resulted in the death of 10 persons and the injury of 40 others. Four of the dead were Michigan business men. Failure to obey orders on the part of one of the motormen is the cause assigned.

The jury in the case of Patrick Calhoun, the millionaire president of the street railway system of San Francisco, whose five months' trial on the charge of bribery ended last Friday, was unable to agree after 24 hours' deliberation, and was discharged. The jury stood 10 for acquittal and two for conviction. Prosecutor Heney announces that Calhoun will be brot to trial on another of the numerous indictments against him without delay.

President Taft and family will spend the summer at Beverly, Mass., taking up their residence there about July 4.

The sixty-sixth national conference of Charities and Correction was held last week at Buffalo with nearly 2,000 delegates registered from every section of the country and many visitors interested in the work. After the reading and discussion of many papers on many subjects the conference voted unanimously for Miss Jane Adams, of Chicago, as its next president to succeed E. P. Bicknell, of Washington.

The state of Illinois, under its inheritance tax law, receives approximately \$184,000 from the estate of the late Nelson Morris, of Chicago. This is the largest tax of the kind yet collected by the state.

Geo. B. Dovey, president of the Boston National League base ball organization, died suddenly on a train near Xenia, O., last Friday. He was buried in his home city of Philadelphia on Tuesday.

The Illinois supreme court has declared the recently enacted primary election law of that state unconstitutional. This law was framed at a special session of the legislature called especially for the purpose immediately after a former primary statute had suffered the same fate.

The Convention of the Amalgamated Association of Iron, Steel and Tin Workers at Pittsburg last week, decided that the 10,000 skilled workers employed in the works of the American Sheet and Tinplate Company, a steel trust subsidi-

ary, should quit work on the 30th of June, when the "open shop" order of the company goes into effect.

Charles W. Morse, the New York banker and promoter, who was convicted and sentenced to prison for irregular acts on the eve of the panic of 1907, has prevailed upon the court to accept bail and let him free, pending his appeal for a new trial. The amount of the bail was fixed at \$125,000.

Mrs. O. H. P. Belmont, the wealthy New York society woman, has returned from England a convinced advocate of woman suffrage, and has let it be known that she would take an active part in financing the coming campaign for that cause.

The trial of the separation suit of Mrs. Howard Gould at New York has been replete with data showing the extravagant notions of women of her class, and has given to the public some idea of the income of the Gould heirs. In support of her contention of non-support, Mrs. Gould gave to the court an itemized list of her ordinary living expenses before her husband left her. This showed that she required \$40,000 a year for clothes alone, and that she wore two or three gowns each day, costing from \$300 to \$600 each. She rarely wore one a second time. Her servants, automobiles, house rent, etc., brot the total up to \$120,000. The court threw out the claim of non-support, and likewise the charge of cruelty. George Gould, brother of Howard, testified that the estate of Jay Gould, the father, had amounted to some \$80,000,000, and that it had never been divided, the will having provided that the children should have equal shares of the proceeds as long as they lived. Howard's income averaged over \$700,000 a year.

The national horticultural congress, organized a year ago, will hold its second annual meeting at Council Bluffs, Iowa, November 15 to 20. The last meeting was composed of men of national reputation from 21 states. This meeting will be important to the fruit industry of the country. A large auditorium, where 5,000 people can be accommodated, has been secured for the sessions.

Reports from California indicate that the honey crop of that state will be light. Unseasonably cool weather followed by extreme heat is said to be responsible.

**State.**

Roland Rich, of Bay City, accused of murdering his grandmother a few weeks ago, has finally been bound over to the circuit court for trial at the October term.

The State Live Stock Sanitary Commission, after investigation of an outbreak of rabies in the vicinity of Adrian, has issued a quarantine proclamation in relation to the dogs of the county. The proclamation declares that all dogs in Lenawee county shall be immediately killed, chained or muzzled in a manner satisfactory to the sheriff, who is made responsible for the enforcement of the regulations. It also empowers any citizen to kill any dog found unchained or unmuzzled.

The freight steamer Eber Ward, which met with an accident and sank in the Straits of Mackinaw very early in the spring, has been located by a Milwaukee vessel. The steamer lies in 138 feet of water. Its cargo, at the time of the accident, consisted of 57,000 bu. of corn. While the recovery of a cargo from such a great depth is extremely difficult, it is believed that about two-thirds of the cargo will be recovered, about 14,000 bu. having already been pumped out.

The recent damage to the locks in the Canadian canal at the Soo has been repaired and the canal is once more open to navigation, the first vessel passing thru on Monday of this week.

**CROP AND MARKET NOTES.**

Branch County.—May furnished some fine weather for farm work, but was rather dry and cold until the last week since which time it has been too wet for anything but waterfowl. Corn mostly planted late in May and farmers growling because it's so wet they cannot cultivate. Oats looking well. What hay there is is now doing well, but the crop will be a very light one. The crop of cutworms is ahead of all records and with wet cold weather to aid them corn will suffer badly. Fruit prospects good. Amount of live stock and grain in farmers' hands is far below normal.

Livingston Co., June 14.—Farmers as a rule, are about two weeks behind with their work owing to the backward season. There is considerable ground yet to be plowed for beans, there being probably not more than 25 per cent of the crop planted at this date. Oats are coming on fine and wheat has not looked better in years. The prospects are good for a good crop of hay and while everything else is about two weeks late haying will likely be with us as early as usual. New seeding never looked better. It is almost impossible to get help at any price and many farmers realizing this are investing in labor saving tools to secure their hay crop. Prices on produce are practically unchanged.

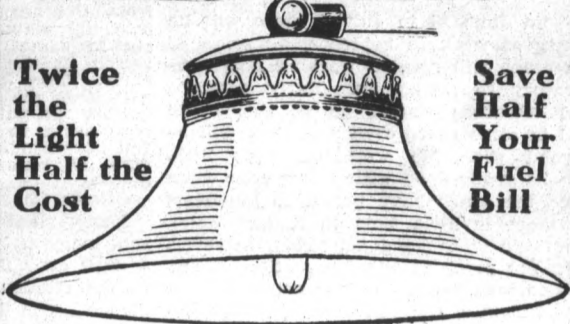
Allegan Co., June 20.—Rain and cold have retarded farm work considerably. Corn is not all planted yet while most of it is up and being cultivated, but we think it will be very few pieces that will show the "knee high the fourth of July." A large acreage of potatoes is being put in. Haying has begun and work is being bunched. Wheat, oats, barley and speltz are looking good and the hay crop will be good. Apples will not be over half a crop, while the prospect for other fruits is quite good. Stock of all kinds looking well. There has been a great demand for dairy cows this season. We have not seen a young turkey this year and it looks as though they will be very scarce and high at Thanksgiving time. The season has been a very hard one for bees, very little honey or increase yet. The following prices are paid at Allegan for produce: Potatoes, 50¢@60¢; beans, \$2.50@3; wool, 22¢@30¢; butter, 18¢@23¢; eggs, 18¢; wheat, \$1.45@1.50; oats, 57¢@60¢; corn, 75¢@80¢.



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**HORTICULTURE**

**LATE JUNE AND EARLY JULY WORK.**

From June 25 to July 4 there will be plenty of work in evidence, as some of the crops will require working now preparatory to laying by. Early potatoes and tomatoes should be at this stage and in some cases even now they will be beyond profitable working. Very little can be safely done with either crop when once the vines have begun to lop over; so there is little time to lose in doing whatever is to be done. This, however, does not preclude the destruction of any large weeds that may show up, as getting rid of them is always in order; but mulching or culture of any kind close to the rows will be done at much risk.

As to the culture of other crops that should go on just as frequently as possible, as good returns for the labor expended are sure to follow. This fact I have never seen more clearly demonstrated than during the present season. Some beets that were sown quite early got sorely neglected, chiefly on account of the wet condition of the soil, with the result that very little growth was made. I took them in hand one day, and with a steel rake went over the rows, occasionally a plant was uprooted, but in general no harm was done and in the following four or five days more growth was made than in all the previous time since sowing. Usually, with all such plants I use a steel rake or hand weeder and begin the work before the plants are up and thus destroy the germinating weed seeds and also leave the ground in the best possible shape for the quick action of the sun and wind.

As to the hand weeder, one can easily be made to fit any hand cultivator and the amount of labor saving when judiciously used is astonishing. Take a strip of board one inch by three and any length desired, from 12 to 30 inches, which is about as long as can be worked to advantage. Drive a row of 10d or 20d wire nails near one edge of the board three inches apart. Drive another row on opposite edge, same distance apart, but so set that they will break joints. Remove the teeth from the cultivator and bolt or wire the rake to the bottom and work the same as when the teeth are attached. It can be used with safety either before or after the plants are up and the amount of work that can be done will be surprising.

**Some of the Late Root Crops.**

Sowing of the late rutabagas is now in order up to the last date above mentioned. Upon good soil and with proper cultivation they will make ample growth by late autumn. Clay, if in good condition, is preferable to the sand or sand loam soils as they are less disturbed by the maggots. The best preventives for this trouble either with "bagas" or turnips is good soil and thoro cultivation, but in all cases work the soil from, rather than to, the hill. Keep the ground clean and well stirred, but keep it away from the bulbs so that they practically grow on top of the ground rather than be buried in the ground and there will be little danger from the maggots. They will not work above ground and the less space they have below the surface the less damage they do.

Late carrots and beets, if sown at these dates, will be timely, and good culture will bring them to good size for market purposes and the quality will be better than if sown too early. Good sandy loam is best for these crops, but lacking this, take the best available and substitute ideal preparation and culture and see what the effect will be. For the former, deep plowing and cultivation previous to sowing is essential. For the latter, except it be for the longer half long sorts, shallow plowing is better. Either crop will assimilate large quantities of fertilizer, and well rotted stable manure is best. Avoid strong, green manure, as scabby, inferior roots are liable to be the result.

Late summer radishes, as also those for fall and winter use, can be sown at any time now. There are several good varieties which nearly all the seedsmen list, and any above home or market use will always come in play for feed at any time they happen to be available.

The pea vines, either late or early, will make good feed if well cared for when the peas are taken off. If not otherwise available they will make good compost and are better thus cared for than to lie around in the way.

Wayne Co.

J. E. MORSE.

**CABBAGE ROOT MAGGOT.**

Will you please tell me thru your paper the name of a small worm that is killing my early cabbage and cauliflower. They are from 1/4 to 1/2 inch in length, are white and resemble a maggot quite a bit. They work on the roots, also burrow from the heart of the plant downward into the stalk. There are as many as six in some plants. The plants were raised in the hotbed, and transplanted early. The first I noticed their being attacked, the plant turned yellow and wilted. On pulling them up the roots and core seem to be partially decayed and full of worms. Any information you can give me concerning this will be appreciated.

Ottawa Co. WADE HEKER.  
These plants are being troubled with root maggot. The maggot is the larva of a dark gray fly having three black lines on the thorax and another along the abdomen. The fly puts in her first appearance in April and soon deposits her eggs. These hatch and the larvas described by our correspondent, are the result. They work in the roots and the heart of the stock of the plant. There has been much damage from them and many remedies have been suggested. The very fact that there are many remedies indicates that any particular one is likely not to be effective under all circumstances. If one thing fails, recourse should be taken to another. All the remedies are preventive. Where the number of plants are few they can be covered with a tent of cheesecloth. This prevents the fly getting to the plants. Another method that can be used on larger areas is to place tarred paper about the base of the stems. This also prevents the flies from depositing their eggs. Where large numbers of tarred pieces are required a specially shaped gouge is used to cut the papers with a hole at the center and a slit from this hole to the circumference. Lift one side of the cut piece above the other and pass the slit by the stem of a plant till the stem is in the center when the side can be pushed back to its former position. Injections of carbon bisulphide in the soil are also held to be effective. Carbolic acid emulsion is used with good results. This last mixture is made by adding one pound of soap to a gallon of boiling water and then a pint of crude carbolic acid. The mixture is then diluted with 30 parts of water and poured about the plants.

**SOME PUMPKINS.**

I wonder why it is that so few farmers now-a-days raise any pumpkins, except a few of a certain variety for pie material, and these they usually plant in the garden. In boyhood days, when we planted corn by hand, covering it with a hoe, father always mixed a plentiful supply of pumpkin seeds (the big, yellow field variety), with the corn, and planned to have a pumpkin seed in every second or third hill. Other farmers went over the ground after the corn was up, and "stuck" a pumpkin seed in every second hill. I remember that the vines prevented late cultivation, but that was not that so important a matter as it is today, and indeed it was not, for the country was new, the soil full of humus, and drouths were unusual. In late summer and early fall, when the pastures were short, we began to feed the pumpkins and I well remember how fond of them all kinds of stock was, and they increased the flow of milk, and made the butter a golden yellow, for that was before the days of butter color, except such as nature had provided.

The finest of the pumpkins were selected and taken to the house cellar, and later they were made into delicious pies, even tho they were only the common yellow field pumpkin. We seldom see any pumpkins now days, and it seems to me that the real, old-fashioned pumpkin pie will soon become one of the "lost arts." There are few more toothsome articles made than a good old-fashioned pumpkin pie, rich with creamy milk, and flavored with blended spices. A "V" shaped piece from a round tin, or a "square" from the oblong tin, rich, golden brown, and an inch thick was a most satisfying article to get next to.

Of course, we do not want the pumpkins in our corn fields now, for the vines would be a nuisance with our riding cultivators, and our late cultivation to conserve moisture, but why not plant a few by themselves or with a piece of early sweet corn that is to be cut and fed out, leaving the ground clear for the ripening of the pumpkins. I am sure all our stock would appreciate them, and the art of making real pumpkin pies might be rediscovered. "A consummation devoutly to be hoped."

Eaton Co.

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One man says: "I used 200 pounds and threaded my machine when I started in; and cut my whole crop without a break or having to thread my needle any more."

Look for the wheat-sheaf tag on every ball. Get Plymouth Twine from the local dealer. Guaranteed.

**Plymouth Cordage Company**  
Largest Rope Makers in the World  
Oldest in America  
**PLYMOUTH, MASS.**

**You can make rain in the Arkansas Valley**  
*by opening irrigation ditch.*  
**Water when wanted makes sugar beets that can't be beat. Alfalfa and fruit, too**

I am employed by the Santa Fe Railway to help settle up the vast territory along its lines in the Southwest.

I am an optimist about that section, but am not a partisan with respect to any particular locality therein. It's my business and my wish to tell the truth about all of them.

There is a valley in western Kansas and eastern Colorado 200 miles long and seven miles wide, through which flows the Arkansas river on its way from the Colorado Rockies to the Mississippi.

It is bordered by upland prairies stretching many miles north and south.

The land in the Arkansas Valley proper is all privately owned. The owners will sell, many of them, for a reasonable price, in order to cut down their holdings. You don't need to occupy a big tract, because intensive farming is now profitable under irrigation.

On the uplands, where "dry farming" can be practiced successfully, are millions of acres of **unoccupied Government land**, which can be homesteaded. If you are interested in such lands, will be glad to post you further. They require only a small investment per acre and rapidly increase in value when brought under cultivation.

If you plan to become a homesteader, hurry up, because 365,000 acres were taken up in three years, and first-comers are getting the choicest lands.

Most of the new settlers buy small tracts "under the ditch" in the irrigable area of the valley, as it means sure crops and good water rights. There are 700 miles of canals fed by immense reservoirs. The price of land varies according to proximity to town and beet-sugar factory.

The sugar beet is a ready-money crop. Six factories in Colorado and one in the Kansas section stand ready to take the product of all the acreage the farmers will put in, assuring a return which the farmer can count on. **\$3,000,000 were paid out** in this valley for beets in one year alone.

Alfalfa is cut four or five times a season. It is a better food for live stock than corn and is the important crop here.

Fruit comes next. You know how popular **Rocky Ford cantaloupes** are — well, they are raised in the Colorado end of the valley. So many watermelons are produced that Watermelon Day, in the Fall, vies with the Fourth of July. Growing melon, squash and cucumbers for their seed is very profitable.

Cut out this advertisement and mail it to me with your name and full address. I will mail you illustrated land folders which tell the story in detail and send you our home-seekers' monthly, *The Earth*, six months free. Questions promptly answered.

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# GRANGE

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

## THE JULY PROGRAMS.

### State Lecturer's Suggestions for First Meeting.

"The people will sustain no better schools and have no better education than they personally see the need of."—Horace Mann.

The Annual School Meeting, (occurs July 12, 1909).—1, duties of members of school boards; (a) itemized reports at school meeting; (b) report of care of school premises and property. 2, duties of school patrons: (a) what taxes must be voted by the people? (b) what repairs or improvements are needed? (c) how may the Patrons assist in making a better school? 3, appointment of school visiting committee (to report in October).

Forage Crops.—1, what crops shall we grow for summer forage? 2, when should a cow have forage to supplement pasture? By what means may we improve on our usual celebration of the Fourth?

Lists of 10 handy, but somewhat uncommon, labor-savers in the home, by five women, each to exhibit at least one of the articles named in her list.

## OUR NEW GRANGES.

### II.—As Leaders of Social Life.

While I have been trying to point out the opportunities for the Grange to assume the direction and lead in the social life of its neighborhood, there comes to my desk the following concrete account of what one Grange has actually accomplished along this very line. I want you all to read it and ponder it well:

"If one wishes to see what the Grange can do in the social, intellectual and moral elevation of neighborhood life, let him study the work of \_\_\_\_\_ Grange. This neighborhood possessed no ideals higher than a cock or dog fight entertainment, and did not meet together socially as families. Mr. and Mrs. \_\_\_\_\_ moved in; there was no hall in which to hold meetings, and these people had a Grange organized and its meetings held in the top of their house, up where the birds nest. The meetings were enthusiastic and social and the young folks came in; soon a comfortable hall was built, and the Grange hall is the social center of that community."

The recreative life of any community will drift—it will not lead itself. Are we in the Granges strong enough, are we men and women enough, to put that and love enough into it to transform the social life in our neighborhood into a real, organized, growing thing? It is not easy to do this. I do not advise you to try it unless you are in earnest to work out a strong social uplift thru your Grange organization. But I do believe that having the Grange take the active lead in many communities for strong, wholesome social life is one of the greatest needs just now. Our new Granges have no greater mission right in front of them than to do this.

The summer months present social opportunities that few Granges, new or old, rarely begin to appreciate. It is a social life along mostly undeveloped lines, those of outdoor sports and sociability. The Grange rally itself has not begun to be what it may become in the social power of the Grange. That and the occasional Grange lawn "social" are about the only outdoor social events of our Grange calendar, and their possibilities are largely undiscovered.

What are some of the ways in which the social life of a neighborhood may be developed? To begin with, we do not make nearly as much as we might of music in the Grange. We ought to have great joyful "sings" out of song books of various kinds—Grange, patriotic, college, etc. We ought to use instrumental music in more ways; everyone who has an instrument that can be carried should be encouraged to bring it to Grange socials. An orchestra might be formed in almost any neighborhood—crude and simple at first it might be, but serving as a start to bind people together in wholesome recreation. Choirs, quartets, whistling clubs, etc., may be organized in the Grange. Games, dialogs, pantomimes, plays and degree work afford physical as well as mental exercise, while dancing (which is sometimes that to be the only available recreation), can hardly be said to be more than physical. Make the Grange the happiest place of all the week in one way and another and our young people will grow strong of moral fiber and virtue in habits.

Grange strength lies largely in the fact that it brings all ages and all conditions of taste into action together. Each needs the others, and in no one thing is the need so urgent as along the social line.

JENNIE BUELL.

## POMONA MEETINGS.

### Huron County.

Huron Co. Pomona was entertained by East Huron Grange, Thursday, June 3. East Huron is a young Grange but has some hustling and energetic members who are enthusiastic in Grange work. After partaking of the very excellent dinner provided by the sisters of East Huron Grange, the meeting was called to order and the question of holding the annual August rally was discussed. It was decided to hold a picnic, and committees were appointed to make arrangements.

The literary program was then taken up. On the first question, "Value of Ritualistic Work," the general opinion was that the value of such work depends wholly upon the way in which it is given. Mrs. P. Lincoln presented a splendid paper on "What can we individually do to improve the morals of a community?" She urged the necessity of right living in the home, with one standard of morality for both parents and children. "The criminal of the twentieth century," was generally discussed, the following being brot out: Since the beginning of the world, criminal characters have stood out prominently. Crime comes in waves, also reforms, and now in the beginning of the twentieth century among the greatest criminals are the men who have been elected to positions of trust and then betrayed the trust. Bro. Fred Hargreaves gave a good talk on "Opportunities for growth and service on the farm." He spoke of the opportunities for growth in the Grange and Farmers' Club. Also that opportunities for growth in the country were far better than in the city and that success depends largely upon the individual.

The evening program consisted of music and recitations. Next meeting will be held in October.—Mrs. Laura Hunt, Pomona Lecturer.

### Western Pomona.

Western (Ottawa Co.) Pomona Grange held its last regular meeting with Nunica Grange. Nunica is one of the new Granges of the county and the interest manifested by its members and their desire to learn, show that they are alive to the work. A short business session was held in the forenoon and at the afternoon session the program prepared by the lecturer was taken up.

The response to the roll call, "From what book or paper that you have read during the past year have you received the most good?" showed that the members were largely readers of farm papers and from them they received the most good. A well prepared paper read by Mrs. Jackson on "The Farmers' Vacation," was followed by a short discussion the general opinion being that farmers should take a vacation and there were various suggestions as to how and when.

Colon C. Lillie next gave a talk on "What do farmers most need, smaller farms, more labor, or a better agricultural education?" He thought there was no question but that all needed a better education; no one has enough. In regard to other divisions of the subject it depended largely upon the man, but he thought that no one farms as well as he might; that most farmers are trying to work more land than they can work well. If they had smaller farms or would employ more labor they could secure better results and greater profits.

By request the initiatory work of the first degree was given by a set of officers selected from the members present which closed the exercises for the afternoon.

The evening session was public and quite a number who are not members were present. The first subject presented was "The Duty of the Farmer to Beautify his Roadside." This was opened by Mr. Gleason and others followed in the discussion, all of whom thought that farmers should keep their roadsides looking as well as possible. Miss Myrtle Brown read a carefully prepared essay on the subject, "Social Life as it is and as it might be."

N. P. Hull, master of the State Grange, was present during the afternoon and in the evening closed the exercises with an able address. The next meeting will be held with Tallmadge Grange in August.

## AMONG THE LIVE GRANGES.

Ingham Co. Adds Two.—At the meeting of Ingham Pomona held at Dansville, June 10, reports were received from two newly organized Granges in that county—one at Webberville with 40 members and the other at Vantown with 30 members.

Ogontz Grange.—State Deputy John Wilde was taken ill while working in the Upper Peninsula during the fore part of May, but after a short vacation has returned to Delta Co., where he organized a Grange at Ogontz, June 11, with the following officers: Master, Andrew Johnston; overseer, John Granholm; lecturer, Thillie Johnston; steward, Henry Dansey; assistant steward, Oscar Weberg; lady assistant steward, Betty Grauholm; chaplain, Agnes Johnston; treasurer, Hans Hanson; secretary, Oscar Nelson; gatekeeper, Emedy Cardinal; Ceres, Nora Dandey; Pomona, Sofia Nelson; Flora, Lizzie Constantino.

Grand Traverse Patrons discussed patent medicines, recipes for housecleaning and the character of the home reading at their last meeting. The consensus of opinion was that the fewer patent medicines used in the home the better; that the best recipe for house cleaning is to start cleaning and keep cleaning until the job is completed; that there should be an abundance of good reading in the home, and that a child of three is not too young to have reading matter. The next meeting of this Grange will be entirely given over to the children. At noon there will be a dinner for the little folks and in the afternoon a program of recitations and songs. The hall will be made bright with flowers for the occasion.

# FARMERS' CLUBS

## OFFICERS OF THE STATE ASSOCIATION OF FARMERS CLUBS.

President—A. L. Chandler, Owosso. Vice-President—Mrs. Clara L. French, Pompeii.

Secretary—Mrs. W. L. Cheney, Mason. Treasurer—D. K. Hanna, Caro.

Corresponding Secretary—Clayton Cook, Owosso.

Directors—D. M. Beckwith, Howell; D. M. Garner, Davisburg; T. B. Halladay, Norvell; E. C. Hallock, Almont; B. A. Holden, Vixom; Wm. H. Marks, Fair Haven.

Address all correspondence relative to the organization of new Clubs to Mrs. W. L. Cheney, Mason, 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.

## CLUB HISTORY.

### The Lenox and Chesterfield Farmers' Club, of Macomb County.

"The Farmers' Club a Factor in Farm Life." The question originally proposed was, "Does this club meet the requirements expected of such an organization?" This leads us to ask, "What is a farmers' club, its duties, and its relation to the public?" We cannot vouch for what other farmer clubs do; but the Lenox and Chesterfield Farmers' Club is a wide open institution for the benefit and advancement of farmers' interests. It seeks by open discussion the best methods of farming, the preparation of the soil, the depth of plowing, the planting thereof, and the better methods of harvesting. Not only are the better methods of raising of crops discussed, but farming for profit is taken into account, whether under underetaoinhrduetaoarissftt: jare under present conditions it is better to engage in raising grain, the rearing of stock, the dairy, or any other field of farming industry.

Moreover, this organization is a family union of farmers and of other occupations. The mothers, the sons, and daughters are there, and the mothers add more than if to its value and entertainment. The meeting is opened with prayer invoking divine aid in its deliberations, and is conducted according to parliamentary usage.

To interest the young people music and recitations are included in the program. This is the definition of the farmers' club. Do the programs meet the requirements? Are they up-to-date and the themes pertinent? If not, it is open for improvements, and glad to hear suggestions to aid its usefulness.

The culinary department is cared for by the ladies who prepare an exceptionally fine dinner at a nominal cost.

This club was organized twenty-seven years ago, and monthly meetings have been held, excepting July and August, with scarcely an intermission during three years. It began in a small, humble way. A few neighbor farmers in Lenox were wont to gather and talk over farming operations. Finally they decided to meet on a certain day and named Friday for such meet. In time the wives of these farmers suggested that they go too and prepare dinner. This was agreed to, and a farmers' club was organized. Farm topics only were for discussion, and the name given was the Lenox Farmers' Club.

The names of some of the founders were: Henry Lowell, Charles Woodruff, James Claggett, Stephen Claggett, Abbott VanHorn, Asa Blanchard, Cornelius Baldwin, William F. Edmunds, and William Burleigh. At its reorganization a few years ago it took the name of the Lenox and Chesterfield Farmers' Club. Since that event the young people have been interested and the programs have been enlarged to include music, readings, and recitations. The month of June has been set apart solely for their exercises and a strawberry dinner, and the December meet for an oyster dinner and election of officers.

The good points claimed for the club are benefits gained in farm work by the experience and opinion of its members, the knowledge gained by conducting the meetings according to parliamentary manner, and not the least, the social relations that exist on such occasions. There is a social equality that is not always evident elsewhere. The aim is to benefit all, be they farmers, laborers, or any honorable walk in life.

Now, if there is any better method

of conducting its affairs, improving its usefulness, or to the community, in its several memberships, for to live better, easier, happier lives, then we are open to conviction.—Warren Parker.

Summer Picnics.—The first of the Farmers' Club picnics for the season will be found noted in the Club Discussion column of this issue. Others will be announced as they are reported. Reports of the picnic meetings will be welcomed.

## CLUB DISCUSSIONS.

The Thornapple Farmers' Club held their June meeting at the pleasant farm home of Mr. and Mrs. David Benewa on Thursday afternoon, June 3. The attendance was excellent considering the busy season of the year and the meeting was enjoyed by all. It was voted for the Farmers' Club and the Ladies' Literary Club of the prairie to celebrate July 4 with a basket picnic in Aaron Adam's grove on Saturday, July 3. It was decided to secure a speaker from the Michigan Agricultural college and to have a literary program, good music and games. It was also voted to make the invitation general and to charge adults 15c each to help pay the necessary expenses.

Committee was then appointed and the program of the day taken up. After the program was over, some excellent refreshments were served, after which the company dispersed, all agreeing that they had spent a very pleasant afternoon.

Will Name Farms.—At Hillview farm, the pretty home of Mr. and Mrs. A. J. Bush, occurred the June meeting of the Ellington-Almer Farmers' Club on Wednesday the 9th. A glance over the surrounding country reveals many beauties of nature, the picturesque landscape and broad, well tilled acres of fellow craftsmen, which give Mr. Bush the vantage over his neighbors, for from no other point in either Ellington or Almer is such a charming panorama presented which, as Poet Reilly says: "No painter has the coloring to mock." President Turner announced the opening of an excellent program which utilized all the available time. "Machinery, its use and abuse," was a theme done full justice by the gentlemen. "What names shall we bestow on our farm home?" found many prepared to baptize their home with names both suggestive and appropriate.

Remembrances for Aged Member.—The suggestion to remember Mrs. Eliza McCrea with a card or other expression of appreciation on her 76th birthday anniversary, which occurred June 14, 1909, was adopted and she was accordingly showered, not alone with cards, but bouquets, booklets and many other gifts from the ladies of the club and other friends.

This is but another instance of showing the good influence of club work among farmers. Several pleasant musical numbers were rendered ere supper was announced, over which Mrs. Nathan George presided.

The July meeting will be held in the McCrea grove and the gentlemen will preside, even to the smallest detail.—Mrs. C. L. Wright, Co. Sec.

Michigan Good Enough.—Lenawee-Ills-dale Farmers' Club was nicely entertained at the pleasant home of Mr. and Mrs. David H. Wood, assisted by Mr. and Mrs. George Miller, June 10, 1909. The society was called to order by the president and appropriately opened with music. "Farming in Nebraska as compared with Michigan," was the subject assigned to Mr. B. W. Baker, on the yearly program. Mr. Baker having been a resident and a farmer of the former state but a few years ago was prepared to handle his subject. He said when a young man and just out of school in his home in the east, he took Horace Greeley's advice to go west, and went to northeastern Nebraska and was soon appointed superintendent of schools, which gave him ample opportunity to understand the farming conditions where his work was. He spoke of alfalfa, corn, oats, and wheat, soil temperature, cattle, hogs and sheep, as well as the minor products, including sand burrs and other natural nuisances. The state boasts of one of the largest peach orchards in the world, but he said one acre of ground here was worth two there. Many questions were asked and answered. The president that Horace Greeley meant Ohio or Michigan when he said, "Young man, go west."

General Topics.—Mr. Oren O'Harrow on general subjects of the day, offered a few suggestions. First, that a part, at least, of the money received from railroads and other corporations now apportioned to school districts for the purpose of paying teachers, be used to hire professors to give free lectures in the various districts. Would advocate an income tax and an inheritance tax, also a specific tax on iron ore and copper ore exported from the state. He believed the common school system as carried out in practice is far less practical and efficient than previous to the adoption of the grading system. As the new road law permits the election of four overseers instead of one, as now, would advocate the election of four, as no one or two men would properly study and look after the seventy-two miles of road in the township. This paper was well discussed and the consensus of opinion was that the ones talking prosperity were the politicians.

After the rendering of an excellent program a hearty vote of thanks was given the hosts and hostesses, and all who helped to make the meeting a success. The chair appointed O. E. Clark and Mr. Frank Jennings to secure the grounds at Devil's Lake for the annual picnic to be held Thursday, August 12. Adjourned after singing "Blest Be the Tie that Binds."—Harriet Weed, Sec. Pro. Tem.





**HOME AND YOUTH**

THE CONVERSION OF MR. PIKE.

BY FRANCIS GALBREATH INGERSOLL.

Mr. Pike wanted a wife. The female sex, not being an item included in stock quotations, or the market fluctuations, had no business ratings by which to judge of their individual matrimonial value.

Mr. Pike, therefore, with the methodical methods inculcated by several years' clerkdom, made a systematic study of "woman"—as she appeared in "advice to young unmarried" publications replying to anxious swains or despairing lovers.

Of the few young ladies whom he had met in his rare hours of relaxation from business, Miss Jessie Sanders seemed the most promising upon whom to test the correctness of said "answers to correspondents."

These latter, however, were so conflicting that Mr. Pike was unable to fix upon one solid peg upon which to hang the matrimonial hat. Until—

"By jinks!"—slapping his knee—"I've found it; if she comes up to that, I'll propose."

He read again: "A wife's attire should be immaculate at any hour of the day, no matter what work in which she may be engaged," etc.

"That's sense," he declared. "There is no more excuse for a woman to be untidy, than for a man to be slovenly. I am sure"—here he surveyed his speckless vest and natty trousers complacently—"there could be no avocation in which I could engage, and not be suitably and creditably attired." His periods of observation had so far been limited to evening functions, at which Miss Sanders shone immaculately resplendent. At the very next one they attended, her charms so overbalanced his caution that he proposed and was accepted.

In the retirement of his room that night his raptures were so overbalanced by his sense of unbusiness-like precipitancy, that he determined to view the matter—and the young lady—in uncompromising daylight and amid prosaic household surroundings.

A suddenly projected party gave an excuse for an unexpected morning call.

With the assurance of an accepted lover, he stepped, at about 8 a. m., unannounced into the Sanders dining room.

Great Scott! That "his" Jessie? He could only gaze speechless at the transformation—hair combed tightly back; a "smut"—positively a smut—on her nose, (a very small speck by the way); a shapeless calico garment covering her from throat to heel, and "looking like a—a"—only he had always supposed "they" were white and "only worn—er—er"—His throts trailed into an incoherent jumble. His blushes and his feelings caused his precipitate retreat with an unintelligible mumble that Miss Jessie was unable to translate.

That she was—barring the "smut"—the personification of neatness, did not impress itself upon him at all. He could not lift himself from the slough of despond at the wreck of his heavenly visions of the future, and Miss Jessie saw nothing of him for several weeks. She puzzled over it in proud silence, until the illness of his mother, housekeeper and general factotum for her son, and a rumor of the absence of "hired help" gave her an excuse for calling.

With the freedom that obtains in a small neighborhood, Miss Jessie entered the house by the nearest—and back—way.

Ye gods! What an object met her gaze: A huge gingham apron, stranger for many days to soap and water, enveloped Mr. Pike's manly form. A long black smudge extended from brow to chin; smears all over him; a sticky skillet in one hand, and a rag—from its appearance a part of the mop, but ignorantly converted to higher uses—in the other, he was too abject to be ludicrous.

It did not need a magician to tell that Mr. Pike had been doing his masculine best to fill the place of the much-needed "help." A stray bird had been dropping bits for a while past that had given Miss Jessie a key to the coldness of her affianced lover; and she promptly "rose to the situation."

"Well, Robert"—taking him all in with one sweeping glance—"it seems there are places where"—but he cut her short with such an abject repudiation of his former sentiments that she had not the heart to heap any more coals upon his repentant head.

"I think, Robert," she mildly suggested, "if you will resign your present position and wash your face, the new 'help' will try to fill your place."

Her scorn of his offer of the apron he wore completed his humiliation.

When she returned five minutes later, with that same "shapeless" garment, and proceeded to evolve dainty order out of slovenly chaos, Mr. Pike would have taken oath that a harp was the only fitting accompaniment to that "angelic" garment.

If Mrs. Robert Pike—nee Sanders—should now appear in her kitchen in a chemise or in bloomers, Mr. Pike would affirm, and believe it too, that no woman could attend to her household duties properly unless she were attired in a garment of that identical cut.

LITTLE FARM FABLES.

BY AUNT QUILLIA.

Padfoot and Pilfer.

A family of mice—the Graylings—had taken up their residence in a deserted building. The house was a most desirable one for a winter home, having been occupied the summer before by a small club of boys.

These merry fellows, seemingly, had not "stood upon the order of their going," but evidently had gotten out pell-mell, leaving behind many a delicious morsel in cupboard, box and jar, to say nothing of numerous articles of cast-off clothing. These last made the snuggest and warmest of nests, and the former, it need not be said, afforded excellent opportunities for foraging.

In short, there was nothing to mar the comfort of the family save a certain element of discord which existed in the unhappy nature of Pilfer.

He belonged to that class of individuals whose personal rights seem to be the only thing worth while in life, and, it goes without saying, that those rights consisted in everything that he considered desirable. Furthermore, he was exceedingly alert and aggressive in maintaining them.

Padfoot, on the other hand, was neither selfish nor assertive, yet he was a bright fellow possessed of more energy, intelligence and conscience than any other member of the household. However, Pilfer, unable to comprehend his character, regarded him as decidedly stupid and weak. "He is so easily imposed upon," he would say to himself, "that I prefer him to any other member of the family and shall continue to choose him for a companion on my excursions."

If there was a spot about the premises where they were liable to encounter a prowling cat, or if they chanced upon a hole too small to admit Pilfer's plump body, Padfoot was readily persuaded to take the lead and pave the way for his cowardly brother, whereupon, if no danger were met with, Pilfer came pompously after, claiming the best the place afforded.

One night they came upon a box of nuts in the attic which some boy, in the confusion of departure, had quite forgotten. It was a strong box with no visible opening save a small hole in one corner.

Having carefully examined it, Pilfer remarked: "Now, Paddy, it is true that this hole is a trifle small, and as I am a little larger than yourself, I dare not attempt an entrance until after you have tried it. I will remain behind, and if you need it, will give you a push from without, then, if you succeed in getting thru you can give me a pull from within."

After demurring for a few moments, Padfoot's kindly nature asserted itself and he decided to make the trial. By a strenuous effort he contrived to get about a third of his body thru, but there he stuck, so firmly wedged in that no struggle on his own part nor help from Pilfer in the rear proved to be of any avail. Many were the squeaks that rent the midnight air; many the frantic kicks that threw their queer, little, wavering shadows on the moonlit floor.

Soon tiring of his useless boasting and pushing from behind Pilfer set out for home, laughing till his plump sides shook over what seemed to him a most comical situation.

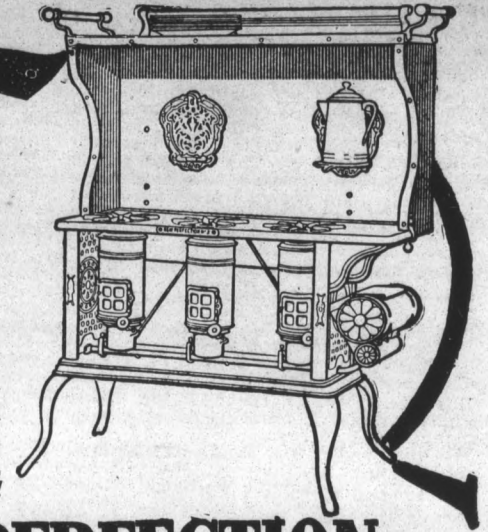
A little while before this unhappy venture, Grandpa Grayling had come to visit the family. He was a quiet, thoughtful old fellow, given to observation and considerable shrewd reflection.

Noting the absence of Padfoot the next morning, and receiving no satisfaction from his inquiries, he, after breakfast, set out on a tour of investigation.

**For the Summer's Cooking**

No kitchen appliance gives such actual satisfaction and real home comfort as the new Perfection Wick Blue Flame Oil Cook-Stove.

Kitchen work, this coming summer, will be better and quicker done, with greater personal comfort for the worker, if, instead of the stifling heat of a coal fire, you cook by the concentrated flame of the



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Delivers heat where you want it—never where you don't want it—thus it does not overheat the kitchen. Note the CABINET TOP, with shelf for warming plates and keeping food hot after cooked, also convenient drop shelves that can be folded back when not in use, and two nickeled bars for holding towels.

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If not with your dealer, write our nearest agency. **STANDARD OIL COMPANY (Incorporated)**

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is an especially good one. Machine-made and therefore perfectly smooth at the top—No danger to the hands and no particles of glass to fall inside when using the E-Z Seal Jar. It has a wide mouth and takes in large fruits without cutting or crushing them. The

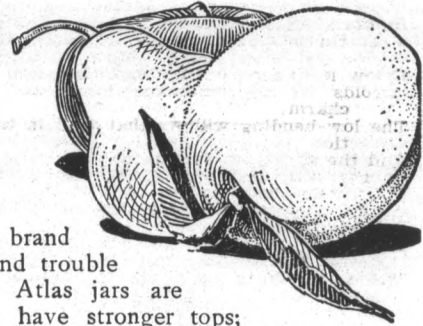
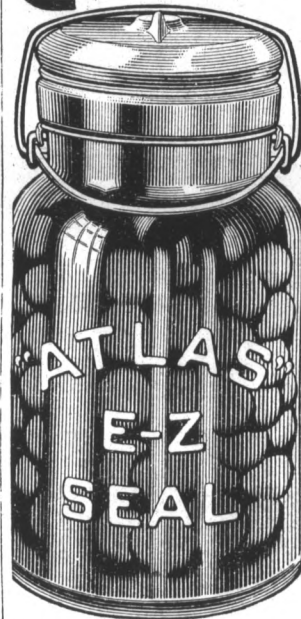
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More of the farm losses in Michigan are due to lightning than all other causes combined. Last year not a single loss occurred on a building properly protected by lightning rods. Eclipse Lightning Rods and fixtures are made from the finest material. They are endorsed by all the large insurance companies in this state. We guarantee the work of any agent handling Eclipse Rods. Write us today, or see our local agent when in town. **ECLIPSE WIRE FENCE CO., Lansing, Mich**

**The Potato Digger Dowden**  
For Fast, Clean Work is the

Simple, strong, always in order. Works in all soils, all depths, hillside and level. No cutting and none missed. Potatoes always clean, lying on top of ground. Works well in heavy tops.

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Guided by some mysterious instinct he at once made for the attic and there found the exhausted body of his favorite dangling from the fatal hole.

Without comment he set to work and, with his teeth, which were still sound and strong, he soon enlarged the opening and gently drew Padfoot to the floor.

Freed muscles, fresh air, and the feeling of relief soon revived him, but no sooner had he regained the power of speech than he began to upbraid himself and lament his unfortunate nature. "I am so constituted," said he, "that I certainly must appear weak and stupid to others, and the worst of it all is, that that is the estimate I put upon myself. Now, Pilfer is a great manager. He knows how to take care of himself and get the best of everything. His business instincts are so sure, his mind so keen and his will so strong, that altho he makes a good deal of discord, he controls everybody and all seem to admire him. Indeed, our parents laughingly call him the family boss, whereas, if the truth were known, I dare say they style me the family booby. In fact, when I contemplate Pilfer's bold, bright talents I wish I had never been born."

"Tut! tut! my child," said Grandpa Grayling. "Your views are quite distorted. True, the noblest characteristics are sometimes underrated. Without fear of spoiling you I will say that you are superior to all in the family. Conscience, kindly feeling, and justice toward others are sometimes mistaken for weakness, but rest assured that neither the brightest nor strongest, but more often the most selfish one is the family despot."

THE MULBERRY TREE.

BY ALONZO RICE.

The mulberry stands on the side of the hill,  
With the fleecy clouds over it lazy and still;  
A silkworm of fancy now spins from its leaves  
A thread of gold tinsel while memory weaves  
A fabric as fine as those looms of the East,  
In hues like the ones of the gay Flower Feast!

Below it, the river with lover-like arm  
Enfolds the fair landscape with many a charm;  
The low-bending willows that trail in the tide,  
And the silvery sycamores rising in pride;  
In the leaf-checked shade where the honey bees sing,  
Hark, a sweet invitation the lily bells ring.  
To stop for a moment and rest, but  
There is beauty alone in the mulberry tree!

In the past, all the wonders its covert possessed,  
From the velvety leaves to the well-rounded nest  
Of the robin that built on the sentinel limb,  
Where poised at the nightfall there trembled a hymn  
Far richer than those of the sirens' fair isle,  
That tempted Ulysses to pause for a while!

The woodpeckers throng where the red berries drip  
With liquid as sweet as e'er moistened the lip  
Of the fond devotee where the tall lilies grow  
And the drops of rich Burgundy sparkle and flow!  
No revel of midnight has dazzled the head  
That peeps from the covert in turban of red;  
A feast to the gods do the berries bestow,  
To the birds in the branches, the poet below!

There the little sapsucker, with many a dot  
Has circled the trunk, and in each hidden spot  
The berries have dropped by the same mystic spell  
As the manna that once in the wilderness fell!

To the very first limbs where we clung with one hand,  
With a lift from a friend, we could easily land  
Among them; then upward we went at our ease,  
Close clasping the trunk with our hands and our knees;  
And, thick fell the shower of fruit, pit-a-pat,  
Plump into the basket, or broad-brimmed straw hat!

Like a palm in the desert, its branches oft rise,  
When the sand burns my feet and the sun blinds my eyes,  
Then I seek its cool shadow, and often I seem  
To see that fair city John saw in his dream;  
I sit by the fountain that flows by its root,  
And drink the clear water and eat the sweet fruit,  
While the peace in its shadow that falls over me  
Is as calm as once rested on glad Galilee!

CARE OF LAMPS.

BY O. E. HACHMAN.

While nothing will equal the soft, steady glow of lamp light for reading purposes, the lamp must be properly cared for to give satisfactory results. There is no reason for a lamp smoking or scenting the room with the unbearable odor of kerosene. These few simple rules will prevent any unpleasant scenting and smoking if adhered to: The lamps should be cleaned each day and the burners boiled every two weeks. The wicks should never be trimmed with shears, but wiped off with a soft cloth. If the wick is trimmed with the shears there are always jagged or uneven portions left, which cause the flame to flare and the lamp to smoke. The charred portions of the wick should be carefully wiped off each day, when a steady symmetrical light will be obtained. To boil the wicks is a wise precaution to prevent them from smoking. Wicks should be bot in bunches, placed in a porcelain kettle, covered with strong vinegar (bring the vinegar to a boil), and set the kettle where it will keep warm for a few hours. Then drain out the wicks, dry thoroly and keep away from dust. Wicks thus treated will hardly ever smoke. All the metal portions of lamp burners should be boiled in strong soda for ten minutes, rinsed and dried in sun or on the stove. Never leave the wicks turned up when the lamps are not in use, for the oil will ooze out and run down the base, creating not only an unpleasant odor, but making the lamps disagreeable to handle. Never allow a lighted lamp to remain for any length of time with the wick turned down, for it will surely smoke and smell disagreeably.

MIXING FAT INTO DOUGH.

In experiments conducted at the Ontario Agricultural College by Miss M. U. Watson, it was found in the case of biscuits in which the shortening had been mixed in the dough by rubbing or cutting

into the flour, and by also mixing in the melted shortening, that equally good results were obtained as regards outward appearances and the way the dough had risen, but on breaking the biscuits made with melted butter they were found to be of inferior texture and seemed very tough, while in the biscuit in which the butter was rubbed into the dough the texture was much better, more spongy and quite tender. When these methods of mixing in fat were tested with cookies the samples were found to be very much alike after baking, one being as good as the other.

HOUSEHOLD NOTES.

I have discovered that hot milk is much better than boiling water for removing berry stains.

Beefsteak should not be salted until done and ready to take from the skillet. It should not be pounded or prodded with a fork while turning as that allows the juices to escape. M. A. P.

CANNING PEAS AND CORN.

I can every sort of vegetable, such as string beans, asparagus, peas, etc., by boiling in salted water until done, then put them in glass cans while boiling hot and screw down cover as tight as can be. Set the cans in a dish and cover half way up with boiling water and let them boil hard until the cover bulges up a little in the center. Take out and if the covers seem loose tighten them down.

For corn I always cut from the cob and pack in the glass jars raw. Screw down covers tight enough to prevent water from getting under and place cans in cold water and let come to a boil. Boil 2 hours steady for pint cans and 3 hours for quart cans.

For tomatoes I scald and peel and place in jars raw and set cans in oven in dripping pan with a small amount of water in the pan. I put no water in the cans as tomatoes make their own juice. Half an hour is long enough in a hot oven. I usually stew some on the range at the same time to fill up any cans that are not full enough. I canned 40 quarts of tomatoes this way last year. Have 12 quarts on hand now. Every can kept perfectly. Wisconsin. Mrs. S. Coss.

INDEX

FOR VOL. XXXII.

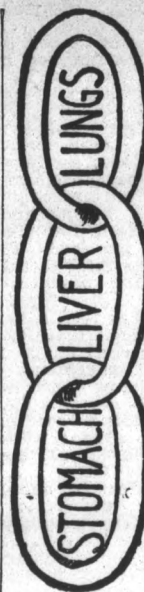
From January 1 to July 1, 1909.

Farm.

After a heavy rain—what then? .....518  
After the corn is in.....598  
Alfalfa .....578  
an experiment with.....149  
experience in inoculating soil for .....494  
lime for .....383  
or mammoth clover .....383  
requisites for success with .....439  
some thots on .....214  
success with late sown.....439  
with barley .....178  
seed in Michigan .....598  
Alsike clover .....279  
Artichokes, additional pointers on .....416  
Barn, good grain and stock .....26  
Barnyard manure, lessons from our Swiss cousins on utilization of .....311  
Bean crop, prepare for.....598  
Beans, fertilizer formula for .....352  
Best farm crop, the.....278  
Business end of farming, the .....352  
Canada thistle business, get out of .....414  
Clay, treating hard, heavy for sugar beets .....27  
Clearing land of soft wood stumps .....176  
Clover root-borers, experience with .....579  
Cloverseed for future use .....3  
Concrete bridges for country highways .....118  
Conveyances on the farm .....71  
Corn problems .....558  
Cowpeas useful in building up soil .....310  
Cow stable floor too smooth .....351  
Disk harrow for new land .....214  
Do not be discouraged.....518  
Elm lumber for lath and plaster silo .....353  
English sparrow, the... 26  
Ensilage corn; red cob... 47  
Evergreen corn as forage crop .....414  
Farm account, keeping a .....26  
Farm ideals .....2  
Farm management .....95  
Farm Notes.—Floats as an absorbent, fertilizer

for potatoes, seeding clover on sandy land, 1; destroying moles, 2; rape as a forage crop; fertilizing new land, 25; managing a small farm, 45; the management of muck soil, 69; oats in the crop rotation, 70; storing manure in the summer, 93; a substitute for hay, 94; fertilizing corn, seeding stubble ground, how to lessen damage from cutworms, 117; a rotation to increase fertility, 118; grasses for bottom lands, making concrete stable floors, soils for alfalfa, 149; should we apply lime to our soils? how lime is applied, how frequently applied, growing cowpeas with corn, 173; making concrete drain tile, alfalfa on hilly ground, preparing for a record crop of potatoes, 174; ridding land of Canada thistles, seeding corn stubble with pasture crop, sugar beets in the crop rotation, seeding alfalfa with wheat, 213; seeding clover in rape, flax culture in Michigan, 214; concrete foundation for barn, seeding wet land, 246; cucumber culture, hay, forage and grain crops, 277; the bean crop, sowing alfalfa seed with clover, how should we sow clover seed, 309; fertilizing corn, crops and grass for swamp land, 310; fall seeding of alfalfa, sowing rape with oats, 349; the management of the woodlot, fertilizing potatoes, 382; seeding worn land to clover, sowing rape in wheat or rye, seeding sandy field, spring seeding to grasses, 382; preparing for the corn crop, cutting alfalfa the first season, growing millet for hay, cement

floors for the granary, beets in the crop rotation, 413; grading the barnyard, 414; treating seed potatoes for scab, eradicator buckhorn, fertilizing potatoes, 437; land not producing well, rape for early pasture, spreading straw and chaff on crops, 438; sowing fertilizer broadcast, treating seed grain and potatoes with formaldehyde, corn after sugar beets, spraying potatoes to prevent blight, 469; the line fence problem, 470; the clover-root borer, 493; how to cultivate the corn crop, how many kernels per hill, 494; corn vs peas and oats, fertilizing potatoes, the crop rotation and soil fertility, 517; handling green and stable manure, buckhorn, destroying weevil, winter barley, 537; millet as a forage crop, 538; sweet clover as a forage crop, handling mammoth clover for seed, preparing potato ground for sugar beets, 557; fertilizing potatoes, 558; fertilizing beans, does the manure spreader pay? fertilizing worn clay soil, 577; wild carrots, when to plant beans, 578; treating seed corn, treating potatoes for scab, seeding low land, seeding a sandy hill, 597; a short vs. a long rotation, fertilizing potatoes, cutworms, laying tile in muck land, 617; catch crops in the rotation, work of the season.....633  
Farm production, an increase in .....3  
Farm work, planning .. 25  
Fence for pigs and chickens .....471  
Fence rails, save the broken .....177  
Fertilizer questions.....71, 578  
Fertilizers for rutabagas and mangels...538



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Spanish, why I breed the ..... 388
Squab raising, possibilities in ..... 234
Suppers, putting on hives ..... 609
Swarms, facts about hiving ..... 637
Toulouse goose as a profit maker ..... 621
Turkey breeding stock hard to secure ..... 637
Turkeys, early spring talk on ..... 498
how success was had with ..... 100
Water glass or sodium silicate ..... 498
Horticulture.
Apple crop, saving the ..... 548
Apple, making a good of a poor ..... 66
Apple orchard, plowing ..... 367
orchard, starting the ..... 36
orchard, the commercial ..... 458
worm, controlling the ..... 568
Apples, can the general farmer afford to grow? ..... 344
Ashes as a fertilizer ..... 648
Asparagus culture ..... 37
Asparagus, rust resisting ..... 67
Bark beetles or bark borers ..... 459
Beans, their culture and varieties ..... 107
Beets, their culture and varieties ..... 162
Blooming plants for shaded lawns ..... 347
Brown-tail moth ..... 499
Burning brush ..... 367
Bush and lima beans ..... 209
Cabbage crop, the late ..... 648
early and late ..... 230
Caring for the foliage ..... 482
Celery crop, getting ready for ..... 426
Chrysanthemums ..... 368
City men wield hoes ..... 143
Coloring fruit by fertilization ..... 458
Cranberry culture ..... 209
Cucumber query ..... 568
Fertilizing onions ..... 208
Flowers for the home ..... 369
Fruit for the farmer's family ..... 163
possibilities in Michigan ..... 106
Fruit trees, renovating ..... 233
winter killing of ..... 459
Garden crops ..... 345
seeds, saving ..... 588
work for late April ..... 458
for early June ..... 588
for early May ..... 483
Garden, cultivating the ..... 402
getting ready to plant ..... 403
the ..... 428
Grand Traverse fruit section ..... 427
Grapes ..... 369
Grape vines, the farmer's ..... 270
Horticulture paragraphs ..... 211
Hotbeds ..... 142
Implements for cultivating the orchard ..... 271
June work in the garden ..... 601
Late work in May ..... 548
Lawn, how to make and preserve ..... 22
provide a good ..... 231
Lime sulfur solution as summer spray ..... 601
spray for the amateur ..... 366
wash, how to make ..... 210
Looking ahead ..... 66
Michigan apples ..... 366
Mid-May and its happenings ..... 525
Muck as a fertilizer ..... 270
Mushrooms ..... 82
Nut trees for Clare Co. ..... 459
Onion culture ..... 208
Onions, late growing ..... 83
Onion queries ..... 366
Orchard drainage ..... 83
Orchards, care of in summer ..... 648
renovating ..... 82
Peach leaf curl ..... 648
Peas, their culture and varieties ..... 403
Planning for next year ..... 222
Planting about the home ..... 525
Prune apple trees, right and wrong way to ..... 426
Pruning raspberries ..... 648
trees ..... 367
Rotate the farm garden ..... 142
Sage culture ..... 427
Seeds, testing ..... 368
Setting trees and plants ..... 367
Small fruit, winter work in ..... 67
Sod mulching trees ..... 36
Soil dyspepsia, causes and remedies ..... 22
Some of the things for early May ..... 499
Spraying law, working the compulsory ..... 626
notes ..... 648
Spraying, cost of ..... 588
for 1909 ..... 106
tall trees ..... 402
with arsenic, no danger from spraying ..... 367
Spray materials, purchasing ..... 231
problems ..... 525
Spring work in orchard and fruit plantation ..... 208
State horticultural society, winter meeting of ..... 296, 346
State law needed ..... 162
Strawberries on the farm ..... 483
Strawberries, setting ..... 548
spring work in ..... 499
Strawberry, the ..... 368
plants, caring for the bearing ..... 525
for 1909 ..... 220

Sweet peppers, growing ..... 345
Tomato plants, growing ..... 210
query ..... 568
Tree labels ..... 143
Vegetable varieties, old and new ..... 83
Using liberal amounts of lime ..... 568
Wind a factor in spraying ..... 482
Winter apples for central Michigan ..... 499
Work for mid-June ..... 626
Editorial.
A farmers' co-operative movement ..... 34
publicity campaign ..... 481
Agriculture in the high school ..... 542
An important decision ..... 160
A modern invasion ..... 446
A modified quarantine ..... 8
An index to prosperity ..... 104
A profitable organization ..... 480
Arbor day and its celebration ..... 480
A square deal for the farmer ..... 364
A timely highway hint ..... 424
Bean jobbers and bean growers ..... 125
Crop prices and prospects ..... 446
Farm products and values ..... 52
Features of the highway law ..... 8
Highway improvement ..... 624
law and sentiment ..... 500
Important farmers' meetings ..... 256
legislation ..... 256
Increase of wealth and production ..... 586
In memoriam ..... 586
Join the farmer travel club ..... 186
Lessons from the wheat corner ..... 602
Live stock improvement ..... 446
Local corn clubs and associations ..... 481
issues ..... 390
Looking for victims ..... 17
Market demands ..... 424
Object lessons needed ..... 542
Otsego Co. farmers organized ..... 526
Otsego Co potato and clover seed growers' association ..... 526
Our natural resources ..... 80
Our state lands ..... 500
Provisions of the Davis bill ..... 126
Pure insecticides ..... 34
Report of the country life commission ..... 186
Revision of the tariff ..... 364
Road improvement ..... 625
Some Michigan advantages ..... 228
Some things we do not do ..... 602
Tariff problems for the farmer ..... 566
The annual corn-show at the round-up ..... 256
The cash highway tax ..... 292
The corner on wheat ..... 480
The contagious disease problem ..... 424
The country life message ..... 229
The county road law ..... 292
The dry farming principle for Michigan ..... 424
The farmer and the square deal ..... 364
The farm problem ..... 446
The farmstead ..... 390
The gasoline can ..... 624
The means to an end ..... 80
The old apple orchard ..... 322
The potato market ..... 34
situation ..... 160
The power of example ..... 52
The president's country life message ..... 228
The quarantine regulations ..... 126
The round-up and corn show ..... 160
The season's campaign ..... 322
The spring migration ..... 256
The state and the state fair ..... 526
The water-power controversy ..... 104
The wheat situation ..... 566
The work of the legislature ..... 8, 586
What you are getting ..... 322
Where and how the tariff applies ..... 586
Where improvement should begin ..... 80
Magazine Section and Home and Youth.
A letter from old Vermont ..... 54
A sailor's work box ..... 259
A study in cardboard ..... 11
A table which any bright boy can make ..... 131
A toy boat house ..... 503
A venture in matchmaking ..... 40
Abraham Lincoln ..... 129
Adam's rib ..... 10
Albert Maywood's Easter ..... 392
An Arbor Day with Uncle Ben ..... 447
Aunt Janet's curls ..... 131
Battle of the russets and the red backs ..... 110
Black cat did it ..... 572
Concrete in the arts ..... 545
Country boys and calves ..... 259
Desolated Timegad ..... 187
Early American authors John Greenleaf Whittier, 58; Washington Irving, 88; Edgar, Allen Poe, 112; Oliver Wendell Holmes, 238; Nathaniel Hawthorne,

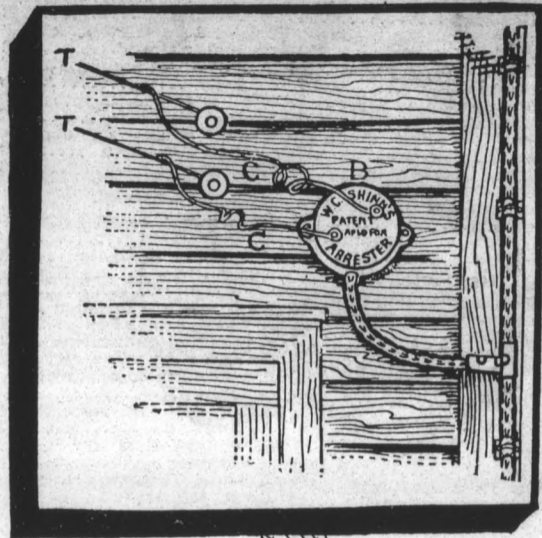
303; Henry David Thoreau, 451; William Cullen Bryant, 605; James Russell Lowell ..... 642
Easter games for the children ..... 394
Extracting the beet's sweet crystals ..... 127
Ezra Green, detective ..... 302
Farming by irrigation ..... 257
For sale—a rogue horse ..... 604
Gerald Clay's vocation ..... 12, 41, 56
How Miss Janet saved the day ..... 604
How the bees told ..... 376
How they named him ..... 259
How to be miserable ..... 375
How to make an ice boat ..... 191
Interesting facts about owls ..... 191
Jimmie Tuttle's sign ..... 325
Joshua Peterson's invention ..... 88
Kittie's Easter offering ..... 432
Lest we forget ..... 592
Let the toads help ..... 259
Little essays ..... 545, 593
Little farm fables ..... 606
Masterpieces of an ink-blot artist ..... 325
May-day in history ..... 503
Minty's chicken ..... 395
Nature's children ..... 53
New facts about the boyhood of Lincoln ..... 191
One rural school ..... 9
Our district school ..... 112
Pete, Arthur & Co. .... 55
Playing to an audience of one ..... 396
Putting up a stove pipe ..... 12
St Valentine's day ..... 168
Significance of Easter ..... 433
Slim tries reforming ..... 640
Some of our wild flowers ..... 327, 449, 543, 641
Some rural school diversions ..... 391
Sparking in the mountains ..... 130
Stilted, or fooling the fooler ..... 374
Strange adventure of a chipmunk ..... 393
Sunday—the children's day ..... 392
Symbolism—civilized and otherwise ..... 434
Teaching color ..... 451
The arms of the law ..... 86
The blessedness of giving ..... 435
The common quail or bob white ..... 376
The dandelion ..... 532
The First Michigan Farmer ..... 639
The five-acre flat ..... 190
The hibernation of bears ..... 238
The hop picker from Port Simpson, 188, 239, 258.
The league of the mighty hunters ..... 169
The legend of the Cherokee Rose ..... 132
The lowly apple ..... 193
The making and distribution of paper money ..... 323
The origin of rural free delivery ..... 603
The salt of the earth ..... 501
The Shetland for children ..... 503
The staff of life ..... 374
The Wall-a-poo Indians and Bill ..... 630
Theodora, 448, 488, 502, 533, 544, 573.
Thomas Bailey Aldrich ..... 433
Told on the train ..... 326
What Mrs. Butler accomplished ..... 111
With St. Valentine's compliments ..... 168
POETRY.
A chafing dish supper ..... 12
A little financier ..... 325
A prayer ..... 396
A puzzling question ..... 170
A song in the storm ..... 302
Abraham Lincoln ..... 130
An old-fashioned visit ..... 58
April sings ..... 392
April's absent-minded beggar ..... 451
Apple blossoms ..... 545
Even as a flower ..... 259
Faith ..... 42
Farmer Brown on rural routes ..... 190
Fortune ..... 453
Gain or loss ..... 375
Goin' barefoot ..... 503
Gone from her home away ..... 170
Granddad says ..... 40
Grandmother ..... 110
In gran'ma's attic ..... 259
In praise of St. Valentine ..... 168
In protest ..... 447
In time of May ..... 543
It might have done in father's time ..... 394
Jamie and Jem ..... 261
Lessons of labor ..... 593
Lucky ..... 505
Memoria in Aeterna ..... 592
My hope ..... 89
My Mamma ..... 131
Once a year ..... 170
Rose or mint ..... 329
Sugar-making ..... 328
Sweethearts ..... 573
Swimmin' ..... 605
The flag of the stars and stripes ..... 631
The forest ..... 328
The last furrow ..... 433
The lie George W. told ..... 191
The little cacs ..... 56
The May-time ..... 532
The new flag ..... 631
The owl ..... 572
The picnic ..... 395
The rose on the water ..... 488

The secret of the stream ..... 433
The state I love ..... 639
The tales I hear in the wind ..... 189
The unknown dead ..... 577
The way of time ..... 131
To mother ..... 88
Unforseen good ..... 503
What grandma knew of Easter time ..... 422
What they call me ..... 191
When Nellie rides ..... 111
When sorrow makes us kin ..... 374
Where the arbutus grows ..... 326
Where shall I look ..... 130
HOUSEHOLD.
Afternoon diversions ..... 574
Bargains ..... 331
Blessedness of giving ..... 435
Border in Porto Rican drawn work ..... 399
Cane vs. beet sugar ..... 608
Care of the carpet sweeper ..... 490
Care of the sewing machine ..... 377
Cellar, caring for ..... 196
China, glassware, and bric-a-brac, how to mend ..... 607
Cleaning the vinegar cruet ..... 631
Clothes and their care ..... 197
Cooking rice ..... 547
Cooking strong smelling vegetables ..... 305
Contests for Lincoln celebration ..... 114
Contributed recipes.—Plum pudding, date drop cakes, 42; rice pyramids, iced tomato, rice cream, 60; curing meat, 90; cheese potatoes, cherry pie, maple velvet, maple cake, stuffed apples, marguerites, mayonnaise dressing, 135; rice chocolate cake, fig cake, orange cake, jubilee cake, ice cream cake, ham salad, tomato salad, dandelion salad, 198; beef-steak pie, ..... 141
Costumers ..... 547
Dignity of labor ..... 241
Doilies for baskets, trays, etc. .... 196
Drawn work border ..... 263
Dry mop, or long-handled duster ..... 305
Easily made mat frames ..... 506
Embroidery, square in Roman ..... 134
Emergency provisions ..... 534
Exterminating the mosquito ..... 594
Falling hair, to stop ..... 170
Family treasures ..... 136
Flowers to brighten the home ..... 134
Gladiolus and dahlias, classes of ..... 114
Helping the teacher ..... 89
Hints for the home dressmaker ..... 198
Home chats with farmers' wives.—The old and the new in housecleaning, 15; a trio of dainty pillow slips, 59; cold weather conditions in the home, 134; purchasing supplies for the family, 195; the spring cleaning, 262; the best way of washing lace curtains and woolen blankets, 331; the true status of the American farm woman, 398; the doorway, 454; simplifying housework, 596; insect pests, 564; going to the exposition, 607; the summer meat supply, 643.
Home-made substitute for coffee ..... 90
Home nursing and hygiene.—Hygiene in rural schools, 16, 60; concerning the eyes, 136, 198; some throat diseases, 264; some questions of diet for children, 332; the care of the baby, 400; food and health, 455; the bureau of sickness, 508; health inquiries, 608; a health problem, 644
House-cleaning ..... 491
Household hints ..... 59, 491
Kerosene oil in kitchen and laundry ..... 507, 524
Kitchen, rules for the ..... 42
that will please the housekeeper ..... 333
Kitchen floor, the ..... 424
Lenten cakes ..... 377
Mr. Ward's advice ..... 241
Oysters, preparing ..... 89
Paragraphs ..... 113
Plant pests and their remedies ..... 171
Poinsettia, how made to bloom in the home ..... 113
Porch boxes ..... 534
Practical showers for the young housewives ..... 278
Putting advance ideas into practice ..... 16
Simple embroideries for waists ..... 15
So-called economy ..... 454
Some pretty cushion designs ..... 594
Suggestion for the season ..... 264
Summer care of the winter clothes ..... 506
Surprise menu, a ..... 491

Telling stories to children ..... 42
Testing drinking water ..... 491
Unappreciated blessings ..... 242
Unique place cards for May-day festivities ..... 507
Unleavened bread ..... 507
Vegetables as medicines ..... 574
Vines ..... 455
When time is plentiful ..... 135
Women's congress at round-up ..... 305, 334
Women's dress in their homes ..... 332
Worry wrinkles ..... 333
Your baby ..... 113
Grange.
A Christmas Grange ..... 23
Among live Granges, 43, 61, 91, 164, 243, 307, 341, 379, 411, 429, 469, 485, 535, 575, 615, 627, 651.
A real social center ..... 627
Balanced Grange relations ..... 509
Getting a fresh grip on one's profession ..... 467
Grange conferences ..... 411
Granges help to secure rest rooms ..... 275
Granges organized and reorganized ..... 115, 469
How the Grange is educational ..... 575
Interesting the young people ..... 379
In the Upper Peninsula ..... 429
Muskegon Co. Lecturer's conference ..... 509
New Granges ..... 411, 575
Our Grange field ..... 243
Our new Granges ..... 651
Planning for the new year ..... 43
Pomona meetings, 23, 43, 137, 243, 307, 485, 509, 595, 615, 627, 651.
Shall parents take a home reading course? ..... 164
Some Grange problems ..... 615
Study of the home ..... 204
Teaching agriculture in rural schools ..... 115
The Grange and, soil fertility ..... 535, 552
the child ..... 595
young people, 307, 341, 379.
The Grange in other states ..... 204, 469
The personal element in Grange success ..... 61
The value of an ideal in Grange work ..... 204
Things that are nearest ..... 485
To members of a weak Grange ..... 91
What hath farm organizations wrought? ..... 243
Farmers' Clubs.
Agriculture in rural schools ..... 43
Assessment of farm lands, 115, 137, 164, 204, 204, 243, 275, 307, 341, 379, 411, 429, 467, 485, 509, 535, 575, 595, 627, 651.
Club work for summer ..... 485
Club work for the young people ..... 509
Country life problems ..... 61
Executive committee meets ..... 137
Hired help on the farm, 379, 411, 429.
How the local clubs are conducted, 535, 552, 575, 595, 615.
Important work for January ..... 91
Organize county association ..... 467
The associational secretary's report ..... 23
The farm garden ..... 651
The housework problem ..... 341
The season for extension work ..... 43
The summer picnic ..... 615
What might be expected of the young man of today ..... 243, 275
Which qualities make the best wife? ..... 535
Yearly programs ..... 307, 485
Illustrations.
A harvest of rats ..... 55
Alfalfa on farm of A. M. Bullock ..... 557
Apiary of Mr. Cavanagh ..... 321
Apple harvesting scene ..... 344
Apples improved by fertilizers ..... 66
Arbor day illustrations ..... 447
Barley, a good head of ..... 213
Barn of J. A. Anderson ..... 437
Barn, plan of basement ..... 422
Bee hive designs ..... 320
Beet sugar buildings and machinery ..... 127
Bently Grange hall ..... 603
Birthplace of Holmes ..... 238
Blood-root blossoms ..... 327
Blue wild-flag ..... 543
Bridges, reinforced concrete ..... 117
Bronze statue of Lincoln in Lincoln Park ..... 129
Buff Leghorn hen ..... 234
Bull-thistle blossoms ..... 327
Cardboard study, half-tones and line drawings of lantern ..... 11
Cement fence posts, making in position ..... 471
Chicken coop ..... 266
Cushion ..... 449
Cushion designs ..... 594
Dairy cows, some good ..... 200
Designs for wool box ..... 280
Drawn-work border ..... 262
Ducks, and the duck pond ..... 185
crested white ..... 138
Dutchman's breeches ..... 451
Embroideries for waists ..... 15
Family horse ..... 597

Farm home of Chas. A. VanDeventer ..... 1
H. W. Randall ..... 1
J. A. Anderson ..... 437
R. A. Woolsey ..... 469
Mrs. Ellen Purdy ..... 537
R. L. Nichols ..... 617
W. Howe ..... 25
Farmstead, old-fashioned type ..... 149
Flowering dogwood ..... 545
Forestry, an experiment in practical ..... 381
Girls driving colt ..... 131
Goose on nest ..... 621
Grain and stock barn ..... 25
Grange Hall of Stony creek Grange ..... 341
Grange, Schoolcraft Pomona ..... 429
Grape vine trellis ..... 270
Hairpin trimming ..... 59
Handkerchief and tie boxes ..... 454
Hay, drawing to market ..... 493
Heifer hitched to cutter ..... 259
Hive bee, worker, queen and drone, illustrated ..... 51
Hive tops and bottoms ..... 73
Hog house and trough made of cement ..... 48
Hog trough, a handy ..... 28
Holmes, Oliver Wendell ..... 238
Holstein-Friesian bull, world's champion butter cow ..... 512
Home of E. D. Jennings ..... 46
Home of family worth quarter of a million ..... 52
House boat, a toy ..... 503
House built of field stone ..... 517
Ice-boat, plans for making ..... 191
Ink blots ..... 325
Ireland church where no collection has ever been taken ..... 605
Irving, Washington ..... 88
Jack-in-the-pulpit ..... 449
Jersey cow, "Echo" ..... 462
Keeping bees in unusual places ..... 101
Kitchen, a model ..... 333
Lapeer social center ..... 627
Liquid manure, loading the ..... 311
Logging camp in Northern Michigan ..... 94
Maple sugar and syrup making ..... 245
Market garden cultivation ..... 402
Memorial day illustration ..... 577
Mending the harness ..... 277
Mountain laurel ..... 545
Nails, how to drive ..... 518
Nathaniel Hawthorne ..... 303
Ohio boy and his pony ..... 503
Onion, harvesting the crop ..... 208
Oxford Downs, prizewinners ..... 249
Paper money, making and distributing, 323, 324.
Peach tree, four years old ..... 106
Perillus claudius ..... 120
Phlox ..... 449
Piggery, up-to-date with ground plan ..... 179
Pink azalea ..... 543
Place card designs for May-day ..... 507
Poe, Edgar Allen ..... 112
Ponderosa lemon ..... 545
Porto Rican drawn-work ..... 398
Pottery produced by Indians ..... 434
Poultry house, locating the ..... 428
sectional ..... 428
Ray Scott and his dog ..... 605
Roman embroidery ..... 134
Rural free delivery scene, and originator ..... 603
Rural school children, grove, and school-house ..... 9
diversions, 391, 393, 395
Salt plant, scenes in ..... 591
Scenes in irrigation section of country ..... 257
Seed corn shelled and graded ..... 413
Sparrow trap ..... 150
Silo, big ..... 173
Silo plans ..... 564
Stock and grain barn, plan of basement ..... 26
Stomachs of calf and cow compared ..... 336
Swamp land, clearing the ..... 349
Swiss manure heap with pump over liquid manure reservoir ..... 310
Table which a boy can make ..... 131
Tennessee girl and her favorite cow ..... 451
Timegad, scenes of, 187, 189
Time of May ..... 543
Trailing arbutus ..... 327
Trot for poultry, self feeding ..... 498
Types of men of irrigated region ..... 257
Vineyard, a well attended ..... 482
Willow blossoms ..... 327
What they call me ..... 191
White Leghorn cock ..... 234
Whittier, John Greenleaf ..... 58
Winter scenes ..... 69
Woodlot with undergrowth ..... 173
Wool, sample of ..... 281
Woman's rest room in courthouse ..... 275
Work-box ..... 259
Work of youthful photographers ..... 131
Yoke of steers ..... 325

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This lightning arrester gives this absolute protection. Endorsed and recommended by telephone companies—they are glad to have it on their lines. (See letter from Lincoln Telephone & Telegraph Co. of Lincoln, in our free booklet.) With this device attached to your 'phone you cannot possibly be hurt or shocked even though telephoning during a storm.

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Protects your 'phone forever. Can't "burn out." Prevents lightning from running in over long distance on the telephone wire. Absolutely does away with every element of danger.

One of the most practical and scientific inventions of the age because it is so simple. Worth many times its low cost. Selling rapidly. Buyers would not consent to part with it. Sold by dealers everywhere that W. C. Shinn's Lightning Rods are sold.

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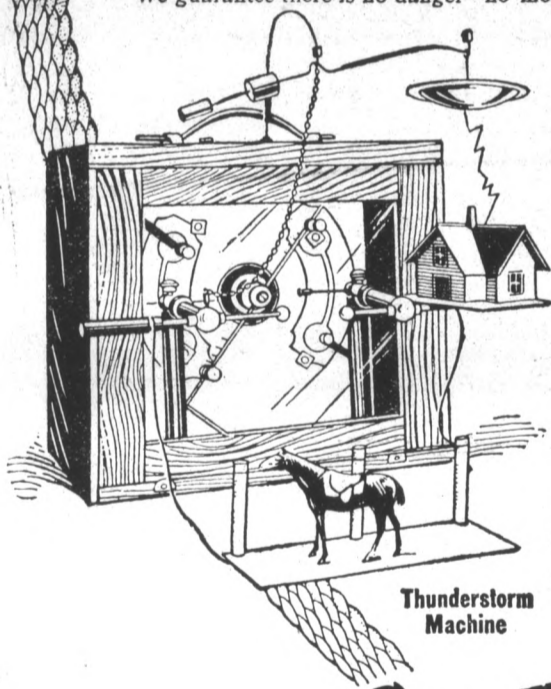
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Shinn's Scientific Copper Cable Lightning Rod will protect buildings against damage from lightning forever. W. C. Shinn is manufacturer of W. C. Shinn's Pure Copper Cable Lightning Rod. This rod has the highest endorsement of scientific men and farm paper editors and fire insurance experts. Insurance companies recommend a discount of 10% to 20% in their rates on farm buildings that are fitted with Shinn's Copper Cable Lightning Rods. During the last ten years thousands of buildings have been protected with the W. C. Shinn Copper Cable Lightning Rod, and not a single one of them has ever been damaged by lightning stroke—and never will be. Mr. Shinn gives every buyer of his lightning rod a written, legal guarantee against loss.

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Thunderstorm  
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