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

Long Life Policies for Farm Equipment.

FROM now until the first of May extends a time during which every owner of farm machinery can make some money. Work spent in repairing equipment, painting, oiling harness, looking over machines for repairs, now, will save breakages, time and money during the busy seasons of next year. The small shop is one of the most profitable buildings on the farm. An assortment of bolts, nuts, washers, rivets, wood-screws, wire and leather, saves hours of time spent in hunting the farm over when breakages of any kind occur. The application of Poor Richard's "A stitch in time saves nine," to the repairing of farm equipment will return greater dividends of profit to the farm owner, for the amount of time and money invested, than any other operation he goes through. And it can be done now. Work is slack and time plentiful.

In this day and age success in farming has come to depend largely upon the use and proper management of machinery. It has become a question of the greatest possible economy in time and labor. Economical management of these tools is not only to get the most efficient usage in the field but to lengthen their period of good use as far as possible, and reduce the cost of maintenance as low as possible. To do this it is necessary to have at least a few repair tools, materials and facilities for keeping the machinery in repair and good working order.

It has become the exception rather than the rule, to see machinery of any kind, plows, drags or cultivators, left in the field or unhoused during the winter months. Never does it occur on well managed farms. Tools should be placed in a shed all of the time when not in actual service, as the effect of the scorching sun and summer rains is often nearly as injurious to the working efficiency of a machine as are snow, sleet, and ice.

The tool house or shed conveniently located near the horse barn, is as easy a place to leave a cultivator as out beside the fence or in the corner of the field.

Upon nearly every farm can be fitted up an out-building or shed where repair work can be done. Have it so that it can be kept warm or little progress will be made. A small stove to heat water upon and warm the place, is a necessity. Repair work will look good to boys and hired men on a cold, blizzard day if they can work in

vention of breakages in the field. Once each year, or more often, if desired, all harness should be taken entirely apart and thoroughly washed and scrubbed in hot water. After drying upon a wire or other convenient support, oil it well with a mixture of neatsfoot oil and lampblack. Repair all weak spots with new leather and good rivets or thread, paint the hames and the appearance of the old harness will be surprising. It will be softer, stronger and safer for a few hours' work, and it will be better looking.

painting and repair of wagons and buggies is just as necessary although they are more often taken care of through the pride of the owner in their appearance.

Some time during the winter or early spring the binder, mower, hay-loader, rake, corn binder, and other machines should be given a careful examination. They should be taken to a light place and thoroughly swept and cleaned off, for after a summer's work and winter's storage they are usually well covered with dirt and dust. With a wire clean out the oil holes and cups, and cleanse well with kerosene oil. Next all wearing parts should be carefully gone over and examined as to the near or actual need of repairs. If any are necessary, they should be ordered immediately and either be placed on the machine or kept in readiness for any break that may occur. Many farmers consider it profitable, when buying a machine of any kind, to get several extra parts that are most liable to wear out or break. Time is the important feature when working a machine to its full capacity in a busy time. If repairs are not at hand and anything goes wrong it not only places the machine out of commission but often means that men and horses have to be idle and sometimes crops are greatly damaged.

The material to be kept on hand for repairs varies, of course, with the size of the farm. It is advisable to keep, on the ordinary farm, an extra ax handle, hammer handle, hoe and rake handle, fork handle, shovel handle, singletrees and doubletrees, and even a wagon tongue. It is good practice to save every small piece of good wood that has possibilities for repair material and store it in some dry loft or other convenient place.

For bolting wood and iron together the round headed or carriage bolt can best be used, and the regular machine bolt for joining two iron pieces. The



Power in the Farm Shop is Desirable for Running the Emery Wheels and Grindstones, and may be Used for Outside Purposes.

warmth and comfort. Otherwise the cleaning, painting and such work will be deserted for the kitchen stove. Work upon harness, cleaning and painting the drags, plows, eveners, whiffletrees, etc., should be planned for the cold days. At warmer times look over the binder, mower and other machinery to find out their condition.

Keeping the harness in good repair will often prevent a runaway, or, at least, save lost time through the pre-

Prosperous appearance counts for much, even on a farm.

There is no question as to the profit in giving all tillage tools, such as plows, drags, cultivators and harrows, a coat of paint every year or two. There is nothing to wear out about these tools except the steel teeth, shoes and points, which can easily be replaced. If the other parts are kept from rusting out the life of such expensive and absolutely necessary implements can be made very long. The



The "Mortality Rate" is High with Farm Equipment, the Long Life of which is not Insured by Proper Storage and Needed Repairs.

A Profit Maker on Every Acre

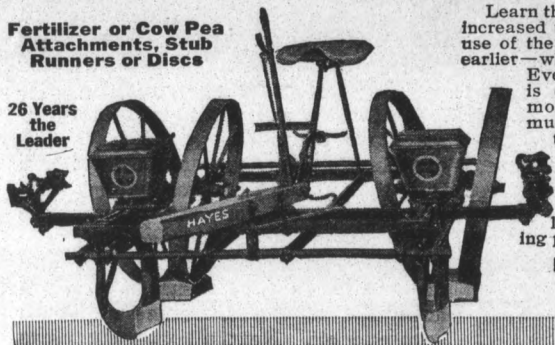
You can have the benefits of better planting and vastly better crops with the **Hayes Four-Wheel**. Every kernel planted *exactly the same depth*—every hill in *perfect* check—an even stand—*surer* germination and *quicker* growth—no missing hills, *no bare spots* in your fields; such conditions will mean *more* corn for you, *better* corn, *more* money.

This planter is *guaranteed*. It must be all we claim and all you expect. 170,000 users verify that **Hayes Four-Wheels** regulate depth of planting to the *fraction of an inch*. Corn all comes up at the same time, allows earlier cultivation, an earlier harvest, a *better* quality and *bigger* quantity.

Hayes Four-Wheels guarantee *surer* germination and *quicker* growth. Wheels pack the dirt around the corn to hold the moisture and leave a *ridge of loose soil* on top. Ridge over corn prevents washouts in hilly fields and gives greater surface for sun's heat.

Fertilizer or Cow Pea Attachments, Stub Runners or Discs

26 Years the Leader



Hayes Four Wheel Corn Planter

Covers where all ordinary open wheels fail—even in wet and sticky ground. Guaranteed not to clog. Short coupled, light draft and turns in shortest space. Checks with absolute accuracy, regardless of team's speed. Cross rows straighter than the way you drive.

The Hayes Drop never misses a hill. Simple, reliable and most efficient. Fewer parts, less breakage and delays. Has no clutch to miss and give trouble. Never cracks or grinds the seed.

Will drop accurately any size or shape kernel. No bare spots in Hayes planted fields. No replanting necessary. Increased yields soon pay for it. Corn growers are never disappointed with the Hayes Never-Fail Drop.

Thousands in use and every one giving time-saving, money-making service. No complicated parts to get out of fix. Strong construction practically exempt from breakage. No expensive and aggravating delays in the busy planting season. Easy and simple to operate and can be trusted to unskilled help.

1,500 dealers. Ask your dealer or let us prove how this planter prevents corn field waste and increases corn yields. Don't make a mistake. Buy the planter that guarantees results.

Learn the experiences of farmers who have increased their yields by big margins with the use of the Hayes—who have finished planting earlier—who have begun cultivation earlier.

Every Hayes user will tell you the work is easier—faster—better; the results more satisfactory—more profitable. So much depends on the work of the planter that a farmer cannot afford to get anything less than the best service.

Free book "AC" of Planter Facts tells all about the Hayes. Write for it today—a postal, or if you wish, a letter, asking any questions on planting problems.

Hayes Pump & Planter Co.
Galva, Illinois

The Bates All Steel Oil Tractor Won't Have to be Cleaned as it Burns All The Fuel.



Mr. L. L. Lawrence, Decatur, Mich., and his Tractor.

You are soon going to commence your spring work. Won't it be a little discouraging to tell your help to go easy with the horses? Won't you feel a little blue when you see your horses standing still and the time rapidly passing that should be given to the preparing of your seed bed? These conditions may prevent you from planting as many acres as you would like to this spring. It has happened in days gone by, and it can happen again.

Wouldn't you feel better if you had a tractor that you could push hard from daylight to dark, that would enable you to plow the ground when it ought to and as you would have it plowed. Then, too, you could hitch on to an eight section harrow and harrow 40 to 60 acres a day. By this system you could handle your work as you would like to have it done.

You have thought of a tractor for doing this work and may have questioned its merits. Let us tell you about the **BATES ALL STEEL OIL TRACTOR**.

First, it is **ALL STEEL** and only weighs one-half as much as other tractors. You can drive this light tractor on soft ground in the spring of the year and it will not mire.

With the **BATES PLOW CARRIAGE** you can back into the corners and plow the entire field without the aid of horses. It won't cost you much for fuel as we burn **KEROSENE**. This may seem to you nice to print, **READ OUR PROPOSITION:**

We will furnish you a tractor using kerosene as fuel, place it on your farm—plow up hill and down—in stony fields, or in any place where you can practically plow with horses, and guarantee to do the work as good as can be done in any other way, with one man, before asking one dollar of your money. Who are taking the chances? We are not, as we sold tractors this way all of last year.

We have a great many tractors operating in Michigan and we would be glad to send you the names of these men and let you discuss the matter with them directly. They will tell you what the **BATES TRACTOR** will do.

BATES TRACTOR CO., 105 Bates Street, LANSING, MICH.

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WHY PAY FOR GASOLINE WHEN WIND IS FREE!
Get a Big, Heavy, Powerful, Light Running, Double Geared

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Harvey Bolster Springs

prevent damage to eggs, garden truck, fruits or live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited. "Thousands in use. My wagon rides like auto" says one user.

MADE LIKE FINEST AUTO SPRINGS
Same principle—same care—same high-quality steel in Harvey Bolster Springs as in finest automobile springs. In resiliency, durability and appearance they cannot possibly be excelled. The Standard Springs of America since 1889. Get a pair at your dealer. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and list of proof free.

HARVEY SPRING CO., 752 17th Street, Racine, Wis.

GUARANTEED

supply of carriage bolts should contain five to ten each of $\frac{1}{4} \times 2$, $\frac{1}{4} \times 3$, $\frac{1}{4} \times 4$ in.; $\frac{3}{8} \times 2$, $\frac{3}{8} \times 3$, $\frac{3}{8} \times 4$, and $\frac{3}{8} \times 6$ in.; $\frac{1}{2} \times 1\frac{1}{2}$, $\frac{1}{2} \times 2$, $\frac{1}{2} \times 4$, and $\frac{1}{2} \times 6$. One or two each of $\frac{1}{2} \times 8$, $\frac{1}{2} \times 10$, and $\frac{1}{2} \times 12$ in. Of the square headed machine bolts a fair supply would be: Ten each of $\frac{3}{8} \times 2$, and $\frac{3}{8} \times 4$; $\frac{1}{2} \times 1\frac{1}{2}$, $\frac{1}{2} \times 2$, $\frac{1}{2} \times 3$, $\frac{1}{2} \times 4$, and $\frac{1}{2} \times 6$ in.; $\frac{5}{8} \times 2$ and $\frac{5}{8} \times 4$ in. One or two each of the following should be included: $\frac{1}{2} \times 8$, $\frac{1}{2} \times 10$; $\frac{3}{4} \times 6$, $\frac{3}{4} \times 8$, and $\frac{3}{4} \times 10$ in.; $\frac{3}{4} \times 3$, 4, 5 6 and 8 in., and $\frac{3}{4} \times 10$, 12 and 14 in.

To replace lost nuts 25 each of $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ in. sizes should be had.

For use with bolts and rivets, 1 lb. each of $\frac{1}{4}$ and $\frac{3}{8}$ -in. washers should be included, and 2 lbs. each of the $\frac{1}{2}$ and $\frac{3}{4}$ -in. sizes.

A few rivets and knives for mowers and reapers should be kept on hand; also a few wood screws of $\frac{3}{4}$, 1, 1 $\frac{1}{2}$, 1 $\frac{3}{4}$, 2 and 2 $\frac{1}{2}$ inch lengths.

Having purchased such an assortment of repair equipment, do not have several places for its storage. Choose one convenient place. Label different sizes and tools and see that they are kept in their places.

Nearly every farmer does and should believe in the liberal use of oil and grease. These lubricators are much cheaper than new machinery. They not only increase the efficiency of any machine, but greatly lessen the power required in using it.

A list of suggestions to be placed in the toolhouse for general reading, might well include the following:

Keep all tools clean and free from rust, and all edged tools sharp.

Keep materials and tools in their proper places, to be accessible on short notice.

Oil is cheaper than steel.

Repairs cost less than accidents.

Purchase tools most frequently and urgently required.

Montcalm Co. A. M. BERRIDGE.

THE ROOFING PROBLEM.

The problem of selecting roofing material is becoming an increasingly perplexing one for the average farmer. The quality of shingles available for roofing purposes has deteriorated so rapidly in recent years that Michigan shingles may properly be considered a roofing material of doubtful economy, while the price of better grades of shingles cut on the seaboard or in the extreme south, is almost prohibitive. For this reason alone, it is the part of wisdom for the farmer who is building new buildings or re-roofing old buildings to very carefully consider this problem of roofing material before undertaking such construction or repairs.

There are a great variety of roofing materials on the market, some of which possess many advantages, but on permanent buildings it pays to use a good quality of roofing material, and here only the better grades of prepared roofings should be used. Some of the prepared roofings possess peculiar advantages, among which not the least important is their fire-resisting qualities. The large number of fires caused by the ignition of wooden shingles has recently led the National Fire Protection Association, of Boston, to issue literature on this subject, in which readers are urged to use non-combustible roof coverings, which include some of the better prepared roofings as well as steel roofing. For temporary buildings, sheds, etc., the cheaper brands of prepared roofings are more suitable, and may often give the most economic service to the user. Often, also, a portion of a roof needs repairing to make it last until the balance of the roof also needs renewing, as, where additions have been made, or portions of a building have been more recently roofed than other portions. Here also the cheaper grades of prepared roofing may be profitably used, as temporary repairs can be more cheaply made.

But to one who has given any thought to the roofing problem, it becomes very apparent that it will be profitable to devote considerable time and study to this proposition before deciding what type or kind of material to use, and as a means of arriving at anything like an intelligent conclusion in the matter, the first action taken should be to send for catalogs published by the various manufacturers of good roofing, and carefully study them to ascertain the various points of superiority claimed for these different types of roofing, and gather first-hand information with regard to the economic service given by such materials. This will enable the prospective purchaser to get the most for his money, and is a much better proposition than to keep on laying unsatisfactory shingle roofing simply because this has been the general custom in one's neighborhood. The wise selection of roofing materials, either for new construction or repair work, means the saving of dollars as well as annoyance, both of which will be a source of satisfaction.

Oakland Co.

A. R. FARMER.

FARM NOTES.

How Much Lime Per Acre?

We are preparing a field for alfalfa. Soil is a sandy loam, in a fair state of fertilization and slightly acid. How much hydrated lime per acre should be evenly spread on such a field to put it in best condition for the development of the alfalfa plant? How much finely pulverized raw rock if that were used, instead of hydrated lime?

Antrim Co.

R. E. M.

The writer has used four to five hundred pounds of hydrated lime per acre with very good results so far as the immediate effect in correcting soil acidity is concerned. As compared with an application of two tons of ground limestone per acre, the immediate results have been as good with the small application of hydrated lime. Unquestionably, however, the larger application of ground limestone will give more lasting results, and this form of lime is generally considered preferable, since it can have no possible injurious effect upon the soil to which it is applied. The amount of lime required to correct soil acidity varies, however, on different soils. In some localities farmers have found that larger applications than two tons per acre gave very much better results, and this amount is probably about the minimum application which would be required upon a soil such as is described in this inquiry.

Sowing Sweet Clover to Inoculate for Alfalfa.

Would it be a profitable proposition to sow sweet clover as a preparation for alfalfa?

Kent Co.

SUBSCRIBER.

You can just as well sow the alfalfa as to sow the sweet clover, because if your soil is not inoculated with the bacteria which live on sweet clover and also on alfalfa, then it would take your sweet clover some time to become inoculated. It would after a while, but you couldn't get a quick growth of sweet clover any better than you could get a quick growth of alfalfa without the inoculation. Where sweet clover has grown in some place for a number of years the soil becomes inoculated with the nitrifying bacteria. Then when you take some of this soil and mix in the ground where you seed your alfalfa you inoculate the soil. But if you have no sweet clover bacteria the sweet clover will not make a vigorous growth from the start, neither will alfalfa, consequently you might just as well sow alfalfa to prepare the land as to sow the sweet clover. Many people are now mixing alfalfa with the common red clover seed and sowing it every time. Some of this alfalfa will live. After it lives for a short time the ground will become inoculated and then the alfalfa makes a vigorous growth.

THE TORRENS LAND TITLE SYSTEM.—V.

Experience Under Torrens System.

In conclusion of this discussion, it is thought it would be interesting and instructive to give some testimony as to how the Torrens System has worked where it has been tried. For this purpose the following extracts are printed from an address by Mr. Justice Charles T. Davis, of the Massachusetts Land Court, given before the New York Bar Association, January 24, 1908:

"The land registration act of Massachusetts has been made intentionally as little expensive as can be. In the country counties it does cost more to have a title registered than to proceed under the old system, but in the metropolitan district it costs, as a rule, rather less. There are, consequently, very few petitions for registration in the country counties. Most of our work lies in the metropolitan district. I do not think, however, that this is due to the matter of expense. I think it is due to the fact that most country titles are still readily marketable under the recording system. * * *

"So far as the profession is concerned, the act at first met with very bitter and hostile opposition from quite a large portion of our conveying bar. I think that, today, however, this opposition has been not only

much less, that the fee that can be charged is larger in proportion to the work done).

"Another and still more formidable difficulty has been that of entire indifference on the part of the general public. In addition there are many purely theoretical objections. Gentlemen, I could think of endless theoretical objections to land registration besides those suggested and very well and fairly stated by Mr. Pegram. The only thing I can say in regard to them, however, is that as a practical matter of fact they do not exist, they do not happen. Land registration with us is cheap. Land registration with us is workable. * * * I do not believe in a compulsory act. I should be exceedingly sorry to see ours made compulsory in any respect. An act which forces nothing upon either an unwilling citizen or an unwilling public, which simply supplies a remedy for existing and admitted evils to those who desire it, and which grows only in proportion to the public demand for it, practically paying its own way, and eventually effecting a large and very real saving in the enormous and rapidly increasing expense of the present recording system, is free from a large, if not the greater, portion of the objections which have ever been urged against the adoption of the Torrens System in general. * * *

"And, finally, a title once established remains established, both as to



Farm Life is More Attractive to the Farm Boy when the Wood is Sawed in this Way.

largely reduced, but almost eliminated. There are still one or two leading firms of conveyances who are strenuous in their opposition to land registration; but, on the whole, the change of sentiment in so short a time has been quite surprising. * * *

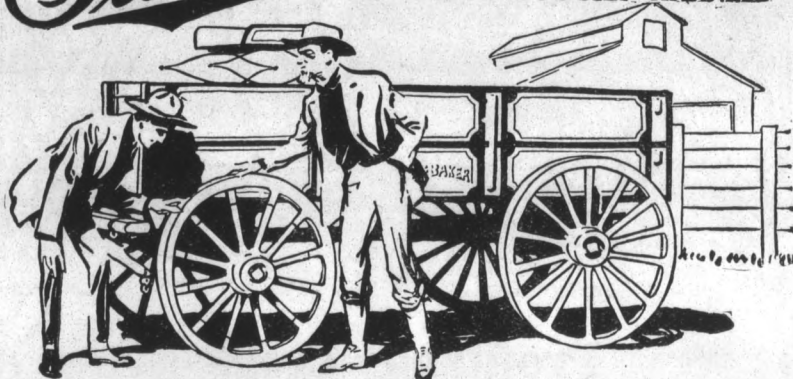
"It is a popular fallacy that a layman can take a registered certificate of title and deal with it with perfect safety. He cannot. Counsel do not, it is true, have anywhere near as much work to do, and they incur nowhere near as much responsibility; but they have to deal with the important phases of the matter immediately before them. A deed has to be properly drawn, instruments of trust carefully considered, a mortgage transaction has to be properly attended to, and the matters excepted from the certificate of title looked up before the title is passed into the registry of deeds. The elaborate labor of going over and over the same old ground and the same old title, which I suppose only those of us who have suffered under it can appreciate, and which has formed the chief cause of expense and annoyance, both to the profession and to our clients, has, however, been eliminated, and, on the whole, the compensation which can fairly and properly be charged for passing a registered title is as a net result larger than under the old system. * * * (That is, the work that must be done and the responsibility that must be assumed are so

record and as to boundaries. If any question arises, it arises at once, and is adjudicated at once. No re-examination of a registered title is ever made. The owner of a tract of registered land, after having found a purchaser, can place a mortgage for him, pass all the papers, and have the purchase money in his pocket, all within twenty-four hours. This is the testimony of dealers who have handled hundreds of registered lots. Where a transaction happens to involve a very large sum of money, this saving of time and interest is a matter of very real importance. * * *

"The growth of new business has thus far shown a moderate but absolutely steady increase, both in the number of applications filed, and in the assessed valuation of the property registered. In 1899 it was \$626,000; in 1902, \$1,991,000; in 1907, \$3,643,000. People who once apply for registration of title come back again. No suit has ever been brought against the commonwealth, nor have I ever heard of any claim being suggested that anybody has been cut off from any right or interest in land during the ten years in which the land registration act has been in operation. We have registered the title to over twenty millions of dollars' worth of property at assessed valuations, and to a vastly larger amount of actual valuation as the same property stands today. We have some 8,000 instruments in existence in the metropoli-

Studebaker

WAGONS BUGGIES HARNESS



Tires that did not require setting in thirty years—on a Studebaker

AFTER thirty-six years of constant use Mr. William H. Horton, of Nineveh, N. Y., writes that his Studebaker farm wagon is as good as ever.

The wheels of Mr. Horton's wagon were run for thirty years without setting a tire. Mr. Horton writes:

"I have a Studebaker wagon purchased in 1877. The wagon now bears the original number and name of dealer; No. 33,435. Sold by Daniel Mann, Cobleskill. This wagon has had constant use since date of purchase and the wheels were run 30 years without setting a tire. The wagon is in good condition today."

WHAT IS THE REASON FOR THIS?

The fact that Mr. Horton used his Studebaker wagon for thirty years without setting a tire means that the wheels were properly built. Its hubs, spokes and felloes were all made of the best materials.

Anyone could have bought them and built them into a wheel, but Studebaker not only build of the best, but they season their materials properly, and then combine these materials in a scientific manner so as to distribute the strain over the entire wheel and

therein lies the reason why the Studebaker wagons run so easily and last so long.

The fact that the wheel material is properly seasoned, dipped in oil and built in the Studebaker way is the reason why Studebaker's tires stay on for thirty years and often times longer.

You will be making a good investment when you buy a Studebaker wagon, a Studebaker Buggy—or Studebaker Harness. They are the best you can buy—and outlast others.

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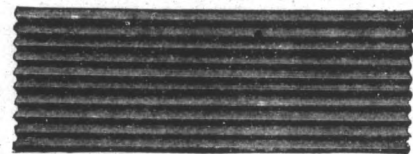
THE NILES IRON & STEEL ROOFING CO., NILES, O.

MANUFACTURERS for THIRTY YEARS of

The World's Best

Galvanized and

Painted Roofing



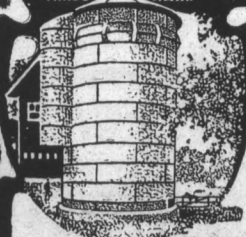
which is PROOF AGAINST FIRE, WIND, LIGHTNING and RAIN. This alone is worthy of your consideration. It is much cheaper than slate or shingles, and will give better satisfaction than any other kind of roofing you can possibly buy. WRITE us today for our FREE CATALOG AND PRICES.

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THE NILES IRON & STEEL ROOFING CO.

NILES, OHIO

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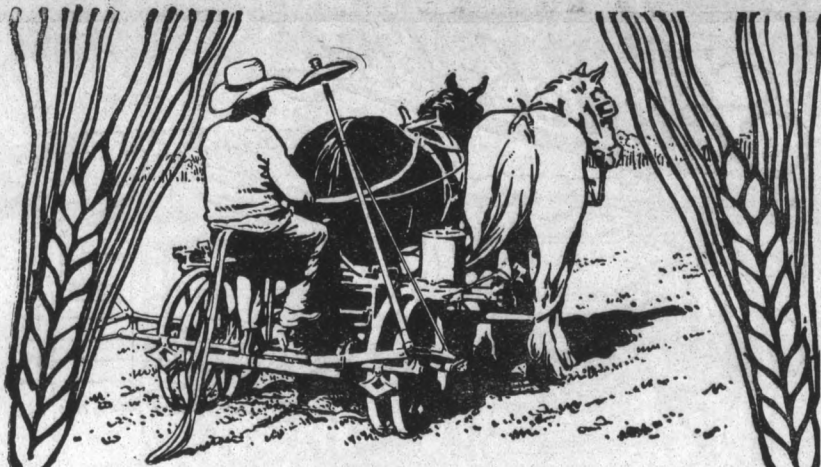
They are guaranteed not to crack or collapse, are storm- and fire-proof. Keep ensilage in most wholesome condition. Many prominent farmers praise the "ZYRO" Silo—pronouncing it "THE MOST PRACTICAL SILO MADE"

Made of exceptionally pure, rust-resisting galvanized iron. Easily erected with most common tools. Sections are of convenient size for easy handling. Doors cannot shrink or swell, hence are absolutely air-tight. For other exclusive "ZYRO" points get

Book of Metal Silo Facts FREE

Fully describes the unique advantages of "ZYRO" Metal Silos and shows them at work on many fine farms. Gladly sent on request. Write a post card today. The Canton Culvert Co., Box 220 Canton, Ohio





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put more money in your pocket and make more business for us. That is why our factories never shut down. We supply a large portion of the seven million tons of fertilizers used in this country every year from our numerous factories, located from Maine to California.

We make special compositions to fill the requirements of the different crops grown on all kinds of soils. We furnish a fertilizer with 34% available phosphoric acid; special grain fertilizer 2-12-3 and 20-4 analysis; also half potash fertilizer for growing onions, celery, corn and other crops on muck land.

If all farmers knew

A-A-C FERTILIZERS

as they ought to know them, not enough could be manufactured to supply the demand.

Write us and we will tell you more about fertilizers and how to use them, and will send you a large handsome calendar, also booklet on fertilizers, postage paid.

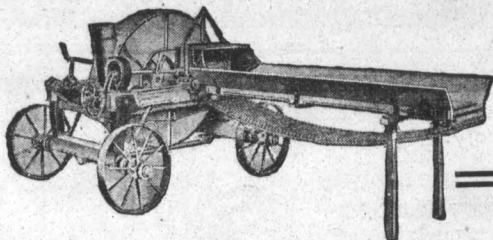
We want agents for unoccupied territory to handle our fertilizers under Consignment Contract. Don't delay. Write at once.

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Also Cleveland and Cincinnati.
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CAREFUL PLANNING BRINGS SUCCESS



Don't wait until your busy days and tired nights of Summer to investigate the merits of various Feed Cutters, to determine which line or which equipment.—These long Winter evenings afford the very best opportunity for thorough study and comparison.—Do it now.

WRITE TO-DAY FOR OUR FREE CATALOGUE OF WHIRLWIND SILO FILLERS and for those describing other makes—compare 'em point by point, machine against machine, and let your later purchase be governed by a carefully worked out Winter decision—that's a better scheme than the snap judgment of Summer and Fall rush.

Whirlwind Silo Fillers

differ from all others—they are the best—and we only ask for an opportunity to prove this to your satisfaction; five sizes, on skid or wheels, plain or traveling apron feed tables, three to forty tons per hour guaranteed capacity with 3 to 22 H. P. Gasoline Engine. To be included in a Whirlwind a piece of cast-iron must withstand at least 9000 lbs. per sq. inch, greater strains than the commoner grades used by others. Every part perfect and so guaranteed.

Remember it's a free catalogue.

WILDER-STRONG IMPLEMENT CO. Monroe, Mich. BOX 13
SILO-FILLERS FEED-CUTTERS LAND-ROLLERS & PULVERIZERS CATTLE-STANCHIONS

Hogs Fattened for LESS THAN 3c a Lb.

is easily done along our line, because green grazing crops can be grown throughout the winter. Sows can farrow during winter months without losing any of the pigs. Pure water keeps them healthy.

Three Crops of Feed a Year

can be raised, and but very little corn is required to finish them for the block. Local markets pay big prices.

Write for illustrated booklets and magazines telling of successes Northern men have made in Kentucky, Tennessee, Georgia, Alabama, West Florida and South Mississippi. YOU can do as well on these cheap lands, and live in an almost perfect climate. (408)

G. A. PARK, Gen'l Imm. and Ind'l Agent, Box C-305, Louisville & Nashville R. R., Louisville, Ky.

tan district alone. No claim, as I said, has been made, and no litigation of any kind has ever been brought that I have ever heard of by or against anybody because of his title having been registered. Nobody has been involved in any of those many theoretical difficulties which we have just heard described because he had a registered title. There has been no suit. There has never been a petition. There has never been even a question as to the meaning of a single clause of the land registration act as originally drawn by Mr. Hemenway, a singular tribute to his professional skill. * * *

"We have not attempted to dictate to any man what he shall do or how he shall do it. We have simply provided for those who wish to make use of it, a method of escape from certain evils which otherwise affect the transfer of land in our locality. * * * Recently a savings bank which within three years declared that under no circumstances would it take a registered title, has so far altered its opinion that, having to take a mortgage involving \$500,000, the directors voted, on the advice of their counsel, who also had been originally a very strong opponent of land registration, that they would take that upon condition, and only upon condition, that the title was registered."

Washtenaw Co. JOHN R. ROOD.

SOIL AND FERTILIZER QUESTIONS.

Wood Ashes for Muck Ground.

I have 15 acres of muck that as yet has not paid for the labor put upon it; it will grow straw, that is oat straw, in abundance, but no oats; neither will it raise good corn. Last summer I worked this ground all summer and got the marsh grass thoroughly subdued, and now it is in good shape for some kind of crop. What kind of a crop could I sow or plant on this ground that I would stand at least a fair chance to get pay for my labor. I have saved about two tons of ashes. Would these ashes take the place of potash and if so what amount should I sow to the acre? I covered this ground with barnyard manure last summer; would this muck take the place of barnyard manure if spread on upland? Some of it is quite a heavy clay soil, but somewhat run down. I have marl that will analyze 95 per cent on this same muck ground. How much of this marl should I spread to the acre to take the place of lime? Any information given along this line will be greatly appreciated.

Barry Co.

D. W. G.

Muck soils differ very much the same as other soils; that is, no two fields of muck are alike. One may be woefully deficient in potash and another may need phosphoric acid more than it does potash. Most all muck soils when they are first reclaimed need available nitrogen because, while they contain a large amount of inert nitrogen in the form of organic matter this is not available plant food, and a liberal amount of available nitrogen is very beneficial. This muck land which has been water-soaked and perhaps is sour, does not contain nitrifying bacteria. Stable manure not only supplies a little available phosphoric acid and potash but it supplies bacteria which go to work at once to render this inert nitrogen available. Cultivating it during the summer time is undoubtedly a splendid thing, and the elements will undoubtedly render some of the plant food available that was inert before.

The fact that this land will produce an abundance of oat straw goes to show that it has a considerable amount of available potash, because potash is what stiffens straw. On the other hand, the fact that the heads do not fill and produce grain indicates a lack of phosphoric acid, because phosphoric acid goes to produce the grain or seed of plants. My idea would be that this particular soil needs phosphoric acid quite as much, if not more, than it does potash. Most all muck lands, especially when new, are benefited by an application of lime. Lime not only sweetens the soil that

is acid, but it also tends to break down the organic matter and make the plant food available. For quick results caustic lime is more valuable than either marl or ground limestone, but marl or ground limestone will accomplish the same purpose, giving it a little bit more time. Marl is just as good a form of carbonate of lime as you can get. There is no danger of putting on too much marl on raw muck land.

I don't know of any better crops to plant on this field than corn and oats. Give the soil an application of wood ashes, which contain lime and phosphoric acid and potash, and I am sure you will have good results. A ton of wood ashes to the acre would be none too much. This probably will supply enough lime and enough potash to produce your crop, but not a sufficient amount of phosphoric acid, because wood ashes contain only about one per cent of phosphoric acid and five per cent of potash, and 32 per cent of lime. I would recommend that you make a careful experiment to find out just what your soil needs. Make a good liberal application of ashes on a portion of the field; make an application of potash on another, an application of phosphoric acid on another, a combination of phosphoric acid and potash on another, and then marl on another strip. If the field was mine I would have faith enough so that on the balance, or the major portion of the field, I would use phosphoric acid and potash fertilizer, say a fertilizer containing 10 per cent of phosphoric acid and five to eight per cent potash.

Of course, this muck soil drawn on a clay soil will do the clay soil some good because it furnishes organic matter, but the expense of hauling it would be considerable. You can get the organic matter on the clay soil cheaper by raising some crop on the clay soil and plowing it under, which will do more good than the muck.

Commercial Fertilizer for Sugar Beets.

What is the best formula of commercial fertilizer to use in raising sugar beets, and do you consider it advisable to sow the fertilizer on the ground and work it in the soil before drilling the beet seed, or would you deem it better to drill the fertilizer just in the rows with the seed?

Tuscola Co.

I. M. L.

The consensus of judgment of chemists, as well as farmers, is that sugar beets not only want a good supply of available nitrogen and phosphoric acid but they also need a good supply of available potash. The beets, in fact, may be said to be gross feeders of potash. Heavy land containing a good per cent of clay is richer in potash than a sandy loam that contains less clay. Consequently a fertilizer for a rich heavy clay loam would not need to be as rich in potash as on a lighter soil, and this should be taken into consideration. Probably a fertilizer approximating a formula of 2:8:4, that is two per cent ammonia, eight per cent phosphoric acid, and four per cent potash, would be sufficient for a good clay loam, but on the other hand, a lighter soil would probably, in order to get a better development of the beets, need a fertilizer containing say two per cent ammonia, eight per cent phosphoric acid, and 10 per cent potash, or a formula containing somewhere near these proportions of the three plant foods.

If the land is comparatively rich and only a small amount of fertilizer is used, just enough to give the beets a start, then this should be applied in the drill with the beets; 200 lbs. to the acre is probably all that ought to be sown with the drill. If you use too much, especially of a fertilizer that is rich in potash, it is liable to injure the germination of the seed. On poor land where heavy applications are used, say 500 to 1000 lbs. of fertilizer per acre, then at least three-fourths of the fertilizer ought to be put on broadcast with a drill before the seed is sown, and the balance of it put in with the seed at the time of sowing.

COLON C. LILLIE.

SOIL FERTILITY.

I am not the only person who can see that the soil is losing its fertility. The reason for this loss seems to be quite plain, but it does not appear so plain how we are going to stop that loss and get the soil back to a more fertile condition. I learned years ago that humus in the soil is better than money in the bank. We could all get rich were it not for this constant drain on the fertility of the soil.

I claim the farmers are not as blameworthy as it might appear without a close examination. We have had to meet unusual, and unexpected conditions. It is safe to say that two-thirds of our seasons of late years have been dry enough to kill our young clover. The loss of a clover seeding means a great deal to a farmer. It is discouraging. He feels that his farm is set back several degrees in the scale of fertility. It affects the whole farm. It interferes with the rotation of crops. Land which he intended for meadow land, has to be plowed up and put into some other crop. It makes an extra amount of work when he is not expecting it. We can get along very well when we can save two out of three of our clover crops, but when the order is reversed and we lose two out of three of our clover crops it is quite a different proposition. It is quite natural for us when we lose a seeding of clover through lack of moisture, to think that the next season will be damper and to go ahead and throw away a lot more of seed. There have been many fortunes in clover seed thrown away, even in this county. We have about come to the conclusion that every farmer must study out this matter in his own way. Farmers are getting thoroughly aroused as to the condition of things, and we look for good results.

It is an old saying that all signs fail in a dry time," and I think that saying applies to clover seeding. I know of one sandy land farmer who has been seeding his farm to timothy for several years. He explains his action by saying that he rather have timothy than nothing. Last fall I experimented in a way that I never tried before. I fitted up oat stubble in good shape for wheat; then about the last of August I sowed a full seeding of both timothy and clover without the wheat, and now I am waiting for results. I feel safe to predict a good stand of timothy but I would not dare to predict a good seeding of clover. However, I have the satisfaction of believing that I shall not have to plow up the ground in the spring.

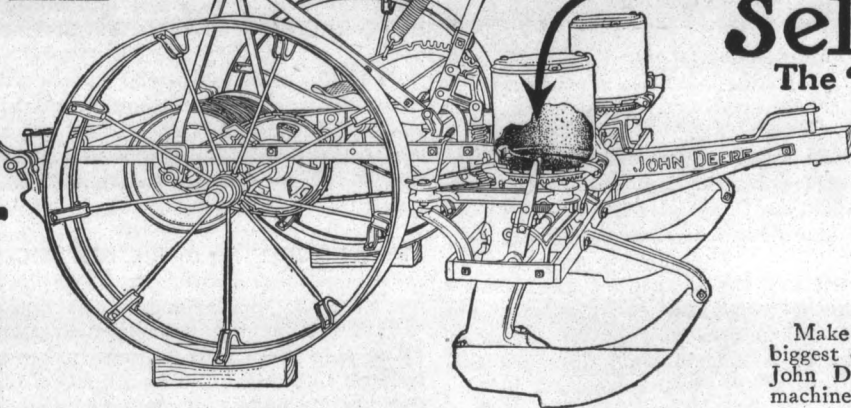
I keep my farm stocked to its fullest capacity. I practically feed up everything raised on the farm. Even the wheat is fed to the chickens, still I feel the need of green manure to plow under. Now if I get a good stand of clover next season on my experimental plot I have not decided just what I shall do with it. I know very well that I ought to plow it under. My action, however, will depend largely on conditions at haying time.

Should the season be very dry and there is a prospect of having to pay \$15 to \$20 per ton for hay to feed stock, I shall probably cut it for hay. Several times I have met with good success by sowing clover seed and wheat seed at the same time in the fall, but I have also met with as many failures. A top-dressing of manure will save a clover seeding unless the season is very dry, but it is not always easy to get the manure.

Branch Co. O. A. VANDERBILT.

If you have not already subscribed for the Michigan Farmer for 1914, don't delay any longer. You will surely want it as it will be better than ever and the extremely low price puts it within the reach of all. Remember 50 cents pays for one year, \$1.00 for two years, \$1.25 for three years, or \$2.00 for five years.

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Selection The "Natural" drop

This machine maintains high accuracy even with ordinary seed. With well selected seed its dropping accuracy is practically perfect.

Make your spring planting the start of your biggest corn crop by accurate dropping. The John Deere "Oblique Selection" will do it. The machine is a splendid investment.

Free Book Gives Valuable Corn Facts

Write us today for free booklet "More and Better Corn". It tells you why the average yield for the United States is only 25 bushels an acre, whereas better methods have produced 125, 175 and even 255 bushels per acre in places. It also describes and illustrates the John Deere "Oblique Selection" Corn Planter. The book to ask for is No. D 5.

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MAKE your corn ground pay you with the largest possible yield, by making sure that the required number of kernels is in each hill.

The seed must be there. Every "miss" means just that much thinner stand. No amount of cultivation can make up for inaccurate planting. The loss of one ear from every hundred hills costs you the price of one bushel per acre.

For years the John Deere Company has concentrated on accuracy in planting devices. The "Oblique Selection" solves the problem.

The results of its use are so profitable that many corn growers have discarded the best of previous machines. It is as far ahead of the old Edge Drop as it was ahead of the round hole plate.

How About Your Harvest?

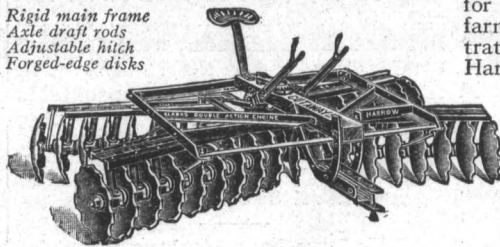
A certain farmer found himself confronted with the same problem at every harvest—

his yields seldom reached the mark they should. His profits were disappointing and, sometimes, distressingly small. He sought for the cause without success—until one day he read a

Cutaway (CLARK)

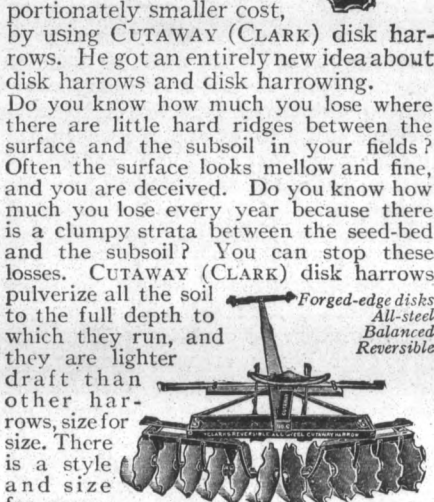
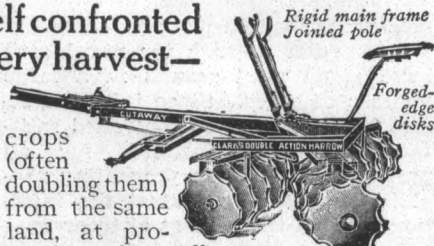
advertisement about Jim, the farmer whose land produced double that of his neighbor's, simply because he took a look ahead to the harvest when making the first preparation for planting. He followed the advice Jim gave his 50%-farmer neighbor and that very day wrote to us for a copy of "The Soil and Intensive Tillage." In it he read about the chemical and physical properties of the soil, about how plants feed, and about intensive tillage. He learned that he could make much larger

Rigid main frame
Axle draft rods
Adjustable hitch
Forged-edge disks



crops (often doubling them) from the same land, at proportionately smaller cost, by using CUTAWAY (CLARK) disk harrows. He got an entirely new idea about disk harrows and disk harrowing.

Do you know how much you lose where there are little hard ridges between the surface and the subsoil in your fields? Often the surface looks mellow and fine, and you are deceived. Do you know how much you lose every year because there is a clumpy strata between the seed-bed and the subsoil? You can stop these losses. CUTAWAY (CLARK) disk harrows pulverize all the soil to the full depth to which they run, and they are lighter draft than other harrows, size for size. There is a style and size for every farmer. In our catalog you will find illustrated and described Double Action-Engine Harrows; Double Actions for horse power for both orchard and field work; Corn and Cotton Harrows; one-horse harrows for field, grove and garden; Bush and Bog Plows; Right Lap Plows; California Orchard Plows—in fact, the tool you need. Remember, our catalog "The Soil and Intensive Tillage," is free for the asking. Write for it today.



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Maker of the original CLARK disk harrows and plows

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Phosphorus is so-called because its use gives largely increased yields of clover, alfalfa and other legumes, which secure nitrogen from the air. The acids formed by the decaying roots of these plants make available the potash which is abundant in most soils. Recorded experiments on all normal soils in the Eastern and Middle Western states show greater profits from the use of phosphorus than from any other element, or combination of elements.

13% Phosphorus, Ground 95% Through 10,000 Mesh Screen
Rock Phosphate has been thoroughly investigated by the agricultural authorities and tested in the field by the leading Experiment Stations. It has proved to be the most profitable fertilizer on all soils deficient in Phosphorus, and the soil surveys show this deficiency in 90% of the cultivated land in the Eastern and Central States. A review of these experiments and much valuable general information about fertilizers is given in "The Farm That Won't Wear Out," by Dr. Cyril G. Hopkins. This book will be sent free to the first 100 farmers who write to us for delivered prices, and state where you saw this ad.

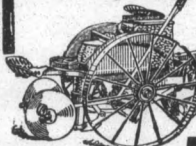
FEDERAL CHEMICAL COMPANY,
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Potato Profits

depend largely on how the crop is planted. Every skipped hill is a loss in time, fertilizer and soil. Every double wastes valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

IRON AGE 100 Per Cent Planters

often pay for themselves in one season on small acreage. They also plant straight, at right depth, 12 to 24 inches apart. New angle steel frame and steel seed hopper. With or without fertilizer distributor. Ask your dealer to show you this Planter and write us for booklet, "100 Per Cent Potato Planting" and copy of Iron Age Farm and Garden News. BATTMAN MFG CO. Box 1049 Glenloch, N. J.



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Pulverized Magnesia Lime Rock, shipped direct to farmers at lowest prices. Comes to you in closed cars and absolutely dry. We ship from Muskegon and Benton Harbor, Mich.

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CLOVER \$5.00 Per Bu. AND TIMOTHY

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

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Grown on an Island in Northern part Lake Michigan. No anthracnose or blight ever was known on this Island. A small pea bean. Price \$2.50. RAY KENT, South Manitou Island, Michigan.

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SEED, pure white and biennial yellow. Prices and circular how to grow it sent on request. Everett Barton, Box 129, Falmouth, Ky.

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The White biennial. Also Alfalfa, Red, Timothy, etc. Sample and booklet telling "How to Know Good SEED" FREE. O. M. Scott & Son, 186 Main St., Marysville, O.

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Exceptionally choice—pure, plump, clean, high test germination—\$9.50 per bushel. DADMUN BROS. Whitewater, Wisconsin.

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Mich Yellow Dent, home-grown, fire dried, tested. Golden Fleece and Reg. Swedish Select Oats. Send for sample and circular. F. A. Bywater, Memphis, Mich.

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Reg. Swedish Select. Also Early Learning, Reid's and White Cap Seed Corn and Garden Seeds. Samples and Catalogue, free. THEO. BURT & SONS, Melrose, Ohio.



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**I'm Feeling Fine
Thank You**

A nervous, discontented cow is always a poor milk producer because Nature is attempting to rebuild her wasting system instead of attending to the natural healthy functions of producing and re-producing.

A cow can be "off color," just as a human being can be—and like a human being, she needs the proper medicine to build up the sluggish organs. KOW-KURE is the standard remedy for such cow diseases as Abortion, Retained Afterbirth, Barrenness, Bunches, Milk Fever, Scouring, Red Water and Lost Appetite. KOW-KURE puts sick cows "on their feet"—makes profitable cows of backward ones.

Try KOW-KURE on your poor milkers. Most feed dealers and druggists sell it, in 50c and \$1.00 packages. Write for free copy of our book "Cow Diseases."

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Lyndonville, Vt.

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THE TIME IS NOW

All the winter long, the troubled owner of a lame horse reads our advertisements. Then, day after day slips away, while he talks, laments, listens, takes advice and hesitating—**FAILS TO ACT**—till the Springtime is on him and his horse is not yet able to work. Meantime the thrifty, prosperous, resolute man, reads, considers the evidence carefully—**Decides Promptly**—and his horse is working in, say, ten days to two weeks. That's exactly what happens every winter.

We Originated the treatment of horses by mail—Under Signed Contract to Return Money if Remedy Fails—and every minute of every day for Eighteen Years our advice and treatments have been on the way wherever mails go and horses are. Our charges are moderate. Spring work is near; Write.

Our Latest **Save-The-Horse Book** is a Mind Settler—Tells How to Test for Spavin—What to Do for a Lame Horse—Covers 58 Forms of Lameness—Illustrated. But write describing your case and we will send our **BOOK**—Sample Contract and Advice—**ALL FREE**—to (Horse Owners and Managers—Only.)

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Druggists everywhere sell **Save-the-Horse WITH CONTRACT** or sent by us Express Prepaid.

FEEDING MOLASSES

Every farmer should have a barrel of Empire Feeding Molasses and feed it to every animal at the rate of one pound of molasses to ten pounds of feed. A barrel weighs 700 pounds and supplies a digestive ferment which will increase the digestibility of 7,000 pounds of grain, hay or roughage. More than this, it makes poor roughage as palatable as the choicest clover hay. This increased value is secured without one penny of expense, because the molasses in itself, contains a food value greater than its cost. This feed is endorsed by the highest authorities and is now used by many big feeders. The price is \$7.00 per barrel, (56 gallons) f. o. b. Pennsylvania Factory. Order a barrel today. If you are not satisfied after feeding half of it, tell us so and we will refund your \$7.00. Write Wattles & Company, Sole Distributors, Box 13 Litchfield, Michigan.

FOR SALE

3 Black Percheron Stallions

one five years old, weight 1800, one 12 years old, weighs 1900 and one yearling. All recorded in P. S. of A. All Brilliant bred and good ones. Address **A. C. MARTIN, R. 2, Stant on, Mich.**

For Sale A percheron colt, coming 5 years old. He is registered and American born, coal-black with white star in forehead. He is all right. **ARTHUR CHANT, R. 12, Merlebeach, Michigan.**

FOR SALE—2 Registered Percheron Stallions. One 12 years old, 1 black, 1 gray, 3 years old. Both sound and sure foal sowers. Priced for quick sale, as other business requires my attention. **T. H. LOVE, R. No. 3, Howell, Michigan.**

Live Stock.

PREVENTION OF NAVEL ILL OF COLTS.

This disease is also known as joint ill, omphalo phlebitis, septic arthritis of sucklings, and pyosepticemia of the newly born.

The many requests for information received by the Dept. of Agriculture regarding this ailment of newly born colts indicate that it exists in many localities. The unfavorable outlook after the appearance of the disease, together with the fact that the disease when present requires the attention of a veterinarian, demands that the breeder should concern himself with its prevention.

This disease is caused by a micro-organism, and several bacteria have been suspected of being responsible for this malady. Every one of the suspected organisms is found abundantly in manure and objects contaminated with manure. The infective material gains entrance into the colt through the open umbilical cord as a result of its coming in contact with litter, floors, or discharges from its dam contaminated by one of the organisms which cause the trouble. There are cases on record where the infection has taken place before birth and while some investigators claim this method to be the principal mode of infection, still the prophylactic measures adopted to guard against the infection through the navel cord have given good results in a large number of cases. Since infection before birth can not be controlled satisfactorily, we are justified, for all practical purposes in preventing navel ill by guarding against the infection through the cord at birth or soon afterwards.

Cleanliness of stables where pregnant mares are kept must be insisted upon. This is especially necessary where outbreaks of navel ill have been known to exist. Mares in the last stages of gestation should be placed in a box-stall which has previously been cleaned and disinfected. The bedding should be frequently renewed, and the external genitals and neighboring tissues should be kept clean and disinfected with a two per cent solution of carbolic acid or one per cent liquor cresolis compositus, or any other reliable disinfecting agent. Operations for opening abscesses and removal of afterbirths from cows should not be executed in the immediate vicinity of mares in an advanced stage of pregnancy.

The foal when dropped should be placed on clean bedding. In any event the cord of the foal should be washed in a disinfectant solution and tied at about one and one-half inches from the navel with a band or string which has previously been soaked in a disinfectant solution. The navel cord is then severed about one-half inch below the band with a sharp pair of scissors and again disinfected. The ligature should, however, not be tightened until pulsation of the vessels in the cord has ceased. The stump of the cord is then painted with a strong carbolic acid solution, tincture of iodine, or a mixture of equal parts of tincture of iodine and glycerin. The stump should be washed daily with a disinfectant and either painted with iodine mixture or carbolic acid, or dusted with some reliable antiseptic healing powder. The parchment-like dried stump may be cut off after five days and the navel wound washed with a disinfectant solution and dusted with powder until healed.

The cases of navel ill resulting from infection before birth can not well be guarded against. By keeping those mares which are advanced in

pregnancy in good physical condition the fetus will be expelled immediately upon the opening of the uterine cavity.

Once the infection of the navel cord has set in, the cord should not be ligated, but should be washed in a disinfectant solution and a veterinarian called for the subsequent treatment.

THE PROFIT IN PORK PRODUCTION.

Very few farmers who produce pork as a side line and do not make a specialty of this line of production on their farms have any great knowledge as to the cost of production or the profit derived from this department of their farm business. Occasionally, however, a man feeds hogs as a specialty, in which event he is much more apt to keep an accurate account of costs and profits. The experience of such feeders is therefore of value to the farmer who does not make this line of production a sufficiently important factor in his business to make it seem profitable to keep an accurate account of costs and profits.

In this connection the experience of Mr. Chas. Booraem, of Hillsdale county, is of peculiar interest, inasmuch as he conducted quite an extensive feeding business last year, purchasing all the feed which they consumed and feeding the hogs on a contract which provided that the feeder should receive seven cents per pound for the gains made. The hogs fed were the culls from those purchased by the local shippers, and were taken over and fed on this contract until they were in condition to market to good advantage.

In all, 447 hogs were fed during five months, the total of gains made being 22,500 lbs., which at seven cents per pound represented a gross income of \$1,575. The feeds used were corn, middlings and feeding molasses, the value of the feeds consumed being as follows: Corn, \$225.53; middlings, \$610.30; molasses, \$90.40, or a total cost of \$926.23, leaving a gross profit above cost of feeding of \$648.77. In this case the cost of gains made was approximately 4.12 cents per pound, which may be considered as a very economical gain in view of the fact that the hogs fed were the culls of those purchased for shipment, and the further fact that the feeding was done in dry yard instead of on forage. Mr. Booraem expresses the belief that the feeds used were an ideal combination, and is a firm believer in the idea that molasses is a profitable feed to use with grains in feeding hogs for profitable pork production.

LIVE STOCK NEWS.

There have been Montana wheat-fed hogs on the Chicago market recently, and they sold well, being good and fat.

Iowa and Minnesota flocks of fed lambs have shown up on the Chicago market in large numbers recently, and supplies came in on some days so liberally as to cause a good deal of surprise to dealers who had supposed these states had marketed the greater part of their flocks. It begins to look as though more lambs went into feeding districts in the two states last autumn than was at first supposed. Colorado and Idaho have contributed a good many lambs on some days, these being marketed usually in big bunches while many hay-fed lambs from Montana and Idaho furnished the class much sought after by sheepmen in search of feeders. The marketing of matured sheep this winter has been so light as a rule as to render them almost immune to the declines in prices so often seen in lambs.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

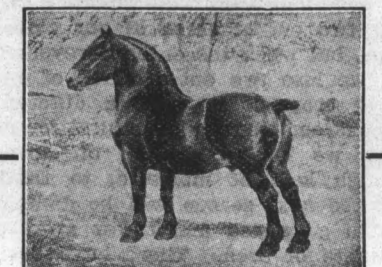


Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.



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H. & H. Wolf, importers of Belgian Horses exclusively, advise old and prospective patrons that their new 1913 importation is now in their barns. It is in all respects by far the most select lot of horses of this breed that have ever been stabled in their barns. Big, weighty, typey drafters of quality all through, that challenge comparison with the Best Anywhere. A select lot of mares, too. Get our terms and Guarantee. This will interest you as much as the horses.

Hewo Stock Farm
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More than a quarter century
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JNO. CRAWFORD,
Horse Importer,
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70 Head for Sale Percheron, Hackney and Clydesdale Stallions.

Also Some Fine Percheron & Hackney Mares with foal. Now gentlemen I am going to sell. Be sure to get my price before you buy.

JACKS and MULES

Raise mules and get rich. 18 Jack and Mule farms under one management, where can be seen 420 head fine large Jacks, Jennys and Mules, 4 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address

KREKLE'S JACK FARM
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Branch barns, Clinton, Ind.



18 Percheron Stallions

2 to 4 years old, blacks. Also young mares. \$300 to \$600 DURING MARCH.

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ECONOMY IN PRODUCTION OF PORK.

(Continued from last week.)

Address delivered by H. G. Krum, Secretary of the American Yorkshire Club, before the Michigan Improved Live Stock Breeders' and Feeders' Association.

In growing our pigs we have generally had clover pasture for them to run on. Placing them on it soon after birth, or perhaps they would first have some rye for early pasture. We generally have either oats and peas or rape for the middle of the summer when clover is growing slowly. If for any reason the clover failed we would fill in the ration with rape.

We are just getting some alfalfa pasture started and find it gives even better results than clover. From birth until early corn is ready to harvest the pigs have all the pasture they want, but little grain. The grain ration probably never exceeds three or four pounds for every 100 pounds of pig. Following the summer pasture we allow the pigs to harvest all they need of the corn crop until they are ready to market. While on the corn they either have the run of an adjoining pasture or the corn lot is sowed with rape at the last cultivation. In this way our spring pigs require very little care and almost no housing. They use but little grain and most of what they do get, they pick,

At the Wisconsin Experiment Station we find that an acre of rape replaced \$21.24 worth of grain, and at the Ohio Experiment Station we find that an acre of rape replaced \$48.97 worth of grain.

On a western Illinois farm we find good corn land produced clover that yielded 400 pounds of pork, or at six cents per pound, \$24.00.

Thus we find that land devoted to growing pasture plants for hogs gives a good return for a small outlay of labor. Although we have not given many reports of the value of alfalfa every experiment station and every individual who has tried it, admits it to be the best hog forage known. Rape and medium red clover are about equal for second place. Rape is especially valuable as an emergency crop. Oats and peas rank well up to rape but in most locations the seed is rather expensive. If one has not alfalfa, rye is of value for early spring and late fall pasture. More care must be used in pasturing alfalfa for it will not stand close cropping. It is better to cut two crops of hay from the pasture than to try to make the hogs eat it clean.

Now to compare the results obtained from feeding forage to those from feeding in the dry lot, I have compiled the following data from some Missouri experiments:

Kind of forage.	Pounds grain per lb. gain.	Pounds gain per bu. corn fed.	Value of pork produced per bu. corn fed on forage; at 6c.
Bluegrass	4.50	12.4	\$0.76
Alfalfa	3.07	18.2	1.09
Clover	2.95	18.9	1.13
Rape	2.74	20.4	1.22
Rape and oats	3.60	15.5	.93
Rape, oats, clover and others	2.47	22.6	1.36
Average	3.18	18.4	1.10

hush and grind themselves. Growing pigs in this way we have produced them for as little as two and a half cents per pound and never have they cost over four cents. Some seasons the cost runs up on account of the shortage of pasture or some other outside cost. I am convinced that if a man has all the alfalfa pasture he needs and uses the proper kind of pigs, etc., he can produce pork from two and a half to three cents per pound. Of course, that means everlasting care and attention to the little details.

One benefit of growing pork in this way is that the pork is of better quality. This is especially true of bacon type hogs. By the way, the bacon type hog is especially adapted to make good use of forage crops for they are active in disposition and good foragers.

In common farm practice one does not always keep a detailed record of results, so although we have given you the final results of our method of feeding as above, I am obliged to resort to reports of the experiment stations for more detailed study of this question. The following table gives the results of some experiments at the Missouri Station on the value of forage for growing pigs:

	Pounds Pork Produced.	Value at 6c.	Value at 7c.
One acre alfalfa	591.8	35.51	41.42
One acre clover	567.7	34.05	39.73
One acre rape	392.8	23.57	27.50
One acre bluegrass	324.6	19.47	22.71
One acre sorghum	275.0	16.50	19.25
One acre rye	211.7	12.70	14.85

These experiments were made on poor land; land that was only averaging 32 bushels of corn to the acre. You will notice that alfalfa heads the list with a production of nearly 600 pounds. Also notice the returns per acre, which is certainly good for the quality of the land. In the same kind of an experiment at the Iowa Station on rich land that was producing 50 bushels of corn to the acre, we find alfalfa producing \$97.09 net per acre with pork at six cents per pound. At the same station clover produced \$64.55 net per acre, timothy and bluegrass only netted \$31.85 per acre.

most of the time, and while their business is necessarily a very uncertain one, yet of late they have struck it right much oftener than wrong. Of course, they have been counting on a generous eastern shipping demand in the Chicago market, and this has seldom failed them, shippers purchasing on some daisy more than half of the day's receipts. Seldom in past years have hogs of all descriptions, from the very choicest down to the commonest, sold so high as of late. The single exceptional year was 1910, hogs selling up to \$9.70 per 100 lbs. in the middle of February of that year. Hogs are coming to market well fattened and at last prime light weights are selling nearly as high as the best heavy weights, instead of going at their former discount.

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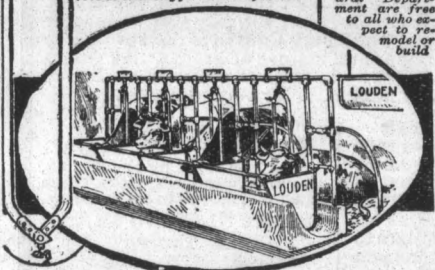
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Dairy.

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SELECT OUT THE POOR COWS.

The advice to select out the unprofitable cows has been given time and time again, yet there are many farmers who do not test their cows and know nothing about how many of them are unprofitable. Farmers do not seem to realize that there can be cows in their herd that are absolutely worthless, cows that do not pay for their feed, let alone paying for the time and trouble of taking care of them.

At first thought it does not look reasonable that cows will fail to pay for the feed they eat, and yet when we test the cows we know very well that this is so. This idea is very strikingly brought out by the results of the world's egg contest, held in Missouri at the experiment station. Three were several hundred hens entered from all over the world. Every hen was kept so that a complete record could be made of her eggs. Each hen was tested individually, just as we test our cows. The ordinary farmer, of course, finds it impossible to keep track of every individual hen. It could be done by having trap nests but it takes quite a lot of attention to do this. In this laying contest, however, every hen was so controlled that one could tell the number of eggs laid. Now it is surprising to note that two of the hens of these several hundred laid 260 eggs each in one year. A few years ago it was considered wonderful that a hen would produce 200 eggs in a year, but here are two hens that produced 260. Now it is believed that it will not be long before a hen will be bred that will lay 300 eggs a year. But what I wanted to bring out was that in this contest of several hundred hens, 700 I think it was, there were five hens that never laid a single egg during the whole year. What do you think of that? Think of people who believed that they had hens good enough to send to a world's egg-laying contest and then send hens that didn't lay one single egg during the whole year.

Now this being a fact, what must be the condition of the average farmer's flock? It may be that a third of them never lay an egg from one year's end to another. Probably one-fourth of them are laying two-thirds of the eggs, and if he only had some way of selecting out those that did not lay there would be much more profit in hens.

It is just so with cows—only with cows it is easy to select out those that do not produce well. By weighing the milk, testing it for butter-fat and keeping track of the feed which each cow consumes we can easily discover the cows that are not producing a profit, and when we find them they ought to be made into bologna sausage because that is all they are good for. Some cows will not change feed into milk economically if given the best of care. They are not dairy cows and consequently should be used for other purposes. Their elimination will increase the value of the herd.

STREAKED BUTTER.

Am making butter from 10 Jersey cows and have trouble with the butter being streaked or mottled. Can anyone give a remedy to avoid this? Have tried many things to overcome it but have failed to accomplish results desired.

Wayne Co.

E. D.

The streaks in the butter are probably due to an uneven distribution of the salt. It may be that you gather the butter too much before you apply the salt. If the butter is gathered in a large mass before you apply the

salt it is almost impossible to evenly distribute the salt. The remedy is to churn your butter until it comes in the form of granules about the size of wheat kernels. Then stop churning and thoroughly rinse the butter. Rinse the butter until the buttermilk is all out. You must do this with cold water. If you do not use cold water when you turn the churn over the butter will gather together, but if real cold water is used it will remain in the form of granules. In rinsing do not turn the churn over more than twice. After you have rinsed the butter so that it is free from buttermilk then apply the salt. Keep the butter cold so that it will not stick together into large masses, and stir the butter up thoroughly with the salt in. Then let it stand and drain a little while and take it out of the churn and set it away over night. Then re-work the butter. If you do this I think that you will get the salt evenly distributed throughout the butter and you will have no more streaked butter.

A PERSISTENT MILKER.

I have a cow, bred May 15, which I could hardly dry up. A week ago I was milking only a couple of quarts once a day. Her bag now is so large she can't lie down, and so full I milked out about eight quarts, and it is still full. It does not seem feverish and is not caked. Some experienced dairymen tell me to keep on milking her. She is in good condition. Feed ensilage, bean fodder, oil meal. When ought she to be fresh?

Allegan Co.

F. W.

Where one has a persistent milker and does not succeed in drying her up four or six weeks before it is time to freshen again, undoubtedly the best way to do is to feed her well and to keep right on milking. The milk may not be good the last few days but you can throw it away. If you attempt to dry her off after she commences to make bag for the new freshening, it may get caked and injured. The safest way is to keep her milked out clean. If this cow was bred May 15 she would be due to freshen again about February 25, or 282 days, which is the period of gestation for cows.

TWELVE POUNDS OF COOKED BEANS FOR COWS.

Kindly tell me or not whether I am feeding a balanced ration? I am feeding six cows each 12 lbs. of cooked beans, six in the morning and six at night. I feed hay once a day as roughage, and cornstalks twice a day. I also feed corn silage, a bushel to each cow twice a day. Would it bring better results if I feed bran and cottonseed meal instead of beans?

Eaton Co.

V. B. R.

Theoretically, this is a good ration. Twelve pounds of cooked beans will furnish all the protein that is necessary to furnish a concentrated ration. With a feed of hay a day and two feeds of cornstalks, and all the corn silage the cows will eat up clean you have a splendid roughage ration. If the cows relish the beans, seem to enjoy them, then I think this is just as good a ration as you can get, and it is certainly cheaper than it would be to feed cottonseed meal or bran. You are getting the desired amount of protein, a sufficient amount to balance up the roughage and make a balanced ration, and undoubtedly the cull beans are a cheaper source of protein than cottonseed meal. If this is so and the cows are doing well I don't see how you can better the ration.

AN ERROR.

In order that all of our readers may take advantage of the free book offer made by the Hercules Mfg. Co., 837 Twenty-second street, Centerville, Iowa, we wish to call attention to an error made in their advertisement in February 14 issue, in giving their address as 837 Twenty-first street. The book on stump pulling which they offer to send free is too valuable to be without. We believe, however, that they will receive all orders addressed to Twenty-first street, but suggest that those who wish one of those free books, to address them at Twenty-second street to make sure.

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PROPER AMOUNT OF LIGHT FOR A COW STABLE.

I am going into the dairy business and expect to put my barn on a basement. The barn is 30x64 ft. I should like to know how much light the cows will require. Some figure that four square feet per cow is the right amount. I think the light should be figured according to the floor space. What is the best method of ventilating this barn? Can we use the silo in this connection? I am planning on stabling 14 cows, six horses, and having a run in one end of the barn for young stock. Is it necessary to keep horses and cows in separate compartments to conform to the state dairy and food law?

Lapeer Co.

H. W. R.

Four square feet of glass or window space for each cow is the rule, but, of course, it is supposed that the cow stable is fully occupied by cows. If you kept but one cow in a great big stable a window four feet square would not be a sufficient amount of light.

The King System of ventilation is the only reliable and practical way of ventilating a cow stable. This allows the pure air from outside to enter the stable without allowing the warm air in the stable to pass out, and then it draws off the cold impure air from the floor of the stable. I don't see how you could connect your ventilating shaft with the silo. The ventilating shaft should extend up through the stable, storage part of the barn and through the roof, and reach up above the peak of the barn. It works on the same principle as a chimney, and how you can run this into a silo and get a chimney draft is more than I can understand.

It will be all right to keep horses and cows in the same stable, providing, of course, that you keep the stable properly cleaned. There is nothing in the pure food laws which would interfere with this, but the stable must be kept reasonably clean. In fact, it is a pretty good thing to have the horse stable in the same room with the cows where one has a small number of cows, for he can keep the stable warmer and in better shape. He can clean out the gutters of the cow stable and put the horse manure in to absorb the liquid manure from the cows and keep the horse manure from heating. This will take less bedding.

It is all right to use one end of this barn as a shed for young cattle, but you must remember that the partition between the shed and the stable must be built just as tight as the walls of the stable if you want the King System of ventilation to work, because with the King system of ventilation the stable must be tight so that you can control the air currents.

SILAGE FOR SUMMER FEEDING.

Can I improve this ration? I feed silage, having plenty of corn ears in, in the morning, following with a feed of oat straw, then at noon bean straw, and silage and oat straw again at night. For grain I give two quarts of wheat bran, eight to ten quarts of oat chop, and one to one and a half pounds of cottonseed meal per cow per day, the amount of the latter depending upon the size of the cow and the amount of milk she gives. I shall have some silage left and will not have over half enough pasture this summer. Could I feed silage in the morning, let the cows on pasture till three o'clock in the afternoon, then yard them, feed silage at night and keep them up till morning? Should I feed grain in connection with the silage in summer? If so, what grain would you recommend? Would it be better to cover up the silage during the period of best pasture, allow the cows to eat all they will of it, then when it gets a little short begin using the silage, or had I better save the pasture by feeding the silage right along?

Huron Co.

H. S. T.

The ration being fed is a good one. There is no particular need to feed gluten feed in connection with this unless you substitute gluten feed for a part of the cottonseed meal. Sometimes a variation in the feed causes the cows to eat better, but if they are

eating the ration well, gluten feed is no better than cottonseed meal in balancing up a ration.

I practice on my own farm the same system that you suggest in your letter; that is, we haven't pasture enough for the cows the entire season, so we feed silage and grain the year around, and also clover hay if they will eat it. We keep the cows up every night the year around and feed them corn silage and grain. Sometimes when the feed grows luxuriantly we cut out the silage for a time but most always they will eat one good feed of silage every day, and they will always eat a little grain. Clover hay is not eaten very well if there is plenty of pasture, but just as soon as the pasture begins to shorten or dry up a little bit then they will eat a feed of clover hay as well as a feed of corn silage.

I think it is more economical where one is short of pasture to feed a little grain all the while than it is to confine the cows entirely to the pasture while it lasts, then they have to depend almost entirely on the dry feed and the corn silage. When they are on the pasture you will have to feed more grain later on to keep them up. Where one is short of pasture it is a good plan to keep the cows in the barn nights. You save almost enough manure to pay for the stabling. You also save in labor as it is quite a job to go out in the pasture every morning and get the cows and put them in the barn. Regarding the manure, it is scattered about the pasture, usually in places where it is little needed, and where it does but little good when the cows are kept there entirely. If they are kept in the barn you can save this manure and put it on the poor places of the farm where it will do the most good.

CEMENT FOR COW STABLE.

Would like to have information in regard to cementing a barn for cows. I am going to use steel stanchions and want to make room for two rows of stanchions across barn.

Berrien Co.

J. A.

By all means use cement for the floor of the cow stable. There isn't any other material today that is as practical. Wood doesn't last but a little while and wood is not sanitary. It will absorb the liquid manure and after a time give off offensive odors that cannot be done away with. But cement is perfectly impervious and can be kept in a sanitary condition. Make the gutters of cement. Make the mangers of cement, the feeding alley, in fact, have the entire floor, including the gutter and the mangers, of cement. You can then keep the mangers in a sanitary condition. They can then be washed out if it is necessary to do this. At present prices of good lumber cement is cheaper.

ROUGHAGE LACKS PROTEIN.

We have corn silage, shredded fodder, oat straw, and millet. Would like to know in what proportion to feed to young cattle and sheep; also what grain ration to feed milch cows.

Wexford Co.

W. C.

All of these foods mentioned are deficient in protein. Alfalfa or clover would help out the ration very much, but as you haven't got these feeds it would be cheaper to buy a little grain to balance the ration than it would to buy either of these hays, and you can balance the ration by feeding a little grain that is rich in protein in connection with them, and I would suggest gluten feed or wheat bran or a little cottonseed meal. There would be no particular use in trying to give the proportion that each one of these kinds of roughage should be fed. The cattle should have all of them that they will eat up clean, but then the ration would be unbalanced, so you should have a grain ration rich in protein to help balance it and make it more economical.

DE LAVAL CREAM SEPARATOR the most important machine used on the farm

SOME BUYERS OF CREAM SEPARATORS DO not stop to think why their purchase of the best cream separator is of greater importance than the purchase of any other implement or machine of any kind used on the farm, or for that matter anywhere else.

NEARLY EVERY PIECE OF FARM MACHIN-ery is only used a few weeks during the year, if that long, and when it is used simply saves time or labor over some other way, with comparatively little difference between makes of such machines except in design or size or possibly that one is better made than another and so lasts longer and probably costs more proportionately.



THE FACTS ARE very different in the case of the cream separator, which is used twice a day every day in the year, and very different as between the De Laval and other cream separators because the use of any other separator or creaming system involves not only the saving in time and labor a De Laval machine would effect but an actual waste in

quantity and quality of product a De Laval machine would save.

The Cream Separator the most wasteful or most profitable

THIS IS THE VERY GREAT DIFFERENCE THAT MAKES the cream separator the most important of farm machines, the most wasteful or the most profitable, because used so often and involving a waste or a saving every time it is used. This is the reason why there are more De Laval separators in use than of any other kind of farm or dairy machines the world over, and more than all the other makes of cream separators combined.

NO MATTER WHETHER YOU HAVE YET TO BUY A separator or are using an inferior machine, you must be interested in what a De Laval—not a 10, 20 or 30 year old one, but a De Laval machine today—would do for you, and that every De Laval local agent will be glad to make plain to you by the demonstration of a machine itself.

IF YOU DON'T KNOW THE NEAREST DE LAVAL agent, simply write the nearest main office as below.

The De Laval Separator Co.

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50,000 Branches and Local Agencies the World Over

"A product without a peer"

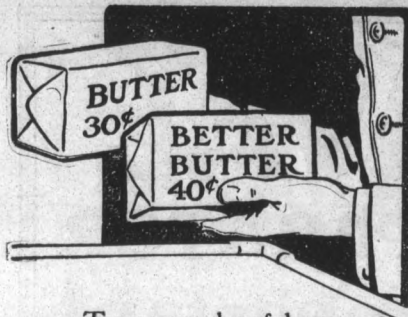
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Two pounds of butter
look the same at the grocery.

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One may sell for 30c.,
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The higher priced butter al-
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There is no bitter taste to
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how quickly the fine even grains
"work in."

Worcester Salt helps you
produce the fine flavor that
commands high prices.

WORCESTER SALT

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er sizes in muslin
bags. Your gro-
cer has it. Get
a bag.

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Largest Producers of High-Grade
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NEW YORK

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**Kept one year on one acre of Eureka
Corn.** This seed corn yielded over 70
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for a whole year from the product
of one acre goes a long way toward
reducing the cost of milk. This
enormous crop won our \$50.00
gold prize for the heaviest yield. No
other corn has ever equalled it.

Eureka Corn

Grows tallest—has most leaves—more ears.
Eureka is a white, smooth dent corn and is
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two and three ears to the stalk.

Planting Eureka Corn is as good as an in-
surance policy to any farmer. It grows where
others fail. Four or six acres of Eureka Corn
will fill a 200-ton silo. Write us at once for
our 1914 catalog. Quotations and list of our
wonderful varieties of big-yielding corn and
other seeds.

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**The Silo That Gives
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Doors on hinges—convenient to operate
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Mention the Michigan Farmer
when writing to advertisers.

CAN THE RATION BE IMPROVED?

Am feeding my cows clover hay
and oat straw, and for grain I feed
two parts oats, one part wheat, one
part barley, one part rye. Please tell
me if I can improve this by feeding
beet pulp, oil meal or cottonseed meal.
The chop feed I don't have to buy; I
raise that on my own place.

Wisconsin.

A. K. B.

Clover hay is the only food in the
ration that is as rich in protein as the
cow's ration should be. All the rest
are deficient in protein, therefore I
would recommend two pounds per
day of cottonseed meal for each cow
and the balance of the ration as it is
now being fed. Since there is no suc-
culent food I believe it would be a
good plan to feed dried beet pulp, two
or three pounds per cow per day, but
before it is fed moisten it four or five
hours so that it will assume some-
thing like the succulency of the beet
pulp before it is dried. Then for the
balance of the grain ration I would
feed the same chops composed of two
parts of oats, one part of wheat, one
part of barley and one part of rye. Or
you could cut out the wheat, the bar-
ley and the rye and put beet pulp in
the place of it.

FEED ONLY TWO POUNDS COT- TONSEED MEAL PER DAY.

Please give me a balanced ration of
the following grains: Oats, cob meal
and cottonseed meal, and for rough-
age, corn silage, mixed hay, clover
and timothy (about two-thirds clo-
ver). Cows came fresh in Septem-
ber. Have been feeding four parts
ground oats, two parts cottonseed and
feeding one pound of grain a day for
every pound of butter-fat produced in
a week. I have not been able to keep
a steady flow of milk. Cows look
well. I give these cows good care,
water twice each day, have the water
warmed and have fed cornstalks and
bean pods once each day, all they
would clean up, also about 40 lbs. of
corn silage.

Midland Co.

SUBSCRIBER.

I would not want to feed a grain
ration one-third cottonseed meal. It
is a very concentrated food. I have
an idea that you are probably feed-
ing more protein than there is any
need of. You can cheapen your ra-
tion by cutting out part of this. If
you will confine your cows to two
pounds of cottonseed meal a day and
make up the balance of the ration
equal parts of ground oats and corn
and cob meal, I believe you will get
just as good results and it certainly
will be cheaper. If these cows are
kept in a stable where the tempera-
ture does not change too much with
the weather, that is, it is so that you
can control the temperature reason-
ably, I do not see why they will not
give a good even flow of milk. They
ought to do well. On the other hand,
if the stable is not warmly built and
the temperature of your stable
changes with the weather, the cows
will not give a uniform flow of milk.

INFORMATION THAT MEANS DOL- LARS.

You may be surprised to know the
amount of butter-fat in the milk your
cows produce. Some of your cows
may be unusually good ones for
yielding butter-fat, while others may
not produce enough to pay for their
keep. We can inform you on these
matters if you will send samples of
milk from each cow to be tested by
our free service to subscribers.

Have the milk thoroughly mixed
when taking the sample. This may
be done by pouring the milk from one
pail or can to another three or four
times. The sample is then taken im-
mediately and from this sample a
four-ounce wide-mouthed bottle is fill-
ed, corked tightly, enclosed in a mail-
ing case and sent to the Michigan
Farmer Laboratories, 674 Woodward
avenue, Detroit, where the milk will
be tested and a report made to the
sender. A sample of the cream sold
to your buyer may also be tested
which will enable you to know if the
purchaser is giving you proper tests.

In case you do not have a suitable
bottle and mailing case request same
of the Michigan Farmer offices, De-
troit, enclosing ten cents in stamps
and they will be forwarded to you
postpaid.

Thick Cream

The advantages of thick cream over thin cream are
many and very important.

Thick cream contains less milk, consequently, less souring
elements and therefore will keep sweet longer.

Thick cream is less in bulk and therefore more easily and
cheaply transported.

Thick cream causes less loss of butter fat in churning.

Thick cream leaves a greater quantity of the skim milk at
home to feed to calves and pigs.

Thick cream brings a higher price—many creameries give
from two to five cents more per pound for but-
ter fat from thick cream than from thin cream.

At a demonstration of cream separators at the Iowa Agricultural College,
January 8th, 1914, the

UNITED STATES CREAM SEPARATOR

separated cream that tested 47 per cent. butter fat. The next nearest
competitor tested 33 per cent. butter fat and the second nearest tested 26
per cent. butter fat.

The United States is the only separator that can separate thick cream
and separate clean. Others, in attempting to equal it, clog or leave cream
in the skim milk.

The United States Separator has a record of 65 per cent. butter fat and
made perfect separation, as shown by the skim milk test and holds

The World's Record for Close Skimming
in 50 consecutive tests run for 30 days with 10 different breeds of cows.

Write for illustrated circulars

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LISTEN! Read This Twice

For five months starting February first I am going to make my New Special Proposition to every dairyman in this country on the New Genuine Galloway Sanitary Cream Separator. It's a combination offer. Its equal has never been made in the history of this country. I not only save you dealer's, jobber's and catalog house profits but I sell you a better machine and give you a bonus as well to try it, which shows my faith in my separator, my proposition and my plan. No such offer as I make on the class of separator I sell has ever been made.

The New Galloway Sanitary Cream Separator

is made so good in my factory that I will send it anywhere in the United States without an expert to any inexperienced user for a ninety day free trial to test against any make or kind that even sells for twice as much and will let the user be judge, because it's the most modern—the most sanitary—the most scientific—the cleanest skimmer—the most beautiful in design of any cream separator made today and I have seen them all. Write me and I will tell you how to make money in the dairy business when the pastures are dried up in summer. I did it on my own farm and know. Get my proposition now. It's so good that no dairyman who owns two or a hundred cows can afford to be without it. All I ask you to do is to first get my proposition before you decide to purchase any cream separator of any make, kind or at any price. Just drop me a postal. Address

Wm. Galloway Pres. William Galloway Co.
183-B Galloway Sta. Waterloo, Iowa

Travel

20,000 miles, look over every factory in the United States and all of the foreign countries—you won't find its superior at any price.

Made in our own factory from finest materials on best automatic machinery, by skilled workmen, in tremendous quantities, all parts alike interchangeable, and standard and sold to you for less money than dealers and jobbers can buy machines not as good in carload lots for spot cash.

Get my 1914 Catalog and Cow Book FREE

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5 Year Guarantee

NATCO IMPERISHABLE SILO

Feed Sweet Succulent Corn Until the Silo's Empty

You can keep your ensilage as fresh, sweet, succulent and palatable as the day the corn was cut—preserve it in perfect condition right down to the last forkful—if you have a

Natco Imperishable Silo

Built of vitrified clay hollow blocks; its glazed surfaces exclude air and moisture. The two dead air spaces protect contents from heat and cold. Each layer of blocks is reinforced by continuous steel bands.

Weatherproof—Decayproof—Vermineproof—Fireproof

The Natco Imperishable Silo will last for generations—any mason can erect it—never needs painting—no staves to warp or shrink—no hoops to tighten—no repair bills—the first cost is the only cost.

FREE SILO BOOK—Full of information about ensilage—describes completely The Natco Imperishable Silo.

Write today for Catalog "A"

NATIONAL FIRE PROOFING COMPANY
Lansing, Mich.

Practical Science.

THE ELEMENT OF UNCERTAINTY IN INTERPRETING FEEDING EXPERIMENTS.

(Continued from last week).

The Great Need of a Chemical Analysis of Each Ration.

The advisability of submitting experimental rations to a chemical analysis is clearly indicated by a study of the variability in the composition of feedstuffs. In the case of grain, this variability is negligible, apparently, as far as the energy value of the feed is concerned, but it is considerable and often extreme in the case of the moisture, protein, and ash content. With roughages, inspection of analytical data would indicate an even greater variability than with grains, apparently involving even the energy value. In the case of commercial concentrates, variation of the protein content is often quite comparable to that in grains, though in the most highly nitrogenous concentrates, such as blood meal with a protein guarantee of 80 per cent, the percentage variability is less evident.

The detailed study undertaken in Bulletin 165, of the variability of the gains in weight of farm animals kept under more or less uniform experimental conditions, has indicated certain general recommendations, more especially as regards the best manner of interpreting the experimental data obtained and of publishing the results and conclusions for the guidance of the agricultural community.

In formulating the conclusions of feeding experiments, the necessity of keeping in mind the possibility that several of the specific experimental conditions may seriously limit the applicability of the results of the investigation should not be lost sight of. Thus, Ration A may be superior to Ration B under some, but not all, conditions. The possibility, if not the probability, exists that if the constituents of Ration A are not up to a certain standard, the reverse relation may hold; hence the necessity of a chemical analysis of the rations used in order that one may know the actual conditions under which the experimental conclusions may reasonably be applied. It is not sufficient simply to enumerate the individual feeds of which the rations are constituted and the proportions in which they enter into the rations. Neither is an exhaustive and repeated chemical analysis of ration either necessary or especially advantageous. In fact, if a fairly complete analysis of feeds be made at the beginning of the experiment and substantially the same feeds be used throughout the subsequent feeding period, it may be necessary to run only moisture determinations on the feeds from time to time during the experiment. If the variation in the moisture content of feeds is not appreciable during storage, even the repetition of moisture determinations will be unnecessary. However, an ordinary analysis should be made of each new supply of feed from a sample fairly representative of the entire supply.

Other conditions than the composition of rations may limit the applicability of conclusions. The manner in which the feeds are given to the animal, e. g., whether they are given ad libitum or in restricted quantities, may determine to some extent the relative merits of the rations. The breed or type of animals experimented upon may be still another limiting factor. The age or condition of the animals may be still other limiting factors. Such considerations as these, which are associated with greater or less degree of probability, should receive due attention in interpreting feeding experiments, and the assertion that a given experiment indicates a superiority of one ration over another should be made only in close connection with a brief statement of the more important experimental conditions.

A Word of Caution in Accepting Experimental Results.

The results of feeding experiments should be published, not only with the idea of describing a particular investigation, but also with the idea of determining, in so far as such a determination is possible, whether a reasonable probability exists that the practical live stock farmer will actually benefit by applying the results of the investigation to his own live stock. If no such probability exists, the farmer should be specifically warned. The elaborate analysis necessary for answering such a question will very probably not be appreciated by the majority of the readers of experiment station bulletins, but this is no excuse for not using such analytical methods at the expense of accuracy in the formulation of conclusions and recommendations. As a matter of fact, the analysis undertaken need constitute no part of the bulletin published, the purpose of such analysis being primarily simply to check or rectify conclusions.

RELATION OF SHAPE OF EAR TO YIELD OF CORN.

The superintendent of the Texas substation at Temple, after a careful study of the relation of shape of ear to yield of corn, concludes that slightly tapering parent ears give the highest yield. This is in accord with the results of experiments at the Ohio Experiment Station, in which extremely tapering ears gave slightly higher results than cylindrical ears. High yields were associated with comparatively smooth kernels of slightly more than average depth and of medium horniness. The yield increased with an increase in the total weight of the ear as determined by slight increase in length, amount of grain, and rather marked increase in weight of cob.

In experiments at the Ohio and Nebraska experiment stations it was found that the highest yields were obtained with medium to medium long ears. Poorly filled butts and tips were more frequently associated with high yields than well filled, but high yields were more frequently associated with well-filled butts than with well-filled tips. "The old score card placed much emphasis on good filling of butts and tips, but for several years past investigators have been getting away from this idea. It has been found that these characters, when highly developed, are usually so developed at the expense of more valuable characters, such as yield, constitution, etc." There appeared to be no relation between yield and shelling percentage and circumference and width of thickness of kernel.

CATALOG NOTICES.

The 1914 catalog of the George A. Sweet Nursery, Dansville, N. Y., is a 52 page booklet, illustrated with many half-tone engravings showing fruit produced from the many varieties and kinds of fruit trees sold by this company, also showing ornamental trees, plants, etc.

The 1914 Year Book of W. N. Scarff, New Carlyle, Ohio, is a 40 page catalog describing and illustrating the goods offered by this company, which has 100 acres of land devoted to nursery, fruit and farm seed production. A 32 page seed annual is also sent upon request by the same firm.

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SPEARMINT

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relieves indigestion. It
causes digestion-aiding
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adds helpful
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friends. It stays fresh
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You can save 43% by deciding now to buy Ajax tires. They are the first and only standard tires to carry a definite written guarantee of 5,000 miles. For the past nine years this pledge of Ajax quality has been in force and fulfilled.

The life of most standard tires, as verbally implied, is 3,500 miles—or 1,500 miles less than the guaranteed-in-writing Ajax 5,000 miles. Thus you save from \$4.00 to \$20.00 (according to size) on every Ajax tire you buy. You don't make this saving because they are cheaper—but because Ajax are tires of higher quality. Ajax are the best tires in the world.

Decide now to equip your car with Ajax tires—all four wheels. There's an Ajax dealer close at hand. Remember! Get acquainted with him. Send for Ajax Literature. It will mean money in your pocket.

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RATES OF ADVERTISING.

40 cents per line agate type measurement, or \$5.00 per inch (14 agate lines per inch) each insertion. No advt inserted for less than \$1.20 per insertion. No objectionable advertisements inserted at any price. Entered as second class matter at the Detroit, Michigan, postoffice. Copyright 1914.

DETROIT, MARCH 7, 1914.

LEGAL QUESTIONS ANSWERED.

For the accommodation of our subscribers, we have arranged with Mr. Allan Campbell, a competent attorney, to answer legal inquiries for our subscribers. For this service a fee of 25 cents for each question will be charged to insure that only questions of importance will be asked. This will bring a personal letter of advice from the attorney, to whom the questions are referred. Address Legal Department, Michigan Farmer, Detroit, Mich.

CURRENT COMMENT.

Several inquiries have been recently received with regard to the present status of the road law relating to road districts and road work. Some of the inquirers want to know if a township can go back to the old road system and elect several "pathmasters," doing away with the present "overseers," as they are denominated in the law.

In 1907 the old labor tax for highway purposes was repealed by the Legislature and a money tax substituted therefor. This act provided for separate appropriations for road repair and highway improvement. This law limited the number of road districts in each organized township to one, and provided for the election of an overseer of highways at the township meeting.

In 1909, when the general road law was revised, it was provided that the highway commissioner, acting with the township board, might divide the township into one or more road districts in each surveyed township, in each of which districts an overseer of highways should be elected.

In 1913 the law was again amended in some minor details, still leaving it with the highway commissioner to divide the township into road districts as he may deem convenient, acting with the township board in any township which has been organized more than fifteen years. This law provides that the overseers of highways shall be elected at the township meeting by viva voce vote, or in such other manner as the meeting may direct, one overseer of highways for each road district, limiting the right to vote for such officer to the residents in the road district, or electors of the township having taxable property in the district.

Thus at the present time the overseers or pathmasters, as they were formerly termed, will be elected as they were under the old highway law, while the appropriations made will be

the same as formerly, under the new law, thus giving the residents of each road district the choice of their own overseer of highways and in this way more local control of the work of highway improvement.

Public Sentiment of the United States Supreme Court will have an important bearing on the future interpretation and administration of the so-called pure food law.

A recent decision of the United States Supreme Court will have an important bearing on the future interpretation and administration of the so-called pure food law. In the case at issue, the government, under the interpretation which has previously been given the law by the officials charged with its administration, claimed the right to condemn an article of food when a "poisonous and deleterious substance" had been added. This right was contested by the litigant, and the court, in an opinion handed down by Justice Day, ruled that it is necessary to prove not only that the addition is a harmful and deleterious substance, but that enough of it has been added to cause actual harm to health.

Undoubtedly public sentiment will demand the early amendment of the law which will make it as stringent in application as it was before this final interpretation was rendered by the court of last resort. It has been well said that no law can be properly enforced which is not backed by public sentiment. It is just as true that public sentiment, once aroused, is a most effective agent in securing the kind of legislation which the public demands. Public sentiment is undoubtedly in harmony with the broad interpretation which has heretofore been given this law, and is quite certain to find an early expression of sufficient force to bring about its amendment in this important particular.

In this issue will be found the last of five special articles on the Torrens Land Title System, written especially for the Michigan Farmer by a disinterested author who is an authority on the law of land titles and conveyances, as noted in the issue in which the first of these articles was published. As previously noted, the reason for publishing this series of articles at this time was an apparent lack of a thorough understanding of the system, as well as the shortcomings of the system now in vogue in this state, by Michigan Farmer readers. A careful reading of the articles on this subject which have appeared in this and the four preceding issues will make the proposition clear to every reader, which is most desirable since the proposition of adopting the Torrens system is certain to remain a live issue in Michigan and to become a subject of proposed legislation in future sessions of the Legislature, as it has frequently been in the past.

Since this is a proposition of direct interest to the majority of farmers, we suggest that the papers containing these articles be preserved for future reference, to the end that the reader may be in a position to use his influence intelligently and wisely when the adoption of the Torrens system becomes the subject of legislative discussion and deliberation. It would also be well to bring this proposition up for discussion in local Grange and Farmers' Club meetings, and, indeed, in any gathering of farmers in which general discussion of current topics is in order. Both of the organizations above mentioned have time and again indorsed the proposition of adopting the Torrens system in Michigan, and a bill having that object in view was first introduced in the Michigan Legislature by a leader in the last mentioned organization. Public sentiment, however, had not been sufficiently developed or crystallized at that time so that any general interest in the proposition was developed. When the proposition again

comes before the Legislature the farmers of the state should be prepared to make their influence felt in the matter and the adoption of the suggestions above offered will place them in a position to accomplish that desirable end.

USE THE RIGHT ADDRESS.

When writing letters to advertisers, it is a good plan to use the correct address, just as it is given in the advertisement. This will insure prompt delivery and immediate attention.

Postal employees say it is remarkable how much mail is wrongly addressed. The state or the street address, or both, will be omitted, or the town or city will be misspelled, or the firm name will be written and no address whatever given.

These are due to lapses of memory or to diverted attention, and to avoid them, one should refer to the advertisement, before addressing the envelope, and then copy the address just as it is given in the paper.

HAPPENINGS OF THE WEEK.

National.

An effort is being made to simplify and facilitate the administration of justice in the federal courts. Last Friday a delegation of noted lawyers headed by former President Taft appeared before the judiciary committee of the lower House of Congress, impressing the need of a change.

Eminent educators are urging upon Congress the desirability of creating a university at Washington to be under the control of the federal government. A bill is now in Congress providing for such an institution, and hearings on the measure are being held.

The eastern states were visited by the worst gale it has experienced since 1888. For the first time in its history, the weather bureau at New York city notified steamship companies that no vessel would be allowed to leave port, owing to the threatening nature of the storm. Five persons were killed or frozen to death during the storm at different places. Scores of trains were unable to proceed to their destinations. Fully nine inches of snow fell in New York state, and the temperature dropped to a few degrees above zero. In places the velocity of the wind reached 80 miles per hour.

A committee of the lower House of Congress selected to investigate the shipping business on the Great Lakes report that the trunk line railroads absolutely control the package freight business, that three-fourths of the bulk freight business is handled by ships in a combination, and that the United States Steel Corporation is in a position to dominate the bulk freight business. The committee recommends that in such cities as Detroit, Buffalo and Chicago, where the railroads control the dock properties, the government should refuse to aid in improving such harbors.

Foreign.

Our relations with Mexico are still critical. General Villa has notified the United States government of his refusal to allow the examination of the body of W. S. Benton, the British rancher who was executed when he went to protest against rebel depredations on his ranch. While this notice may cause delay, it probably will not change the plan of the government at Washington of sending a commission to investigate into the details of the execution. Gen. Villa, in making the above refusal states that matters of a diplomatic character must hereafter be taken to Gen. Carranza. Should the latter refuse to permit the commissioners to make an investigation under his authority, a crisis will probably result. This action of the rebels will have a decidedly unfavorable effect upon their relations with this country in that it places the United States in an embarrassing position with Great Britain and other European countries.

The 40,000 French miners who recently went on strike as a protest against features of the workers' pension bill, have gone back to work.

The new kingdom of Albania became reality on March 1. Prince William of Wied has been named monarch by order of the powers. Immediately after his ascension to the throne, a rebellion broke out in Epirus and the inhabitants of that district proclaim it to be an independent state.

The new Haitian government has been recognized by the United States.

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and GIRL
SCIENTIFIC and
MECHANICAL

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

Facts About the Big Trees of California

By EARLE WILLIAM GAGE.

THE big trees of California were stately, fluted columns, with their soft, fibrous bark, raising their green tops to the stars a thousand years before Caesar conquered Gaul, and, at that, have never been known to die of old age. Nothing but a mountain forest-fire or a flash of lightning is able to lay them low, save the saw and axe in the hands of man. From one of these big trees one could cut 1,000,000 feet of timber—one-inch boards, twelve inches in width—enough to cover the entire hull of the majestic and mighty steamer "Mauretania."

These big trees are to be found in their greatest glory in Yosemite National Park, where nature and Uncle Sam go hand in hand in preserving them for coming generations' study and inspiration. They grow all through the Sierra Nevadas at an elevation of about 4,000 feet. The bark is the color of cinnamon and is soft and fibrous. So much so, that the Indians of the region are able to make some very nifty little articles for the dressing-room for the eastern tourists whose eager coins purchase these trinkets.

The redwoods of California are known far and wide as the great cypress-like forest of the United States, being of the Sequoia variety, the original name of the Cherokee Indians. Two thousand acres of this variety are to be found on the slopes of the Coast Range in Oregon along the banks of the Chetoo River. This acreage occupies a strip of land varying from 10 to 30 miles in width, and traversing the range from the Oregon line to the Bay of Monterey. South of the Chetoo River a continuous redwood belt starts, and increases its width from 10 miles, at Del Norte county, to 18 or 20 miles, and remains unbroken to southern Humboldt county. Here a break exists, while in

Mendocina county the belt becomes dense again, widening out to nearly 30 miles. South of this county the trees grow in isolated patches as far south as the Santa Lucia Mountains.

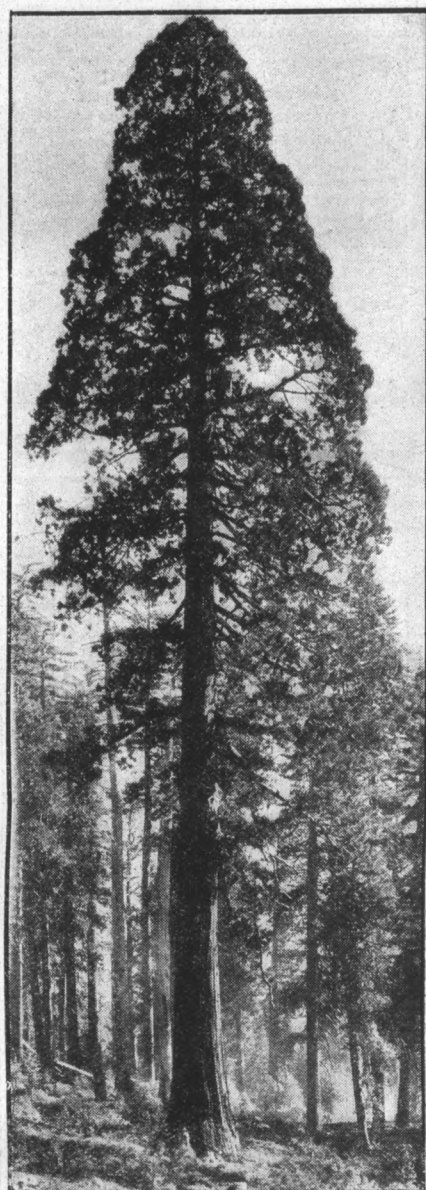
The redwood attains a greater height than any other American tree, while in girth and age it is exceeded by the big trees of the Sierras. On the slopes 225 feet is about the maximum height and 10 feet its greatest diameter, while on the flat-country region, under better conditions, it attains a height of 350 feet, with a diameter of 20 feet, while some of the giants of the species have been known to exceed this.

The redwoods come under the direct commercial line of lumbering. The greater majority of the trees fell are from 400 to 800 years of age. After the trees have passed the age of 500 years they usually begin to die down from the top and to fall off in growth. The oldest tree scientifically examined by the United States Department of Forestry, was found to have begun life as early as 531 A. D.

The lumbering of redwood was instituted as a commercial venture in 1850, and has steadily increased since with the growing market demands and growth of transportation facilities which were not to be had in the earlier days of the venture. The use of the wood is mostly confined to the state of California, the greatest demands coming from the southern counties. Occasionally a cargo is sent across the Pacific to our Oriental neighbors, but it is rarely sent to the Far East on account of the high cost in duty and transportation. It has, however, even at home, failed to prove a business venture giving forth extravagant profits to the lumbering operators. Several hundred thousand acres have already been cut over,

with a large acreage yet to be fell. A large portion of the land where the forests formerly stood are the richest and most profitable fruit and farming lands of the state of California, and stupendous crops are produced on what is termed "redwood lands." It seems that the cones that have been falling for these hundreds of years has formed a richness that man cannot duplicate with artificial means which means in turn, that these lands are in great demand at a high price.

Probably nowhere in the world is greater experience demanded of the woodsman than in the matter of lumbering. Great skill is needed that the trunk may fall precisely where the woodsman desires that it shall lie, and he must take great care that it is not split or in any manner broken by the heavy concussion, to prevent which a bed is smoothed and properly prepared for the oncoming fall. A great platform is then constructed, wholly surrounding the big tree, six to eight feet above the base of the tree. With a saw an undercut is made through the trunk, not quite to the center, and from the opposite side a crosscut is sawed, ending a foot or so above the undercut, thus leaving a foot of solid lumber between. When the exact place where the tree is to fall has been selected, the choppers ascend the platform and with their axes hew out an angular-shaped piece having the undercut as a base. When this has been cut the second or crosscut is wedged till the tree topples over and falls to the ground, the solid section of the trunk, not pierced by the cuts, supporting the tree till the center of gravity has been passed, and then the mighty frame falls on its prepared bed almost intact. The noise which these towering monsters of the forest make when they fall is



Scene in Manposa Grove, Showing Beautifully Shaped Top of Species.



Galen Clark, Yosemite Pioneer, at the foot of "Grizzly Giant." The Proportions indicate tree's Enormous Size.

not to be compared to the stampede of a drove of elephants. Men who have traveled far and wide, heard all sorts of noises, claim that the noise which a falling redwood makes is not comparable to anything they ever heard. The falling monster advises people five and eight miles distant that it has become food for the sawmills. The lumberman start operations at the edge of the "clearing," working their way into the density of the forest. This is the only method that could be pursued without the loss of large numbers of the other big trees.

After the trees have been "downed," the next operation is performed by the "ringers" and "peelers." Every 12 to 14 feet, as required by the needs for which the lumber is to be used, a ring is cut around the bark, and afterward the peelers, with crowbars and wedges, peel the bark from the prostrate monster. Finally all the trees are stripped of their covering, and become surrounded with an immense accumulation of debris, consisting of pieces of bark and branches, which must be removed previous to sawing the trunks into suitable lengths for conveyance to the mill. The ground is cleared by fire, precaution being taken first to plug up the "splits" in the trunk with clay so that

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the fire may not reach the interior of the tree. A foggy day is chosen, with the atmosphere still, that no blowing winds may fan the flames to unconquerable lengths. Fire is started and in a short period of time is burning with a fierce heat that quickly reduces the piles of bark and brush to heaps of ashes, leaving an unobstructed field for the action of removal of the timber which has been scarcely charred by the intense heat to which it has been subjected.

The trunks are sawed as they lie, into stated lengths, and then follows the arduous task of conveying the enormously heavy sections to the railroad. Temporary skidways are laid and roads capable of heavy loads constructed. Powerful chutes down which the logs pass have been planned, and on these, guided by the skillful lumberjacks, the unwieldy logs reach their destination. The work of loading the logs on trains is performed by donkey engines which haul the logs to the top of the steep banks and into seemingly impossible situations.

Redwoods, in the northern flat country region yield about 150,000 feet of lumber per acre, while about Humboldt Bay the yield will average from 50,000 to 75,000 feet per acre; while on slopes such as found in Sonoma county the average cut is 20,000 to 30,000 feet the acre.

The normal redwood is "clear" for 100 feet from the ground. That is, no limbs grow along the trunk of the tree 100 feet from the ground. This is of the normal, well-shaped tree, although the redwood has among its family some of the most peculiar shapes of any variety of American tree. The roots strike downward at a sharp angle, and are so very large and so numerous as to form a compact mass of wood, in shape like an inverted funnel.

While other trees have their deathly pests, the redwood stands supremely powerful against all pests of the common variety. The wind can scarcely uproot these trees, insects seem to do little harm, while fungi seldom af-

fect it. Even fire, the greatest enemy of all other trees, though it may occasionally kill whole patches of young redwood, is unable to penetrate the fire-proof sheathing of the shaggy-barked old redwoods, with which they protect themselves. A large acreage of redwoods in Santa Cruz county has been reserved as a National Park by the government.

The real big trees of California are the Sequoia of the gigantea variety, already mentioned. These are to be found along the western slope of the Sierras, usually at an elevation of 4,000 to 6,500 feet. This tree and its cousin, the gigantea, are evergreens, both bearing cones two or three inches in length. The latter tree is at the head of the family in age and size. There are specimens which tower 400 feet to the sky, while one is said to even exceed this, while the majority of the forest monsters measure from 70 to 90 feet around their trunks. The largest, recently discovered, has a base circumference of 109 feet.

These trees, in affect, are not mere poles or slender shafts as is the Eucalyptus of the forests of Australia, but proportionate and symmetrical in girth and height. The bark varies from 11 to 40 inches in thickness, being of a bright cinnamon color, soft and fibrous, while the real beauty of the tree is enhanced by the flutings, which traverse the trunk from base to apex. The age of the big trees has furnished plenty of scope for friendly controversy between various scientists, whose estimates vary from the beginning of the Christian era to a period ante-dating the Christian era by 4,000 years. David Starr Jordan, President of Leland Stanford Junior University, has placed the age of these trees at 7,000 years.

Regardless of these varying opinions, the one great undisputed fact remains, that these big trees stand in California today in all their perfect majesty, being the oldest living things in all the world.

No. 923 Valerian Street—Part I.

By J. deQ. DONEHOO.

THAT particular ten-dollar bill had, as it slipped through his fingers, a queer appearance to Radway, the money expert of the Railway National. Not that it gave evidence of being spurious; the most cursory glance proved to him its genuine character. But it had been altered, doctored—changed in some way, as was at once apparent to one as familiar with paper currency as he was.

Close inspection showed that the peculiar feature about this note consisted of three rows of faint, almost microscopic characters, which ran across the upper part of its face. With the aid of a glass the young man soon read them, as follows:

"Hqt iqfu ucmg tkuewg c rqqtrjcp iktn fgvekpqf cickpuv jgt yknn cv plkg vygpvavjtgg xengtkcpvttgvc. C hqtvpwg cyckvu vjg qpg yjg yknn ucxg og. Dwv fqp vgnn vjgrnkeg. Vjcv yqwnf urqkn yxgtavjkpi cplrtqcdna ecwug oa fgcvj. Cnqkug."

"I wonder what in the deuce they mean?" Radway asked himself. "I'll look into this thing this evening and see what I can make of it. Some counterfeiting or other nefarious scheme may be in this."

True to his word, Radway, a most methodical and unromantic young gentleman, got the bank-note out in his room after supper that evening. Although he claimed no skill in the art of cryptography, it took him but a few minutes to decide that this secret writing was of the simplest character and required no intricate key for its deciphering.

It used nearly all the letters of the Roman alphabet, and the proportions seemed to indicate that each of them regularly represented some vowel or

consonant. Since, now, "g" was oft-est repeated, it might tentatively be inferred that it took the place of "e," which occurs most frequently in English. Again, since "c" alone appeared entirely by itself, evidently forming a word, it might be assumed that it stood for "a" or "i," or, by a remote possibility, for "o." Radway next recalled the fact that "c" was, in regular order, second after "a," just as "g" was second after "e." He leaped at once to the conclusion, and a correct one, that this was the key to the cryptogram. He applied the principle; and this is the message he read, substituting for each character of the inscription the one that stands second before it in usual sequence:

For God's sake rescue a poor orphan girl detained against her will at nine twenty-three Valerian street. A fortune awaits the one who will save me. But don't tell the police. That would spoil everything and probably cause my death.—Eloise.

"Well, of all the games," exclaimed Radway. "A practical joke, or possibly a trap laid for rubes and easy marks. But they don't catch Robert J. Radway, of the Railway National. And yet—Eloise. A mighty pretty name, that—suggests a romance. Might not there be something in it, after all?"

For some little time the young man thus soliloquized, as he continued to gaze on that message. The result, though for a time in doubt apparently, was inevitable. Suddenly slipping into his pocket a revolver, he started out. "I'll take a look at the place, at least," he muttered.

The search for Valerian street was long and not exciting. Few had ever heard of it, and it proved to be, not

in the slums, as Radway had feared, but it was, instead a very short thoroughfare extending for only two blocks in one of the most exclusively fashionable parts of the city. It was lined all the way with massive brown-stone and brick mansions, each set back in its own yard. One of the largest and most imposing of these was No. 923, situated at the corner of an intersecting alley, almost wide enough to be itself called a street, which a sign designated as Trafalgar Way.

The amateur detective spent no less than two hours watching the house; but in all this time nothing occurred, no one entering or leaving it. All the blinds were closely drawn, though it could plainly be seen that every part of it was well lighted within. There was no question as to the fact that it was occupied.

But about eleven o'clock the young man's curiosity was aroused to the highest pitch. The idea that the message might be a joke or the lure of some swindler had come to seem to him preposterous. There was genuine mystery—the air of tragedy—here. The watcher could sense it in the very atmosphere of this exclusive yet lonely neighborhood. But what should he do? To ring the bell—to enter unbidden—these were measures to which his courage did not reach. Should he not by so doing invite disaster to himself—perhaps to the unfortunate Eloise, according to the tenor of the note? He was absolutely undecided as to his next movement when suddenly a blind was raised in one of the rooms in the third story.

A form became visible—that of a very beautiful young girl. Radway could see her quite distinctly as she stood in the strong electric light that flooded the room. There was no question but what she had observed him and understood his mission. Quickly she raised the window—made a gesture to him, and threw some small object in his direction. As suddenly she closed the window and blind, and disappeared.

Eagerly the young man leaped forward to look for this object. In a moment he found it as it lay near his feet, for it was quite conspicuous. A massive gold breastpin, with old-fashioned cameo setting, was stuck through a bit of paper folded up into a billet not more than two inches square. He hastened down the street before he dared to open this, for he felt that he must run no further risk of being observed by other inmates of the house.

Under an arc-light on a side street, two blocks distant, Radway first dared to stop and open the note. He was so excited that his fingers fairly trembled as he did so, and he found that something had been hastily scribbled with a lead pencil on a sheet of stylish stationery bearing the monogram, "E. L." It read as follows:

Am in the greatest danger. Try to open the back basement door at midnight and let me out. For God's sake don't fail.—Eloise Landis.

For a few moments the young man nervously paced the sidewalk. Now at last was he thoroughly convinced that there was no joke or trick concerned in the message on the bank-note; it was a serious matter. But should he, Robert J. Radway, bank clerk, deliberately turn his hand to house-breaking—technical burglary, even to rescue a distressed damsel? Yet if he did not, what was the alternative? Should he suffer this fair girl to be destroyed? Should he call in the police, a measure, as she had assured him, that meant precisely the same thing for her?

"No; by the eternal powers, I'll fight it out," he finally ejaculated, after a hard inward struggle. "I'll try it, if I lose my job—my life, for it."

But how should he attempt to get into the house? Burglary is not a profession to be taken up extempore; and the attempt, if made at all, was

(Continued on page 272).



Nothing to be Ashamed of Here.

Bob's Contract.

BY GEO. E. WALSH.

IT'S a good job, my boy, and you've well earned the money. I'll give you the job of cleaning the sidewalk off every time it snows, for the same price.

Bob had shovelled snow hard for an hour, cleaning the sidewalk carefully, and in reward for his work he was handed a quarter; but Mr. Enderby's words of praise pleased him the most.

"Thank you, Mr. Enderby. I think I'll take your offer. I'll remember it, and come around after every snow storm."

Bob was working that winter after school, and before school, and on Saturdays and holidays to make money for a special purpose. He thought now with happiness of the contract he had made with Mr. Enderby.

"I hope it will snow a lot this winter," he said, looking up at the sky. Then he stopped and looked up at the row of houses. "I wonder if I couldn't get the contract to do all the sidewalk along here. I'll canvas every house, showing them what I did for Mr. Enderby."

Bob was so successful in this that he stood appalled at the contracts he had made. He now had ten different sidewalks to clean of snow every time it stormed. He thought of his hour of hard work just finished and wondered if he hadn't contracted for more than he could do.

"I'll get some of the boys to help me," he reflected finally as the easiest way out of the difficulty.

But that night he worried a little. He liked to keep his word, and he was almost ready to cancel some of his contracts by morning. Fortunately, however, he happened to walk through the park on his way to school, and what he saw caused him to stop and think. It was a big snow plow drawn by a team of horses.

"Now that's my idea!" he exclaimed. "I'll do it tonight."

It didn't snow again for a week, and Bob had ample time to work at his new idea after school hours. At the end of that time he had built a pretty good snow plow, using old boards, which he nailed together in the form of a triangle, with the sharp, pointed nose armed with tin. When this affair was finished in the backyard it was a pretty formidable affair, too large and heavy for a single boy to haul. But Bob had no intention of pulling it alone.

"Bill," he said to his chum, "I'll give you ten cents an hour to help me drag my snow plow after every snow storm. I want a double team of four boys, or six boys if the snow is deep. You can take turns riding the plow every ten minutes. Will you do it?"

Bill promptly responded and agreed to get the other boys. They looked over the snow plow and pronounced it a dandy. Two days later it snowed hard. Bright and early in the morning Bob was up and had his boys at work.

They ran the big snow plow along the walks in front of the whole row of houses. It swept the sidewalks almost clean, but Bob followed with a shovel and broom. The four boys dragging the snow plow thought it the

greatest fun in the world, and they were being paid for it. Each one took his turn guiding the plow and standing on it for a ride to keep it down in the snow.

In two hours they had the whole block cleaned and it still lacked half an hour of school time. Bob had saved up enough money to pay them off. Four boys working two hours a day meant 80 cents. When he had paid them Bob hurried off to school.

After school he presented his bills to the owners of the ten houses, and collected for his morning's work \$2.50. "That's pretty good," he mused, "one dollar and seventy cents. If I keep that up all winter I'll have enough money for my purpose."

Bob had really been paid for his idea more than for his hard work. He had found a way to make others help him so that they were paid for having fun. Altogether it was a profitable transaction. It was so simple that he wondered why some of the other boys hadn't thought of it.

Bob had five light snow storms to contend with that winter, and one very severe one when his snow plow wouldn't work. Then he had to hire the boys to shovel for him, and paid them twenty-five cents an hour. He didn't make anything on that snow storm, but that was a part of the understanding. He could afford to give his morning's work for nothing because of the big profits he made on the light storms. That is the way in most business enterprises. You may lose on one contract or break even, but the average is made good when your profits are counted for the less difficult jobs. Bob was learning an important principle of contract work, and it was to his credit that he lived up to his agreement, and cheerfully paid the boys all he received for clearing of the snow after that one big storm.

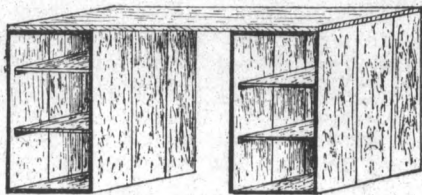
WITH THE SAW AND HAMMER.

BY W. TRUB.

Years ago boys hunted squirrels, rabbits, and other game for their sport, but today in most settled sections of the state game is scarce, making hunting uninteresting, consequently other occupations are sought.

Farm boys find the saw and hammer good substitutes for the shotgun. With these tools they can construct things; and it is the real doing that boys like.

The traveler notices one thing about farm homes of today that is more frequently met with than in the farm homes of the past. Even among the very ordinary farmers' houses rooms are set apart for the boys. Sometimes these rooms are well-kept and again they are not. Occasionally they are looked after by the mothers and everybody feels at liberty to use the room, while again boys are given



to understand that they are masters in the portion of the house set aside for them.

Many boys furnish their own rooms. They make chairs, tables, lounges, desks, bookcases, etc. On this page we are illustrating a home-made desk fashioned by a youthful hand. It serves the purpose and suits its owner much better than one mother could buy at the furniture store for several dollars. He made it and that means more to the maker than a desk of elegant finish, artistic design and built of expensive materials.

The ingenious boy can build such a desk from looking at the illustration. A little careful thinking and measuring of his father's desk or that of a neighbor will give him the propor-

"Better than leather For all kinds of weather"



The High Cost of Leather Has Made Bootees Popular

There is more leather needed today than ever before. The makers of automobiles are worried about the decrease in the supply. They are paying fancy prices, and are taking the large share of the leather supply. That's why leather shoe manufacturers have been steadily raising the price of their products, and why men who work hard for their money are wearing comfortable **Hub-Mark Bootees**. Every pair represents a decided saving because they last longer and give better service. They keep the feet warm, dry, and comfortable.

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Michigan Farmer's Club List.

For the benefit and convenience of our subscribers we have arranged the following list of papers on which we can save them money. Besides the money, they save the trouble and expense of sending each order separately.

EXPLANATION—The first column is the regular subscription price of the other papers. The second column gives our price for a year's subscription to both the other paper and the Michigan Farmer. The third column gives the price at which the other paper may be added when three or more are ordered. If price is not given in this column ask us. Example: We will send the Michigan Farmer and Detroit Semi-Weekly Journal for \$1.15. If, for instance, McCall's Magazine also is wanted add it at 40c making total \$1.55. Any number of papers may be added at third column price if they are for a subscriber to the Michigan Farmer.

If you want the MICHIGAN FARMER THREE YEARS and the other papers one year add 75c to the second column price. For the Michigan Farmer 5 years add \$1.50. We do not send samples of other papers. Address the publishers direct. Send all orders to the Michigan Farmer or through our agents. We will take your order for any publication you want whether listed or not. Write for rates.

NAME OF PUBLICATION.	See explanation above.
Daily, (6 a Week) on R. F. D. only.....	\$ 1.00
Free Press, Detroit.....	2.50
Journal, Detroit.....	2.50
Times, Detroit.....	2.50
Herald, Grand Rapids.....	2.00
News, Grand Rapids, Mich.....	2.00
Press, Grand Rapids.....	2.00
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Blade, Toledo.....	2.00
News-Bea, Toledo, Ohio.....	2.00
State Journal, Lansing, Mich.....	2.00
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Enquirer, Cincinnati, O.....	1.00 1.00 55
Inter Ocean, Chicago, (w).....	1.00 1.00 55
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Horseman, Chicago, (m).....	2.00 2.05 1.60
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Poultry Pointers, Kalama, Mich.....	50 70 25
Poultry Success, Springfield, O. (m).....	50 80 35
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Youth's Companion, Boston, Mass. (m).....	2.00 2.25 2.00

tions it is to be made. An investigation of the quality of the different kinds of lumber will show the varieties that are best suited for the manufacture of a desk or other furniture. At the furniture stores in town he perhaps can get an idea of how the surface is prepared and varnished.

If the problem arising in connection with the construction of a piece of furniture like this are worked out it not only will provide the manufacturer with the knowledge required to make that particular piece, but will suggest a method of getting help on any problem of construction, whether it be with the hammer and saw or with metal-working tools.

A boy's room containing some of the handiwork of its master is a delight to the traveler who is interested in boys, and usually is a source of pleasure to the boy's parents. The traveler knows that such a boy thinks and desires to put his thoughts together in some kind of structure, while the boy's parents are usually concerned in the things the boy makes, except occasionally when the operations requires the use of tools that are wanted elsewhere, or gets things scattered around for someone else to pick up.

But such boys usually grow into men who succeed.

SPRING CATALOGS.

BY A. S. CODY.

Though winter is dreary there are things that are cheery and keep hope alive when our fingers are numb, and the days that are brightest and care presses lightest are the days when the seedsmen's big catalogs come. Though winter, the wizard, may send a fierce blizzard, or just a plain snowstorm, with snow to our knees, while north winds are blowing in fancy we're sowing our gardens to lettuce and onions and peas. While our toes we are toasting green corn we are roasting, or "plunking" ripe melons, with cores coral red; or baking potatoes, or slicing tomatoes—the prize ones that through every catalog's spread. We are shelling green peas, such as no one e'er sees except in a catalog's pages, I fear. They are big as our bunions, or small pickle onions—I never saw any at all like them here. Ah, me, who can measure the feeling of pleasure we get from the catalogs, blooming in spring. As the fire grows warmer our dream as a farmer grows big as Jack's beanstalk. We envy nothing while these catalogs, splendid, show us all that men did in making Dame Nature conform to their will. So through winter's dull hours we sniff phantom flowers and a Barnacide feast gives our stomachs their fill.

DR. DOWNY—TREE SURGEON.

BY ORIN E. CROOKER.

In certain communities it is possible to secure the services of a so-called tree surgeon who will trim, prune, spray, fill up cavities and otherwise restore one's tree to a healthy and prosperous condition. A man who values his trees and who has not the time to attend to such matters himself usually considers the services of such an expert well worth what he charges.

There is another tree surgeon that examines every tree on the farm with great regularity and who charges not a cent for his labors. His name is Dr. Downy—of the well known woodpecker family—and it behooves every farmer to at least have a passing acquaintance with him.

Dr. Downy is a diminutive fellow in a trim black and white suit. He wears a little red cap on the crown of his head and is usually so quiet that his presence is not suspected until one hears him tapping vigorously upon trunk or limb of some orchard tree—quite like a physician who tests the lungs of his patient by sounding.

Dr. Downy is one of the most effective destroyers of the orchardist's arch enemy, the codling moth. He searches out and attacks this pest in its pupal chamber where it has secreted itself so thoroughly under the bark scales as scarcely to be discovered by human eyes.

Not only does he spend the fall and winter giving his professional attention to these secreted pupae of this and other orchard pests, but in summer he has also been observed in the act of extracting the larve of the codling moth from young apples. This he does by giving his attention to the fruit before the grub has had time to work far into the apple from the calyx where the egg was deposited. His long flexible tongue permits him to extract it without injury to the fruit—other than that already done by the grub.

Dr. Downy is essentially the friend of the farmer—serving him without charge and doing his work well. Inasmuch as he does not migrate in winter his professional attention to the trees of orchard and farm is given continuously throughout the year.

No. 923 VALERIAN STREET.

(Continued from page 270).

scheduled to be in less than an hour. The young man knew nothing about the kind of fastenings that secured the door referred to in the note. He cudgelled his brain for some suggestion that might help him out. Suddenly an inspiration came to him—Abner Holtgreve.

Radway rushed for a downtown car and quickly boarded it. A few minutes later he got off before the shop of a locksmith, with whom he had previously had some dealings on behalf of the bank.

Vigorous pounding on the door soon aroused Holtgreve, who, with his family, occupied the rooms above his shop. In night attire he came down, let the young man in, and in response to his trumped up story of how the bank had immediate occasion for opening a lock, the construction of which could not at all be described, prepared a large selection of skeleton keys, giving many directions as to how to use them. Seizing these, Radway darted off and caught the first car going in the direction of Valerian street. It was just five minutes of twelve when he hurriedly slunk along Trafalgar Way, in the rear of the house at No. 923.

The back yard was enclosed by a massive iron fence which the young man without difficulty scaled; then he cautiously made his way to the basement entrance. For a moment he crouched down here and listened. There was no sound, nor was there any evidence of light within. Soon he took out his keys and began, with beating heart, to fit them into the lock. Good! This one at last slowly turned, the door yielded—it opened.

Radway suddenly drew back, for just at this instant he heard an inside door open. As he reached for his revolver a slight figure in dark attire hurried towards him, exclaiming in excited whispers, "It is I, Eloise. Oh, I'm so thankful you came. But quick! We must get out of this at once. In a few moments they are sure to discover my absence. They will ransack the house and find out where I escaped."

The young man instantly seized the girl's arm, and, returning the revolver to his pocket, with rapid, reassuring words, uttered in a low undertone, led her toward the iron fence.

"Over this now," he panted, "and you will be safe. I shall get to the top first and help you up. Don't be afraid."

Before Radway had finished the sentence—before he had gotten to the top of the fence, or could reach for the revolver to defend himself—he was seized from behind with a mighty grip. Another assailant had taken

HINTS That Help Housewives

Forks, spoons, plate and metal articles can easily be made bright and kept clean by boiling them in hot water to which Borax has been added in the proportion of one tablespoonful to a quart of water.

By allowing a little Borax solution to boil in the coffee or tea pot for fifteen minutes the vessel will be found to be purified and sweetened materially.

Mirrors, lamp-glasses, decanters, tumblers, wine and other glasses, cut glass-ware and bottles. Wash in warm water containing Borax in the proportion of one tablespoonful to a gallon of water.

Hair brushes as well as combs can be kept sweet, clean and healthy by washing them in hot water to which Borax has been added. Borax will assist greatly in removing the dirt and act as a disinfectant.

Colored fabrics remain fresh, bright and new looking indefinitely, if Borax is used in the cleansing water.

20 MULE TEAM



BORAX

The Marvelous Aid to Soap
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In convenient 10c, 15c and 50c packages. If your retailer does not supply you promptly, your choice of a 10c, 15c or 50c package will be mailed to you by Parcel Post, delivery charges paid, on receipt of the regular retail price.

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WE WILL PAY YOU \$120 to distribute literature in your community. Sixty days' work. Experience not required. Man or woman. Opportunity for promotion. Spare time may be used. International Bible Press, 576 Winston Bldg., Philadelphia, Pa.

hold of the girl, who tried to scream, but was at once gagged with a handkerchief. Noiselessly as cats had two men emerged from the open door which the fleeing couple had left, and so pounced upon them.

"A case of housebreaking and attempted abduction for you, my fine fellow," snarled the man who held Radway by a grip from which that startled individual was powerless to free himself. "We'll attend to your case. Come on."

Radway made no resistance; it was useless. He saw the girl, now apparently almost unconscious, also led along by the other man, who was swarthy—a foreigner, evidently. The one who had charge of the party was portly and past middle age, but he seemed agile and as strong as an ox.

None of the most pleasant were the young man's reflections. Blackmail was that of which he principally thought, but in any case he saw looming up a choice vacancy in the Railway National Bank, if not also a term in the penitentiary.

In a minute or two the whole party had arrived in what seemed to be the parlor—on the first floor. The swarthy man placed the girl, who had now revived from her swoon and was softly weeping, upon a divan. The other one conducted Radway to a chair, where he watched him closely, although curiously enough he neglected to search him for concealed weapons. Next the door opened and a youth of not more than twenty entered. The elderly individual at once addressed his unknown prisoner.

"Of course you know who I am—Eloise's uncle, Henry Landis. Who you are, I neither know nor care, except that you are some fortune-hunter who has managed to get acquainted with my silly niece here, and who has tried tonight to abduct her. You are now absolutely and unreservedly in my power, and there is no use in mincing words. She knows me, probably you do also, by reputation. I am a man of my word, and somewhat old-fashioned in my views regarding the taking of vengeance for injuries received by myself or family. The law, if I should hand you over to it, might possibly give you twenty years in the penitentiary, for breaking into my house and attempting to kidnap my minor ward. I think that your offense merits nothing less than death. I shall have no scruples, then, about inflicting that penalty upon you, if this girl does not see fit to save you, her lover, by promptly consenting to that marriage with her cousin Edward which I have long urged upon her, and which her deceased father most of all desired."

(Part II in next week's issue).

TO A TUFTED TITMOUSE.

BY MARY E. RODHOUSE.

Ho, little bird with the crest and air Of knowing the secrets of Every-where,

Upside down in the tall fir tree, Picking and pecking with rollicking glee,

Are you a bird or a fairy, say? Or a prince bewitched for a year and a day?

Or is there, shining beneath the bark, A golden keyhole in the dark, And a stair, where, lit by the damp wood's fire,

We might climb to the Land of the Heart's Desire?

Ho, little bird, your secrets tell, Tiny gray mischief, we love you well.

A TRIP THROUGH BELGIUM.

We have learned from our histories the debt the United States owes to the little country of Belgium, how that some of our most valued institutions were imported from that land; but we perhaps are not so well acquainted with the people and their methods of livelihood, especially from the viewpoint of a student of agriculture. In next week's issue of The Farmer will appear another of those interesting and instructive articles of Prof. Vivian on what he saw while in Belgium. It would be well to bring the attention of your neighbor to this contribution and also to others from the same author, on travels through foreign lands. These travel articles will appear frequently through the spring and summer months.



He's Big All Over And Good All Through

Big Ben is built for endless service. He has no "off-days," no shut-downs. His four years of existence have been one long record of on-the-dot accuracy. 25,000 jewelers say that he does more efficient work for less pay than any other clock alive.

A Big Ben battalion, over 3,000 strong, leaves La Salle, Illinois, every day. Their sparkling triple nickel-plated coats of implement steel; their dominating seven-inch height; their big, bold, black, easy-to-read figures and hands; their big, easy-to-wind keys—all make Big Ben the world's master clock.

In return for one little drop of oil, he'll work for you a full year. From "Boots on" to "Lights out"—365 times—he'll guarantee to tell you the time o'clock with on-the-dot accuracy.

He'll guarantee to get you up either of TWO WAYS—with one long, steady, five-minute ring if you need a good big call, or on the installment plan, with short rings one-half minute apart for ten minutes, so you'll wake up gradually, and he'll stop short in the middle of a tap during either call if you want to shut him off.

Big Ben is a mighty pleasant looking fellow. His big, open, honest face and his gentle tick-tick have earned him a place in thousands of parlors. He wins friends everywhere.

The next time you go to town call at your jeweler's and ask to see Big Ben. If your dealer hasn't got him, send a money order for \$2.50 to his makers—Westclox, La Salle, Illinois—and he'll come to you prepaid. (206)

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By our exclusive top arrangement the fire has to pass under all six lids before escaping. This makes your fuel do double duty.

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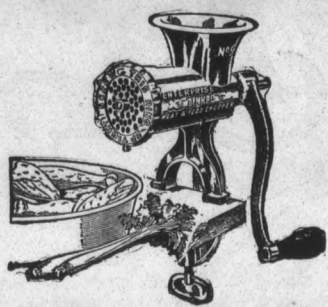


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Woman and Her Needs

At Home and Elsewhere

The Great Opportunity of Mothers

EVER since I've been old enough to think seriously about anything, I've had one great source of worry. It has always bothered me to see just how easily folks in particular, and the world in general, could get along without me after I slipped away. No matter where I lived or what work I had to do, I could go away and stay for weeks or months, and nothing slipped a cog. Everyone went on eating and drinking and sleeping just as heartily as if I was around, and someone else picked up the work I had been doing, and got through with it somehow, even though I might think they weren't doing it half so well. It has bothered me dreadfully all my life, that feeling that I was on the "Lord High Executioner's" little list of people who never would be missed."

I've always wanted to do something so big that I would be missed. You all know that feeling. For years I planned what I could do, but never got far with it. Just recently I suddenly awoke to the fact that for some time I've had the opportunity to do the big thing, and it has been so small and unobtrusive a thing that I never thought of it in the light of the Great Opportunity. It came to me all of a sudden one day when I got to thinking how much I'd miss my mother when the Call comes. She's been here so long, always right where she was needed and never making any fuss about it, that when I got to trying to imagine what it would mean not to reach out and find her there, I had to stop thinking. Then all of a sudden I thought that for seven years I've had the same opportunity to do a work that no one else could do just as well as I could, and I'd quite failed to live up to my opportunity.

For after all, no matter how poorly we do it, if we are trying to do it the best we can, no one else can do our job of mothering our own children quite so well as we can. For who else is there that can know them so well? Someone else might handle them more deftly, might feed them more wisely and discipline them more judiciously, but they couldn't mother them so well. For we have borne them. We know all about their little peculiarities of mind, speech and temper. We could tell, if we would, just when and where a lack of self-control on our own part gave them a certain trait of character which is not lovely, and we should be generous and patient with them because we know. We know from which ancestor they get this trait and that, and if we will, we can nip in their infancy habits which will warp the later life if allowed to grow. We love them as no one else could, and they unconsciously, love us better than they do anyone else, no matter if that other person has had more care of them than we have had ourselves. Say what you will, there is a bond between mother and child which could never exist between a stranger and the child, no matter what the other might do to take the mother's place.

Here is a work ready to the hand of the most unknown mother, a work which shall keep her name alive in some hearts years after she has folded her hands for the last time. Even when her own children have passed on, her memory will still live, for do we not all have spells of musing over the women who were our grandmothers and great-grandmothers and great-

great-grandmothers, thanking them silently for the good work they did with the children who were our progenitors? It's such a simple, unobtrusive sort of work is it any wonder women so often overlook it when they are looking for The Great Work which is to keep their memory green? Writing a book or being a prima donna or leading the suffragettes, is so much more noisy and exciting that these things often succeed in making us deaf to that other greater work which is right at our doors. But who remembers the novelists and singers of even 25 years ago? No one, unless it

is their own descendants. So that their memory is kept alive not by the thing which they thought was great, but by the work which they looked upon only as a hindrance to greater things.

Being a mother is a great thing for the woman who wants to live forever in some heart. Being a daughter or a wife can not compare with it. Your mother will remember you while she lives, but your brothers and sisters are living in their own families and forget you before a decade has passed. Your husband forgets and finds happiness with another wife. But your children never forget, "if you have lived and you have loved" as you should.

DEBORAH.

Raising House Plants from Seeds.

By PEARLE WHITE McCOWAN.

PERHAPS one of the most fascinating things the flower lover can do is to raise her own plants, even those of the commoner varieties. It takes some patience, but one is rewarded by the interesting pastime of watching each tiny seedlet develop and grow, besides having the satisfying knowledge that they are of one's own raising, to say nothing of the varieties thus procured and the bright unlooked for little surprises that often develop.

Many seed houses carry seeds of geraniums, primroses, abutilons, begonias, carnations, clyclamens, and Lantanas, at reasonable prices, to say nothing of those rarer varieties, ferns and palms.

To prepare the soil for seed planting sift through a screen and bake well in the oven to kill all weed seeds, for the amateur will find it difficult to detect the little plants if mixed with a growth of weeds, especially if unfamiliar with their early appearance.

The finer seeds, especially, do best if first sown in shallow boxes and later transplanted to their permanent quarters. Before their planting the soil should be pressed firmly down into the pots or boxes. A good rule to follow in the sowing is to cover all seeds to twice the depth of their thickness. For instance, a seed one-eighth of an inch thick would need to be covered with a quarter of an inch of soil.

However, the very fine seeds do not really need to be covered at all. Some mix them with a little fine sand, place the whole in a salt shaker, and scatter seeds and sand together over the surface of the soil. Others prefer merely to scatter the seeds about upon the surface and lay over them a piece of thick cloth which is kept constantly damp until the tiny plants begin to appear. The cloth is then removed and they are given light and air. However, they are very tender at this stage, and susceptible to cold or direct heat, also to moisture or drouth. Therefore one must needs be very careful. If kept too wet the little plants will soon succumb to the damping-off process, or if too dry they will simply wither away. Only one's own good judgment can tell when the happy medium is reached.

The watering, too, will need to be done very carefully that the soil may not be dashed up and the tiny seedlings washed out. Perhaps the best way is to use a brush broom, gently pressing out a portion of the water against the side of the dish containing it and carefully shaking the re-

mainder over the little plants much as one would sprinkle clothes.

When three or four leaves have appeared the tiny plantlings can be lifted on the tip of a knife and transplanted to their especial quarters, always of course disturbing them as little as needs be and leaving as much soil as possible about their roots.

Of the geraniums there are two particular classes known to florists. The Zonales, from which come both double and single varieties in all the lovely common and uncommon shades and colorings. They are all very easily grown from seeds and the amateur will probably find them on the whole the most satisfactory of any window plants. The pelargoniums, or Lady Washington varieties, are not so dependable. They are of less easy culture and their blossoming periods are much shorter, but they are wonderfully beautiful when one does succeed with them.

Perhaps next to the geraniums the bright little primroses repay one's labor best. It is sometimes a little difficult to get a seedling, but when once started they are of the easiest culture, only requiring that they be not kept too warm. The brave little oxalis that is so constant with its cheerful little clusters of pink and white blossoms can also be grown from seed.

The time of germination required for the different kinds of seeds will vary from ten days for the geraniums and oxalis to 20 or even 25 for some of the varieties mentioned.

All of the kinds suggested are of sufficiently easy culture to be undertaken even by the amateur if she but have patience and a genuine love for flowers. And if she have very, very much patience she may even, with a reasonable hope of success, try the raising of palms and ferns and callas from seeds.

Of course, these latter are of slower growth and germination, and the larger and harder seeds will need to be soaked for several hours in warm water. Indeed, it is sometimes wise to slightly file one side of those seeds that are very hard, especially if they be as large as a pea or larger. The time required for the germination of any of these last mentioned is from 20 to 30 days.

Ambitious:—I have looked through every book of quotations in the Detroit public library, but can not find the quotation you give. Am inclined to believe it is simply a folk saying, and no one knows the author.



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THE ART OF RESTING.

BY TOMMIE BAKER.

"Woman's work is never done," is an age-old saying that doubtless applies to the modern housewife quite as well as to her predecessor. But to be busy all the time is far preferable to being idle, for idleness is the mother of discontent. I wonder, in the midst of so much to do, how many good women succeed in carrying on their work so systematically as to preserve their mental and physical poise day in and day out, free from nagging and petty quarrels.

The one grave hindrance to health and happiness comes in the form of the great American Disease—worry. Its blighting effects are almost too numerous to mention. It impairs appetite, disturbs sleep, makes respiration irregular, spoils digestion, irritates disposition, warps character, weakens mind, stimulates disease and saps bodily strength. Men and women vainly imagine it is work that is killing them, whereas, they are constantly charging themselves with the mental poison of worry. It is not work that uses up the vitality but increasing worry, often over mere trifles, that makes everything seem dead wrong and brings one to the borderland of nervous collapse.

Normal work invigorates, creates a wholesome desire for food; brings dreamless sleep; aids digestion; sweetens disposition; forms character; wards off disease and satisfies both body and mind. If amid pressing duties one would call a halt for a few minutes each day for quiet rest the work would go on and the physical and mental vigor be preserved to good old age. Take five minutes, if no more, and instead of sitting in a chair, lie down, close the tired eyes and completely relax overstrained muscles. In this way a weary brain and aching limbs will be reinforced much more effectively than in a sitting posture.

Many busy women succeed in finding rest in a change of labor, alternating embroidering, crocheting or any pretty needle-work with the more laborious tasks of the household. The method takes the mind from drudgery and sets it to creating beautiful designs so gratifying to the artistic sense.

A certain industrious lady was told to rest after eating, so she formed the habit of memorizing a portion of some favorite poem in the 20 minutes just after her noon-day meals. It is needless to say her friends found her optimism good to behold.

If American womanhood could be made to know how much of beauty, sweetness of disposition and general attractiveness of personality depends upon good health, and health in turn, to simply resting a little every day, there would be formed a habit for resting the same as the habit for work. Then the mad rush for lucre would assume proportions commensurate with good sense and reason. May American people "get busy" and learn the gentle art of resting.

HOME QUERIES.

Household Editor:—What sort of hats will be worn this summer?—B. M., Dundee.

It is a little early to say what the summer hats will be. The spring hats which are now in are all small, turned up at the side and trimmed with stiff bows and high side effects. They are of fine straw or of straw and silk combined, straw crown and silk brim. These hats will be worn from now until late April and May, when the summer chapeaux will be ready.

Household Editor:—How do you blanch rice?—Cook.

Put the rice into cold water in the proportion of one cup of rice to a quart of water, and let boil five minutes after boiling begins. Then pour off the boiling water, wash the rice and drain through a fine sieve.

M. E. G.:—To make the everlasting yeast, take two cups of potato water, six teaspoons of sugar and put in can with cover. Keep warm until light, which will be about four days. I set mine on top of furnace. Never put salt in starter. I always take out my starter, and put salt in flour when ready to set bread.—Mrs. J. H. B.

Household Editor:—Will you please ask through your Home Queries if someone will kindly give samples of tatting and direction for making cloverleaf tatting and any other makes? The butterfly and sample that were in Michigan Farmer a few weeks ago were fine. Thanks.—Mrs. E. D. R.

Household Editor:—I saw an inquiry in the Home Queries a few weeks ago of what to do for pancakes which would not bake, and having had the same trouble thought I would give my experience. I found a remedy in an old cook book and it works like a charm. Put about two tablespoons of common cooking molasses in your cake batter when you stir it up, or if you should forget, it can be added in the morning before cooking. They will be a lovely golden brown and much lighter than before. Hope this will help the lady asking, as it did me. The amount of molasses is so small that you can not taste it.—Mrs. F. J. R.

Household Editor:—I noticed in your paper a request for a recipe for can or witch yeast. I make mine as follows: At noon use the mashed potato and water, as when starting bread, but not nearly so much. When at the proper temperature add one teaspoon of salt, two tablespoonfuls of sugar and a softened yeast cake. Let stand at least 24 hours to ferment, when it is ready for use. It improves with age, and should smell a little of hops. To keep it prime, it should be used oftener than once a week and keep it in a cool place.—Mrs. A. W. G.

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The above patterns will be mailed to any address by Fashion Department of the Michigan Farmer, on receipt of ten cents for each.

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That's what C. W. Greene, Linden, Mich., calls the Underfeed. W. L. Hutchinson, Cecil, Pa., says: "We have no piece of machinery on the farm that gives better satisfaction than our Underfeed furnace." J. P. Scott, R. F. D. No. 2, Carnegie, Pa., says: "I have been using an Underfeed for 10 years and it is as good as ever. Can heat our house to 100 degrees on the coldest day." "Best furnace on the market," says John F. Atherton, Zanesville, O. Others write: "Coal bill \$16.22 for 7 rooms." "\$5.40 to heat 4 rooms." "Reduced coal bills from \$109 to \$55." "Have cut coal bills \$10 each winter for 9 years." "This is strong evidence of merit, isn't it? A saving of $\frac{1}{2}$ to $\frac{3}{4}$ is the certain result with the Underfeed. And over 25,000 users have proved it.

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COMING EVENTS.

Eighth Annual Rural Progress Lecture, with Lecturers' Conference preceding, at Western Normal, Kalamazoo, March 13. All rural workers and others interested are invited. Kalamazoo Pomona and Normal hosts.

Pomona Meetings.
Washtenaw Pomona, Ann Arbor, March 10, at Y. M. C. A. Building. Picnic dinner.

PLYMOUTH GRANGE NOTES.

Plymouth Grange installed their officers for the ensuing year on January 15, James Brighton, of Wyandotte, assisted by J. W. Mellow, of Plymouth, being the installing officers. The work was very beautifully and impressively done, especially when the new and the retiring Masters met and clasped hands, while the Grange sang "The Tie that Binds."

James Handford, the retiring Master, has held the office for three years and would have been the choice of the Grange again but he felt that he could not accept the office for another year. Mr. Howard Braun, a very worthy young man, was the new choice, being elected and installed master at this meeting. Mr. Handford greeted the new master and gave a very pleasing retiring speech, which showed the place he has in his heart for the Grange.

The Plymouth Grange has been flourishing during the past two years, applications for membership being handed in at nearly every meeting. It has 223 members in good standing, a good orchestra, with Mr. Will Harmon as leader, and a fine degree team with another being drilled to be ready to assist the regular team when necessary. The regular team, which consists entirely of ladies, exemplified the third and fourth degrees at Romulus in December, and at Ypsilanti in January.

The second Friday of each month we have a Grange social so that the patrons can get better acquainted. The Grange is getting so large that it is hard to give the social side enough time at the regular meetings. These social gatherings was the idea of Mrs. Paul Bennett. The evenings are spent in visiting, playing games, and dancing. This furnishes entertainment for our large membership of young folks and also enjoyment for the older members.—Mrs. Rose E. Tillotson, Cor.

AMONG THE LIVE GRANGES.

Stony Creek Grange, Washtenaw county, has received 21 new and eight re-instated members since the beginning of the year. This is one of the oldest Granges in the state, No. 51.

A good number of people helped Leonidas Grange, No. 266, St. Joseph county, celebrate its fortieth birthday with a dinner and a program, February 13. Four charter members were present.

Antrim County Pomona Grange met with Helena Grange at Alden, Wednesday, February 18. Grangers from nearly all parts of the county arrived in time for the picnic dinner furnished by Helena Grange. Grange was held in the fourth degree in the afternoon. Three numbers on the program during this session are worthy of especial mention. They were: "The Torrens System of Land Transfers," by C. S. Gible, of Forest Home Grange; "Our New Currency Laws," by O. S. Bloomer of Helena Grange, and "Gasoline Power on the Farm," by Mrs. P. Bearss, of Ellsworth Grange. A fifth degree session was held from 6:00 to 7:30 p. m. The evening session was open to the public. An illustrated lecture was given by a representative of the Western Michigan Development Bureau.

Berlin Center Grange is active in the endeavor to draw the people of its community to something elevating instead of degrading. In order to carry out this plan, the young people are putting forth their very best efforts to make this Grange a success. Through the leadership of our State Master, John C. Ketcham, who is to be with us some time in the near future, we are planning to have a grand rally at our hall. We are also preparing a play which will be given in the near future. A short time ago we had a special meeting at which we finished up the work of giving a class of seven the first four degrees.

Grange.

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

PLYMOUTH GRANGE NOTES.

Plymouth Grange installed their officers for the ensuing year on January 15, James Brighton, of Wyandotte, assisted by J. W. Mellow, of Plymouth, being the installing officers. The work was very beautifully and impressively done, especially when the new and the retiring Masters met and clasped hands, while the Grange sang "The Tie that Binds."

James Handford, the retiring Master, has held the office for three years and would have been the choice of the Grange again but he felt that he could not accept the office for another year. Mr. Howard Braun, a very worthy young man, was the new choice, being elected and installed master at this meeting. Mr. Handford greeted the new master and gave a very pleasing retiring speech, which showed the place he has in his heart for the Grange.

The Plymouth Grange has been flourishing during the past two years, applications for membership being handed in at nearly every meeting. It has 223 members in good standing, a good orchestra, with Mr. Will Harmon as leader, and a fine degree team with another being drilled to be ready to assist the regular team when necessary. The regular team, which consists entirely of ladies, exemplified the third and fourth degrees at Romulus in December, and at Ypsilanti in January.

The second Friday of each month we have a Grange social so that the patrons can get better acquainted. The Grange is getting so large that it is hard to give the social side enough time at the regular meetings. These social gatherings was the idea of Mrs. Paul Bennett. The evenings are spent in visiting, playing games, and dancing. This furnishes entertainment for our large membership of young folks and also enjoyment for the older members.—Mrs. Rose E. Tillotson, Cor.

AMONG THE LIVE GRANGES.

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COMING EVENTS.

Eighth Annual Rural Progress Lecture, with Lecturers' Conference preceding, at Western Normal, Kalamazoo, March 13. All rural workers and others interested are invited. Kalamazoo Pomona and Normal hosts.

Pomona Meetings.
Washtenaw Pomona, Ann Arbor, March 10, at Y. M. C. A. Building. Picnic dinner.

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."

CLUB HISTORIES.

Pine Lake Club, of Barry County.

The Pine Lake Farmers' Club which has gained for itself a wide reputation in these parts, had its beginning the evening of December 16, 1913. When a representation of the people of the Pine Lake neighborhood met at the home of R. W. Pettijohn and were organized into a Club whose main object is to promote an ambition among our farmers that more beneficial results in agriculture may be secured.

The regular meetings are held on the first Friday of each month, but special meetings are called during the winter months, so we manage to get together every two weeks.

The secretary's roll now boasts of 50 names of interested farmers and more are being added at each meeting. Although roads and weather have been rather severe thus far, we have had a good attendance. Of this a goodly number are young people and we are glad to notice the interest they take in the discussions and the readiness with which they respond when called upon by the program committee. It would be well to add here that the women, too, are live wires in this locality and not only are they interested in the household topics but take an active part in discussions originated by the men.

A special day meeting was held on February 21, at Maple Corners, the home of Walter Brown. A bounteous chicken-pie dinner was served at late noon to 125 persons, after which came a short business meeting, followed by an excellent program of music, recitations and papers for discussion, which proved to be instructive as well as entertaining. The committee was unable to obtain a speaker for this date it was voted to hold another day meeting on March 14.

The jolly crowd disbanded in ample time to reach their own firesides before dusk, each agreeing that this had been a day well spent and telling the good the Farmers' Club was to accomplish for this locality in the near future.

Organize New Club.

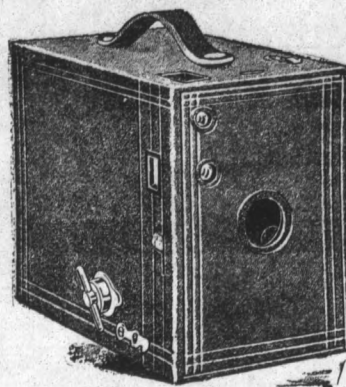
Thursday, February 12, 1914, a number of farmers and their wives met at the pleasant home of Mr. and Mrs. B. P. Cowles and organized what is to be known as Sherman Farmers' Club, Isabella county, said Club to meet on the first Thursday of each month at 10:30 a. m. at the homes of its different members. The object of the organization is the social, moral, intellectual and financial improvement of the community. The following officers were elected: President, B. P. Cowles; vice-president, Arthur Fleming; secretary, Asa A. Smith; treasurer, John Hibbard.

CLUB DISCUSSIONS.

Discuss Practical Topics.—Hartland Farmers' Club was very pleasantly entertained by Mr. and Mrs. C. M. Parshall, February 7. Although the day was cold the large house was filled, there being over 100 to dinner, after which the Club was called to order by the president, Wm. Willson. All regular business was taken care of. Also reports of committees. Our program was short on account of some being absent. We were favored with some good music by Mrs. Fred McGraw and Miss Effie McGraw. The following questions were submitted for discussion under the direction of Wm. Youngs and Henry Huskinson: "Which will give best results, manure drawn out in winter or summer?" "Which will get the best catch of clover, to sow in spring on fall crop or to sow with spring crop?" "Which is cheaper to get, the first or second 100 pounds of a 200 pound hog?" "How can we secure the most grain per acre, by drilling or hilled corn?" These questions were well discussed and brought out good thoughts. After more music, Club adjourned to meet with Fred Huskinson and sister, Hattie Clements, in March.—Mrs. H. W. Clark, Cor. Sec.

2A BROWNIE

Price, \$3.00



JUST the thing you need on the farm to take pictures of stock, crops, etc.—you can use it to advantage in your business. It is very simple to operate and works like it's big brother the Kodak. The film cartridge of six or twelve exposures can be put in or taken out by daylight, and you can do the developing and printing yourself without a dark-room, or send it to your dealer. Takes pictures $2\frac{1}{4} \times 4\frac{1}{4}$ and you can make as many prints as you want.

Ask your dealer for catalogue or write us and we will mail it free.

EASTMAN KODAK COMPANY,
389 State St., Rochester, N. Y.

FOR THE "LAND'S SAKE"

BUY A BOSTROM IMPROVED



FARM LEVEL
which has TELESCOPE enabling you to read the Target over 400 yards away, and
TERRACE, DITCH, TILE DRAIN, IRRIGATE

your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most

SIMPLE, ACCURATE, DURABLE AND COMPLETE

outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from a nearby hardware jobber.

Write today for description of Level, and details of our MONEY BACK GUARANTEE.

BOSTROM-BRADY MANUFACTURING CO.
148 Madison Ave., Atlanta, Ga.

BUY Guaranteed STEEL ROOFING

Direct From the Factory--

and keep the dealer's profit in your own pocket. We sell you at exactly the same price as your dealer would have to pay us. We protect you with

Our Guarantee

that every sheet must be perfect, full weight and brand new or it doesn't cost you a cent. It pays to buy this kind of roofing. While we sell it to you for the same or less money than ordinary connective quality roofing, it is much cheaper in the end. Besides

We Pay the Freight

and our price list shows exactly what your roofing would cost laid down at your railroad station. Send today for catalog and samples Free.

The Ohio Galvanizing & Manufacturing Company
27 Ann St., Niles, Ohio

\$10,000 Backs

Hertler & Zook Portable SAW

Guaranteed 1 year. Money refunded—freight paid both ways if unsatisfactory. Only \$10. saw to which ripping table can be added. Operates easily. Catalogue free. Hertler & Zook Co., Box 23, Belleville, Pa.

A Most Efficient Tractor

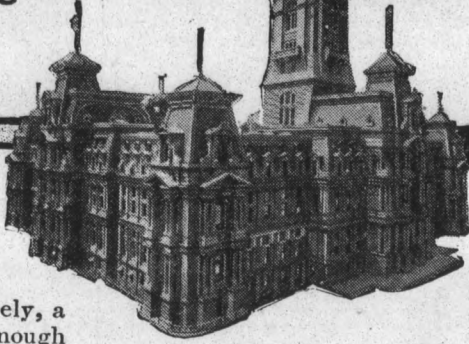
because it drives in all four wheels it pushes and pulls. Easier to handle—does better work. Works where ordinary tractors can't. Write for catalog.

Heer Engine Co. 45 T St., Portsmouth O.

J-M ASBESTOS ROOFING

Used on Largest and Most Expensive Buildings

City Hall,
Philadelphia, Pa.
Roofed with J-M
Asbestos Roofing



This great building, erected at a cost of \$25,000,000.00, is covered with J-M Asbestos Roofing. Surely, a roofing that is good enough for this monumental structure will answer your requirements.

Hundreds of the largest and finest buildings of all types are covered with J-M Asbestos Roofing—because it is the roofing of proven permanence.

J-M Asbestos Roofing is all-mineral. It is composed of several layers of Asbestos (rock) felt cemented together with Trinidad Lake Asphalt—the greatest waterproofing substance known.

It contains nothing to rot, rust, melt, crack or deteriorate. Never requires graveling, coating, or any form of preservative. Its first cost is the last cost. Cheaper than tin, iron, slate or shingles—and the cheapest-per-year roofing on the market. Gives perfect fire protection.

Adapted to any climate. Keeps buildings warm in Winter and cool in Summer.

Furnished in flat sheets or in rolls. It can be applied by any handy man. J-M Roofing Cleats, packed in each roll, make absolutely watertight laps and give the entire roof a handsome white appearance. Suitable for any type of building.

Sold direct if your dealer can't supply. Write nearest Branch for sample of the wonderful Asbestos Rock and Book No. 3140.

H. W. JOHNS-MANVILLE CO.

Albany Chicago Detroit Louisville New York San Francisco
Baltimore Cincinnati Indianapolis Milwaukee Omaha Seattle
Boston Cleveland Kansas City Minneapolis Philadelphia St. Louis
Buffalo Dallas Los Angeles New Orleans Pittsburgh Syracuse
Montreal Toronto

DEALERS WANTED—Choice territory still open. Quick sales. Liberal profits. Satisfied customers.

2122

Farm Commerce.

Public Markets are Being Favored.

At a recent meeting of the North Owosso Farmers' Club, held at the home of Mr. and Mrs. E. O. Place, one of the questions under discussion was this: "Which would be of more benefit to the consumers of Owosso and the farmers of Shiawassee county, a county fair or a public market place?" After thoroughly discussing the matter it was agreed that a public market place under proper regulations would be of greater benefit.

Other towns are taking steps toward city markets. The civic committee of the Muskegon Chamber of Commerce has adopted a resolution asking the city council to set aside a public market place, "for the meeting of farmers and buyers, and for the exchange of produce, and in connection therewith a rest room with separate apartments for men and women." A public market is being agitated at Three Rivers, Battle Creek, Cadillac and many other cities. Kalamazoo, Flint, Lansing, Grand Rapids, Detroit, Jackson and a few other centers already have markets.

While the market in Grand Rapids and in most places is now closed for the season the Jackson market, with its general lines of meats, fish, bread, cake, pickles, apple butter, mince meat, sauer kraut, canned fruits, in addition to potatoes, beans and the usual stuff, has been open every day and doing business. The retail grocers of Jackson are beginning to sit up and take notice. They have been discussing the plan of opening a big co-operative store near the market and

selling goods at cut prices with a view to killing the market. They believe that they should enjoy the free rental afforded dealers on the market property.

It is of interest to note what is being done in other states. It is found in Des Moines, Iowa, that the public market saves a great deal of money for the poorer classes who are willing to shop with the market basket, also that it causes a rapid increase in the number of fruit farms and truck patches in the suburbs and vicinity. The city of Memphis, Tenn., secured data from New Orleans, Cincinnati, Indianapolis, Seattle, Montreal, San Antonio, Norfolk, Rochester, Columbus and Dubuque. In general these cities reported that the public market gives the consumer fresher and better goods at lower prices, while from the producer's standpoint it means better profits. The opening of markets in these centers has encouraged an increased production of fruit, vegetables, etc., in adjacent territory.

A commission appointed by Mayor Harrison, of Chicago, "to make a comprehensive study and report on the subject of municipal markets and other agencies tending to bring the producer and the consumer into closer contact," after an investigation lasting several months, concludes that the establishment and successful operation of retail municipal markets or co-operative stores must be preceded by the establishment of municipal wholesale terminal markets with several branches.

Marketing Farm Products by Parcel Post.

THE new parcel post offers a fine opportunity for marketing many farm products—and advertising will bring the requests right to the farm. All the farmer needs to do is to pack the products and place them at the mail box.

Fifty pounds can now be sent in the first and second zones and 20 pounds to all parts of the United States. But, poultry, fruit and vegetables can be marketed through the parcel post or sent to a neighbor. Containers for eggs are also being perfected and as soon as manufacturers place them on the markets, there will be an unusual field opened for marketing eggs by the postal route. Likewise articles from town can be sent to the farms.

The cost per pound in what is called "local territory" is but five cents for the first pound and half a cent for each additional pound. The "local territory" includes the region served by either rural or city carriers. This means that a package of 50 pounds can be sent within this territory for 30 cents; a package of 25 pounds for 17 cents. This makes a cheap and efficient method for handling many products from the farm to the town, or vice versa. In the first and second zones, which cover a distance up to about 150 miles, the charges are five cents for the first pound and one cent for each additional pound.

The next point is how to get the farmer in touch with the person in town that is in need of what the farm offers for sale. This can be done very cheaply and efficiently through advertising. An advertisement in the local paper will bring the inquiries and purchases can be arranged over the telephone or by letter. A walnut grower in California marketed his whole crop of walnuts by parcel post in 10-pound bags. He did this through placing advertisements in his local

papers. So many inquiries came in that his own crop was soon gone and he had to buy from his neighbors to fill orders that kept coming. In this way the nuts went right from the trees to the consumer. The grower got a better price and the consumer got his nuts cheaper.

On many farms there are more vegetables and fruits grown than is needed; still the extra amount may not be sufficient to pay for a trip to town. By means of the parcel post these extra vegetables and fruits can be made up in small lots and sent to families in town and both the producer and consumer be benefited.

It is important, too, when sending stuff to families in town to send only the best. It is a good plan to adopt some trade-mark; or better yet, name the farm and put the farm name on the product. The printed letterhead is also an important factor. On it can be given the farm name and a list of the products that are for sale. When a customer in town or a fellow farmer gets a letter written on a printed letterhead it at once stamps that farmer as a business man. It puts him in a much more advantageous position for doing business. It will also reflect on the farmer. He will take more pride in his business and in putting a good product on the market. The printed envelope is a traveling advertisement telling its message all along its route.

Parcel post can be made to do good service, and through advertising the market will come to the farmer.

A SPECIAL EGG TRADE.

With a flock of 500 White Leghorn hens which he has managed in such a way as to make them profitable lay-in 10-pound bags. J. C. Brown, of Franklin county, Ohio, is making a good profit from a

KITSELMAN FENCE



We make you the same price we would make the Dealer or Jobber. That is why we can save you money. Look at these very low prices.

14 CENTS A ROD for 26-in. hog fence

23 1/2 c. a rod for 49-in. farm fence

25 1/2 c. a rod for 60-in. poultry fence

\$1.40 for 80 rod spool of Ideal

Barbed Wire. Large free Catalog showing 100 styles of Farm, Poultry and Lawn Fence.

KITSELMAN BROS. Box 278 Muncie, Ind.

WE PAY THE FREIGHT

Brown Fence

Strongest, most durable made. Basic open heart wire. Double galvanized. Compare our quality and prices with others.

Bargain Prices—Direct From Factory
150 Styles—13 Cents Per Rod Up

We pay freight anywhere. Write now for free fence book and sample to test.

THE BROWN FENCE & WIRE CO.
Dept. 49 Cleveland, Ohio

BOOK FREE **WRITE NOW**

12¢ A ROD AND UP

MASON FENCE

Costs Least. Lasts Longest. MASON weaves his science into every rod of his fence. That is why he can afford to ship direct from factory to you for 60 days' trial with a money-back guarantee. Largest assortment, biggest stock and quickest service are yours when you deal with Mason. Our FREE CATALOG means money in your pocket. Write for it today.

The Mason Fence Co.
Box 68 Leesburg, O.

REPUBLIC FENCE



FORCES SANITATION

The trash pile, the garbage can, the mud hole in the back yard or front yard, do not harmonize with Republic Ornamental Wire Fence. Sunlight and fresh air can pass over every part of your premises unobstructed.

REPUBLIC FENCE Is Better Than the "Fly Swatter"

It helps to correct the conditions that breed flies and disease. Does not hold moisture; does not decay.

Built of Heavy Galvanized Wire

Closely spaced, firmly woven. No other fence like it. Makes a life-time improvement—a daily delight. Costs so little you can't afford to do without it.

Fully guaranteed; many designs. Illustrated Catalog.

REPUBLIC FENCE & GATE CO.
44 Republic St., North Chicago, Ill.



BOWSER SWEEP MILLS

Different from all others. 4 or 2 horses. Grind Corn with shucks and all small grains. (Also make 10 sizes of bell mills) FREE—Booklet on "Feeds and Manures"

O.N.P. Bowser Co., South Bend, Ind.

"Can't-Sag" Gates Save You BIG MONEY

Cost only one-third as much as ordinary iron, wire or gas pipe gates, but last twice as long. Neat in appearance—best and strongest gate made—light, easy to handle, opens both ways. Boards are double bolted between eight angle steel uprights and double truss braces, guaranteed never to sag.

Cost Less Than All Wood Gates—Last 5 Times as Long

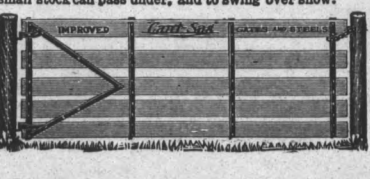
Can't-Sag Gates are furnished complete, ready to hang, or just the Gate Steels which include everything except the boards. Patent self-locking hinge feature—reinforced two piece malleable hinges. Six Triangular Truss Braces make gates extra strong.

Improved Elevating Attachment permits the gate to be raised full length from 5 to 30 inches, so small stock can pass under, and to swing over snow.

30 Days Free Trial and 5 Year Guarantee

Catalog shows both complete Gates and just the Steels, at prices you can't afford to raise. Send for my new catalog with free 30 days' trial and freight prepaid offer.

Alvin V. Rowe, Pres.
ROWE MANUFACTURING CO.
665 Adams St., Galesburg, Ill.



farm of a few acres by direct marketing of eggs. Living on an electric line within easy reach of the city of Columbus, Mr. Brown markets all of his eggs himself among special customers. He has worked up a route among families living in a limited section and every week in winter and three times a week in summer he makes deliveries direct to these customers. In two baskets he is able to place 50 dozen eggs, and as he carries these, the car fare is his only expense. The price per dozen varies weekly according to market quotations, but because of the quality of his product, Mr. Brown usually realizes from five to eight cents a dozen above the price paid by dealers.

WHAT IS THE TROUBLE WITH BEAN PRICES?

Our readers are financially concerned in the way bean quotations have acted during the past fall and winter. We shall publish an article from the pen of Mr. McBride who has had unusual opportunity to learn of the inside workings of the market, and in this article he describes some seemingly underhanded operations that vitally affect the farmer's income from this crop. The article appears next week.

Crop and Market Notes.

Michigan.

Northern Isabella and Southern Clare Co.s.—Very cold and blustering with about eight inches of snow on the ground, but piled in heaps more or less. We had a regular Florida winter until about three weeks ago, and since then it has made us think of the Klondike. Not much work being done on the farm, more than the chores. Some hay and beans being sold. Most of the farmers that have beans are holding for higher prices. Lots of auction sales being held and everything goes at good prices. Cows bring from \$50@85. Not many sugar beets will be raised next year as the farmers do not like new contracts.

Florida.

Volusia Co.—The recent heavy rains made the roads almost impassible, and creeks are full of water. On the 16th smug fires were on the program to save the buds. The orange and plum trees are in half bloom. All small vegetables are doing nicely. Celery is good except where drainage is poor. Strawberries are in their infancy.

New York.

Niagara Co.—Weather is clear and cold, the thermometer dropping to 12 below zero. Farmers have been harvesting ice, which is of good quality, and from 12 to 14 inches thick. We have not had much snow, and roads have been fine. Autos have been running all winter on country roads. Wheat and rye have been partly covered with ice. All the produce is sold except beans and cabbage. Beans are off market. Cabbage has gone down to \$20 on account of shipments. Butter is only 20c per lb., and it looks as though it would go lower yet. Trimming of trees is nearly done.

Columbia Co.—There is very little doing among farmers. The ice crop is pretty well harvested, and the quality good. Roads are good. There is not much to market except a little hay and straw. Oats and corn short, about all being consumed on farms. Rye looks well; there is no wheat grown in this country. Farming is not well conducted, selling off and returning but little has depleted the soil of humus, and drouth such as last summer, is ruinous. Tax delinquents were never so numerous, owing to shortage of crops. Potatoes \$1; butter 35c; eggs 34c.

Ohio.

Guernsey Co.—This is a good ice season, and farmers are putting in a supply. Roughage will be pretty well cleaned up. Most fat hogs and cattle are sold. Farmers are doing chores, delivering milk and cutting and hauling mine props. Hens were laying well until this cold wave. Eggs 35c; hay \$10@15; wheat \$1; corn 75c. We do not grow enough corn for home consumption, but have much shipped in. Roads are bad and rough. Mines working pretty well in this Guernsey valley.

Greene Co.—We are having real winter, with temperature around zero, and six inches of snow. Wheat and rye are in good condition. There is some wheat and cloverseed still in farmers' hands. Some fat cattle are being sold at \$8@8.25 now at local markets and some to be shipped. Roads are good except where drifted.

Farmers are ordering fertilizer for spring through the County Improvement Association, at a saving of from \$3@6 per ton. Our county agent is a busy man. Some marl deposits in the county located by him.

Hancock Co.—The weather is very cold. A great deal of ice is being harvested. We have not had much snow this winter. Wheat and rye are looking fine. Fat cattle and hogs are selling around \$8@8.50. Farmers are marketing corn at 80c per cwt; wheat 92c; oats 37c; butter 25c; eggs 28c; chickens 12c per lb. Good draft horses are scarce and high in price. There are not many farms changing hands in this vicinity. All live stock is coming through the winter in fine shape. Farmers are well along with their spring plowing, and roads are in fine shape.

Coshocton Co.—We are having cold weather, with five inches of snow. Plowing was done during January. Wheat looks the best in years. Some Farmers are hauling manure and building fence. Stock has wintered well. Institutes are reported well attended. Special interest is taken in corn shows. Wheat 95c; corn 65c; rye 60c; oats 40c; hay \$14; straw \$6; chickens 13c; turkeys 18c; ducks 12c; geese 15c; eggs 30c; butter 25c; medium clover \$8.50; alsike \$12; timothy \$2.75; apples \$1.20; hogs \$7.75@8; dressed hogs 10½c; veal \$9.50. Corn and hogs promise to go higher, but wheat does not on account of the bright prospects for 1914 crop.

Sandusky Co.—The recent cold weather is thought to have damaged wheat and seeding to some extent. Farmers are busy putting up ice. The roads are good. Hens have about quit laying. Stock is about all sold except some cattle to be finished on grass. There is plenty of rough feed. Hay \$11@13; wheat 95c; oats 37c; corn 80c per cwt; hogs \$8.50; eggs 25c; butter 25c.

Union Co.—Have had cold weather recently, the thermometer registering zero on several mornings, with about four or five inches of snow. Wheat and rye are looking fine, but the ground is slightly lifted by the frost. Marketing is rather quiet, only a few hogs and sheep going to market. Hens are beginning to lay. Marketing is rather quiet. Hay, mixed, \$9; timothy \$10; corn 65c; oats 35c; wheat 93c; cloverseed \$8 per bu; alsike \$9; timothy seed \$2; rye 57c; eggs 28c; butter-fat 32c; whole milk \$1.85 for four per cent milk.

Hancock Co.—We had a severe cold spell, which was hard on wheat and rye, as there was no snow to cover it. Much plowing was done during the mild weather previous to this. There is very little grain and stock marketed. Farmers are busy feeding stock, cutting wood and hauling manure. There will be many sales before spring. Eggs 24c; butter 22c; hogs \$8.50; wheat 93c; oats 37c; rye 55c; hay \$8@11; potatoes 75c; chickens 12c.

Madison Co.—This month has been very cold, with little snow, which is unfavorable for the wheat, which is no doubt damaged to some extent. Very little corn is going to market. Hogs and cattle continue high in price; milch cows and springers selling highest we have known. Grade two-year-old springs are selling up to \$90, and ordinary milch cows bring from \$90@100; choice grades \$125; some even higher. Prices for sheep and lambs remain unchanged. The site for the new State Farm Prison which is to be located in this county, and containing 1,500 acres, owned by John Ellsworth, was condemned by the state. The case was tried and value of same was fixed by the jury at \$170 per acre, and the owner was awarded \$4,000 damages.

Indiana.

Tippicanoe Co.—We are having a real blizzard. Roads are drifted and the street cars find it impossible to run. Trains from all directions were late on account of the storm. Farmers are not marketing very much produce on account of the bad roads and weather. A small amount of wheat and corn is yet for sale among a few farmers. Wheat and rye fields are covered with about three feet of snow. The feeding steers are not yet ready for market while most of the hogs have been marketed. Hogs are selling at \$8.40@8.80; timothy hay \$14; straw \$6; eggs 27c; butter 23c; old hens 10c.

Wisconsin.

Clark Co.—Not very much is done now with the exception of chores, as the month has been rather cold and winter-like. We have about six inches of snow and sleighing is good. New seeding, winter wheat and rye looks poor. Farmers have plenty of feed, hay and silage and a large amount of stock is kept over winter. Hens are laying and eggs going at 29c; butter 26c; potatoes 60c. Quite a lot of ice is also being cut for summer use.

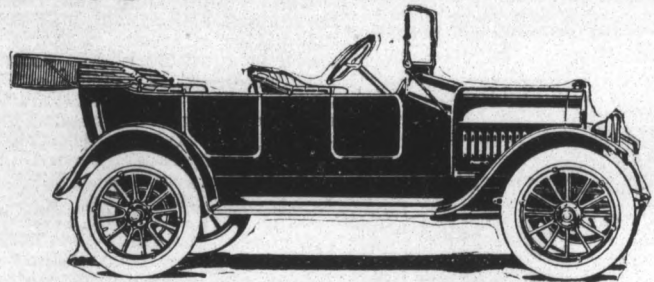
(Continued on page 280).

Jackson
No Hill Too Steep
No Sand Too Deep

Three Great
Models
for
1914

THE twelfth year of Jackson automobiles brings us three great models, ranging from a really wonderful four-cylinder value at \$1385 to a big, high-powered "Six" at \$2150. By every basis of comparison these three models are leaders. Consider their size, power, unusual comfort and their elaborate equipment, then consider the long Jackson record of superior mechanical construction and you will understand why the 1914 Jackson leads the way.

A typical Jackson value



The "Olympic Forty" \$1385

Electric Cranking and Lighting—Complete Equipment

Long stroke, full 40-horse power motor, full elliptic springs both front and rear; wheel base 115 inches; 34x4 inch tires. Regular equipment includes mohair top, top hood, ventilating windshield; speedometer, gasoline gauge on dash, Firestone demountable rims, extra rim, tire holder, foot rail, coat rail, pump, tools and jack. Electric cranking, electric lights and electric horn.

Jackson "Majestic" \$1885

Long stroke, four-cylinder motor, 45-horse power, electric cranking. Wheel base 124 inches. Tires 36x4. Full elliptic spring suspension front and rear. Full floating rear axle. Extra roomy body. Wide seats, wide doors, 10-inch cushions. Completely equipped.

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Long stroke, six-cylinder motor, 55-horse power, electric cranking. Wheel base, seven passenger, 138-inches; five passenger, 132-inches. Tires, 36x4½. Full elliptic spring suspension front and rear. Full floating rear axle, ball bearing throughout. Completely equipped. Seven passenger model, \$2300.

JACKSON AUTOMOBILE CO.

978 Woodward Ave., Detroit, Mich.

JACKSON AUTOMOBILE COMPANY, 1508 E. Main St., JACKSON, MICH.

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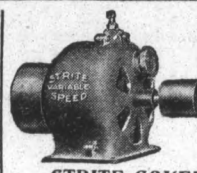
REFLEX SLICKER

No water can reach you even through the openings between the buttons. Our famous Reflex Edges keep out every drop. Make the Reflex Slicker your wet weather service coat. It's the best your money can buy. **\$3.00 Everywhere.** PROTECTOR HAT (waterproof) 75 cts. Satisfaction Guaranteed. Send for Free Catalog. A. J. TOWER CO., BOSTON. Tower Canadian Limited, Toronto.



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PUMP GRIND SAW Made to Hard Use. Wood Mills are Best. Engines are Simple. Feed Grinders, Saw Frames, Steel Tanks. CATALOGUES FREE. AGENTS WANTED. Perkins Wind Mill & Engine Co. Est. 1860. 135 MAIN ST. Mishawaka, Ind.

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Live up in every detail to the

APPLETON STANDARD OF EXCELLENCE

Low enough for every convenience—Lightest Draft—Easiest Running.

Write Today for Free Booklet Showing these Machines or General Catalog showing complete line of

Silo Fillers—Gasoline Engines—Huskers—Shellers—Grinders—Wind Mills—Wood Saws—Pump Jacks, Etc.

Appleton Manufacturing Co. 220 Fargo Street, BATAVIA, ILLINOIS.



Markets.

GRAINS AND SEEDS.

Wheat.—Although wheat values have lost a fraction during the week, the market on Monday and Tuesday showed a firmer tone. Dealers have been counting on a bumper crop; every condition has favored the growing plant and present prices have been adjusted to meet this ideal condition. Such a state of affairs make it probable that changes will be favorable to the bulls. So Monday when it was reported that the sudden shifting of the weather from one extreme of temperature to another was damaging the crop in different districts the effect was immediate and the trade showed a firmer tone. Statistics offered little help as primary receipts were liberal, exports small and American visible supply decreased less than a million bushels. One year ago the price for No. 2 red wheat was \$1.07½. Quotations for the week are:

	No. 2 Red.	No. 1 White.	May.
Wednesday	99	98½	1.02¾
Thursday	99	98½	1.02¾
Friday	98¾	98¼	1.02¾
Saturday	98¾	98	1.02¼
Monday	98½	98	1.02
Tuesday	98½	98	1.02

Chicago, (March 2).—No. 2 red wheat 95¾c; May 94¼c; July 89c.

Corn.—The cold weather has stimulated dealing in this grain and brought values up a cent. The increase in the visible supply was 832,000 bu. One year ago No. 3 corn was quoted at 50c per bu. Quotations for the week are:

	No. 2 Mixed.	No. 2 Yellow.
Wednesday	62½	64½
Thursday	62½	64½
Friday	62½	64½
Saturday	63	65
Monday	63	65
Tuesday	63	65

Chicago, (March 2).—No. 2 corn, 66¾c; May, 67¾c; July, 67¾c.

Oats.—Values have been fluctuating within narrow ranges. The supply decreased 588,000 bushels during the week. One year ago the price for standard oats was 34¾c per bu. Quotations are:

	No. 3 Standard.	White.
Wednesday	42	41½
Thursday	42	41½
Friday	41½	41
Saturday	41½	41
Monday	41¼	41¼
Tuesday	41¼	41¼

Chicago, (March 2).—No. 2 white oats, 42¼c; May, 40¾c; July 40¾c.

Beans.—With stocks increasing quotations have declined and trade rules easy. Local board of trade quotes immediate and prompt shipments at \$1.83; March \$1.85 per bu. Chicago reports a quiet trade. Pea beans, hand-picked, choice, are steady at \$2; common \$1.75@1.85; red kidneys, choice, \$2.80.

Rye.—This cereal is steady. No. 2 is quoted at 67c per bu.

Barley.—At Chicago barley is quoted at 52@70c per bu., while Milwaukee quotes the malting grades at from 54@71c.

Timothy.—Prime spot is lower at \$2.40 per bu.

Alfalfa.—Steady at \$7.25 per bu.

Cloverseed.—Market is fluctuating, with prime spot and March higher at \$8.40 per bu; alsike at \$10.40; Toledo prime cash is quoted at \$8.50 and prime alsike at \$10.45.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent \$5.30; second \$5; straight \$4.75; spring patent \$5.10; rye flour \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$27.50; coarse middlings \$27.50; fine middlings \$29; cracked corn \$29; coarse corn meal \$28; corn and oat chop \$25 per ton.

Hay.—Trade is easy with prices steady. Carlots on track at Detroit are: No. 1 timothy \$14.50@15; standard \$13.50@14; No. 2, \$12@13; light mixed, \$13.50@14; No. 1 mixed \$12.50@13; No. 1 clover \$12@12.50.

New York.—Market steady. No. 1 timothy \$20.50@21; No. 3 standard \$15@20; light clover mixed \$18@19; clover \$17@18 per ton for large bales.

Chicago.—Tone of this market is somewhat improved. Choice timothy is quoted at \$17@18 per ton; No. 1 \$15@15.50; No. 2, \$12.50@13.50.

Straw.—Steady. Rye \$7.50@8; oat straw \$7@7.50; wheat straw \$7@7.50 per ton.

Chicago.—Rye straw is quotable here at \$7.50@8; oat straw \$7@7.50; wheat straw \$6.50@7 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market steady with prices unchanged. Extra creamery 30c per lb; firsts 28c; dairy 21c; packing stock 18c.

Chicago.—Market is quiet, the demand and receipts both being light. The advance in price is slight. Extra creamery 29½@30c; extra firsts 28@29c; firsts 25½@27½c; seconds 23@24½c; ladles 20@21c; packing stock 18½@18¾c per lb.

Elgin.—Market steady but quiet at 30c per lb.

New York.—Market is firm but the bad weather has prevented free trading. Prices on better grades from 1@1½c higher than last week. Quotations: Creamery extras 31½@32c; firsts 28@31c; seconds 24@27c; packing stock 19½c per lb.

Eggs.—Cold snap has reduced the movement of eggs and advanced the price ½c. Current receipts of fresh stock is quotable at 27c per dozen.

Chicago.—Cold weather has curtailed trade, and holds market firm. Many eggs arrive frozen. Prices are 1c higher. Miscellaneous lots, cases included, 26@26¾c, according to quality; ordinary firsts 26@26¼c; firsts 26¾@27c; frozen 18c.

New York.—A firm feeling prevails and owing to light production it is expected to continue. Many eggs are frozen and have to be sold to disadvantage. No change in prices. Fresh gathered extras 31@31½c; extra firsts 30½c; firsts 29½@30c per doz.

Poultry.—Local market holds firm on account of light receipts. Prices and conditions unchanged. Live—Springs 17½@18c; hens 17@18c; turkeys 18@19c; geese 15@16c; ducks 17@18c.

Chicago.—Conditions firm. Demand good and receipts light. Springs are ½c higher. Quotations on live are: Turkeys, good weight 17; others 12c; fowls, choice 16c; spring chickens 13@16½c, according to quality; geese 10@14c, according to quality; ducks 16c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices higher. No. 1, \$5@6; No. 2, \$4@4.50 per bbl. Cold weather and snow has caused a quiet feeling on the Chicago market. Holders are firm and not especially anxious to sell. Barrel stock is quoted: No. 1 Jonathans \$6@7; Spies \$5.50@6; Baldwins are \$5.50@5.75. In New York, Baldwins are selling from \$5@5.50 with a few at \$6.

Potatoes.—On account of the cold weather trade is very light. Prices are unchanged. Quotations: In bulk 58@60c per bu; in sacks 63@65c per bu. for carlots. At Chicago owing to increased receipts the market is easy. The price has declined. Good Michigan white stock is quoted at 60@65c per bu. In New York good Michigan stock is selling for 76c per bu. in car lots. Michigan offerings are heavier than any other time this year.

Cabbage.—Steady with prices higher. Good quality is quoted at \$3@3.25 per bbl. At Chicago the market is liberally supplied. The price is lower. Holland \$1.50 per bbl.; \$25 per ton. Red \$2 per bbl. In New York good stock of Danish or Holland is selling at \$22@25 per ton, while in Cincinnati it sells for \$33 per ton.

Onions.—The local market is steady with prices advancing. Quoted at \$3.25@3.50 per sack for yellow and \$1.75 per crate for Spanish. At Chicago the market is steady with prices unchanged. Sacks 65@70 lbs., Michigan-grown, sell at \$1.75.

GRAND RAPIDS.

The sale of potatoes at loading stations through the state during the past two weeks has been steady and in the aggregate has been large. The price paid at Cadillac for several days has been 46c. News from Maine of powdery scab and of threatened drastic action by the government may affect the Michigan market, for that state is reported to have six million bushels ready for shipment. An embargo on seed stock from Maine would force southern states to look to Michigan and other markets. Local buyers are still bearish, however, and say that nearly 75 per cent of the crop is still in growers' hands, that Holland and Belgium have complied with government regulations and are now shipping in stock, and that it looks like 25@30c potatoes this spring. No change is noted in the bean situation and \$1.55 is the ruling price for white pea and \$2 for red kidneys. The poultry market is firm with live fowls worth 14c; dressed hogs are also higher, selling at 11c. Eggs are worth 24@25c; hay is in good demand at \$16@18.

LIVE STOCK MARKETS.

Buffalo.

March 2, 1914.

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

Receipts of stock here today as follows: Cattle 160 cars; hogs 100 d. d.; sheep and lambs 90 d. d.; calves 1000 head.

With 160 cars of cattle on the market here today and a blinding snow storm from midnight until this afternoon, the cattle looked very bad, and the market on all cattle weighing over 100 lbs. was fully 15c per cwt lower than last week, and on the medium and lower class, 15@25c per cwt. lower than last week. At the close of the market there were several loads yet unsold and more reported to arrive tonight, consequently the market closed weak with prospects barely steady for the balance of the week.

Receipts of hogs today were liberal, about 100 double decks. Demand was just fair and prices were 5@10c lower from Saturday's average; all good grades selling at \$9.15@9.20; pigs generally 9c per lb; roughs \$8.25@8.50; stags \$6.50@7.50. Late market was extremely dull with fully 30 double decks going over unsold, prospects are not very encouraging for the next few days.

The market was active today on handy lambs and sheep, but dull on heavy lambs. Prices quarter lower than the close of last week. Choice handy lambs selling mostly at \$8.15. Heavy lambs selling from \$7.50@7.75. We look for slow trade on heavy lambs all the season. Most of the orders calling for lambs weighing from 75@83 lbs. Look for steady to shade higher prices on lambs last of week.

We quote: Choice lambs, \$8.10@8.15; heavy do, \$7.50@7.75; cull to fair do, \$6.50@8; yearlings, \$6.50@7.35; bucks, \$4.50@4.75; handy ewes, \$5.75@6; heavy do, \$5.50@5.75; wethers, \$6.25@6.60; cull sheep, \$4@5; veals, choice to extra, \$11@11.50; fair to good, \$9.50@10.50; heavy calves \$5.50@8.

Chicago.

March 2, 1914.

Received today..20,000 Cattle. Hogs. Sheep.
Same day 1913..16,329 40,000 38,000
Last week 1913..16,329 34,425 18,641
Same w'k 1913..49,981 151,576 135,131
Same w'k 1913..46,663 166,599 82,492

Cattle open this week with a moderate Monday supply and a good general demand at well maintained prices, choice beefs showing an upward tendency. Hogs open at steady prices, sales being mainly at \$8.50@8.65, with the extreme range \$8.35@8.70 and a few below \$8.40. The late market is slow, packers bidding much lower prices for the better class. Hogs received last week averaged in weight 226 lbs., a gain within a week of two pounds, the average for the first week of the year having been 209 lbs. Sheep and lambs are slow and look 10@15c lower.

Cattle sold extremely well during the first half of last week, the cold weather imparting increased life to the demand for beef, and the general market was strong and advancing, even ordinary cattle moving upward under good buying. The subsequent trade was much less animated, a sharp reaction on Thursday placing values more or less lower, some kinds of cattle selling at large reductions. The bulk of the sales of steers for the week took place at \$7.90@9.15, with choice to fancy heavy beefs purchased at \$9.10@9.75, the top price showing another high record for the season, as \$9.65 was the top a week earlier. The commoner light-weight steers went at \$7@8, aside from a few inferior steers that were purchased as low as \$6.85, while medium steers sold at \$8.10@8.50 and good cattle at \$8.60@9. Good to prime yearlings were salable at \$8.50@9.35, with singularly few offered that were good enough to go above \$9. Killers showed marked partiality for steers that sold above \$8.50, these being the quickest to sell higher, and the deep snow blockades on the western railroads and tie-ups in some parts of Iowa and Missouri cut the Wednesday cattle receipts down to 12,863 head, including extremely few choice beefs. Butchering cows and heifers had a good outlet up to Thursday at \$5.15@8.40, with a few head of fancy yearling heifers taken at \$8.50@9, while canners went at \$3.50@4.55, cutters at \$4.60@5.10 and bulls at \$5.50@7.65. Canners and cutters sold at the highest prices in a long time, and calves had a good demand at higher values, going at \$5@9 for heavy lots and at \$10@11.25 for desirable light vealers. There was a fair movement in stockers and feeders, especially in the former, sales of which took place at \$5.75@7.65, while heavy feeding steers brought \$6.85@7.85, a few going at \$8. Stock and

feeding cows and heifers sold at \$5.50@7 and good to choice heavy stock calves at \$7.50@8.25. Milch cows sold sparingly at \$55@85 each.

Hogs fluctuated back and forth in prices last week, as usual, with good rallies as the receipts became smaller, every hog being needed. Eastern shippers wanted a good share of the better class of hogs, and the best light hogs sold nearly as high as the best strong weights as a result of the steadily decreasing percentage of light hogs marketed. This is a season when increasing average weights are usually witnessed, the average weight of the receipts having been 232 lbs. a year ago, 217 lbs. two years ago and 230 lbs. three years ago. There is at present considerable discrimination against fair to good big heavy packing hogs, these being rejected from car loads and sold on their merits, largely recently at \$8.25@8.40. Strength in prices for hogs has come mainly through outside competition furnished by eastern buyers. The week closed with hog sales at \$8.35@8.70, pigs going at \$7@8.55 and stags at \$8.75@9.15. At the recent high time of the season prime hogs brought \$8.90.

Sheep and lambs, as well as fat yearlings, sold extremely well last week, the marked improved consumption of mutton because of the cold weather being responsible for the good advances in prices at a time when receipts were on a generous scale from day to day. While buyers discriminated against heavy lambs they were urgent buyers of fat sheep and yearlings, while demand ran strong for good feeders at ruling stiff prices. Colorado-fed lambs were more numerous than heretofore and sold briskly, whether choice or only fairly fat. Receipts embraced a few thousands of Montana hay-fed feeder lambs that met with quick sales. Lambs continued to make up by far the greater part of the receipts, with fair numbers of western and native ewes and a few yearlings and wethers. Lambs sold freely at \$6.25@8.10 for culls to prime, yearlings at \$6.25@7.50, wethers at \$5.75@6.50, ewes at \$4@6.50, bucks at \$4@5.50 and feeder lambs at \$6.50@7.25. It was quite a novelty for prime heavy ewes to sell on a level with the best wethers.

CROP AND MARKET NOTES.

(Continued from page 279).

Polk Co.—A great deal of logging has been done since the snow came, and some wood is being loaded on cars at \$4@4.50 for hard wood, and \$2.50@3 for soft wood. Rye and clover seem to be in good condition, as they are well covered with snow. Hogs 8c; beef 5@6c; oats 34c; eggs 26c; potatoes 45c; milch cows at auction bring \$70; brood sows \$25@35; farm horses bring \$150@175; hay \$12. Farms are changing hands in this neighborhood quite rapidly at \$100@150 per acre, poorer lands unimproved bring \$50@75. The last two weeks have been very cold, being from 15 to 20 degrees below zero every day.

Missouri.

Warren Co.—We have had heavy snows for this locality this month. They have been the salvation of the wheat and rye, which are looking fine, though the weather has been extremely cold. The farmers have sold their hogs and cattle pretty closely on account of the scarcity of feed, but Jersey cows at the sales are bringing from \$50@75. Hogs \$8.40. A good many young mules are being sold at an average of \$200. Butter 30c; butter-fat 30c; eggs 25c. Roads have been fine, enabling the farmers to haul a great deal of wood which brings \$2.75 per cord and \$1.50 per load for sawed wood. There are a good many railroad ties made and a good many mine props. The ties bring 51c and the props from 7@10c according to size.

Polk Co.—February has been the only winter month with heavy snow fall. Snow has about all melted at this time, leaving wheat and grass in excellent condition. Mild winter and good wheat pastures have reduced expense of feeding farm animals to a minimum. Roads have been in good condition until after the thaw, but are heavy now. Timothy and clover hay is selling for \$17.50 a ton and prairie hay \$17. Corn and wheat 85c; hens 12c; eggs 25c; butter 20c; 40 per cent of land winter and fall plowed for corn. Large acreage of new meadow.

A WARNING.

We would advise our readers not to send butter, eggs or other products to Mrs. H. D. Hickey, 747 Lawton avenue, Detroit, unless remittance is enclosed with order. Complaints of non-payment for goods shipped to her are on file in this office.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
March 5, 1914.
Cattle.

Receipts, 1217. Market is slow at Wednesday's and last week's prices. We quote: Best steers and heifers \$8; steers and heifers, 1000 to 1200, \$7.25@7.50; do 800 to 1000, \$6.50@7; do that are fat, 500 to 700, \$6@6.50; choice fat cows, \$6@6.25; good do, \$5.50@6; common do, \$4.75@5.25; canners, \$3.75@4.25; choice heavy bulls, \$7; fair to good bolognas, bulls, \$6.25@6.50; stock bulls, \$5.75@6; choice feeding steers, 800 to 1000, \$6.75@7; fair do, \$6.25@6.50; choice stockers, 500 to 700, \$6.25@6.50; fair do, \$5.75@6.25; stock heifers, \$5@6; milkers, large, young, medium age, \$7@9; common milkers, \$4.50@5.50.

Bishop, B. & H. sold Sutton 13 steers av 964 at \$7.35, 9 do av 816 at \$7; to Rattkowsky 2 cows av 990 at \$5.25, 1 do wgh 1010 at \$4.75; to Hammond, S. & Co. 2 do av 815 at \$4.25, 2 do av 1045 at \$5.50, 4 heifers av 880 at \$6.50, 1 steer wgh 1100 at \$7.50, 6 butchers av 680 at \$6.25, 6 do av 750 at \$6.65, 7 steers av 1046 at \$7.50; to Mason B. Co. 12 do av 1005 at \$7.25; to Sullivan P. Co. 2 cows av 960 at \$6, 1 heifer wgh 750 at \$6, 6 steers av 950 at \$7.40; to Hammond, S. & Co. 7 do av 750 at \$7; to Newton B. Co. 7 do av 1094 at \$7.50, 1 do wgh 1120 at \$7.50, 1 do wgh 740 at \$6.75; to Sullivan P. Co. 3 cows av 1013 at \$5.50; to Bowersox 2 do av 1100 at \$5.90, 1 do wgh 940 at \$5.10; to Breitenbeck 4 do av 1057 at \$5.35, 2 do av 1055 at \$4.25, 2 do av 1630 at \$4.50, 4 do av 800 at \$5.50; to Ratner 2 steers av 1900 at \$7.25; to Parker, W. & Co. 3 cows av 927 at \$4.50; to Goose 3 heifers av 413 at \$6; to Bresnahan 6 stockers av 445 at \$6.25; to Sutton 7 steers av 966 at \$7.25; to Sullivan P. Co. 4 cows av 925 at \$6.25, 1 do wgh 920 at \$5.25, 5 steers av 978 at \$7.40, 13 do av 1012 at \$7.50, 3 bulls av 1090 at \$6.75, 4 cows av 1115 at \$5.75, 3 do av 1133 at \$5.75, 1 do wgh 1000 at \$5.

Lowenstein sold Mich. B. Co. 3 bulls av 857 at \$6.25, 1 do wgh 2220 at \$7, 6 cows av 1136 at \$6, 2 heifers av 700 at \$6.75.

Youngs sold Sullivan P. Co. 5 steers av 814 at \$7, 1 bull wgh 1210 at \$7.

Lowenstein sold Kull 6 cows av 937 at \$5.25.

Same sold Bresnahan 4 cows av 1035 at \$4.60.

Veal Calves.

Receipts, 557. Market steady. Best \$11@11.50; others \$8@10.50.

Haley & M. sold Mich. B. Co. 6 av 135 at \$11, 5 av 125 at \$11.25, 1 wgh 240 at \$7, 1 wgh 170 at \$11.50, 4 av 140 at \$11.25, 1 wgh 130 at \$11, 1 wgh 190 at \$11.50, 4 av 150 at \$11.25, 5 av 125 at \$11.50; to Burnstine 6 av 155 at \$11.15; to Mich. B. Co. 1 wgh 150 at \$11, 3 av 160 at \$10, 3 av 140 at \$11.

Spicer & R. sold Rattkowsky 2 av 145 at \$11; to Burnstine 3 av 150 at \$11.50; to Mich. B. Co. 5 av 145 at \$11, 6 av 150 at \$11, 6 av 155 at \$8; to Kull 7 av 140 at \$11.

Sheep and Lambs.

Receipts, 5575. Market steady. Best lambs \$7.65@7.75; fair to good do, \$7.25@7.50; light to common lambs, \$6@7; yearlings, \$7@7.25; fair to good sheep, \$5.25@5.75; culls and common \$3.50@4.

Spicer & R. sold Mich. B. Co. 4 sheep av 95 at \$5.50, 6 do av 85 at \$5, 26 do av 115 at \$5.50, 18 do av 100 at \$5.50, 36 lambs av 80 at \$7.50, 61 do av 75 at \$7.50, 6 do av 60 at \$7, 15 yearlings av 90 at \$6, 13 lambs av 65 at \$7.50; to Young 7 sheep av 90 at \$5.50; to Kull 13 sheep av 90 at \$5.75.

Haley & M. sold Mich. B. Co. 7 sheep av 100 at \$4.75, 2 lambs av 65 at \$7.50, 7 do av 55 at \$7, 16 do av 80 at \$7, 17 do av 58 at \$7, 4 sheep av 140 at \$5, 98 lambs av 70 at \$7.60, 15 do av 60 at \$6.50, 71 do av 75 at \$7.60, 8 do av 65 at \$7.25, 68 do av 82 at \$7.50, 24 sheep av 105 at \$5.25.

Roe Com. Co. sold Nagle P. Co. 217 lambs av 70 at \$7.55; to Barlage 68 do av 60 at \$7.

Hogs.

Receipts, 3997. None sold up to noon; packers bidding \$8.60. Bishop, B. & H. sold Parker, W. & Co. 1510 av 190 at \$8.60, 275 av 170 at \$8.55.

Same sold Mich. B. Co. 226 av 200 at \$8.65.

Roe Com. Co. sold Sullivan P. Co. 150 av 190 at \$8.60, 55 av 170 at \$8.55.

Haley & M. sold Hammond, S. & Co. 165 av 170 at \$8.55, 182 av 190 at \$8.60.

Spicer & R. sold same 270 av 190 at \$8.60, 125 av 170 at \$8.55.

Low Fares to CANADA

Settlers Travel to the farm you have selected over the Canadian Northern Railway, via Duluth, Ft. Frances or via St. Paul and Winnipeg—through 1550 to 2550 miles of Canada's richest farming country—stop-over privileges allowed. Low rates, 2nd class, one way fare for settlers every Tuesday during March and April.

FREE Settlers Guide containing valuable information. Write at once stating destination.

Settlers

DATES OF SALE—March 10th, 17th, 24th and 31st.

TO	FROM—Chicago	Des Moines
Dauphin, Man.	\$24.15	\$22.35
Regina, Sask.	24.15	22.35
Saskatoon, Sask.	24.15	22.35
Prince Albert, Sask.	24.15	22.35
North Battleford, Sask.	24.25	22.45
Kindersley, Sask.	24.70	22.90
Hanna, Alta.	26.05	24.25
Calgary, Alta.	26.70	24.90
Edmonton, Alta.	26.70	24.90

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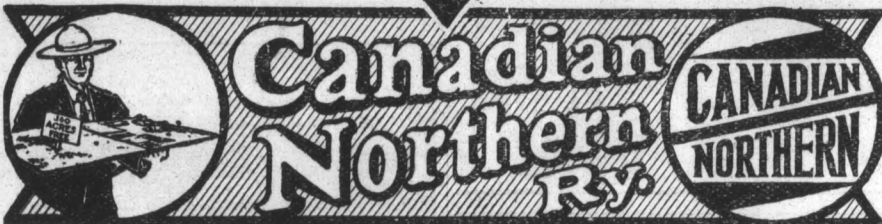
—also "Western Canada has a Home for You" and "The Peace River Country"—write quick for these FREE BOOKS.

Fares

DATES OF SALE—April 7th, 14th, 21st and 28th.

Kansas City	Omaha	Minneapolis or St. Paul	Duluth
\$27.75	\$24.10	\$16.00	\$15.00
27.75	24.10	16.00	15.00
27.75	24.10	16.00	15.00
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All parts of the Provinces of Manitoba, Saskatchewan and Alberta, have produced wonderful yields of Wheat, Oats, Barley and Flax. Wheat graded from Contract to No. 1 Hard, weighed heavy and yielded from 20 to 45 bushels per acre; 22 bushels was about the total average. Mixed Farming may be considered fully as profitable an industry as grain raising. The excellent grasses full of nutrition, are the only food required either for beef or dairy purposes. In 1912, at Chicago, Western Canada carried off the Championship for beef steer. Good schools, markets convenient, climate excellent. For the homesteader, the man who wishes to farm extensively, or the investor, Canada offers the biggest opportunity of any place on the continent.

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THE Southeastern States need more milk, cream and butter producers. Each year \$32,500,000 worth of Northern dairy products are shipped into the South. You can make money in this many crop, all the year—grazing country. Ample rain, (irrigation unnecessary) mild winters and pleasant summers make living enjoyable and highly profitable. **GOOD LAND \$15 AN ACRE UP** produces heavy yields of alfalfa, clover, corn, wheat, fruit and truck. Profitable local markets greater than supply. Alfalfa booklet, the "Southern Field" magazine and facts about dairying along the Southern Ry., M. & O. R. R. and Ga. So. & Fla. Ry., sent on request. **M. V. RICHARDS, L. E. Ag't**, Room 76 Southern Ry., Washington, D. C.

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Ship your Hay to Pittsburgh and to Daniel McCaffrey Sons Company Pittsburgh, Pa. Ref.—any bank or Mercantile Agency.

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134 Acres; 20 a. wood and timber, balance tillable. 8-room house, basement barn 40x50, silo. Granary. hog house, hen house, fruit. If sold at once owner includes 8 cows, heifer, pair horses, brood sow, boar, 150 hens, mow, rake, wagon, buggy, spring wagon, sulky plow, harrow, potato digger, 3 sets harness, sleigh, manure wagon, lot of hay and straw. All \$3,900, \$2,500 cash. Hall's Farm Agency, Owego, Tioga Co., N. Y.

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Trustee Offers 1900 Acres of Land.

I am authorized by the United States Court for the Eastern District of Michigan to dispose of all the farm lands of the Estate of John Godkin, bankrupt, including 1900 acres of the finest land in the fertile Saginaw Valley, in Tuscola and Bay counties. Land is all clay loam; all within three to twenty miles of Bay City and Saginaw, each city of over 50,000; adjoining land is settled and under cultivation. In the heart of Michigan's Best Sugar industry; part of the land is heavily timbered with elm, oak, ash and maple. The opportunity of a generation for farmers, investors and colonizers who can buy all or part of these lands for cash; local banks will loan 50% of purchase price. We want to get in touch with practical farmers in Michigan, Illinois, Ohio and Indiana who are seeking new land. For further information write **ROBERT D. KIRK,** Trustee of John Godkin, Shearer Bldg., Bay City, Mich. **COUMANS & GAFFNEY,** Attorneys for Trustee Shearer Bldg., Bay City, Mich.

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All boys and girls desire a watch that they can carry and that will give them the correct time whenever they want it. We can make it possible for any boy or girl to get an excellent watch without one cent of cost and just a couple of hours of their time after school or on Saturday. We have both boys watches and the small girl watches, state which kind you want and we will write you how you can get it. Address **B. & G. Dept. The Michigan Farmer, Detroit.**

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Sledge-hammer blows can't break Majestic malleable iron!

That's why Majestic joints can be cold-riveted; oven made practically airtight, without putty—stays tight. As cast iron breaks, ordinary stoves can't be riveted at all. They must be bolted, loosely, leaving cracks that are filled with putty, which soon falls out, allowing heat to escape and cold air to enter oven. This requires hotter fires, doubles fuel bill, causes heavy repairs and rapidly burns out range.

The whole front and top of a Majestic is unbreakable malleable iron, riveted to body of charcoal iron—resists rust 3 times as long as steel. Body lined with heavy, pure asbestos, (held by open grating), easily and stays rigid and level under heavy weight. Cup catches falling ashes when emptying pan. Open end ash pan scoops up ashes inside as you slide it back. Ventilation under pan—floor can't scorch.

Don't let low price mislead you into buying a cheap range—quality doesn't show in appearance. A Majestic outwears three ordinary ranges. You don't get a range often; investigate!

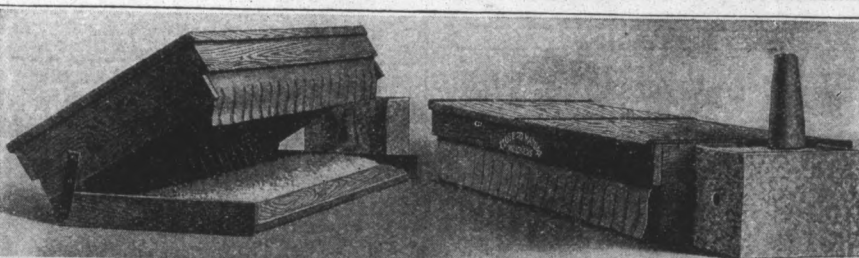
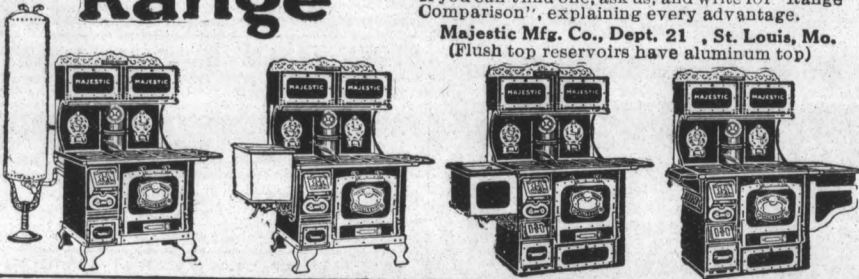
Majestic dealers are in every county in 40 states. If you can't find one, ask us; and write for "Range Comparison", explaining every advantage.

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With or without legs.

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The Longest Portable Hover Now Advertised. Contact Warmth, Open Air Ventilation, Non-Piling. Used either with the Lamp or as a Fireless. Brooders same principles as hovers. Nothing like them now on the market. Prices very low. Don't buy till you have read a Close-To-Nature Circular.

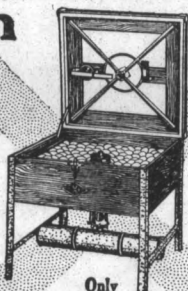
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Only incubator in the world with a heating plant like this.

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Send for FREE Book No. 29. It tells about the X-Ray, which is bringing success to thousands. X-Ray brooders give chicks best start. Write today.

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Germozone, Louse Powder, Egg Maker and other Poultry remedies have a successful reputation of twenty years behind them. They have brought success to thousands of poultry raisers and will to you. Lee's big "New Poultry Book", "Reading Symptoms of Disease" and "Poultry Pointers" free from all Lee's dealers, or write direct. The New Mandy Lee Incubator is a real automatic hatcher. Write for catalogue.

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is guaranteed for 20 years. Makes big hatches in coldest weather. Shipped on 90 days' trial. Order shipped day received. Write for Big Free Book. **Johnson, Incubator Man** Clay Center, Neb.

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LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1914. Write **Henry Pfile, Box 676, Freeport, Ill.**

Additional Poultry Ads. on page 287.

Poultry and Bees.

An Essential in Raising Chicks.

The method of raising your chick-houses are eight feet square, with ens to a large extent influences the two-foot high sides. From the top of future productiveness of the flock. On the floor to the peak of the roof it is the majority of farms, the yearly flock of six feet. There is a door and two chickens is raised in the back windows in the front. The opening in the door is 18 inches square, covered with quarter-inch galvanized iron hardware cloth. During the winter a serious mistake, and ought not to be muslin curtain can be hinged in front so generally practiced. We raise all of our chickens, and we raise several thousand on new ground each year, at least never twice in succession on the same piece of ground. In so doing we have eliminated the greatest cause of contagious diseases among small and growing chickens.

To show you that our method brings results, it might be interesting to know that our early hatched pullets, about 200, or a few less, averaged better than 50 eggs a day early in August and made big daily gains.

Now there is a reason for the above good work, and it can be accounted for in no other way than that they are kept under natural conditions. There is no question about it,

These houses were designed by the New York State Agricultural College, and have been found satisfactory. They are being used more and more all over the country.

New York. F. W. KAZMEIER.

THE HEN THAT PAID.

People are still asking, "do hens pay?" The best way to answer this query is to relate the life story of one New York state hen, who lived a life of toil and happiness on one of the Chautauqua county farms. She was not a fowl of high breed, laying eggs worth several dollars a setting, but merely a little half-breed Plymouth Rock and Rhode Island Red; so much of each breed that she loved to lay and to hatch eggs, and yet so far from a real strain of either that her color would not testify to her utility, quality.

It was about New Year's Day that this little old hen decided that it was full time to sit. The owner aided her in all ways possible and a sitting of \$5 eggs was given her to hatch. In due time she revealed a dozen chicks which netted 50c each. Thus the first three weeks she had earned \$1. She was returned to the laying house, and on the middle of March again became broody, and was given the \$5 eggs and this time brought 14 little chicks into the world. This exploit earned her owner \$2. Her next hatch was from \$1 eggs which sold as chicks for 25c, of which there were eleven, making \$1.75. Her total hatching record for the year was six broods of chicks netting from \$1 to \$2.50 per



A Practical Colony House.

but that the only way of raising chickens at a profit is as near to nature as possible.

Accompanying photo is of a colony house in one of our chicken-growing lots, which we find supplies ideal chicken raising conditions. We have raised over 2,500 chickens this year under identically the same conditions, and our total loss, after they were placed in these houses, which was when they were between eight and 12 weeks old, has been less than one per cent. This further goes to prove that their care, feed and housing conditions must be ideal.

All of these houses have a rear window, which is always open, and in addition to the opening in the door, affords plenty of ventilation, and also keeps the house reasonably cool at night.

Providing Shade.

If there is no other shade near at hand, it is advisable to block these houses about a foot from the ground; this will furnish them all the necessary shade, although if shade from trees, or other objects, is to be had, it is advisable to block these houses up about an inch from the ground, and board up the ends. In so doing, the chickens can not get underneath at closing up time, thus doing away with much annoyance. But, whatever you do, remember shade they must have to do well.

For water most of our growing chicks have access to a running brook with fresh water day and night. This has been found a great labor saver, and wherever possible I think it is advisable to locate your chicken coops not far from running water. To those too far away from the brook to find ready access to it, we cart the water three times a day and keep a supply always before them.

These houses are built on runners so that they can be moved about the farm. Also, this makes it possible to raise the chickens on new ground each year, or every two years. These



Chicks Appreciate Shade.

hatch and totaling the sum of \$8.50 for the year. Beside this record she laid 126 eggs which averaged four cents apiece as all eggs were put in storage when prices fall below the four-cent point, and when fresh eggs retail for 60c storage eggs readily sell for 50c per dozen. Thus the hen's eggs netted \$5.04 and after deducting \$2 for her board and lodging, her net profit to her owner was \$11.54. On the market she was reluctantly sold for meat, bringing \$1.12.

If a common every-day hen will do this, with care, a pure-bred fowl would make a Morgan of the hen-yard for the owner, with like care and due attention to marketing the product.

New York. EARL W. GAGE.

Prominent fruit growers keep bees to assist in pollination of blossoms.

HATCHING HINTS.

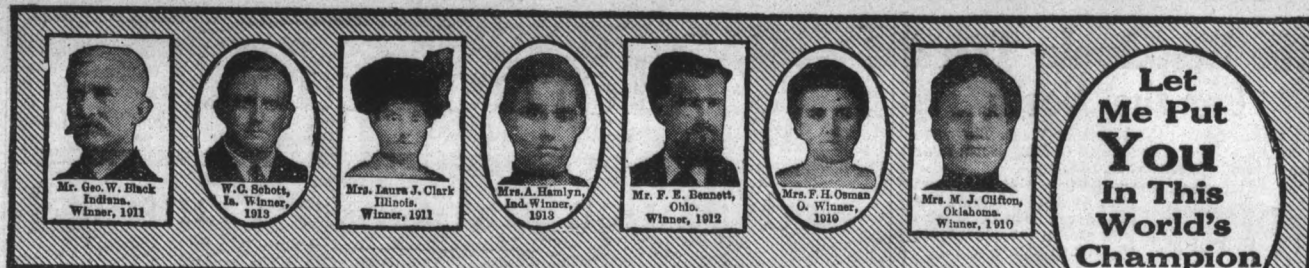
Too many farmers go to the egg basket and pick out 13 or 15 eggs and put them under the hen without much thought or care, and then blame it on the poor old biddy if the hatch is unsatisfactory.

In the first place the stock must be vigorous and the birds must have been fed in a way that will insure a high percentage of fertility. Given these primary requisites, the eggs should be gathered immediately after being dropped in clean nests. There should be no dirt, and water should never be used on the shell. It may cause too much moisture. Select eggs having perfect shells and of uniform size. Put them in a place not too warm, still, eggs will not hatch if they have been chilled. It is well to turn them every day if they are to be kept several days before setting. Eggs should always be set as soon as possible after being laid. Those received from a distance by express or parcel post should be allowed to "settle" for at least 24 hours before incubation is begun. This allows the delicate germs to resume their positions.

A good time to test the eggs is the eleventh day and again about the fifteenth. Infertile eggs should be removed. They will make excellent chick food. Spoiled ones will do harm to the other eggs if allowed to remain in the nest or incubator. Eggs must not be disturbed after the eighteenth day. As little handling as possible should be the rule from the time they are laid. By all means see that the hands are clean and dry when it is necessary to touch the eggs.

The number of eggs for a single setting must be determined by the size of the hen. A member of one of the larger breeds can easily cover 15, while it might be desirable to give a smaller bird three or four less. Prepare good nests, roomy and filled with dry material. It is the nature of the hen to desire seclusion when she is setting, therefore have the nest where other hens will not be liable to intrude and where nothing will frighten the setter. Give the bird dummy eggs for a day or two and after she seems thoroughly satisfied gently slip the real eggs under her. Also give the bird, nests and eggs a careful dusting with insect powder. Do this two or three times during the period of incubation and the chicks will not be badly infested with lice. A dust bath handy for the hen to use when she is removed for her daily feed will add greatly to her health, comfort and contentment. Corn, grit and some kind of green food should be given the setters daily. Carefully remove the birds from the nests and let them have ample time for food and exercise. See that they do not remain off the nests too long. A good setter will usually return to the nest as soon as her hunger is satisfied and she has indulged in a dust bath. This daily airing helps with the hatch and also keeps the bird in good condition.

Where a machine is used it should be thoroughly cleaned and disinfected. Put it in shape and run it at least 24 hours before placing the eggs on the trays. Be sure everything is running smoothly and an even temperature is maintained. A dry cellar is the best place for the machine, but any unused room will do. Do not place it in the sunshine or near a stove, also avoid a place subject to drafts. Test the eggs the same as if under hens. If the air space is too large add to the moisture, if too small put a pan of dry lime in the room and hold back moisture until the air space is right. Careful attention to detail in the matter of temperature is essential. Keep the lamp clean and fill it regularly. Smoke is harmful. Finally, study the directions which come with the machine and follow them as closely as possible. Common sense is a requisite that may help considerably where conditions are variable. C. H. C.



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This is the "Tycos" Cup won by my Belle City Incubator in the Championship Contest for the best hatching, beating incubators costing two to five times more.

GET the whole story of these Championship hatches with the Belle City. Get the stories of thousands of men and women who are getting 100% perfect hatches. Over a quarter of a million Eight-Times World's Champion Belle City Hatching Outfits are in use. Satisfy yourself. No other incubator made—not even the highest priced—approaches the amazing records of my Belle City. I have the letters of owners to prove it. Many of these letters are printed in my free book, "Hatching Facts." They tell you how Belle City owners are making the most money in the Poultry Business. How you can make big profits on a small investment. You certainly want this book. It illustrates and describes

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in actual colors. Great big illustrations give you an exact idea of the kind of Hatching Outfit the wonderful World's Champion Belle City is—the kind used by all of the Belle City World's Champion Prize Winners—the kind chosen by the U. S. Government Department of the Interior—the kind used by leading Agricultural Colleges—the kind that won the gold lined Silver "Tycos" Cup. Get full information, proofs and all particulars.

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With the book comes my low price. The greatest incubator bargain ever offered—my personal Money Back Guarantee—tells you the particulars of my one-, two-, three-months' home test. You can't lose. Whether you are going into the egg or poultry business on a large or small scale—no matter what machine you had thought of buying, you want to see my great Free Book of "Hatching Facts," before you make another move. Write for it before you lay this paper aside. Just say: Send me "Hatching Facts," and my whole interesting proposition will come to you Free. Address Jim Rohan, President,

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130-EGG Incubator & 130-CHICK Brooder, both \$10

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Freight paid East of Rockies—Incubators have hot water heat, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Incubator and Brooder shipped complete with thermometers, lamps, egg-testers, all set up ready to use when you get them. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others you will feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Send for FREE catalog today, or send in your order and save time.

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Wisconsin Wins In Big Hatching Contests Every Year

Mrs. J. McMahon, Veedersburg, Ind., in 1910 won in Missouri Valley Farmer Hatching contest, hatching 135 chicks from 130 eggs.	Mr. C. B. Armitage, Atwater, Ohio, in 1912 won in Successful Farming contest, getting 181 chicks from 181 eggs in two hatches.	Mrs. J. W. Mize, Vaughns Mill, Ky., in 1913 won in Successful Farming contest getting 208 chicks from 209 eggs in two settings.	Mrs. F. H. Lewis, Montrose, Pa., in 1913 won in Successful Farming contest getting 96 chicks from 96 eggs in one setting.
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140-EGG Incubator & 140-CHICK Brooder, both \$10

Freight paid East of Rockies—Incubators have hot water heat, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Incubator and Brooder shipped complete with thermometers, lamps, egg-testers, all set up ready to use when you get them. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others you will feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Send for FREE catalog today, or send in your order and save time.

IRONCLAD INCUBATOR CO., Box 117, RACINE, WISC.

Ironclad Wins in 2 Biggest Hatching Contests EVER HELD

Mrs. C. F. Merrick, Lockney, Tex., with her 140 egg Ironclad Incubator wins in the last hatching contest held by the Mo. Valley Farmer and Neb. Farm Journal. She placed 148 eggs in the incubator and hatched 148 strong chicks. Think of that! You can now get these famous winners—

140 EGG INCUBATOR AND 140 CHICK BROODER.

If ordered together, for only \$10.00; freight prepaid east of the Rockies. Incubator is made of California Redwood, covered with galvanized iron and asbestos, hot water type, triple walls, copper tank and boiler, self-regulating, Tycos thermometer, O. K. burner, egg tester, nursery; complete, set up ready to run. Brooder is large, roomy, well made with wire scratching yard. Compare material and construction with other makes; if you do you'll surely order Ironclad. Guaranteed 10 years. 30 days trial. Order direct from this ad.; hundreds do; money back if not satisfied. Or write for free catalog. Ask the publishers of this paper about us.

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are not grown in the North or West. They are grown on the eastern shore of Maryland, near the Atlantic Ocean at Berlin.



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Horticulture.

Sod Mulch and Close Planting.

We can find successes among those who use the regular accepted methods of doing things and those who venture along original lines. The methods of the latter should not be mentioned merely because they have been successful but because they might suggest to others a new line of thought which will bring about changes in their methods which will make them more efficient.

Mr. Fred J. Overton, of Van Buren county, is a sod mulch enthusiast, which he is because he has made a success of it. He favored the sod mulch system because it so closely imitated nature with her mulching of the forests, also probably because it involved less labor and expense than the other methods practiced. The main reason, however, was because he was quite sure that he had suitable conditions to make the sod mulch method a success.

The Main Essentials of this System.

He says that the main essential in successful sod mulching is a soil which will produce a good stiff sod and a good growth of grass. The lighter soils would not be as practical for this purpose. Every bit of grass grown in his orchards is cut several times a year and left on the ground

through, the side growths were shortened back and the top headed in. By regular pruning the trees are kept back so as that they do not interlock and each tree has plenty of open space around it. All of the trees are low-headed.

Summer Varieties as Fillers.

The soil of Mr. Overton's orchard is clay and sandy, with a clayey subsoil. The varieties in the orchard are Jonathan, Hubbardston, Sutton's Beauty, and Duchess. The Duchess are set between the other trees so that all of the trees will not make the demand on the plant food and moisture at the same time. When the winter varieties are making their greatest demands the summer varieties are through with their work for the year, is the idea upon which Mr. Overton bases this system of setting.

By practice of the sod mulch system the feeding roots of the trees come close to the surface of the ground, there being a great profusion of them just under the mulching material and often some in the mulch. Due to this, Mr. Overton claims that they are able to take advantage of the moisture from light rains, and even dews, and it is their nearness to the sunlight which he thinks makes



Sod Mulch Apple Orchard Eighteen Years Old.

or put under the trees as far out as the drip of the leaves. If the orchard does not produce enough so as to make the mulching thick enough under the trees some should be brought from other sources to make up the deficiency as it is very essential to have all growth of grass under the trees smothered out by the mulching. Mr. Overton suggests that this is one of the most important points to be considered when following out this method.

This sod mulch enthusiast set his present orchard eighteen years ago. Thinking that low-headed and closely set trees would aid in the practice of the sod mulch system by shading the ground he set his tree for permanent orchard twenty feet apart each way. He did not set the orchard in sod as many do, but cultivated it and grew crops in it for three years. Then he seeded it to clover, alsike and timothy. This seeding grew abundant crops of grass, which was cut and left on the ground. The trees made a splendid growth and when ten years old nearly filled the space allotted to them. Then began a system of pruning to keep the trees within this space. Before this the pruning was only slight, just enough to keep the heads of the trees in fair form. To keep the trees back so as the spray rigs and orchard wagons could go

the good coloring of the fruit in sod mulch orchards.

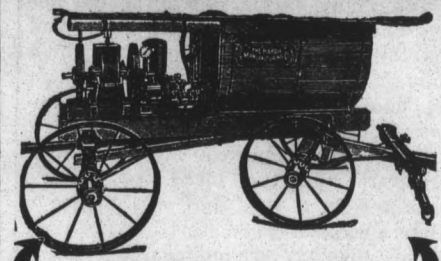
The trees in this orchard average about 17 feet spread and about 14 feet in height, and the plan is to keep them that size. All of the fruit is easily picked from step-ladders which is a big factor in economical harvesting of the fruit.

Protection from Mice and Fire.

In practicing this sod mulch system the protection of the trees from mice is an important factor. Mr. Overton solves this problem by wrapping the bodies of the trees with galvanized wire screen about ten inches wide. Poisoned wheat thrown in the runways of the mice will also easily destroy them. One-half ounce of strychnine dissolved in three-quarters of boiling water and poured over one peck of wheat and let stand for 24 hours makes a good poisoned bait. To protect the orchard from fire post notices in the orchard, "no smoking allowed," or if near a railroad plow a few rows next to the railroad.

Mr. Overton's system is proving to him that it will bring quick results because the trees start bearing early. Economy in the care of the orchard and good quantities of high quality fruit are results this system has given him. He says: "These methods have proven their usefulness and are filling a place in economic fruit-growing.

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TROUBLE DEPARTMENT.

Grafting Cherries.

I have two cherry trees that have been bearing for two years and are not the variety I ordered. Can cherries be cleft grafted as apples are, and at what time should it be done?

Washtenaw Co. W. C.

The cherry tree is one of the hardest of fruit trees to graft. Even in nursery work the results in grafting cherries are not as good as with other fruits. So if one has had little experience in grafting, endeavors to try it on cherries, especially the older trees, he can not expect very good results. This is because of the hard and brittle character of the wood.

The best time to cut cions is while they are dormant. Late fall is usually the time favored by most nurserymen and for keeping until spring they are packed in moist sand or leaves and protected from frost. To get the best results the grafting should be done after the buds have started swelling but before they burst. Care should be taken to have the sap wood or cambium layer of the cion in good contact with that of the stock. All open surfaces should also be well sealed with grafting wax to prevent drying out of the graft and to protect it from the action of the weather.

Plowing Old Sod in Orchard.

Kindly tell me the best way to break a 12-year-old sod in a 25-year orchard set 34 feet apart, and the likely result. Would a row of gooseberries set between each row of apples be profitable?

READER.

It is hard to advise on this matter without more detail as to local conditions. Under ordinary circumstances plowing does an orchard great benefit especially if the trees have not been making a normal growth. In such an orchard plowing will "start things." Plow as shallow as possible near the tree, increasing the depth as you get away from the trees. Plowing to the trees will be the best for the first time, and the plowing should be done as early in spring as possible. Plowing late in May or in June is too late to conserve the moisture as it should be. If the sod is very stiff, disking first, then plowing and disking again after plowing, will bring the soil in good condition quickly.

It is not advisable to put gooseberries in an orchard, as they need plenty of sunlight to assist in keeping them free from fungus troubles. Currants would do well under such conditions, as they do best in partial shade. As far as the orchard is concerned it would be best not to plant anything in it, especially at the age the orchard is now. The trees ought to soon yield profitable crops. The roots of the trees are also undoubtedly so well distributed through the soil that they would take a lot of moisture and plant food from the gooseberries. Should you still desire to plant something in the orchard, currants would be preferable for the reason suggested above.

The Best Legume for Sandy Soils.

Which do you think the best to build up sand soils, alfalfa, mammoth clover, winter vetch, sweet clover or crimson clover?

Genesee Co. J. L.

Winter vetch will undoubtedly give you the best results as a soil builder. It will give more humus in a short time than the other plants mentioned and is also one of the best nitrogen gatherers of the legumes. It is especially adapted to light soils.

Planet Jr.



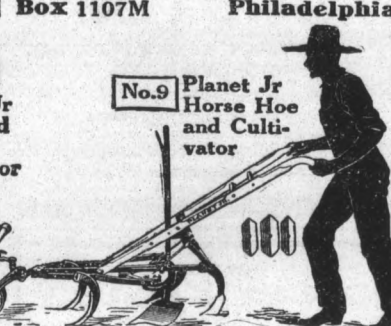
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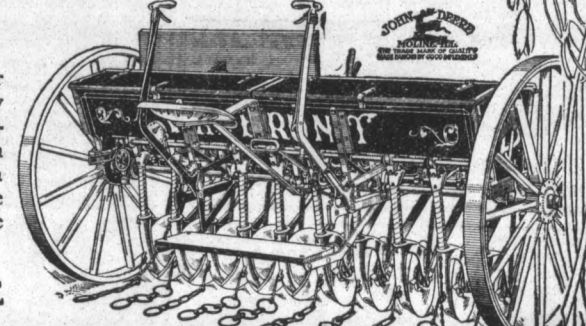
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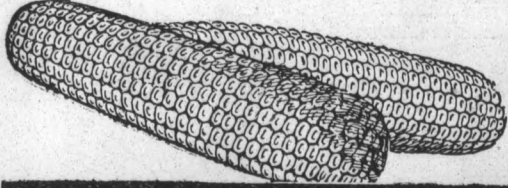
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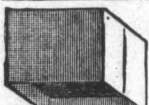
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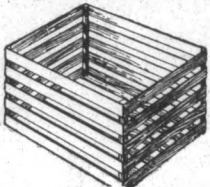
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The strawberry is about the first fruit of note to call attention to our winter needs for sauce and preserves. Let us bear in mind the berry that eats so lusciously on the table, does not yield the product we would pronounce equally luscious in glass. The sour or tart berry, dark all the way through, and firm, is a berry that will deliver the goods. From careful observation and much experience, I believe the Warfield has no equal. It gives a product rich in color and retains its fine flavor. When the Warfield is not to be had in a fine quality, the Senator Dunlap, the real Senator, mind you, for his name has been greatly abused and borrowed, is a good first cousin to the Warfield, and will give a fine finished product. I have been so satisfied with these two varieties that I feel I can recommend them highly. I wish we could have more of these varieties raised with a view to quality and true to name.

Getting Results with Cherries.

Following along with the cherry. We are anxious to get in ahead of the birds, and often put up the fruit before it is properly ripened. As the cherry product depends so much upon its ripeness it stands in hand to be patient. After they look just right they need the plumping process which comes from hanging a few days longer. It is surprising how much larger they will get, and more tender. The Montmorencies are highly praiseworthy and turn out a fine product in tenderness and flavor. The May Duke and Windsor are also good, giving a rich, meaty product. Its hardly fair to pass over our old acquaintance, the Early Richmond. It has its merits. But I would only use it from necessity.

With the currant, also, a great deal depends on its stage of ripeness for successful treatment. Proper culture will usually insure a good currant, which means a good product. The London Market and Cherry currant has been our preference when obtainable. The Industry and Columbus are good varieties to use in gooseberries, and grow to a large size.

Preserving Quality in Raspberries.

In raspberries we have three distinct kinds, black, red and purple caps. The "black caps" are a good lazy man's fruit, giving a good yield from neglect, and making a seedy product. Where it is raised under conditions conducive to its natural development it is so full of juice, has a flavor so mild and delicious it should have a place at the head of the class. The Cumberland has been the most satisfactory with us in our work. In the red varieties the Cuthbert and Marlborough are all that could be desired. The Columbia, a purple cap, should have a place in every man's garden, as it is a poor shipper. It is a cross between the black and red, a blending of the two flavors, with its own delicate flavor added, which makes it a delight to create and consume. It is a great success when put in glass or jelly. I can hardly refrain from a burst of enthusiasm when I speak of this delicacy. When we talk of blackberries I must beg the privilege of saying there is only one variety grown, and that is the Wilson. I have used many varieties, but the Wilson stands without a peer with us. To whatever test we have placed it, it has never been found wanting. The

products are delicious and deserve a place on the President's table.

The varieties of plums are many and well known. With us our best success has been with the Burbank, Green Gage, Bradshaw, and Damson. Where one likes the old-fashioned wild plum flavor, the Abundance is the nearest approach to it.

Again, like the blackberry, for us, there is only one peach for general preserving purposes, and that is the Kalamazoo. Reliable under any form of treatment, yielding a delicious flavor, and the appearance to be desired in glass. The peach is able to champion its own cause and I like anything that's a peach, but notwithstanding, I am loyal to the Kalamazoo.

Canning Quality in the Keifer Pear.

The Bartlett pear is everybody's favorite and so insistent is the pear-consuming public upon having the Bartlett that I am told the noble Keifer is ripened to a golden yellow and dubbed California Bartlett. Not that I am not a friend to the Bartlett, for I am. The catalog says it is "buttery and musky," and I would not presume to contradict the statement. When properly picked and ripened it turns out a product of beauty that is hard to equal. We use many. The Keifer abused Samaritan, "only fit to sell," has great possibilities. Store away in a comfortable place and wait. When so ripe that the juice follows the knife it is ready to be turned into products, the richness and color of which can not be surpassed by any other pear. It bears acquaintance.

In crabapples the Hyslop and Transcent have met with all our requirements and given excellent results. The quince was known as the golden apple of the ancients. We should be glad it has been passed down to us to enjoy and it holds a time-honored place on our fore-mothers' shelves. The Orange quinces are the best and only kind that seem to compensate for the labor incident to preserving.

Everyone should have a goodly store of cooked fruits in some shape. It is health-giving, helps reduce the high cost of living, and is a base of supply which meets emergencies.

Van Buren Co.

R. de R.

INSPECTING TRUNKS.

The trunk of the tree needs due consideration as it connects the top, or money-making end, of the tree with its source of supply, and is therefore indirectly an important factor in successful fruit growing. Very often these cankers of fungus or blight nature, winter injury or its twin sister, sun-scald, will cause injury to the cambium layer or the active living part of the trunk, and therefore check the flow of the sap.

The external symptom of these troubles is a dark, dead looking bark, either rough or smooth, and often cracked open. When cut into the inner bark is of a dark brown color instead of a healthy green.

It would be a good plan to inspect the trunks of the trees early this spring and cut away all the dead and loose bark. All of these unhealthy places in the trunk, from whatever source, should be trimmed back to solid, healthy bark. This should be painted over with pure white lead and raw linseed oil.

It would be well to do this before the scale spraying, so as to get the beneficial fungicidal action of that application on these wounds. If these "bad spots" in the trunk are not treated as above, they will enlarge through decay. Treatment lessens the possibility of decay and gives the wound a chance to heal up. Later in the season another inspection should be made as some places will show up then which were not noticeable earlier in the season.

The Name Burpee

is known the world over as synonymous with The Best Seeds That Grow! Are You willing to pay a fair price for selected seeds of the choicest vegetables and most beautiful flowers? If so, it may prove of mutual interest if you write to-day (a postal card will do) for The New Burpee Annual. This is a bright book of 182 pages that is intensely interesting to every one who gardens either for pleasure or profit. Shall we mail you a copy? If so, what is your address? Our address is

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are as perfect as 30 years' experience can make them. They are made in the right way from the right kind of material. Deming Sprayers aren't in the habit of "getting out of order." They are always ready when you want them, and there are

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Write Today for Free Spraying Guide and Catalog. Tells all about spraying and Deming Spray Pumps. Write for name of your nearest "Deming Dealer."

The Deming Co., 316 Depot Street, Salem, Ohio



Veterinary.

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

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

Rheumatism.—I have four pigs that are stiff and sore in all four legs and I would like to know what to do for them. A. V. S., Grand Rapids, Mich. —If your pigs weigh 100 lbs. each, give them 15 grs. of sodium salicylate at a dose three or four times a day; also give them 15 grs. powdered nitrate of potash once a day and if their bowels are constipated, give them either castor oil or epsom salts. Perhaps you have been feeding them too much corn, not enough oats, oil meal and roots. If you have been giving them dishwater with soap in it, discontinue it.

Partial Loss of Power.—I have a brood sow that is unable to stand on hind legs, but seems to eat well. G. K. D., Howell, Mich. —Your sow has perhaps had too much feed and not sufficient outdoor air and exercise; besides, her ration may have been unbalanced—not enough protein. Give her 15 grs. ground nuxvomica, 1 dr. ground gentian and 15 grs. potassium iodide at a dose three times a day. Rub her back with one part turpentine, one part aqua ammonia and three parts olive oil once a day. Feed her oats and roots.

Melanotic Tumors.—Is there any cure for tail warts on horses? R. W., Holly, Mich. —If the color of your horse is white, the warts or tumors are melanotic and should be cut out. These bunches are seldom found on dark colored horses. If they are warts, cut them out and apply tincture of iron to wound every day or two.

Chronic Cracked Heels.—Last fall my six-year-old horse became diseased with scratches and I have been unable to effect a permanent cure. Have applied sulphur and lard, but they crack open whenever he is used. H. K., Saginaw, E. S., Mich. —Chronic cracked heels are incurable, the skin can never be again restored to its normal condition. Apply one part oxide of zinc and two parts vaseline and if there are any wounds, apply one part iodoform and nine parts boric acid twice a day. One part carbolic acid and nine parts glycerine is a very useful remedy. It is needless for me to say that the horse should be kept in a clean stable and if used in wet and slush, the legs should be bandaged in cotton until they dry. You will find benefit by giving him ½ oz. doses of Fowler's solution three times a day.

Indigestion.—During the past 12 months my five-year-old mare has had three attacks of indigestion. We have no Vet. near here and I gave her 2 ozs. of turpentine in a quart of raw linseed oil and this seemed to help her. Is there any way of preventing these attacks? J. K., Carsonville, Mich. —Careful feeding, avoid over-loading the stomach with food that is hard to digest, lack of exercise, allowing the animal to drink large quantities of ice cold water at one time, and allowing the bowels to become constipated are common causes of indigestion. Give a tablespoonful of ground ginger, a tablespoonful of cooking soda and a tablespoonful of powdered charcoal at a dose in feed two or three times a day; not forgetting to add a small quantity of salt to each meal. If she has an attack, give salicylic acid or hypo-sulphite of soda or aromatic spirits of ammonia, every hour or two, until relief comes. It is always good practice to give cathartics of either oil, aloes or salts.

Laryngitis.—Several of my hogs cough after leaving their nest and when eating. They also breathe somewhat like a heavy horse. When standing their back is arched. One of them has been out of condition for six weeks. I am feeding them corn and bean meal and slop from house, and I usually warm it. W. B., Coral, Mich. —Are you sure that the dust and filth where they sleep has no bad effect on their air passages, perhaps the dust in bedding causes them to cough. Give each hog 10 grs. of powdered nitrate of potash and 10 drops of fluid extract belladonna at a dose three times a day. Also feed them warm food and less corn.

POULTRY.

YOUR HENS YOUR FARM YOUR MONEY

should get the FREE POULTRY BOOK and Catalogue written by ROBERT ESSEX well known throughout America. After 25 Years With Poultry. It tells how to make most from eggs and Hens for Market or 'Show', contains Pictures of 30 Poultry Houses, tells cost to build, describes AMERICA'S LARGEST LINE OF INCUBATORS AND BROODERS—\$2.25 to \$48 each. Write today. Robert Essex Incubator Co., 113 Henry St., Buffalo, N. Y.

1914—Big Poultry Year

Shortage of beef, pork, mutton, means poultry meat and eggs. Big poultry profits for wise poultry men. Right equipment means almost sure success. **CYPHERS INCUBATOR & BROODER** World's Standard. Self-regulating and self-ventilating. Big Poultry Guide Free. CYPHERS INCUBATOR CO. Dept. 35 Buffalo, N. Y.



\$6.00 FOR THIS 150-EGG INCUBATOR

With brooder, \$8. Also 70-Egg Incubator \$4, with brooder, \$6. Our Direct From Factory Plan makes these exceedingly low prices possible. Machines are fully equipped—all set up and ready for use. Write Today for circular, or order direct from this ad and get started. **WOLVERINE SALES COMPANY, Dept. C, 711 Delaware St., Grand Rapids, Mich.**

SAVE YOUR CHICKS

We can help you. Send us names and addresses of ten poultry friends and receive our revised 32-page book on "WHITE DIARRHOEA," the greatest foe to Chick Life. This book makes Poultry Profits Possible, gives care and feeding of chicks and turkeys, also cause and guaranteed cure for bowel trouble. Above book FREE for the names. Postpaid. Write today; the value will surprise you. **F. K. REMEDY CO., SECOND STREET, ARKANSAS CITY, KANSAS.**

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CHICKS—We ship thousands each season. Booking orders now for spring delivery. Prices always right. Free booklet. **Freeport Hatchery, Box 12, Freeport, Mich.**

BUFF PLYMOUTH ROCKS—Heavy winter layers. Eggs \$2.00 per setting. Write wants. **GEO. W. WAGNER, Ann Arbor, Mich.**

Barred Rock Cockerels, Hens and Pullets. **W. O. COFFMAN, R. No. 6, Benton Harbor, Mich.**

LILLIE FARMSTEAD POULTRY B. P. Rocks, R. I. Reds, and S. O. W. Leghorns eggs for sale, 15 for \$1.25 for \$1.50; 50 for \$2.50. **COLON C. LILLIE, Coopersville, Mich.**

EGGS—From S. O. Black Orpingtons, prize winners, good color, good size, good shape, good layers. **Elmer 15, 15A F. NEWTON, Nashville, Michigan.**

Eggs for Hatching—From white Indian runner and Pekin ducks. White African guineas. **H. V. Hostetler, Route No. 1, St. Johns, Mich.**

PRIZE WINNING BARRED ROCKS, S. O. Reds, Pekin and Indian Runner Ducks. Stock for sale, eggs \$1 up. Chicks, circular free. **ELWOOD FARM, R. 13, Grand Rapids, Mich.**

PINECREST WHITE ORPINGTONS, Won at Great Round Up Show, Detroit, Jan. 1914, 1st cockerel, 1st pullet, 2nd hen, 5th cock out of four entries. **Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Michigan.**

PLYMOUTH Rock cockerels 5 lb. to 11 lb., according to age. Price \$2 to \$3. Mammoth Bronze Turkeys 8 lb. to 35 lb., according to age. Price \$3 to \$25. Eggs in season. **A. E. ORAMTON, Vassar, Mich.**

BARRED P. Rocks—Cocks, Hens, Cockerels & Pullets for sale. Also trios and pens mated right. Guarantee to satisfy you. **Ostrander Bros., Morley, Mich.**

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S. C. White Leghorn Cockerels—Fine utility birds. Price \$1.50 and \$2. **ALFADALE FARM, R. 8, St. Johns, Michigan.**

S. L. WYANDOTTE EGGS—From great laying strain of Blue Ribbon Birds. Satisfaction guaranteed. **F. E. COWDREY, Ithaca, Mich.**

WHITE Wyandotte Cockerels, a few nice ones to close out at \$2.50 and \$3.50 each. Vigorous and fine breeders. **A. Franklin Smith, Ann Arbor, Michigan.**

SILVER, GOLDEN and WHITE WYANDOTTES. White Stock Especially good, send for circular. **Browning's Wyandotte Farm, R. 30, Portland, Mich.**

WHITE LEGHORNS DAY-OLD-CHICKS—Wyckoff Strain. **Maple City Poultry Plant, Box C, Charlotte, Mich.**

Tells why chicks die

J. C. Reefer, the poultry expert of 1604 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this disease almost always over night. All actually raises 98 per cent of every hatch. All poultry raisers should write MR. REEFER for one of these valuable FREE books.

BREEDERS' DIRECTORY.

CATTLE.

ANGUS CATTLE FOR SALE

We have on hand several choice pure-bred Angus bull calves which can be sold for immediate delivery. These calves are sired by Louis of Viewpoint, a Grand Son of Lucy's Prince, the International Grand Champion bull for three years in succession. We also have for sale a few choice heifers from this herd bull. Will make a price on Louis of Viewpoint as some of his heifers are old enough to breed. Address **GLENWOOD FARM, Addison, Michigan.**

ABERDEEN-ANGUS

HERD FOUNDED IN 1900. Strains represented consist of Trojan Ericas, Blackbirds and Prides, only. Black Quality, a bull of rare individuality and merit, heads the herd. **WOODCOTE STOCK FARM, Ionia, Mich.**

CLOVERLY FARM—Registered Aberdeen Angus stock, 5 young bulls and 3 cows for sale. **GEO. HATHAWAY & SON, Ovid, Mich.**

AYRSHIRES—One of the foremost dairy breeds. Bull calves for sale. Write for description. **Michigan School of the Deaf, Flint, Mich.**

HOLSTEIN BULLS AT FARMERS PRICES Sired by one of the best bulls of America. **LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.**

\$350—Bays a registered Holstein cow 7 years old, fresh March 8th, 1914. Calf contracted at \$150 if a heifer or \$100 if a bull when 8 months old. **B. B. REAVEY, Akron, Michigan.**

HOLSTEIN FEMALES—Two choice butter boy heifers, 1 A. R. O. Butter Boy 3 year old fresh in March, and a grandson of Hengerveld DeKol. Fine start for some one. **ANDREW C. BROWN, Hastings, Mich.**

Holstein Bull Calf 5 Mo. Old—A splendid individual, nearest dams have A. R. O. records that average butter. 7 days 24.35 lbs. **W. B. READER, Howell, Mich.**

GUERNSEYS—Reg. Tuberculin Tested. **Windermere Farm, Watervliet, Mich.** **J. K. BLATCHFORD, Auditorium Tower, Chicago, Ill.**

REG. HOLSTEINS—4 months old bull, by 33-lb. sire, Dan, a 41-lb. straw daughter of a 41-lb. sire. His grand dam made 21.94 butter as a 3-yr.-old. His dam made 19 lbs. butter, ave. \$2.47 lbs. milk. If interested write. **R. G. Brown, R. 3, Fowlerville, Liv. Co., Mich.**

SQUARE DEAL HOLSTEIN FARM offers you this bull calf to improve your herd. Born Jan. 25, 1914. His grand sire has 11 A. R. O. daughters. His grand dam made 21.94 butter as a 3-yr.-old. His dam made 19 lbs. butter, ave. \$2.47 lbs. milk. If interested write. **R. G. Brown, R. 3, Fowlerville, Liv. Co., Mich.**

HOLSTEIN FRIESIAN CATTLE BREEDERS of high record cows. Young bulls at farmers prices. **JONES & LUTZ, Oak Grove, Michigan.**

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The Michigan Home and Training School, Lapeer, Mich. Offers Choice Purebred Holstein Bull Calves, 1 to 7 mo. old. Also choice grade Holstein heifers out of good milk producing dams. List furnished upon application.

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Registered Holsteins.

A Fine Foundation Holstein Herd For Sale Minnie Butter Boy 4th. No. 71404. Dam, Pauline DeKol. Butter in 7 days, 26.53 lbs. fat 4.22%. Sire Minnie Butter Boy, No. 2908, with 11 A. R. O. daughters, he by Pontiac Butter Boy, with 57 A. R. O. daughters, May Hartog Beauty, A. R. O. No. 219731. **Kekke Hengerveld DeKol 4th. No. 179558 A. R. O. Anna DeKol Meethilde, A. R. O. No. 157734. Canfield Meethilde DeKol, A. R. O. No. 151571. Kenilworth Duchess, A. R. O. No. 163381.**

These cows are three years old, all with good A. R. O. records, from A. R. sires and out of A. R. O. dams, and all bred to A. R. bulls. I never have offered as good a lot for sale as these. Price \$3000 for the six. I also have bulls and bull calves that will please you.

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

JERSEYS—Bulls calves bred for production. Also cows and heifers. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

JERSEYS—Two yearling bulls, well bred and well grown. We invite personal inspection. **SMITH & PARKER, Howell, Michigan.**

MAPLE Lane Register of Merit Jersey Herd—Tuberculin tested by the U. S. Bureau of Animal Industry. Bull calves from cows of R. of M. test. No females less than \$100. Average of R. of M. herd, 526 lbs. of 85% butter in one year. **IRVIN FOX, Allegan, Mich.**

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

For Sale Jersey Bull—1-yr. old, also 2-yearling heifers sired by a grandson of Imp. Interested Prince. The Dams are large healthy high producing cows. **Newman's Stock Farm, Marietta, Mich. R. 1.**

FOUR Shorthorn Bulls for Sale, roans, eight to ten months old. Also two registered cows due in March. **W. E. MORRIS, Flushing, Michigan.**

REGISTERED Shorthorn Bull Rupert 2nd 336001 four years old the 25th of March. Color roan. Price \$150. **J. Wallace Smith, R. No. 1, Watervliet, Mich.**

OUR HERD BULL FOR SALE—At beef price. Reg. Shorthorn. A fine animal. Also 2 young bulls. **Robt. Knight & Son, R. No. 1, Marietta, Michigan.**

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DAIRY BRED SHORTHORNS—of best bates Strains 25 years a breeder of Shorthorns. **J. B. HUMMEL, Mason, Michigan.**

YOUNG SHORTHORN BULLS—Strong in Bates blood \$100 to \$150 each. **WARNER BROS., Almont, Michigan.**

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BERKSHIRE For Sale—Sow Bred for April farrowing and a choice lot of fall pigs either sex. **A. A. PATTULLO, Deckerville, Michigan.**

BERKSHIRES Choice spring boars and gilts, priced to move quick. **Farmers stock. ELMHURST STOCK FARM, Almont, Mich.**

O. I. C.—Spring Boars all sold, fall pigs ready to ship, also a few choice red polled heifers. **JOHN BERNER & SON, Grand Ledge, Mich.**

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

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

O. I. C's.—Two Good Last spring boars, pigs on hand. **OTTO B. SCHULZE, One-half mile west of Depot, Nashville, Michigan.**

O. I. C. SWINE—Bred gilts all sold. Have a No. of Spring pigs on hand. Will book orders for Sept. pigs, get my price on pairs and trios not akin. **A. J. GORDON R. No. 2, Dorr, Mich.**

O. I. C.—18 months and 4 months boars. Also taking orders for spring pigs. **Oak View Farm, N. H. Weber, Prop., Royal Oak, Michigan.**

O. I. C.—16 sows bred for spring farrow, 30 fall pigs, large and growthy. Write your wants. **GLENWOOD STOCK FARM, Zeeland, Mich.**

O. I. C's—Bred gilts all sold. Summer and fall boars weighing 125 to 160 lbs. All of right type. I pay express. **G. P. Andrews, Dansville, Ingham Co., Mich.**

O. I. C.—Extra choice bred gilts, service boars and spring pigs, not akin. From State Fair winners. **AVONDALE STOCK FARM, Wayne, Michigan.**

Chester Whites—Fall pigs, either sex, orders taken for spring pigs. Write your wants. Price & quality right. **Meadow View Stock Farm, Holland, Mich.**

Chester Whites—Reg. Bred Gilts—Orders taken for spring pigs and Collie pups. Holstein Bulls at Bargains. **FAY B. FARHAM, Bronson, Mich.**

O. I. C's All sold. Would be pleased to book your order for spring pigs. **C. J. THOMPSON, Rockford, Michigan.**

O. I. C. GILTS—bred for June farrow, and a few choice fall boars. **CLOVER LEAF STOCK FARM, Monroe, Mich.**

DUROCS—Spring pigs all sold. Fall pigs, either sex. Prices reasonable. **S. C. STAHLMAN, CHERRY LAWN FARM, R. 2, Shepherd, Michigan.**

DUROC JERSEYS—Fall pigs of the large heavy boned type, pairs not akin. **F. J. DRODT, Monroe, Michigan, Route No. 1.**

Duroc Jerseys—A few bred sows for sale, also a few registered Shropshire. **Ewes bred for April. M. A. BRAY, Okemos, Ingham Co., Michigan.**

Fancy bred Duroc Jerseys—Boars & Gilts of spring & summer farrow. Good individuals at reasonable prices. **John McNicoll, Station A, R. 4, Bay City, Mich.**

KORN-EL STOCK FARM now offer Duroc Jersey pigs of either sex at reasonable prices. **E. R. OORNEILL, Howell, Michigan.**

Durocs—25 large high class sows, bred for March & April to Barney Crimson, Cherry Advant & Oak and Fancy. Write or come & see. **J. C. Barney, Coldwater, Mich.**

Durocs—2 spring gilts about 200 lbs. \$35 each. 1 spring gilt about 170 lbs. \$30. All April and first of May farrow, 3 extra good yearlings about 300 lbs. due to farrow April 15 and 16, price \$50 each if taken soon, not fat, in good breeding order, bred to a son of the Jr. Champion at the International Chicago, 1911. (All immuned.) Come or write. **H. G. KEESLER, Cassopolis, Michigan.**

DUROC JERSEYS—10 Bred Gilts for Sale **CAREY U. EDMONDS, Hastings, Michigan.**

Duroc Jersey—Bred gilts, heavy bone, sired by prize winner boar, bred for last of March and April farrow good cherry color, weight around 300 lbs. \$50 each, come or write. **Frank Mathews, Bristol, Ind.**

Duroc-Jerseys—Spring boars from prize-winning strains. Sows all ages. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

LARGE TYPE P. C.—Largest in Mich. Bred gilts all sold. A few good fall pigs left. Watch this space for something large and good, they please where ever they go. **W. E. LIVINGSTON, Parma, Michigan.**

POLAND CHINAS—The large prolific kind; bred gilts at farmers prices. **ALLEN BROS, Paw Paw, Mich.**

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

POLAND CHINA SWINE, Shorthorn cattle, Oxford sheep and B. P. Rocks. High grade Holsteins and Guernsey calves. **Robert Neve, Pierson, Michigan.**

POLAND CHINAS—Bred sows all sold. Some good growing fall pigs. Prices right. **G. W. HOLTON, R. No. 11, Kalamazoo, Mich.**

Poland China Boars; Sows Bred, All of the Big Type. **A. A. WOOD & SON, Salline, Michigan.**

LARGE T. P. C.—Measurements of one of my top heart girth 57½, loin 59½, bone small part hind legs 7¼ in. Weight close 350 lbs. Can spare Big Wonder, weight close 350 lbs. **H. O. Swartz, Schoolcraft, Mich.**

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. We have 25 big boned boars ready for service. Buy one and make more money on your hogs. You can't get any better at any price. **P. C. History Free. J. C. BUTLER, Portland, Mich.**

Poland China Bred Sows Fall Pigs and Minorca cockerels. Satisfaction guaranteed. **R. W. MILLS, Salline, Michigan.**

30 Poland China Fall Pigs—Good ones from immune sows \$10 and \$15 each, while they last. Bred sow sale Feb. 27th, send your name for catalog if you want to buy Big Types with Quality. **Wm. Waffle, Coldwater, Mich.**

350 BIG TYPE MULE FOOT HOGS—America's Champion Herd. Prolific, hardy, Best for Mich. Also Ponies. **J. DUNLAP, Box M, Williamsport, Ohio.**

Mule Foot Bred sows, bred gilts and boar pigs, not related, for sale. Satisfaction guaranteed. **G. C. KREGLOW, Ada, Ohio.**

LARGE YORKSHIRES—Fall pigs, both sexes, pairs not akin. Yearling sows bred for March farrow. **GEO. L. McMULLEN, Grand Ledge, Mich.**

Yorkshires All Sold—Will have some later. **MEADOWLAND FARM, Waterman & Waterman, Ann Arbor, Mich.**

YORKSHIRES

The large, long-bodied, heavy-boned prolific kind. Sows and gilts bred for spring farrow. 60 head of September, October and November pigs. Prices reasonable. **W. C. COOK, R. 42, Ada, Michigan.**

Lillie Farmstead Yorkshires

Spring gilts, splendid ones. Fall pigs, either sex. Gilts bred for spring farrow. **COLON C. LILLIE, Coopersville, Michigan**

BUSTED PRICES!

Our Great 1914 Offer!!

CHANG!!

No Money Down

WIRE & FENCING PRICES

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BUILDING MATERIAL PRICES

Here is the Greatest Sale ever advertised—the opportunity you have long sought for—a chance to buy staple lumber and building material—Roofing, Wire, Fencing, Furniture and Household Goods of every kind and description, in fact, Merchandise of every nature, at unheard of low prices.

We are determined that the Spring of 1914, will be the most successful in the history of this Great Company, and the Wise man will take early advantage of the great bargains shown in this advertisement.

You can order a complete carload of building material from us, including everything you need to construct and equip and we will ship it to you, without one cent cash in advance.

All we want to know is that the money will be paid us as soon as the material is received, unloaded and checked up.

Lumber Prices S-m-a-s-h-e-d

Yes, we mean smashed. Absolutely busted to pieces. We quote prices on lumber that will positively save you big money. If you will send your lumber bill we will send you a freight paid price that will mean a saving to you of from 30% to 50%. Every stick is absolutely first class, brand new and fully up-to-grade such as you would buy from any reputable house in the United States.

We have determined that the year of 1914 is going to be the Banner year in our great lumber department. We have on hand 20,000,000 feet of high-grade lumber suitable for the construction of Buildings, no matter for what purpose intended. Come to our great yards in Chicago and let us show you this stuff actually in stock. No other concern in the world has a more complete stock of everything needed to build, whether Lumber, Shingles, Structural Iron, Plumbing, Heating, Doors or anything else that you may need. Do you know that lumber is getting scarcer and scarcer every year? Yet our prices are lowest and will continue so until our stock is gone. WRITE TODAY.

Shingles At Big Saving

We have a special lot of 1,000,000 5 to 2 10 inch Clear Shingles on which we are making an exceptionally low price of \$2.80. Order by Lot No. MS-40.

This Door at 98c

Lot CD-39. Four panel painted door, size 2 ft. 6 in. x 6 ft. 6 in. 500 in stock. A high quality door for the price. This is only one of our many special bargains. Our grand Building Material Catalog and Bargain Sheets will show a full line of inside Mill-work of all kinds.

Free Building Book

A 200-page Book of Bargains in Millwork, Building material of all kinds, including Paints, Plumbing, Heating, Structural Iron, Metal and Co position Roofing, Hardware, Carpenter's and Blacksmith's Tools, Wire Fencing. No prospective builder should be without it. It is Free.



ROOFING PRICES SMASHED!

Galvanized Steel Roofing Is Fire, Water and Lightning Proof

We bought 20,000 squares of this Corrugated Iron Roofing, which we offer at this remarkably low price. It is new, perfect, and first-class, but light weight. The sheets are 22 x 24 in. x 1 1/4 in. corrugated. Our price of \$1.25 per sq. ft. is f. o. b. cars Chicago. When ordering this item, specify Lot No. CD-700. This is not galvanized, but black steel roofing.

\$1.25
per 100 sq. ft.
buys best
steel roofing

Write us today for our special FREIGHT PREPAID PRICES on new, galvanized roofing. We are offering prices lower than ever before offered in the roofing business. Galvanized roofing at \$2.75 per square and up. Ask for free samples. We can furnish anything needed in Roofing, Siding or Ceiling.

62c Per 108 Square Feet Buys Best Rubber Surfaced "Ajax" Roofing

Here again we show the lowest price ever known for roofing of quality. This smooth surfaced roofing we are offering is our one-ply "Ajax" brand, and the price includes necessary cement and caps to lay it; this price is f. o. b. Chicago; at 85c per square, we pay the freight in full to any point East of Kansas and Nebraska and North of the Ohio River, provided your order is for at least 3 squares. Prices to other points on application.

Roofing is guaranteed to wear as long and give as good service as any Ready Rubber Surfaced Roofing on the market. It is put up in rolls of 108 square feet and contains 3 to 4 pieces to the roll. We have other grades of Ready Roofing, which we offer at prices easily 30 per cent below regular quotations. Write today for free samples and Roofing Catalog. Fill in the coupon.



Fill in This Coupon

HARRIS BROTHERS CO., Dept. C. D. 42 Chicago
Send me free of cost the following catalogs (Place an X mark in square opposite the catalogs you wish)

- | | |
|--|--|
| ☐ Catalog of 50,000 Bargains | ☐ Building Material |
| ☐ Plan Book of Houses & Barns | ☐ Roofing, Siding and Ceiling |
| ☐ Wire and Fencing | ☐ Plumbing & Heating |
| ☐ | ☐ Paint |

My Name is.....
My Address is.....
County..... State.....
R. R. P. O.

CHICAGO HOUSE WRECKING CO.

Now operated under the name of
HARRIS BROTHERS COMPANY

FOR 22 years the CHICAGO HOUSE WRECKING COMPANY has been well and favorably known to the public. During all these years the four Harris Brothers have been the executive officers and owners and for that reason have been finally decided to operate under the name of HARRIS BROTHERS COMPANY.

There is no change in our business, except that in the future the four Harris Brothers will advertise and sell their goods, heretofore advertised and sold under the name of the CHICAGO HOUSE WRECKING COMPANY, under the new name of HARRIS BROTHERS COMPANY.

Why We Are Called the Great Price Wreckers

Consider what becomes of the stock of goods, when a manufacturer or big retail merchant goes bankrupt or "busted" as the saying goes. It is estimated that about ten thousand merchants annually meet with business disaster—this is why our company exists. If the stocks are sufficiently large and the goods are new and desirable, they find their natural way to our great forty acre plant for distribution at a small added profit, to our thousands of customers, who in this way take the benefit of wonderful bargains. In many cases our prices do not even represent the original cost of production. We stand foremost in our line. We recognize no competition. That's why we are called "THE GREAT PRICE WRECKERS."

Our Binding Guarantee

We guarantee absolute and complete satisfaction. There is no half way about this guarantee. Every purchase you make from us will be exactly as represented and you will be satisfied in every way, or we will make such just amends as are within our power. We will take back any unsatisfactory article at our freight expense both ways and refund your purchase price. We refer as to our responsibility to the publisher of this or any other publication or any bank or express company and to the public at large.

We Sell Practically Everything

Our stock includes practically "everything under the sun." It's in truth, from a needle to a locomotive. No matter what your vocation, or what position in life you occupy, or what your business, or how great a merchant you are, you have use for us, and we have the goods that you can buy from us to a decided advantage. The quicker you learn to recognize this fact, the sooner you will be "putting money in your pocket."

Our stock includes Building Material, Lumber, Roofing, Sash, Doors, Millwork, Wire and Fencing, Hardware, Plumbing Material, Heating Apparatus and Supplies, Furniture, Household Goods, Rugs, Stoves and everything needed to furnish or equip your home, your club or hotel. It includes Groceries, Clothing, Dry Goods, Boots and Shoes, Furnishing Goods and every single article to clothe a man, woman or child. It includes Sporting Goods, Fishing Tackle, Hunting Outfits, Tents, Guns, Harness and Vehicles, Jewelry, Sewing Machines, Clocks; also structural iron needed in construction of buildings, bridges, etc. Machinery, gasoline, gas and electric power outfits. In fact you cannot think of a single manufactured article that we cannot supply you at a saving in price. Let us convince you—it means but little effort on your part to prove the truth of all we say. Write us today for our Catalogue and literature. Fill in the coupon shown below.

THE GREAT PRICE WRECKERS

LETTERS FROM CUSTOMERS

\$1,000.00 Saved

Everything arrived in good condition. I saved on the building; also heating plant and bathroom outfit about \$1,000.00 as this kind of lumber would be very dear here.

Signed (LEWIS YOUNG, Pennsylvania.

\$700.00 Saved

I am perfectly satisfied. Don't be backward in referring to me, for you have done more than you agreed to. I saved \$700.00 and also got better material, and a better house.

(Signed) JOHN J. DUNN, Ohio.

Satisfied With Furnace

The furnace I got from you is perfect in every way. I would not be without it one winter for double its price. If farmers only knew how easy it is to install it, they would not be without it.

(Signed) HENRY D. CHARTER, Canada.

Used 12 Years and In Good Condition

Some 10 or 12 years ago, I bought quite a bill of Black Corrugated Roofing from you, and only painted it twice since I laid it, and it is in just as good condition today, as the day it was laid. Please send me your catalog, as I expect to put up a barn next Spring and am looking for something for a roof as good as that bought from you last time.

(Signed) W. W. STODDARD Ohio.

Will Order More

Am pleased to say the roofing all here and in splendid shape. Allow me to congratulate you on prompt delivery. You will receive more orders from me.

(Signed) D. DUELLLO.

Recommends Our Paint

I have used your Premier Paint in this salt atmosphere for the past four years and find it better for this climate than any paint I can buy, no matter what the price. (Signed) W.A. WEIDE, Florida.

\$13 BUYS COMPLETE BATHTUB

This is a white enameled, cast iron, one-piece, heavy roll rim bathtub; fitted with the latest style nickel-plated trimmings, including Fuller double bath cocks for hot and cold water, nickel-plated connected waste and overflow and nickel-plated supply pipes. It is 5 ft. long and is good enough to answer the needs of any one. Lot 6CD-101.



Hot Water Heating Plants

We are headquarters for steam, hot water and warm air heating plants. They are suitable either for new or old homes. It is easy to install one of these plants in your old building. For this great Fall Sale of ours we are offering a warm air heating plant large enough for the ordinary 5 room house, with all necessary plans and complete instructions for installing, for \$45.00.

Iron Pipe and Fittings

Good iron pipe in random lengths complete with couplings, suitable for gas, oil, water and conveyance of all liquids; size 3-8 to 12 inches; our price on 1-in. per foot 3c; 1 1/4-in. at 4c per foot. Complete stock of valves and fittings. Send us your specifications.

AXMINSTER RUGS at 75c

We bought at New York Auction an enormous stock of high grade, brand new rugs and floor coverings. This is a sample of our money-saving bargains. Write for complete Free Rug Catalog, showing actual colors.

FURNITURE

We are the World's Bargain Headquarters for the outfitting of your home, club, lodge or hotel, from the very latest to the finest. An assortment of Household goods and everything such as will be found in no other institution in the land. Write for free copy of our Furniture and Household Goods Catalog.

A THOUSAND PAGES OF BARGAINS

Write us today for a copy of our Great Big Spring Price Wrecker now off the press. It is the most stupendous Book of Bargains ever produced. It contains a thousand pages of matter true to life and describes the merchandise we are offering for sale so plain and correct that you will experience no trouble in making your selections.

It is a wonderful book of Bargains and can be used every day of your Buying Life. You need it whether you are a customer of ours or not.

WRITE US TODAY.

\$759 Buys the Material to Build This House

This is Our House, No. 6A
A beautiful up-to-date full 2 story, 7 rooms and bath, home. The biggest bargain in the world. Copied and imitated all over the U.S., but our price and quality cannot be equaled. The price is easily 25 to 50 per cent below local dealer's prices. Immediate shipment right from our Chicago stocks, where you can come and see it loaded. NO MONEY DOWN. \$2.00 buys perfect Blue Print Plans, complete specifications and detailed descriptive material list, with a refund of \$1.50 if you do not like them.



Original Methods

We are the originators of a system of selling practically complete Houses direct to the consumer, at a great saving. We eliminate all in-between profits. We sell and ship direct to you from our own stocks. Great care and study has been given all our Plans. Economy is the watch-word both in materials and construction.

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Our Binding Guarantee both as to quality and quantity goes with every sale. Write us for letters from people in your vicinity who have bought from us. We have thousands of unsolicited testimonials.

SPECIAL INFORMATION

If you intend building, you will lose money if you don't write us at once. Tell us what you want. We will answer you promptly and give you valuable information regarding building. Send rough pen and ink sketch showing the kind of house you want. We will make you a freight paid price that will save you big money on material necessary to build same. Every stick first class. If you intend to make improvements, write us what they are, and we will help you to save money on your purchases.

Our FREE BOOK OF PLANS

Our Book of Plans contains 120 pages of different kinds of buildings. Everything from a 2 room Portable House for \$147.50 to the finest kind of a residence. Houses are completely illustrated showing the floor plans, prices, etc., and it's free.



Wire and Fence Prices Smashed!

Barb Wire Less Than 2c Per Rod

New Galvanized, heavy weight barbwire, put up on reels about 100 lbs. to the reel. Lot 2-CD-36 per 100 lbs. \$1.95. Galvanized barb wire, Light weight, best grade. Put up on reels, 50 rods to reel, 2-point barbs. Lot 2-CD-28, per reel, \$1.40.



WIRE NAILS, Per Keg, \$1.28

5,000 kegs, put up 100 lbs. to the keg mixed, all kinds together, regular nails, such as made by nail factories. Lot 2-CD 33, price per keg, \$1.28. 1,000 kegs of 10 penny-weight regular new wire nails, 100 lbs. to the keg, while they last, per keg, \$1.55. Write for our free Wire and Fence Catalogue. Gives valuable information to any land owner. Fill in the coupon below.

SMOOTH GALVANIZED WIRE 100 lbs. \$1.00

Stable for fences stay wires or any ordinary purpose. This wire is irregular, in length, ranges from 50 to 250 ft., and one gauge only to a coil. \$1.00 per 100 lbs. is in lots of 1000 lbs. Write for special quotations in other quantities.



15c per Rod Buys Heavy Hog Fencing

Here is another one of our remarkable bargains. A good heavy fence, bought from Ohio flooded factory, perfectly adapted for hogs and general farm purposes, 26 in. high, square mesh, put up in suitable size rolls. Lot 2-CD-31, price per rod 15c. Other heights in proportion. Staples 100 lbs., \$1.75.

BEST QUALITY READY MIXED HOUSE PAINT

Our paint department is under the personal supervision of Mr. V. Michaelson, for 30 years the foremost paint man in America. His picture has appeared on over 5,000,000 cans, and his name is known from ocean to ocean. Paint of quality is his specialty. Every gallon has our strongest guarantee. Our Ready Mixed Barn Paint at 56c a gallon will outlast any similar paint produced. If you want quality paint, write us or write to Mr. Michaelson if you prefer. Finest, most valuable paint book ever published sent FREE. Send coupon.

95c
Per Gal.

HARRIS BROTHERS CO. 35th and Iron Sts. Chicago