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FARM NOTES.

Marl as a Soil Corrective.

Is marl containing 95 per cent of carbonate of lime, practically no magnesia, a good fertilizer? How much a load could I pay for it and haul it five miles, and how apply it? My soil is a sandy loam. Is peat of any value when applied with a manure spreader?

Montcalm Co.

A. E. W.

Marl is not a direct fertilizer. That is, it is not of great value to the soil for the plant food which it contains, except perhaps for alfalfa. But a great many of our older soils need lime, not alone as a preparation for alfalfa, but as well to stimulate the clover crop and other legumes. Some other crops are also benefited by an application of lime, where there is a deficiency of lime in the soil. The producing power of all soils that have become sour or acid is also benefited by the application of lime. Where lime is needed it should, of course, be supplied in the cheapest way.

In recent years carbonate of lime has increased in favor for use in all cases where the soil is to be limed. For this reason the use of ground limestone instead of caustic lime is recommended by the best authorities. It supplies the calcium needed in the soil in the form of a carbonate which becomes available more slowly, and consequently has a more lasting effect and does not attack the humus in the soil as does caustic lime. At the same time it sweetens the soil and makes it a more suitable habitation for the beneficial soil bacteria, such as the nitrifying bacteria peculiar to the clovers, for which reason liming is so beneficial to leguminous crops and from which its principal benefit is probably derived. Now it makes little difference from what source the carbonate of lime is obtained. That contained in the marl will prove just as effective as that contained in the ground limestone, and where it has an analysis of 95 per cent carbonate of lime probably a little better, since most limestones contain more than five per cent of magnesia aside from some other mineral compounds. But it also has the disadvantage of containing a good deal of water, which adds to the cost of hauling and makes its distribution more difficult. It is, however, largely a question of cost, whether it would be better to draw the marl the distance stated or buy the ground limestone, and this is a question which can be intelligently decided only by figuring it out on a local basis, as the cost of the ground limestone is largely dependent on the freight rate from the nearest available source of supply. In either case it would be advisable to experiment on a small scale with different crops to determine the benefit which would result from the application of lime to this soil, although the full benefit of the application can hardly be determined until the land is seeded to clover at the regular period for that crop in the rotation practiced.

While peat is rich in vegetable matter it should be weathered and composted before being applied to the soil, as it will furnish neither available plant food nor humus until it is decomposed. It is doubtful whether it is an economic source of either for use upon the land under the present high cost of labor

in handling it. It would be cheaper in most cases to supply the needed vegetable matter by plowing down some suitable crop grown for green manure.

Selecting and Preparing the Soil for Alfalfa.

What kind of soil is best for alfalfa, high or low ground? Is it necessary to use fertilizer on the ground for alfalfa where same is heavily manured? Can it be successfully seeded with oats, and should any other grass seed be sown with it? How much seed should be used per acre and how deeply should it be covered?

Ottawa Co.

G. S.

The kind of soil to select for the growing of alfalfa and the method of preparing it for the crop which promises best

results, is a subject to which a great deal of space has been devoted in the columns of the Michigan Farmer during the past two or three years. But there are new readers being added to the Michigan Farmer family constantly, and if some of these can be interested in experimenting with alfalfa on a small scale by a repetition of the advice given to other inquirers, the space devoted to answering their inquiries will be well used.

As before noted in these columns, a soil should be well drained to be suited to the growing of alfalfa. The permanent water table should be at least three feet or more below the surface of the soil or

alfalfa cannot be expected to thrive. Then the soil should be in a fertile condition, with plenty of available plant food in the soil for the young plants, as they start rather slowly at first. Whether fertilizer is needed or not will depend upon the condition of the soil. In many localities of the state lime is needed as a preparation for alfalfa. Ground limestone is generally considered best for this purpose by authorities on the subject, but other forms of lime may be used in lesser quantities if more convenient. From one to four tons of ground limestone or one-half ton of caustic lime may be used per acre with advantage. While successful stands of alfalfa have been secured where the seed is sown with oats or barley, most growers favor seeding without a nurse crop. If sown with spring grains the latter should be seeded rather thinly to give the alfalfa the better chance. From 10 to 20 lbs. of alfalfa seed should be sown per acre, about 15 lbs. being sufficient to make a good stand under ordinary conditions if the seed is good. It should not be covered too deeply for best results. A light harrow will cover it deep enough.

Inoculating and Disking Alfalfa.

On May 20, 1910, I sowed two acres of alfalfa on a well prepared seed bed. The land was sandy, but had been well manured. The seed was sown at the rate of nine pounds per acre, which I think was plenty as the stand is very thick. But the plants are of a poor color, and only in spots did it look green and thrifty as it should. It grew all the way from four to 15 inches high, and was clipped twice during the summer. I did not inoculate the seed or the soil. Now I would like to know if I can inoculate this piece of land by sowing on some earth from another field of alfalfa that is well inoculated, and harrow or disk it into the soil, or are the plants so young that there would be danger of killing out what I have? Or would it be better to plow this field up and commence over again in the right way? Time is money with the farmer in getting his crop established, and I am satisfied that we can get it if we go at it in the right way.

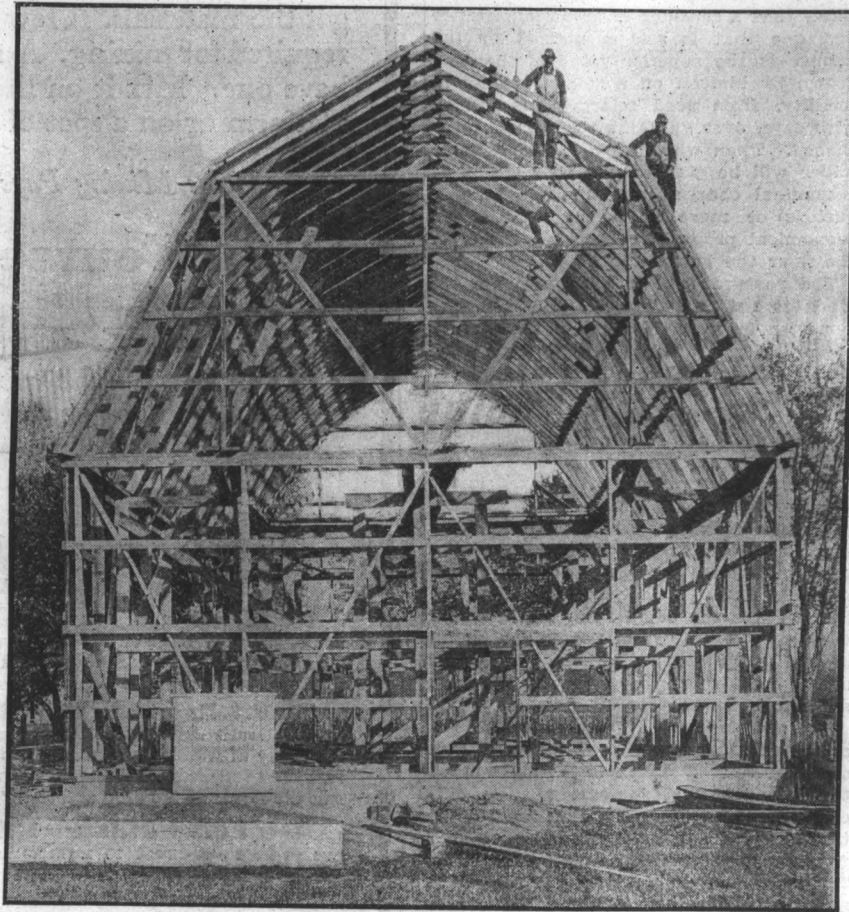
Grand Traverse Co.

F. S.

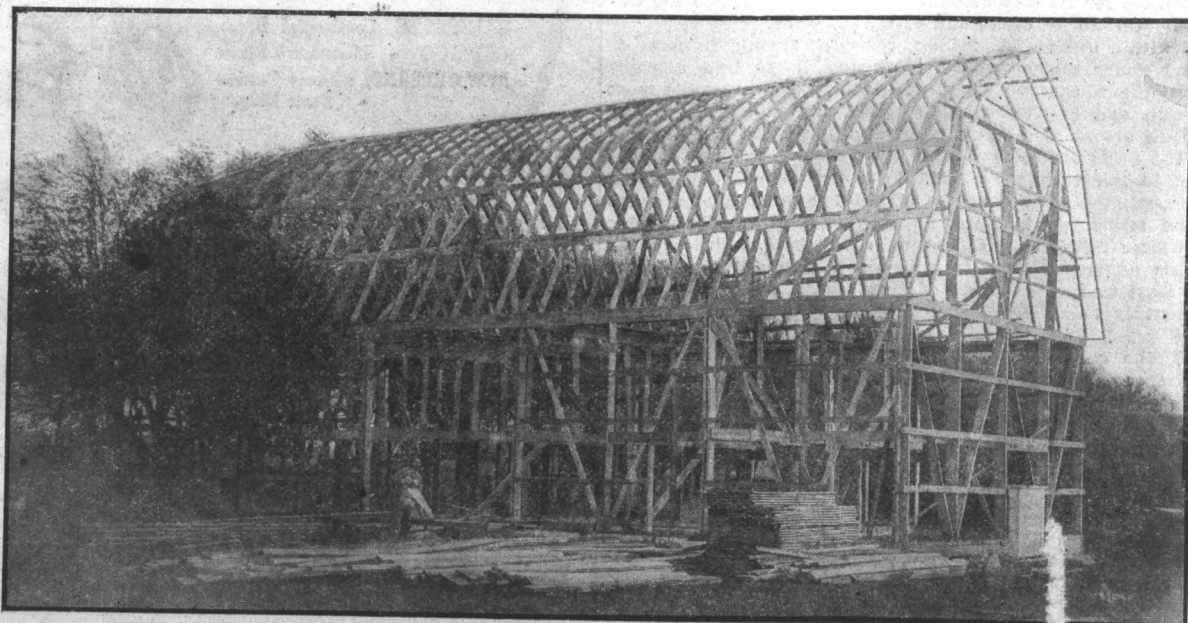
Without any doubt, the spotted condition of this alfalfa field is due to imperfect inoculation. There is no question about the bacteria being present where the plants are a dark green color and grow thriftily, but where the plants are small and spindling and of a yellowish color there is an evident lack of inoculation. The best method of handling this uneven stand can be better determined in the spring, when it can be seen whether it has been injured by the winter, as injury is more likely with

a weak stand than where inoculation has been good and the plants have become well developed the first season. But if the weaker plants seem to be alive in the spring, and there are no large bare spots in the field, it is the writer's opinion that it would pay to inoculate as suggested in this inquiry.

In one of the experiences with alfalfa published in the Michigan Farmer during the past year, the writer stated that he had tried the effect of inoculating the second season by sticking a spade into the ground and dropping some inoculated soil in back of it, and that the benefit was very marked and noticeable almost at once. If inoculation by this method was successful there would seem to be no reason why it would not be equally successful if the inoculated soil were sown



Two Views of a New Type of Plank Frame Barn in Process of Erection on the Farm of Geo. W. Ford, Huron Co., Ohio.



This frame as above illustrated, represents 12 days' work of two men, with the exception of putting on the rafters, which requires about 10 men. The main posts or studding are 2x10 in., and are nailed in two inches where the girts are spiked on. The rafters are 2x6 in. oak, the lower section being 16 ft. long and the upper section 12 ft. Barn is 36x74 ft.

on the field and thoroughly disked into the surface before the alfalfa starts in the spring. The disking would probably be beneficial rather than otherwise to the stand, as many of the most successful growers of alfalfa contend that disking alone will do much toward the improvement of a poor stand of alfalfa. Then, if the inoculated spots are fairly well distributed over the field and not too far apart, the bacteria will spread naturally and a disking and harrowing would help to distribute it. In the writer's opinion it would be a mistake to plow the field up without giving it another chance to make good with the help suggested. Of course, it may be found that the inoculation will not prove successful, and that lime may be needed in the soil before good inoculation can be secured. It would add to the interest in and value of the experiment to apply lime to a portion of the plot at the same time the inoculated earth is sown and work both into the soil together, leaving a portion unlimed and uninoculated as a check on the experiment. This is the best way to gain positive knowledge as to the right method of getting a stand of alfalfa under our local conditions. In other words, the soil can answer these questions more satisfactorily than the best authority on the subject, who has gained his knowledge from experience under different local conditions.

Is Sawdust Beneficial to Clay Knolls?

Will you kindly give a little advice on the use of sawdust or planer shavings on clay ridges that seem to be too hard to grow good crops? I have a field that grows excellent corn except on the clay hills; there it amounts to but little. I have been considering covering it with sawdust and plowing under. Would it be advisable to put it on thick? I have not manure enough to cover it all and prefer to replenish the ground that I know is good.

Ogeman Co.

W. H. S.

The writer has never had any experience in the use of sawdust or shavings to improve the mechanical condition of hard clay knolls. Coarse vegetable matter of any kind that will hold the soil particles apart and make some humus as it decays is beneficial on hard soils, and it would seem that hardwood sawdust or planer shavings would accomplish the same purpose. If the inquirer tried the experiment we would be glad to have the result reported through the columns of the Michigan Farmer.

A GOOD DEVICE FOR CULTIVATORS.

One of my neighbors rigged his one-horse cultivator for cultivating corn after it gets a little size, and his idea is so very good and so simple it ought to be more widely known. He simply widens the cultivator to fill the row and then, removing the two outside shovels and in their place bolting on a steel bar about $\frac{3}{8}$ -inch thick, 2 inches wide, and long enough to reach across. The bar should be set at a cutting angle and the lower edge kept sharp. It will shave the weeds all off clean and will not go deeper than an inch or so, leaving a nice mulch and the ground as flat as a floor. Anyone can put one onto almost any make of cultivator. Remove any teeth behind the knife and set the teeth in front shallow so as not to injure the corn roots.

Jackson Co.

L. B. BENTON.

CROP OBSERVATIONS.

Wheat is still looking good, though conditions are now rather unfavorable for its remaining in this condition. Up to a week ago it had been covered with a thick coat of snow and the ground under the snow was frozen very little, so the wheat appeared to have held its own and remained green and perhaps even grown a little. At present, however, the fields are nearly bare, and the ground is freezing more deeply, and thawing somewhat during the day and with warm spells, so there is likely to be more winter injury and heaving. The market has advanced a little, the quotation at the local market now being 90-92. Little wheat is being marketed.

Clover has also fared well, the conditions which were good for wheat being also favorable for the clover. The chief drawback with each was the dryness of the soil, but this has been relieved somewhat by the recent rains. Clover seed is becoming in better demand, and is worth around \$8.50 to \$9.00.

More interest is being manifested in alfalfa than ever before. There are no pieces of much size in this locality large enough to give a yield of hay, but a few tried it last year, and more will try it this year, the writer included. We have been looking up the matter for a few years, and believe it is going to be a success in Michigan eventually, and he says so.

ranged to sow a small field in the spring. Seed is scarce and worth around \$14-per bushel. Most farmers are sowing about 20 pounds per acre, and sowing alone, but the season of sowing varies from April to August.

Fruit is still unhurt by the winter so far as can be seen. There has been no severe weather to injure it as yet. The winter is rather dry for young trees, but as there was no deep freezing during the driest part of it I do not think there is much injury as yet. Last season was rather unfavorable, as a whole, for fruit, and the trees ought to be in condition to develop a good crop of fruit buds, and with a favorable spring, mature a good crop of fruit.

S. B. HARTMAN.

UNNOTICED, NEGLECTED THINGS ON THE FARM.

One of the very first requisites in good farm management is naming the farm.

Every park is graced with a name. Each cottage or summer home at the resorts is given an appropriate name and is considered more valuable because of it.

Each farm is, or should be, a combination of these two, then why not name it.

After naming the farm you will find your standing has become more important and of necessity you will be a very busy man, so busy you will need assistance in more ways than one.

One thing that will give a large amount of help is a pocket memorandum. As the thoughts come to mind they can be jotted down in a moment as, "articles to purchase," "special work," and so on. One thing that I consider of great importance and one that is seldom noticed by the farmer is the superior value of the food grown by himself on a soil increasing in fertility, from seed selected and graded with care, over anything that can be purchased. Then why buy your flour. Some miller will be glad to mill your wheat at a nominal charge, providing you take 20 bushels or more at a time. It is an economical proposition, besides, the older the flour the better the bread.

The pasture field is given over to the stock to raid as a whole, and soon becomes a poor one, when a temporary fence across it will make it into two good ones. The advantage of small pastures over large ones is great. When one is pastured until the best is gone the other one is new and fresh, unscented and palatable.

Another thing usually overlooked is the average age of all farm stock. The depreciation of value, while more in some cases and less in others, yet is, on the average, about the same as on dairy stock or very close to ten per cent. I claim the average age of all farm stock should vary not very far from the age when an animal first comes to its best. A herd of ten animals will, collectively, be ten days older tomorrow.

To overcome this depreciation it becomes necessary to grow all kinds of farm stock ourselves. There is in this method the advantage of increasing their efficiency, and at the same time hold down the average age. In this connection I would advise taking an annual invoice. The rules governing business force the merchant to do this and gives him a record of all his holdings and their value as a premium for his labor. An inventory by the farmer will give him a record of his holdings and their value, also the average age of all his stock.

A falling common among farmers is crowding too many hours into a day's work. It was to help overcome this most undesirable condition that led me to buy a gang plow and five-horse harrow and contemplate the purchase later of a four-horse drill. I purchased the plow against the advice of a large number of farmers because, as they said, it was impossible to use one on rough land. Although my farm is situated in one of the roughest sections of this county I find it possible to plow nearly the entire farm with this plow, excelling as well in the quality of work done.

As stated here, I use a gang plow, still I think that to attempt a system of good farm management it is necessary to own and use a one-horse plow. They are not only valuable in the orchard and small fruit but can be used to place the land under cultivation within a foot of the fence line. This does away with the "fence row" evil, also cuts down the noxious weed nuisance.

In the purchase of tools for farm use a considerable amount of study and thought should be used in considering future as well as present needs. For instance, the four-horse drill must have a seat, also a fertilizer attachment; not that it will be

**Home
Mixing
and how
to do it**

Farmers

are learning that they
can satisfactorily mix their
own fertilizers, and because it
is so *simple* and so *profitable*,
more and more are doing so.

POTASH

There are but two things to know to make it a success, and these you have to know anyway to make fertilizing pay: Just what your land and crop should have in the way of fertilizer and where to get the materials. A few simple tools are all that are required for mixing. A sand screen will help if you have one. Mix it on the barn floor, on an outside platform or on a spot of hard ground swept clean.

Home Mixing Pays Because Potash Pays

Mix It Yourself and Get Just the Fertilizer You Need

You can vary the mixture to suit specific needs of different crops or sections of land. To get best results you'd have to select several different fertilizers if you bought the complete commercial mixtures. You can add filler if more bulk or better mechanical condition is needed, and you don't pay freight on it, or handle that extra weight unnecessarily.

For full and valuable information on fertilizers, their mixing, use and value, see your State or U. S. Government Agricultural Bulletins, read good farm papers, discuss the subject with neighbors, and today write us for literature on Fertilizers with especial attention paid to Home Mixing, FREE.

The U. S. Department of Agriculture, in discussing commercial fertilizers in the South Atlantic States (*Farmers Bulletin No. 398, Free*), says: "In the study of fertilizer practice it was found that nearly all of the best farmers mix their fertilizers at home and adjust the different fertilizer constituents to suit the needs of the crop and soil."

We sell Potash—Muriate, Sulphate, Kainit—through dealers everywhere or direct to farmers anywhere in any amount from a two-hundred-pound bag up.

Your dealer can get it for you or you can write us. Write for our booklets and prices. Potash pays and we can supply you.

German Kali Works

BALTIMORE, Continental Bldg.
CHICAGO - Monadnock Block
NEW ORLEANS, Whitney Central
Bank Bldg.



used now, or perhaps soon, but if ever wanted it will be there.

Modern methods and conditions have made it imperative that to measure up to any degree of perfection in any branch of farm management, the question of sanitation and ventilation must be considered thoroughly. The time has arrived when it can almost be said that the profits can be measured by the degree of cleanliness surrounding the production and delivery of all farm products. A good place on which to begin a crusade is the watering tank for stock. Do you enjoy a drink of water from a filthy cup? Do you expect your animals to give you the best of service when forced to drink from a receptacle that is repulsive in appearance to you? Any water system that does not allow of a complete renovation or clean-up every seven days is of questionable value.

A practice that comes home to a majority of farmers is leaving the cream separator bowl without cleansing, to be used for the separation of the next milking. It is not necessary to drink from one that has been left over but simply scent it after it has stood for 12 hours and anyone with a sense of justice and right to themselves and their families will discontinue the abhorrent practice. If there is a reason for cleansing or renewing the strainer, there are several reasons for cleansing the separator bowl.

A young man, to succeed in farm management, whether employing hired help or being assisted by his own children, should make a study of all lines or departments of his business, even to the point of becoming an expert, that he may become a living example or an inspiration toward a higher standard of accomplishment.

Of all the neglected things on the farm I consider the housewife the most neglected of all. She is not only obliged to perform the drudgery common to house-keeping, rear the children and pay strict attention to their education, but is expected to shine as a companion to her husband, and do all this confined in unventilated quarters. Instead of leaving undesirable work to further burden her strength and time, I think a good manager will set aside from 15 to 30 minutes every day after dinner to clean up the undesirable and unpleasant jobs. Try it and see how it works.

The foregoing is submitted to Michigan Farmer readers, not as a complete list of the unnoticed and neglected things on the farm but rather as a specified few of the little things that, when righted, go to make life worth living.

Kalamazoo Co. L. J. BRADLEY.

HOW TO ESTIMATE THE PROBABLE COST OF BUILDINGS.

It often happens that we want to know just about what a building will cost and yet we do not want to go to the bother of having to make out an itemized list of the materials necessary to make such a structure. Then again, it often happens that we have just a certain amount of money with which to build and we want to know just how large a structure we can build with that amount of money. For such cases Prof. Ramshower, of Ohio, gives out the following tables: First estimate the cubical content of a proposed building by multiplying the height of the proposed structure by the length and the breadth. In this case the height is counted as the distance from the basement to one-half the height of the roof. According to this table first-class frame houses costing from \$800 to \$900 run from eight to nine cents per cubic foot; eight to 12 room frame houses run from nine to 11 cents. Frame barns, of the plainer type, shingled and unpainted, cost from 1½ to 2½ cents per cubic foot, and well finished barns, painted, from 2½ to 3½. Of course, these tables cannot be relied on for a certainty and so are but approximate, yet for their purpose they are exceedingly handy and fairly reliable.

Ohio. CLYDE A. WAUGH.

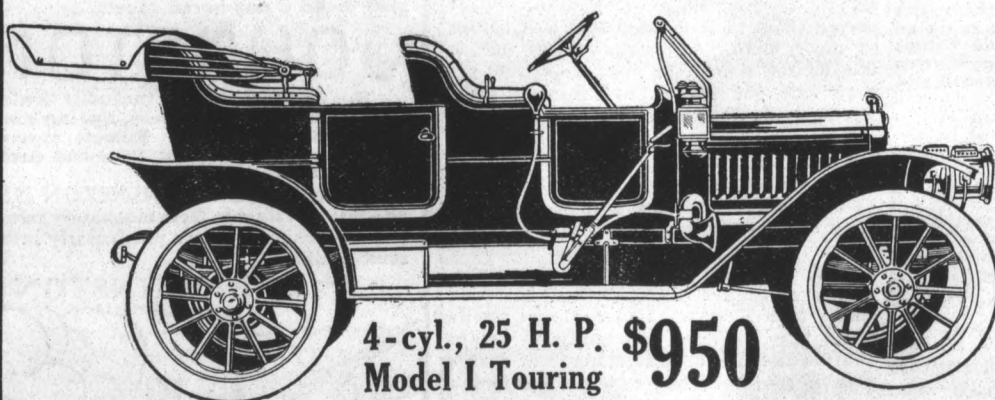
PROBLEMS IN MAPLE SUGAR MAKING.

I would like to know if any maple sugar makers use soft coal successfully, and if so, how is it used, in arches? How are the fire places arranged so as to burn soft coal? Are grates used? Also how to construct a sugar house over evaporating pan, and arrange so the steam has an escape.

Tuscola Co. A. M.

If any of our readers can answer these questions from personal experience, we would like to hear from them for the benefit of this inquirer and other subscribers interested in sugar making.—The Editor.

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Model I Touring

Top, wind shield, and gas lamps extra

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for at a price
you can afford.**

LAST year we sold 4,227 Maxwells to farmers. Think of it! This so stirred my enthusiasm that I resolved to design a car for *farmers especially*. One that would stand the hardships and terrific punishment of rough farm work, and yet stand up 365 days in the year.

Typical Farmers' Car

Operating a farm myself, I knew what was wanted. I knew the car must be substantially built of first-class materials. That it must be a big car, adaptable both for business and pleasure. That it must possess ample power. That it must possess simplicity and accessibility of parts. Above all, it must be a car of stylish lines and dignified appearance. Such a car I built. When I figured up manufacturing cost, to my great surprise I found that owing to the tremendous Maxwell facilities and output I could sell this car at the exceedingly low price of \$950. Such car value was never before known.

Be My Guest Call on the nearest Maxwell dealer. I have arranged for him to invite you and your family to ride in any Maxwell you select—at my expense. Be sure and try the Model AB—the new 16 H. P. Farmers' Runabout at \$600. Satisfy yourself that all Maxwells work alike—that they are equally reliable. The car will save you money, just as it has 40,726 other Maxwell owners.

Not a City Car

It doesn't pay to sell a car built for city use—fine boulevards and macadam roads—telling the farmer it is the ideal car for the country. This policy may sell the first car, but never the second.

Ask any Maxwell Owner

Ask any Maxwell owner what it has cost him, saved him and produced for him. How it has saved his horses. How it has kept young men with their father on the farm because of its money-making possibilities. Ask him how it compares in expense with horse-drawn vehicles—if it is a paying investment.

These Books Free

Let me send you our latest catalogue, new "Farmers' Economy Booklet" and other timely literature. I will gladly send you these books free—and no obligation. Write me today. A postal will do. Just say, "Mail Books."

J. D. Maxwell President and General Manager

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Sold to Nov. 30, 1910	- 40,176
Sold during Dec. 1910	- 550
Maxwells in use today	- 40,726

WATCH THE FIGURES GROW

LIVE STOCK

VALUE OF THE MANURE CROP.

In order that I may be able to figure correctly, will you kindly answer the following question through your paper, that others may receive some benefit from it as well as myself. I have 50 head of cattle. I haul the manure direct from stable each morning and put in piles on field where most needed. How much value has this manure per head? I have 500 sheep running in sheds. When we clean the sheds we handle the manure the same as above. I also have 17 head of horses which I handle the same. In addition to above I have about 75 brood sows and feeder hogs in pens. When pens are cleaned out the manure is thrown in the barnyard and will be hauled out in the spring. How much value has each lot of manure per head? Also, I want to put in some crop for early hog pasture, which I may plow up later and sow rape or soy beans. What can I use for the first feed? Last year I had ten acres of soy beans which I used for hog pasture, with very good results. Will use this same field for the early hog pasture, as I figure the hogs did it some good by running in it most of the season.

Ogemaw Co.

W. H. S.

At the Cornell Experiment Station it was determined that when animals were fed liberally and given sufficient bedding to keep them clean the quantity of manure obtained and its value per day, estimating nitrogen at 15 cents per pound, phosphoric acid at 6 cents and potash at 4½ cents were as follows for each 1,000 pounds of live weight of the different farm animals:

	Amt. per day, lbs.	Value per day, cents.
Sheep	34.1	7.2
Calves	67.8	6.2
Pigs	83.6	16.7
Cows	74.1	8.0
Horses	48.8	7.6

It has also been calculated that if all of the solid and liquid manure from farm animals could be saved it would have an average approximate annual value per animal as follows: Horses, \$27; cattle, \$19; hogs, \$12; sheep, \$2.

Figured on another basis it is estimated that a ton of good mixed stable manure will contain about 10 lbs. of nitrogen, 5 lbs. of phosphoric acid and 10 lbs. of potash, and will be worth for the plant food which it contains about \$2.45 at the values given above for these substances which would approximate their cost in commercial fertilizers.

As a matter of fact, good stable manure has an additional value for the vegetable matter which it contains and which will add to the humus content of the soil and as a medium for the development of beneficial soil bacteria. But the value of the manure is affected by many factors which are difficult to estimate accurately, such as the loss of some of the liquid portion which is richest in plant food, deterioration in handling from fermentation and leaching, etc. It is also affected by the character of the feed given and the purpose for which the animal is used. These figures, are, however, a sufficiently good basis for estimating the value of our manure crop to awaken the many farmers who have not considered it from the standpoint of its money value to the importance of its conservation and careful use.

Oats and rape sown early make as satisfactory early hog pasture as any crop that can be sown early. By dividing the field with a temporary fence and sowing a part to soy beans and again sowing rape in August following the early crop, a succession of green forage would be secured. Or if the early sown rape is seeded to clover the same object will be attained, with better future results.

A PLEA FOR THE BROOD SOWS.

There are many who keep different kinds of stock and fully understand the advantages gained by getting their cows in proper condition before freshening, who fail to give their sows a chance to get in good condition before farrowing time comes, and if they do not have "good luck" with their litters, they either blame the sows, or say that they can not make any money raising hogs.

In accordance with the laws of nature, females, after becoming pregnant, eat more greedily than before and take on flesh, preparing to feed the young after it arrives. In other words, the female stores up in her system nourishment which she begins to yield up in her milk as soon as the young appear and can take it. In many cases the increase in flesh is more apparent than real, as is shown by the fact that they shrink in appearance as soon as they give birth to their young, much of the supposed improved condition having come from the change in

filling up internally by carrying the young. But the farther fact that they become more and more emaciated as they continue to give milk, although they are fed all that the digestive organs can utilize, shows that they give up in their milk much that had been previously stored up in the system.

The man who confines his brood sows to a small pen or inclosure, compels them to eat snow or ice for their drink and only feeds them a little corn once or twice per day, makes a serious mistake. He is not giving the sows a chance to fill up and sustain themselves, to say nothing of preparing them to feed the litters well before or after birth. To neglect them during the winter season is false economy, for they can not make good returns after having been subjected to such treatment.

The nearest to ideal conditions which we have on the farm for the development and preparation of the sows for farrowing and raising the litters of pigs, is when they are turned out on grass and clover pasture in the summer, have a moderate allowance of grain with some sloppy feeds, and have shelter from the flies, hot sunshine and storms. Under those conditions they exercise sufficiently to retain the normal use of themselves and maintain a healthy condition of the stomach and bowels. Under such conditions there is rarely any trouble at farrowing time, and the fevered conditions that cause the sows to eat their pigs are never present.

The nearest we can approach those ideal conditions in winter time is to feed sloppy feed, at a moderate temperature, twice per day, using a variety of grain feeds to make the slops. It is safer to use only about one-third corn and oat chop and make up the other portions of wheat middlings and wheat bran. If hot water is used in mixing the feed, and it can be given while warm, all the better. Do not neglect to give the sows a chance to eat some clover hay or cornstalks each day. They will not require much, but what little they eat will help them to some of the elements they need to sustain them and build up good bone, and at the same time will be a saving on the grain feeds as less will be required to secure the same results than would be the case if the forage feeds were left out.

Exercise.

Perhaps no other kind of animals on the farm are so likely to be neglected in regard to exercise as brood sows. No other kind of animals need the exercise more than they. With no other kind of animals are disastrous results likely to follow from the lack of exercise as with the brood sows. Exercise is a positive necessity to insure a healthy condition of the sows, and qualify them to nourish the pigs they are carrying, and at the same time impart to them the strength and vigor that is needed to enable them to make a live of it under ordinary conditions. Pigs from an active sow will survive under unfavorable conditions, while those from a sow that is averse to moving are very liable to perish from lack of vigor.

It is a good plan to compel the sows to travel a considerable distance twice per day for their feed. Such a practice forms the habit of keeping up the regular exercise. It keeps them healthy, promotes appetite, aids digestion and keeps the joints of the limbs in use so as to avoid the many leg difficulties frequently met with where exercise is neglected.

Comfort an Important Factor.

It is a sad sight to see the brood sows running along a barb wire fence squealing on account of hunger and cold, bemoaning their uncomfortable conditions, perhaps wallowing in the mud in the day time and sleeping in a damp, cold place at night. Such a sight betokens unthriftiness, not only on the part of the sows themselves, but on the part of the owner. It shows that there is a waste of feed on the sows at the time and a condition that can not produce good results in the spring. Such men will never admit that they make any money at raising and selling hogs, and they, no doubt, tell the truth. If they do not lose the pigs in the spring, they will not inherit the thrifty habit to make them profitable pork producers.

It pays to provide a warm, dry nest in which the sows can sleep at night, and remain in during the day if the weather is stormy. All annoyances should be avoided, either from a boar or from the store hogs. If they receive kind treatment from those who feed and care for them, they will be tractable and easily handled at farrowing time, and the pigs will partake of the quiet disposition that will make them agreeable as well as profitable animals to keep on the farm or feed for market.

Wayne Co.

N. A. CLAPP.

PRACTICAL FARMERS PREFER

practical machines with no experimental or "freakish" features; they know that JOHNSTON farm machines represent the most advanced development along practical lines. The name JOHNSTON on farm machinery spells SATISFACTION in every civilized country.

Simplicity, strength and durability characterize all JOHNSTON machines. They are easily operated, cheaply maintained, and adaptable to all conditions of soil and grain. They cost more to manufacture, but cost the farmer no more than cheaply-built machines and give much longer dependable service.

The JOHNSTON No. 10 Mower has many good features; cuts a clean swath in any grass on level or hillside; easy to operate, to pass obstructions and turn corners; simple and strong; the best Mower made for long service. We also make a one-horse Mower.

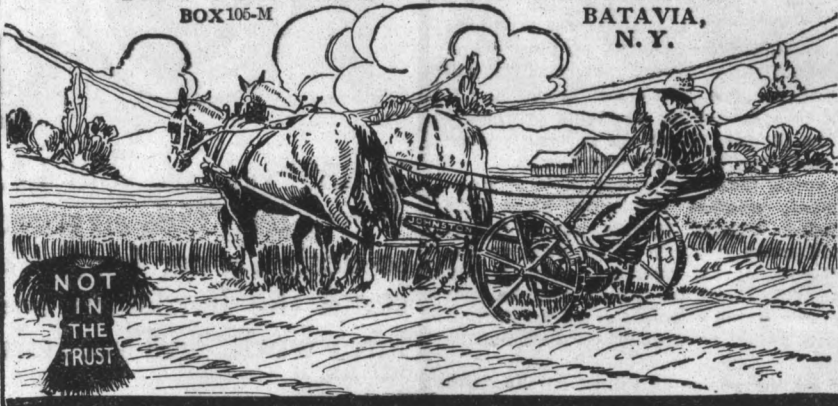
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The JOHNSTON line includes Grain Binders, Reapers, Rakes, Manure Spreaders, Spring and Spike Tooth Harrows, Side-Delivery Rakes, Mowers, Tedders, Hay Loaders, Corn Binders, Disc and Orchard Harrows, and Land Rollers.

Write to-day for JOHNSTON 1911 catalog—it's free and full of valuable farm machinery information. Or advise what machine you are particularly interested in, and we'll send booklet.

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Better Disking at Half the Cost

We know that the new Imperial double disc, flexible frame, scalloped blade Harrow will save you money and time, and give you a better seed bed than any other implement. We know this through recorded tests, and from the experience of thousands of farmers throughout the country. We want you to know it, too, from an actual test of an Imperial, conducted by yourself on your own farm.

Imperial Double Disc Flexible Frame Harrows

Any Bucher & Gibbs dealer will be glad to let you have an Imperial Harrow to make this test. Get one from your dealer, and while running it note these facts:



The Imperial Harrow works the ground twice for its full width of cut in the same time it takes the old style harrow to do it once. Four horses hitched to an Imperial will do twice as much work as three horses with an ordinary harrow.

The specially designed, scalloped blade cuts to greater depth and more perfectly pulverizes the soil. The flexible frame lightens the draft and leaves a perfectly level seed bed.

Write for all the facts about the Imperial double disc Harrow, and we will send you some printed matter that we know will be of value to you. Write to-day.

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Here is the Engine for you—the right power for every practical farmer. Because it does the work, all the time, for any man, whether he has ever seen an engine before or not. Maybe you are enough of a mechanic to operate a complicated engine—but why take chances when you can get one that's so perfectly simple that anyone can run it easily. Why be bothered with valves and other weak parts that are always getting out of order, needing fine adjustment, packing, etc. Before some one sells you this kind of trouble let us send you our instructive farm power book and tell you about the simple, economical, sure and steady

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Great Western Gasoline Engine

No Valves—No Trouble—Just Power

This remarkable engine is what all manufacturers have been striving to produce for a generation. It is a 2-cycle engine. Others, as you doubtless know, are 4-cycle. By perfecting a 2-cycle we have done away with valves and other complications. Other engines have from 25 to 50 working parts about the cylinder. The Great Western has only 2 and these are heavy and strong. Other engines, the 4-cycle kind, produce power only at every other stroke of the piston. Ours gets power at every stroke—which means steady power and no useless wear and tear and vibration—no waste of fuel. Made in various sizes from 1½ to 10 horsepower—uses gasoline, gas, naphtha, distillate or alcohol. You can't doubt our claims when you read our guarantee—and we'll tell you where to see the engine. Send Postal for our big Free Book of Farm Power Facts No. B331 and get posted before deciding on any engine.

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CHATHAM FANNING MILL and Seed Grader

Cleans and grades all kinds of seeds, grasses and grains. Don't grow weeds or thin stands. Land and taxes are too high. Double the crops, get better crops and have high-priced seed to sell. Send postal now for my factory price, liberal terms, and get FREE BOOK No. 167. Tells how thousands are making big extra profits with a Chatham. Send your name by next mail.

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Kansas City, Mo.; St. Paul, Minn.; Seattle, Wash.

No Money Down
No Note
No Contract



17 Screens and Riddles
Enough for Every Purpose

STATE BREEDERS' MEETINGS.

(Concluded from last week.)

Michigan Horse Breeders' Association.
The meeting of this association held at M. A. C. during the general live stock meeting was a very successful one, with a good attendance of horse breeders. Various topics of interest to the horse breeders of the state were discussed, notably the proposed bill for the licensing of stallions in Michigan. A legislative committee was appointed to further the passage of the bill which had been prepared for discussion at this meeting, and which was unanimously endorsed by all present. An outline of this bill was published in a recent editorial comment in the Michigan Farmer, and a determined effort will be made for its passage by the legislature this winter. Officers were elected for the ensuing year as follows: Pres., Wm. Bird, St. Johns; first vice-pres., Dr. J. E. Ward, Perry; department vice-presidents, Mart Hicks, St. Johns; Geo. Achermann, Elkton; C. F. Sattler, Charlotte; C. C. Hoag, Charlotte; A. P. Green, Olivet; W. W. Collier, Pontiac; sec., J. G. Palmer, Belding; treas., E. P. Sessions, Gd. Ledge.—J. G. Palmer, Sec.

Michigan Jersey Cattle Club.

No elaborate program was prepared for the meeting of the Michigan Jersey Cattle Club which was held at M. A. C. on Jan. 11. The time was devoted to an informal discussion of matters of interest to the goodly number of Jersey breeders present. Dr. Geo. A. Waterman, of Ann Arbor, was elected president and R. E. Jennings, of Paw Paw, secretary.—H. F. P.

Michigan Shorthorn Breeders' Association.
Michigan Shorthorn Breeders' Association convened at the Agricultural College, Jan. 11, 1911, and had a fairly good representative crowd, with plenty of enthusiasm for the outlook for the breed in Michigan. A number of interesting subjects were ably discussed by the breeders, one of the most important things being an arrangement to hold another meeting next month to perfect arrangements for holding an annual sale, the first of which will take place in 1912. The following officers were elected for the ensuing year: Pres., G. F. Ottmar, Merlebeach; vice-pres., Alfred Allen, Mason; sec-treas., Dell Dawson, Sandusky; board of directors, W. G. Anderson, St. Johns; J. F. Clemons, Bath; Geo. T. Fuller, Battle Creek.—Dell Dawson, Sec.

Michigan Berkshire Association.

The fifth annual meeting of the Michigan Berkshire Association was held in the Agricultural Building, M. A. C., Jan. 11. This meeting proved to be of unusual interest, the attendance was good, and the addresses given were both pleasurable and beneficial. Dr. Marshall, of M. A. C., gave an instructive address on "Hog Cholera," and Hon. H. H. Hinds, president of the State Live Stock Sanitary Commission, in an address on the same subject, stated that there was greater financial loss to the farmers of Michigan from hog cholera than from any other disease to any other stock. The result of the discussion following was the passing of a resolution to petition the legislature now in session for a suitable appropriation to assist the M. A. C. in the manufacture of serum for the treatment of hog cholera, so that it might be furnished to the farmers at a reasonable cost, and thus be able to stamp out this fatal and dreaded disease. A petition with over 200 signers of the most representative stockmen of the state was presented to the ways and means committee of the legislature, on the afternoon of Jan. 12. The meeting resulted in the election of the following officers for 1911: Pres., E. L. Salisbury, Shepard; vice-pres., F. W. Upton, Lansing; sec-treas., Chas. B. Scully, Almont; executive committee, C. S. Baldwin, Bennington; Jas. Reynolds, Port Huron; G. C. Hupp, Birmingham; C. C. Corey, New Haven, and W. H. Schantz, Hastings.—Chas. B. Scully, Sec.

The west and southwest are full of sheep and lambs that are being fed for the market, and a great deal of feeding is being carried on in several states east of Chicago, Michigan, Indiana, Ohio and Pennsylvania being actively engaged in this important industry. The consumption of mutton has been increasing recently, and rallies in prices have taken place at times, especially for fat flocks, but excessive marketings are frequently seen, and these give buyers a powerful advantage. Sheepmen should get advised by their commission firms as to the best time to ship and should watch market condition carefully at all times. They should make careful note of the fact that excessive weight on lambs is a serious detriment to their sale, the demand being for choice, fat lambs of handy weight. Neither should yearlings be made heavy.

Famous Old "Hickory" and "Tennessee" Farm Wagons Now Sold Direct from World's Largest Factory—Freight Prepaid. Write Today For Low Prices

THIS news means a gain to you of \$10 to \$30, according to the style of wagon you need and the locality in which you reside. It means hundreds and hundreds of thousands of dollars saved to farmers this year and every year.

We make and sell more wagons than any other manufacturer in the world, have the largest factory, have a working capital of over \$2,000,000.00, make the highest grade wagons produced, wagons with the best reputation and a service record of forty years back of them.

Millions of dollars will be saved the farmer in the future by our direct selling method. Save your share now.

We now sell direct to the farmer—the wagon buyer—at actual cost of production plus only one very small manufacturing profit. And you get the benefit—from \$10.00 to \$30.00 in your pocket, according to the size and style wagon you need, and the locality in which you reside.

4 Weeks' Trial—2-Year Guarantee

Write for our book, pick out the style wagon you need from our great assortment, note the low factory price, freight prepaid to your railroad station, and see the liberal trial offer and signed guarantee sent with each wagon.

You will find that we make it easy for you to buy from the factory and save money.

You know what you get, too, in an "Old Hickory" or a "Tennessee" wagon. 900,000 farmers know "Old Hickory" and "Tennessee" quality, durability, light draft and lasting handsome appearance.

Write for our book and learn what "Old Hickory" and "Tennessee" wagons are made of and how they are made. Then you will realize why they last for a generation and what bargains

these wagons are at our factory prices, freight prepaid. We have a 30-acre plant—our own saw mill, foundry, paint mill and all. A million dollars worth of lumber always seasoning. Hickory, air-dried for years for axles, eveners, whiffletrees and neckyokes; finest black birch or white oak hubs; select hickory or choicest oak spokes; best white oak bolsters, sandboards, reaches, brake bars, felloes and hounds; special extra large, straight grained oak tongues, every piece of lumber the best that money, spot cash, will buy, then inspected, seasoned for years, and reselected and examined for flaws at every stage of development. All iron and steel work watched with equal care—every detail made right regardless of cost to us, down to the painting and finishing, which is done by hand, in five different operations.

To Farmers and Users of "Old Hickory" and "Tennessee" Wagons: If you now have one of our wagons and owing to accident or long service, you need repair parts, write for our generous proposition on parts needed.

Write for Our Big Free Book

The only book of the kind ever published giving reasons for this radical change in selling

plan. Also gives you greater choice of wagons than twenty big dealers could—all priced to save you from \$10.00 to \$30.00, according to size and style and locality in which you reside. Mail coupon, or a postal card will do. That penny postal may save you \$20.00 or \$30.00.

We have had the trade of dealers for over 30 years and in making this radical change in our selling method we will be fair to them as well as to you by filling first orders out of their stocks of "Old Hickory" and "Tennessee" wagons if they consent to let us do so. Address

Kentucky Wagon Mfg. Company
(INCORPORATED)
Office, 296 West "K" Street, Louisville, Ky.



Send
Coupon
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Book

Kentucky Wagon Manufacturing Co.

Office, 296 West "K" Street, Louisville, Kentucky

Please send me free, your new, large wagon book and factory prices.

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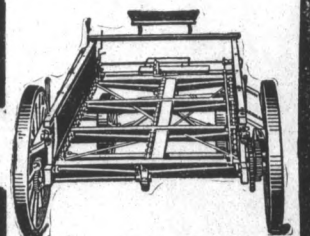
Buy an Appleton Manure Spreader WITH ITS SOLID OAK FRAME.

The frame is the foundation of a manure spreader—it must stay square and level or the machinery parts will soon stop working right. Our frame is made of solid oak—every piece is carefully selected, every piece well seasoned. It is braced and

trussed by steel rods, so that it is always square and always level all the time and under all conditions. There is no other wood as good as oak for this purpose, and there is absolutely no other frame equal to the Appleton. See the picture—that will convince any practical man.

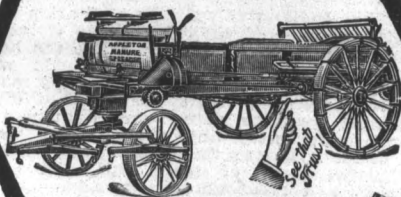
The Frame That's Always on the Square.

Here's a combination of the toughest wood, the strongest metal and common sense.



The all oak frame. Steel braced and steel trussed.

Eight Styles To Choose From



Made with RETURN OR ENDLESS APRON

A BOY CAN RUN IT

easy to haul; spreads thinly or thickly and always evenly, from start to finish; has positive force feed; pulverizes thoroughly; doesn't bunch; has a changeable feed, operated without stopping the team; automatically balances the load; is so simple of construction and so easily operated that any boy, who can drive a team, can run it.

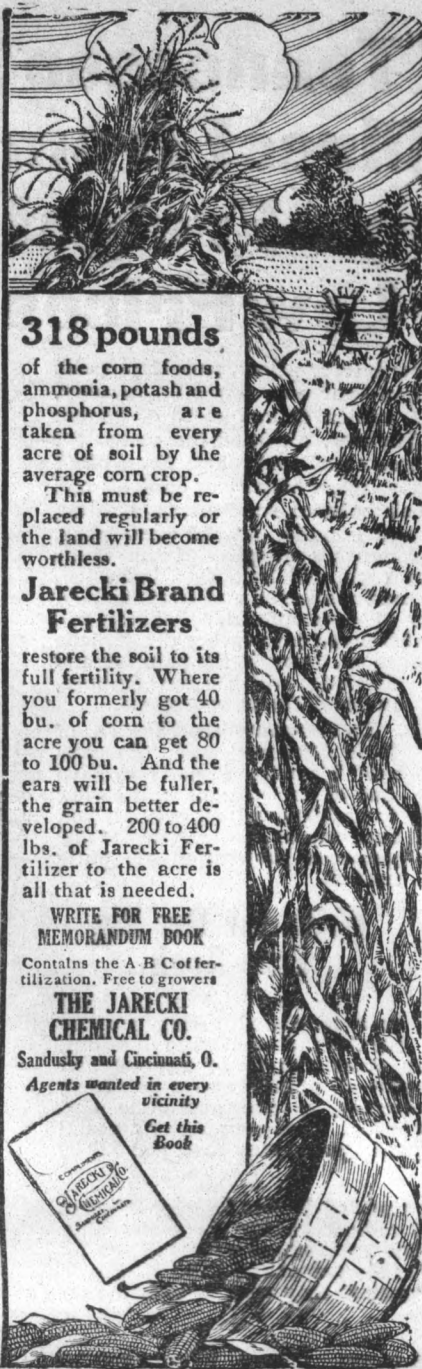
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of the corn foods, ammonia, potash and phosphorus, are taken from every acre of soil by the average corn crop.

This must be replaced regularly or the land will become worthless.

Jarecki Brand Fertilizers
restore the soil to its full fertility. Where you formerly got 40 bu. of corn to the acre you can get 80 to 100 bu. And the ears will be fuller, the grain better developed. 200 to 400 lbs. of Jarecki Fertilizer to the acre is all that is needed.

WRITE FOR FREE MEMORANDUM BOOK
Contains the A B C of fertilization. Free to growers

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Agents wanted in every vicinity

Get this Book

The Most Economical Engine Ever Built

PEOPLE everywhere are rejoicing that at last they can have an engine that runs on coal oil faultlessly. All this is the result of gasoline going up because of the big automobile demand. Kerosene costs 6 to 10c less per gallon than gasoline, and gasoline keeps on going up higher and higher. This engine runs on less than half the cost of a gasoline engine right now. Also runs on any engine fuel.

Perfection Kerosene Engine

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You can have this remarkable money-saving engine for 15 days' free trial. Go to your local dealer, ask him to show you the "Perfection" and have it sent to your farm. Try it thoroughly for 15 days. If at the end of that time you are not entirely satisfied, return the engine to your dealer and every dollar you have paid for it will be refunded cheerfully.

AND DON'T MISS our free Engine Book. Get a copy from your dealer. In the event that your dealer does not carry the "Perfection," write to us.

Caille Perfection Motor Company, 210 Second Av., Detroit, Mich.

Price \$10 and Up

Earn \$10 a day and more, easily, sawing firewood, lumber, lath, posts, etc., for yourself and neighbors with a

Hertzer & Zook Portable Wood Saw

Fully Guaranteed for One Year

The Hertzer & Zook is the cheapest and best saw you can buy. Direct factory prices—finest tested materials. Easier than other saws to operate because the stick sits low and the saw draws it on as soon as you start work. It is the only saw made, selling at \$10, to which a ripping table can be added. Write for circular and save money.

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THE ROSS SILO

The only thoroughly manufactured silo on the market. Full length stave. Continuous door frame complete with ladder. Triple beveled silo door with hinges. Equipped with extra heavy hoops at bottom.

AIR TIGHT

Makes winter feed equal to June mass. THE ROSS will more than pay for itself in one season. Write today for catalog which gives facts that will save you money. Agents wanted.

The E. W. Ross Co. (Est. 1850) Box 14, Springfield, Ohio.

NEEDED ATTENTION FOR THE HORSES.

Sharp shoes are the urgent need of the day. It seems incredible that a man should expect a smooth-shod horse to haul a load over slippery roads, but there are any number to be seen daily. Only the other day I saw smooth-shod horses in ill-fitting harness being urged to pull loads in old, insecure wagons and that on such icy streets that it would have been quite a feat for the horses to have walked across them when entirely unhampered.

At this time of year every horse in service needs special attention. He who owns or drives horses should put into use every bit of his practical and theoretical knowledge of horses, especially in this slippery weather.

After a horse had made several frantic efforts to start and has satisfied himself that it is useless to try, it is often hard to get him to make another attempt, even after applying something to aid him to get a foothold. No amount of yelling or lashing will do any good, and such a scene is a sad spectacle. Let him rest a moment, talking quietly to him, and then go to his bridle and shift this as if readjusting it. Then hold up his front foot a short time, and the horse will have forgotten his fear in wondering what you are doing to him. Then take hold of his bridle, and, with a few calm, reassuring words from you he will start off.

It is often impossible for a team unassisted, to start a wagon on a sharp grade. When the horses exert all their strength to start the load the driver should use all his common sense to help them. It may be necessary, after arranging for a foothold, for the driver to put his shoulder to the wheel. Passersby will gladly help him, and with one man at the horses' heads and two more at the wheels the thing is done quickly and happily.

The horse's feet should be watched for signs of cracked heel or scratches during cold, muddy weather. If he stands in mud and water that freezes on his feet it is liable to cause grave trouble. A good preventive is to rub the hollow above the hoof thoroughly with vaseline before starting out on such days.

Never wash the mud off the legs and feet upon coming in at night, simply wipe off thoroughly with a dry cloth, and then, if possible, bandage. The next day brush out dried mud and apply vaseline.

See that the blanket is securely fastened when you leave your charge standing in the cold. A blanket that only touches the horse where it is fastened around the neck and leaves the rest to the caprice of the wind, is enough to frighten any horse. No teamster with feeling or self-respect will leave his charge unblanketed.

The few seconds gained in throwing harness on in a careless, slip-shod manner often means many hours lost in the detrimental effects upon the horse. How would you like to do a hard day's work with the arm holes of your coat so tight that they cut into the flesh with every move? Think of this when harnessing your horse and adjust your harness accordingly. It is almost unbelievable that a man could put a harness on a horse day after day without readjusting when the evidence against that harness was gradually working itself into a sore. Think of how this galling lessens the working capacity of the horse.

During slippery weather, especially, see that your wagon is in good condition and pulling as lightly as possible. Look to it that the wheels are on tight and axles well greased. Don't wait to have the wagon tell you at some critical moment that it needs attention.

St. Joseph Co. W. J. GRAND.

A RATION FOR FATTENING LAMBS.

Will you give a beginner in the sheep feeding business some advice as to how to compound a balanced ration for fattening lambs, from the following feeds: Oats, beans, corn and black barley, (which weighs 60 lbs. per bu.), with bean pods and clover hay for roughage?

Isabella Co. F. H. B.

This is a good list of feeds from which to make up a ration for fattening lambs. The choice should depend somewhat upon the relative quantity of the different grains available. Assuming that plenty of corn is available it would be best to use it for the basis of the ration, using at least one-half corn in the ration. Beans may be used to advantage if not made too big a factor in the ration, but should not be fed much if any in excess of one-fourth pound per day per head. Barley or oats may be used in making up the balance as desired. Barley is about five per cent less valuable per given weight than corn. Like corn it is a starchy feed,

although it contains a little more protein than corn, but it also contains more fiber which makes it less digestible. With a ration made up approximately as described from these grains and with clover hay and bean pods for roughage the nutrients would be sufficiently well balanced to prove economical and the variety of feed would make the ration palatable.

LIVE STOCK NOTES.

High-grade, well-bred feeder cattle have been selling in the Chicago stock yards recently at prices nearer to those paid for fat bullocks than have been seen in many months. Observers have remarked that it was startling to see prime long-fed beef steers selling at \$6.50@7 per 100 lbs. and choice 900 to 1,100-lb. feeders going at \$5.90@6. The inevitable conclusion formed by observers of this condition was that either fat cattle were too low in price or that feeders were altogether too high. The packers have contended that beef steer prices were as high as they should be, taking into consideration the beef outlet, while conservative stock feeders raised the point that feeders were too dear unless the packers could assure them of much higher prices by the time the feeders are returned to market. Extremely large numbers of cattle have been going to feeding districts, although numerous careful stockmen are waiting for much lower prices before buying.

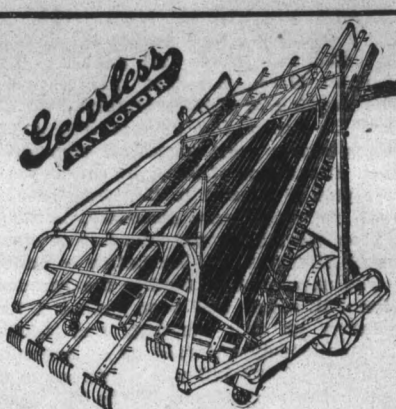
Everything goes to indicate that the hog market is on a firm basis and that farmers who are so fortunate as to be the owners of healthy, growing hogs are fully justified in holding them to maturity and in holding them back after any break in prices. So long as there is such a good demand in the Chicago market from eastern shippers there is bound to be healthy competition among buyers, and this is sure to make high prices. Several weeks ago there were numerous reports of outbreaks of the disease popularly known as "hog cholera," and from the affected localities many shipments of pigs and partly grown hogs were made, while many complaints were made of the inadequate supply of serum, which is manufactured by the various state experiment stations and used to inoculate swine as a prevention to falling victims to the malady. Since then the production of serum has been increased considerably, and reports of hog sickness have mostly died out.

Probably, comparatively few people realize the immensity of the sheep feeding industry as it is being conducted at the present time. The movement of feeding sheep and lambs and breeding ewes from the five leading feeder markets to feeding and breeding districts for the first eleven months of 1910 aggregated 3,830,642 head, showing an increase of 1,705,044 head over 1909, or a gain of more than 80 per cent. Omaha sent out 1,675,669 head and Chicago 1,353,627 head. An enormous forced marketing of thin flocks from the ranges of such states as Idaho, Montana, Wyoming, Utah, Arizona and Nevada gave sheep feeders the opportunity to load up heavily, which they proceeded to do. The great bulk of these flocks went to Nebraska, Kansas, Missouri, Iowa, Illinois, Indiana, Michigan and Ohio.

Buyers of first-class, extra heavy draft horses in the Chicago stock yards say they are paying as high prices as they ever did, while everybody knows that the commoner kinds have suffered a sharp reduction in prices in recent months. The farmers who have gone into breeding high-class draft horses are the winners, and the demand for pure-bred stallions and mares is growing all the time, such purchases during the past year having far exceeded those for all former years. In the east this industry is becoming a leading one, and wealthy men in such states as New York, New Jersey and Pennsylvania have been establishing studs of pure-bred draft horses of the different breeds. The time for breeding scrubs is past, for it has been found to be unprofitable, neither domestic buyers nor foreign buyers caring to invest in them. The foreign market for American horses is once more an important factor, exports from the United States during the first ten months of last year having aggregated 27,158 head.

The Indiana Experiment Station fed 1,000 pounds of shelled corn to a lot of steers that gained 100 lbs., while the hogs following them gained 50 lbs. It was found that the heaviest gains were made when shelled corn was fed. With shelled corn the gains were lighter, and with corn meal and silage gains were still less. It was found that young cattle digested more of their food, the hogs making correspondingly smaller gains. Larger gains were made when cattle had such feed as oil meal, gluten, or cottonseed meal, or alfalfa, in place of an exclusive corn diet. Larger gains were made on alfalfa pasture than in the dry lot. Cheap feed, with big and rapid gains, spell economical production.

The sale of 60 head of nine-months-old 226-lb. Duroc barrows raised and fed on the farm of the agricultural college at Manhattan, Kansas, at \$8.10 per 100 lbs., was a feature of the market at Kansas City recently. They were even in size and attracted much attention on account of their smooth condition. Turner Wright, who directed the feeding of the hogs, accompanied the shipment. They were fed in six lots, and each lot was furnished a little different ration. Mr. Wright was positive that the lot running on alfalfa pastures and getting a ration of ground corn, shorts and tankage, made the best showing, while the lot getting straight corn and alfalfa fell behind.



A Light Running HAY LOADER

BOOKLET FREE.

The fact that the GEARLESS HAY LOADER has no gears, no chains, no sprockets to grind and consume power, makes it the lightest draft loader on the market. Another easy running feature, the GEARLESS does not drag on iron shoes as other loaders do but runs on iron wheels.

Point for point, simplicity of construction, small cost of operation (but one man required), small expense for repairs, lightness of draft, durability and from every other point of view the GEARLESS stands in a class by itself.

That is the reason why farmers everywhere are discarding loaders with gears and replacing them with GEARLESS.

Our free illustrated Booklet is yours for the asking. Write for it today.

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32nd Street. Chicago Heights, Illinois

Use KEROSENE Engine FREE!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing.

Gasoline Going Up!

Automobile owners are burning up so much gasoline that the world's supply is running short. Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints coal oil do work of three pints gasoline. No waste, no evaporation, no explosion from coal oil.

Amazing "DETROIT"

Only \$45.00 and up. The "DETROIT" is the only engine that handles coal oil successfully, uses alcohol, gasoline and kerosene.

too. Starts without cranking. Basic patent—only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h.p., in stock ready to ship. Engine tested just before crating. Comes all ready to run. Pumps, saws, threshers, churns, separates milk, grinds feed, shells corn, runs home electric-lighting plant.

Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate amazing, money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are fired in your neighborhood to write, we will allow you Special Extra-Low Introductory price. Write!

Detroit Engine Works, 149 Bellevue Ave., Detroit, Mich.

Use a HERCULES

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VETERINARY

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

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

Luxation of Stifle—Capped Hock.—I have a suckling colt that has been bothered with his stifle for some time. It seems to slip in and out real often and I would like to know what can be done for an ailment of this kind. I would also like to know what can be done for capped hock, caused by kicking in stable. A. K., Burton, Mich.—Apply one part turpentine, one part aqua ammonia and three parts olive oil to stifle every day or two, or as often as you believe it necessary; or you may clip the hair off and blister with cerate of cantharides. Unless you can prevent your colt from kicking the stall and bruising point of hock, treatment will do very little good. The sides of stall should be padded or you should tie a piece of chain to each hind pastern and when he kicks the chain will whip his legs; by doing this he will perhaps discontinue the habit. Apply one part tincture iodine and three parts spirits of camphor to capped hock daily.

Injured Hip and Back.—My ten-year-old Clydesdale mare has been lame in hind quarters for the past 14 months, but shows more lameness during the past three months than before. The whole trouble is in hind parts and when she travels her back is arched. T. R., Munith, Mich.—It is possible that your mare fractured her hip or injured her back and as she is gradually growing worse I have doubt about her ever getting entirely over it. Apply one part turpentine, one part aqua ammonia, one part tincture cantharides and six parts olive oil to back and hips three times a week.

Lymphangitis.—My five-year-old mare went lame; soon showed considerable swelling on inside of thigh and lower portion of leg. Four days later I succeeded in moving her, but she was scarcely able to bend the leg; although the swelling has reduced some it is yet considerably stocked and somewhat feverish. I forgot to say that this mare is out of condition. C. S., Grindstone City, Mich.—If your mare is not in foal give her seven drams aloes, one dram calomel, half dram ground nux vomica and two drams of ground ginger made into a bolus and given at a dose, one dose only. Or give her one quart of raw linseed oil; this will act as a cathartic. Also give her 2 drs. iodide potassium at a dose in feed two or three times a day. She should be fed very little grain, but some well salted bran mash and roots. This ailment usually follows rest and generous feeding of grain. The leg should be hand-rubbed gently and bandaged in cotton. Strong liniments and blisters should never be applied, for if so the leg usually remains thick.

Uneven Molar Teeth—Indigestion—Worms.—I have a four-year-old mare in foal that is quite thin; she passes some worms and a moderate day's work seems to tire her out. I have doctored her for worms, but it failed to help her. A. P., Coopersville, Mich.—It is possible that her teeth need attention. A temporary tooth or two should perhaps be pulled out and allow the permanent teeth to grow in their place; besides, there may be some sharp points on outside of upper rows or inside of lower rows that should be filed off; however, you should avoid filing the teeth too much. Also give her a tablespoonful of the following compound powder at a dose in feed three times a day: Powdered sulphate of iron, gentian, ginger, quassia, and fenugreek, equal parts by weight mixed thoroughly. Avoid giving her cathartic medicine.

Stone in Bladder.—I would like to know what to do for a horse that has stones in the bladder. This horse has been ailing for a year and passes water too often and the urine is occasionally tinged with blood. He is 14 years old, has a good appetite and is seemingly in good health. J. S., South Haven, Mich.—I believe you are mistaken in your diagnosis and if you will give the horse good care it will perhaps not be necessary to resort to a surgical operation, but if so you must secure the services of a competent veterinarian. Give 2 drs. citrate of lithium at a dose in feed two or three times a day.

Scours.—I bought a 10-year-old mare 30 days ago and ever since I have owned her she has been troubled with looseness of the bowels. W. K., Maple City, Mich. Her grinder teeth may need floating; besides you are perhaps not feeding her on oats and well cured timothy. Water her before feeding grain and avoid letting her drink large quantities of water at a time, but let her drink often. Give a tablespoonful of the following compound powder at a dose in feed three times a day: Powdered sulphate of iron, ginger, catechu and prepared chalk, equal parts by weight, mixed thoroughly.

Abcess.—About three months ago my seven-year-old horse began to hold his nose out straight and some time later a swelling appeared near ear which we opened and I applied blue vitriol and water, but lately have been using carbolic acid and water. Will it be necessary to operate on him again? H. W., Quincy, Mich.—If the discharge lessens and the pain decreases it will not be necessary to operate again. Apply one part carbolic

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Allow 100 lbs. Sal-Vet for each 100 sheep for 60 days' use. Same for each 100 hogs. Allow Same for each 25 horses. All shipments are made based on this table. Less amounts may not prove as effective no more than a half ration of feed is equal to a full feed of grain.

Sidney R. Feil, Pres., The S. R. Feil Company, Cleveland, O.

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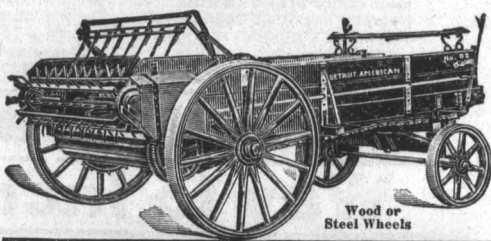
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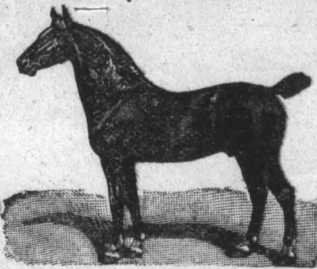
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acid and 30 parts water, or one part
bichloride mercury and 500 parts water,
but if there is much pus use peroxide of
hydrogen before using the acid or mer-
cury lotion.

Indigestion—Colic.—I am feeding my
horses cracked corn, wheat bran and
buckwheat middlings, equal parts by
measure; they also have oat straw and
marsh hay with an occasional feed of
carrots. This mare is perhaps in foal,
has some worms and has had two or
three attacks of colic, for which I gave
her epsom salts and raw linseed oil. A.
I. F., Newaygo, Mich.—A change of food
will perhaps prevent future attacks of
indigestion. Feed oats and well cured
timothy for two weeks, then select well
cured fodder; besides, she should be ex-
ercised every day. Give her two table-
spoonfuls of the following compound
powder at a dose in feed three times a
day: Gentian, ginger, fenugreek, anise,
bicarbonate soda and charcoal, equal
parts by weight, and mix thoroughly.

Opacity of Cornea.—Some three months
ago a scum or film commenced to grow on
eyeball of my eight-year-old horse, and
if it is possible I would like to remove it.
A. B. C., Sears, Mich.—Give 5 grs. cal-
omel and 1 dr. iodide potassium at a dose
in feed night and morning for ten days,
then give the iodide of potassium for 20
days more. Also blow a little calomel
into eye once a day.

Bruised Udder—Enlarged Gland.—Have
a cow whose udder hangs low and she
met with an accident, wounding teat;
besides having a small bunch near top
of teat. This cow has given bloody,
stringy milk occasionally and I would like
to know what can be done for her. G.
W. E., Wayne Co.—Apply tincture iodine
to enlarged gland and try to prevent her
bruising the udder for I am certain the
whole trouble results from injury which,
if corrected, she will get well, otherwise
not.

Cow Leaks Milk.—I have failed to no-
tice any remedy for cows that leak milk;
will you kindly tell the readers of this
department what can be done for cases
of this kind? J. M., Lansing, Mich.—
The Lawrence Publishing Company can
supply you with teat plugs that will pre-
vent a cow from leaking milk. Giving
or applying drugs in such cases seldom
do much good.

Barrenness—Stocking.—I have two 5-
year-old cows that calved last spring, and
were bred some time later, so that they
should come fresh in March or April, but
both came in heat last December and
have both been in heat every two weeks
since. They discharge some blood and
mucus. I also have a ten-year-old mare
that appears to be healthy but stocks in
all four legs. She is fed oats and mixed
hay. J. S., Davison, Mich.—Your cows
have perhaps both aborted. Dissolve 1
dr. permanganate potash in a gallon of
tepid water and wash out vagina and
uterus through a rubber tube with funnel
once a day until the discharge ceases.
Also give 25 drops carbolic acid in a quart
of water mixed with feed to each cow
once or twice a day. Be sure and disin-
fect and clean their stalls and hind quar-
ters, using one part carbolic acid and 50
parts water. Give your mare a table-
spoonful of powdered rosin, a tablespoon-
ful of ground gentian and the same quan-
tity of ground ginger at a dose in feed
night and morning until her leg ceases to
stock.

Incoordination of Motion.—I have a
mare that does not seem to have the
right control of her legs; she frequently
places the left foot where the right one
should be and travels sort of cross-leg-
ged. Therefore I would like to know
what can be done for a case of this kind.
M. H. S., Kingsly, Mich.—Give 1 dr.
doses of ground nuxvomica in feed three
times a day. Also give 2 drs. Donovan's
solution of arsenic at a dose in feed twice
a day for 30 days. She should be fed
enough well-salted bran mash or roots
to keep her bowels open. Your mare
may have injured her spine, causing this
nervous ailment, and the result of treat-
ment in such cases is rather uncertain.

Barrenness in Cows.—I am unable to
get any of my cows with calf and would
like to know what is wrong? One year
ago last fall I bought two three-year-old
cows, with calf by side. I drove them
to bull and supposed they were pregnant,
but to my surprise they came in heat the
following season; after mating them four
or five times I decided to fatten them.
Another six-year-old cow that dropped a
calf in July fails to get in calf. In No-
vember I bought four more head, all four
supposed to be in calf, but two of them
are not pregnant. I do not believe the
fault is with the bulls they have been
bred to. What do you advise? J. M. S.,
Flushing, Mich.—Had you not better pur-
chase cows that you are sure to be in
calf, and if they do not clean properly
treat them for it. It is possible that you
have been deceived, but I have known a
great many cows that seem to breed every
other year. One of the principal reasons
why your cows are barren is for want of
proper care after calving.

Mange or Lice.—I have a cow that
seems to itch continually. Every chance
she has she will rub against fence, trees
or any hard substance and I would like
to know what can be done for her. E.
M., Clinton, Mich.—Give her three table-
spoonfuls of bicarbonate of soda at a
dose in feed night and morning; also dis-
solve ½ lb. of cooking soda in a gallon
of water and wet her itchy parts every
evening.

Partial Loss of Power.—I wish you
would tell me what to do for a hog that
seems to be stiff in its back and hind
quarters. There seems to be a little loss
of power. A. M. B., Williamston, Mich.—
Feed your hog less corn, more oats and
oil meal. Also give him 10 drops fluid
extract nuxvomica, 15 grs. citrate of
potash at a dose in feed twice a day.
Also give him a teaspoonful of air slaked
lime at a dose in feed two or three times
a day.

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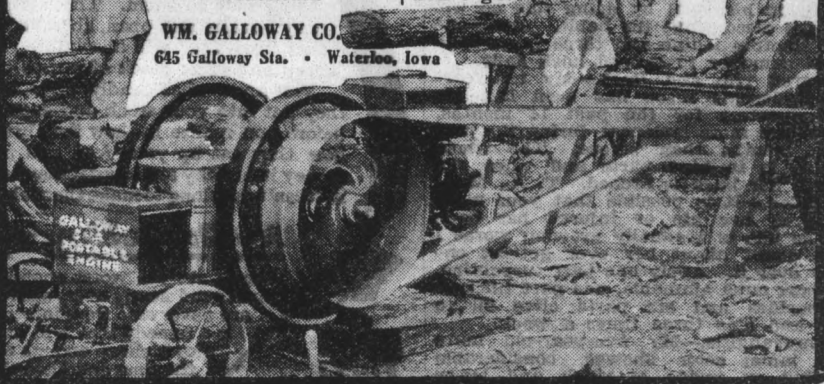
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I am putting a quarter of a century of business experience as a manufacturer of Stock Food and Veterinary Remedies behind this free offer. I know that I am manufacturing Stock Food and Veterinary Remedies which are above the class of goods which can be found elsewhere. I know this because I know that I insist upon the absolute purity—because I insist upon putting those things into my goods which are put there to make the stock thrive.

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THE double standard Polled Durham. Wild eyed Abots burn. Milk strain, Grand Champion silver cup winner at 1910 Michigan State Fair. JAS. H. HALL, Port Austin, Michigan

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Has for sale, twenty-five choice bred yearling ewes, at a low price, also a few good three and four year-old, bred ewes.

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A FEW first class Duroc Jersey Service Boars FOR SALE. Duroc Jersey Swine established M. A. BRAY, Okemos, Ingham Co., Mich. Indpt phone

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A. J. GORDEN, R. No. 2, Dorr, Michigan.

Poland-Chinas—Boars ready for service; spring pigs, either sex. Write L. W. Barnes & Son, Byron, Shiawassee Co., Mich.

FOR SALE—Fall Pigs and Bred Gilts B. M. WING & SON, Sheridan, Michigan.

GREAT POLAND-CHINA HOG SALE. JANUARY 20th.

60 sows bred for spring farrow. If you want the best, attend my sale as I have the best in the state. WM. WAFFLE, Coldwater, Michigan.

Poland-Chinas
The home of the Michigan State Fair-winners. We won 24 prizes at Detroit in 1910. Pigs of both sexes for sale, sired by our prize-winners.

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Butler's Famous Wonders—the Big Poland-Chinas that make good. They grow big, because they have been bred big for 20 years. Some great Aug., Sept., Oct., pigs, good enough for any breeder, cheap enough for any farmer. J. C. BUTLER, Portland, Mich. Bell Phone.

RECORDED MULE FOOTED HOGS are said to be immune from hog cholera. Stock of all ages for sale. John H. Dunlap, Box M, Williamsport, O.

O. I. C. SWINE—Boars all sold. 20 young sows bred for spring farrow, for sale. E. E. BEACH & SON, R. No. 3, Brighton, Michigan.

O. I. C.—Choice Bred Sows. Boars ready for service and fall pigs. From World's Fair Winners. Glenwood Stock Farm, Zeeland, Michigan. Phone 94.

12 P. C. Boars ready for service, sired by a Son of the World's Champion Meddler; dam, undefeated Lady Louise. Z. Kinne, Three Oaks, Mich.

POLAND-CHINAS—Large styled Gilts and older sows bred. Boars ready for use, also fall Pigs. Prices low. ROBERT NEVE, Pierson, Michigan.

P. C. SOWS bred for spring farrow. Big value for your money. Some good boars. WOOD & SONS, Saline, Michigan.

POLAND CHINAS—Sows of big type. Gilts bred for spring. A few choice boars and fall pigs. E. D. BISHOP, Route 38, Lake Odessa, Michigan.

P. C. SOWS—Sired by the largest boar ever in this part of Michigan. Bred to a son of a World's Fair Champion. Satisfaction guaranteed. R. W. Mills, Salem, Mich.

Large Type P. C.'s—Spring pigs all sold. Order a fall pig early from my great herd and get choice. None better. W. E. Livingston, Parma, Mich.

LILLIE FARMSTEAD YORKSHIRES.
The great medium bacon type. The hog that wins on sheer merit. Large, vigorous, prolific. Gilts bred for March or April farrow. Fall pigs, either sex. Pairs not akin. I guarantee satisfaction, or money refunded. COLON C. LILLIE, Coopersville, Mich.

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

A SILO CRITICISM.

I have read with considerable interest the article written by C. C. Curtis, on "The Value of the Silo," in your last issue. He has placed the matter in as clear a light as I have ever seen it; however, there is one item he has omitted which it seems to me is a matter to be considered. Mr. Curtis, in presenting his figures, takes 900 bu. of corn to be husked from 12 acres of land but does not in turn consider that this corn would, at the present price, be worth at least \$225. In presenting the figures in favor of the silo it would seem to me that this item alone would be quite a serious handicap for the advocates of the silo system to overcome. It is a conceded fact, or ought to be, that fodder from the silo is the best form of feed for cattle, but how about the feeding value of that 900 bu. of corn in a nice, thrifty bunch of pigs, or ground up for feed for your cows. In the opinion of silo advocates, is the silo so far superior to the old form of feeding as to even offset this item of 900 bu. of corn, and its possible feeding value, the present price of pork considered? Also, in considering the matter we must remember that corn is lower just now than it has been for some time, which, of course, in a measure, is to the advantage of the silo advocates.

The principal objection I have to the silo is that to my way of thinking (which may be wrong), it is a one-sided proposition, namely, a farmer with a well balanced stock of cows, sheep and pigs would find it unprofitable. I concede it is the "best there is" for cows, but rather a delicate proposition with sheep and fattening lambs, and places pigs entirely out of consideration.

I would be glad to see Mr. Curtis discuss the matter in this light, or anyone else who has had the experience. I confess I have had not had the experience as silos are beginning to appear gradually around us and I understand that north of us they are left empty and farmers are again resorting to the old way of feeding their fodder.

Ingham Co. E. W. FEHLING.

This letter was referred to me. While I am answering it briefly, I am sure we should all of us be glad to have Mr. Curtis take the matter up later on when he sees this article in print, and answer it directly.

This is the same objection to the silo that we have heard for years, ever since the first silo was constructed. The man who lacks faith in the silo is always afraid to see those good ears of corn run through the ensilage cutter, and up into the silo. He is afraid that he will never hear of them again. He is just on a par with the man who takes a measure of grain to his cow in the stable and tips it up a little, then gradually rights the measure, and walks on to the next cow. He hasn't faith enough in the dairy cow to give her the measure of feed, and so he hasn't faith enough in the silo to believe that the ears of corn which he puts into it will come out again, as valuable feeds in the form of ensilage. He doesn't lose the feed by putting it into the silo, he simply preserves the feed, then when he takes it out to feed his cows, or his sheep or his horses, he gets the value. Nobody denies but what he can get value out of this, if he husks it in the old way, but the silo man contends that he can harvest his corn cheaper by putting it into the silo than any other way. He contends that, with a good silo the loss of food nutrients in a silo are less than when he dry-cures his corn. He contends that the corn stored in a succulent condition, when it contains the largest per cent of digestible nutrients, is more palatable to the cow, is more digestible, and he can get larger returns when it is fed in the form of ensilage, than he can when it is fed in the form of corn meal and dry corn fodder. And we can give ample proofs to back up these statements.

E. W. F. admits that ensilage is the best for the dairy cow, or for cattle, but he hesitates about sheep. Now, some of the best sheep breeders in this state, and in this country, would not think of getting along without feeding ensilage. They have proved by practical experience that they can get more value out of their corn crop in the form of ensilage, in feeding it to fattening lambs, or to breeding ewes, than they can in feeding it dry in the old way. Steer feeders, also, who have tried the silo know of its value. Careful experiments made at experiment stations, prove beyond the question of a doubt that you can make more beef with corn silage than you can with the same crop of corn fed in the dry way. Then why should you shudder when those big ears of corn go through the shredder, and into the silo?

But E. W. F. says that the silo puts the pig out of business. Well, we cannot advocate silage for pigs. The stomach of the pig is not constructed in the proper

way, so that he can consume enough of this bulky feed—stalks, corn, and all, and make profitable growth. We must feed the pig something that is better adapted to him. But what is the matter with saving a portion of the corn crop and husking it dry for the pigs? Raise a few acres more of corn than you need for the silo, or for the cows, other cattle, and sheep, and husk this and feed the corn to fatten the pigs, and shred the stalks and feed them to the cows, or the horses, or the sheep, as dry fodder. I can't see any harm in this, or that it is any argument against the silo, because the pigs won't eat corn silage. Why, the farmer might better, if he feeds all of his corn crop to his cows, and his cattle, and his sheep, he might better put it all into the silo, and then buy corn for his hogs.

E. W. F. says that he understands that many people who have built silos have discarded them, that they stand empty. Now, as I have explained many times through The Farmer, there may be some instances where this is so. In fact, I know of instances. But they are nothing against the silo. One man is in the dairy business, he builds a silo, and he uses it. He dies; the farm changes hands, the new man is not a dairyman, perhaps he doesn't keep scarcely and stock at all, and what use has he for a silo? It stands there, just as a vacant shed would stand. But it is the man, and not the silo, that is to blame. Of course, if you don't keep live stock, you don't want a silo. We don't expect everybody is going to keep live stock, especially dairy cows. We dairymen don't want everybody to keep dairy cows, for if they did the price of butter would get too low to be profitable, and the price of milk, and the price of cheese, in fact, of all dairy products would go below the cost of production, but I have never heard of a man who continued in the live stock business, either with dairy cows, fattening steers, or lambs, who has tried the silo, and ever allowed his silo to stand empty, as long as he kept stock. There may be such instances, but the universal favor that the silo has found among stockmen and dairymen would rebut any theoretical argument of the sages of the past who find premises for their silogism in the practices of an occasional person, whose sanity could perhaps be questioned, or whose conclusions are drawn from erroneous or faulty information.

WEATHER DOES NOT AFFECT THE BABCOCK TEST.

Some time ago I saw in the Michigan Farmer a certain question I would like to have answered if possible. What difference is there in making a cream test, that is, a Babcock test, on a rainy or cloudy day and on a nice, clear day?

J. R. Illinois.
The weather cannot have any appreciable influence upon the accuracy of the Babcock test. A cloudy day or a sunny day could certainly have no effect whatever. A variation in temperature might change results. To be accurate with the Babcock test, the water used, to float the fat in the neck of the bottle, must be hot, the fat itself must be kept at a certain temperature, so that it will flow readily, or else the proper reading cannot be made. One must have the right temperature, and keep it right, or he will not get the same readings, because fat shrinks and swells with the changes in temperature, the same as any other liquid, semi-liquid, or solid. But the weather has nothing to do with this, as far as the Babcock test is concerned, because we can control the temperature. A humid or a dry atmosphere would have no appreciable effect, and it makes no difference with the day, whether it be hot or cold, humid or dry.

FEEDING QUESTIONS

Is cottonseed meal and corn silage of such composition as to make a balanced ration for dairy cows? Will cows keep clean in the model cow stall? What can one do when the silage freezes?

Allegan Co. T. W. K.
So far as food nutrients are concerned, you can make a balanced ration for cows out of cottonseed meal and corn silage. But I would not think it advisable to feed these two feeds alone. There would not be variety enough to give best results, and your cows will do better if they have at least one feed of dry fodder.

2. The model stall, if properly constructed, will prevent the cows from getting stable soiled.

3. If you will throw the frozen silage into the warm feeding alley, and let it thaw out before it is used, no harm will come from feeding it.



More Milk Per Cow

better and richer milk that means more profit on every cow in your barn. This is the aim of every live dairyman and thousands of successful men know that the best way to get these big money-making results is to use

Pratt's Animal Regulator

Here is what W. W. Squires, Flat Woods, W. Va., says: "I have been using Pratt's Animal Regulator for the past two years and have found it to be the greatest milk and butter producer of the age. I can honestly recommend it for cows."

Pratt's Animal Regulator acts directly on the stomach, bowels and liver. It makes whatever the cow eats at once available to pass into the blood and increases the secretions of milk. It also is the greatest conditioner in the world for horses and hogs. Pratt's Animal Regulator is sold everywhere always on this condition—Satisfaction

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Try Pratt's Animal Regulator today. Test it thoroughly, then if results do not more than satisfy you your dealer will return you all you have spent.

You can get Pratt's Animal Regulator from your dealer, \$3.50 for a 25 lb. pail—also in smaller sizes and in 100 lb. bags.

Pratt's Bag Ointment for caked bag and sore teats

Send for Free Booklet, "Things Worth Knowing" about Horses, Cows and Hogs.

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The 1911 United States Separator

A MARVEL OF EASY RUNNING

There have been tremendous advances in the running qualities of the United States Cream Separators.

The skimming power is there. The same that won the world's record in fifty consecutive tests extending over a period of thirty days with the milk of ten different breeds of cows. .0138 of one per cent.

BUT—with the new Interlocking skimming device, the centrifugal action on the milk is so intensified, the course along which the milk is forced to travel so lengthened, the skimming force so increased, that the Interlocking bowl for any given capacity is reduced nearly one-half and runs with about half the power required for older models.

Now add to this great improvement the fact that the United States Separator is the only successful separator that distributes the incoming volume of the whole milk evenly outside the cream zone, thus preventing any remixing of cream and skimmilk, and you will see why it is that the Interlocking Style U. S. Separator is gradually displacing every other separator on the market.

A free demonstration will be given by selling agents who are located in nearly all dairy sections of the country. Ask for catalogue 111 today and we will give you agent's name.

VERMONT FARM MACHINE CO., BELLOWS FALLS, VERMONT.

"Biggest Money Maker a Farmer Can Have!"

The Saginaw All-Steel Door Frame is patented and no one else can use it.



These are the very words a farmer used when he wrote us about his good old reliable Saginaw Silo. He adds: "If I was a farmer owning only 20 acres, even if I had to borrow the money, I would have a Saginaw Silo." This is what your neighbors are saying. Don't you think you had better investigate? Write us and we will reply to you personally. Free Book, "The Modern Way of Saving Money on the Farm," pictures and describes the famous Saginaw Silo part by part. Built to give perfect service for a lifetime. You can't afford to take chances with a poor silo. Saginaw All-Steel Door Frame prevents bulging or collapsing. We hold the patents. No one else allowed to use it. Any silo door frame described as "Like the Saginaw" is only a lame imitation.

FARMERS HANDY WAGON CO.

Saginaw—Des Moines—Minneapolis makes and sells the famous Saginaw Silo direct from the factory only. We give you the benefit of our personal service not only when you buy a silo, but at any time afterward.

Ask for SPECIAL PRICE on the WHIRLWIND SILO FILLER

Direct drive on big, heavy fly-wheel, which acts as cutter, blower and shredder (where required). Combined fly-wheel, cutter and blower driven direct, not through gearing—easy running. Mounted and "down" machines same height—no digging. Knives and Shear Plate adjustable without taking anything apart.



Farmers Handy Wagon Co., Office and Factory, Sta. 96, Saginaw, Mich. Western Factory—Station 95, Des Moines, Iowa. Northwestern Factory—Station 95, Minneapolis, Minn. (17)

SELECTING AND FEEDING THE DAIRY COWS.

Dairying is carried on on many farms in a slipshod manner, and then fault is found because the profit is lacking.

Dairying is a business just as much as selling dry goods or groceries. To make a successful merchant one has always to be striving to get ahead and do a little better each succeeding year. It is so in any business. There is no stand still. One is either going forward or backward, whether in dairying or any other business.

One of the greatest drawbacks to successful dairying, is not knowing what the herd is doing, or if the owner knows, he is too lazy to get out and hustle for good cows, or raise them to replace such as he knows perfectly well are being kept at no profit, and very likely at a loss.

Everyone who has ever kept a herd of a dozen or more cows, knows that, in order to keep them up to the top notch of production, he has got to rid himself of some of them each year.

Some fail to breed, some prove small producers, and some go to pieces in various ways.

No cow that gives less than 5,000 lbs. of milk in a year, ought to be tolerated. No matter what breed they are, or how long their pedigree. If a bull is half the herd, no matter how heavy a milking strain is back of him, no considerable percentage of his progeny can be "top notchers" unless he is mated with reasonably good producers.

The feeding of cows is a matter that can occupy a good deal of attention from a man with a pretty good head.

Very little thought is given to feeding, on the average farm. All cows are fed alike, whether producing ten or forty pounds of milk a day. A certain amount of grain is the rule, and some hay.

May be the grain ration is sufficient. I actually believe the milk flow is more often reduced from hay-penuriosness than from a too small grain ration.

I am not much of a believer in "pounds of hay" for dairy cows. My method is to feed hay, (and nice hay, too), to the capacity of the cow's storage tank. I do not believe anyone ever knew a cow to eat sufficient good hay to cause any uneasiness regarding her health. A cow producing forty pounds of good milk daily will make a big pile of hay "blush" every day, but with plenty of good hay she can produce forty pounds of milk a day for a good long time, supplemented with eight or ten pounds of good grain. To make a profit, hay wants to be supplemented with grain, and not vice versa, although by the meagre allowance of hay fed by many one would suppose the main dependence was grain.

Some men feed six or seven times a day. It seems to me three times is plenty, then after each feed let them have a chance to masticate what they have eaten, and by the time for their next meal they have a good appetite for it. A person does not feel as well when lunching between meals. Why should a cow?

A cow likes to be filled full, then she is happy. If she cannot lie down without grunting, you will know you have done a good job of feeding.

When one has learned to pick good cows, and has learned to feed and care for them he has a good foundation to build on, if he has an ambition to be a good dairyman.

How many men there are, who keep two cows, feed and milk them for the same product he might get from one. From the two he loses money, while from one of the right kind he might have a good profit.

Heavy producing cows should be watered twice daily and not be obliged to drink out in a cold winter wind. Water properly administered is the cheapest milk producer a dairyman can give his cows.

Maine. D. J. RYTHER.

DAIRYMEN SHOULD KNOW THE VALUE OF FEEDS.

In the successful feeding of dairy cows one of the first requisites is a knowledge of the composition of feeds. This is necessary for two reasons: First, to enable the feeder to determine the relative value of the feeds at his disposal; and secondly, to assist in determining what quantity of feed is necessary to supply the required amount of nutrients.

In studying the composition of feeds we must first of all familiarize ourselves with three important groups of nutrients found in all feed stuffs, namely, protein, carbohydrates and ether extract.

Protein is the nitrogenous part of feeds

and is by far the most valuable of the different groups of nutrients. Its characteristic element is nitrogen. The white of egg is almost pure protein. Cottonseed meal and linseed meal are rich in protein, and so are leguminous hays, such as clover, alfalfa and cowpea hay. Protein is the muscle-forming part of the feed.

Carbohydrates contain no nitrogen but are made up of carbon, hydrogen and oxygen. Sugar and starch are almost pure carbohydrates. The common use of carbohydrates is the production of heat and energy in the animal body.

Ether extract consists largely of fats and oils. Its function is similar to that of carbohydrates but it has a higher feeding value. One pound of fat has two and a quarter times the feeding value of the same amount of carbohydrates.

Having studied the composition of the feeds at his disposal, the feeder must next determine how much protein, carbohydrates and ether extract (fat) is required daily by the different cows in the herd. In this connection it should be remembered that milk, like feeds, contains protein, carbohydrates and ether extract (fat). Furthermore, what is of first importance in feeding for milk, is to remember that only the protein or nitrogen part of the feed can be utilized for the production of the protein or nitrogenous part of the milk. The non-nitrogenous constituents of milk are probably largely produced from the non-nitrogenous constituents of the feed, namely, the carbohydrates and ether extract. What is especially important to remember is, that carbohydrates and ether extract can never produce any of the protein of the milk, but it is possible for the protein of feed to produce some of the carbohydrates and ether extract (fat) of milk.

Some of the nutrients of the feed are required to maintain the body weight of the animal, but with good cows the larger portion of the nutrients is required for the production of milk. The amount of protein, carbohydrates and ether extract required will vary according to the quantity and quality of the milk produced. According to the Wolff-Lehrman feeding standard, a cow of 1,000 pounds live weight and yielding 22 pounds of average quality milk a day requires daily 2.5 pounds of digestible protein, 13 pounds of digestible carbohydrates and 0.5 pounds of digestible ether extract. Investigations during recent years have shown, however, that the protein called for by the Wolff-Lehrman standard is a little too high while the carbohydrates and ether extract are a little too low.

We are now ready to consider the feeding of a ration, which means the amount of feed required by an animal in twenty-four hours. The method of compounding a ration consists in selecting from the feeds at our disposal such quantities as will contain the amount of nutrients called for by the standard. Suppose we have at our disposal wheat bran, corn silage and red clover hay. By referring to tables giving the composition of feeds we find that 12 pounds of wheat bran, 10 pounds of red clover hay and 35 pounds of corn silage contain a total of 2.46 pounds of digestible protein, 12.13 pounds of digestible carbohydrates and 0.84 pounds of digestible ether extract. These figures represent approximately the amount of nutrients called for by the Wolff-Lehrman standard for a cow weighing 1,000 pounds and giving 20 pounds of milk a day.

Tables giving the percentage of digestible nutrients in different feeds may be obtained free of charge by writing to the state experiment stations and to the Department of Agriculture, at Washington, D. C.

The Wolff-Lehrman feeding standards for different amounts of milk are shown in the following table:

Daily milk yield. Lbs.	Digestible nutrients per 100 lbs. live weight.		
	Protein Lbs.	Carbohy. Lbs.	Ether Ex- Lbs.
11.0	1.6	10.0	0.3
16.6	2.0	11.0	0.4
22.0	2.5	13.0	0.5
27.5	3.3	13.0	0.8

Standards for balancing rations should always be used with considerable flexibility. They should be looked upon as guides and as such are exceedingly useful. Every practical feeder knows that the influence of individuality counts for much in the feeding of dairy cows. A ration that may be satisfactory for one cow may not be suited to another. We have also to consider the source of the nutrients. It is known that the digestible nutrients in coarse feeds yield smaller returns, pound for pound, than those in grains and concentrated feeds in general.

Wisconsin.

JOHN MICHELS.

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year old patent expired and now abandoned type of DE LAVAL construction, though lacking all the essential elements of the improved DE LAVAL machines of today, or for that matter the DE LAVAL machines of the past five years, while none of them do or can use the still patent protected "split-wing" distributing shaft feature of all DE LAVAL machines since 1900.

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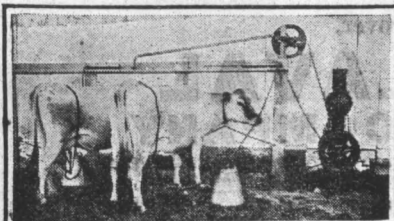
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WINTERING GROWING HEIFERS WITHOUT HAY.

I have a number of Jersey heifers that will be two years old in the spring. Will not freshen until early fall. I will be short of hay and I am wondering if I could successfully winter these animals on oat straw, corn stover, corn chop and oat chop. If I can successfully winter these animals on the feeds mentioned, please say about how much will be required per animal per day for just average size high-grade Jerseys.

Wayne Co.

L. J. B.

It is not entirely practicable, but it would be good business judgment to winter these heifers on the roughage available, rather than purchase hay, and not utilize the straw and corn stover now at hand. One reason why we keep growing stock on the farm is to utilize the waste products like corn stover and straw, and turn this into money, and get in a condensed form so that we can put it back on the land in the form of manure. Some people winter their young stock on roughage alone, but I do not think this is policy, and J. L. B. has the right idea, when he proposes to feed with the roughage, corn and oat chop. Now they will get along very nicely on the foods which he has, but my judgment would be that it would pay to mix a little oil meal with the oat and corn chop, because none of these foods are very rich in protein, and while these heifers are not producing milk and do not need a sufficient supply of protein in the food to manufacture the casein in the milk, yet they are growing animals, muscular tissue is being formed, and you must have protein in the ration, in order to make the muscular tissue in the animal. By mixing in a little oil meal, in connection with the corn and oat chop, you could get along without feeding so much of the chop. I think it would make a cheaper ration, and at the same time a better ration. Wheat bran would be even better than oil meal, though probably not quite as cheap. Wheat bran contains a larger per cent of ash than the oil meal, and would be better for growing animals for this reason. I would suggest that you feed the oat straw and the corn stover liberally. Don't compel them to eat it all up clean. Give them a chance to make a little selection, and then mix corn and oat chop and wheat bran in equal parts by weight, and feed about two pounds per head per day.

A BALANCED RATION WITH BEET PULP, COTTONSEED MEAL, OATS AND CORN.

Give me a balanced ration for milch cows from the following feeds, regardless of price: Shelled corn and oats mixed equal parts, ground linseed meal, cottonseed meal, dried beet pulp, and for roughage, alfalfa in the morning, cornstalks at noon, clover hay at night. Which way would I get the best results from the beet pulp, to soak it or feed it dry?

Jackson Co.

F. E. W.

Since you are feeding one feed of alfalfa per day, which is rich in protein, I do not think that you would need to feed more than one of the highly concentrated protein feeds, and since you can buy a pound of digestible protein in cottonseed meal cheaper than you can in oil meal at the present time, I would leave out the oil meal, and feed only cottonseed meal.

Not having corn silage, I believe that it would pay to moisten the beet pulp before it is fed, because, from my experience in feeding beet pulp, I am quite sure that the moistened beet pulp does, in a measure, take the place of a succulent food. It would be less bother to feed the beet pulp once a day, which would answer every purpose. For instance, at noon you could moisten the beet pulp, sprinkle water on it, and shovel it over until it is all thoroughly wet. The beet pulp will absorb all of this moisture so that it will not be sloppy. You will have to use even more water than you think for at first. In order to have the beet pulp all swollen out, as it should be, and feel a little damp and soft to the hand. Then this will be ready for the evening feed. Now it is quite a job to mix cottonseed meal in with other feeds, and get it evenly distributed. Therefore, I would feed it alone. A good place to feed it would be on this moistened beet pulp as it sticks to the beet pulp and not to the manger. Consequently, I would feed beet pulp and cottonseed meal for the evening grain ration, and then I would feed my corn and oats ground together for the morning meal. I don't believe you could get a better arrangement than this. Now, as to the amount of grain to be fed. I think about the best rule for feeding grain is to feed as many pounds per day, of the grain ration, as the cow produces pounds of butter-fat in a week. This you can readily figure out. On the other hand, it will be

difficult to feed just this moistened beet pulp in proportion to the amount of milk which the cow gives. You might make a basic ration of this, say mix up enough of your beet pulp so that every cow would have three or four pounds of dried beet pulp. When you moisten it this will swell up so that your cow will have quite a mess of feed, but each one will get about the same. Then you can govern the amount of cottonseed meal in proportion to the amount of butter-fat which the cow produces, and in the morning you could also proportion the amount of corn meal and ground oats in the same way. I think I should make it a rule not to feed the best cows over two pounds of cottonseed meal a day. Then those that do not yield as much you can feed accordingly. If you follow these suggestions, I believe that you will have splendid results, providing you have good dairy cows.

FROZEN SILAGE.

I am having my first year's experience in feeding ensilage and have had no great trouble in getting my cows to eat it, excepting a Jersey cow that will eat up her feed over night but in the morning she will leave most of it; but now another young cow refuses to eat it and it looks to me as though none of the cows relish it as well as they did. I feed from 30 to 40 lbs. per day, according to size. My cows are grade Holsteins, Jerseys and Guernseys. Besides silage for roughage I feed mixed clover and timothy hay and oats and pea straw; for grain, 200 lbs. of pea meal, 100 lbs. of corn and 100 lbs. of cottonseed meal mixed. I feed one pound of concentrates to 3 1/2 to 4 lbs. of milk. Where is the trouble? Is it because the silage is cold and frosty? About two weeks ago the silage froze to the depth of 2 inches but since I have taken John Michels' advice in Michigan Farmer and ventilate my cow stable through the silo and keep silage from freezing, but I notice today the silage is quite frosty. What is best to do under the circumstances? You have been in the silo business for a good many years and must have had just such experiences. I practice throwing the silage down into the feed alley early in the afternoon, feed silage twice a day, put the grain on top of silage and salt every morning. I notice that cows do not drink as much as they used to on dry feed. There is lots of corn in my silage as I only picked about one wagon box full before filling the silo. Am I feeding a proper ration? If not, I wish you would correct me. We ship our cream and like it much better than making butter.

Leelanau Co.

R. P.

We have never been bothered with frozen ensilage. If the silo freezes a little around the outside, when we throw this down into the barn the barn is so warm that it soon thaws out and we have no trouble along this line. I should think that it would work the same with you if your barn is warm when you throw it into the feeding alley. You can prevent the silage from freezing by hanging a lighted lantern in the silo, or by using a little oil stove. Perhaps the reason why this one particular cow doesn't eat up her ensilage in the morning well, is because you put too much salt on it. You say you only feed them salt once a day, and put it on the ensilage in the morning. It might be that you are giving her too much salt at a time. Two ounces of salt per day is sufficient for a cow weighing 1,000 lbs. live weight.

Now another thing, I think you are feeding pretty heavy grain, that is, of your kind of grain, which is very rich in protein. You haven't a single food in them that isn't rich in protein, and I am inclined to think that you are overfeeding this Jersey cow anyway. She can't eat so much. If you will let up a little on the grain, and also on the ensilage, she will clean up her mess. You are trying to get her to eat more than she can readily digest and assimilate. Pea meal is an excellent food for cows, but is rich in protein. Bran is a good food, that is also rich in protein. The cottonseed meal is rich in protein, very rich. You haven't a single food in the concentrates but what is rich in protein. Besides, you have one feed of alfalfa hay a day, which is also rich in protein, and I believe consequently you are feeding a ration that is too narrow, contains too much protein for the carbohydrates. I would suggest that you stop feeding cottonseed meal entirely. If you want to, put in corn meal in the place of it; 200 lbs. of pea meal, 100 lbs. of bran, and 100 lbs. of corn meal would make a concentrated ration sufficiently rich in protein, and the corn meal will be much cheaper than the cottonseed meal. Then, instead of feeding more grain, I would feed less grain, because I think that you are trying to get them to eat more than is profitable. If you try this suggestion of mine, I wish you would kindly let me know what results you get.

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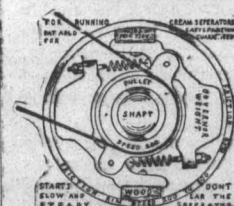
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FARMERS' CLUBS

Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

Associational Motto.—

The skillful hand, with cultured mind, is the farmer's most valuable asset.

Associational Sentiment.—

The farmer, he garners from the soil the primal wealth of nations.

WHAT THE LOCAL CLUBS ARE DOING.

Washington Center Club, of Gratiot Co., was represented at the state meeting by Frank Cook, who said in part: This Club is now 12 years old, holds 12 meetings every year, has printed yearly programs, and Club stationary, holds a fair every October and a picnic in August, holds all day meetings from Oct. 1 to May, takes active interest in all matters pertaining to the welfare of town, county, state and nation, as well as in everything in the line of up-to-date farming. It has become a prominent factor in the social life in Washington, and is much enjoyed by those who are so fortunate as to be members of it. Under the plan of entertainment followed the hosts furnish the vegetables and meat for the dinner. Printed stationery is used by the members. The Club owns its own song books. A temperance meeting is held in March of each year.

Hartland Club, of Livingston Co. In response to an inquiry from the delegate of the Cambridge Club, of Lenawee Co., who stated that the Club dues collected by that organization were not sufficient to provide for the financial needs of the Club, and asked about this feature of other Clubs, the delegate from the Hartland Club stated that the dues were 50 cents per year, which was ample for the expenses of the Club. The membership consists of 31 families. Monthly meetings are held throughout the year. Questions of a practical nature are discussed at the meetings. The attendance is generally very good, 103 being present at the annual meeting and oyster dinner.

CLUB DISCUSSIONS.

Discuss Torrens System.—The Washington Center Farmers' Club met in January at Elmwood with Mr. and Mrs. S. N. French. The meeting was opened with music by the Club. Then came the reading of minutes, miscellaneous business and the president's address, which was very good. The Club then adjourned for dinner. The dinner is one of the special features of the day. It was one of those, "like mother used to make." The afternoon session was opened with singing by the Club. The roll call was responded to by nearly every member with quotations from the Bible. The secretary's annual report was excellent, and was full of inspiring suggestions for Club workers. The treasurer's annual report showed that the Club was in a very good financial condition. "Plans for the Year" was ably discussed by different members of the Club and some very good thoughts were brought out. "The Torrens System of Land Transfers" was discussed by O. J. Campbell, S. N. French and others. A good musical and literary program was rendered by the excellent talent in the Club. The question box contained some very good questions and all were well discussed. There were about 60 present and all enjoyed themselves very much. The Club will meet at Shadeland, with Mr. and Mrs. O. J. Campbell on Feb. 9. Everybody is cordially invited to attend and join the Club.—Mrs. Cora Keiser, Cor. Sec.

The Annual Oyster Dinner of the Hadley and Elba Farmers' Club was held at Hasler Valley Farm, the home of Mr. and Mrs. Fred G. Selby, Jan. 12, 1911. Nearly 90 people were present and enjoyed the good cheer and hospitality of the day. The business meeting was called to order by the president, and Mr. C. A. Bullock gave a short report of the state meeting. Inez Selby sang a solo and Master Alphon Schick favored us with a recitation. Mr. and Mrs. Phil Schick sang several songs which added much to the pleasure of the day. Hadley and Elba Farmers' Club has become one of the important factors of social and intellectual uplift in this community, and the people appreciate its value more and more. May its membership and enthusiasm never grow less.—Mrs. C. P. Johnson, Sec.

Hold Annual Meeting.—The annual meeting of Columbia Club, of Jackson Co., was held at the home of Mrs. C. M. Crego, with a very good attendance. The meeting was called to order by President Harper, and after the opening exercises and routine business, the Club proceeded to ballot for officers for the ensuing year, with the following result: President, Judson Freeman; vice-president, Mrs. Margaret Peterson; secretary, Mrs. Flora Vinberg; treasurer, Miss Belle Weeks. The annual report of the secretary showed the Club in a very prosperous condition, with a membership of 96 who had paid their annual dues. A brief paper entitled,

"Club Rules and Regulations" was read by the secretary. It gave to the members in concise form some idea of what was expected of them, especially in the line of entertaining the Club. The lovers of fine music who were not at the Club missed a great treat as a number of fine selections added very much to the enjoyment of the day. A vote of thanks was tendered non-members who contributed music. The Club then adjourned to meet in February with Mr. and Mrs. D. J. Boyce.

Hold Pioneer Meeting.—The Wise Farmers' Club held a pioneer meeting at Clover Leaf Farm with Mr. and Mrs. J. H. Seely and family, Jan. 11, with 162 present. After dinner the meeting was called to order by Pres. J. H. Hersey. Following the opening exercises, Mrs. Rachel Goodman read a well prepared paper on "Pioneer Life in Michigan Fifty Years Ago," followed by Grandma Davy, 84 years of age, who thought 50 years too recent and went back to 75 years ago, when her father and mother left New York state for Michigan by way of the Erie Canal to Buffalo, thence by schooner to Detroit, which took one whole week to cross Lake Erie, and if Mrs. Davy's mother had not raised the alarm the whole boat load would have been in the bottom of Lake Erie. After arriving at Detroit they made their way to a piece of land in Wayne county. The remarks were listened to with rapt attention. E. W. Allen, one of the first pioneers of Wise township, told of hard times in Wise, and if reports are true there was lots of grafting done in Isabella county 40 years ago, especially in Wise township. J. H. Seely gave a short talk on life in Vernon 38 years ago. Mathew Johnson, of Isabella township, kept the crowd laughing for 20 minutes with his witty stories and telling of rural life in Isabella from 1870 to 1880. J. H. Hersey gave a talk on early life in Wise. J. H. was one of the first babies born in Wise. Mrs. J. H. Wilson read a well-prepared paper on the same subject and gave her husband some hard knocks about farming. N. Vandewalker gave a talk on "Back-Woods Life." P. M. Loomis gave

GRANGE

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

THE FEBRUARY PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Music, led by Grange chorus.
Recitation.
Dairying, I—Making good milk. Talks by a man and woman, followed by discussion.
Use of the Babcock Test.
Three anecdotes concerning Abraham Lincoln.
Public affairs in which we are specially interested: (a) National; (b) State; (c) County; (d) Local.
Stunts, in charge of a Surprise Committee of young people.

Suggestions for Second Meeting.

Opening song.
Reading, "The Worth of a Boy."
Review of a late number of my favorite paper or magazine, briefly reported by a man and woman.
Music, by Grange orchestra.
Home Nursing, I—Hints on care of the sick—in charge of Woman's Work Committee.
Music.
Distinguished guests—some illustrious Americans.
Song.

YOUNG MEN TO THE FRONT.

Ever since it was organized, only a few years ago, Golden Rod Grange, Cass Co., has been in the foreground of Grange success, with first one progressive undertak-

entire meeting over to its young men. Look into the faces of the leaders of that evening and see for yourself that it certainly made no mistake in so doing. The occasion proved to be one of the especially interesting and profitable meetings ever held. The young men conducted the Grange from the first tap of the gavel to the last. Wearing the new regalia which was made for the event, they initiated four young men candidates in the first and second degrees and added a very pretty floor drill. They prepared and presided over the program, enlisting every person present by asking all to respond to the sentiment, "My choice of occupations, and why." They served refreshments from a booth arranged for the purpose, then sold at auction all that remained and turned the funds into the Grange treasury. If you know young people, you easily read between these lines an account of the jollity and good cheer that pervaded such a meeting as this. And again, if you know Grange aims, you also see what must be the effect upon both the actors and the audiences of such an occasion in which each young man "dignifies his calling" and grounds his thought and conduct deeper in its highest conception of the importance and possible dignity of agriculture. What, think you, must be the effect upon the young men who are thus initiated into a society of farmers by fellow comrades who use the tools and tasks with which their own hands are daily engaged to illustrate simple but fundamental lessons for the mind and soul?

Looking into the faces of these young men of Golden Rod one is easily persuaded that here is a Grange that is reaping returns, both rich and real. On the one hand older members are trying to place responsibility upon younger shoulders; and, upon the other hand, the young men are taking the burden splendidly. Are there no such young men in your neighborhood, or material that can be made into such? Look and look again, search carefully and for many days before you deny their presence. Many of you will be surprised at what you discover in such a search. Remember Golden Rod!

JENNIE BUELL.

NEARLY 100 NEW GRANGES.

The secretary of the National Grange reports the number of Granges organized and reorganized from Oct. 1, 1910, to Dec. 31, 1910, both inclusive, as follows:

Organized.

California	1	New Jersey	1
Colorado	1	New York	6
Connecticut	2	Ohio	7
Idaho	4	Oregon	15
Illinois	2	Pennsylvania	6
Indiana	1	Rhode Island	1
Iowa	1	South Dakota	4
Kansas	4	Vermont	4
Maryland	4	Washington	16
Massachusetts	5	Wisconsin	3
Michigan	6		
Minnesota	5	Total	99

Re-Organized.

Illinois	1	West Virginia	10
Massachusetts	1	Wisconsin	1
New York	1		
Ohio	1	Total	16
Washington	1		

AMONG THE LIVE GRANGES.

Allendale Grange, of Ottawa Co., has taken in a number of new members and is now active. The principal officers for the present year are as follows: Master, Geo. Leggett; overseer, Burr Cooley; lecturer, Charles Sheridan; secretary, Esther Leggett.

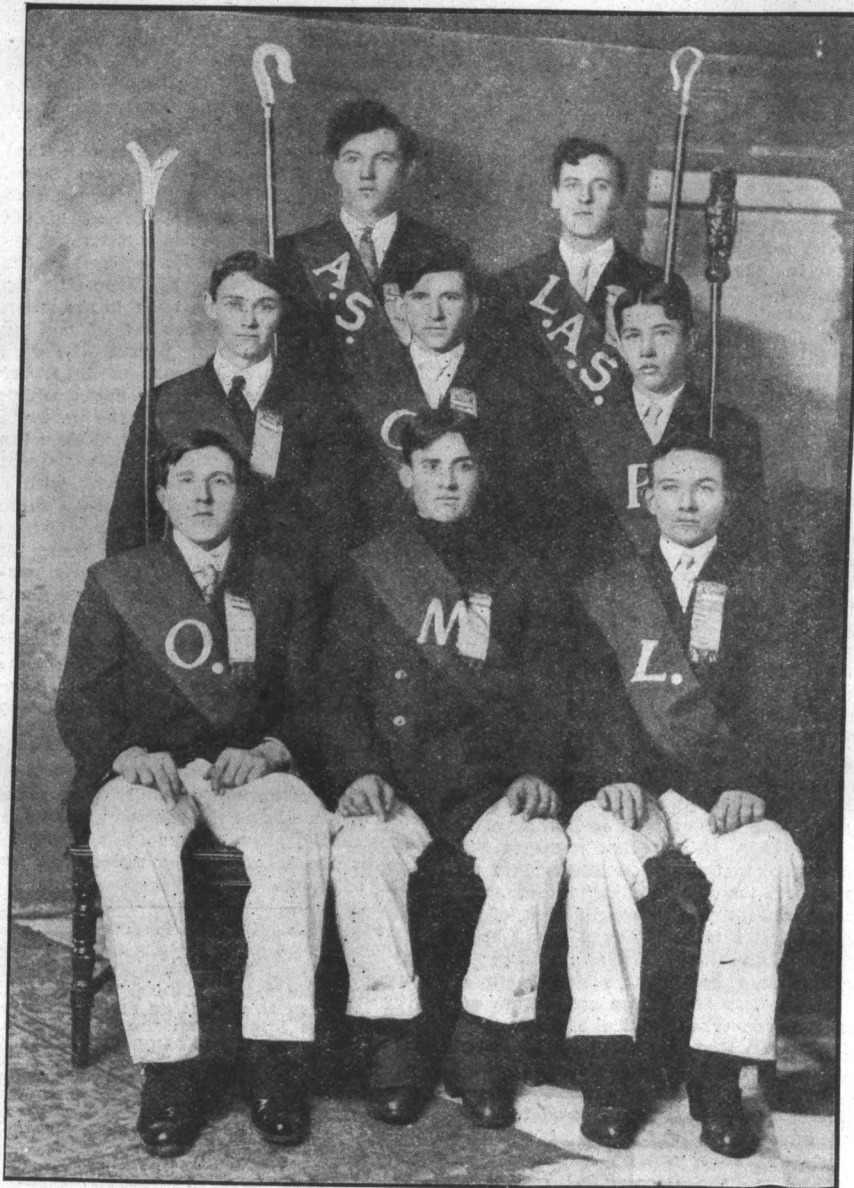
Owosso Township Grange, of Shiawassee Co., is having good meetings. Recently appointed a committee to represent the Grange at a meeting of farmers held in Corunna for the purpose of considering the telephone question in all its various phases. Grange has decided that all its winter meetings shall begin promptly at 11 a. m. and close at 3 p. m., and this plan has been pronounced a success.

A Thriving Pioneer.—Pipestone Grange, of Berrien county, is one of the oldest Granges in the state, having received its charter nearly 40 years ago. It boasts that at no time in its history has its membership fallen below 35, and it is today one of the most lively and prosperous in the state, it being stated that no other Grange hall in Berrien county is better furnished. The Grange recently elected officers for the present years as follows: Master, Otho Robinson; overseer, S. M. Clawson; secretary, Nelson Sutherland; treasurer, A. O. Williams; lecturer, Mrs. A. O. Williams; steward, O. O. Sutherland; chaplain, Mrs. S. M. Clawson; organist, Mrs. Otho Robinson; lady ass't steward, Mrs. Kate Sutherland.

COMING EVENTS.

Pomona Meetings.

Arenac Co., with Bay Grange, at Arenac, Friday, Feb. 17. Geo. B. Horton, state speaker. Installation of officers.
Gratiot Co., at Ithaca, Saturday, Feb. 11. Joint meeting of Patrons and teachers.
Ingham Co., with Wheatfield Grange, Wednesday, Feb. 22. Special patriotic program.



Young Men of Golden Rod Grange, Cass Co., who Conducted a Recent Meeting.

From left to right they are: Upper row—Robt. Mosher, Lyell Wooster; second row—Wallace Camburn, Grant Mosher, Jarvis McCoy; lower row—Leo Parker, Thos Butler, Leo Tase.

a talk on the same line, of the hardships he and his family endured and how his two little boys cut down a half-acre by cutting all the way around the trees and trusting to luck and providence where they would fall. J. F. Tatman gave a short talk. Rev. Shipway gave the laughable side of the blunders he made with our language after he arrived from England. J. H. Lowe, a pioneer pastor of Clare, gave a talk on pioneer life of preachers. He told of his first charge he held at East Lake, Mich., and his wife cried all the way going up there into the wilderness. After they had lived there awhile they liked it well, and Mrs. Lowe cried when they came away, cried both ways. It was a very interesting meeting. The program was pleasantly interspersed with musical and literary numbers. The February meeting will be held at Pleasant Valley Farm with Mr. and Mrs. Badgley.

ing and then another, steadily pegging away for community uplift. Local farmers' institutes, agricultural college extension reading courses as a basis for live discussions on home and farm affairs, outside speakers, debates, a team for ritualistic exercise, an attractive social life, participation in local option campaign, and an all-round steady improvement in Grange routine, these have been among the activities employed to keep the higher life of the neighborhood in good circulation. Who can say it has not been a work well worth all the effort it has cost?

But no better thing has been done by this Grange with the flowery name than that which it did the night it turned its

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 The Lawrence Pub. Co.,
 Detroit, Mich.

DETROIT, FEB. 4, 1911.

CURRENT COMMENT.

For some weeks Canadian Reciprocity negotiations have been in progress at Washington between representatives of the Canadian government and Secretary of State Knox and his advisers looking toward the establishment of a degree of reciprocity in trade between the two countries. Publicity was given to the result of the negotiations on Thursday of last week, when President Taft submitted the terms of the agreement to congress, together with a special message in which he recommended their prompt approval. Notwithstanding the fact that it had been predicted by those who were thought to be in the best position to know that this conference would not direct its efforts toward the establishment of a large degree of free trade between the two countries, but would limit the proposed agreement to the placing of a few raw materials on the free list, a reduction of the duty on American manufactured goods not now largely made in Canada and reduced import duties on some Canadian agricultural staples largely used in the United States, the sweeping character of the agreement reached by the negotiators, and which has been submitted to the congress of the United States and the Canadian parliament for approval, is such as to startle American producers of agricultural staples. The essential features of this agreement as contained in press dispatches are given below. A complete official list of the commodities affected will be published in a future issue:

Placed on Free List.—Cattle, sheep, hogs, poultry, eggs, dairy products, fish, grains, hay, vegetables, fruit, cottonseed, oil, rough lumber, tin andterne plates, barbed wire, mica, gypsum, etc.

Subject to Reduced Rates.—Fresh and canned meats, bacon and hams, lard and lard compounds, canned vegetables, flour, cereal preparations, motor vehicles, cutlery, clocks and watches, leather goods, agricultural implements, iron ore and bituminous coal.

In order that the reader may better understand the situation with regard to the proposed tariff changes in the staples which they produce, reference to the present schedules on these products is essential. In the order in which they are above mentioned, the present rate of duty on the agricultural staples which this agree-

ment proposes to place on the free list is as follows: Cattle imported from Canada are now dutiable at \$3 each to 27.5 per cent advalorem, depending upon their value; Canadian hogs and sheep, \$1.50 each; Canadian poultry, dressed, 5c per lb., live, 3c per lb.; eggs, 5c per doz.; butter, 6c per lb.; milk, 2c per gal.; wheat, 25c per bu.; hay, \$4 per ton; vegetables, 25 per centum advalorem; fruits, 25c per bu. and 25 per centum advalorem as to kinds, etc.

With these facts before him, the Michigan farmer should approach this question, not as a question of politics in which his judgment would be biased by preconceived opinions, but rather as a simple question of business. So far as live stock is concerned that now produced by Canada is directly tributary to the Buffalo market, with a shorter haul in most cases than is required to get the Michigan product to that market. Those at present shipping to the Detroit market would be affected by the same competition, while those in reach of Detroit and other border towns who sell dressed meats by the carcass in those markets would be affected to a still greater extent. But perhaps the gravest danger to our live stock industry from this cause lies in the undeveloped possibilities of the grazing lands of the Canadian Northwest, where the climatic conditions are said to be more favorable for range production than in the northern sections of the United States, and the character and effect of the competition from stock raised in quantities on the open range is not unknown to the farmers of Michigan and other sections of the middle west. The competition from Canadian poultry and poultry and dairy products would be even more keenly felt, particularly at a time like the present when there is evidence of an overproduction in this country which is causing rapid and unseasonable declines in prices for these staple products. So far as wheat is concerned the effect could hardly be marked, since the price of the crop is practically fixed by the world's supply and demand, the United States, like Canada, having a large surplus for export. But with some other grains included in the agreement the case is different. Barley, for instance, is a grain which depends upon a market demand for its use in a special industry, and the price of which would be reduced to its value on a feeding basis by the opening of our market to the large Canadian product. The placing of hay on the free list would also have a very considerable effect upon our market, not alone at Detroit and other border towns, but in the markets of the east as well, which are more accessible to the Canadian product than to that from Michigan. The abolition of the duty on vegetables, including that on potatoes, which is now 25 cents per bushel, would perhaps be the greatest blow to Michigan agriculture. The potato crop is a special cash crop on a very large percentage of Michigan farms, and such a remission of duty would doubtless greatly stimulate production in a country well adapted to the crop which is directly tributary to our eastern market, and which now produces a crop larger than that of Michigan. In other words, if Canadian potatoes were admissible to the United States duty free this year, the available supply for American markets would exceed that of last year, and market conditions would be far worse than they now are. Then the courts have held that sugar beets are vegetables, so far as the application of a duty is concerned, and the remission of the duty on this raw material would open Canada to the sugar mills of Michigan as a source of supply, and make it far more difficult for Michigan producers to secure the advance in the price of beets for which our beet growers are now working. Also, the opening of our border cities to Canadian garden products and fruits would doubtless prove a greater handicap to Michigan producers than would any possible extension of the market for American fruits in Canada, an advantage which would accrue to the producers of the Pacific coast if any.

Now let us analyze the agreement and see what, if anything, the Michigan farmer will get in return for the protection which this agreement would take from him. Rough lumber is placed on the free list, but he does not use rough lumber. When a board is even planed on one side it becomes a manufactured product, and the manufacturer would get the benefit of the present duty on all kinds of manufactured lumber which the farmer would use. Practically no manufactured article used by the farmer is made duty free. As a producer of raw materials, so called, his interests have apparently been sacrificed

to those of the other interests of the country in arriving at this agreement. For the handicap of unrestricted competition of Canadian products it would appear that our farmers as a class would get little in return, save such benefit as might accrue from the slight increase in the purchasing power of the American laborer through a possibly increased demand for his labor due to a reduction in the duty on American manufactures.

While it may be conceded that a degree of reciprocity in trade with Canada arranged on an equitable basis might prove of benefit to the country at large, it would appear that in arriving at this agreement the negotiators have overlooked the fact that the farmer is the basis of national prosperity, and that the country as a whole cannot remain prosperous unless the farmer is given an equal chance with other citizens to obtain a fair reward for his labor. This he is just beginning to do, when he is assailed by the "other half," who do not understand the real situation, for the high cost of living which is largely due, as pointed out by a department of the government itself, to our expensive methods of distribution. But we cannot conceive how those who are responsible for the terms of the proposed agreement can have thought it would be acceptable to either the farmer who believes in the principle of protective tariff or that of free trade. If our manufacturers are to be protected from the encroachments of our friends across the border how can the farmer who also believes in protection be satisfied if he is to be denied any semblance of protection on his products. If the farmers who hold opposite views on this economic problem find themselves compelled to compete with their Canadian brothers in our own markets where they sell the products of their farms, yet are denied the possible benefits of such competition in the markets where they must buy their needed supplies, how can they be satisfied with this one-sided application of the principle of free trade. It would appear to the thinking man to be a case in which the "fence" should either be left standing intact or be removed entirely, or perhaps lowered by the taking of a single "board" from its top rail along the line by an equitable reduction of existing schedules, instead of making a big gap which will permit the free flow of agricultural products into our country and lowering it in spots which will furnish a new outlet for the products of other American industries and thus the better enable them to maintain present prices for domestic manufactures with a corresponding increase of profit to those industries.

Naturally the metropolitan press is urging its readers to favor the early passage of this agreement by congress, since its avowed purpose is to decrease the cost of living and that apparently at the sole expense of the farmers of the country, and as a means to that end are asking them to communicate their wishes in the matter to their senators and representatives. It is just as important that the farmers of the state and nation should study the situation carefully and make their own views of the matter known just as promptly, since the adoption or rejection of the terms of the agreement lies with congress.

HAPPENINGS OF THE WEEK.

National.

Eight thousand of Chicago's street car men threaten to go out on strike because they are paid less than the employees of another street car company of the city.

The house committee has favorably reported upon the offer of Andrew Carnegie to give \$10,000,000 for the advancement of universal peace.

Reports from the steel mills show that the amount of business done in January exceeded that of every month since last June. The amount reached 400,000 tons.

It is reported that in Paris, Edgar Co., Ill., has been maintained for the past 50 years a system of traffic in votes. Books have been kept of the transactions, in which are recorded the names of the persons selling their votes, their addresses, and the amount for which their franchise privilege was sold. The book gives the number of republican votes not to be bought, and also the number of democratic votes. The floating votes number 127 and are amply sufficient to carry the elections, consequently when put up to auction they sell at good figures, the highest on the books indicating \$60 per vote.

While the attempt of J. A. D. McCurdy to fly in his aeroplane from Key West, Florida, to Havana, the longest trip ever attempted over water with such a machine, ended short of the goal, and in his rescue from the sea by the torpedo boat destroyer Paulding, he did succeed in getting within ten miles of the Havana harbor and had it not been for a minor accident which resulted in spilling his oil, he undoubtedly would have reached the Cuban capitol.

Volvra, leader of Zion City, announces

that he will inaugurate the use of the whip to punish users of tobacco in that town.

Statistics show that there are 10,000,000 apples imported into Great Britain every year.

Foreign.

The volcano Taal in the Philippines is active and with accompanying eruptions and the earthquake shocks which number 332, the island upon which the volcano is located sunk five feet, according to the measurements of observers. The natives were panic stricken, 300 of them are reported killed and the constabulary has been sent to relieve them.

It is officially announced that the Duke of Connaught will succeed Earl Grey, in September next, as governor-general of Canada. He has been appointed for a term of two years and the period may be extended. The news of the appointment has been received with much satisfaction in Canada and it is predicted that Ottawa will become at once a popular political and social center with so distinguished a member of the royal family there.

The government of Portugal has awarded to their recently deposed King Manuel a pension of \$3,300 per month. King Manuel is located in Richmond, England, and in all probability the liberality of the home government is in consideration of the renunciation of all private claims of restoration to power by the deposed King.

The Jamaica chamber of commerce has answered the recommendation of the royal commission that a representative be sent to Canada for the purpose of bringing about closer relations with that government, with the statement that the United States is the proper and natural market for her goods, and nothing will be done to prejudice their present relations.

The plague with which China is now having trouble appears to be spreading rapidly. The disease is raging in Manchuria. Deaths have been so numerous at Harbin that it is impossible to bury the bodies, and they are disposed of by burning. The Russian workmen employed on the Chinese railroad at that place have gone on a strike, because they fear the disease. Eminent scientists are going to the seat of trouble for the purpose of studying the disease and means of controlling it.

Roger Sommer, a French bi-plane operator, took up six passengers in his large bi-plane, circled about at a height of 100 feet, and then carried them from Douzy to Romilly and back, thus making two world's records, for numbers of passengers carried and distance flown.

The people of Ecuador are up in arms in opposition to the proposed leasing of the Galapagos Islands to the United States. These islands are in line with the steamer route from Panama to Australia and afford a splendid coaling station.

The chamber of deputies of France are now considering demands made upon that body by the grape growers of the country.

The legislature of Panama at a special session passed a bill providing for the increase of duty on rice, corn, lard and flour. Duties on luxuries were increased five per cent and on other articles than those mentioned above, 2½ per cent.

The rebels have succeeded in taking Yoro, Honduras, which gives three points from which they can attack the capital.

Spanish papers are giving much space to the evidence gathered incident to the raising of the battleship Maine sunk in Havana harbor. Moderate reference is made in the articles regarding the injustice of the Spanish-American war.

CROP AND MARKET NOTES.

Genesee Co., Jan. 28.—January has been less like winter than the month which preceded it. Snow all gone. Wheat is found to have been actually growing under the snow and cold weather now will be almost certain to do serious injury to the coming crop. Roads getting muddy, although a break up is not anticipated since freezing is already predicted by the weather bureau. Auction sales continue and prices remain high for all kinds of farm stock. Several changes in ownership of farms reported during the last few weeks. Live stock doing well; veterinarians report very little doing in their line of business. Sugar beet acreage being contracted about as freely as usual in spite of some dissatisfaction regarding the price.

Cass Co., Jan. 23.—The January thaw has removed most of the snow from the fields and where the fly did not injure the wheat last fall those fields look green. Many of the larger farmers of the county have not yet disposed of their wheat crops but are waiting for the dollar per bushel. Good corn has been selling for 50c; oats, 32c; wheat, 92c. Eggs have been 30c but during the week have dropped to 24c. Though we have been having considerable stormy weather during the winter, and most of the time we have had what is termed snug winter weather, even to zero several times, it has been a pleasant winter. For the last two or three weeks the roads have been very icy.

Lapeer Co., Jan. 23.—Icy roads and poor sleighing prevail, and with the wheat fields nearly bare the present weather conditions are not favorable to the crop. Meadows seem to be all right as yet. In many fields corn is yet standing in the shock. Stock in good condition and hog prices still remunerative. Many farmers are cutting and storing ice. Blacksmiths are reaping a harvest in extra shoeing of horses on account of the icy roads.

Livingston Co., Jan. 21.—We are enjoying ideal winter weather, but for the past three weeks it has been very difficult to get about on account of the ice on the ground. The sleighing is getting very thin and wheels will soon be used unless more snow comes. Wheat and clover not very well protected as on the higher places the snow is entirely off. Stock of all kinds doing well. Lamb

(Continued on page 127).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

How Grindstones are Made—By George Frederick Wilson

FROM the quarry to the grindstone in your back yard; to the axe-bit in your shed; to the scythestone in your granary and the whetstone little Johnny is forever losing, is a process involving an expenditure of skill and human brawn.

Grindstone making is the chief industry in the village bearing the euphonic title of Grindstone City, situated at the point of what is called the Thumb of Michigan, on the Lake Huron shore. The quarries and mill are owned and operated by a big stone company. They also operate a store where general merchandise is retailed and cleanliness observed. The company's local interests are under the management of a resident superintendent.

Hundreds of acres of land, lying close to the lake shore and extending a quarter of a mile inland, are pot-holed with worked-out and abandoned quarries. Two quarries are now in full operation, one of them close to the mill and the other a half-mile distant. New quarries are opened in the spring. Tests are made by drilling, a solid tube of the rock being brought up for examination of veins. Where suitable rock is found, the thin upper layer of earth is scraped away and, by blasting, the upper scaly rock is cleared and the grindstone broken for the mining. Grindstone is deposited in sheets of irregular depth, running from three inches to three and four feet, and each sheet slides freely from the other.

When all refuse has been cleared and the grindstone reached, a track, similar to the track of a railroad, is laid and the channeling machine lowered into the pit and set upon the track. A quarry seldom goes deeper than twenty feet, and the first layer of grindstone is often but three feet from the earth's surface. Below the grindstone is black scale and soapstone.

The channeling machine is an engine to which can be fastened, at either side, the steel bars which cut the rock in strips. These bars are about an inch thick and three inches wide, sharply pointed at both ends so that when one point is dulled the bar can be reversed. Short bars are first used, the length of the bars depending on the depth of the cut. Three are placed in each of the two vises provided at either side of the engine, if a channel is to be cut on both sides of the engine. If on only one side, that vise is alone used. The engine drives these bars up and down while moving slowly back and forth on the track, and so smooth a crevice do their sharp points cut that the sides of a quarry present the appearance of a smoothly cemented surface. The strips are cut in widths of six feet to six feet six inches, depending upon the quality of the stone.

After the channeling machine has cut a strip—usually they extend the entire length of the quarry—various size blocks are marked out. Where there are evidences of gravel or scale, those portions are worthless for grindstone milling. Grit is the important consideration; the greater the amount the greater the value of the stone. With keen two-pointed pick, wedges, iron mallet and stool, the quarrymen go down and cut the blocks marked out. The quarryman's stool is a peculiar affair of interest. The seat is small and but one leg supports it, placed in the center. At the end of the leg is a pointed iron peg which they jab into the stone. The stool accommodates their every motion, rocking backward and forward while the pick is being swung. With the pick, holes are cut at intervals of an inch or so along the line, of a size to accommodate the point of the wedges, which are in most instances a half-foot long and not unlike an ordinary wedge. When holes have thus been picked from channel to channel, the wedges are inserted and the blows of the mallet evenly distributed

over them. The blocks are thus separated, the first pried out and hoisted by the immense fifteen-ton crane, the remaining blocks sliding into the vacant spaces with very little effort. No prying underneath is required, as the sheets split without effort. Notches are cut at two sides of the huge blocks and the points of enormous hooks are set into these notches, their massive chains drawing them tight against the block as the derrick-crane lifts. The process is similar to the action of tongs on a cake of ice.

Hoisted to the surface, the blocks are laid flat on the ground and a circle marked with a compass, with a view to as little waste as possible. All roughage outside this circle, and all scale on the sides, are called scabs and the men who clear it away have the title of scabbers. They mount the block with pick and stool, like those of the quarrymen, and pick holes for their wedges around the circle, wedging it off in such chunks as can be broken with five wedges. Thus a rough circle of stone is hewn. When this circle is completed, scabbers with long-handled picks clean away the scale on the sides of the stone, if there be any, and pick in the center of the block a square hole to fit the turning lathe at the mill. When the hole becomes too deep to get at with a pick, they use a pointed crowbar of steel.

The cut blocks are then craned to a flat-car, three or four of the large size constituting a load. A private yard en-

makes a smooth circular cut. Some of the chunks broken away are twice the size of the two fists of the turner, yet he holds his tool with scarcely a waver in its course. Their muscles are as hard as the steel in their bars. They keep at a stone until it is finished and then lose the least possible time in adjusting the hoist and craning it off and another stone on, to which they immediately apply themselves. Possibly this condition of industry would not exist were they paid day wages instead of by the ton, as they are.

Look at the next grindstone you come across and note the ridges torn in the sides by the facing tools. With all stones, whether of one foot in diameter or seven—the largest size made—the process of manufacture is the same, the difference being that the small stones are made indoors and require less muscle, while the large ones are made in the open shed to permit freedom in craning, and much muscle is required. The edge of the stone upon which you place your knife is trimmed with a facing tool between an inch and two inches in width, which smoothes instead of ridging. It is to prevent this tool from kicking that the guide pins are in one of the end beams which lock in the stone. The large stones, for which there is a greater demand than for the small, are used by cutlery and implement manufacturers.

The iron eye, with the round eye-hole, set in the center of the stone, is cement-

is the continual rubbing of this sand and water into the stone by the saws which does the cutting. The water runs off the stone into a sluice and is sucked up again into the sifter. Every half-hour or so a shovelful of fresh sand is thrown into the sluice and carried with the water to the sifter. In cutting scythestones the saws eat in at the rate of a foot per hour.

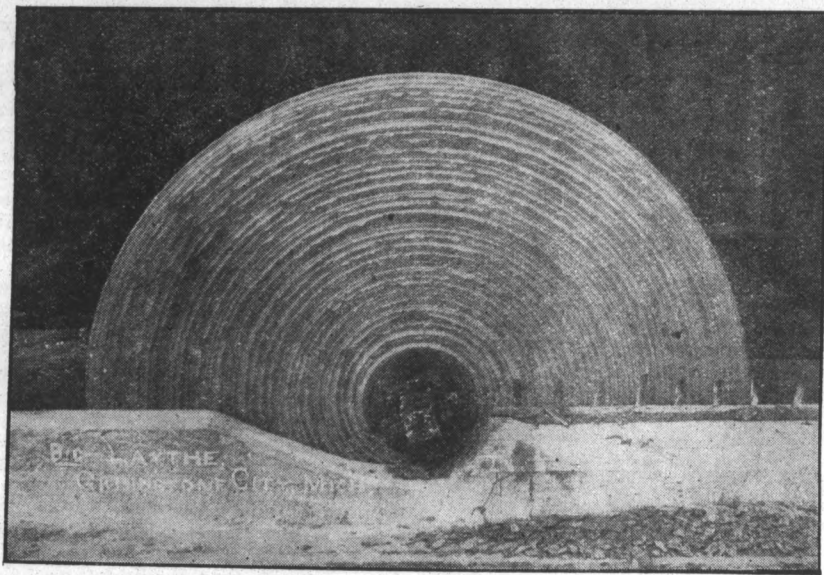
Building stones, the chief requirements of which are perfect coloring, no attention being paid to the amount of grit, are cut at a greater speed, from one and a half to two feet per hour. The saws, of course, are set at greater widths than one and a half inches. Under the catalog of building stones come window and door sills, facings, corner-blocks, etc. Stones used in their manufacture lack sufficient grit for grindstones but are of a perfect color. Their manufacture is entirely a sawing process.

The inch and a half scythestone slabs are taken from the saws to a cutter who lays them, one at a time, upon a table, a frame dropping on the slab. This frame holds eight small round iron bars, set ten inches apart. With a keenly pointed tool, the size of a large flat file, he scratches lines in the slab, guiding his marker by the iron bars. Then he breaks the slab along these lines, across an iron strip set edge up in the bench. So perfect is the break that the impression of it having been sawed is gained. He now has slabs ten inches wide by anywhere from a foot to two feet in length. He slides these along two rails into the cutting knife, which cuts it in slabs one inch thick. Thus a scythestone in the rough is ten inches long by one thick by one and a half wide. Above the knife is a mallet, extending over it in the manner of the spar of a crane-boom. The cutter grasps the handle of the mallet near to it and, in lowering it, the knife automatically drops to the stone. One blow upon it does the work. His work is entirely hand-power.

The pieces thus cut are taken to the rubbing bed. This is a wheel about eight feet in diameter, revolving flat side up at about the height of a man's waist. It is made of four-inch basswood, into the face of which is driven narrow iron strips so close together that the entire surface is iron. The face is leveled with sand. Over this wheel is a sifter from which drips sand and water upon the rubbing bed. Three work at each of the rapidly revolving beds.

The finishers take six of the scythestones and lay them face down on the bed, a guard which projects from a beam preventing them from going around with the wheel. A loaded box is set on the stones and the bed thus finishes a side. They are then turned and, when finished on the other side, removed altogether. Six more are replaced and the work of finishing the edges and ends of the first six begun. The finishers wear leather gloves and dip the stones in water. A slight turn of the hand, as he holds the edge of the stone upon the bed, gives it that rounding edge. When he has finished three of the six in this manner he stops and turns the six under the box. By the time the remaining three are completed, six more are ready. Thus the process continues throughout the day, giving him no slack in work. A finisher's speed is encouraged by the fact that he is paid solely by piecework, as are all the others employed in the scythestone department. A good finisher can trim as many as twenty-one gross in a day—3,024 pieces.

These stones are piled like cord wood in individual racks, out of doors, to dry. Each rack has the name of the finisher attached. When dried they are taken to the labeling room, and when there completed are packed, a half-gross to the box.



Lathe in which Grindstones of the Largest Size are Trimmed.

gine hauls the car to the mill. The yards are a network of tracks.

All blocks cut in a rough circle at the quarry are intended for grindstones and are taken to the turning lathe to be properly rounded and trimmed. For the large stones, the lathe protrudes out-of-doors, protected by a shed roof. A deep pit accommodates the stone so that the lathe sets close to the ground. The stone is placed on the square end of the lathe, this being the purpose of the square eye-hole, and wedged, so that it will not slip off. Heavy beams of timber are locked around it so close that the stone just has room to move freely. Into the top of the two side beams and one of the ends are driven iron pegs at distances of about four inches. These stand up about five inches and are guide pins for the facing tools. The turners place their long, finely-pointed steel bars, called facing tools, between these pins, which prevents them sliding or kicking out of their hands. The lathe is set going and the turners drive the points of their facing tools against the revolving stone, holding it there by sheer exertion of muscle while it tears away the projections of the rock and

ed to it with plaster of paris. The size of the stone is marked upon it and it is piled in the yard until the day of shipment. A platform holds the first, laid flat, and each succeeding stone is separated from the other by four-inch blocks.

When perfect blue stones, of a high quality of grit, are taken from the quarry in blocks a foot or more in thickness, they are sent to the scythestone department. Unloaded from the flat-car, they are laid upon a truck running on tracks, there being three trucks and one stone to a truck. These trucks run into a shed and are stayed against movement, underneath immense gang-saws, one gang to each truck. Each gang has thirty-two saws, set one and a half inches apart. These saws have no teeth, being merely strips of steel ten feet in length, three-sixteenths of an inch thick, and four inches wide. The gang rests upon the top of the stone and moves backward and forward in the same manner of a cross-cut saw operated by two men. The power of steam is here employed. Over the gangs are water sifters which keep up a constant drip of fine sand and water upon the stone as the gang moves over it. It

Scythstones, finished, are ten, by one and a half, by three-fourths inches, and retail from ten to thirty cents each. They are of the highest quality of grindstone; the prices indicating the grades. The greater the amount of grit, the greater its usefulness and price. Axe-bits, for which there is now little demand, are three inches square by three-eighths thick. Whetstones are usually the same size as scythstones. When the highest quality is desired in a whetting stone, buy a scythstone.

In considering the immense weight of the stones handled, the question of danger arises. "I have been in the business for many years," the superintendent said to me, "and I can't recall one man killed. We are very careful to see that our various appliances are in perfect condition. Carelessness sometimes causes injuries of

a bruising character, but these are not frequent, for the men exercise care in their work. A careless man wouldn't be tolerated by the firm or by his fellow workers."

Regarding the principal seat of this industry in Michigan, Grindstone City is an unincorporated village of about four hundred people. The thirty red cottages that the company built along the lake shore near to their mill, constituted practically the first Grindstone City. But in later years it grew away from the mill and lake front to a hill about half a mile inland. It is spread over enough ground to accommodate five villages its present size. Two miles to the west is the village and summer resort of Pointe Aux Barques, and five miles westward is Port Austin. To the east are Huron City, Port Hope and Harbor Beach.

THE GATES OF BAKAPPLEIN

By { ELIZABETH JEWETT BROWN
and SUSAN JEWETT HOWE.

Synopsis of Preceding Chapters.—Ned and Merle Jackson, son and daughter of wealthy parents, become dependent, while yet in school, through the business reverses of their father shortly before his death. On their own solicitation they become members of the household of a cousin, Searls Jackson, possessor of the old Jackson homestead, a fine large New England estate. Here Merle has the care of Yvonne, the little adopted daughter, while Ned is given an opportunity to learn to work. The latter, however, regards manual labor degrading and attempts to conceal his identity when friends from the city, the Amidons, visit the farm. At the suggestion of Mr. Amidon, Merle plans to join the earners by serving refreshments of baked apples and cream to the numerous automobile parties which frequent the section, in consequence of which the old home is named Bakapplein. Near by is Old Beverly, the ancestral home of Searls' Jackson's wife, Nell, and now in the hands of Manning Beverly and his sister Madeline, Manning's wife having recently died. Searls Jackson has entered public life and is a busy man, leaving the farm operations largely in the hands of his foreman, Ben Baker, under whose authority Ned grows discontented. The climax is reached when Ned and Young Joe Green, during the ice harvest, become incapacitated through indulgence in hard cider. On Searls' return Merle pleads for her brother, who has not yet recovered from his debauch, and the cousin promises to give him one more chance. Ned, however, forces a quarrel and immediately leaves the farm, going to work for John King, proprietor of a local general store. His failure on the farm is attributed to the evil influence of Jimmie Malley, one of the farm hands. Jimmie's father, old and penniless, and his crippled sister, Martha, live with a son-in-law, Thad Hobby, at whose home Ned boards. Hobby finally drives the old man and the little girl from his door and Ned endeavors to save them from a pauper's fate. His appeal to Jimmie avails nothing but he succeeds in bringing about the latter's discharge from the farm.

Chapter VIII.—(Continued).

"Guess it won't set no harder than I'm a settin'," remarked Joe, evenly. "Never yet heard uv no law that could teach a man fer settin' down on another. I've ben set on lots uv times, and here's hopin' you'll be all your life fer the way you've set on your dad. I reckon, when you wuz a puny youngster, how yer dad yoost ter walk the floor with yew night after night, and how he suffered when you had a run uv fever. He said ter me then that ef you died he'd want ter die too. He set a sight by yew then, and he yoost to go hungry in order to give you good things ter eat and buy your clothes so yew could go ter skule. Yew and Mandy wuz dressed fair, too, and yer old dad would hev worked himself ter death any day fer yew and would hev thanked God fer the privilege. And this is how yer pay him. Confound yer stingy, mis'erable hide. I'd like ter set on yew till I'd squeezed every bit uv meanness outen you. Do yew want any more, or will yew let my boy alone?"

"An' I also want ter make it plain ter yew that I know that yew wuz ter blame fer Ned Jackson's trouble here," old Joe continued. "Ef yew hadn't kep' naggin' at him all the time he'd ben here, contented and not ben with that cut-throat uv a King. I, fer one, am mighty glad yew've got kicked off the place, and I wish it had happened long ago. Now git!" he got up heavily, "and ef I hear uv yer botherin' my boy agin I'll set on you harder than ever the next time I git a chanst."

A half hour later when Nell, with Ned, was driving to the street to see King, they met Thad Hobby's wife returning from his office. Her eyes were red and swollen from heavy weeping, but she came close to the buggy, standing fearlessly between the wheels, a pathetic little creature with a frightened, desperate look on her haggard face. "King tells

me that they took him to Collins'es," she said in a strained voice. "I was afraid they would, and it seems as if I will die if they keep him there. You don't know what it means to me," she continued passionately as Nell tried to speak; "you don't know—what it means to see your poor old father turned out to be a pauper in his old age. But there is nothing that I can do—nothing, though if I could I would do everything in the world for my father—the best father a child ever had," she sobbed. "But Thad will not let me do anything. I have feared for months that this would happen, for I could see in his eye that he begrudged him everything he had, even the warmth of the fire and the privilege of speaking when he was in the house. He watched every time I passed father his food at the table, and the children and I fed Rover on the sly. And little Martha! I sent her over to Mrs. Wilson's to stay until something can be done about her. She would take her if she could, but with her family she can't. She will take you to board," turning to Ned; "I asked her and she said she would be glad to have you come there. She can give you a better home than I can," she said plaintively, wiping her eyes with her apron with one hand while with the other she shifted the weight of the heavy baby on her hip.

"I had thought perhaps I had better return," began Ned; "it might be harder for you if I left."

"No," she said, "I think it will do Thad good to find that you would not stay on account of his meanness. I have put up with things when you and father and Martha were there to avoid having a scene, but when I am alone with him I shall stand up for my rights." She turned towards Nell with a curious, tigerish gleam in her sunken eyes. "He will find a different wife, now that he has abused my father and sister. He will never swear at the children again when I ask for shoes and clothing for them. If he does, I'll either kill him or leave him. He has gone too far this time, and it is time he realized it."

Nell essayed to speak comfortingly, but the woman continued excitedly: "You told me, before I married him six years ago, that I would not be happy with him, but I did not believe it. I thought by being good myself I could make him good, and when he did not make much of a fuss when father and Martha came to me, I believed that things would be all right. There was no trouble as long as father was able to work on the farm, but if he did anything else, even to making a flower bed, Thad was ugly over it and would say that he would not feed him unless he did something that was profitable. I would not stay with him another day if it was not for these three little children. I would get father and support him myself; but a mother is the most helpless creature in the world. All she can do is to stay where she is, and endure and endure, as long as life lasts. All I hope," she cried, her voice rising, "is that he will live to be old and penniless, and that he will have a son-in-law who will put him on the town in his old age; and I wish the same for my brother. It may be wicked, but I shall pray as long as I live that just such trouble shall come on them as they are putting on father today."

"He is not going to stay there over night," said Nell, decidedly. "I imagine that King will find that Searls Jackson is still alive. I am going to see him personally about it today. I had a little talk with Joe Green just before I started. He told me that he has been talking with Mary Willett. She will be glad to have

your father come there, and will give him a good home. She remembers his kindness to her in the days when Sarepta Barry was squeezing the life blood out of her and her husband; now she will reciprocate it at the price the town pays Collins, and I shall give her a dollar more a week, myself, as long as your father is there. And one thing more, Mrs. Hobby. Don't worry about little Martha. I intend to take her home with me tonight and keep her as a nurse girl and playmate for Yvonne."

The woman looked up, amazement and thankfulness transforming her haggard, drawn expression. "God bless you!" she breathed. Her glance rested on Yvonne's flower-like, happy little face as she sat in Nell's lap hugging a big doll. "God bless you," she said again. "I know you will be as good to her as you are to Yvonne, and that is all I ask. And as for father—" she stopped again, crying for sheer joy. The April wind had tossed her dark hair into disorder and blew her scant skirts around her frail limbs, but her appearance and her misery were for the time forgotten in the joy that Nell had brought into her heart. She knew that Nell would do as she had promised and she returned to her home comforted.

A day or so later Joe met Jimmy in the blacksmith shop on the street. The young fellow had at once secured a position at Cal Chase's farm and, although the pay was not quite as good as he had received at Jackson's, he was elated at his luck in not being out of work for a day. He was boasting about his being in such good demand when old Joe entered the shop.

"I allers notice," he observed quietly, "that the feller that stands back and hollers 'sic' is usually the one that gits off scot free; but 'casionally it is the tother way around and the dog that brags last is the best one in the pack."

"What do you mean?" demanded Jimmy, his big red face darkening. "I s'pose you're hittin' on me and ain't man enough to come out and say it square."

"Yep," said Joe good-naturedly. "It's a wise child that knows its own picher when somebody else draws it."

"If you've got any pictures in your mind about me, spit 'em out," he snarled. "I reckon I kin draw some as well as you."

"Like as not," drawled Joe; then turning to the assembled group of men who were eagerly scenting a quarrel, he said: "I stopped in ter Old Man Beverly's today and he wuz tellin' me about a certain King he knowed wunst. Not John King," with a comprehensive wink around the shop, "but a feller by the name of King Lear. He showed me a picher uv him he had in a big book, where the ole man wuz a tearin' his hair and a shoutin' suthin' 'bout an ongrateful child bein' wusser than the bite uv a snake. Seems as if this old King had three darters which wouldn't do nothin' fer their ole dad, and let him go on the town as a porper, and—"

"Nobody's ongrateful far-zl-no," growled Jimmy, "and ef yew don't stop your darned hantin' I'll knock the block clean off'n your shoulders."

"What's eatin' you?" asked Joe mildly, as he meditatively scratched his head. "Hain't told the fellers here how you got set on, have you? Wall, that story will keep till next time, perhaps," he added significantly. "Nobody ever thought you ongrateful, Jimmy, any more'n they think a hog is ongrateful; fer when a critter hain't got no gratitude in him he can't be neither grateful nor ongrateful, as I take it."

"The old man don't need me," muttered Jimmy; "anyhow, I ain't goin' to make a porper uv myself by helpin' a man that never knowed enough to save up fer a rainy day. I say that if a feller don't save when he's young he deserves to be poor when he's old. Look what I have saved, and I ain't twenty-five yet," he boasted.

"I saw your dad today," continued Joe calmly. "He looked ten years younger than he did the other day. He was shaved and had a clean shirt and a good suit uv clothes 'at Nell Beverly Jackson giv him, and he said he believed his rheumatiz was better. Bill Willett's wife will giv him a good home, don't you fer git it. She ain't the kind that fergets favors, and many a meal your dad giv her when Bill was so mis'able years gone. Your dad had some books to read 'at old man Beverly sent him, and he 'lowed he wuz goin' to have a good time at last. Pore ole man! He's got a good 'education, but he never had no chanst to enjoy it before. His mind is easy now about leetle Martha. I saw her, too; she's got a new pink dress and she looked like a picher playin' with Yvonne. Treated just like Yvonne, too; eats at the same table,

and I wouldn't be suprizd ef the Jackson's adopted her, by and by, the same as they did Yvonne."

"Yew don't seem ter be especially de-lighted because the hull fambly is comin' so near yer," he drawled, as Jimmy made no answer. "I've got a leetle more news fer yew to chaw on, seein' yer wouldn't chaw my terbacker I offered a minnit ago. Yew remember when yer step-ma, some ten year ago or thereabouts, got full up by the Town'us and tried to nuss her baby upside down. Wall, King got down on all yer fambly then, coz he thort her actions cost him his 'lection, and I ain't sayin' but what they did, all right. Sence then he's druv yer dad to the wall jest as fast as he could drive him, puttin' on the screws here and the screws thar till he's almost pushed him inter the grave. But he ain't gounter quite kill the three younguns, fer with leetle Martha goin' there as a playmate and sort uv nuss gal to Yvonne, and that baby—Henry Malley he is now—is a fine leetle chap and Lucille Beverly's husband, Norval Dickson, has tuck him, and they will keep him till he is eighteen anyhow and make a man on him; an' yer sister Jennie is goin' over to Bob Beverly's in Winthrop, to keef fer Bob's two leetle boys, Thar, Jimmy! Yer see the Lord has set the Beverlys ter lookin' arter yer own flesh an' blood that yew would ha' let died in the gutter. What do yew think about it?"

"I'll tell yew a leetle suthin' more 'bout King while yew be thinkin' it over," Joe continued, amicably, as Jimmy's answer had been an inarticulate growl of anger. "Per'aps yew don't know how King served yer dad years ago. Yer knowed yer dad's mother wuz a pore, helpless cripple that yer dad keered for as a mother does a child, till she died. Wall, he got bad in debt to King, who wuz a sort uv constable then, and when she wuz dead yer dad wanted ter bury her decent-like, so he borried some money uv somebody else when he wuz in debt to King. King, uv course, got hold of it, so he went ter yer dad ter make him pay what he owed him instanter; and he said if he didn't he'd tach his mother's body, which he did," he added solemnly. "Then when he saw that yer dad couldn't scare up the money no-how, and that all he said wuz, when he kissed his dead mother's face, that he hoped she'd hev a decent berry-all anyway, King took the 'tachment off. They tried ter keep it quiet like, and uv course yer dad would say nothin' 'bout it, but some folks knowed it, and I've ben tellin' on it lately and King told me to shet up. I told him to take it to law ef he dast; but he don't dast," he chuckled, "and as I ain't no clam, I don't shet up wuth a cent. That shows some uv the hard things yer dad has had ter contend with all his life. 'Nuther thing King did ter him. Said ter him one day, 'Malley, I've got a nice pig I'll let yew have. You've ben havin' hard luck lately, so I'll let my man take the pig down ter yer pen.' Course, Malley wuz de-lighted, though he might have smelled a rat. I wuz the 'man' then, though jest a boy, and I tuck the pig down thar, and I see that Malley had a fine, fat hog already, and I wondered what the divvill made King hev a change uv heart. Heard pretty soon, when he 'tached the fat hog fer debt, leavin' Malley a little runty pig he had ter fat."

"That was his own look out," snapped Jimmy. "If he had been smart, such things wouldn't have happened. But anyhow, it ain't my business to waste my life caring fer an ole man that never knowed how to take care of himself."

"Believe yew said that afore," remarked Joe, serenely, "but ef yew wouldn't look after yer dad yew might have thort of yer little sister. Pore leetle cripple! Not as she needs yew now; and tain't likely she ever will now that Nell Jackson has got her. Martha Malley Jackson will sound well, won't it?" he said, irritatingly. "I allers said that King ort to do suthin' fer that child, seein' as it wuz in passin' his barns at butcherin' time that yer step-ma got the scare at suthin' she see by the road which made that child come into the world lackin' ha'f an arm."

"You've got nothin' to say on that score," cried Jimmy, brutally. "Everybody knows how it was that Constance Beverly died. She was drivin' by your barns when her hoss got skeered and throwed her out, and what she saw set her inter convulsions. They got her home fast enough, but that night Manning had a dead wife and a kid they thort couldn't live. You're a pretty one to talk about other folks butcherin' by the road. Better keep your own doorsteps clean yourself, you old drunken fool you," he taunted.

"Yes," said old Joe soberly, "you're

right thar, Jimmy, I ain't. But it ain't as ef I hadn't repented every day uv my life sence. I never thort uv hurtin' nobody, fer I allers had done my butcherin' by the road as well as most uv the men around here do. I forgot that some wimmin's hearts is soft, and that they can't stand sech sights that we men think nothin' uv; and also that some hosses is dreadfully skeered at the smell uv blood. But it larned me a lesson," he continued, soberly. "Poor Constance Beverly was a sweet leetle gal and I wouldn't meanin'ly hev hustled her out uv this life, even in order to save my own wuthless hide. I felt like a murderer when the doctor told me that she wuz gone and that the leetle baby might or might not live. I went home and smashed that ole pig pen to smithereens and there ain't never goin' to be no more slaughterin' animals in sight uv the road on Joe Green's place. Fer, as I said, I ain't never goin' to dew nothin' agin in my life ter hurt nobody ef I kin help it, unless by so doin' I kin help somebody that is bein' hurt by the feller I sets out to hurt—like King and—present company," he added pointedly. "But speakin' uv King, as long as I've got a tongue in my head I shall shout his pesky meanness from the housetops. I've ben tellin' lately how he berryed that fat porper some years ago. He wuz so big that thar wan't no coffin in Winthrop large enough, so King had a big box made a' puppus; and when that wan't hardly big enough he squeezed him inter it and nailed it down; then they berryed him without no prayer nor nuthin', same as they would a dog. And then there wuz that idjit porper who got drowned; they fished him outen the river, wropped him up in a bag, stuck him under the seat uv a wagon an' druv on a trot to Collins'es, with his pore body a floppin' up and down the same as ef he hadn't been a pore unfortunit human critter, but nothin' but a ca'f. I tell yew, sech things make me think that thar is nothin' but meanness in the world. Thar ort to be laws agin' butcherin' by the road," he added, harking back, "coz it makes children, or ruther, some children, cruel ef they see it; and thar ort also to be laws to make folks treat the pore and onfortunit as ef they wuz human beins'. And I say, the very wust thing that kin happen to a feller is to become a porper, and I believe that hell is tew good a place fer a man that will send his ole father there. He may slip erlong like grease fer a few years, but the Law of God will ketch up with him by and by, and don't you fergit it." he said sternly, speaking directly to Jim-

my, who, fuming with rage, was hurrying to leave the shop.

"Don't ye fergit it!" he called after him. "The Law of God, young feller, is on yer track, and some day it will ketch ye up and trip ye daown, and prob'ly set on ye wuss than I did the tother day. And I'm hopin' to live ter see the time when it does."

Chapter IX.—The Big Basket.

Ned expected a sharp reproof from King for his share in the Malley affair, but King had contented himself with charging the town the full number of hours of Ned's absence for the "transportation of paupers" and with remarking drily to the young man that he would learn yet that in order to conduct his own personal business as well as town affairs he must leave sentiment entirely out; that he could never get rich by looking at anybody's troubles but his own. Sentiment was a good thing for women and children but it had no place with men in their race for personal success.

Ned's duties continued throughout the summer and into the fall. His work was so congenial to him that he only took a week's vacation. He was saving his money and hoped to go into business soon for himself. He was also learning the tricks of the trade and had found out the ways and means by which King was constantly

(Continued on page 123).

WHAT GRANDMA SAID.

BY MILDRED M. NORTH.

"When Janiveer calends are summerly
Tis ^{gay} wintery weather till calends of
May."
That is what grandma used often to say.

And many times she said to me,
"If Candlemas Day the sun you see,
Six weeks more winter there will be;

"But if the ground-hog, on that day,
Shall see no shadow cross his way
He'll leave his winter hole to stay."

"A winter fog," my grandma said,
"Will freeze a dog;" and I, in bed,
Would fear to find old Rover dead.

But when the morning sunshine fell,
And with its warmth would mists dispel,
Then I have heard my grandma tell,

"When fog goes up the hill a-hopping
The rain comes down the hill a-dropping;"
Of grandma's signs there was no stop-
ping.

"When days begin to longer grow,
Then colder still the winds will blow,"
My grandma said 'twas surely so.

"If March comes like a lion," said she,
When it goes out a lamb we'll see;
Or, come lamb, go lion, it will be.

When some old rooster, nightmare led,
Crew in his sleep, then grandma said,
"Morn will bring rain upon his head."

And when the moon was circled bright
With misty ring of shining light,
She'd say, "Twill bring a storm all
right."

She'd count the stars within the haze—
For that was one of grandma's ways—
And say 'twould be so many days.

When hoar frost whitened hill and plain,
Then grandma's sign was heard again:
"Two more and then we'll have a rain."

When rainbow spanned the western sky,
Or morn the east did crimson dye,
"Tis sailor's warning," grandma'd sigh.

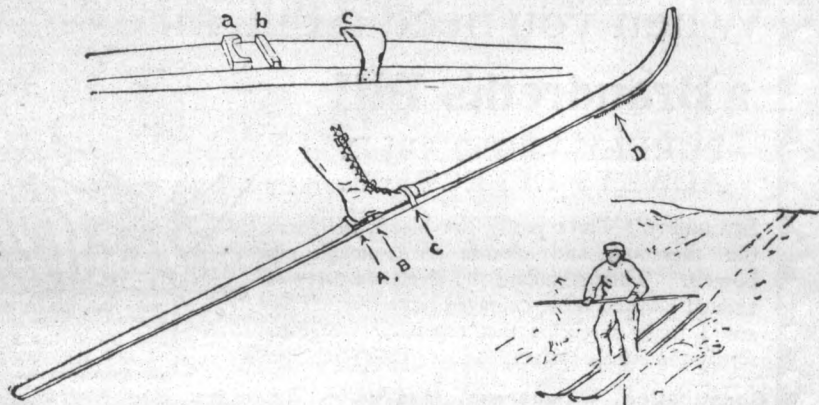
But if at night the sky was red,
Or rainbow o'er the east was spread,
"All fair tomorrow," grandma said.

HOW TO MAKE SKEES.

BY ISAAC MOTES.

The making of skees is a simple matter, and any boy handy with an ax, saw and plane should be able to make a nice pair for himself, or for his younger brother. Following are the directions given me by a Norwegian friend who, as a boy and young man in Norway, almost lived on skees and snowshoes, and has made many a pair.

The first thing to do is to select a straight-grained red fir, pine, ash, or oak



tree, six inches in diameter. Cut this down, and cut off about eight feet of the body where it is smooth and free from knots and limbs. Split it straight through the middle. It splits best if frozen. The broad, or heart, side should form the bottom of the skee. Hew the halves down to about three-fourths of an inch on the round or sap side, then turn over and hew down the heart side until you have two boards about an inch thick, and some six inches wide. Trim off the edges until the boards are four inches wide at one end, tapering to two and a half at the other, which is to be the rear end.

You now have two pieces of timber 8 ft. long, 1 in. thick and 4 in. wide. Now take your plane and dress both sides very smooth, especially the under side, which should be smooth as glass. Just a little in front of midway of the skee, where the foot is to rest, leave a thick place, say an inch thick and a little longer than your foot. In front and rear of this place plane the boards down to a thickness of a good half inch. If the wood is reasonably tough and free from knots or other imperfections, this will not be too thick.

Now mark off on the thick part the exact shape and size of your shoe sole, and neatly chisel out the place about one-third of an inch deep, so that your shoe will fit into it without slipping backward or forward. Or you can nail two neat

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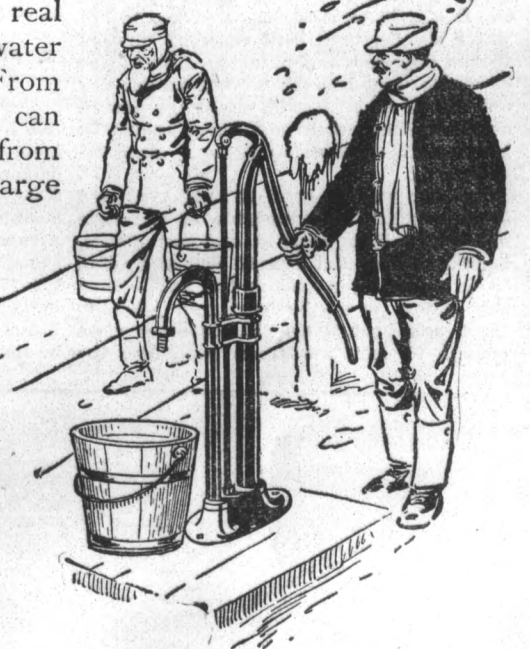
bring to the farm one real advantage of the city—water where it is needed. From our complete line we can meet any requirement from the cistern pump to the large power pump for general water supply, including lift and force pumps, thresher pumps, hydraulic rams, pneumatic water supply pumps, rotary, centrifugal and irrigation pumps.

The name Goulds on every one marks the genuine. Don't buy any pump until you have read our free booklet—

"Water Supply for the Home."

We want you to select the pump best adapted to your conditions. This book is a mine of valuable information on the subject. Send for it.

The Goulds Mfg. Company, 86 W. Fall Street
Seneca Falls, N. Y.



It's Easy to Have Running Water in Your Home Today

You'll not want another winter to pass without the comfort and convenience of running water in every part of your home. Even if you do live miles from city water mains, you may enjoy the same advantages that city folks have in bath-

room, laundry, sprinkling, watering stock, and fire protection. And these comforts may be yours without the worry of a gravity tank that is bound to decay, freeze and leak, and is but a temporary makeshift. For the modern water supply is furnished by the

Leader Water System

The manufacturer who places his trade-mark upon his product thereby indicates to you that his goods are worthy of your confidence. The word **Leader** is a symbol of the skill and experience that must go with a perfect water system. Your protection is assured only when this mark appears on the plant you buy.

The plant that you select will operate by compressed air, forcing the water from the air-tight steel tank in basement or underground, beyond all danger to life or property. Every drop of water is delivered cool and refreshing, both summer and winter. No danger from dirt, dead animals, and "wigglers"—outside air does not at any time touch the water. Nor can your plant be put out of business by freezing, if properly installed—and it will last a lifetime without replacing.

Make it unnecessary to carry pail after pail of water from the pump or go out of the house on stormy days—such primitive methods are altogether needless in this day of comfort. The same plant delivers water to the barn as well as to the house.

Have you hesitated to investigate, waiting for a perfect system? Then write us now, and talk to your dealer and architect. For the Leader Water System has already brought water supply comfort and happiness to fourteen thousand homes—your problem can be just as easily and simply solved. And you will be able to afford the cost—a plant of a size to suit you and operated by hand or any style of power, is at your service, no matter where you live. Write to-day on the coupon below for our book, "The Question of Water." It tells the whole story in an interesting way. Also ask about the Leader Gasoline Storage Outfit for the garage.

Leader Iron Works

Decatur, Illinois and Owego, New York

New York Office, 15 William St., Chicago Office, Monadnock Block.

Leader Iron Works, 2807 Jasper St., Decatur, Ill.

Without cost or obligation, mail me your book "The Question of Water," with full particulars about Leader Water Systems.

Name.....

R. F. D. or Box.....

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Cut Out and Mail This Coupon

When Writing to advertisers mention the Michigan Farmer

little cleats across where your foot is to rest, one about a half inch wide to go in front of your heel (b, B), and another cleat an inch wide to go behind your heel. The latter should have a half circle cut out of it in the front edge, to fit around the heel (a, A).

It is understood, of course, that a pair of skees eight feet long is for a grown man. For a boy they should be from four to six feet in length, depending upon the age and weight of the boy.

The ends of the skees should be planed down a little thinner than the middle. Trim the rear corners off so as to leave this end rounded, not square. The front end should be tapered to a round point, then planed smooth on the edges and on top and bottom, maintaining an even thickness to the point. This point must now be curved upward at an angle of 30 to 45 degrees. As the board is from a green tree, it is an easy matter to bend it. It should be steamed or soaked in hot water awhile, then bent carefully upward to the required angle, fastened in a vise or clamp, and left for a week to get dry and hard. Then it will retain the curved shape. When not in use, skees should be kept in this clamp to prevent straightening.

Another way to bend the point upward is to saw into the top side of the skee one-eighth inch deep in a dozen places, beginning near the tapered end and going back a foot, or a foot and a half. Then rub tallow over the part you wish to bend, and hold it over a hot stove close enough to cook the grease well into the

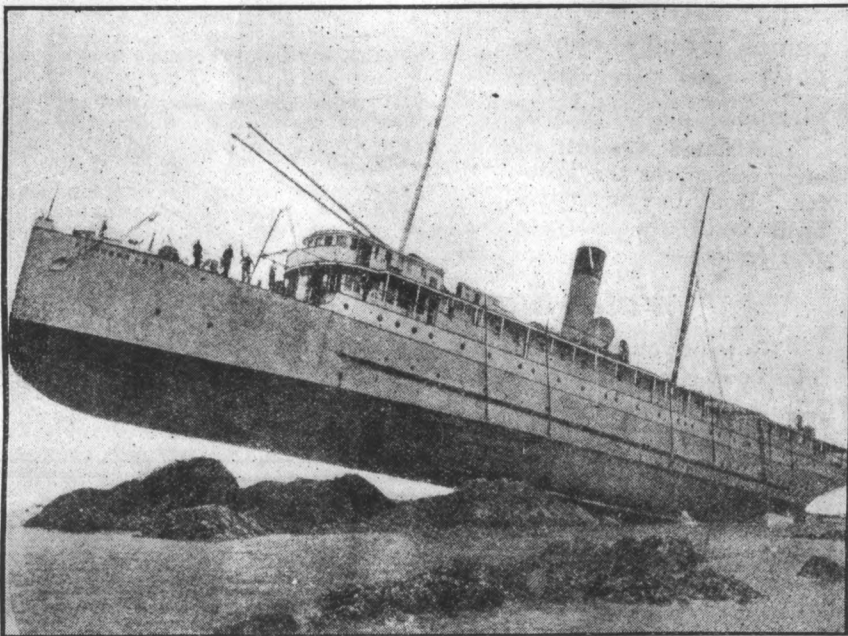
various countries tack fur upon the under side of their skees (D), the fur pointing towards the rear ends. They claim that this prevents the wearer slipping backward while ascending steep hills.

All natives of northern Europe are usually proficient in the use of skees, and with them skeeing is fully as popular as skating or ice-boating. It is primarily a sport, never being used extensively in traveling over long distances except where there are long, even grades, down which the traveler may coast. As a sport it furnishes an opportunity for skill and endurance. The novice usually contents himself with coasting on an easy grade, but as he gains in skill and confidence, he will pick out the steeper inclines and more broken hillsides. With the experts, the ability to take long and difficult jumps is the real test of skill. Usually the skeer carries a light, strong pole, 10 or 12 feet in length, which he uses in balancing and in climbing sharp inclines.

A FREAKY STEAMSHIP DISASTER.

BY J. MAYNE BALTIMORE.

A freak steamship wreck is very seldom seen, but the accompanying photograph demonstrates that such a thing is possible. The stranding of the vessel in question occurred recently away up in Alaska waters. While the trim and handsome steamer, Princess May, was steaming along at a good rate of speed in the neighborhood of Sentinel Island, in the Lynn Canal, Alaska, during a dense fog in the night, she ran high up on a ragged



wood. This makes it bend easily. After bending, put the skees into a vise or clamp, or tie them in position, and leave them for a week.

To put on the straps, the Norwegian way is to chisel out a little notch on the under side of the skee and on the edges, the width of the leather strap and just as deep as the leather is thick, so the ice or snow crust will not catch it and tear it off. The leather should be stout and tough, but not thick enough to be unwieldy. The strap should be about an inch wide where it goes under the skee, but should widen to fully two inches where it goes over the toe of your shoe (c, C). The foot should fit under this strap tight and snug, so the skee can not shake or come off when ascending hills and jumping across gullies and the like.

The strap should be nailed substantially with a number of small short nails on the under side of the skee, where it fits into the groove and also where it comes up over the edges. The ends of the strap, cut off smooth and square, should jut up against each other in the notch on the under side of the skee, and be nailed down well. Letting the strap pass under the skee and through the chiseled-out notch makes it more substantial than if nailed across the top of the skee against the bottom of your shoe sole.

The rear end of the skee should be a little heavier and longer than the front half. You can sometimes buy the boards for making skees, already finished and smooth. Then all you have to do is to cut them the proper length for the person for whom intended, trim to a point in front, and give this point the upward bend. In this case greater care must be used in the bending because such wood is dry and seasoned. You must steam or soak it very thoroughly, or make the little notches with your saw and cook the tallow in well. Some people in cold, moun-

ledge of sharp rocks and was held fast. At the time of the stranding a very high tide prevailed and the vessel rode far up on the ragged ledge. As the tide receded, the stern of the ship sank, because of the great weight of the boilers, machinery, etc., thereby elevating the bow and forward part of the steamer high in the air, as may be observed in the photograph.

Very singular to relate, the hull was not damaged in the least, and there was no leakage whatever. The only damage that did result, was to one of the twin propellers—and that was only slight. The vessel showed remarkable strength and rigidity in that she did not bend or break short off at the point of the greatest stress, but there was not the slightest indication of yielding.

Assistance was summoned by wireless telegraphy, and that speedily brought the Princess Royal—a sister ship—to the scene of the disaster. This vessel rendered all necessary aid.

The Princess May lies firmly attached to the high point of sharp rocks, but in such a manner as to rise and fall with the higher tides. The craft is in no immediate peril, but the great engineering problem with sea-faring men is how to get the steamer down from her "perch," and back into the water. Some engineers have suggested that the rocks be blown out with dynamite; but that method would be attended with great danger and difficulty, and might involve the destruction of the entire steamer. Fully considered, this is pronounced one of the most remarkable and "freakiest" marine disasters in all the history of shipwrecks.

"Sixty Years Young" is the title of a new catalogue issued by The Joseph & Feiss Company, of Cleveland O., makers of Clothcraft clothes. This catalogue describes in detail the Clothcraft idea, its history and growth, and contains many half-tone illustrations showing the interior of their factory.



Mayer

Leading Lady

Shoes—leaders of women's fine footwear—style leaders and leaders for comfort and durability. Mayer Leading Lady Shoes give a trim and stylish appearance. They are satisfactory for all dress-up occasions, yet durable for general wear, and have all the qualities of refined footwear.

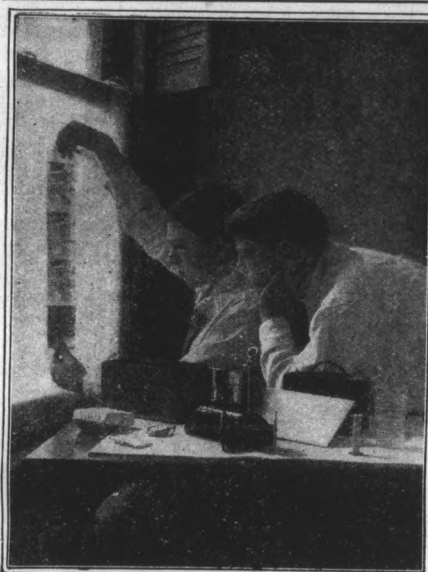
MAYER LEADING LADY SHOES

are made of choice leather selected for its quality, strength and suitability for fine shoes. They fit comfortably and are stylish looking. They are high grade quality shoes, yet they cost no more than ordinary shoes.

To be sure you are getting the genuine look for the Mayer Trade Mark on the sole.

FREE—If you will send us the name of a dealer who does not handle Leading Lady Shoes, we will send you free, postpaid, a beautiful picture of Martha Washington, size 15x20. We also make Honorbilt Shoes for Men, Martha Washington Comfort Shoes, Yerma Cushion Shoes, Special Merit School Shoes and Mayer Work Shoes.

F. MAYER BOOT & SHOE CO., Milwaukee, Wisconsin



THE SIMPLE, KODAK WAY

DEVELOPING films in the Kodak Film Tank is so easy and so little apparatus is needed that you can do all the work on the kitchen table and have room to spare. The Kodak Film Tank can be used in any light—no dark-room for any of the processes. The experience is in the tank, so you won't waste any time or materials in learning how.

The important part of it is that a beginner who uses the Kodak Film Tank gets better results than the veteran Kodaker who clings to the dark-room method. Developing films will make many a winter evening pass quickly and will give you that satisfaction which comes from doing every part of the work yourself.

Ask your dealer or write us direct for a free copy of the booklet "Tank Development."

EASTMAN KODAK CO.,
389 STATE STREET, ROCHESTER, N. Y.

Established 1752.

When you need a Pill, take a Brandreth's Pill

PURELY VEGETABLE. ALWAYS EFFECTIVE.

BRANDRETH'S PILLS purify the blood, invigorate the digestion, and cleanse the stomach and bowels. They stimulate the liver and carry off vitiated bile and other depraved secretions. They are a tonic medicine that regulate, purify and fortify the whole system.



Constipation, Billiousness, Headache, Dizziness, Bad Breath, Pain in Stomach, Indigestion, Dyspepsia, Liver Complaint, Jaundice, or any disorder due to impure state of the blood.

FOR SALE BY DRUGGISTS throughout the world.

B Brandreth

Established 1847

Allcock's PLASTER

The World's Greatest External Remedy.

Apply Wherever there is Pain.

B Brandreth

COMPO-BOARD

WALLS

Beautiful Panel Effects Compo-Board is more than a substitute for lath and plaster, it is better in every way.

COMFORT: Compo-Board walls will keep the house perfectly warm in the winter and in the summer they exclude heat; your walls will always be perfectly dry and sanitary.

DURABILITY: They will last as long as the building, cannot be chipped or marred by knocking furniture into them; won't crumble and fall off.

ECONOMY: Compo-Board can be put on in less time than lath and plaster; outlasts plaster several times over; no expense for repainting; saves fuel because it is warmer than plaster; cheaper in the long run.

Write For Free Sample and Booklet. The sample will show you just what Compo-Board is and the booklet will tell you its many uses and advantages. You ought to have it.

For Sale by Dealers in Nearly Every Town

NORTHWESTERN COMPO-BOARD CO., 4205 Lyndale Ave. No., MINNEAPOLIS, MINN.

When writing to Advertisers mention the Michigan Farmer.

THE GATES OF BAKAPPLEIN.

(Continued from page 121).

getting the better of nearly everyone with whom he dealt. He was proud of his share in driving close bargains, and Joe Green shrewdly remarked that King had never had as prosperous a year before. The young man was able to always appear carefully dressed and, with his nails manicured and shoes polished, he appeared a "swell," though he was democratic enough in his way to have the good will of the townspeople. They excused the foppishness in him, which they would have condemned in anyone else, by conceding that it was perfectly natural and in accordance with his bringing up. Had he appeared otherwise they would have distrusted him at once.

It was a prosperous season at Old Beverly and Bakapplein as well. At the former place Madeline Beverly and the two younger Beverly boys had been there again during their summer vacation, and Manning was able to make the farm pay, with the help of Nell, who still superintended the marketing and the culture of the fruit. At Bakapplein Merle had had a prosperous season with her automobile parties, from the time the first cars started in the spring, when she served them rolls and baked russet apples, followed by strawberries and cream, other small fruits in quick succession, then baked sweet apples, peach parties in the fall, followed by baked apples again as long as the automobile parties continued. She delighted in her work and as Mary had grumbled about the constant baking of bread Merle had learned to do that herself. As little Martha played with and cared for Yvonne, the girl had abundant time to make herself useful in her home.

Both she and Nell were uneasy about King's influence over Ned. The boy was developing into a sharper, they feared, with but one idea—to get rich. He was fond of pointing out ways in which Searls could have made more money, and he had no patience with him in some of the deals he made, declaring that he was slow and behind the times. And he offered—if Searls would let him—to come to the farm and, with the full management in his own hands, beat King at his own game; for, though Ned served King's interest loyally, yet he had no respect for him. He was the middleman, and the profits of the producer rested in his pocket, to the loss of both producer and consumer, and Ned was anxious to have just such a chance for himself.

One of King's business deals was the buying of carloads of potatoes of the farmers and then shipping them away. That fall, when the potato crop in that vicinity had been unusually good, he planned to reap a financial harvest for himself, as in many other sections of the country potatoes had been a failure. One carload he marketed himself, but when the second was ready to ship he was laid up with rheumatism and was obliged to send Ned in his place.

Ned was eager for the opportunity to display his business ability. He had been with King on his buying trips, and had noticed that King invariably had the potatoes measured in his own baskets, which he declared were correct measure. As the farmers had never objected, Ned had given the matter no further thought, but while on the trip the thought came to him that perhaps there was a crooked deal somewhere in the transaction. If there wasn't it would be about the only deal that King had ever put through that was strictly honest. Through some inadvertence one of the baskets had been left in the car and at the first opportunity Ned filled it with potatoes and weighed it himself, finding that it would make each bushel of potatoes weigh five pounds more, so that King was in reality getting sixty-five pounds to every bushel of potatoes he bought of the farmers.

(To be continued).

ANSWERS TO JAN. 7 KINKS.

Kink I.—Quotation from James Russell Lowell.
"It is with true books as with Nature, each
New day of living doth new insight teach."

Kink II.—Transpositions.—1. The Chicago House Wrecking Company. 2. The Lincoln National Bank. 3. The Barrett Manufacturing Company. 4. The American Sea Green Slate Company.

No Prizes Awarded.

A large number of correct solutions to Kink I were received but not a single contestant offered an answer to Kink II. The prizes are for correct answers to all of the Kinks, not to any single one which the solver may select.



Remington
AUTOLOADING RIFLE

Five one-ton shots! As quick as you can pull the trigger and as straight to the mark as you can look.

Remington Autoloading Rifle—solid breech, hammerless—ejects, reloads and cocks by recoil without the loss of an ounce of muzzle energy. The only automatic rifle which locks the cartridges in the chamber. Safest and best of big game guns.

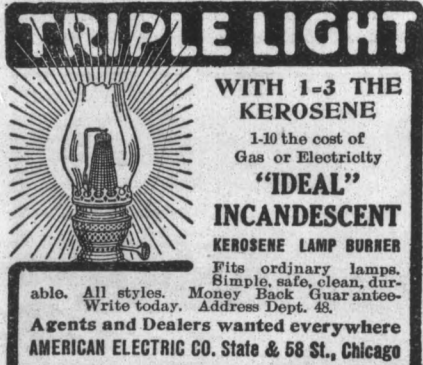
Made in .25, 30-30, .32 and .35 Remington calibres.

"The Gun for the game Game" Inspect it at any dealer.

"Game Laws for 1910" mailed free.

THE REMINGTON ARMS COMPANY,
Agency: 299 Broadway, New York City.

TRIPLE LIGHT



WITH 1-3 THE KEROSENE
1-10 the cost of Gas or Electricity
"IDEAL" INCANDESCENT KEROSENE LAMP BURNER

Fits ordinary lamps. Simple, safe, clean, durable. Money Back Guarantee. Write today. Address Dept. 48.

Agents and Dealers wanted everywhere
AMERICAN ELECTRIC CO. State & 58 St., Chicago

Wanted
Farmer or Farmer's Son

with rig in every County to introduce and sell Family and Veterinary Remedies, Extracts and Spices. Fine pay. One man made \$90 one week. We mean business and want a man in your County. Write us.

SHORES-MUELLER CO., Dep't C, Tripoli, Iowa

AGENTS 100% PROFIT

15 IN ONE

Most perfect and valuable combination of tools ever invented. Sells at sight to Farmers, Plumbers, Machinists, Automobile Owners, in stores and the home.

Made of Drop Forged high grade carbon steel. One agent in Essex County, N. Y., after a 6 days' canvass ordered 100 tools. His profit \$100.00. Big snap for agents. Sample free to workers.

T. THOMAS MFG. CO., 2845 Wayne St., Dayton, Ohio

LEARN A GOOD TRADE

We graduate practical, skilled Plumbers, Electricians, Bricklayers, Mechanical Draftsmen, Painters and Decorators in three to four months. Low expense. All teaching practical. Tools instead of books. You earn \$5 to \$8 a day as soon as you graduate. Write me today for large illustrated Book. Leslie L. Cook, Pres. Coyne National Trade Schools, 188 Cass St., Chicago, Ill.

PATENTS IN CASH DEMAND

Many deals closed by our clients—one recently for \$680,000.00—our proof of Patents that PROTECT. Send \$c. postage for our 3 books for Inventors.

R. S. & A. B. Lacy, Div. 89, Washington D. C. Estab 1889.

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

Let Me Start You in Business!

I will furnish the advertising matter and the plans. I want one sincere, earnest man in every town and township. Farmers, Mechanics, Builders. Small business man, anyone anxious to improve his condition. Address Commercial Democracy, Dept. D 30, Elyria, Ohio.

Don't Wear A Truss

After Thirty Years Experience I Have Produced An Appliance for Men, Women or Children That Cures Rupture.

I Send It On Trial.

If you have tried most every thing else, come to me. Where others fail is where I have my greatest success. Send attached coupon today and I will



The above is C. E. BROOKS of Marshall, Mich. who has been curing Rupture for over 30 years. If Ruptured write him to-day.

send you free my illustrated book on Rupture and its cure, showing my Appliance and giving you prices and names of many people who have tried it and were cured. It is instant relief when all others fail. Remember I use no salves, no harness, no lies.

I send on trial to prove what I say is true. You are the judge and once having seen my illustrated book and read it you will be as enthusiastic as my hundreds of patients whose letters you can also read. Fill out free coupon below and mail today. It's well worth your time whether you try my Appliance or not.

FREE INFORMATION COUPON

C. E. Brooks, 4322 Brooks Bldg., Marshall, Mich. Please send me by mail in plain wrapper your illustrated book and full information about your Appliance for the cure of rupture.

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To Buyers of Woven Wire Fencing.

Notice this knot with care. Did you ever see it's equal? Made from the best galvanized wire. Agents wanted in open territory. Absolute protection guaranteed to all agents. Write for prices, models, catalogues, etc., to

The Imbler Fence & Mfg. Co., Alexandria, Ind.

SALESMEN WANTED

Trained Salesmen earn from \$1,200.00 to \$10,000.00 a year, and expenses. Hundreds of good positions now open. No experience needed to get one of them. We will assist you to secure a position where you can get Practical Experience as a Salesman and earn \$100 a month or more while you are learning. Write to-day for our free book "A Knight of the Grip." List of good openings, and testimonials from hundreds of men recently placed in good positions.

Address nearest office, Dept. 221

National Salesmen's Training Association
Chicago New York Kansas City Seattle New Orleans

MOTSINGER
GUARANTEED AUTO-SPARKER
(Better than an overloading battery)
Will generate current for ignition, and electric lights, charging storage batteries, etc. Suitable for all types and sizes of gas and gasoline engines. Let Us Tell You How To Make Your Own Electricity. MOTSINGER DEVICE MFG. CO., 106 Taylor St., La Fayette, Ind.

WE PAY FREIGHT

on all Horse and Cow Hides
To be tanned and manufactured into coats, robes, gloves and mittens. We are dyers and dressers of all kinds of furs. We complete all work within 15 to 20 days after we receive the hides. Write for free catalogue and samples telling all about our work.

THE SYLVANIA TANNING COMPANY,
Sylvania, Ohio.

DR. ISAAC THOMPSON'S Celebrated EYE WATER

has been in constant use for over 100 years. If you're suffering from weak, inflamed or sore eyes in any form, its use will be of inestimable benefit. As a daily toilet article it is indispensable.

For Sale by all Druggists. Price 25c.
Write for set of Allegorical Art Pictures FREE.

JOHN L. THOMPSON, SONS & CO.,
161-5 RIVER ST., TROY, N. Y.

OLD COINS WANTED—\$7.75 paid for the rare 1853 quarter; \$20. for a \$5. Keep all money dated before 1890, and send 10 cents at once for new Coin Value Book. It may mean a fortune.

A. M. KRAUS, 417 Chestnut St., Milwaukee, Wis.

NEW 1911 PATTERN
Signed Rings, just like illustration, warranted to wear. Initial engraved FREE. One sample ring by mail, postpaid, 10c.

HONORABLE JEWELRY CO.,
123 Liberty St., Dept. B, N. Y. City.

Wanted—An honest, sober and industrious married man to work on Dairy farm by the year.

COLE BROS., R. No. 5, Ypsilanti, Michigan.

A-7 Million Rod Price

Our new prices are based on this enormous output. Prices the lowest ever made for a high grade fence. We can

Save You 5 to 15 Cents a Rod

and you'll say it is the best fence you ever used. Easiest put up, lasts longest and is the strongest

fence made. Sell to user at

Dealers Prices Freight Prepaid

Don't buy fence AT ANY PRICE before getting our prices. They will surprise you.

We give customers 30 Days Free Trial

that they may be sure they are

satisfied. Full line of Farm and Poultry

Fence. Very low prices on

BARBED WIRE and GATES. Write for Free Catalogue.

COILED SPRING FENCE COMPANY,

Box 21 WINCHESTER, INDIANA.

Get It From the Factory Direct



Kitselman Fence

Made from thoroughly Galvanized Open Hearth steel wire. Our Free Catalog shows 75 styles and heights of hog, farm and poultry fence at from

13 1/2 Cents a Rod Up

Sold on 30 days free trial. If not satisfied return it at our expense and we will refund your money. 80-rod spool of Ideal galvanized

BARBED WIRE \$1.45

Write today for large Free Catalogue.

KITSELMAN BROS. Box 278 Muncie, Indiana.

BROWN
WE PAY THE FREIGHT

Heaviest Fence Made
Heaviest Galvanizing
We make 150 styles. Horse cattle, sheep, hog, and bull proof fences made of No. 9 double galvanized wires and absolutely rust proof. Bargain Prices!

14 cents per Rod Up
Poultry and Rabbit Proof Fences, Lawn Fences and Gates. Send for Catalog and Free sample for test. The Brown Fence & Wire Co. Dept. 49 Cleveland, Ohio

FENCE

EMPIRE FENCE

Get the genuine EMPIRE big wire fence, direct, at wholesale. Save dealer's profits.

Big Factory, Big Sales, 23 Styles

No traveling salesman, small expense, prices low. Everything guaranteed. Free samples by mail. Prices of leading styles freight prepaid to all points north of the Ohio and east of the Mississippi River.

Wires Inches high Medium Weight Extra heavy (all No. 9)

9 39 23c per rod 37c per rod

10 47 26c per rod 41c per rod

12 55 32c per rod 49c per rod

Special rates beyond this territory.

BOND STEEL POST CO., 16 E. Maunce St., Adrian, Mich.

\$10 per day-AGENTS MAKE-\$10 per day

No canvassing. Agents make \$10 per day and up taking orders for our B. F. D. automatic opening and closing castings for Swing Gates. Enables them to be opened and closed from buggy seat, etc. Sample set, express prepaid, only \$1.00.

THORP GATE CO., Wapella, Illinois.

Don't Rust Farm Fence

Heavily galvanized. Sold direct to farmers at manufacturers' prices. Also Poultry and Ornamental Wire and Iron Fences. Sidetrack dealers' profits. Catalog free. Get Special Offer. Write

THE WARD FENCE CO.

BOX 375, DECATUR, IND.

48 IN. FENCE 25c

Best high carbon coiled steel wire. Easy to stretch over hills and hollows. FREE

Catalog-fences, tools. Buy from factory at wholesale prices. Write today to Box 68

MASON FENCE CO., LEESBURG, O.

LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries. Coiled Spring Fence Co.

Box 1 Winchester, Ind.

Woman and Her Needs

At Home and Elsewhere

Imagination and Complexion Powder.

IMAGINATION is truly a wonderful thing. The more I see what it will do for some women the more I am impressed with its working powers. There is the question of complexion powders, for instance. It is perfectly wonderful how a liberal coat of powder will, with the aid of a vivid imagination, cool a woman off on a hot day in summer.

A woman comes into the house of a hot day covered with perspiration and perhaps dust. She looks in the mirror and is horrified to see that her face is red and her nose shiny. She immediately bathes her face and dries it carefully and then gives it a liberal coat of powder. Then she sits down in a cool, shaded room and tells you how wonderfully powder cools her off.

When I studied physiology I was taught that the skin is filled with a multitude of tiny pores through which perspiration exudes to the surface and by evaporation cools the body and removes a part of the poisons produced by oxidation. To fill these pores means to check the flow of perspiration with a consequent injury to the system. Yet women say that, after filling up these pores with powder, they feel vastly more comfortable than before! I can't blame many women for using the powder. But why not make the improvement to their looks the excuse instead of trying to blame it on the weather?

It is another curious thing how some women can keep warm by the aid of imagination. They do not like to wear warm woolen underwear and high boots in cold weather because with the woollens they can not wear thin waists and the high boots hide their pretty ankles. So they wear thin muslin underwear and diaphanous waists all winter, and patent leather pumps with silk stockings. Yet they will assure you they are just as warm as they would be with sensible thick clothing. While they are telling you this their lips are probably blue with cold and the goose pimples are thick on their poor arms. But bless you, they can't feel the cold. Their imagination tells them that, because they are summery in attire they must be warm, and they positively pity you in your flannels and warm winter garments.

Imagination will make a woman with a number five foot believe she can wear a number two shoe. If you don't believe it, ask the shoe clerks. The way they have to quibble to fit a shoe to a customer and make her satisfied she is getting a small shoe, is really a shame. But so long as the lady imagines she is wear-

a thing to do beyond eating and dressing are always having some sort of ailment. Just as soon as a woman is relieved from the legitimate work of womankind she begins to get poor health, that is, unless she occupies her mind with a fad of some sort. She reads all about some disease in a book or a magazine and immediately has all the symptoms. Off to a doctor she rushes, he examines her, finds out she only has a bad case of imagination and if he is a very bold man, indeed, he tells her so. If he isn't he gives her some bread pills and recommends a change of scene.

Imagination will make an old woman think she looks young because she paints her face, wears false curls and affects youthful colors and styles of dress. It

will also make a young miss of 15 believe she is grown up if she can persuade her mother to lengthen her dresses and let her "do up her hair." By it mothers are persuaded they are doing their duty when they bring their daughters up to despise their surroundings and look forward to marriage as a means of release from hard work. It makes other mothers believe they are called to neglect their home and children and go out to lecture and teach others.

It is a queer thing, is imagination. Of the right sort it brightens life more than any other God-given faculty, as when it lifts us above the hardships of the present to the fairyland of future where everything will come out all right. Its name is then hope. But if of the wrong sort it is apt to lead us into doing some very queer things, things which only make for our discomfort and unhappiness.

DEBORAH.

Have You Necessary Tools for Housework? See What a Dime Will Buy.

Do you like housework? If the question were put suddenly to every reader of this page, how many women would "rise up in meetin'" and enthusiastically shout "Yes?" A very small per cent, I fear. But of the larger per cent who would respond, "No," half of the number would change their answer if they were supplied with the proper tools.

There is no other occupation known to man, or woman, whose follower are so poorly supplied with working necessities. Now do not conjure up pictures of vacuum cleaners, electric washing machines and flatirons, fireless cookers, dishwashers and the other modern devices to lighten woman's labors. I mean just the plain, cheap tools which every woman ought to have, but which thousands do without in order to save money to build one more barn or buy another 40 acres.

How many women are paring potatoes every day with an old kitchen knife which is as dull as the proverbial hoe, when a nice sharp, pointed paring knife could be bought for ten cents? How many send lumpy gravy to the table day after day, because they can't pay a dime for a strainer to remove the lumps? How many have scorched breakfast foods and burned custards because they have no double boiler, when for ten cents they might buy a teakettle cooker? How many try their nerves and their tempers trying to "flap" pancakes with a caseknife every morning, when they could buy two pancake turners for a nickel?

A piece of tin pounded full of nail holes

No man would think of trying to work under such disadvantages. The newest machinery is none too good for him and if he expressed his private opinion of his wife's attempts to get along without tools it would not be at all flattering to that

dustpans, dippers, pails, machine oil cans, individual frying pans, wooden spoons and all sizes of cups.

If you can not buy five and ten cent articles there are a number that come two for five, as pancake turners, egg or cream whips, mixing spoons, vegetable brushes, plain cooky cutters, spoons for lifting boiled eggs from the water, and dozens of other small kitchen helps.

CARE OF THE HANDS IN WINTER.

BY ELLA E. ROCKWOOD.

I learned something the other day along this line, which I am going to pass on. A busy woman, a farmer's wife, was giving her experience in being without soft water for household use this winter as the cistern had gone dry in the fall and not enough rain has fallen thus far to replenish the supply.

She said, "At first I gave the matter no particular thought, supposing the cistern would be filled before winter set in, but it was not, and as the weeks went by I found my hands showing the effects of the hard limestone well-water I was compelled to use for everything. Not only were they red and rough, but they began to crack and bleed in places. The palms were filled with little zig-zag lines, crossed and re-crossed, and every line looked as if it were filled with dirt. The discomfort and all combined, forced me



Fifty Cents will Buy the Lot.

lady. Two dollars rightly spent, means all the difference between working at a disadvantage and working easily.

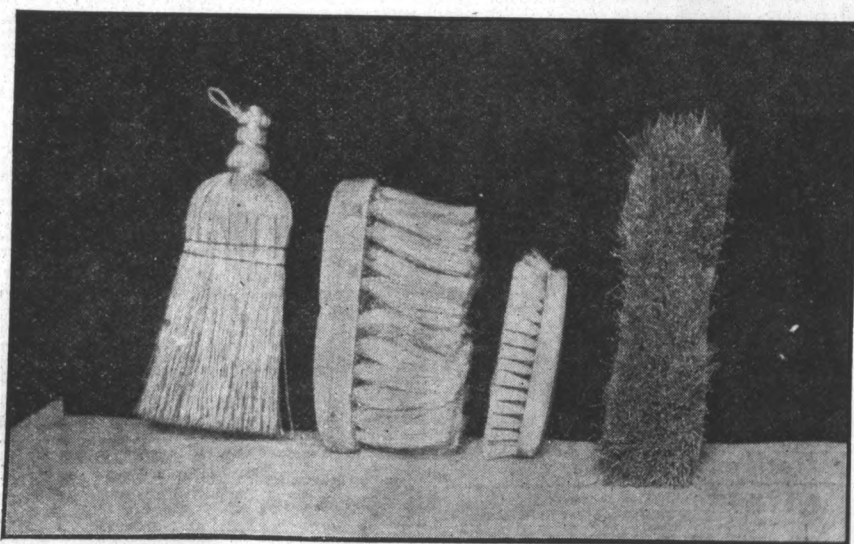
Here is only a partial list. Gravy strainers, tea and coffee strainers, egg beaters, toasters, skimmers, towel bars, pancake turners, frying baskets, soap dishes, white enameled cups of all sizes, two handled pans of enamel ware, granite mixing spoons, covered granite kettles, granite cake pans, granite pie pans, granite basins, white lined, blue enameled basins, granite stewpans, sink strainers, tin colanders, selves, gem tins, sugar boxes, tea and coffee canisters, plainly labeled by-the-way, two quart measures, paring knives, bread trays, invalid trays, tea kettles, two-quart pails, egg poachers which will hold three eggs, carpet beaters, clothes lines, salt boxes, vegetable cutters, meat boards, hammers, clothes racks, chair bottoms, sleeve boards for ironing shirtwaists, mixing bowls, covered jars, individual baking dishes, chopping knives, bread knives, lemon squeezers and dishes of every sort, not to mention scrubbing brushes, longhandled dusting brushes, vegetable brushes, shoe brushes, stove brushes, window brushes and whisk brooms.

For five cents you can buy toasting forks, cake spoons, strainers, egg beaters, stove lifters, handles for flatirons, whisk brooms, brushes of all sorts, cooky cutters, both plain and crimped, measuring cups, all sorts of graters, nutmeg graters and larger ones, pepper and salt shakers, both tin and glass, funnels, crumb scrapers, jelly molds, cake tins, again."

to try and find relief, if possible. As dish washing kept my hands in the hard water a good deal I bought a five cent dish mop, although I had previously scorned to use such a make-shift. I was amazed to see the difference so simple a thing could effect. With the mop only the tips of fingers of the left hand go into the water at all, except for a few pieces which require a brush or a cloth. That little five cent article made friends with me from the first time I used it, and I would not be without it again. After washing the dishes I make it a practice to moisten my hands with a little weakened vinegar. "I found that rubbing thoroughly with bran, moistened with vinegar, was excellent for cleansing and healing the roughened cuticle. A friend gave me the following recipe for a lotion which acts like a charm in reducing chaps of lips or hands. It is the smoothest I ever found, and not greasy.

"One-eighth ounce gum tragacanth, one gill alcohol, one gill glycerine, one-half gill cologne. Soak gum in one pint warm soft water for three days, then add other ingredients.

"The next thing I did was to buy a pair of ten cent canvas gloves, which I wear in caring for the stove, hanging up the clothes, also in sweeping and dusting, for dust is hard on the hands. I read about this in The Farmer not long ago, and now my hands do not look like the same ones. It took about two weeks to accomplish the change but it is worth the effort and I do not intend to neglect them again."



Brushes Procurable on the Ten-Cent Counter.

ing a small shoe it does her just as much good.

What imagination can do in making perfectly well women think they are ill only the doctors can tell you. It is a curious thing that the women who haven't

does duty as a grater in scores of homes, and yet graters of every sort and description may be bought for five and ten cents. Eggs are beaten with a three-tined fork, with a great loss of time, when a nickel would buy an egg whip or an egg beater.

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The Steel Shoe Man.

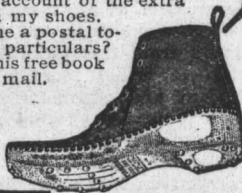
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The Country Girl's Chances in Town—No. 3.

By Hilda Richmond.

Recommends Government Service.

During the past few years the tendency of those in authority has been to discriminate against women in public service, where once they were more freely taken. It is argued that women are apt to desert places for whims, to be married, and also on account of ill health or nerves. However, there are still many good places in the classified service open to girls, and the beauty of it all is that merit wins. The highest averages on the register, regardless of influence and everything else, receive recognition first, so that there is no such thing as chance in trying for a place in the civil service. The young woman who passes a poor examination for the position of teacher, clerk, stenographer or any other place, will not be chosen, unless it happens that there are many vacancies on the list and every eligible, low and high, is taken.

People are always pointing out, especially to young girls, that it is no use to try for a government position, because they are so few and far between. Well, in a way, that is true, since the only government employes in most cities, even of fair size, are the people who work in the post offices. Comparatively speaking, the opportunities in the Indian schools, the pension agencies and the departments at Washington, are not very numerous, but yet there are vacancies here and there all the time. The careless, indifferent girls are willing to take five or six dollars per week rather than fit themselves for a place no harder, but requiring more knowledge and ability, so the real workers always have the best opportunities open to them.

And there is never any guess work about the matter of passing the examinations, so that the country girl has the same opportunities afforded city people. Upon request the Civil Service Commission will send out sample pages of questions and minute details regarding every branch of work open to women, and it is easy for any young woman to see at a glance whether she is able or not to stand the test. Everything is as fair and open as possible, and the girl who fails after carefully studying the circular, does so with her eyes open. She will have to go to some city designated by the commission for the examination, and she should know before setting out that she can pass with a high grade without doubt or peradventure.

Once she is on the list the only thing to do is to wait. There is no such thing as hurrying up the officials, and in due time she will receive official notice as to her standing if she was successful. The girl expecting to enter civil service must hold herself like the soldier ready for duty wherever she is sent. The salaries are good and in most cases the hours short, so for the bright, intelligent, ambitious girl the work offers many inducements. After hours in a great city she can visit the libraries, stores, parks, and other places of interest—things that would be practically out of her reach if she were a stenographer or a teacher, and there is no need to "carry home" work, mental or physical. When the hour for going home comes, all work and worry are left behind, for the routine system makes it possible to become a part of the great machine and grind out so much work without difficulty each day. Of course, this is also a drawback, as there is no incentive to study, but it has its advantages.

So really there are more chances in the classified service for country girls than appear at first sight. The city girl living with her parents and relatives and friends about her would rather do with less in the way of a salary than go to a strange place to live, while the country girl is planning to leave her "dull" surroundings and is eager for a city, the larger the better. Any healthy, well poised, bright girl in the country who will be satisfied with nothing but a place in a city, will do well to investigate the opportunities offered by government service before taking up anything else. The work is usually light, the hours short, the pay good, and the outside opportunities for leisure, education and enjoyment splendid. No one in his senses would say the life is all sunshine, but a great part of it is, with its regular pay day, certainty of a position through good behavior, as long as the person is competent to do the work, and its fixed hours for work. The girl with the keen brain, good health and steady nerves will find many opportunities

for work and pleasure in such a position, but the one who welcomes any task that will take her away from home must expect defeat from the very start.

"If you are in no hurry to get a position, try for the civil service," is the comment of Miss Margaret K. Collins, of the Treasury Department, special agent's office, Detroit. "The examinations are not hard if you have an ordinary education, and the work is pleasant, if you get an appointment. But there is the rub. When a position is to be filled the names of the three highest on the list are sent the commission and from them they make the appointment. Naturally, we expect they will select the one with the highest per cent. Favoritism does not count for when you write your examination you take a number and all your work is handed in under that number. After the papers are marked your number is compared with the list and your name learned, but your name is absolutely unknown to the one marking your work."

"If you are not appointed to a position within one year after you pass, you must write again. If you get an appointment, that is the end of examinations. You are supposed to hold your position during life and good behavior, or until you marry. The departmental work, such as I do, is pleasant and interesting, the hours good and the salary satisfactory."

Opportunities in post offices are scarce, according to Mr. Niles, the deputy located in Detroit, there being but 12 women employed in the Detroit post office. Stenographers and typewriters are more in demand than post office employes, the salaries running from \$480 to \$900 a year. In making application, state the lowest salary you will accept. Teachers, too, in the Indian service, are needed, and a small number of female teachers are employed in the Philippines, the salaries being \$900 or \$1,000. The school year in the islands begins early in June and ends in March, and the contract period is for two years.

"If you decide to try one of the examinations, do not be fooled into taking a correspondence course," is the advice of Mr. Niles. "Anyone of ordinary education who knows how to study can do enough studying by herself to prepare for the examinations."

MRS. NEW TELLS HOW TO GET SUMMER BOARDERS.

Dear Editor:—As so many have written in reference to my article under date of December 31, concerning summer boarders, it will be impossible for me to spend the time and postage to answer personally. I will state a few things briefly from which I think all interested can see how to go about it. I do not know whether all railroads issue booklets advertising summer resorts, but ask your station agent for address of the general passenger agent, then correspond with him for information.

I also know that people living in Benton Harbor and St. Joe advertise in booklets put out by the steamship lines, so I think any of you living somewhere near the large lake cities could consult both boat lines and railroads. Then one could run an ad. in some city paper about the middle of May or June. This cost I do not know.

You would not likely hear from any before June, then when you get an inquiry tell them that you will get them and the baggage to and from the depot free of charge. State your hours for having meals, and whether you would get a late breakfast. If there are any nearby attractions, such as a lake, tell it, and whether you give free use of row boat, and any items of interest.

When they come, have your meals on time, keep table linen very clean, give good, wholesome food, well cooked, and neatly served. Nearly all city people are very fond of milk, fruit and fresh eggs, and butter and vegetables. Have your bedding clean and provide plenty of towels, etc.

A hammock or lawn seat is much appreciated. If you have children do not let them disturb your boarders when reading or resting.

The price usually paid is from \$5.00 per week up for board and room. I had \$6.00 but the cost of food is now higher. I think six or seven dollars a week a fair price, according to advantages and surroundings. Then if the boarder is well

EASY CHANGE

When Coffee Is Doing Harm.

A lady writes from the land of cotton of the results of a four years' use of the food beverage—hot Postum.

"Ever since I can remember we had used coffee three times a day. It had a more or less injurious effect upon us all, and I myself suffered almost death from indigestion and nervousness caused by it."

"I know it was that, because when I would leave it off for a few days I would feel better. But it was hard to give it up, even though I realized how harmful it was to me."

"At last I found a perfectly easy way to make the change. Four years ago I abandoned the coffee habit and began to drink Postum, and I also influenced the rest of the family to do the same. Even the children are allowed to drink it freely as they do water. And it has done us all great good."

"I no longer suffer from indigestion, and my nerves are in admirable tone since I began to use Postum. We never use the old coffee any more."

"We appreciate Postum as a delightful and healthful beverage, which not only invigorates but supplies the best of nourishment as well." Name given by Postum Co., Battle Creek, Mich.

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Save \$2 by Making This Cough Syrup at Home.

This recipe makes a pint of better cough syrup than you could buy ready-made for \$2.50. A few doses usually conquer the most obstinate cough—stops even whooping cough quickly. Simple as it is, no better remedy can be had at any price.

Mix one pint of granulated sugar with $\frac{1}{2}$ pint of warm water, and stir for 2 minutes. Put $2\frac{1}{2}$ ounces of Pinex (fifty cents' worth) in a pint bottle; then add the Sugar Syrup. It has a pleasant taste and lasts a family a long time. Take a teaspoonful every one, two or three hours.

You can feel this take hold of a cough in a way that means business. Has a good tonic effect, braces up the appetite and is slightly laxative, too, which is helpful. A handy remedy for hoarseness, bronchitis, asthma and all throat and lung troubles.

The effect of pine on the membranes is well known. Pinex is the most valuable concentrated compound of Norwegian white pine extract, and is rich in guaiacol and all the natural healing pine elements. Other preparations will not work in this formula.

This Pinex and Sugar Syrup recipe has attained great popularity throughout the United States and Canada. It has often been imitated, though never successfully.

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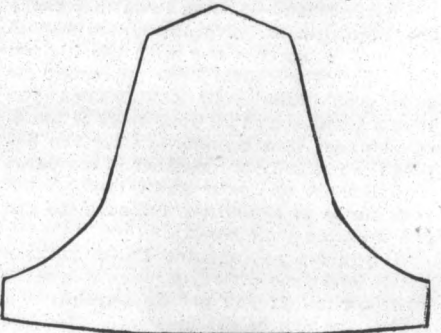
pleased and you think would pay you more another year you could perhaps arrange it.

The most profit is on the room. For we all on the farms have extra rooms which have to be taken care of, whether in use or not, and as there is not much wear on things used for a few weeks, I consider what I get over the cost of food as all gain.

I think I have answered the questions of all in a general way and hope this will be of help. These are ideas learned from my own experience and that of some of my friends.—Mrs. New.

A SPECTACLE HOLDER.

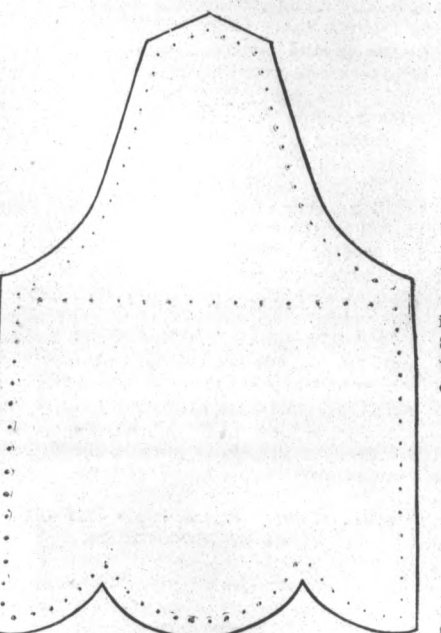
Editor Michigan Farmer:—Here is a pattern for the receptacle for spectacles



Lining Pattern.

that Mrs. H. W. C. wished someone to send her.—Mrs. A. D. P.

Sew lining in, turn over and stitch as marked. Sew center seam, press and turn to center, sew across bottom. Make



Pattern for Spectacle Case.

of velvet, chamois, or anything you wish. Would be pretty made of black velvet lined with blue silk.

RECIPES.

Cake.

During this scarcity of eggs I take the liberty of sending a recipe for a cake that I have used for several years. We use it for our every-day cake and like it very much. I take a good-sized cup, in fact, I nearly always use the same one, then I can judge better of the proportions. Fill the cup half full of granulated sugar, then finish filling with molasses, turn contents into mixing dish. Fill same cup with sour milk and cream, pouring most of this on to the sugar and molasses, saving a little for a teaspoon of soda, if the milk is very sour use a heaping teaspoon. This I save until the last. If stirred directly into the molasses it makes it light. Take one-third cup of butter, warming before stirring in. Now add two and one-half cups of flour, the soda, season with a little cinnamon, and add raisins, or it is very good without. Bake slowly. I find a correct test of its being done is to listen and you will hear a sizzling noise.—Mrs. M. W.

Roast Veal.

The best part of veal for roasting is the tenderloin. Like all white meats, veal needs to be thoroughly cooked and should never be served rare. Sprinkle the veal to be roasted with salt and pepper and spread the top thinly with butter or lay strips of pork on the roast. Cook slowly. Three pounds of veal will require about one hour to cook.—M. P.

Roast Beef Pie.

Line a pudding dish with a rich biscuit crust and fill with cold roast beef left from some previous meal. Sprinkle over this layer pepper, salt, bits of butter and

a few slices of cold potato. Cover with paste, having a slit in the center, and bake half an hour.—K. M.

Banana Shortcake.

This is nice in winter when desserts become rather difficult. Make a batter as for strawberry shortcake, and then while it is still hot spread with butter and a layer of bananas that have been sliced thinly with one orange, (also sliced and cut up very small), added for every three bananas. Mix the fruit with one cupful of sugar, and spread between and on top of the hot buttered layers of shortcake. Whip a cup of cream till stiff, sweeten and spread over the fruit without further seasoning.—E. J.

Chocolate Cookies.

Beat to a cream one-half cupful of butter and one tablespoonful of lard. Gradually beat into this one teaspoonful of salt, one teaspoonful of cinnamon and two ounces of chocolate melted. Now add one well-beaten egg, one-half teaspoonful of soda dissolved in about two and one-half cupfuls of flour. Roll thin and cut into round cakes; bake in a quick oven. Use as little flour as possible.—E. S.

Steamed Eggs.

The eggs are broken into the upper part of a double boiler after it is buttered. They are then seasoned with butter, pepper and salt and stirred occasionally, as they cook over hot water. When they are jellied they are ready to serve. A bit of buttered toast is put on a hot plate and the egg placed on it. This will sometimes tempt the fastidious palate of a sick person whose physician has ordered eggs.—Mrs. J. J. O.

To Clean Sweetbreads.

Carefully pull off all the tough and fibrous skin and place them in a dish of cold water for ten minutes or more. They are then ready to be boiled. They must always be boiled twenty minutes, no matter what the mode of cooking is to be.—M. D.

HOUSE DRESSES.

These patterns may be secured by writing Michigan Farmer office. Be sure to give number and size desired, together with price mentioned.

No. 5117.—Ladies' Dressing sack.—Cut in six sizes, 32 to 42 inches bust measure. Size 36 requires $2\frac{1}{2}$ yards of 36-inch material; two yards of insertion, $3\frac{1}{2}$ yards edging, two yards ribbon. Price 15 cents.



No. 3966.—Ladies' Dressing Sack.—Seven sizes, 32 to 44 inches bust measure. For 36 bust it requires $3\frac{3}{4}$ yards, 27 inches wide. Price 15 cents.

No. 5079.—Ladies' Long Kimono.—Cut in seven sizes, 32 to 44 inches bust measure. Size 36 requires $6\frac{1}{2}$ yards of 36-inch material; one yard of 27-inch contrasting goods. Price 15 cents.

No. 2935.—Ladies' Dressing Sack.—Eight sizes, 32 to 46 inches bust measure. For 36 bust it requires $3\frac{3}{4}$ yards, 27 inches wide. Price 15 cents.

No. 4015.—Ladies' Dressing Sack.—Seven sizes, 32 to 44 inches bust measure. For 36 bust it requires $3\frac{1}{2}$ yards, 27 inches wide. Price 15 cents.

Beads and tiny wooden button molds, described some weeks ago in an article on embroidered gowns, in The Farmer, are to be largely used as dress trimmings.

You will probably hear a great deal about Maderia work as a decoration for lingerie gowns. This is merely a new name for eyelet embroidery.

When The Stomach Stops

Working Properly, Because There Is Wind In It, Use Stuart's Dyspepsia Tablets to Set It Going Again.

A Trial Package Free.

The doctors call it flatulency, but unprofessional folks know it as "wind on the stomach," and a most distressing state of things it is. It is a serious condition of this great motor organ. Always annoying and painful in the extreme, at times often leading to bad and fatal results. The stomach embarrassed and hampered with wind, cannot take care of its food properly and indigestion follows, and this has a train too appalling to enumerate. The entire system is implicated—made an active or passive factor in this trouble and life soon becomes a questionable boon.

All this is explained in doctor books; how undigested food causes gases by fermentation and fomentation in which process some essential fluids are destroyed—burnt up—wasted by chemical action, followed by defective nutrition and the distribution through the alimentary tract of chemically wrong elements and as a consequence the stomach and entire system is starved. Plenty of food, you see, but spoilt in preparation and worse than worthless.

A deranged stomach is the epitome of evil; nothing too bad to emanate from it; but the gas it generates is probably its worst primary effect and the only way to do away with this is to remove the cause. Stuart's Dyspepsia Tablets go to the root of this trouble. They attack the gas-making foods and render them harmless. Flatulency or wind on the stomach simply cannot exist where these powerful and wonderworking little tablets are in evidence.

They were made for this very purpose to attack gas making foods and convert them into proper nutriment. This is their province and office. A whole book could be written about them and then not all told that might be told with profit to sufferers from this painful disease, dyspepsia. It would mention the years of patient and expensive experiment in effort to arrive at this result—of failures innumerable and at last success. It would make mention of the different stomach correctives that enter into this tablet and make it faithfully represent all.

Stuart's Dyspepsia Tablets are not alone intended for the sick, but well folks as well; for the person who craves hearty foods and wants to eat heartily and run no risk of bad effects, they act like a charm and make eating and digestion a delight and pleasure. They keep the stomach active and energetic and able and willing to do extra work without special labor or effort. Don't forget this. Well people are often neglected, but the Stuart Dyspepsia Tablets have them in mind.

A free trial package will be sent any one who wants to know just what they are, how they look and taste, before beginning treatment with them. After this go to the drug store for them; everywhere, here or at home, they are 50 cents a box and by getting them at home you will save time and postage. Your doctor will prescribe them; they say there are 40,000 doctors using them, but when you know what is the matter with yourself, why go to the expense of a prescription? For free trial package address F. A. Stuart Co., 272 Stuart Building, Marshall, Michigan.



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Stewart Hartshorn on label.

Get "Improved," no tacks required.

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Tin Rollers



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THE BEST LIGHT

Lighted instantly. Over 200 styles.

Agents wanted. Write for catalog

THE BEST LIGHT CO.

280 E. 5th St., Canton, O.

RICE—NEW CROP. 100 pounds beautiful, clean, white table rice in double sacks, freight prepaid to your railroad station. \$3.85. J. ED. CABANISS, Rice Farmer, Katy, Texas.

(Continued from page 118).
feeders are beginning to ship their lambs though many are selling without having made any profit, and some with an actual loss. The price of butter has taken a great slump. Many new buildings will go up in this section in the spring.

Ingham Co., Jan. 13.—The weather has been rather mild for the past two weeks, snow nearly all off the ground, roads rough and icy. Fat lambs lower, \$4.50@5.50, quite a number in feed pens; hogs \$7.50, but few for market, mostly brood sows and fall pigs; cattle rather scarce and high, from \$3.50@5.50 per cwt; grains of all kinds remain about stationary; butter, since the recent tumble in price, is bringing 16c per lb. at country stores; eggs, 26c; milk, \$1.20 per cwt. at cheese factory.

MASON COUNTY FARMERS ENTHUSIASTIC.

The Farmers' Institute, of Mason Co., which was held at the court house in Ludington, Jan. 20-21, was very well attended, many not being able to obtain seats. Mason county farmers are very progressive and boosters for their own county and the state of Michigan. Much of the Michigan fruit show at Chicago lately, was from this part of the state. Some one had brought a few Washington and Colorado apples to be placed on exhibit but no state can produce fruit that can put to shame the famous fruit of Michigan, which has a flavor.—W. I. P.

MICHIGAN FARMERS' INSTITUTES.

County Institutes.

Osceola Co., Leroy, Feb. 6-7; Genesee Co., Flushing, Feb. 6-7; Berrien Co., Berrien Springs, Feb. 6-7; Cass Co., Cassopolis, Feb. 7-8; Montcalm Co., McBrides, Feb. 8-9; Branch Co., Coldwater, Feb. 8-9; Shiawassee Co., Perry, Feb. 8-9; Hillsdale Co., Hillsdale, Feb. 10-11; Ingham Co., Mason, Feb. 13-14; Jackson Co., Parma, Feb. 14-15; Ionia Co., Ionia, Feb. 15-16-17; Lenawee Co., Adrian, Feb. 15-16; Calhoun Co., Athens, Feb. 16-17; Barry Co., Hastings, Feb. 17-18; Livingston Co., Howell, Feb. 17-18; Washtenaw Co., Ypsilanti, Feb. 17-18; Arenac Co., Sterling, Feb. 17-18; Wayne Co., Redford, Feb. 21-22; Macomb Co., Washington, Feb. 22-23; Oakland Co., Pontiac, Feb. 23-24; State Round-Up Institute, Agricultural College, Feb. 28, March 1-2-3.

One-Day Institutes.

Leelanau Co., Empire, Feb. 6-7; Bay Co., Bentley, Feb. 7; Pinconning, Feb. 8; Crump, Feb. 9; Bedell, Feb. 10; Colden, Feb. 11; Washtenaw Co., Manchester, Feb. 6; Saline, Feb. 7; Superior, Feb. 8; Dexter, Feb. 9; Webster, Feb. 10; Notten's Corners, Feb. 11; Salem, Feb. 13; Eaton Co., Mulliken, Feb. 10; Dimondale, Feb. 11; Barry Co., Woodland, Feb. 13; Carlton Center, Feb. 14; Freeport, Feb. 15; Glass Creek, Feb. 16; Arenac Co., Sterling, Feb. 13; Melita, Feb. 14; Moore's Junction, Feb. 15; Johnfield, Feb. 16; Arenac, Feb. 17; Oakland Co., Troy, Feb. 14; Ortonville, Feb. 15; Oxford, Feb. 16; Clarkston, Feb. 17; Milford, Feb. 18; Wayne Co., Belleville, Feb. 14; Willow, Feb. 15; Flat Rock, Feb. 16; Eureka, Feb. 17; Wayne, Feb. 18; Canton, Feb. 20.

CATALOGUE NOTICES.

Iron Age farm and garden implements, manufactured by the Bateman Mfg. Co., Grenloch, N. J., are fully illustrated and described in the handsomely illustrated 65-page catalogue for 1911, published by that company. This line of implements, which includes almost everything needed on the farm or in the garden is the product of the experience and growth of this company since its establishment in 1836.

Kitselman Fence, manufactured by Kitselman Brothers, of Muncie, Ind., is illustrated and described in various styles in the new 36-page catalogue No. 29, just issued by that company. The line of fencing described includes various heights and kinds of coiled spring fence suitable for the farm and poultry yard, as well as ornamental fences and gates.

"Barn Work Made Easy," is the title of a new catalogue issued by the Kent Mfg. Co., of Fort Atkinson, Wis., in which the James carriers made by this company are fully illustrated and described, with cuts showing the possibilities of their economic installation for convenience in feeding live stock and economy in cleaning the manure from the stable.

"Alfalfa, and How to Grow It," is the title of a 50-page pamphlet published by The Wing Seed Co., of Mechanicsburg, Ohio. Aside from containing specific instructions and invaluable information regarding the growing of alfalfa, this pamphlet contains information with regard to the improved seeds of other legumes, grains and grasses carried by this company.

Burpee's Annual for 1911, sent by W. Atlee Burpee & Co., Burpee Bldgs., Philadelphia, Pa., purports to tell "the plain truth about the best seeds that grow." It is a catalogue of 174 pages, listing the full line of farm, garden and flower seeds carried by this well-known firm, which is entering its 35th year.

Planet, Jr., farm and garden implements, manufactured by S. L. Allen & Co., of Philadelphia, Pa., are fully illustrated and described in the new 36-page catalogue issued by this company. They manufacture a complete line of farm and garden cultivators and combination tools for all purposes and in size and variety to satisfy every need of the farmer or the gardener.

The Hinman Milker, including the 1911 model, is fully illustrated and described in the pocket-size catalogue sent by the Hinman Milking Machine Co., of Oneida, New York. The essential details of the construction of this machine are fully illustrated and described in this booklet, which also contains many testimonials from satisfied users.



"Hatching Facts" Free

I want to send you my 1911 Booklet. Just send name and address on a postal—I'll mail you my latest edition of "Hatching Facts"—the most unique—most convincing—right-to-the-point piece of literature ever published on Incubators and Brooders and Poultry Raising for Profit. It gives you just what you want—quick—tells you how to start right at least expense. My Belle City Incubator won the World's Championship last season. "Hatching Facts" tells you all about it—tells you of hundreds of other wonderful hatches. Write for the Booklet today—or if in a hurry, order direct from this advertisement—hundreds of others do. I'll send book, too. Anyway, read remarkable offer below: J. V. ROHAN, President, Belle City Incubator Company.

\$7.55 Buys the **Best 140-Egg Incubator** Ever Made

\$4.85 Buys the **Best Brooder** Both Incubator and Brooder, Ordered Together Cost You Only **\$11.50—Freight Prepaid**

WHY PAY MORE? Investigate—send your name and address today, the easiest way, by postal or letter. I tell you the prices right here—and how my machines are made. You can have ninety days' trial on both incubator and brooder—and I'll send all money back if they do not do all I represent.

Be sure to send for my illustrated, free booklet, "Hatching Facts." But, if in a hurry, you are perfectly safe in ordering right now from this ad. Thousands do this way every year. I guarantee to ship all orders sent from this ad on day received—(from warehouse nearest you, or Racine.) No disappointments. Order a Complete 140-Chick Belle City Hatching Outfit. Send only \$11.50 for both Incubator and Brooder—freight prepaid (East of Rockies). You'll surely need the

brooder, too. So make the savings. Satisfaction Guaranteed or money back.

BELLE CITY WORLD'S CHAMPIONSHIP Incubators and Brooders

140-Chick Belle City Brooder ONLY \$4.85



This I guarantee. Double walls—dead air space all over—copper tank and boiler—hot water heater—best regulator—deep, roomy nursery—strong egg tray—high legs—double door—and everything that's any good on an incubator—all in the Belle City. "Tyco's" thermometer—egg tester—burner and safety lamp included. The Belle City Brooder is the only one having double walls and dead air spaces. I guarantee it to raise more healthy chicks than any other Brooder made. Hot-water top heat—large, roomy, wire runway yard, with platform—metal safety lamp and burner.

Complete Hatching Outfit Only \$11.50

Over 75,000 machines in use—all doing perfect work. The Belle City should be your choice. Send your order now or send a postal card for "Hatching Facts" booklet and full particulars. Don't pay more than my price. No machines, at any price, are better hatching or brooders.

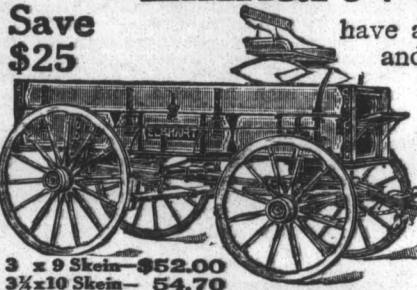
Mrs. M. J. Clifton, of Quinlan, Oklahoma, won the World's Championship with her Belle City Incubator by hatching the 140-egg size—140 eggs set—140 chicks hatched. This was 100% perfect on the full capacity of the Belle City. Many other incubators selling at from 2 to 5 times the low price of the Belle City did not equal or even approach this performance. Thousands of testimonials show you Belle City can do best for you also.

J. V. Rohan, President

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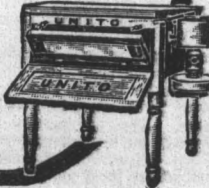
Quickest Poultry Profits On Smallest Investment

Here is your chance at large, sure poultry profits. Quick results guaranteed—proved on most liberal FREE TRIAL. Greatest bargains ever offered because highest quality made. Let us prove it before you risk a cent on any machine. Start right and at our risk.

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That beats them all by \$5.00 to \$7.00. You'll say so when you know the machines and see results. Self-regulating—self-ventilating—finest heating system in both. Send for illustrated catalogue showing construction and giving full details of our plan for saving you money by selling only goods of guaranteed quality direct to users from 16 big factories. Write for offer quick.

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SAW your own wood and save time, coal and money; or saw your neighbors' wood and

MAKE \$5 TO \$15 A DAY

Hundreds are doing it with an Appleton Wood Saw. Why not you? We make six styles—steel or wooden frames—and if desired will mount the saw frame on a substantial 4-wheel truck on which you can also mount your gasoline engine and thus have a

PORTABLE WOOD SAWING RIG that is unequalled in effective work and profitable operation.

We make the celebrated Hero Friction Feed Drag Saw also, and complete lines of feed grinders, corn shellers, corn huskers, fodder cutters, manure spreaders, horse powers, windmills, etc. Ask for our Free Catalogue.

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MONEY IN CABBAGE



Money in cabbage if you use the right seed. Customers doubling profits. 35 tons per acre is no unusual yield with **HUNKEL'S HOLLANDER CABBAGE** Medium size, solid, average 8 lbs.; fine white flesh, tender, crisp and firm—a splendid keeper. Pkg. 10c; 1 oz. 25c; 1 lb. 85c; 1 lb. \$3.00. Write for Free catalog of vegetable—flower—farm seeds. **G. H. HUNKEL CO.** 207 Chestnut St., Milwaukee, Wis.



112 PAGE POULTRY BOOK FREE

Tells how to succeed with poultry on the ordinary farm. How to make a first-class brooder out of an old piano box. What breeds lay best. Plans for poultry houses, how to feed, breed, etc. Describes **PRAIRIE STATE Incubators and Brooders** You will be surprised at the valuable information it contains. It's free. Write a postal for a copy today. **Prairie State Incubator Co., 413 Main St., Homer City, Pa.**

MARKETS

DETROIT WHOLESALE MARKETS.

February 1, 1911.

Grains and Seeds.

Wheat.—Bearish sentiment has been in the ascendancy this past week, and prices have sunk to a lower level. The larger visible supply, the increase in the world's movement, the exports from Russia, the condition of the crop in India, the heavy receipts from farmers, have all worked to the detriment of the bulls whose only hope is tied to the condition of the growing crop in this country where a lack of moisture is threatening the winter wheat in the southwest and fixing the spring wheat section for a poor seeding next spring, unless a change occurs. Millers are not taking wheat readily as they are having difficulty in distributing their flour. A year ago the price for No. 2 red wheat was \$1.26 per bu. Quotations for the past week are:

	No. 2	No. 1	White.	May.	July.
Thursday	96 1/2	95 3/4	1.01 1/2	.97	
Friday	95 1/2	94 3/4	1.00 1/2	.95 3/4	
Saturday	95 1/2	94 3/4	1.00 1/2	.95 3/4	
Monday	94 1/2	93 3/4	.99 1/2	.94 3/4	
Tuesday	94 1/2	93 3/4	.99 1/2	.94 3/4	
Wednesday	95 1/2	94 3/4	.99 1/2	.95 3/4	

Corn.—The weakness of the wheat market has been the most depressing feature in corn. Prices have sagged a little and transactions on the local market are small and few. Primary points have received liberal amounts from farmers who appear to be in a selling frame of mind. A year ago the price for No. 3 corn was 64 1/2¢ per bu. Quotations for the past week are:

	No. 3	No. 3	Yellow.
Thursday	47 1/2	48 1/2	
Friday	47 1/2	48 1/2	
Saturday	47 1/2	48 1/2	
Monday	47	48	
Tuesday	47	48	
Wednesday	47	48	

Oats.—Oat dealers are a little suspicious that the letting in of oats duty free from Canada might disturb the situation on this side and so are a little skeptical about loading up too heavily with the grain. Prices have not altered on the local market, but in Chicago during the time of firm feeling in wheat and corn circles Tuesday, there was a flabby demand for oats. Country elevators are getting a fairly large volume of oats and offerings, generally, are larger than the demand. Last year at this date the price for standard oats was 50 1/2¢ per bu. Quotations for the past week are:

	Standard.	No. 3	White.
Thursday	35	34 1/2	
Friday	35	34 1/2	
Saturday	35	34 1/2	
Monday	35	34 1/2	
Tuesday	35	34 1/2	
Wednesday	34	33 1/2	

Beans.—Nominal prices for beans have been trimmed two cents more this past week. No transactions are reported from the local board. Nominal quotations are:

	Cash.	Jan.	Feb.
Thursday	2.02	2.07	
Friday	2.02	2.07	
Saturday	2.00	2.05	
Monday	2.00	2.05	
Tuesday	2.00	2.05	
Wednesday	2.00	2.05	

Cloverseed.—Values are on practically last week's basis and the dealing is active with a good demand. Quotations are:

	Prime Spot.	Mar.	Alsike.
Thursday	\$8.75	\$8.75	\$9.10
Friday	8.75	8.75	9.10
Saturday	8.80	8.80	9.10
Monday	8.80	8.80	9.10
Tuesday	8.75	8.75	9.10
Wednesday	8.80	8.80	9.10

Barley.—Prices unchanged and selling is being conducted on a basis of \$1.75@1.80 per cwt.

Rye.—Scarce and steady, with price unchanged, No. 1 quoted at 84 1/2¢ per bu.

Visible Supply of Grains.

	This week.	Last week.
Wheat	42,263,000	42,101,000
Corn	8,068,000	7,406,000
Oats	15,997,000	15,390,000
Rye	381,000	385,000
Barley	1,462,000	1,296,000

Flour, Feed, Provisions, Etc.

Flour.—The flour trade is dull with prices for all except patent Michigan unchanged. That grade advanced. Quotations are:

Clear	\$4.45
Straight	4.85
Patent Michigan	5.75
Ordinary Patent	4.95

Hay and Straw.—Hay values are steady. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$16.50@17; No. 2 timothy, \$15.50@16; clover, mixed, \$15.50@16; rye straw, \$7@7.50; wheat and oat straw, \$6@6.50 per ton.

Feed.—Feeds containing corn are down while other grades remain steady. Carlot prices on track are: Bran, \$25 per ton; coarse middlings, \$26; fine middlings, \$28; cracked corn, \$22; coarse corn meal, \$22; corn and oat chop, \$20 per ton.

Potatoes.—While there is no change in quotations, traders pass the word that the market is firm. In car lots Michigan potatoes are selling at 37@40¢ per bu.

Provisions.—Family pork, \$22@23; mess pork, \$21.50; medium clear, \$19@21; smoked hams, 14 1/2@15¢; briskets, 13 1/2¢; shoulders 11 1/2¢; picnic hams, 11 1/2¢; bacon, 16@17¢; pure lard in tierces, 11¢; kettle rendered lard, 12¢.

Dairy and Poultry Products.

Butter.—For the first time since it became generally known that a large surplus of butter was in storage, have prices held steady one week. The recent discovery that the Payne tariff law has re-

duced the import duty on cream from 5¢ per lb. to 5¢ per gallon, has encouraged large importations from Canada and thus depressed our own market. Extra creameries are now quoted at 25 1/2¢; firsts, 23¢; dairies, 17¢; packing stock at 14 1/2¢ per lb.

Eggs.—Receipts are increasing and with reduced prices consumption is expanding. Values lower. Fresh receipts, case count, cases included, are now quoted at 22¢ per dozen.

Poultry.—Little doing. Supply small. Dressed birds about steady. Live lower. Quotations are: Dressed—Turkeys, 20@23¢; chickens, 14¢; fowls, 13@13 1/2¢; ducks, 18@19¢; geese, 14@15¢ per lb. Live—Spring chickens, 13¢; fowls, 12¢; old roosters, 9¢; turkeys, 18@19¢; geese, 12@13¢; ducks, 15@16¢ per lb.

Cheese.—Michigan, 17¢; Michigan, late, 15@16¢. York state, September, 17@18¢; do. late made, 15@16¢; limburger, old, 16@17¢; Swiss domestic block, 20@22¢; cream brick, 16@18¢.

Dressed Pork.—Price is lower at 9 1/2¢ 10¢ per lb.

Veal.—Market lower. Choice, 11 1/2@12¢; ordinary, 9¢ per lb.

Rabbits.—Steady. Per dozen, \$1.75.

Fruits and Vegetables.

Apples.—There is a good demand for apples and it seems that the public is beginning to recognize the superiority of Michigan-grown fruit in that there is now a greater demand for barreled goods from this state than fancy goods from the west. Fancy greenings are quoted at \$5.25@5.50; Kings, \$5.25@5.50; Baldwins, \$4.50; Steel reds, \$6; ordinary grades, \$3@3.50 per bbl. Western apples, \$2.25@2.50 per box.

Cranberries.—Steady. Quoted at \$3.25 per bu.

Cabbage.—Steady. Selling at \$1.75 per bbl. for new.

Onions.—Steady. 80¢ per bu.

Honey.—Choice to fancy comb, 15@17¢ per lb.

OTHER MARKETS.

Grand Rapids.

Cold weather has checked the downward slide of eggs and dealers are quoting 20@21¢ for fresh stock, 18¢ for storage. Butter is unchanged from last week, with dairy at 20¢; creamery at 24 1/2¢. Live poultry, delivered is bringing the following prices: Fowls and chickens, 11@12¢; old roosters, 9¢; geese, 11¢; ducks, 13¢; turkeys, 20¢. Veal is worth 6@11¢. Potatoes are bringing 25@30¢ at loading stations. Dealers report outside markets easier. Cars for shipments are easy to get now and the movement is heavy, some Michigan potatoes going as far as Los Angeles, Cal. The farmers are free sellers. No beans are moving and prices are unchanged at \$1.70 for white and \$2.75@3 for red kidneys. Dressed hogs are easier, bringing 9¢ this week. Wheat is off, the mills paying only 90¢ for No. 2 red. Timothy hay is bringing \$17.

Chicago.

Wheat.—No. 2 red 94 1/2@95 1/2¢; May, 96¢; July, 93 1/2¢ per bu.

Corn.—No. 2, 46 1/2@47¢; May, 49 1/2¢; July, 50 1/2¢ per bu.

Oats.—No. 2 white, 32 1/2@33¢; May, 33 1/2¢; July, 33 1/2¢.

Barley.—Malting grades, 80@94¢ per bu; feeding, 65@75¢.

Butter.—Market quiet without price change; current receipts fully up to requirements. Quotations now are: Creameries, 17@25¢; dairies, 19@22¢.

Eggs.—Prices rallied, sharply, late last week which so checked the demand as to result in a weak opening this week with prices below the range of a week ago. Quotations: Prime firsts, 22 1/2¢; firsts, 21 1/2¢; at mark, cases included, 17@19¢ per dozen.

Potatoes.—Top grades have lost last week's advance, but the better feeling developed in recent weeks is still in evidence. Choice to fancy quoted at 46@48¢ per bu; fair to good, 42@45¢.

Elgin.

Butter.—Market firm at 25¢ per lb., which is the quotation of last week. Output for the week, 525,200 lbs., as compared with 570,300 lbs. for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

January 30, 1911.

(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of stock here today as follows: Cattle, 125 cars; hogs, 9,000; sheep and lambs, 14,400; calves, 1,200.

With 125 loads of cattle on sale here today, and with 26,000 reported in Chicago, our market was fairly active at steady to strong last week's prices.

We quote: Best 1,300 to 1,400-lb. steers \$6.40@6.65; good prime 1,200 to 1,300-lb. do., \$5.75@6.35; best 1,100 to 1,200-lb. shipping steers, \$5.50@6.25; medium butcher steers, 1,000 to 1,100 lbs., \$5.35@5.85; light butcher steers, \$4.65@5.25; best fat cows, \$4.75@5.25; fair to good do., \$3.75@4.35; common to medium do., \$3.50@4; trimmers, \$2.75@3.25; best fat heifers, \$5.50@6; good fat heifers, \$5@5.50; fair to good do., \$4.25@4.65; stock heifers, \$3.25@3.50; best feeding steers dehorned, \$4.75@5; medium to good feeding steers, \$4.40@4.60; stockers, all grades, \$4@4.25; best bulls, \$5@5.50; bologna bulls, \$4.25@4.75; stock bulls, fair to good, \$3.75@4.25; best milkers and springers, \$5@6.50; good to best do., \$4@5.00; common to good do., \$2.50@3.50.

Late springers hard to sell at any kind of satisfactory prices; in most cases have to be sold by weight.

With about 40 cars on sale at the opening, our hog market opened strong 10@15¢ higher than Saturday's close, and closing steady at the opening for all good light weights; few heavy hogs going over unsold.

We quote: Heavies, \$8.25@8.40; mixed and mediums, \$8.40@8.50; Yorkers, light

to good weights, \$8.55@8.60; pigs, \$8.70@8.80; few choice light bringing \$8.85; roughs, \$7.25@7.35; stags, \$6@7 as to quality. Our market looks high compared with the western markets, and we would advise caution on these high prices of today's market.

The lamb market opened slow today; few of the choice handy lambs selling from \$6.15@6.25; we sold two loads rancy at \$6.30. Lambs weighing from 85 to 90 lbs. are still hard sellers; selling from \$5.75@6. Heavy lambs, that is, weighing 100 lbs. and over, selling from \$5.25@5.35. Look for about steady prices until Thursday, when we look for a little break, unless we should get moderate receipts. Sheep market was active today; most of the choice ewes selling at \$4@4.15; wethers, \$4@4.35. Look for about steady prices on sheep balance of week.

We quote: Best handy lambs, \$6.15@6.25; heavy lambs, \$5.25@5.35; bucks, \$3@3.25; heavy ewes, \$3.75@4; yearlings, \$5@5.25; wethers, \$4@4.35; cull sheep, \$2.50@3.50; handy ewes, \$4@4.15; northern Michigan lambs, \$5.25@5.75; veals, choice to extra, \$10@10.50; fair to good do., \$7.50@9.50; heavy calves, \$5@6.50.

Chicago.

January 30, 1911.

Received today 26,000 32,000 20,000
Same day last year..... 17,890 33,865 17,835
Received last week..... 63,382 149,159 83,221
Same week last year..... 64,462 116,764 72,901

Another week opens today, and live stock supplies are smaller than usual for Monday. Cattle opened with sellers firmer in their views and asking a little higher prices. There were some sales of steers and butcher stuff 10¢ higher, but after trade got well under way general prices were hardly more than steady. The early sales of the better class of hogs of light weights were 5@10¢ higher, generally not more than 5¢ better, the heavier lots being unchanged. After the shippers had secured all the hogs they wanted local packers supplied their wants at Saturday's figures. Hogs sold at \$7.40@8.10, light hogs going at \$7.75 and upward, while heavy packing and selected shipping hogs went at \$7.40@7.80, mixed packing and medium butcher weights at \$7.60@7.95, boars at \$4@4.50 and stags at \$3.15@3.50, according to weight, all stags selling subject to 80 lbs. dockage per head. The extreme range of prices for hogs has widened out greatly, with heavy lots extremely bad sellers. Hogs sold a week ago at \$7.65@7.95. Those received last week averaged 228 lbs. in weight, compared with 211 lbs. a year ago and 205 lbs. two years ago. Sheep and lambs were firmer today under moderate offerings, and the best lots were a little higher, lambs selling at \$4.75@6.20 ewes at \$2.50@4.25, wethers at \$4@4.40 and yearlings at \$4.50@5.40. Prices have regained their decline of last week.

Cattle were marketed much less freely last week than during the preceding week, but buyers had got so well stocked up with beef that they were less eager to operate, and a moderate local demand resulted in a generally lower scale of prices. Beef steers sold mainly at \$5.50@6.65, with common to fair short-fed, light weights going at \$4.85@5.85, while the best long-fed steers brought \$6.35@7.05. Export steers sold at \$5.75@6.45, and good to prime yearlings sold for \$6.25@7, or practically the same as heavy beefs. Illinois and Iowa contributed a great share of the good to choice weighty beefs, while the best demand was for medium-priced cattle owing to the popular call for moderate-priced beef, retail beef prices being about as high as ever. Comparisons with former years show that the common grades of cattle are now unusually high in price, and cows and heifers are relatively higher than steers, with the packers competing with country buyers for the better class of feeders carrying a moderate amount of flesh. Cows and heifers are going at \$3.60@6.25, with few selling above \$6, while canners sell at \$2.25@2.95, cutters at \$3@3.55 and bulls at \$3.25@5.35. Calves sold at \$3.25@9.75 per 100 lbs., the best selling later at \$9.25, and milkers and springers were in very limited demand at \$30@60 per head, eastern buying decreasing materially.

Hogs started off last week weak and decidedly lower, the Monday receipts being 47,596 head, which was much the largest number seen in any day in a long time. There were further good supplies on following days, but by Thursday receipts fell off materially, country shippers deciding in many instances to wait for a reaction in values before shipping in hogs freely again. As usual, eastern shippers and Chicago speculators were the best supporters of the market, and local packers usually held back until late in the day and purchased the cheaper droves of hogs on concessions. There were rallies in prices at times, but sellers generally did not feel like sending in hogs while the Chicago market stood on a basis of under \$8 per 100 lbs. for good hogs. The average quality of the hogs marketed was extremely good, with a much greater proportion of heavy hogs than in former years in the latter part of January, and light hogs and pigs that were hardly heavy enough to be called hogs were scarce and topped the market, heavy hogs going at a considerable discount. The great bulk of the hogs sold within a range of not over 15¢.

Sheep and lambs have suffered reactions enough recently to cause more care upon the part of sheepmen in marketing their flocks, and this accounts for the smaller offerings last week. The lack of the recent good demand for fat heavy stock for exportation to England and Scotland was deeply felt, causing a much poorer market for such flocks, and these failed to bring the recent good premiums over light and handy-weights of fat muttons. Heavy lambs also sold at a discount, although part of the time insufficient offerings of prime lighter lambs resulted in lots of 90 to 100-lb. lambs selling much closer to light weights than usual.

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THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
February 2, 1911.
Cattle.

Receipts, 1,087. Market steady at last week's prices; not quite so active as on Wednesday.

We quote: Best steers and heifers, \$6; steers and heifers, 1,000 to 1,200, \$5.50@5.65; steers and heifers, 800 to 1,000, \$5@5.50; steers and heifers that are fat, 500 to 700, \$4.50@4.75; choice fat cows, \$4.50@4.75; good fat cows, \$4@4.25; common cows, \$3.50@3.75; canners, \$2.75@3.15; choice heavy bulls, \$4.75; fair to good bolognas, bulls, \$4@4.50; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Bishop, B. & H. sold Hammond, S. & Co. 1 heifer weighing 860 at \$4.50, 1 cow weighing 900 at \$3.25, 2 heifers av 710 at \$4.50, 1 cow weighing 980 at \$4.85, 1 steer weighing 890 at \$5.50, 1 cow weighing 860 at \$3.40, 1 do weighing 1,190 at \$4.50, 1 do weighing 1,170 at \$4, 2 do av 1,025 at \$3.90, 2 bulls av 1,460 at \$4.75, 3 steers av 820 at \$5.20, 2 cows av 1,100 at \$4, 2 heifers av 575 at \$4.25, 1 steer weighing 750 at \$5.25, 4 cows av 860 at \$3.30, 1 bull weighing 1,450 at \$4.75; to Bresnahan 1 steer weighing 630 at \$4, 4 do av 700 at \$4.60; to Parker, W. & Co. 31 butchers av 776 at \$4.65, 10 do av 900 at \$5.25, 24 do av 950 at \$5.10, 28 steers av 880 at \$5.30; to Sullivan P. Co. 1 cow weighing 760 at \$3, 3 do av 1,035 at \$3.50, 1 do weighing 840 at \$2; to Mich. B. Co. 13 steers av 710 at \$5, 1 bull weighing 1,230 at \$4.50, 1 cow weighing 1,260 at \$4.25, 1 do weighing 820 at \$3; to Fromm 5 cows av 1,040 at \$4; to Kamman 1 do weighing 810 at \$5.50, 1 do weighing 900 at \$4, 1 heifer weighing 620 at \$4.50.

Spicer & R. sold Goose 1 cow weighing 960 at \$3.50, 1 do weighing 1,270 at \$4; to Hammond, S. & Co. 1 bull weighing 1,040 at \$4.50, 1 do weighing 1,460 at \$4.60, 4 steers av 850 at \$5.50; to Bresnahan 1 bull weighing 520 at \$4, 11 heifers av 715 at \$4.25; to Mich. B. Co. 29 butchers av 780 at \$4.75; to Breitenbeck 27 do av 850 at \$4.85; to Sullivan P. Co. 7 cows av 1,100 at \$3.90, 1 do weighing 740 at \$2; to Rattkowsky 1 do weighing 1,060 at \$3.25.

Roe Com. Co. sold Mich. B. Co. 12 cows av 1,045 at \$4.25, 5 do av 900 at \$4.25; to Newton B. Co. 27 butchers av 764 at \$5, 23 do av 760 at \$5, 9 do av 723 at \$4.50, 23 do av 930 at \$5.35, 2 cows av 1,065 at \$2.50, 8 heifers av 727 at \$4.75, 14 steers av 912 at \$5.25; to Heinrich 20 do av 880 at \$5.25; to Rattkowsky 1 cow weighing 1,140 at \$4.

Bresnahan sold Mich. B. Co. 7 cows av 1,030 at \$4, 2 do av 850 at \$3.50, 1 do weighing 1,050 at \$4, 1 do weighing 950 at \$3.50.

Haley sold Sullivan P. Co. 1 cow weighing 970 at \$2.50.

Sandall & T. sold same 13 butchers av 778 at \$4.35, 3 cows av 1,100 at \$4, 2 do av 805 at \$4, 1 bull weighing 870 at \$4.

Haley sold Rattkowsky 2 cows av 2,110 at \$3.80.

Adams sold Hammond, S. & Co. 1 bull weighing 1,620 at \$5, 9 steers av 830 at \$5.25, 1 cow weighing 1,150 at \$4.25, 1 do weighing 1,040 at \$4.25.

Kalaher sold same 1 do weighing 1,000 at \$4, 3 steers av 953 at \$5.75.

Clark Bros. sold Parker, W. & Co. 21 steers av 1,010 at \$6, 22 do av 1,100 at \$6, Wilson sold Fromm 8 steers av 851 at \$5.30.

Veal Calves.
Receipts, 459. Market opened steady with last week, closing trifle lower. Best, \$9@9.50; others, \$4@8.75; milch cows and springers steady.

Spicer & R. sold Goose 1 weighing 110 at \$7.

Haley & M. sold Goose 5 av 120 at \$7.50, 5 av 125 at \$7.50, 14 av 150 at \$9.50; to Parker, W. & Co. 5 av 165 at \$9.25.

Bergin & W. sold Sullivan P. Co. 2 av 105 at \$7.50, 13 av 135 at \$9.

Bishop, B. & H. sold Goose 2 av 270 at \$4; to Mich. B. Co. 10 av 146 at \$7.75, 2 av 135 at \$8; to Swift & Co. 4 av 125 at \$7.50, 10 av 140 at \$9.50, 8 av 135 at \$9.25; to Goose 6 av 140 at \$9, 5 av 150 at \$8.75; to Rattkowsky 2 av 135 at \$9.25; to Parker, W. & Co. 12 av 140 at \$8.50, 16 av 140 at \$8.50.

Sheep and Lambs.
Receipts, 6,075. Market steady with last Thursday, 15@20c lower than on Wednesday this week. Best lambs, \$5.50@5.75; heavy lambs \$4.50@5.15; light to common lambs, \$4.75@5.25; fair to good sheep, \$3.50@4; culls and common, \$2.50@3.

Bordine sold Youngs 59 lambs av 75 at \$5.65.

Thompson sold Nagle P. Co. 124 lambs av 85 at \$5.65.

Adams sold same 39 lambs av 85 at \$5.65, 5 sheep av 120 at \$3.75.

Roe Com. Co. sold Mich. B. Co. 7 sheep av 140 at \$3.75, 12 lambs av 85 at \$5.50; to Nagle P. Co. 138 lambs av 80 at \$5.65, 60 do av 85 at \$5.75.

Haley & M. sold Thompson Bros. 10 sheep av 134 at \$3.50.

Bishop, B. & H. sold Sullivan P. Co. 130 lambs av 75 at \$5.50, 67 sheep av 85 at \$3.25, 4 lambs av 140 at \$4.50, 44 do av 73 at \$5.25, 23 do av 70 at \$5, 13 do av 75 at \$5.50, 26 do av 85 at \$5; to Mich. B. Co. 19 sheep av 95 at \$3, 25 lambs av 67 at \$4.75, 30 do av 68 at \$5.60; to Parker, W. & Co. 246 do av 67 at \$5.65; to Breitenbeck 39 do av 80 at \$5.50, 10 sheep av 115 at \$3.25; to Swift & Co. 737 lambs av 77

at \$5.50, 92 sheep av 112 at \$3.75, 58 do av 110 at \$3.60, 180 lambs av 85 at \$5.65; to Youngs 87 do av 90 at \$5.30; to Barlage 100 do av 77 at \$5.60, 12 do av 90 at \$2.50.

Spicer & R. sold Nagle P. Co. 223 lambs av 77 at \$5.75, 15 do av 90 at \$5.25, 135 sheep av 110 at \$4.25, 70 do av 112 at \$4.25, 40 do av 125 at \$4.25, 31 lambs av 83 at \$5.50, 10 do av 115 at \$4.75, 62 do av 92 at \$5.25, 7 sheep av 100 at \$3.50; to Mich. B. Co. 8 sheep av 125 at \$3.50; to Nagle P. Co. 66 lambs av 83 at \$5.60; to Sullivan P. Co. 10 do av 93 at \$5; to Stoker 15 do av 85 at \$5.75; to Gordon 14 do av 85 at \$5.40, 3 sheep av 112 at \$3.

Hogs.
Receipts, 2,474. Prices are 10-15c lower than last week.

Range of prices: Light to good butchers, \$7.60; pigs, \$7.65; light yorkers, \$7.60; heavy, \$7.40@7.50.

Roe Com. Co. sold Parker, W. & Co. 425 av 200 at \$7.65, 60 av 220 at \$7.60.

Sundry shippers sold same 370 av 190 at \$7.65.

Bishop, B. & H. sold Hammond, S. & Co. 2,020 av 180 at \$7.65, 215 av 220 at \$7.60, 110 av 270 at \$7.50.

Spicer & R. sold Sullivan P. Co. 260 av 180 at \$7.65.

Haley & M. sold same 380 av 180 at \$7.70.

Sundry shippers sold same 460 av 200 at \$7.65.

Farmers have saved largely in their feed bills this season on account of the open winter and the liberal supply of roughness and forage. Corn has been very cheap, and with recent sales of No. 2 corn for May delivery in Chicago more than 19 cents a bushel lower than a year ago and corn in Iowa country stations bringing only about 35 cents, there has been a strong incentive to feed stock extensively and to make holdings extra heavy.

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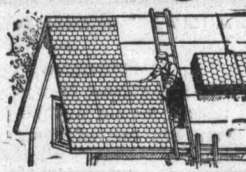
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New Seed Oats. Big money in oats if you raise the right kind. Here's your chance to get them. Imported Canadian Seed Oats for sale; extra fine. Send for free sample. It speaks for itself. This same oats we sold last year in the United States and proved their merit and our statement that the farmers need a change of seed in this country. We make a specialty of growing extra fine seed oats on our big Canadian farm; new, clean land; no weeds. Have best known varieties. Regenerated Swedish Select went 116 bushels to acre this year; Early New Market, Canada's favorite, 110 bushels to acre. Both of these are big, early yielders. We absolutely know from experience it will pay you to get a change of seed. Try some of these oats. The average oats are inbred and run out. Canadian Government Grain Inspector graded this grain No. 1 White. Harvested straw, white berry, thin husk, enormous yield. It is as easy to put in and harvest a big crop as small one. The reason your oat crop is not bigger is because your seed is run out. This has been proven. Look at this cut. Taken from photograph of two stalks from Galloway Brothers' field, over 200 kernels to the stalk. Write early for free sample, or send ten cents each for packet of one or both kinds. Will also send you free booklet entitled "Big Money in Oats and How to Grow Them" by Galloway Bros. and Prof. M. L. Bowman, former professor of farm crops Iowa Agricultural College. Information in this book is priceless. Get it free. Resolve to start a seed patch on your high-priced land this year. The book tells you how.

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800 Seeds Cabbage	3 Best Varieties	3 pkts.
2,600 " Lettuce	4 " "	4 "
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Also Breeders of Prize Hampshire Sheep

HORTICULTURE

FARMERS' HOME CANNING.—No. 2.

Principles Involved.

History shows that the art of canning is nearly as old as history itself, for long before the era of modern civilization the Chinese possessed a knowledge of canning and preserving. But not until one hundred years ago was there a practical application of the principle of preserving fruits or vegetables in cans or bottles by sealing them and then placing in boiling water for a given period, depending upon the kind of fruit or vegetable to be canned. At that period in history it was taken for granted that it was the oxygen of the air which caused the decomposition of canned goods, the theory was that by applying heat and excluding the air, a fusion of the ingredients and ferments was brought about in such a way that the power of the ferments were destroyed. Not until recent years have our scientists overthrown this theory.

The investigation and research made by scientists have proven that it is not the oxygen of the air which causes decomposition and fermentation, but germs which are microscopic organisms. The air we breathe, the water we drink, and all raw produce are full of minute forms of life. These are called bacteria, or molds, or yeast, and are spoken of collectively as germs.

These germs are the sole cause of fermentation and putrefaction. The exclusion of air from canned articles is unnecessary, provided the air is free from germs, for air which has been completely sterilized or freed from germs by applying heat may be continually passed over canned articles without affecting the article in the least. This may be proven by filling a bottle with any fruit or vegetable and in place of corking, fill the neck of the bottle with raw cotton and apply heat until all germ life is destroyed, the article will keep indefinitely. The air can pass in and out of the bottle through the plug of cotton very readily but the germs can not pass through the cotton without being caught in its meshes. This proves that by destroying the germs and their spores we have solved the art of canning.

Germs which cause canned articles to spoil may be divided into three classes, yeasts, molds and bacteria. All are plants of a very low order. They live and thrive upon plants of a higher order, and in order to preserve this higher organism we must destroy the lower plant life by applying a sufficient amount of heat for a given length of time, then sealing so that new germs can not come in contact with the higher organism. Yeasts and molds exist more freely in fruits, and are much easier destroyed than bacteria, both yeasts and molds thrive best in mixtures containing sugar but are easily destroyed by applying heat at the temperature of boiling water, but bacteria are much more difficult to destroy and therefore must have a much higher degree of heat applied and for a longer period of time. Molds require air in order to thrive but some species of bacteria will cause vegetables to spoil even when no air is present.

Bacteria are so small that they can only be seen with a high-power microscope and they reproduce themselves with tremendous rapidity. It is estimated that under favorable conditions one bacterium will produce about twenty millions in 24 hours. The reproduction of bacteria is performed by one of two ways. The germ either divides itself into two parts, making two where one existed, or it reproduces itself by means of spores. These spores or seeds are difficult to control in canning vegetables for, while the original bacteria may be readily destroyed at a temperature of boiling water, the spores retain vitality for a long time at this degree of heat and when cooled will germinate and the new bacteria will begin their destructive work. Therefore, it is necessary to apply a sufficient amount of heat for a given period of time that these spores or seeds will be completely destroyed. After being completely sterilized further care must be exercised. The spores of bacteria are so light that they float in the air and a bubble of air no larger than a pea may contain hundreds of them. Hence, it is necessary to take great care to exclude all outside air, for if one bacterium should get in and find a resting place it would only be a few days before the contents of the can would be destroyed.

To sterilize a substance or thing is to destroy all germ life and spores in or

about it. By being careful in performing the operation and being scrupulously clean there should be no reason why a farmer should not succeed in canning his own products.

Wayne Co.

G. C. RAVILER.

OBSERVATIONS ON TREE PRUNING.

Much has been said, and volumes written, on the important subject of pruning, but once in a while some other fellow has some new wrinkle which is worth while after all. For instance, a few years ago, while having charge of the setting and pruning of a nice young apple block, I was busily engaged when in strolled an old resident who, in fact, simply existed in the neighborhood and, after surveying my work remarked, "Pears to me I'd take every limb off them trees quite close up and leave no crotches or forks anywhere along the trunks, if they was mine."

Well, to satisfy my own curiosity, along toward the last I let him trim and set twelve trees to his satisfaction, and this is the way he went at it: The roots were spread out evenly on the bottom of the holes, which were covered with fine surface soil and moistened, after the first layer of roots were firmly established in the soil the next roots all about the stem higher up were similarly served, he making, in all, three different operations in firming the tree in the ground and, of course, his theory was as near an imitation of nature in the distribution of the roots as was possible to make. There were no crowded, twisted roots, nor any that touched another, all had "breathin' space," as he said, and every rootlet was thus supplied with a little world of its own to draw an unstinted supply of the elements from the soil for the proper sustenance of the growing tree. A shallow, and a rather wide, circle or basin, was left around each tree. This, he stated, was to catch and retain stray leaves, bits of debris, etc., the winds would eventually blow therein, thus forming a mulch and manure for the tree. It would also catch and retain more of the needed summer and fall rains, also in the winter this would hold the mulch, (straw, etc.), better when placed about each tree; the deeper mulch immediately next the tree being a better frost protector for the tender roots than natural soil was, he advanced also, as a factor in its favor.

I imagine he was more right than wrong, for every tree he set, lived and thrived vigorously. As to the pruning, every tree was carefully scrutinized and only those limbs and buds along the main trunk left that were not diametrically opposite. All limbs were left alternate, that is, if he retained a branch on one side, a portion of the way around the trunk, but always higher up, another was left, and thus to its top. When finished the tree had no crotches, but every limb grew out self-supporting from the parent stock. There were no weak forks for high winds to catch and split the tree in twain as one will see examples of in almost any old orchard.

I have followed this plan invariably since when setting out young trees of any kind and find it proves a superior method or way of doing.

In orchard pruning, if necessary to remove very large branches I saw from the under side first until it pinches somewhat, then if it is exceedingly large and heavy I rope its outer end securely to limbs on the tree and saw through from the top. I have never split a tree or stripped bark in this manner of removal. If one has a very choice tree and it becomes necessary to remove large branches and for fear the wound might decay, thus endangering the life of the tree, here is a method I have tried successfully in covering the severed surface next the tree. Saw in as usual from the under side as stated above, but before the cut is made from the top, take a sharp knife and cut out a tongue of bark, sufficient in width and length, so when the limb is off this will lap down over and completely cover the severed space. Of course, do not cut its upper end next the tree off. This strip of bark should be carefully worked back and up so one can insert the saw underneath it to sever the limb. When this is done, immediately wipe off all stray particles of sawdust, etc., and cut or trim the tongue of green bark to exactly cover the wound. The edge of bark all around should correspond so it will form a true union between them, then cover all over and for an inch or so below the wound with good wax firmly pressed in place. Afterwards bandage around the tree with sacking, etc., securely tied on to further exclude air and to hold the waxed bark in place. If your work has

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SOWING SMALL GRAINS.

There is a right way and a wrong way to plant. Soil conditions vary, even in adjoining fields, and no ironclad rule can be made to fit every condition. It is essential to have the land in proper condition for seeding, and no one will deny it. Some men get in such a hurry to seed that they think they cannot possibly wait another hour, so they get stampeded, mud in their crops and then wonder why their more successful neighbors get more bushels to the acre. Yes, it pays to plant right. It pays to have a good reliable grain drill to do the work—a drill that will not clog, choke or skip—a drill that will handle any size seed in any quantity desired. The farmer who really wants to put his seed in the ground and give it root room in a wide, broad seed bed, will investigate that old, reliable grain drill, the Farmers' Favorite, manufactured by The American Seeding-Machine Co., Incorporated, Springfield, Ohio, is a drill that can be thoroughly relied upon to do the work of any farmer in any part of the world. Among the many styles and sizes of Farmers' Favorite Drills will be found drills exactly suited to the seeding conditions anywhere. This drill is guaranteed in such a way that the purchaser runs no risk. Send for the Farmers' Favorite catalogue. Go to your implement dealer and insist on looking over the Farmers' Favorite Drill.



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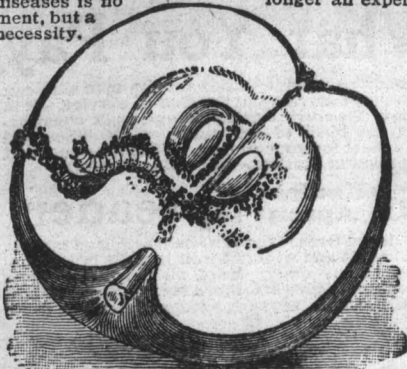
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The only pure bred, pedigreed oats. This variety is in a class by itself. The best yielder, the stiffest straw, the freest from rust, of any oat today. I have some choice seed, all cured under hay caps, not a drop of moisture ever touched these oats after they were cut. Every kernel has vitality.
COLON C. LILLIE, Coopersville, Michigan.

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Our readers will do well to write Wm. Stahl Sprayer Co., Box 108Y, Quincy, Ill., and get their catalog describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contains much valuable information, and may be had free.

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From 8 acres of land one man raised 5600 bushels of onions—an average of 700 bushels per acre. He planted

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Gives universal satisfaction. Its earliness permits planter to realize high early market price and its keeping qualities allow many of our customers to keep onions well into June. Pkg. 5c; 1 oz. 15c; 2 oz. 25c; 4 lb. 40c; 1 lb. \$1.40. Free Seed Catalog. G. H. HUNKEL CO., 107 Chestnut St., Milwaukee, Wis.

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Finest floral novelty of the season. A magnificent large flower with long stem, of perfect shape and just the color of the noted Enchantress Carnation. Free bloomer and you'll like it. Really worth 25 cents per packet, but we desire to place our large, beautifully illustrated catalog of seeds and plants in the hands of every flower lover and will send it with packet of 50 seeds of Enchantress Aster Free, if you mention this paper. **IOWA SEED CO. DEPT. 48. DES MOINES, IOWA**

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Wing's Mikado, Sable and Mongol are the heaviest known yielders. Are all our own new varieties obtainable from us only. Mikado has record of 37 bu. per acre. Will grow on poor soil and greatly improve it. Write today for catalogue.

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Fruits in Fall of first year and in Spring and Fall of second year. Better than a gold mine. 500 plants set in Spring of 1910 produced in Aug., Sept., Oct. and Nov. nearly 400 quarts, which sold at 40c to 50c per qt., netting us over \$2,000 to the acre. We are headquarters for these plants. Also all other Berry Plants—Plum Farmer, Idaho and Royal Purple Raspberries, Norwood and Early Ozark Strawberries. Hastings Potato. 28 years experience. Catalog will be sent you free. Write to-day. **L. J. FARMER, Box 160, PULASKI, N.Y.**

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1000 acres devoted to the growing of Scarff's fruiting strains of small fruit plants, fruit trees, farm seeds, garden roots, etc. Our free catalog will surely please and save you money.

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Government statistics show there were 48,000,000 bushels less of potatoes grown in the United States last year than in 1909. This with increasing population must necessarily make a larger demand for potatoes in 1911. No crop as a

Money Maker

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OATS

That Yield. Our Sensation Oats breaks all records. Nothing like it. Also Seed Corn. For samples and catalogue write. **Theo. Burt & Sons, Melrose, Ohio.**

been careful and thorough the grafted bark will unite and in one season a wound five inches across may thus be completely healed. Remember, it takes pains and patience to do a good job but if not done in a perfect manner your time, etc., will be thrown away. In an experimental way I have thus covered dead, dry wood and healed over spaces several inches in extent. This is tree surgery, pure and simple, and many seemingly impossible feats may be performed successfully if one but goes at it understandingly and is studiously painstaking in his efforts.

Gratiot Co. G. A. RANDALL.

CUTTING BACK YOUR YOUNG APPLE TREES.

Do young apple trees need to be headed back? **Allegan Co. A. K.**

Most growers would head back the young apple trees for the first two years after planting in order to give a vigorous, stocky plant. After that it is the general practice to allow the young apple trees to grow up to bearing age without much further cutting of the top. This gets a better shape, a more compact head, and many are of the opinion that trees thus treated will come into bearing sooner than those pruned closely. Of course, dead and disorderly limbs should be pruned and those crowding each other too closely, but the heading in that is given to peach trees is not to be generally recommended for apples inasmuch as the latter trees are not subject to the straggling habit of growth so common to peach trees. The ideal apple tree has bearing surface all through the central portion of the top and this condition is best attained when the pruning shears are not used too freely the first half-dozen years of the tree's life.

HOW TO GROW CURRANTS.

Could you please tell me how to grow currants, and how to prevent worms from destroying the plants without poisoning the fruit.

Shiawassee Co. E. E. B.

For currants make ground rich by liberal use of barnyard manure and commercial fertilizer, having plenty of potash. Cultivate ground the previous season, if convenient, and have soil in fine condition for planting early in the spring before the plants have a chance to start growth. Use the best plants; set rows five or six feet apart and plants about four feet apart in the rows. Cultivate shallow after planting as the roots grow near the surface. Mulching about the plants is a good practice, but where there is a large number of plants cultivation is cheaper. Fruit is produced on both old and young wood; hence, one can keep the top cut back and at the same time allow enough new wood to develop to renew the head every few years. The older shoots are harder and produce more fruit while the new ones produce better fruit. Wood over three years old should usually be removed. Have about six canes in each hill.

The currant worm produces two broods each season. The eggs of the first are laid early in the spring on the leaves. They hatch, eat liberally of the leaves, go into the pupa stage, come out and lay eggs again in June or July when another brood is started. Use Paris green or arsenic for the first brood to prevent their coming to maturity, and when the second generation appears use white heliole, a teaspoonful to a gallon of water. Do this work thoroughly, and you will not have serious trouble. Heliole is a poison, but it soon loses its strength when exposed to the atmosphere, hence the fruit is not endangered by its use, but the material should be fresh to give best results.

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By special arrangement Ratekin's big 1911 seed catalogue, with a sample of "Diamond Joe's Big White" seed corn that made 153 bushels per acre, will be mailed free to every reader of this paper who is interested in the crops they grow. This big book tells how to make the farm and garden pay. It's worth dollars to all who plant or sow. Write for it and mention this paper. The address is **RATEKIN'S SEED HOUSE, Shenandoah, Iowa.**

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are made of the strongest rubber in the world. They're made on honor by people who know how, on a special plan of construction that experience has demonstrated a success. The duck vamps are made by forcing the highest grade rubber into the best quality of canvas duck by powerful hydraulic pressure instead of by hand. As a precaution against cracking at the ankle, we use an extra ankle reinforcement of pure gum, while others use a strip of cloth. Cloth is cheaper. Century Soles are made from the toughest compound known, and will outwear the soles of the average rubber boot two to one. Here we reinforce again by running a strip of pure gum all the way around the edge of the sole, making a connection so firm and lasting as to absolutely prevent breaking. It's not easy to tell a good rubber boot by appearance, and even the dealer gets fooled occasionally. More often he yields to the temptation to make what looks like a little "easy money" by stocking up on a "cheaper" article on the representation of some smooth salesman that "it's just as good" as the Century. Why take chances on goods of doubtful quality when you can have Century Boots, backed by years of success, at no greater cost? It has paid thousands of people to insist on having the Century. Beacon Falls Rubber Footwear is "always the best for the money"—best for wear—best for style and fit. Ask your dealer for it, and if he can't supply you, write us, giving his name, and we will see that you are fitted out. Illustrated booklet free.

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JOHN R. MARVIN, Fenton, Mich.

WARFIELD—Strawberry Plants \$1 per 1000. Sen. Dunlap \$2 per 1000. 100 varieties. Catalog free. **J. G. Prestage, Allegan, Mich.**

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It Destroys **SORREL** and **MOSS** And insures a heavy yield of Alfalfa and Clover.

LIMESTONE makes sour land sweet. Increases the yield of all crops. It supplies the necessary carbonate to light sandy soils. To make heavy clay land more porous and easily worked use the great loosener

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Will positively destroy **SAN JOSE SCALE** and all soft bodied sucking insects without injury to the tree. Simple, more effective and cheaper than Lime Sulphur. Not an experiment. One gallon makes 16 to 20 gallons spray by simply adding water. Send for Booklet, "Orchard Insurance."

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It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.

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A WHITE package which insures highest prices for your fruit. Write for 1910 catalog showing our complete line, and secure your BASKETS, CRATES, ETC., at WINTER DISCOUNTS.

The Berlin Fruit Box Co. Berlin Heights, Ohio.

THE HOME GARDEN.

Irregardless of commercial consideration, the pleasure of having one's own garden, giving the needed exercise in the open air, being intimately associated with growing plants, and being able to secure one's vegetables always fresh from the soil, is one of the blessings of rural life.

Having been raised in the city and unacquainted with the demands of horticulture, it takes time, and thought, to meet the exigencies of the ever recurring needs of growing plants. We bought the little home where we now live two years ago last fall. Aside from that occupied by the house, lawn, and barn, we have about one-half acre in garden. Both seasons have been extremely dry, and as the land was in a run-down condition, we have not been able to accomplish our ideal, but have met with fair success as novices.

In the spring of 1909 we set 200 strawberry plants (Brandywine). They were set three feet by two feet and were allowed to form matted rows. Last June we picked 175 baskets of superfine berries, there being but few small ones. Last spring we enlarged the bed, setting them the same distance, but did not let them run. Last fall some of the plants measured 18 inches across and should give a good crop next June.

I am going to relate how we grew an extra early crop of cabbage by a process but little known and seldom practiced.



Products of "Oak Farm," Allegan Co., O. C. Goss, Proprietor.

The seed was sown in September, and the plants transplanted to a cold frame in October. Though we had a temperature of 18 degrees below zero and the bed had no protection over the glass except some old pieces of carpet, we succeeded in carrying the plants through the winter in good condition. They were set in the garden in March, and though we had severe freezing afterward, did not lose a plant. During the first warm days of May the plants began to wilt, and examination showed that they were attacked by the root maggot. The outlook seemed dubious, as every plant wilted, and from three to six maggots were found to the plant. We gave them a liberal dose of soap and kerosene emulsion, making a hole with a stick near the plant and filling it with the emulsion. The plants recovered, and headed finely, maturing by the first week of July, when they sold readily at eight dollars per hundred. The middle of July the ground was set to late cabbage, making a good crop. On the ground where we grew early potatoes, we planted White Plume celery as a second crop. We made a mistake in setting it three feet between the rows, instead of four, as we did not have room for banking without using boards. We have tried both the old and new systems of onion culture, and have had the best success with the new, which consists in sowing the seed in shallow boxes in the living room about the first of March. We sow them rather thickly, in rows three inches apart, and clip the tops once or twice before setting them out. We grow the Prizetaker and by this new process have grown some very large and fine ones.

Tomatoes, peppers, eggplants, etc., are started in the window boxes the middle of March and transplanted to cold frames in April. We use home-made boxes made of pasteboard, cutting strips three inches wide, and of a length when pinned together that will make a box two and a half inches across. These are set close together in the cold frame and filled with

soil and the plants set. In taking them up we use a trowel to slip under them, to prevent spilling the soil.

Melons, cucumbers, squash and lima beans we forward in the same way, but these are planted directly in the boxes or on pieces of sod inverted in the frame. The sods are transplanted with the melons. Last summer we planted some tomatoes in old tin pails, sinking them level with the ground. These were put in the cellar in the fall, and now, January 12, we still have ripe tomatoes. We also grow rhubarb in the same way, taking the roots up in November and planting them in tubs, or boxes in the cellar. Last winter it was ready to use by the first of February, and was of superior quality.

As we are only beginners we have had to depend on books and garden papers for information. But we enjoy the novelty of it, and are not sorry we came to the country.

New York.

JENNIE A. MACK.

GARDEN PAYS IN GRAND TRAVERSE COUNTY.

While reading in *The Farmer* of the gardens "that paid in Indiana," I thought it might be interesting to learn what a Grand Traverse county garden did. Our garden consisted of about half an acre of which about one-third of it was set to strawberries, currants and blackcaps—the strawberries and currants were set in October, 1909, and the blackcaps were set last spring, so we did not receive anything from them this year. Our land is new and a great many people thought we could not raise anything in our locality. But I will tell you what our garden did alone for us. First, we purchased the best seeds. I planted about one-sixth of the garden to watermelons and cantaloupes. I planted two varieties of watermelons, Cole's Early being the best, which ripened September 1. We sold \$51.00 worth of melons, besides many feasts were held at home. The rest of the garden consisted of most all kinds of vegetables, of which we sold \$26.50 worth. We remembered all our neighbors and friends who did not have plenty, and had then more than we could use and so fed the hogs about 15 bushels of sweet corn. We had radishes from the middle of May till the last of September. Our garden is fenced partly with wood and partly with woven wire and where we did not have a fence I planted sunflowers and flowering beans, which made a beautiful hedge, as some of the sunflowers grew 16 feet high, with heads varying from 11 to 18 inches across. The woven wire was covered with yellow-podded snap beans. The pods grew from nine to 12 inches long and as wide as a caseknife.

Now all we did after our garden seeds came up was to wield the hoe, and we were amply repaid as we received \$77.50 in cash; besides, we have 12 bu. of carrots, five bu. of beets, 125 head of cabbage, lots of pickles, five quarts of shell beans and plenty of canned tomatoes and corn.

We did not think of raising much to sell, but planted it to see if common garden crops would grow on our land as it is sandy soil. We now believe that we can.

Grand Traverse Co. MRS. F. GEIGER.

THE OHIO STATE HORTICULTURAL SOCIETY.

This association has just held an intensely interesting three days' session at Columbus, Ohio. The past year has been a very good one, the membership being increased from 332 members to 440. Two interesting features were demonstration meetings on proper methods of packing fruit and on fruit as a food. The program covered about every feature of the fruit business. Along with this meeting occurred the state apple show, which was a success from every viewpoint.

Ohio.

CLYDE A. WAUGH.

The manufacturers of spraying machinery and spraying materials will have an exhibit of their products at the Michigan Agricultural College, February 28 and March 1-2-3. This is the date of the annual Round-up of the Farmers' Institutes. Space has been assigned for this exhibit in the new Agricultural Building. Every effort will be made by the manufacturers to make this the best display of spraying machinery and spraying materials ever held in Michigan. The Michigan fruit that was on exhibit at the land show in Chicago will be on exhibit at this meeting. Those who are interested in fruit and spraying will find it to their advantage to attend this meeting

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The Great Western is a *quality* spreader—made for the men who can see *past* the price to the years of service and the *kind* of service. It is built with the finest materials—the correct principle and right construction. Then the price is fixed on the basis of our matchless facilities and enormous output which insures the most for your money. 100,000 farmers and most U. S. Government and State Experiment Stations—use and endorse the

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SPRAYS AN ACRE IN 20 MINUTES.

The H. P. Spramotor will spray an acre of Potatoes in only 20 minutes. No other method known can do that work in even twice the time.

The picture above shows the H. P. Spramotor spraying Potatoes. There are three nozzles to a row, and four rows. Two spray from the sides, and one from the top. They are adjustable to height and width up to 40-inch rows. The nozzles will not clog, or get out of order. Have a 12-gallon air tank, with 100 pounds pressure guaranteed with 12 nozzles open. Automatic and hand controlled. The Spramotor has agitator clean-out pressure relief into tank, and nozzle protector, all under control of the driver, from seat. The Spramotor is made for 1 or 2 horses. Fitted for Orchard, Vineyard and Grain Crops. Can be operated by hand. The Spramotor saves enough money in time and labor to pay for itself in 1 year on 20 acres of potatoes. Don't be content with moderate results when you can increase per crop 3 or 4 times. Send for free Treatise on Crop Diseases. Agents Wanted.

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It works two rows at once—16, 18 or 20 inches apart, and goes close to plants, leaving the ground smooth and level. Extensions can also be used to work 22, 24, 26, 28 inches apart.

Cultivating parts are of high-carbon steel, and the whole implement is strong and well-built. Made by an actual farmer and experienced manufacturer expressly to cut down work and save time and money. And the Planet Jr does it every time. A full guarantee covers every implement.

Write for illustrated 1911 Catalogue of Planet Jr Beet and Orchard Cultivators, One and two-horse riding cultivators, Harrows, Seeders, Wheel-Hoes—55 different tools for farm and garden use. Free and postpaid.

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Diamond Joe's Big White—A strictly new variety. None like it. It is the Earliest and Best Big White Corn in the World—Because it was bred for most Big Bushels, not fancy show points; because grown from thoroughbred inherited stock; every stalk bears one or more good ears, because scientifically handled, thoroughly dried and properly cured and had the most rigid examination. Big Seed Catalog FREE. It tells about all best farm, grass, garden and flower seeds grown. Write for it today.

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Burpee, Philadelphia,

we shall be pleased to send THE LEADING AMERICAN SEED CATALOG. An elegant book of 174 pages, it tells the plain truth, and should be read by all who would have the best garden possible and who are willing to pay a fair price for seeds of the

is sufficient for the front of a post card. If you will write your own address plainly on the other side

Burpee=Quality

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Peach Trees

800,000 Peaches 5 to 7 feet 9c; 4 to 5 ft. 8c; 3 to 4 ft. 6c; 2 to 3 ft. 4c; 2 to 3 ft. light 3c; 200,000 Apples, 50,000 Pears, 50,000 Plums, 100,000 Cherry, 300,000 Carolina Poplar, and millions of Grape and Small Fruits. Secure varieties now, pay in Spring. Buy from the man who has the goods and save disappointment. Catalog, Sheerin's Wholesale Nurseries, Danville, free to everybody.

POULTRY AND BEES

PRODUCING HATCHABLE EGGS.

As the breeding season is about to begin, now is the time to make preparations for hatching the eggs. In order to secure pullets for early laying next winter it is not too soon to pick out and mate the breeders. This, in itself, is an important and perplexing problem.

To produce fertile, hatchable eggs that will bring forth vigorous, livable chicks we must have healthy, vigorous, breeding stock. This is essential for size, vigor and laying qualities. Stock that has ever suffered from roup or some of the other serious ailments must not be used in the breeding pen. The chicks will be likely to inherit a tendency toward disease, will be weak and undersized at best, and consequently will develop into anything but profitable fowls. A chick well hatched is half raised. These are the kind that will stand a bit of rough weather without contracting colds, etc., and that will develop into large, healthy, profit-producing specimens.

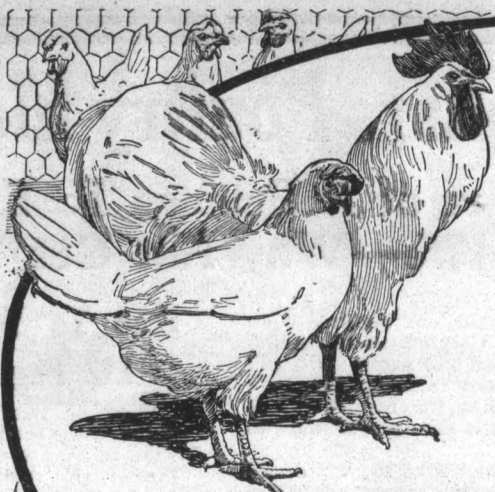
Breed only from the best layers. This is an easy matter where trap nests are used. In the absence of trap nests, other means must be resorted to in order to pick out the layers. A safe rule is to select only the active, nervous hens, those that eat heartily, that are off the roost early in the morning and the last to go back at evening, and that have red combs and bright eyes—in short, the industrious hen. Mated to a good vigorous cockerel, a good crower, one that spoils for a fight, that has a bright red comb and that is not closely related to the females, such hens should produce chicks that will live and thrive under almost any conditions.

Hens' eggs are usually preferred for hatching. They are considerably larger than pullet eggs, consequently bigger and stronger chicks are hatched. These eggs should possess strong germs as the mature hens had their laying test last year with a good rest before beginning this season's work. While it is desirable that they be good layers they should not be forced for heavy egg production. Stock that has laid heavily all winter should not be used for breeders in the early spring, as their eggs are not likely to produce extra strong chicks. The feeding of ground green bone or animal meal will increase the fertility of the eggs, but care must be exercised not to feed too much at one time, especially in the beginning, as bowel trouble may result. Stimulants or condiments must not be resorted to in order to get eggs. They only do harm when fed to breeding stock.

The stock should have fresh air coops in preference to closed, warm quarters. If one does not care to go to the extreme of providing open-front houses, muslin covered openings should be provided, which are nearly as good, in fact are preferred by many. All possibility of draughts is thus removed, and yet plenty of cool fresh air is admitted, affording perfect ventilation. I have an inside door made of light strips, covered with muslin, which I close in the day time, leaving the outside board door open. This affords more light and fresh air. The muslin covered openings can be arranged on the south side between the windows. Some glass windows are necessary, however, to let in plenty of light and sunshine. With a muslin covered drop curtain to let down in front of the roosts at night the chickens will be plenty warm with no danger of frosted combs. A house thus arranged is about 8 to 10 degrees warmer than a closed house with only glass windows.

The eggs for hatching should be gathered often. If once allowed to become chilled they are spoiled so far as hatching is concerned. They should be stored in a room having an even temperature, if possible, and turned every day. Place them where draughts do not strike them and where the sun does not shine directly upon them. They should also be covered with a cloth to prevent the shells from drying out. White diarrhoea in chicks can be prevented by dipping the eggs in a weak solution of creolin and water. They should be placed in the incubator immediately after dipping. Some may feel inclined to doubt the possibility of getting a good hatch if the eggs are dipped, but extra good hatches have resulted from this method. The inside of the incubator should also be thoroughly disinfected with the same solution. A spray pump is excellent for this work.

Indiana. O. E. HACHMAN.



Make Your Hens Pay Better—

Perhaps, Mr. Henman, you go "by the book" and think because you do, you're getting about all there is in poultry. Well! here's a point worth your further consideration. The expert knowledge which you've gathered from the published experiences of others *will net you many more good dollars* if you'll follow "The Dr. Hess Idea" for the care of hens, and mix in the morning mash which you give them a small daily portion of.

DR. HESS Poultry PAN-A-CE-A

Dr. Hess Poultry Pan-a-ce-a makes more of the hen's food digest. That means less food lost through non-assimilation—more food converted through the proper channels into meaty eggs. Hens getting Dr. Hess Poultry Pan-a-ce-a stop robbing at the trough and begin paying in the basket. It makes healthy fowls and good profits a certainty. It carries young chicks safely past the many dangers of early chickenhood. It makes market birds and old fowls fat rapidly and it prevents such common poultry troubles as roup, cholera, gapes, etc. Ask your dealer for Dr. Hess Poultry Pan-a-ce-a. Remember "The Dr. Hess Idea—a poor ration well digested, is better than the best ration poorly digested." A penny's worth of Dr. Hess Poultry Pan-a-ce-a feeds thirty fowls one day. Sold on a written guarantee.

1½ lbs. 25c; mail or express 40c; 5 lbs. 60c; 12 lbs. \$1.25; 25 lb. pail, \$2.50.

Except in Canada and Extreme West and South.

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Send 2 cents for Dr. Hess 48-page Poultry Book, free.

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In every line of business, under existing conditions, there is an effort to improve. Throughout the country the farm press and the bright minds of leading agriculturists are occupied with cultivation, fertilization and intensive farming. This question appeals especially to the farmer because his opportunities to succeed are far greater than in other occupations. One of the chief needs of modern farming is good

fertilizer

An acre of tillage land eight inches deep weighs 2,000,000 pounds (1,000 tons). An average dressing of concentrated fertilizer at the rate of 1,000 pounds per acre gives only one pound of mixed fertilizer to every ton of soil, or less than a grain of actual plant food to each pound of soil.

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We guarantee that our fertilizers are brought up to the highest state of perfection and are made just right to produce the best results. There is no guess-work about it.

Every operation in the manufacturing of our fertilizers is directed by expert chemists. Scientific formulas are carefully observed, materials and the finished goods are thoroughly analyzed, and when we print our guarantee on the bags we know that the goods are absolutely perfect and of the highest productive quality.

We want good reliable agents for unoccupied territory. Write us for further information.

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Largest manufacturers of high grade Fertilizers in the world.

GET EGGS NOW

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The incubator is Both \$10 For \$10. California Redwood, covered with asbestos and galvanized iron; has triple walls, copper tank;

nursery; egg tester, thermometer, ready to use. 30 Days' Trial—money back if not O. K. Write for Free Catalog today. Ironclad Incubator Co., Dept. 65 Racine, Wis.

SELECTING AND USING THE INCUBATOR.

When the old sitting hen that has been given every attention for eighteen or nineteen days, riseth from her nest, "and like an Arab steals away," one's thoughts will naturally turn to artificial methods of incubation.

The last year we tried hatching our chicks under hens, we got 72 chicks from 364 eggs. The result of that season's efforts was what kindled out interest in incubators and brooders. So the mails were filled with requests for catalogs, and, as was to be expected, each manufacturer proved most conclusively that his was the best machine. As we received some fifteen or twenty catalogs, the choosing of a machine was a difficult undertaking. Many kinds of wood and many different metals were used in the various makes. Some were heated with hot water, some with hot air, and most of them seemed to have some point of superiority which the others did not have.

There are many points to consider in choosing a machine, but really little choice between different makes of the same grade. Naturally one looks for superior workmanship and greater durability in the high-priced machine. Different buyers will have radically different ideas as to the relative importance of various features and as to their simplicity and efficiency. In the main, these are matters of individual taste and preference and a careful comparison of the various makes through the catalogs should enable practically every purchaser to select the machine which most nearly meets his ideas and requirements.

Now a few words about operating. I do not intend to give minute directions for running an incubator, as each manufacturer furnishes directions for operating his machine, and they should be carefully followed. Then if disaster attends your efforts you will have just cause for complaint. There are a few things in general, however, which might be of assistance.

To retrace a little, it is better not to keep the eggs intended for hatching over ten days, certainly not over two weeks. They should be kept at a temperature of about 60 degs, and should be turned every day. A handy way to manage the turning is to place the eggs, as fast as gathered, in crates such as many use for taking eggs to market; then turn the crate or crates first on one side and then on the other. If you have only a few hens and are saving eggs for a 200-egg incubator, it will be found quite a task to turn each egg separately until the required number is obtained. Choose a place which is as handy as possible for running the incubator for it requires a good deal of attention and if it is not easy of access one is apt to slight it. We usually run ours in the kitchen for the first hatch and if, by the time we are ready to set it again, it is too warm there, we move it into the sitting room.

Of course, the eggs must be turned often—the directions will tell you how often. Placing a small mark on one side of the eggs will help you to determine whether you have really turned them or not.

The temperature after the regulator has been set, will remain at the desired point for six or seven days; then it will gradually rise until the hatch comes off, this being due to the heat the eggs themselves generate as the incubation goes on. Thus the regulator will have to be set every two or three days, after the first week, on account of this. I mention it here as we failed to find it in the directions furnished us, and when operating our machine for the first time we worried much, thinking the regulator had gone wrong.

After the hatching begins, we prefer to remove the chicks as fast as they become dry, putting them in baskets lined with soft warm cloths with one thrown over them, then placing them beside the kitchen stove where a good fire is kept. They fluff up better under this treatment and it makes more room for those in the incubator that are all the time coming out. Care must be taken if you follow this plan, lest the heat run down and "spoil" the latter part of the hatch. For removing the chicks at intervals also removes the heat they have been generating, and as the regulator has been set to take account of this, it must constantly be readjusted. Watch the thermometer and regulator closely at this time.

A Word for the Brooder.

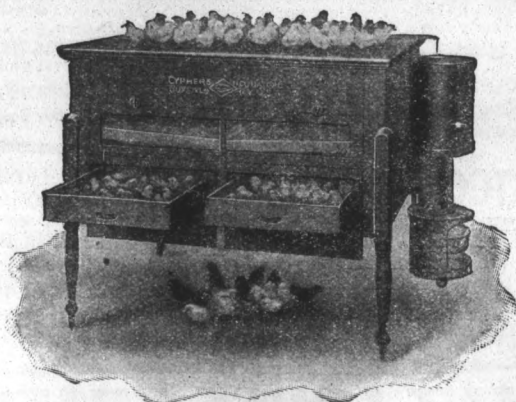
While I have not space in which to discuss the brooder at this time, I would just say that I consider the brooder as necessary to the incubator, as the hen is

A Billion Dollars Poultry Money For 1911

A Big Share of It Belongs To Every Farmer and His Wife—Why Not Get Your Share?

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Poultry and eggs are two of your *most important crops*. Don't forget that!

They are worth your *best effort* and *best attention*. You *must* have the right equipment—a *real* incubator!

The Cyphers is the *logical* incubator for the intelligent farmer who uses modern appliances—for whom the best is none too good.

It is the greatest "hatching machine" on four legs that was ever invented. The Standard Cyphers is a hot air machine—because that is the *best* method. It has absolutely no heat or moisture worries—no ventilation or regulation uncertainties. It is used by more Government Experiment Stations, more large poultry plants, more leading fanciers, and by more *progressive, successful* farmers than all the others put together.

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are fireproof and insurable. Every machine is fully and positively guaranteed.

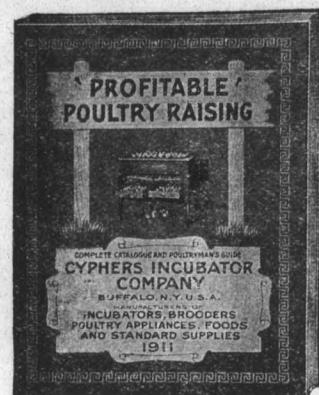
Don't throw away your money on a cheap, built-to-sell incubator—a never-ending waste of time, money, temper and eggs. Own a *Cyphers* first—and you will never know what incubator troubles are.

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See pictures of the world's largest, best paying poultry plants. See letters from users, farmers, fanciers, experiment stations. Let these people who *know* give you the facts—then profit by their experience. See the Standard Cyphers Incubators and Brooders in all sizes, illustrated and described in detail. Also our one hundred standard poultry specialties. Write for this book now—the biggest book about the biggest industry—a billion dollar business. Send coupon below or a postal *now* to learn how to get your share of the profits.



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2,000 Local

Selling Agents.

Memory-Jogger

This reminds me to send today for Cyphers Company's new book "Profitable Poultry Raising" and complete 1911 catalog of Incubators, Brooders and Poultry Supplies. I have in mind the purchase of a.....size incubator (or)size brooder.

My name is.....

My address is.....

To Cyphers Incubator Company, Dept. 35, Buffalo, N. Y.

\$5.20 Buys My Double Wall, Hot Water Fifty Egg Incubator

A better machine for the money cannot be had. Guaranteed to hatch every fertile egg. Double walls. Hot water tank covers entire top of egg chamber. Absolutely self-regulating. I've built incubators for 30 years.

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An Incubator Really Different

In that the complete Incubator is metal covered, insuring bigger hatches, making even temperature more certain. That's why *Freight Prepaid* you'll find it economical, safe, pleasant, easy to run a

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entitled "1911 Notes on Poultry Raising" Send for it. National Incubator Co. 140 18th St. Racine, Wis.



125 Chick \$8.00

NATIONAL INCUBATOR CO.

RACINE, WIS.

Aches, Sprains, Bruises, Stiffness, Soreness, Neuralgia, Lumbago, Sciatica

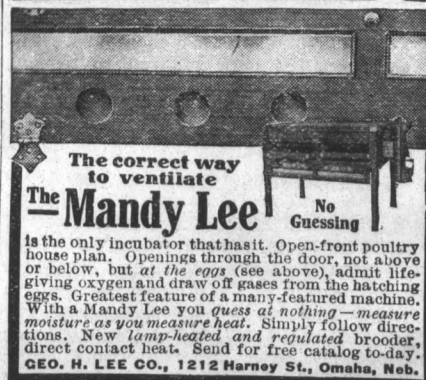
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SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1911 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickenhood. You need it. Only 15c. C. C. SHOEMAKER, Box 911, Freeport, Ill.

to the chicks when hatched in the old way. The first season we tried placing, under hens, chicks that had been hatched in the incubator, but the hens did not take kindly to the little orphans and a good many were killed. The brooder lightens the season's work, for one can care for fifty chicks in this way almost as easily as fifteen can be cared for with the hen.

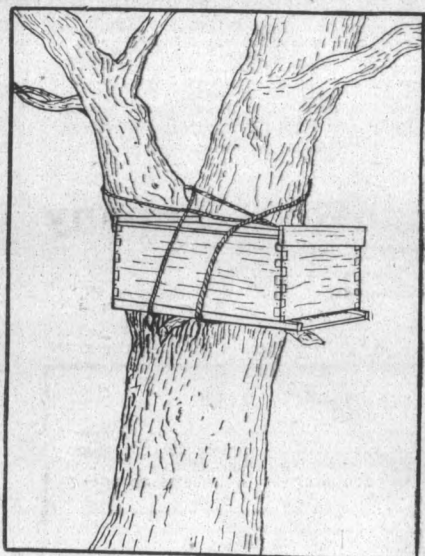
To the farmer or poultryman who keeps two or three hundred hens or more, it is almost impossible to keep up the flock without the use of incubators and brooders. Even those farmers who do not keep over a hundred fowls, will, I believe, find it a profitable investment. There is no waiting upon the inclination of the hen to commence incubation, and no leaving the nest with the work half completed. The brooder will not take the young chicks off through the morning dew, nor refuse the needed warmth at any time. The chick is the chooser; there is no peeping for the mother hen, no mad scramble to keep from getting lost, but, with plenty to eat and with proper care it is just a rollicking, jolly time to see which will grow the fastest and crow first.

Ohio.

W. W. HOWES.

DECOY HIVES.

In a country where big timber is plenty decoy hives will stand a poor chance of catching anything, but where timber is small and scarce and bees are consequently hard up for a place to locate, decoy hives will prove a paying proposition. As there is nothing about them but what any farmer can easily arrange, there is no reason why the man living in such a place should not be supplied with bees. All there is to do is to get some hives fitted up with frames of foundation and one



frame of old comb and fasten it up in a tree in the edge of the woods. The bees do the rest. Of course, you cannot expect that every hive so put up will catch a swarm, but if you are in a country where many farmers keep bees you will be pretty apt to get enough to pay you well for your trouble. The illustration will show the manner of fastening to the tree.

Mecosta Co.

L. C. W.

INFLUENCE OF THE DRONE.

Bee-keepers who seek to improve their bee stock by breeding their own queens must give some attention to the drones with which their breeding queens mate. While obviously true, this phase of the problem of queen rearing has been given little thought in the past. Dr. Phillips, apicultural expert of the Department of Agriculture, declares that drones should not be allowed to fly except from colonies where the queens are prolific and the bees good workers; that just as much care should be exercised in the choice of colonies for the production of drones as for breeding queens. The mere fact that mating takes place in the air out of the control of the bee-keeper, is no reason why care should not be taken in the selection of the drones which shall be allowed to fly about the apiary. When breeding any race, Italians for example, it is not enough that all the drones be Italians; they should be selected as to the honey-producing powers of the workers, the prolificness of the queen, or any other quality that is considered in choosing a breeding queen. The selection of drones may be accomplished by the use of drone traps or by cutting out drone comb. For absolute safety the drone trap is preferable, since some drone brood may escape observation. Aged queens are known to produce a larger proportion of drones than younger queens.

Why Pay More

125 Egg Incubator 125 Chick Brooder

If you could see the Wisconsin side by side with others selling for \$4.00 and \$5.00 more, you would agree with me that to pay more than my price and get less value is the height of folly.

If Ordered
Together
Both for

\$10
Freight
Paid
East
of the
Rockies

You see I know what I am talking about, for I have bought and compared side by side others on the market. Over in the other columns I have pointed out these comparisons for your benefit exactly as they are and you can judge for yourself how much less you get for the extra money you pay.

That's why I ask "Why Pay More?"

Why My Sales Double Every Year

There is a lot of people who have learned the truth of my statements. They have saved those extra dollars and each year this number is increasing. Each year my sales are doubling and this enables me to improve my machines—give better value for the same money. I won't raise the price, though in comparison with others, I know they are easily worth \$15.00. I want to give the biggest and best incubator and brooder bargain on the market and I am doing it. There is none on the market that approaches them even at 1/2 more cost and I'll prove it to you.



Natural
Finish
California
Redwood

four sell an average of two, making an endless chain of sales—all because of the excellent results they give my customers and the bargain price I make of \$10.00 for two machines, freight paid.

I Ship Them on 30 Days' Trial

You have ample time to test them out and if not completely satisfied you can send them back at my expense. Out of the thousands I ship every year if I told you how many ever come back I doubt if you would believe me.

20,000 Machines in One Year

That's the high watermark and nothing but genuine merit can ever make it possible. Then to double it—certainly it requires the very best at the lowest cost to climb into public favor at such a rate. But that is what increases the sales of the Wisconsin Incubators and Brooders.

Every machine I sell through my advertising sells me an average of four more and each of those four sell an average of two, making an endless chain of sales—all because of the excellent results they give my customers and the bargain price I make of \$10.00 for two machines, freight paid.

What Users Say

Wisconsin Incubator Co., Racine, Wis.

Dardanelle, Ark.

Dear Sirs:—You have the best incubator on the market, regardless of price, and I am perfectly satisfied with the one I purchased from you. Out of four hatches I got 360 chicks. The Wisconsin requires less attention and burns less oil than any other incubator I have ever used and the regulator is perfect. By following the book of valuable instructions anybody can have good luck and it does not take an experienced person to run a Wisconsin. Any child that can read can run your incubator. I am going to get another right away.

JESS C. ADNEY, P.O. Box 158

Wisconsin Incubator Co., Racine, Wis.

Grass Lake, Mich.

Dear Sirs:—I do not think there is a better machine on earth than your incubator. I have taken off four hatches and I got a 100 per cent hatch the first three times and a 99 per cent hatch the fourth time. From the first three hatches I got 115 chicks from 115 eggs, 105 chicks from 105 eggs and 109 chicks from 109 eggs. No incubator on earth can beat that. I will stand by this statement as I can prove it.

A. JESSUP, R. No. 3

Wisconsin Incubator Co., Racine, Wis.

Blanchester, Ohio

Gentlemen:—I am well pleased with the way your incubator works. I think that chick nursery underneath your egg tray is all right as you do not have to take the chicks out until they are all hatched and they come downstairs like the children in the morning. I set the incubator three times and got 245 chicks and the best part of it is that they are all running around our yard today and the first two hatches are full grown.

F. FERREL

Wisconsin Incubator Co., Racine, Wis.

Ripley, Tenn.

Gentlemen:—The Wisconsin Incubator I purchased of you has proven more than satisfactory in every respect. I have had most excellent hatches with it. From my first hatch I got 98 chicks from 110 eggs. I am very glad indeed that I purchased a Wisconsin incubator and brooder, for \$10.00, instead of a higher priced machine, which I feel sure could give no better results. I have just taken off another hatch and wish you could see them. They are beautiful.

M. A. GILLESPIE

Wisconsin Incubator Co., Racine, Wis.

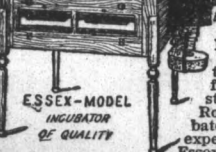
Pimento, Ind.

Gentlemen:—We had fine results with your incubator. We set it four times and it hatched 90 per cent each time. There are several different makes of machines in this locality but the Wisconsin easily beats them in every way. The brooder is everything that is claimed for it and the two together make a complete outfit for a chicken raiser, and I recommend them to be the best on the market regardless of price.

HARRY THOMPSON

Wisconsin Incubator Co., Box 126, Racine, Wis., Thos. J. Collier, Mgr.

Every Farmer and Farmer's Wife can Make Money with Poultry



And They Don't Have to be Fanciers
Poultry is part of straight business farming—often the best paying part. Send for 1911 Free catalog and start right. Learn the way Robert H. Essex, the incubator authority and poultry expert, advises. The 1911 Essex Model Incubators and Brooders are the latest and best money makers for farm poultry raising. Every man, woman and child who keeps even a few chickens should read this highly instructive book. Free. Write for copy.

ROBERT ESSEX INCUBATOR CO.

92 Henry Street

Buffalo, N. Y.

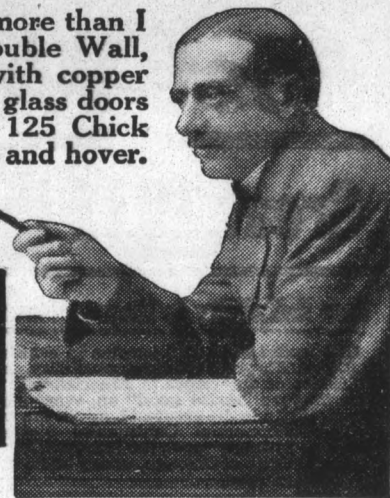
BEEKEEPING

its pleasures and profits, is the theme of that excellent and hand-illustrated magazine, GLEANINGS IN BEE CULTURE. We send it for six months on trial for twenty-five cents, and also send free a 64-page book on bees and our bee supply catalog to all who name this paper. THE A. I. ROOT CO., Box 54, Medina, Ohio.

Build Your Own Incubator

ANYONE can easily do it and save good money. I have a great big interesting free book which shows you how. My parts are the best and most economical in the world. Write today for FREE BOOK and let me show you how to save incubator money. H. M. SHEER, Dept. 76, Quincy, Ill.

It is simply throwing money away to pay more than I ask for my 125 Egg, Hot Water, Double Wall, California Redwood Incubator with copper tank and boiler, large double glass doors and roomy nursery and 125 Chick Brooder with Lamp and hover.



Why I Can Sell Better Machines at One-Third Less Cost Than Others

I was the first to make and sell an incubator and brooder for \$10.00, freight paid. It was two years before my imitators got busy. I had a good start on them and they are farther behind today than ever.

It takes experience (more so than money) to know how to produce a successful incubator and sell it at my price. That's why the imitations cost more and are of inferior value. You want the original—the best and one of longest proved reputation. Then don't be misled—get the Wisconsin. You take no chances, for

I Guarantee My Machines for Five Years

Just think of it. Does it not stand to reason that I must have machines of exceptional merit to put them out on 30 days trial—guarantee them five years and sell them for about \$5.00 less than others charge for machines of less quality?

The Wisconsin incubator is hot water type, has double side walls with dead air space between; top has three walls; large double glass doors; copper tank and boiler; roomy nursery beneath egg tray; self-regulating; made of high grade California Redwood, stained and varnished so you can see quality of lumber (not painted to cover up cheap timber), turned legs, completing a machine that has no equal at anywhere near the price.

The brooder is a roomy, well made, properly heated and ventilated machine. Fitted with hover, oil lamp and wire scratching yard as illustrated. Both machines complete—ready to use with Taylor "Tycos" thermometers, O. K. burners, galvanized lamps. Egg tester—everything but the oil.

If you don't wish to order direct from this advertisement—don't buy until you send for my 1911 Free Catalog. Write for a copy today.

This illustration shows the double walls, dead air space construction of our machines.

More Users' Letters

Wisconsin Incubator Co., Racine, Wis.

Elkader, Iowa

Dear Sirs:—I am pleased to say that your Wisconsin Incubator is a success. I placed 125 eggs in it and hatched 110 chicks. This can be done by any one who takes an interest in the business. The three brooders I bought of you are just the things to raise the chicks with. The instructions with your machines are very easy to follow and the eggs are turned easier in your machine than in many high priced machines. I give my machines no attention during the night as many of my neighbors do with inferior makes.

ELMER PEAKE

Wisconsin Incubator Co., Racine, Wis.

Odessa, Mo.

Gentlemen:—It pleases me greatly to be able to say that your incubator is a jewel. We have seen several incubators in operation and none have equalled the Wisconsin. Through six hatches last spring we never averaged less than 90 per cent. We also had excellent results with turkey and duck eggs. By closely following your directions your machine has brought us success. We were also pleased to find the material and construction exactly as represented.

H. S. REDDICK

Wisconsin Incubator Co., Racine, Wis.

Vickery, Ohio

Dear Sirs:—I am well pleased with your incubator. After I had taken off one hatch, I could have sold it to several of my neighbors but I did not want to sell it. With the first hatch I got 97 chicks from 100 eggs and if the eggs do not hatch it is not the fault of the incubator because it is perfect.

MARY M. STULL

Wisconsin Incubator Co., Racine, Wis.

Friendship, Wis.

Dear Sirs:—I had good success with your 125 egg incubator. I took off three hatches. First hatch, 108 chicks; second hatch, 110 chicks and third hatch, 114 chicks. Your machine will hatch chickens if any of them hatch. It is very simple to operate as it almost takes care of itself. If I was to buy another machine it would be a Wisconsin, for I am perfectly satisfied with the work it did for me.

M. C. SMITH

Wisconsin Incubator Co., Racine, Wis.

Edwards, Ind.

Gentlemen:—The incubator and brooder I purchased from you cannot be surpassed for doing the work. I had no experience in operating an incubator, but went according to instructions and it hatched every fertile egg and brought out fine, strong, vigorous chicks. No machine, no matter what the price, can do better than that. If anyone wants a fancy priced machine, they are on the market, but they can do no better work than the Wisconsin, and many of them not as good. Could name a few in our neighborhood. Yours for the increased popularity of the Wisconsin.

J. A. KOONTZ

Barred Rock Chks.—Vigorous, farm raised, and bred from prize winners. \$3 each, two for \$5. J. A. BARNUM, Union City, Mich.



48 BREEDS Fine pure bred chickens, ducks, geese and turkeys, Northern raised, hardy and very beautiful. Fowls, eggs and incubators at low prices. America's greatest poultry farm. Send 4c. for fine 100-page 17th Annual Poultry Book. R. F. NEUBERT, Box 813, Mankato, Minn.

Buff Wyandotte Cockerels \$1.25 each, 2 for \$2.25, 3 for \$3.00. Eggs in season \$1.50 for 13. F. E. HARTWELL, Cannonsburg, Michigan.

Barred Plymouth Rocks—A choice lot of cockerels, Write, W. C. KEMPSTER, Coldwater, Michigan.

EGGS: EGGS: EGGS—White & Buff Orpington, White & Barred Rocks, Black & White Minorcas, White & Buff Leghorns, Rose & Single Comb Reds, Houdans & White Crested Bk. Polish. H. H. King, Willis, Mich.

CHOICE business & prize bred Mammoth Toulouse Geese & S. C. White Leghorns low prices for quality. New catalogue free. Write, P. R. PFOUTS, R. 2, Bucyrus, Ohio.

BUFF PLYMOUTH ROCKS—Only perfect standard cockerels. April and May hatch at \$2 and \$3 each. Excellent laying strain. Fred Nickel, Monroe, Mich.

MAMMOTH White Holland Turkeys at right prices. Satisfaction guaranteed. Mrs. Mae Whitbeck "Two Pines," Montague, Muskegon Co., Michigan.

THOROUGHbred S. C. BROWN LEGHORN Cockerels. Price for Jan. \$1.25 each. 4 for \$4.50. ELWIS T. OPPENLANDER, R. No. 4, Lansing, Mich.

Buff Rock Cockerels—Farm raised. Healthy, good size, shape and color. From \$1.50 up. WILLIS S. MEADE, R. No. 3, Holly, Mich.

Big Business Barred Rocks

J. E. TAYLOR, Belding, Michigan.

COCKERELS FOR SALE—Light Brahma White Wyandotte & B. P. Rocks, good ones, also pullets. E. D. BISHOP, Route 88, Lake Odessa, Michigan.

BUFF PLY. ROCK and S. C. Buff Leghorn Cockerels. Exceptionally good stock at farmers' prices. Eggs in season. F. J. H. BURCH, Blaine, Michigan.

R. C. B. Leghorn Cockerels—Kulp strain, the best there is, \$1 to \$3. Eggs in season. C. W. WAITE, Gobleville, Michigan.

SILVER, GOLDEN and WHITE WYANDOTTES 100 White cockerels at \$2 and \$3 each. New circular after January 15th. C. W. Browning, Portland, Mich.

BARRED PLYMOUTH ROCK—Hurry! Hurry! Write quick if you want your pick out of a bunch of Cockerels the large type, narrow barring, bred right sired by first Cockerel at Grand Rapids Poultry Show. A. J. GORDEN, Dorris, R. No. 2, Michigan.

S. C. B. MINORCAS—Large, beautiful plumage—alright every way. Priced to sell. Guaranteed to please. Eggs \$3 per 15. R. W. Mills, Salem, Mich.

White Wyandotte Cockerels—A few good breeders left. Write Soon. A. FRANKLIN SMITH, Ann Arbor, Michigan.

DOGS.

TRAINED foxhounds and hound pups for hunting fox and coons. Also collies. Inclose 2-cent stamp. W. E. LECKY, Holmesville, Ohio.

YOU WRITE W. J. ROSS, Rochester, Michigan. For those beautiful sable and white Collie Puppies, of the finest breeding, and from stock workers.

Most Wonderful Offer Ever Published

Great 1911 Price Wrecking Sale of Brand New Staple Merchandise

Our Reliability is Unquestioned

Our capital stock and surplus in excess of \$1,000,000.00 is proof of our responsibility. Any publisher of any paper in America will tell you that we "make good" on every statement. Write to the greatest bank of the west - The Commercial Continental National Bank of Chicago - or to the Drovers Deposit National Bank of Chicago, or any of the commercial agencies.

A Positive, Binding Guarantee

Every article bought of us is guaranteed a decided bargain. If any article does not please you or fails to come up to your expectations, then you may return same at our freight expense both ways, and we will refund your money in full.

CHICAGO HOUSE WRECKING COMPANY Guarantees a Saving of 30 to 50 Per Cent

Of all our wonderful offers of the past, none are greater than those published in this advertisement. This Company is known far and wide as "The World's Bargain Center." Our success proves the truth of the public's decision.

During the past six months we have inaugurated a buying campaign that has placed us in possession of the largest stock of merchandise ever gathered together by any one institution. We have searched the markets of the world for the best bargains obtainable. The proof of this fact is seen in this 1911 announcement.

Our Stock Includes Everything Under the Sun

It means, in fact, everything from a needle to a locomotive. It makes no difference what your requirements, we can supply them at bargain prices. Briefly outlined, we sell everything to eat, wear, furnish, equip or manufacture.

Our Great "Price Wrecker"

Under this heading we publish a mammoth 1100-page Catalog of bargains. It describes 300,000 new articles secured by us from *Sheriffs', Receivers' and Manufacturers' Sales*. Gives interesting facts as to our past history and makes you acquainted with the greatest Commercial Institution in Chicago.

1100 Pages of Bargains

We send this catalog to you without obligation of any kind. It contains illustrations true to life of everything the manufacturing world produces; it gives plain, straight from the shoulder descriptions - shows in colors handsome floor coverings, clothing, etc. All you need to do is to fill out the coupon below, or merely drop us a card and the book will be forwarded to you at once, all charges prepaid.

GEM STEEL RANGE
1-PW52L. Empire Gem Steel Range, guaranteed in every way. Neat appearing and first-class baker. Price No. 8-10 as illustrated, with reservoir, high closet.
Price.....\$19.15
Price without reservoir and high closet.....\$12.50

SUPERIOR GASOLINE PUMP ENGINE
The finest ever for pumping water, running cream separator, etc. Complete with trimmings. Full instructions for installing and operating. Sold on thirty days free trial.
2 H.P. Price.....\$36.00
4 H.P. Price.....\$64.00

LADIES' ALL-WOOL SKIRT
All-wool Panama Skirt, made the very latest style. Beautifully trimmed with silk soutache braid and satin covered buttons. Nobly and dressy. Made to sell at \$7.50. Your money back if you don't like it. Colors, black or blue. Sizes, 22 to 30 inch waist, 31 to 44 inch front.
Lot No. 27-W-110.
Price (postage 16 cents).....\$2.65

MODERN HEATING PLANTS
All kinds of heating apparatus. We can furnish you with a modern, up-to-date steam or hot water system cheaper than any other concern. Complete plans and instructions go with every plant. We loan you tools free. Write for Heating Catalog and free estimate. Each plant backed by our Guarantee Bond. We save you 50 per cent.

MEN'S PAT. BLUCHER SHOES
While they last, 5000 pairs of men's Patent Colt Blucher \$3.50 Shoes, at a saving to you of \$1.55. We took the entire output of the factory. This is a perfect fitting shoe. Sizes 6 to 11. Width C.D.E. and E.E. Price per pair.....\$1.95
Price per dozen pair.....\$21.00
Write for Catalog today.

MAGNIFICENT SUIT LESS THAN COST \$4.95
We secured the entire stock at a ridiculously low price. You get the benefit. Handsome black cheviot suit, newest model, tailored by experts. Coat round sack style; vest popular single breasted. Notice - we send with this suit an extra pair of pants. Cut latest mode. Color is gray, guaranteed. Order by Lot No. 25-W-52. Suit with extra trousers.....\$4.95
Write for our FREE catalog.

LADIES' PATENT COLT BLUCHERS
This is a rare opportunity to secure high-grade patent leather shoes at a give-away price. They are made the latest city style. Dull mat top, perforated toe caps. Cuban heels and extension sole. Sizes 2 1/2 to 8; Width C.D.E. and E.E.
Price per pair.....\$1.00
Per doz.....\$10.80

DURABLE ARMY KHAKI SUIT \$1.95
This fabric is very firmly woven narrow Wale diagonal Khaki cloth, the same as used so successfully by the United States Army; plain army tan; recognized everywhere as the most durable shade known. Comfortable, full, roomy. Two outside pockets; semi-pet trousers with adjustable belt; two side and two hip pockets. We save one-half the regular price. A strong, durable, washable, inexpensive suit that will stand extremely hard usage and last almost forever. Sizes 34 to 46 chest; 30 to 42 waist measure; 30 to 35 inseam. Order by Lot No. 25-W-304. Price.....\$1.95

PRINT LINOLEUMS
W-59. A splendid grade of Print Linoleum in exact imitation of quarter-sawn oak; 6 feet wide.
Per square yard.....37c
W-61. Patterns of extra heavy grade Print Linoleum. All colors, 2 to 2 1/2 yds. wide. State colors wanted. Price per square yard.....42c

FINE TOP BUGGY
This fine leather quarter top Buggy, black, with Brewster green gear, 16 tires, narrow wheel, wide track. Price.....\$34.95
Send for free booklet.

FINE SINGLE STRAP HARNESS \$10.98
At this low price we will furnish light new harness.
\$1.00 LACE CURTAINS AT 63c
3300 pairs as shown. 50 inches wide and 9 feet long. White or Arabian Shade. Beautiful Bonne Femme pattern with ruffled lower edge and a throw at the top. A curtain of rich appearance and long wearing quality. Regular retail price \$1.00. Our wrecking price, pair.....63c
Order by Lot No. 20-K-532

HIGH QUALITY SMYRNA RUG \$6.95
W-45. A heavy, reversible Smyrna Rug. Handsome Oriental pattern. Red or green ground; border colors tan, blue or red. Can be used either side up. Offered to you at exactly one-half its value. State colors wanted when ordering.
Price.....\$6.95
30 x 60 in. 78c 3 x 6 ft. \$1.50
6 x 9 ft. \$3.25 9 x 12 ft. \$6.95

SPECIAL SINGLE BARREL SHOT GUN
This gun is strong and reliable. Taper choke bored, automatic ejector, 12 or 16 gauge; reinforced breech. Case hardened frame; good quality fore end and full pistol grip stock; rubber butt plate. Weight about 6 1/2 lbs.
16-W-510. 12 gauge, 30 or 32-inch single barrel, with ejector, \$3.70.
16 gauge single barrel, with ejector, 30-in. barrel \$3.70

\$20 AND WE PAY THE FREIGHT
This high-grade Harris A Sewing Machine, guaranteed for 20 years for only \$20 and we pay the freight to all points east of Denver, Col. Besides you are allowed 60 days in which to try it in your own home. Notice the beauty of the design; golden quarter-sawn oak, hand polished ball bearings, drop front, automatic lift. A full set of attachments with each machine. The finest material and the best workmanship represented. The greatest bargain ever offered. Send for our Sewing Machine Catalog. Free for the asking.

101 PIECE DINNER SET \$7.00
15,000 sets to be sold at this astonishingly low price. Decoration beautiful floral sprays of dainty pink roses and green leaves. Gold borders. Each piece warranted. We also have 42-piece sets selling just now at \$5.00.

PLUMBING MATERIAL
Everything needed in plumbing material. Our prices mean a saving to you of 30 to 50 per cent. Here is an illustration of a bathroom outfit selling at \$37.50. Your plumber would ask you about \$60.00 for this same outfit. Our catalog describes them in detail. Write us today for the catalog.

\$20 ALL-WOOL SERGE SUIT \$10
Lined with Skinner's Guaranteed Satin. The king of suit values. An all-wool, silk lined, stylish Blue Serge Suit, backed by our guarantee to either satisfy or we will return your money. Three button, round cut sack dress style well tailored; padded shoulders; long, shapely lapels; single breasted. The trousers are full semi-pet, perfect hanging, belt loops and adjustable side buckles and straps. All sizes from 34 to 44 chest measure, 30 to 42 waist and 30 to 35 inseam. This is an excellent example of how we save you money. Order by Lot No. 25-W-155. Price per suit.....\$10.00

\$6.00 FOR THIS OAK DRESSER
An opportunity such as this to secure a high-grade, handsome dresser at our bargain price has never been equaled. This is a splendidly constructed piece of furniture. Colonial style wood carvings; brass trimmings. Three roomy drawers; good locks and castors. French bevel plate mirror 30 inches high, 16 inches wide. Top is double thickness. The upper drawer has waved front. The three panel ends have great strength. Finish is a rich, golden gloss. Order by Lot No. 880-W. Price.....\$6.00
Write for Furniture Catalog.

A \$12.00 DINING ROOM TABLE FOR \$6.95
Colonial Pedestal Table. The illustration shows the harmonious lines but the table must be seen to appreciate the rich golden finish. It is excellently made with heavy solid pedestal and scroll legs. Extra leaves are furnished free. Extension six foot. Has 42 inch top. An actual \$12.00 value. Order by Lot No. 1-K-6643. Price only \$6.95

AUTOMATIC BED DAVENPORT \$12.60
This neat, substantial full size Automatic Bed Davenport at a saving of at least half the regular price. It has the best guaranteed indestructible steel spring construction. Tufted as shown and covered with fabric cord leather over soft filling. The frame is very strong solid oak, finished a golden gloss. This is one of our greatest values. Order by Lot No. 1-K-985. Price.....\$12.60
Write for catalog today.

Any of These Price Wrecking Catalogs SENT FREE

We publish many special booklets giving specific information on certain lines of merchandise of which a brief description is shown below. If any of these subjects are of interest, we will send you the books noted without any obligation to you. If you do not want to fill in the coupon shown on the left, just drop us a line and say what catalogs you want and state where you have seen this advertisement, then they will be sent to you at once, all charges prepaid. Write to us today.

Fill Out This Coupon

Chicago House Wrecking Co.
35th and Iron Sts. 28

I saw your ad in Michigan Farmer.
I am interested in.....

Send me free of all charges your 1100-page catalog.
Send the following additional books.....

Name.....
Town.....County.....
State.....R.F.D.....P.O.Box.....

Ladies' Apparel

This book illustrates and describes Ladies' and Children's Wearing Apparel, and is an education in itself of the very latest and correct styles. As to quality this is an essential that takes first place in all our dealings. Quality and low prices. We send you this book absolutely free, and you can dress in the most up-to-date manner at a saving of from 30 to 50 per cent. Send today.

Floor Covering

Shows actual colors of Rugs, Carpets, Linoleum. Beautiful assortment of latest designs and rich colorings. Will save you money every time you make a selection. Send you absolutely free.

Wall Paper Catalog

Be sure to send for our sample book. It shows the paper itself so you will know just what you are getting. Beautiful designs and colorings for every room. 30 to 50 per cent saving.

Our Clothing Book

A correct guide to the proper styles for men and boys. The illustrations are true to life. Samples of the goods are shown so you will know just what you are getting, and a perfect fit is guaranteed. Besides we save you so much money on every deal that you certainly should take advantage of the money-saving bargains this book contains. Send us absolutely free for the asking. Write for it today.

Grocery Price List

Shows how you can economize in your every day wants. Published every 60 days. Shall we put your name on our mailing list? Fresh groceries of excellent quality is the keynote of our success.

Sewing Machines

Gives complete and valuable information regarding Sewing Machines, and shows you how you can obtain this household necessity at a splendid saving. Be sure to get this catalog.

Boots and Shoes

Ladies', Men's, Children's Shoes, Boots, Rubbers, Slippers, etc. A perfect fit, excellent quality and a low price is guaranteed. Our stock always represents the latest fashions. We give you the privilege of examining the shoes, trying them on, and then if they don't suit, send them back. Nothing could be fairer. Send for catalog to-day.

Gasoline Engines

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