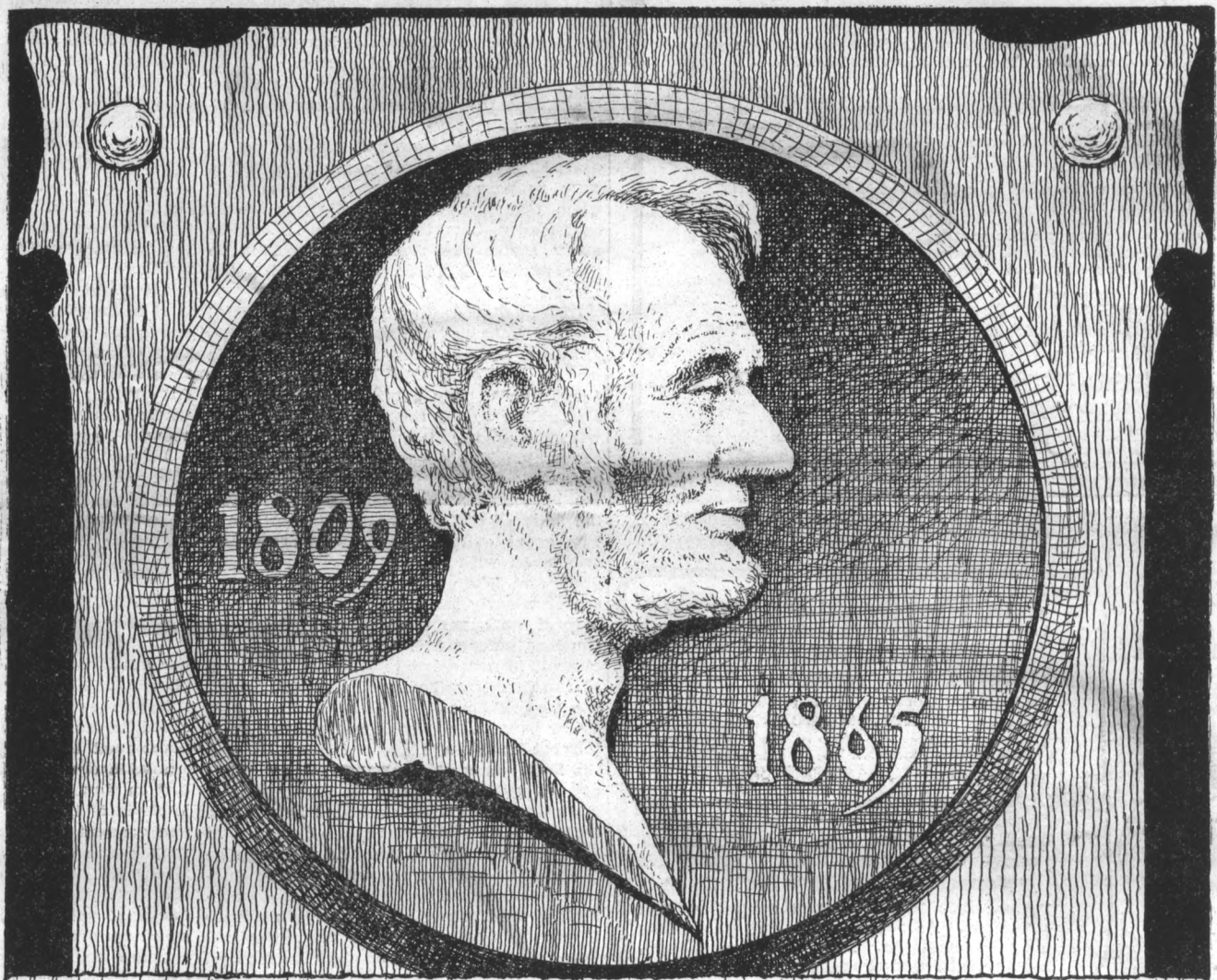


MICHIGAN FARMER



GOVERNMENT OF THE PEOPLE, BY THE PEOPLE, FOR THE PEOPLE.



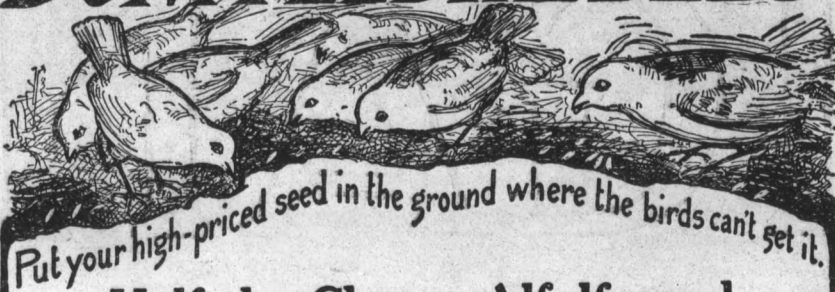
ED. O. PEETS.

VOL. XLII

DETROIT, MICHIGAN, SATURDAY, FEBRUARY 7TH 1914.

No. 6

DON'T FEED THE BIRDS



Put your high-priced seed in the ground where the birds can't get it.

Half the Clover, Alfalfa and Grass Seed Planted is Wasted

There never was a more sinful waste of seed than broadcasting

Broadcasted seed is scattered to the four winds of heaven; part is washed away by rain; another portion goes to feed the birds; much of it lies on top of the ground and never makes healthy plants.

In broadcasting, there is usually sown an average of 66 clover seeds on a square foot of ground. This is **more than twice too much**, and the results are doubtful, at that.

If you intend to sow clover in your winter wheat, the Superior Alfalfa and Grass Seed Drill will show you a gain of about **FOUR DOLLARS** per acre.

If the seeding is done in old pastures and meadows or run-down alfalfa fields, the discs open proper furrows, cultivate, let the air in and put the seed in the ground where it is sure to grow. This method increases the hay tonnage and forage. It also saves half the seed.

In sowing Hungarian Grass or Millet, half the seed is saved and the tonnage is greatly increased over other methods.

The Superior Force Feed accurately sows Crimson and Red Clover, White Clover, Alsike, Alfalfa, Clover and Timothy mixed, Timothy alone, Red Top Fancy, Red Top, Blue Grass, Millet, Flax, etc., in widest ranges of quantity.

SEND FOR THE SUPERIOR ALFALFA DRILL FOLDER

Go to your local dealer and ask to see the Superior Alfalfa and Grass Seed Drill. Sold under the strongest warranty. You run no risk in purchasing.

THE AMERICAN SEEDING-MACHINE CO., Inc.
SPRINGFIELD, OHIO

The Torrens Land Title System.

THE suggestion at the recent annual meeting of the Michigan Grange society at Flint of a rumor that there was a boodle fund of \$50,000 to obtain the enactment of a Torrens law in this state proves that there is a general misunderstanding of the nature of the present law and of the proposed measure. We all know that if boodle is to be paid it is because someone would reap a profit from the proposed measure. Who could the persons thus to profit be? Certainly not the abstract companies, whose business existence is threatened by the new measure. If not these, who, then? Perhaps it is the land-owners who would thus be enabled to pass title to their lands without paying tribute to the abstract company. If the reader be a Michigan tax-payer it would be pertinent to ask whether he has been called upon to contribute to such a fund? The only other class who might be induced to subscribe to such a fund from a selfish interest is the lawyers. But why should the lawyers wish to kill the goose that lays the golden eggs, just to get one mess of pottage? It is true that there would have to be a careful scrutiny of all titles before they could be admitted to the new registration, and of necessity lawyers would get some fees from that source. But at the present time the lawyer gets a fee every time title is passed, unless the parties are willing to take their chances of getting title or not without having it passed on by a legal expert. If titles were to pass into the new system only when transfers were made, there would be no advantage to the lawyer. And in many states the registration under the new system is made optional with the owner.

It is believed that there is a general popular impression that the principal advantages to be derived from the proposed system are ease of ascertaining who is the owner of any particular plat of land and ability to get the desired information without paying tribute to an abstract company. But desirable as these things are, they are believed to be the least of the benefits of the proposed system, and the least of the evils of the present plan. The great evil of the present system is that even with the aid of abstract company and lawyer, certainty and security are absolutely impossible, no matter how careful the buyer may be to take all precautions beforehand. To make this point clear it is necessary to look for a minute at the theory and method of operation of the two schemes.

Our present system is not and does not purport to be a registration of title to the land. It is only a registration of some of the evidences of title. Only deeds, mortgages, and land contracts have to be recorded. By marriage an interest in land is acquired whether the marriage be recorded or not. A second marriage during the life of the parties without dissolving the first is void even as to a party to it who did not know of the first. Suppose that there are children by the second marriage and on death of the parent title is purchased from these children or their guardian. The purchaser gets no title. Moreover, none of these evidences of title are disclosed by the record. The true title is not even suggested by the record.

Again, suppose that one goes into possession of land claiming to own it, retains possession for the statutory period to acquire title by adverse possession, then abandons his claim, leaves the country, and dies. No examination of the record or counsel with lawyers will protect the purchaser. The record is a trap to lead him astray rather than a protection. If he buys of the person who appears of record to own the land he will get nothing. Only the heirs of the adverse claimant, whoever and wherever they may be, can give title. One who gets title by adverse possession can not rid himself of it by mere renunciation. If he could it would often happen that dishonest litigants would procure perjured testimony of a pretended renunciation when outlawed record titles were set up.

The two illustrations given above are merely selected at random from a thousand, for the purpose of showing that our present system is only a record of some of the evidences of title, not a record of the title.

The proposed system changes the effect of the record. Instead of being an evidence of the title, the record is to be the title. Before attempting an explanation of the new system an illustration by way of comparison may be instructive.

A makes a contract with B for services. At the end of the employment a dispute arises as to the rights of the parties—as to what the contract was, how much has been paid, etc. Each party goes to his lawyer with his statement. Each has letters, receipts, witnesses, etc. These furnish the evidence. From these the lawyers form their opinions as to the rights of the parties. These evidences may be compared to the evidences of title which our records give at the present time. From these evidences the lawyers make up their opinions as to whether the title is good or not. Now suppose that A sues B and all these evidences are submitted to the court. The court passes on the evidence and renders judgment. Now this judgment is not evidence of the rights of the parties. It is the rights of the parties. They can't go behind it or give any other evidence of their rights on that matter. The judgment settles the whole question, and settles it conclusively forever.

Such is the change it is proposed to make in the recording laws. It is proposed to establish a system whereby a careful examination shall be made of the possible claims of title to a particular piece of land, giving every possible known claimant notice and an opportunity to make a showing of his rights before the title can be passed into the new system, with right to appeal to the higher courts if he is dissatisfied with the finding of the title examiners. But if no appeal is taken and the finding is finally approved, the record thus made becomes the title and the only evidence of title. Then for the future, transfers can be made only by making a new record. The new record when made displaces the old, and renders it of no importance. All that is necessary under the new system to make absolutely sure of any title is to know in whom the record now stands. But under the present system it is necessary to trace the whole history and from it form a guess as to who has title.

JOHN R. ROOD.
Editors' Note.—The above is the first of a series of five articles on this subject by Mr. Rood, who is an authority on the law of real property. Mr. Rood has served on the teaching staff of the Department of Law at the University of Michigan for many years and is the author of a standard work on the Law of Wills.

FERTILIZING MUCK SOILS.

The fertility of any soil is measured by the relative amounts of nitrogen, phosphorus, and potash which it contains. The nitrogen is present in muck in large amounts, but only a small amount of this plant food is readily available. The unavailable organic nitrogen compounds are broken down by minute living germs, or bacteria of the soil, and changed to nitrogen compounds in available forms. Lime may cause a change to available forms if enough heat is provided, but probably the first source is the better since the bacterial action can be easily started by small applications of well rotted barnyard manure followed by good tillage. The decaying organic matter is an especially good home for these little organisms, since they require an abundance of moisture and heat. But few people realize the great importance of soil bacteria, those many, invisible little agents which are at work day and night changing compounds in the soil. Manure and other humus would be of no use to soil if it did not decay, a process brought about by bacteria. The human race would never have developed without their aid.

Lime, besides liberating some nitrogen, is of greatest use in correcting acidity and forming a more congenial home for the bacteria, as well as for the plants themselves. Often the damp, water-soaked soils are quite acid, and exposure for a year or two would be required before tillage would be profitable.

Phosphoric acid and potash are present in limited amounts only, since their origin is mostly from rocks. Probably not over 10 per cent of the soil is mineral at the first plowing, and the supply diminishes rapidly with each crop. There are experiments which show increased fertility after applying a fertilizer containing these two elements, and of the two, potash seems to be the most important.

In mixing or buying fertilizer for muck soil it is necessary to get one with a very small percentage of nitrogen, and relatively large amounts of phosphoric acid and potash. It would also be well to use sufficient lime to keep the acid condition corrected and improve the tilth of the soil.

Ingham Co.

L. C. WHEETING.

BUFFALO GARDEN TRUCK FERTILIZER



International Agricultural Corporation

BUFFALO FERTILIZER WORKS

600 Marine Bank Bldg.

BUFFALO, N. Y.

398 Bushels Potatoes PER ACRE

of marketable size, grown by L. S. Combs, Hampshire County, Mass., with an application of 1600 lbs. per acre of

BUFFALO FERTILIZER

More than four times the average yield in Michigan. **BUFFALO BRANDS** insure your crops, increase the yield and improve the quality. They are soluble, available and in perfect drilling condition. Our book

"Conservation of Soil Fertility," mailed free will help you solve your soil problems. Also write for our pamphlets *The Corn Crop*, *Hay*, *Forage Crops*, *memorandum book* and *calendar*.

Agents wanted in unoccupied territory.

PURE SWEET CLOVER \$6.00 Per Bu.

BIGGEST MONEY-MAKER KNOWN—INVESTIGATE
The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from \$50 to \$125 per acre. Easy to get started, grows everywhere, on all kinds of soil. Don't delay writing for our Big 76-page free catalog and circular giving full particulars. We can save you money on best tested guaranteed seed. Sample Free. Write today. **A. A. BERRY SEED CO., Box 931 CLARINDA, IOWA**

SWEET CLOVER Seed for Winter sowing, price and circular how to grow it. "Free." John A. Sheehan, Falmouth, Ky. R. 4.

OATS 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.**

BE THE OATS KING

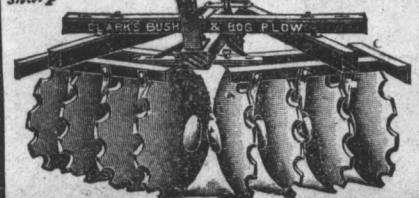
Make big money selling improved Seed Oats. Help me supply this tremendous demand. My special new Oats Book 10c. All about newest 100 to 141 bu. varieties. What soils adapted, etc. With it I will send free sample and new, big, free

Pure Seed Book for 1914
It is filled with information on growing big profitable Oats, Wheat, Corn, Alfalfa, Clover and other legume crops. Packed with pictures, full of planting hints, tells about "Nitragin," the wonderful seed inoculator. You want it. Write today. Address

GALLOWAY Bros.-Bowman Co. 182 Galloway St. Waterloo, Iowa.

Have You Any Bush or Bog Land?

Extra heavy steel disks forged sharp



If you have any bush or bog fields, or parts of fields, lying out as waste land, or if you have any tough sod that you want to thoroughly chop up, or if you have any other disking that heretofore you considered impossible, put the

Cutaway

BUSH AND BOG PLOW on the job. You will be astonished at what this big, strong, heavy plow or disk will do to it. Let us tell you more about this tool. Write today for catalog and B. & B. circular.

CUTAWAY HARROW CO., 992 Main St., Higganum, Conn.
Makers of the original CLARK double action harrows

STONE ROADS VS. THE KING DRAG.

Having read the first article, also the one of December 13, on the subject of "Stone Roads of Fayette," as they have come under the observation of J. A. Kaiser, of Hillsdale county, it seems desirable to at least have the viewpoint of farmers who oppose such roads, and who are entirely unable to see the desirability or economy of taxing, or bonding, the county, for any such purpose. I am well aware of the almost universal sentiment, which has grown up in the last five years, of bonding counties, townships and cities, in large sums for the present and future generations to pay, but so far as the roads are concerned it seems to have been coincident with the development and growing use of the automobile and to endeavor to show there is any need or demand for crushed stone roads by the working farmer is utter nonsense. Mr. Kaiser's purported conversation with the Ohio farmer is of especial interest from the fact that large numbers of those same farmers have come into this township, Salem, for no other reason than to escape high-priced land and consequent high taxes. The Ohio farmer is quoted as saying: "Land now sells in my neighborhood for from \$150 to \$225 per acre," and the inference is that stone roads alone are responsible. And if the Ohio man is correct in his contention that stone roads add to land values it would be interesting to know if the added value is any more than the added expense, and anyway the assessor will never forget that added value, and the happy possessor can go on all the rest of his life paying ever increasing taxes on land to which his \$4,000 a mile stone road has not added a dollar of producing capacity.

With the tax rate in Michigan increasing from year to year—in the present year an increase of from 50 per cent and in some instances 100 per cent—it would seem a good time to consider some form of retrenchment. And, in fact, it is evident that young men will be driven to the city in increasingly large numbers as it will be utterly impossible for them to acquire property in high-priced and high-taxed communities.

Let us see for a moment if there is not a safe and sane method of working the roads which would be of practical advantage to all. If Mr. Kaiser's stone roads ever come, it will of necessity be many years and then only the trunk lines of the county, leaving the cross roads in the deplorable condition that they are at present. With the very modest sum any township can raise, every foot of road in the township can be put in first-class condition and kept so; sufficiently good, at any rate, for any farmer's legitimate business and if they do not invite the joy rider it will not be an insupportable loss. A tractor can now be purchased for a few hundreds of dollars of sufficient horse power to draw a King drag heavy enough to level and fill up every rut as soon as formed, thus keeping the roads in excellent condition, such outfit to be kept in constant motion over the roads of the township at all times when they are not frozen. The total expense would be merely nominal and the result would be almost incalculable. The only insoluble persons would be those who are now enabled to put in a few days work with self and team at \$4.50 per day from any time after harvest until winter, when they have nothing else to do, and the dirt so moved may be suitable or otherwise, to become mud in wet weather and dust in dry.

The King drag, as everyone knows, is no experiment and wherever they have been used in this or other townships, have transformed the common dirt road into a satisfactory thoroughfare. I hope soon to see the member of the Legislature, who desires to cover himself with glory and acquire the undying thanks of his constituents, draft and secure the passage of a law, making it obligatory on townships to secure the general betterment of roads along some such lines.

Washtenaw Co. C. L. Ross.

HEATING THE FARM HOME.

The question of adequate heating facilities for the farm home is one which is best studied at this season of the year. Of course, the best time to install a heating plant is during the summer season, but this is the season of the year when we can best appreciate the heating problem and decide on the kind of heating plant which it is desired to install in case it is concluded advisable to make a change from stoves to a permanent heating plant of some kind. This is one of

Four Wheels—Bigger Yields

Make sure that every square foot of your corn fields will be *working* for you this season. 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*. You can have these benefits of better planting and vastly better crops with the **Hayes Four-Wheel Planter**.

Don't depend on an old, worn out planter or a complicated new one full of fads and fandangles. They are time killers and money losers. Buy a **Hayes Four-Wheel** now—this winter—and be prepared.

Guaranteed Results

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*. Runners set back between the wheels within 10 inches of the covering point. In going over ridges, dead furrows or uneven ground, the shoe *rides* and *falls* with the wheels and plants every kernel *exactly the same depth*. **Hayes** planted 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 from the sides to hold moisture and leave a ridge of loose soil on top, so that corn sprouts quickly and comes up several days sooner. The ridge gives greater surface for sun's heat and prevents washouts in hilly fields. This method *assists the budding sprout*, protects its vitality and makes stronger and healthier stalks.

Hayes Four-Wheels cover where all ordinary open wheels fail. They open at the top and clean themselves. Guaranteed not to clog or carry the corn over even in wet and sticky soil. Insures a stand even in low, wet spots of field—allows *earlier planting*.



26 Years
The
Leader

Stub Runners
Or Discs.

Fertilizer Or Cow Pea
Attachments.

Never Misses a Hill

Bare spots from missing hills cut the corn crop short. Good seed, rich soil and favorable weather *will not prevent this loss*. Don't be blinded to this fact—figure it out yourself. How much have the bare spots cost you, year after year? Eliminate this waste! *Make sure that every square foot of your corn field will be working for you this season.*

The **Hayes Drop** never fails. Simple, durable and most efficient. Fewer parts, less breakages 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. Increased yields soon

pay for it. Corn growers are never disappointed with the **Hayes NEVER-FAIL DROP**.

Checks With Absolute Accuracy

No matter how fast you drive, the **Hayes** always plants in *perfect check*. Cross rows straighter than the way you drive. Easiest handled planter. Also shortest coupled, making it the *lightest draft*, and turns in *shortest space*. For these reasons, you can plant *more acres a day* with the **Hayes** and get your corn in *earlier*—an important factor in the success of the corn crop.

170,000 Users Know

Thousands in use for years with practically no repair expense 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.

If the planter you used last year missed the hills, planted at an uneven depth, did not drop accurately, cut or cracked the kernels, scattered the seed, checked unevenly, clogged or was a constant source of trouble by getting out of fix, you can *save its cost* many times over by buying a **Hayes Four-Wheel**.

Think these things over and start investigating now. Learn the overwhelming advantages in **Hayes Four-Wheel** construction. Ask any **Hayes** user.

1500 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.

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

No. 4

Planet Jr. Combined Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow

This practical tool combines in a single implement a capital seeder, an admirable single wheel hoe, furrower, wheel-cultivator, and a rapid and efficient wheel garden plow. Every man or woman running a vegetable garden can save cost of this tool in a single season.

No. 53

Planet Jr. Beet and Bean Cultivator

A wonder in the amount and kind of work it does. Cultivates within 2 inches of crop at each side. Works two rows at once, 16, 18, or 20 inches apart—or with extension 22, 24, or 26 inches. Carries irrigation steels, discs, and weeder. Wheels adjust in width. It is all steel but the handles.

No. 11

Planet Jr. Double Wheel Hoe, Cultivator, Plow and Rake

The greatest cultivating tool in the world for the grower of garden crops from drilled seeds. It has steel frame. Light enough for woman's use. Crops can be worked both sides at once until 20 inches high. A favorite with onion growers.

No. 9

Planet Jr. Horse Hoe and Cultivator

This implement is a great worker in corn, potatoes, tomatoes, and similar crops. Noted for its strength, lightness, and easy change of width. Handles are adjustable in height and sideways. Has new all-steel wheel. Can be fitted with plow and disc attachment.

No. 72

Planet Jr. 2-row Pivot-Wheel, Cultivator, Plow, Furrower and Ridger

Cultivates at one time, two rows of potatoes, corn, beans, etc., in rows 28 to 44 inches apart. Works like a charm in check rows, crooked rows and rows of irregular width. Can be equipped with roller-bearings, spring-trip standards, and discs. Cuts cultivating expense in half.

Ironclad Wins in 2 Biggest Hatching Contests EVER HELD

140 EGG

Covered With Galvanized Iron

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. R. Burner, egg tester, poultry complete, set up ready to run. Brooder is large, roomy, well made with wire scratch floor. 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.

IRONCLAD INCUBATOR CO., Box 117 RACINE, WIS.

Both For \$10

Made of Best Lumber

Look at
these
two
nails

Old-fashioned Nails did not Rust

THE old-fashioned iron nail, after thirty-eight years' service is still as good as it was the day it was driven. The modern steel nail, after only eleven years of service, is practically eaten up with rust. Iron kettles, iron chains and cables that were made in the days of the American Revolution are still perfectly good and still "on the job," but the "Quick Process" steel products of a dozen years ago have already gone to pieces.

AMERICAN INGOT IRON ARMCO CULVERTS

are made of pure Iron—even purer iron than the famous "Old-fashioned Iron" of Colonial Days. It contains not more than sixteen one hundredths of one per cent. of foreign substances. Because of this high purity American Ingot Iron Culverts show an unequalled resistance to rust. They are strong, tough, elastic, light in weight and easily installed. They represent fundamental economy in road building and maintenance.

99.84% PURE Insist on seeing the triangular trade-mark on every section of corrugated metal culvert that goes into your roads. Otherwise you may be paying taxes for steel culverts that look like Armco Culverts that even may be advertised as "Pure Iron" or "Genuine Iron" but that will soon go to pieces like the steel nail in the picture.

For full information about American Ingot Iron Culverts, Plates, Sheets, Roofing, Siding and Formed Products write to

Armco Culvert Publicity Bureau

571 Walnut St. Cincinnati, Ohio



"Can't-Sag" Gates Save You

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 miss. 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.



BIG MONEY

"Can't-Sag" Gates & Steels

Republic Hercules Gates

You have to handle your big farm gate a dozen times a day. Why bother with a heavy, saggy, back-straining, rickety old wooden gate that gets snow bound in winter, mud bound in spring and summer, and soon falls to pieces?

For less money you can install a Republic Hercules Gate, which you can adjust to any position you like with little effort; always swings clear; locks automatically; resists all stocks—lasts a lifetime.



You can tell a Republic Hercules Gate from any other Gate made, by its simple, strong construction; its solid tubular steel frame; its heavy, firm-standing, durable fabric; its easy raising device; its malleable iron fittings; its freedom from troublesome attachments.

We back it with a strong guarantee. Illustrated Catalog FREE

REPUBLIC FENCE AND GATE COMPANY

44 Republic Street

North Chicago, Illinois

FOR THE "LAND'S SAKE"

BUY A

BOSTROM IMPROVED



Price \$15

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.

Pulverized Lime Rock

We can ship in carload lots in two days after order is received from Muskegon and Benton Harbor. Write for prices direct to you.

LAKE SHORE STONE CO., Milwaukee, Wis.

KITSELMAN FENCE



Get It From
the Factory
Direct

14 CENTS A ROD

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.



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

the greatest comforts which are included in the term "modern conveniences," and one which every member of the family will appreciate most highly. To appreciate this fact it is but necessary for one who has been accustomed to heating a portion of the house with stoves, to go into the home of some friend or neighbor who has a permanent heating system installed. For the money invested, there is no way in which the comfort of the home can be so greatly increased, to say nothing of the convenience to the housewife in having the work and dirt incident to the setting up and taking down of stoves and the cleaning of pipes, etc., eliminated. And it is not in comfort alone that we derive the greatest benefit from a modern heating plant. Health is a still more important consideration, and the evenly and adequately heated home is an important factor in the conservation of this choicest of human blessings. This is a good time to consider the problem in all of its phases and to make an investigation with regard to the kind of heating plant which would be most satisfactory, its cost, etc.

Wayne Co.

C. T. H. B.

THE FARM WOOD-LOT.

One of the first steps in the work of reforestation in this section, will be taken the coming spring, when ten thousand forest trees will be planted. The innovation marks a new era in the life of the farming community. It is a return to the process of construction and preservation as against the process of destruction and wanton waste in forest material. It is a recognition of the importance and usefulness of the forest and of the necessity of giving nature back some of her wildness. The step is one fruitful of good in more ways than one. If it shall awaken in the minds of the careless and unwise, a realization of the importance of saving the young trees already standing, it will be of inestimable value.

In reflecting on the work of again turning the cleared field into a forest, two facts rise into prominence: First, it will require time, money, and patience, before such a venture can prove productive of material advantage to the promoter. Second, a wood-lot of young, thrifty saplings that are already growing, is infinitely more valuable and more satisfactory than a forest of trees that have yet to be planted. As these facts confront us, we are astounded to see on every hand, even at this late day, wanton destruction of young, healthy forest trees. Wherever a five or ten-acre strip of timber is still standing, the men with the portable saw-mill gather like flies around a lump of sugar, and vie with each other in coaxing the owner to part with his possession. Too often, the owner is all too willing to part with the property, and after the saw-mill has done its work, wood cutters complete the job, cutting the valuable young oaks and maples which would some day rise into a magnificent forest.

Although the practice mentioned is not universal in this section, it is wide-spread and general. The farmers wise enough to recognize the importance of keeping the forests that yet remain, are comparatively few. As a rule, when the saw timber has been taken from a piece of forest, the young trees not large enough to convert into lumber, are cut into wood and the spot is cleared for crops. That the policy is short-sighted and selfish, needs no proof. That the total destruction of forests will prove disastrous to the farmers of any country, has been shown again and again, in the world's history. Realizing this fact and the importance of preserving the trees we have and of planting others, both the state and national governments are doing everything in their power through their special departments, to encourage and promote the work.

If you are fortunate enough to possess a few acres of timber on your farm, count it among your most valuable farm assets. Cut the trees that need cutting or that have reached maturity, and protect and preserve the young, growing trees. If the saplings do not mature and make fine trees in your life-time, they will grow and prove a blessing to another generation. Do not get the clearing fever and think that before you die, you must see every foot of your farm under the plow. Do not accept the short-sighted, selfish policy which says that a few hundred dollars is worth more to you than your wood-lot. The owner of a saw-mill who tells you this, is thinking only of lining his own wallet.

Hillsdale Co.

J. A. KAISER.

New Idea Manure Spreader



Does More
and
Better Work

It makes a better day's work easier. Besides thoroughly pulverizing all kinds of manure, it spreads it wider and more evenly. Because of their simple construction and durability New Idea Spreaders are the

Business Farmer's Choice

Here are a few of the many points wherein New Idea Spreaders surpass: 2 pulverizing cylinders, besides a special distributor; its simplest of all feeding mechanisms never jerks; the gearless drive transmits power direct from rear axle to cylinders. Strongly built, yet light, this ideal spreader is almost trouble-proof.

Large, Illustrated Catalog FREE

If interested in spreaders let us send you a copy. Explaining the thorough construction of our machines. Illustrated. Write for yours today.

New Idea Spreader Co., Box 113 Coldwater, Ohio

Sure Corn

As a rule this has been a very bad year for maturing seed corn the country over. The majority of our growers were fortunate in being located where conditions, on account of rainfall, were perfect. While our supply will necessarily be limited, what we have is of excellent quality.

Write, Book Free

Get our seed corn offer on all standard varieties of corn. Big catalog free—quotes money saving prices on seed for all grain—cereals—grasses—hay—vegetables—fruits—flowers, etc. Write today. Address

GRISWOLD SEED COMPANY
253 10th St. Lincoln, Neb.

A FARMER'S GARDEN

Helps his wife to plan her table in busy times. Saves work and worry, saves buying so much meat, gives better satisfaction to the help. A good garden will be almost impossible in your busy life without proper tools. They cost little and save much hard work.

IRON AGE WHEEL HOES AND DRILLS

will sow, cultivate, ridge, furrow, etc., better than you can with old-fashioned tools and ten times quicker. A woman, boy or girl can do it. Can plant closer and work these hand tools while the horses rest. 38 combinations from which to choose at \$2.50 to \$12. One combined tool will do all of the work. Ask your dealer to show them and write us for booklet, "Gardening With Modern Tools," and "Iron Age Farm and Garden News" both free.

BATEMAN MFG. CO.
Box 1042
Grenloch, N. J.

ALFALFA

The Kind That Produces Per Acre in Profits

Can be grown anywhere successfully. The secret is pure seed—the Galloway kind—and system of inoculating and growing. Investigate today. Don't experiment any longer. Don't waste time and money. Write for

GALLOWAY'S Big 1914 Pure Seed Book

or send ten cents and get our new 62-page 25-cent book entitled "How to Grow Alfalfa, the Wonder Crop"—a mine of information; tells how to get a sure "catch," prepare ground, inoculate, protect, harvest and many other new facts and important discoveries.

GALLOWAY BROS.-BOWMAN CO.
185 Galloway St., Waterloo, Iowa.

TIMOTHY \$2.35 Per Bu.

SAVE MONEY—Buy Direct from Grower. New cleaned Iowa Grown Timothy, free from weed seed. Guaranteed Satisfactory or money refunded. Write today. 76-page catalog and Free Samples. Low prices on Clover and all grass seeds. Write before advance.

A. A. BERRY SEED CO., Box 331 CLARINDA, IOWA

STRAWBERRY PLANTS

1000 FOR \$1—Quality guaranteed the equal of any plants. All kinds and overbearers listed. Also trees, raspberries, blackberries, shrubs, asparagus, tomato and cabbage plants. Catalog free.

ALLEGAN NURSERY, Allegan, Michigan.

SEEDS

Get our catalog, new system, sold by actual weight. 2 or 3 times more seeds for same money. **W. A. ALLEN & SON, Geneva, Ohio.**

PURE FIELD SEEDS.

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

A. C. HOYT & CO., 142 FOSTORIA, OHIO.

SWEET CLOVER

SEED, pure white and biennial yellow. Prices and circular how to grow it sent on request. Everett Barton, Box 123, Falmouth, Ky.

Choice Northern Grown Seed Potatoes

CATALOG SENT ON REQUEST
NORTHERN SEED COMPANY
Box 28, Grand Rapids Michigan

BUSHEL CRATES—Reduced prices. Nailed up or knocked down. Write for sample and prices. O. S. BUSH, Mason, Mich.

WHOLESALE PRICES

on Strawberry Plants. Many other varieties and garden roots at reasonable prices. Catalog FREE. Write today to **A. A. WESTON & COMPANY, BRIDGMAN, MICHIGAN**

SPOROCIDE SURE CURE FOR SMUT

in oats. Guaranteed Simple to treat. Sent direct by parcel post where we have no agent. Booklet. Acts. **Sporicide Chemical Co. N. Y.**

Practical Science.

CITY MILK SUPPLY.

BY FLOYD W. ROBISON.

Producer of Milk not Wholly to Blame.

We have attempted to give a somewhat hasty glance at the opportunities for the contamination of milk for which the producer is primarily responsible. Without question the producer's end of the milk business is the one for which the largest responsibility holds for the production of clean milk. But all the blame incident to the faulty milk should by no means be laid at the door of the producer. What are the factors therefore that may enter in to change the character and also the nature of the milk supply after it has left the premises of the producer. We may assume for example that an examination of the producer's premises warrants the opinion that a reasonably pure milk may be produced upon his farm, and assuming that analytical determinations of the milk at the time it leaves the premises of the producer discloses a reasonably pure product as well, it by no means follows that that same product when it reaches the consumer will be in anywhere near the same state of perfection as when it left the producer. We recognize, therefore, that there are other factors beyond the reach and control of the producer of milk which operate against the purity and wholesomeness of that product. Consumers of milk in the city, distributors of milk in the city, and too frequently, municipal officials fail to take into consideration anything other than the producer's share in the blame.

The Country Milk Route.

Assuming a reasonably pure milk, therefore, to begin with, and a milk not devoid of bacteria but containing them in limited numbers, what is the treatment that naturally follows which has a modifying influence upon that product. In many communities milk is gathered by a collector who takes milk from the farms of a great many dairymen in a certain particular district and gathers this milk from early morning until his load is ample. It is then delivered to a railroad station or to the local receiving station. In the winter time, provided the milk is well cooled at the start, there is little opportunity during the time which elapses in this gathering process for any very decided detrimental effect upon the milk. But in the summer time it is many times mid-day before the milk which was produced that morning, and part of which was produced the night before, reaches the station platform or the local receiving station. Rarely indeed is it with present methods of gathering milk and caring for it that the milk reaches the station platform in a satisfactory condition as far as temperature is concerned as when it left the premises of the producer. This period then, of three to five hours, or six hours, may really be called an period of incubation, for with a gradually rising temperature the bacteria become increasingly active and the count therefore of the bacteria contained at the time the milk reaches the receiving station or the station platform will show many more bacteria than when made at the door of the producer. At any platform the period of incubation is lengthened by the milk being permitted to stand out upon the platform with, in the majority of cases, nothing over it and in rare cases, a canvas to protect it from the direct rays of the sun until the arrival of the train or car which transports it to the city.

The Railroad.

When milk is produced at a considerable distance from the city, two or three trains a day are at best the only trains to carry this product, and all the time that it is waiting bacterial changes are going on rapidly. If there is a local skimming station then this milk, instead of going to the railroad station frequently goes to the skimming station where it is usually put through the separator and the fat removed, the skimmed milk either being rejected or returned to the individual dairymen. Many times this skimming process carries with it a considerable refrigeration which, of course, tends to check the rapid growth of bacteria. At any rate, the condition of the milk or cream at the time it boards the train is wholly different from the condition it was in at the time it left the premises of the producer. Now it goes aboard the milk train which in this state usually consists

of an ordinary baggage car without any refrigerating facilities. By the time this milk reaches the city it is warm and considerably above, as a rule, a temperature considered by inspectors to be satisfactory for a retail milk. This milk was perfectly wholesome and reasonably clean, and altogether a satisfactory milk for human consumption when it left the premises of the producer. Due to the common method of handling and through the lack of proper refrigerating facilities on board the train, this milk may now be in a condition quite unsatisfactory as a retail product. It goes now usually to the city distributing plant where it is placed in bottles either with or without pasteurization.

The Result of Current Methods of Pasteurization.

The process of pasteurization of milk is quite a satisfactory one if properly carried out. But many milk distributors dislike to thoroughly pasteurize milk because it destroys the customer's main indicator of the quality of that milk, that is, the cream line. If the milk is thoroughly pasteurized, which is the only expedient we think should be permitted by the municipal authorities in case of pasteurization at all, the effect upon the globules of fat in the cream is such that a more thorough emulsion is formed and the cream is accordingly much slower in rising, and in many instances does not rise completely at all. There is nothing that causes dissatisfaction with the milk supply among the consumers in the city more than to find a narrow cream line in the milk bottle. They are accustomed to judging of the richness of the milk by the depth of the cream zone, and when the milk is thoroughly pasteurized, that is, heated to a temperature at which the greater numbers of bacteria are killed, what may have been a very wide zone before pasteurization becomes after pasteurization a very narrow cream zone without changing the fat content of that milk a particle.

Cream Zone Not an Accurate Index of Fat Content.

As a matter of fact, the width of the cream zone is by no means a reliable indicator of the percentage of fat in the milk for in certain grades of milk the size of the fat globules seem to exert a very decided influence upon the depth or breadth of the cream zone. The phenomenon of the rising of cream is brought about primarily by the fact that the fat in itself is lighter than the other constituents of the milk as oil will rise upon water. It must not be supposed, however, that cream is lighter than water for cream is heavier than water and will sink if poured into water. But cream is lighter than milk and consequently rises to the surface. We may take two different samples of milk fat, and permit them to rise normally in milk bottles, and we will find zones of different depth. In other words, the cream which rises upon these milks will contain different percentages of milk fat. The reason for this seems to be due largely to a difference in the size of the globules of fat and this difference in size causes the difference in the amount of other milk constituents which are carried upward with the fat globule when it disentangles itself from the main body of the milk. Now let us assume that when the milk is pasteurized the fat globules are broken up into much finer particles and therefore the cream either is much slower in rising or becomes so entangled with the other constituents of the milk that it does not rise at all in this condition because the whole body of the milk becomes of a greater specific gravity. This condition is avoided in some distributing plants by skimming the milk, or rather running it through a cream separator previous to pasteurization, pasteurizing the skimmed milk and the cream separately and thoroughly and then re-mixing in this condition. The cream will then rise satisfactorily and the milk will therefore be perfectly pasteurized as well.

One loses patience with a milk distributor who argues that he cannot thoroughly and scientifically pasteurize milk because it destroys the cream line and he is compelled to take this position because first of all before any other consideration can be weighed by him he must have a market for his milk supply and the consumers vigorously protest when they do

(Continued on page 137).

This Coupon Is Good for Prof. Beery's Introductory Course in Horsemanship FREE!

CUT OUT AND MAIL TODAY
PROF. JESSE BEERY,
 Box 42, Pleasant Hill, Ohio
 Please send, free of cost, to the address below,
Prof. Beery's Introductory Course in Horsemanship
 Name.....
 Postoffice..... State.....
 R. F. D.....



Bad Habits Cured

By Beery System

Refusing to lead.
 Running away when halter or bridle is removed.
 Getting fast in the stall.
 Pawing in the stable.
 Pawing while hitched.
 Crowding in the stall.
 Fighting halter or bridle.
 Tender bitten.
 Pulling on one rein.
 Lunging on the bit.
 Lunging and plunging.
 Refusing to stand.
 Refusing to back.
 Shying. Balking.
 Afraid of automobiles.
 Afraid of robes.
 Afraid of clothes on line.
 Afraid of cars.
 Afraid of sound of a gun.
 Afraid of band playing.
 Afraid of steam engine.
 Afraid of the touch of shafts or harness.
 Running away.
 Kicking.
 Biting. Striking.
 Hard to shoe.
 Bad to groom.
 Breaking straps.
 Refusing to hold back while going down hill.
 Searing at hogs or dogs along the road.
 Tail switchers.
 Lolling the tongue.
 Jumping fences.
 Bad to hitch to buggy or wagon.

To all men owning horses, who

answer this advertisement immediately, I will positively send my introductory course in Horse Training and Colt Breaking ABSOLUTELY FREE.

World's Greatest System of Horsemanship

Twenty-five thousand FARMERS and horse-owners have taken my regular course and found that it does the work. Even if you have only one horse, it will pay you to master my wonderful system. The Beery Course is the result of a lifetime's work as a tamer and trainer of horses. As one of my students has said, "The horse has never been foaled that Prof. Beery cannot handle." My record proves it.

Master Any Horse

The Beery Course gives you the priceless secrets of a lifetime—enables you to master any horse—to tell the disposition of any horse at sight—to add many dollars to the value of every horse you handle—and my students are all good traders.

Break a Colt in Double-Quick Time!

You can do it by my simple, practical, humane system. There is a lot of money in colt training.

Make \$1,200 to \$3,000 a Year

Many of my graduates are making big money as professional horse trainers at home or



BEFORE TRAINING

AFTER TRAINING

My Graduates Are Doing Wonders

A. L. Dickinson, of Friendship, N. Y., says: "I am working a pair of horses that cleaned out several men. I got them for \$110, gave them a few lessons, and have been offered \$400 for the pair." Fred Bowden, R. R. No. 2, Keokuk, Iowa writes: "It's worth many times its cost." I have many similar letters from graduates all over the world.

traveling. I made a fortune traveling and giving exhibitions. You have the same opportunity.

Send the Coupon

and get the Introductory Course in Horse Training FREE. This special offer may never be repeated. Act now. Tell me about your horse.

PROF. JESSE BEERY
 Box 42, Pleasant Hill, Ohio

\$254 an Acre NET from Potatoes

is what the manager of one of the Shippers' Associations on our line says can be averaged every year. The long growing season, productive soil and abundant rainfall do it. One farmer gathered at the rate of

1120 Bushels to the Acre

Write me 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.

G. A. PARK, General Immigration and Industrial Agent
 Box A-105, Louisville & Nashville R. R., Louisville, Ky. (406)

Why Do You Raise Oats?

It makes no difference whether it is simply as a part of a rotation or as a money crop.

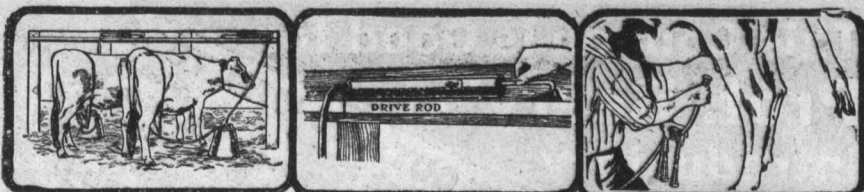
POTASH

will put them out of the light, chaffy class and make them a profitable crop. Try 250 to 500 lbs. per acre of a fertilizer containing at least 6% Potash. It means heavy heads and straw strong enough to prevent lodging. Potash Pays on oats.

Write to us for prices on any amount from a 200-lb. bag up. Also get our free books on profitable fertilizers.

GERMAN KALI WORKS, Inc., 42 Broadway, New York
 Chicago, McCormick Block Savannah, Bank and Trust Bldg. Atlanta, Empire Bldg.
 New Orleans, Whitney Central Bank Bldg. San Francisco, 28 California St.

When Writing to advertisers please mention The Michigan Farmer.



What You Do When the Pail is Full

Change the cover. Don't stop the machines milking—that would be a loss of time. Weigh and record each cow's milk—that's the Hinman way. Everything runs smoothly and silently. The first you know the milking is over.

The HINMAN Milker

Don't think that the Hinman is made only for the big farmers. It's a money maker for dairies of all sizes from 10 to 400. Every owner will tell you proudly "It's a Hinman." They milk every time—always on the job. Cheaper than hired help.

Milking in Silence Means Dollars

Cow-contentment and thoroughly scientific milking make the big records. That's why such dairymen as Jno. Garrow, Morenci, Mich., uses the HINMAN when putting his heifers through the advanced registry. A few of the many features found only in the Hinman: Each machine separate; no vacuum in pail; rapid-pail-changing idea; visible milk flow; no piping—just a simple drive rod; only two moving parts.

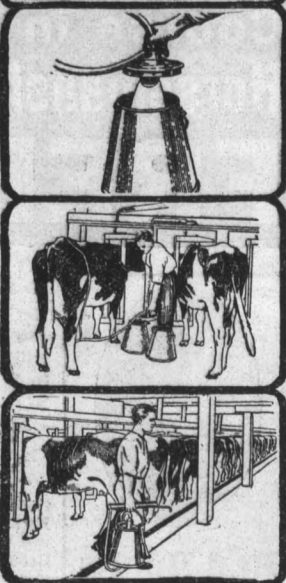


Say the word and we'll mail you our catalog. It will help you to understand why the Hinman milks 65,000 cows daily under greatly varied conditions. Agents everywhere.

HINMAN MILKING MACHINE CO.

74-84 Elizabeth St., Oneida, N. Y.

TO BE CONTINUED—WATCH THE ARROW.



Increasing Market Prices Through The Dairy Cow

By ASHLEY M. BERRIDGE.

THE majority of dairy farmers in Michigan can increase the market price upon all of the products of their soil by nearly one-half. With a very little effort the price of a bushel of corn can be raised from 65 cents to \$1.00. Dairy cows must be kept instead of cows; and dairy knowledge used instead of "just as father did." The testing and weighing of the milk will sort out the poor cows. Raising the heifers, instead of buying cows, prevents the good blood from leaving the farm. The purchase of a purebred dairy sire will make the future cows doubly valuable for he is surely half of the herd. Records tell the story.

A Market on the Farm.

A market is considered by the farmer as the place where he disposes of his milk, grain, apples or potatoes. It is an institution that will take his products and give him money in return. With the dairyman, the market for grain, hay and silage, is the dairy cow. Upon the efficiency of the cow depends the price received for these products. When the potato raiser takes a load of his produce upon the market he sells them to the highest bidder. Even one-half of a cent more per bushel easily gets the load. But when he gets home he places every damper upon competition. He takes a load of clover hay upon his dairy market and allows an equal share to go to each cow. Some may pay him at the rate of \$20 per ton, others give him \$12 per ton and one or two may not pay him at all. Yet he persistently keeps on year after year feeding these same cows and wondering about the profits from dairying. He cannot see the difference in price, paid by the cows, as clearly as that for the potatoes. Yet it is there and affects the pocketbook just as surely in the end.

Two Stories.

At a large condensing factory the men delivering milk from the poorest three herds in the community, received \$30.62 per cow for the year's milk, while the three best herds, at the same factory, returned \$98.94 per cow for the milk during the year. As the skim-milk was not returned to the farm, the poorest herds did not pay for their feed and labor, while the best three herds made a profit of something over \$50 per cow.

In another locality one dairyman produced \$2,000 worth of milk from 20 cows. His neighbor bestowed twice the labor on 40 cows and received only \$1,800 for his products, barely paying expenses. The second man was so busy that he could not spend a few moments each day weighing and testing the milk from each cow. Instead he spent four years harvesting the crops from his 160-acre farm, feeding and caring for 40 cows, only to make the same profit that his neighbor did in one year with but 20 cows, half the land and half the labor.

The large check received for the products of a large herd seems to blind some men's business vision. They often fail to distinguish between total receipts and net profits. Our fortune does not depend upon the amount of money we handle, but upon the per cent of profit.

The Dividing Line.

The economy of keeping efficient cows is very great. Figures based upon value of the cow, milk, butter-fat, calf and the manure, upon the cost of feed, care, interest, taxes, etc., show that under ordinary farm conditions, and with the product sold at a creamery, that a cow must produce about 4,000 pounds of four per cent milk to pay her expenses. That is the dividing line. Productions lower than 4,000 pounds result in a loss, while those on the other side bring in the profits. A cow producing 5,000 pounds of milk will bring a profit of about \$10, while a cow producing 8,000 pounds returns \$40. In other words, a herd of ten cows with the latter production will return as much profit to their owner as a herd of 40 cows producing 5,000 pounds of milk and with only one-quarter of the labor involved.

The Key to Successful Dairying.

The milk scales and Babcock tester are the court of awards from which may be obtained a profitable dairy business. It is absolutely impossible to tell in any other way which are the poorest cows in a milking herd. The unprofitable cows do not belong to an extinct family. They are flourishing and wide spread. Examples can be found in nearly every herd in Michigan where accurate performance records have not been kept. The man who declares that dairying does not pay, it is pretty safe to say, is harboring several of these cows.

Too many farmers sell their heifer calves—good, bad and indifferent, they all go and the herd is built up with purchased cows. The buyer can't find enough good cows in these days to form a profitable herd, for high-grade animals are scarce. This practice is a step toward poorer cows. When the farmer tests his herd he can save the heifers of his profitable cows. He knows their parentage and what they ought to do.

Raising Heifers a Good Business.

A prominent dairyman once said of his grade herd: "The heifers we raise from our best cows are better milk producers, with their first calves than are the average mature cows we can buy." The only excuse for selling calves seems to be that it requires too much milk to feed them. An experiment conducted by the Illinois Experiment Station with 48 calves showed that good animals can be raised with very little milk, if necessary. The results proved that calves could be brought up successfully on 150 pounds of milk and 400 pounds of skim-milk. The milk was fed at the rate of ten pounds per day until the calves were 50 days old, when it was gradually lessened one pound per day for ten days and then no more was fed. No substitutes for milk were given. Just good grain such as is raised upon the ordinary farm and all the leguminous hay they would eat.

A successful dairyman has said that he can raise a heifer to the age of two years at a cost of \$20 and that he has been offered \$50 for many of his heifers at that age.

One of the laws of breeding is that the quality of large milk production will be transmitted from the dam to her daughters. Surely the value of a record to the cow's progeny should not be thrown away because it takes a little exertion to rear the calves. No other man has the advantages for raising heifers that the dairyman has, nor is so interested in so doing, naturally, and so liable to succeed.

Herd Improvement at Small Cost.

Herd improvement is most rapid when a good sire is used. The progeny take their qualities just as readily from the sire as from the high-producing dam. He represents in a herd one-half of all the qualities, characteristics, capacity for milk production and everything transmitted to the calves that will form the future herd. A fine bull may be purchased for \$200. With 40 cows worth \$100 each the herd would represent an investment of \$4,200. The bull costs only one twenty-first of that sum, yet he will improve the future herd just as much as the other twenty twenty-firsts. The extra \$150 placed in a well-bred bull is the best investment in the herd. If another bull of the same breed is used upon the succeeding generation, instead of being one-half of the herd, he is three-quarters, the one with the next generation, seven-eighths, and so on until he is about the whole thing. A few poor females cannot do serious damage in the building up of a herd but a poor bull will cause a failure every time. If heifer calves are to be raised, a scrub sire should not be allowed on the farm. The dairyman could not afford to use him if the animal were given to him, his board paid for and a substantial bounty paid for the keeping of him. The presence of a scrub bull on a dairy farm is a disgrace to the business of dairying and an offense to all good dairymen.

The profit from many farms can be doubled in a short time if properly managed. Start weighing the milk this winter when there is plenty of time. When spring comes the weighing will be continued for the owner will see that it is to his advantage to do so. Weed out the poorer cows and raise the calves from the good ones. With a good bull and an accurate account book the "market prices" are sure to take an upward shoot that will be surprising.

Calves are sold too often by farmers for veal instead of being matured, says Prof. W. J. Fraser, of the University of Illinois. Experiments show that a calf can be successfully raised on 150 lbs. of whole milk and 400 lbs. of skim-milk. This milk was fed in the experiment performed in the University of Illinois at the rate of ten pounds a day for the first 50 days, when it was gradually lessened one pound a day for ten days, when milk feeding was discontinued. Grains, and no substitute for milk were then given. The actual value of the milk fed was \$3.45.

It is estimated by the Price Current that in all feeding states the average of cattle feeding is 75.5 per cent and hogs 65 per cent of a year ago. Ohio leads off in cattle feeding compared with last year and Wisconsin in hog feeding.

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.



Harris Feed Carriers and Litter
make mean barn work easier. Simple to operate, roller bearing, self-cleaning. Strong construction makes them practically indestructible. Thousands of pleased Dairymen use Harris.

Labor Saving Barn Equipment
Harris Stalls and Stanchions make cows more comfortable, are easily kept clean and require no repairs. Let us mail you our FREE Illustrated Catalog. Describes complete line of high-grade barn necessities. Send for it to-day sure.

Harris Mfg. Co., Box 50 Salem, O.

New Scientific No. 20 Mill
Heavy steel legs and steel hopper. Most efficient and strongest small power mill ever built. Will grind cob corn, shelled corn, oats and all other small grains to any desired grade, from hominy feed to meal.

Fully Guaranteed
Equipped with flywheel, cold rolled steel shaft, end thrust ball bearing and 8-inch high carbon grinding plates. Two sets of plates furnished with each mill. Adapted for use in any locality. We stand back of every claim we make for it. Write for descriptive catalog.

THE BAUER BROS. CO., Box 506 Springfield, Ohio

CHEAP FEED For sheep and cattle feeders and dairymen. Salvage grain, oats, barley, wheat and corn, damaged in elevator fires. Bone dry and equal in feeding value to other grain. For sale in carlots direct to feeders. The best feeders in Michigan have been using it for years. Write at once for samples and prices, and information as to what experienced feeders think of it. "We save on your feed bill."

C. E. DINGWALL CO., Milwaukee, Wis.

Feed By-Products—A money-saving proposition. Ask prices on Michigan Farmer Brand Cotton Seed Meal, highest grade manufactured. Linseed, Beet Pulp, Gluten, Brewers, Distillers, Salvage Grains, Corn, Corn Flakes, Corn Meal, Mill Feeds, Screenings, Cull Beans, Tankage, Meat Meals, Lump Rock Salt, Wholesale Flour. The Bartlett Co., Michigan's Largest Feed Shippers, Jackson, Mich.

It Pays to Feed Dried Beet Pulp

Increase production at a lower cost. Better try it, you can't lose. Write

T. F. Marston, Bay City, E.S., Mich.



Which Way do You Make Hay The Loudon Way

is the quick, easy, money-making way.

The Loudon Junior Hay Carrier, like all Loudon Movable Equipments, is center hung—runs easily and smoothly; will not bind on the track; never misses register. No loss of time because of kinked or twisted ropes. Built entirely of steel and iron—the strongest swivel carrier made.

The Lifting Power of the Loudon Balance Grapple Fork, and the easy way it handles a heavy load, makes it the most serviceable in any kind of fodder. Will grip half a ton at once, short or long growth, and hold it tight. So perfectly balanced it never fails to drop the hay where desired.

Write for Catalog giving full information on Loudon Hay Tools, Stalls, and Stanchions, Feed and Litter Carriers, Barn Door Hangers, etc.

See the Loudon Line at your dealers

LOUDON MACHINERY CO., 1900 Broadway, Fairfield, Iowa



PLAN FOR A LEAN-TO COW STABLE.

I am planning on building a cow stable with a one-sided roof, on to the end of my barn. I would be very pleased for plans showing how wide the shed should be to provide a suitable alleyway to feed from, also, walk behind cows or to make it shorter if you could give me a plan with the measurements stating how many cows a 36-ft. long shed will hold. I want to put in the model cow stall.

Lenawee Co.

M. B.

A cow stable for a single row of cow stalls should be at least 16 feet wide. This will give four feet for a feeding alley in front of the cows, seven feet from the feeding alley back to the gutter, if you have a gutter with the model cow stall, then one foot for the gutter, and four feet behind the gutter for a passageway for milking and cleaning out stables. As long as you are building this building I am positive it would pay you to make it 20 feet instead of 16. Then you could have a wide enough space behind the gutter so that you could drive through with a manure spreader or manure truck and load the manure directly onto the wagon and take it out to the fields. While you are building it will cost but little more and you could have a door at each end of the cow stable and drive in and load the manure directly on the wagon and save an immense amount of labor. Of course, you can get along with a 16-foot stable if you wheel the manure out or if you put in a litter carrier and take it out with a litter carrier. This sort of stable is perhaps a little more difficult to ventilate with the King system of ventilation, but it can be done and a good sanitary, comfortable stable can be made with slight expense.

You will want your cow stalls about three and one-half feet wide from center to center and with the 36 feet you would have room for ten cows, but you will have a passageway from behind the cows to the feeding alley in front, which will take up one stall, so I hardly see how you can get in room for more than nine cows in this space.

CORN FODDER, SILAGE AND BEAN PODS.

Please balance a ration for grade and registered Holsteins, weighing from 900 to 1300 lbs. and producing from 25 to 40 lbs. of milk. I have for roughage silage from matured corn, bean pods, sufficient for one feed daily, unhusked shock corn averaging about six small, round ears to bundle. I have enough of this corn to feed one bundle per day to each cow. I have no hay. Can buy grains at following prices: Cottonseed meal at \$1.70 per cwt; buckwheat middlings at \$1.40; corn meal at \$1.40; bran at \$1.40; oats at market price; oil meal at \$1.90.

Isabella Co.

J. C. K.

Bean pods, if they have been well cured, and the beans were pulled before they got too ripe, are nearly as good as clover hay. If they were as palatable and as digestible they would be as good as clover hay, because they show a protein content that is practically equal. However, they are hardly ever as palatable as clover hay and the cows will not eat as much of them, which fact must be taken into consideration. Corn fodder and the silage, of course, make splendid feeds, but they are both deficient in protein. Therefore the deficiency in protein must be made up in the concentrated ration. Buckwheat middlings is a splendid food for a cheap source of protein. I would recommend that you mix corn and oats and buckwheat middlings equal parts by weight. Then feed two pounds of cottonseed meal per day to each cow; and in addition to the cottonseed meal give them enough of corn and oats and buckwheat middlings so that each cow will get a pound of grain for every four pounds of milk she gives. Or another good rule would be to give each cow a pound of grain per day for each pound of butter-fat she produced in a week. There is no use in weighing out the roughage in this ration or in fact any ration. Give them all the corn fodder they will eat up clean once a day, and give them all the silage they will eat up clean twice a day. Then give them all the bean pods they will eat up without too much waste. Having well-bred dairy cows they should give liberal yields of milk upon this ration, providing, of course, they are kept in a comfortable dairy barn.

A Help to Subscribers.—The free testing of cream and milk by the Michigan Farmer for its subscribers is not only becoming popular but is actually rendering a positive help by checking up the returns of creameries to their patrons. The subscriber then knows positively whether he is getting a "square deal."

Only \$2 Down 1 Year To Pay

WRITE for our big free colored catalog folder

today and get our astonishing offer on the 1914 Model New Butterfly Cream Separator. You can now get any size machine we make on easy payment terms of only \$2 down and have a year to pay the rest of our low factory-to-farm prices. Think of it! The money you get for only 8 pounds of butter will now put one of these big labor-saving, money-making machines in your home and after that the separator itself will more than earn the other easy payments before they are due.

You won't feel the cost at all. Surely you will never have a better opportunity to get a cream separator, especially since you can deal direct with the factory and save half. Nearly 25,000 of these splendid machines already in use. Every one guaranteed a life time. You can have one too. Send the coupon, today.

5 Sizes To Choose From

ALBAUGH-DOVER CO.



The Milk Tank is low down and self-draining

Our Big Chicago Factory Buildings where New Butterfly Cream Separators are made.

New Butterfly Cream Separators

\$24 Only \$2 Down—1 Year to Pay buys the New Butterfly Junior No. 2—light running, easy cleaning, close skimming, durable—pay only \$2.00 down and then \$2.00

a month for eleven months—no interest to pay—no extras. Skims 95 quarts of milk per hour. Guaranteed a life-time. Made also in four larger sizes up to No. 5½ shown here. Send the coupon below for FREE catalog folder and latest, rock-bottom, factory-to-farm price-list.

30 Days' Free Trial

Easy Payments—No Interest

When you receive our catalog you can quickly decide which size New Butterfly Separator you want to try 30 days at our risk. Send only \$2.00 with your order. We will gladly ship any machine we make—large or small—with this understanding, that you are to use it on your farm 30 days at our risk. If at the end of this trial you are not fully satisfied—if you are not convinced beyond all doubt that the New Butterfly Separator is the best separator you can buy even at twice the price we ask, simply return it to us at our expense and we will refund every penny you have paid including the freight charges both ways. **YOU DON'T RISK A SINGLE PENNY** by accepting this offer. You take no chance whatever.

Send the Coupon Today

Just fill out the coupon at the right and take advantage of this remarkable offer at once. Never before have you had such an opportunity—perhaps never again will it be so easy for you to get one of these big, fine, labor-saving, money-making machines. When our 1914 stock is sold this offer must be withdrawn. You should act quickly. Send the coupon NOW and get our big, FREE Catalog Folder, printed in colors, with astonishingly low factory-to-farm prices. Address

ALBAUGH-DOVER CO.

2195 Marshall Blvd.
Chicago, Illinois



This out shows our big size 5½. Skims 95 to 100 lbs. of milk per hour. Has easy cleaning, one piece Aluminum skimming device, low tank and frictionless pivot ball bearing. Terms only \$2 down and small monthly payments.

Proof From Actual Users

Albaugh-Dover Co., Chicago, Ill.
Dear Sirs: the New Butterfly Separator has proved to be the best paying machine on the farm. The cream from four cows brought us \$24.00 for the month of October. I can recommend it to be as easy running and as easy to clean as any on the market.
Yours truly,
Williamstown, Ohio. C. C. TRACKER.

Albaugh-Dover Co., Chicago, Ill.
Dear Sirs: We have been using one of the New Butterfly Cream Separators for about four years and will say it is the easiest running, easiest cleaned and closest skimming machine I ever saw. I can recommend them to anyone wanting a first-class separator.
Yours truly,
Donnellson, Iowa. CHAS. H. KIRCHNER.

Albaugh-Dover Co., 2195 Marshall Blvd., Chicago, Ill.
Please mail me your FREE Catalog Folder with full description of all sizes, factory-to-farm prices and terms.

Name.....

P. O.

State.....

I Keep.....



For CULVERTS, TANKS, SILOS AND ROOFING Use

APOLLO BEST BLOOM GALVANIZED SHEETS

Careful manufacture and good galvanizing insure maximum service from APOLLO sheets. APOLLO Roofing and Siding Products are sold by weight, by leading dealers. Send for "Better Buildings" booklet. AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.



APPLETON MFG. CO.

820 FARGO ST., BATAVIA, ILL.
MAKE GOOD

Grinders and have for Thirty Years but the new Ball Bearing, Fine Grinding, Light Running, Strong, Durable No. 12 is a Marvel. Grinds ear-corn or small grains, with Appleton or other 4 to 8 H.P. Gasoline or Kerosine Engines.

Silo Fillers, Huskers, Spreaders, Wind Mills, Towers, Wood Saws, Shellers, Jacks, Corn Pickers, Corn Snappers, Fodder Cutters.

Send today for Free Circular of this marvelous Grinder and other Goods.

GRINDERS

15.95 AND UPWARD ON TRIAL AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION to send fully guaranteed, a new, well made, easy running, perfect skimming separator for \$15.95. Skims warm or cold milk; making heavy or light cream. The bowl is a sanitary marvel, easily cleaned.

Absolutely on Approval. Gears thoroughly protected. Different from this picture, which illustrates our large capacity machine. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address:

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





Why Dave stayed on his father's farm

OLD Man Hicks, the dairy farmer, has a herd of mighty fine cows. He also had a son named Dave who thought milking a pretty tough job, and who imagined he was getting weak-handed and on the way to milker's paralysis. So he laid down on the job and the old man had to milk all the kickers and fussy bovines.

Then one day Hicks, Sr., saw the light. He installed a

SHARPLES MILKER

That was four years ago and ever since, twice a day, the herd has been machine-milked, the kickers and fussy producers give down without being chained, and Dave's doing the work formerly done by Dad and two husky hired hands.

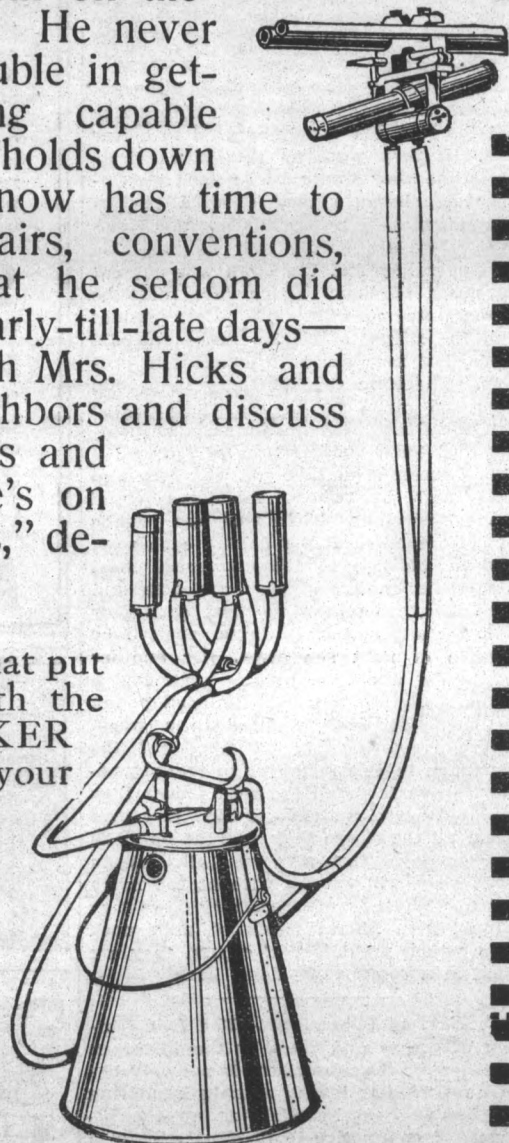
Long ago the son forgot paralysis in standing by and watching the teat cup with the upward squeeze get Bossy's milk. When she persists in yielding 30 pounds of fluid, the machine sticks to her and gets all of it. There are no finger nails gouging out a bit of teat or scratching her udder. She's not sworn at now—she's sworn by. She no longer holds up her milk, for the machine does what human hands can't do—draws the milk intermittently with a soothing massage motion, driving the blood up and the milk down. And Bossy knows that's how she ought to be milked.

Dave's now clamoring for a bigger dairy and another machine. The only way to use the hour or more saved at each end of the day is to put in more cows and

increase the size of Dad's bank roll.

Ask Old Man Hicks what the SHARPLES MILKER is and does. He'll say it's a clean-milk getter and a hold-'em-on instead of drive-'em-off-the-farm proposition. He never has the least trouble in getting and keeping capable help. While Dave holds down the job, Hicks now has time to attend county fairs, conventions, socials and—what he seldom did in the old grind-early-till-late days—go to meetin' with Mrs. Hicks and mix with the neighbors and discuss politics and ways and means. "The joke's on Bossy these days," declares Hicks.

The same catalog that put Hicks in touch with the SHARPLES MILKER and prosperity is at your disposal. Why not ask for your copy?



The Sharples Separator Co.

West Chester, Pa.

Chicago, Ill.
Dallas, Texas
Minneapolis, Minn.

Kansas City, Mo.
Toronto, Canada
San Francisco, Cal.

Portland, Ore.
Omaha, Neb.
Winnipeg, Can.

Agencies Everywhere

CITY MILK SUPPLY.

(Continued from page 133).

not see any cream line on the bottle. This brings us therefore to the consumer's responsibility in the matter of the city milk supply, and coupled with the consumer's responsibilities in the matter comes the responsibility of the city inspectors and officials, for it is within the power of the law to bring a more consistent demand on the part of the consumer.

The Milk Inspector's Duty.

We will take the question of the fat content of pasteurized milk. Too frequently it is a fact that milk with a narrow cream zone means milk with a small fat content. Consequently the consumers' opinion in this matter is merely the opinion formed by experience with the product. If the city inspection authorities will see to it by vigorous inspection of retail milk that the fat content of milk and the fat content of cream are what they are guaranteed to be, then we think the consumer will in turn remove her objections to a narrow cream zone for experience will then show her that a milk may contain a desirable content of fat which will not exhibit itself in a wide cream zone. But until such assurance is given and proven by the actual inspection and control of the milk, dealers will have difficulty in disposing of a milk which has been thoroughly pasteurized under the prevailing conditions and which has as a consequence of pasteurization a very narrow cream zone.

The customer's actual responsibility in caring for the milk has been discussed many times and it has been assumed usually that the greatest carelessness in this respect comes among the poorer people of the city who perhaps have least knowledge of the character of milk and the consequence attending careless handling of same. While this condition may be true in a great many instances and perhaps the majority of cases, it is surprising indeed, to note what carelessness exists among consumers who should know better and in places where they do know how to properly handle milk but through carelessness or neglect they do not exercise the proper precautions.

Carelessness of Those who Know.

In professional homes and too frequently in hospitals even the methods surrounding the use of milk and its preparation for food products are very careless indeed. In the modifying of milk for infants' use there can be no excuse for the leaving of milk bottles out in a warm room for two or three hours and then using this same product in making up the daily feeding of children. Graduate nurses know how to handle milk but very frequently their very familiarity with the product breeds neglect and carelessness in its handling. We have been called in on several occasions to investigate conditions which pointed clearly to laxity in the handling of this product, milk, a point which among professional people, nurses and physicians, should be one of the points of primary consideration.

The Milk Problem Needs Intelligent Study by a Commission of Competent Men.

In discussing the problems therefore incident to the securing of a pure, wholesome and satisfactory milk supply in cities, when attaching the responsibility that is due the producer, let us not imagine that he is the party responsible for all of the evils which attend an impure milk supply. It is his duty to start it right, and this he may do without any expensive equipment; without any unnecessary frills, but with simple attention to a few sanitary details which he should be glad to do the moment they are called to his attention. With an efficient co-operation and attention to details, the proper refrigeration of milk in transportation and the exercise of certain desirable precautions in the milk distributing plant in the city and at other points, it should be possible to secure in the city a milk which may be consumed at least with perfect safety.

HIGH GRADES—HOW TO IMPROVE.

I have in my herd of cattle a seven-eighths Holstein cow and her grandson, which was bred from a full-blood Holstein bull. What portion of Holstein blood is in the grandson and through what process can I better my stock?

Osceola Co.

P. L.

Since the cow is seven-eighths Holstein her son or daughter would be fifteen-sixteenths Holstein and her grandson thirty-one-thirty-seconds Holstein. The best way to improve your herd is to get a pure-bred sire of some reliable breeder. Don't use this grade grandson you speak

of as a sire. Breeding is uncertain enough when you use the best pure-bred sire that you can get. Nowadays when one can get a pure-bred sire at a nominal price he is not warranted in using a grade even though he is a high-grade, as a sire. Your grade may be a good individual and all that, possibly this grade would be prepotent and get good calves, yet there is impure blood there. That impure blood is liable to come out, perhaps not in the first generation, but the second and third, and you have undesirable animals not alone in looks but in production, and finally you will regret the fact that you used a grade when you could get a pure-bred animal at a mere nominal price.

CORN, OATS AND BEANS.

I am milking seven cows which are giving about 200 lbs. of milk a day, and have clover and timothy mixed for hay, also cornstalks and bean pods. How would I feed the following grain to get the best results: Corn, oats and beans? Would this be anywhere near a balanced ration, if not what would it need to make it balance?

Livingston Co.

F. L.

If your cows relish bean meal, then do not look for any other food to balance the ration, because you have got ingredients that if fed in the proper proportion, will give you just as well balanced a ration as you can get. You have mixed hay, corn stover and bean pods for roughage. This is very good roughage and offers a variety. Now if you will feed corn and oats and beans ground equal parts by weight, it will furnish you a fairly well-balanced ration. I would suggest that you feed a pound of grain for every three or four pounds of milk, depending on the quality of the milk, or feed three-quarters of a pound to a pound of grain per day for every pound of butter-fat which the cow produces in a week. If your cows don't relish the bean meal and do not eat it, that is another thing. Then I would feed a smaller amount of it and perhaps put in gluten feed or wheat bran in the place of a portion of the bean meal.

NUMBER OF TONS OF SILAGE—VALUE.

I would like to ask a few questions to enlighten me on a silo proposition. I am going to move in a place having two silos, one of which is full, lacking about five feet. The silo is 12 feet in diameter and 30 feet high. The silage has settled five feet. Now I would like to ask how many tons of silage there would be, and also the value of the silage is sold. When the corn was put in last fall the ears were about half picked off, so this silage is not as valuable as if the ears were left on. Now I would like to know the tonnage and a fair valuation.

Ottawa Co.

H. O.

Forty pounds per cubic foot is the estimated average weight of well-settled corn silage. Of course the deeper the silo is the more the silage will weigh per cubic foot because it will be submitted to much greater pressure, but the weight of silage is only a careful estimate anyway, and the above is the weight usually given. Now your silo being 12 feet in diameter and the ensilage being 25 feet deep you will have 3,000 cubic feet of ensilage, or 60 tons.

It is difficult to give the value of corn silage because there is no market for it. There is nothing to fix the price. In the cow testing work in this vicinity the silage is charged against the cows at \$3.50 per ton. The chemical analysis of corn silage compared with timothy hay would show that corn silage has one-third the value of timothy hay. If timothy hay would sell for \$15, then corn silage would be worth \$5 per ton. If it sells for \$12 then it would be worth \$4. Taking everything into consideration, however, probably \$3.50, the price fixed upon by the cow testing association, is a fair one.

Nowhere near enough stock cattle are offered in the markets to supply the wants of stockmen of various parts of the country. Well-bred stock cattle cost high, and with corn bringing unusually high prices everywhere, making beef is enhanced in a marked degree. In the middle-western markets killers are still competing with stock feeders for the good fleshy steers, as has been the rule in past years, and this aggravates the situation a good deal. The extraordinary popularity of baby beef is turning the attention of many farmers to the necessity of saving all their good calves for maturing quickly as fat yearlings, but there is always danger that these youngsters will be marketed before they are well fattened. Meanwhile there promises to be a continued large demand for butcher stock as well as for culling and cutting cows, while it is certain that the packers are going to find it a difficult matter to secure enough common cattle for culling purposes, the sales of tinned meats having increased enormously of late because of the dearth of beef and other meats.

DE LAVAL

Butter Triumphs as Usual at the NATIONAL DAIRY SHOW

BUTTER made from cream separated by De Laval Separators made the usual clean sweep of all highest awards at the great 1913 Chicago National Dairy Show and Annual Convention of the National Butter-makers' Association, just as it has always done every year since the organization of the National Association in 1892.

Whole Milk Creamery Butter

The highest score in this class was awarded to O. N. Peterson, of Rapidan, Minn., a De Laval user, as were 187 out of 200 whole milk creamery entries.

Gathered Cream Creamery Butter

The highest score in the gathered cream factory-made butter class was given R. O. Brye, of the Readstown Creamery Co., Readstown, Wis., this prize-winning butter being made from the cream of farm patrons all using De Laval Cream Separators.

Farm Dairy Butter

The highest score in this class was awarded to Mrs. D. H. Turnbull, of Monmouth, Ill., whose family have been using De Laval Cream Separators for over 20 years.

DeLaval Superiority Indisputable

The evidence of the superiority of De Laval cream and butter, demonstrated by the winning of all highest awards the world over for thirty years, is so overwhelming as to be indisputable and unanswerable. A De Laval catalog, to be had for the asking, will make plain the reasons for it.

Fill out the coupon or give information asked for in a letter or postal and get this 72 page book free.

THE DE LAVAL SEPARATOR CO., 165 Broadway, New York

Please mail me, postage free, your Dairy Handbook.

I keep cows. I sell cream, make butter, sell

milk (which?) The make of my

Separator is used years.

Name

Town State.....



The De Laval Separator Co.

NEW YORK

CHICAGO

SAN FRANCISCO

SEATTLE

No More Dead Chicks



Get a vigorous chick from every fertile egg by using the **MORKLEY Oxy-Vitalizer** to supply them with moist oxygen.

Attached to any incubator in 5 min. Self operating—no watching. One may be used for several incubators. Lasts a lifetime. Send for free literature or \$3.50 for Vitalizer, Parcel Post prepaid. **Morkley Mfg. Co.,** 230-36 Onondaga St., Syracuse, N. Y.

130 EGG Mankato Incubator \$7.25

A high grade hatcher, direct from factory to user. Has red wood case, triple walls, asbestos lined, copper hot water tank, self regulator, nursery, high legs, safety lamp, etc. Safe, simple and sure. All set up ready for use. Money back guarantee. 12 years experience. Brooders for 120 chicks \$2.50. For 240 chicks \$4.00 and up. Write for big free catalogue.

Mankato Incubator Co., Box 727 Mankato, Minn.

YOUR HENS YOUR FARM YOUR MONEY

Farmers and Fanciers 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 how 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.**

POULTRY.

Emden, White & Brown China Geese, Indian Run, Lner, Cayuga, Aylesbury and Blue Swedish ducks, Partridge Rocks, Partridge Wyandottes, Game Bantams, Pearl & White Guineas, Good stock cheap. State Fair Winners. **Ellis Poultry Farm, Charlotte, Mich.**

15 YOUNG ROUEN DRAKES of good markings and are of extra large size. \$2.50 and \$3 each. **David G. Fisher, R. 3, Box 98, Birmingham, Mich.**

PROFITABLE STRAIN OF BARRED ROCKS. Bred for winter laying and early maturing. A limited number of choice cockerels of May and June hatch. Weight 9 to 10 lbs. Price \$3 each. \$1 with order, balance C. O. D. **Byron Barnett, R. 1, Pontiac, Mich.**

For Sale—M. Bronze Turkey Toms, Buff Plymouth Rock cockerels and choice Dahila Turkeys. 75 varieties. **Lucy O'Harrow, R. 42, Clarksville, Mich.**

M. B. Turkeys—Large with fine plumage. Toms \$6, Hens \$4. Indian Runner ducks. A few choice Silver and Partridge Wyandotte cockerels. **Collar Bros., Coopersville, Mich.**

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

50 Leading Breeds—Pure bred Chickens, Ducks, Geese, Turkeys, Fowls, Eggs, Incubators. Best at lowest prices. Fine large catalog 2c. **W. A. WEBER, Box 923, Mankato Minn.**

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.**

BARRED ROCK COCKERELS—\$2.00 each, two for \$3.00, pullets \$1.00 each. **A. A. WOOD & SON, Salline, Michigan.**

BARRED ROCK COCKERELS—\$3 each, two for \$5. Winners for 10 years. **J. A. Barnum, Union City, Mich.**

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

PRIZE WINNING Barred Rocks, R. I. Reds, High quality, low prices. 500 Indian Runner and Pekin ducks, \$5 per trio. circular free. **EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.**

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

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

MRS FLORENCE HOWARD, PETERSBURG, MICH. White Rock cockerels. Choice, large, \$2.50 each.

WHITE Wyandottes Duston Strain. Farm raised 20 fine cockerels \$2 each 3 for \$5. Eggs 5 cents each. **VERN MOORE, R. 1, Hartford, Mich.**

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

S. L. WYANDOTTES—Bred from great laying strain of blue ribbon birds. \$2 each. Satisfaction guaranteed. **F. E. Cowdrey, Ithaca, Mich.**

PINE CREST WHITE ORPINGTONS—Fifty early pullets from prize winning stock, excellent layers. Three and five dollars. **MRS WILLIS HUGH, PINE CREST FARM, Royal Oak, Michigan.**

DOGS AND FERRETS.

Fox and Wolf Hounds

of the best English strain in America 40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog **T. B. HUDSPETH, Sibley, Jackson County, Mo.**

HOUNDS FOR HUNTING Fox, Coon, Skunk and Rabbits. **W. E. LECKY, Holmesville, Ohio.**

Tells why chicks die

J. C. Reefer, the poultry expert of 1604 Main St., Kansas City, Mo., is giving away 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 terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write **MR. REEFER** for one of these valuable **FREE** books.

The Lamp in the Center



INCUBATOR

Saves Big Money Let Me Prove It

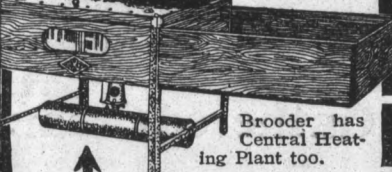
The only incubator built on the right principle, with the lamp underneath—square in the center. This means an absolutely even, regular temperature. No more cold corners. Note the big oil tank! This only needs to be filled once for a hatching, and 1 gallon of oil makes the hatch—a saving of 75c to \$1.25 each hatch.

Get Our Factory-Direct Price Get the Big New X-Ray Book

Study the construction of the X-Ray! Study its big hatching record. The door is the top; has two double glass panels. You can see the thermometer and all that is going on.

X-Ray Brooders Too

Built on the same scientific, lamp-in-the-center plan. Sanitary, healthy, evenly heated. Give chicks the best start. Raise largest percentage.



Brooder has Central Heating Plant too.

Get the Free Book

Post up on Facts. Incubators have been sold on talk too long. See what this machine is doing. Our big, free, new book No. 29 has the facts and proof. Write for it. A post-card will do. We pay the freight.

X-Ray Incubator Company Des Moines, Iowa

Double Your Income with Big Poultry Profits

It's entirely possible this year. Shortage of beef-cattle, swine and sheep means people must turn to poultry and eggs. We predict greatest demand in decade—best profits. Raise a bumper combined poultry and egg crop for 1914 with

CYPHERS INCUBATORS & BROODERS

You can't afford to take chances on equipment. Cyphers is World's Standard. Used by more well known Poultry Raisers, more Poultry Fanciers, more Government Experiment Stations, more State Agricultural Colleges than all other makes combined. No heat or moisture troubles. Substantial, fire-proof, dependable. Get our

Big FREE Book

—244 pages of practical down-to-now information based on actual experience. Eight special chapters of valuable suggestions. Fully describes and pictures Cyphers Incubators and Brooders and one hundred standard poultry specialties. Also explains Cyphers Co.'s Free Bulletin and Personal-Letter Service—biggest day-by-day help to poultry keepers ever offered. But write this very day for book—get early money-making start. Write postcard now.



Cyphers Incubator Co., Dept. 35, Buffalo, N. Y.
New York City, Boston, Mass., Chicago, Ill., Kansas City, Mo., Oakland, Cal., London, Eng.

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.

Poultry and Bees.

IMPROVING THE MARKET QUALITIES OF EGGS.

At this writing the price of eggs in the New York city market is as follows: Fancy firsts, 75 cents; firsts, 61 cents; seconds, 43 cents; pullet eggs, 51 cents, and checks, 34 cents. These prices ought to show that, as a rule, the quality of an egg denotes its price.

We candle all our eggs, whether fresh laid or not. We do this so as to remove all such as have blood spots, broken air space, imperfect shells or ruptured yolks. In pullets' eggs especially is it absolutely necessary, because they are more apt to lay eggs with blood spots. A blood spot is caused by a ruptured blood cell just at the time the egg drops into the oviduct. A ruptured air cell is generally caused by rough handling or hauling over rough roads.

In candling eggs the age is always noticeable in the size of the air space; in a fresh egg it is barely noticeable, and the older the egg the larger the air space or cell. This is accounted for in the way of evaporation. The egg dries up gradually, unless the pores of the shell are sealed up, or they are stored in an airtight receptacle. The lower the temperature, of course, the less evaporation. Thus in cold storage they do not evaporate quite as much, and in candling the same allowance for the same must be made.

Grading Eggs.

In grading the eggs, for fancy firsts we use absolutely nothing but eggs which are perfect in every way, perfectly fresh, and weigh two ounces or more and are perfectly white.

For firsts, we take either whites or browns, of medium size, perfectly fresh, and perfect in every other respect. The only difference we make is that in this grade we use medium-sized eggs, that is, a little smaller than those going as fancy firsts. We also use browns in this class, but of course always grade the colors together. In grading in eggs grade according to freshness, size, color, and formation of the shell. It is our aim to have as uniform a lot of eggs as possible.

For seconds, we use all such as are not perfectly fresh and not older than 14 days. Cracks that are perfectly fresh are put into this grade, also eggs too small to go into either of the first two grades. Eggs with blood spots, ruptured yolk or air cell also go into this grade.

Into checks we grade all such that cannot be placed into any of the previous three grades.

The pullet eggs especially the first few laid we grade as such and place them in separate cartons from the rest properly labeled.

Quality Influenced by Feeds.

One of the best ways of improving the market qualities of eggs is by feeding nothing but pure, wholesome food. Guard against feeding tainted and impure animal foods. We like milk best to partly take the place of animal foods. For green food where the market quality of eggs is considered, during the winter, we know of absolutely nothing that is as good as well-cured third cutting alfalfa hay. When feeding this we find that the yolk of our eggs possess that rich, natural yellow color, not that heavy dark or stringy yolk so often found in winter laid eggs. Feeding excessively of beets or cabbage gives the egg an unnatural odor and watery yolk, and often the white appears to be stringy and tough.

We have carried on various experiments here in increasing the size of the egg. The conclusion of these is that a large fowl in its breed will lay the largest egg. From these experiments we draw the conclusion that it is apparent that if we are to produce eggs that bring a high price, and continue to keep them of good size from year to year, we must expect to do so with a good-sized hen, and if we expect to get a good-sized hen, we must use good-sized eggs to make the start.

New York.

F. W. KAZMEIER.

ONE MAN'S METHOD OF POULTRY RAISING.

Individual methods of caring for poultry are always interesting. We always like to get knowledge of another's way so that we can get hints on the improvement of

our own. Therefore W. F. Grady's method as given in a talk before the South Haven & Casco Pomological Society, will be interesting.

After making his hearers realize that he has had his ups and downs in the business, and that he has learned much through hard experience, he told of his way of raising chicks, giving first, briefly, his experience with incubators. He never feeds the chicks until they are 61 to 72 hours old, as this prevents fermentation and late digestive disorders. As the chicks develop he feeds the commercial feeds prepared for growing chicks.

His idea being egg production he used the White Leghorn. He sells the males when they weigh one and a half pounds as he finds they come to that weight as soon as any breed and at that weight bring the best prices.

He finds green food not as desirable as many believe and feeds scratch food, one quart to 40 in morning and one to 20 chickens at night. Besides this he gives a mash made of middlings, corn, beef scrap, bran, alfalfa, oil meal, and salt, and gives a dose of epsom salts once per week, a teaspoonful to three hens. He has had little sickness for he pays especial attention to cleanliness and uses permanganate and copperas, or carbolic acid to sterilize the water thoroughly. He cleans the coops every day and scatters air-slaked lime over the perches and pens.

Mr. Grady said the hens would average about 110 eggs per year and began to lay at five to six months. The manure was worth 30 to 40 cents and the feed cost \$1 to \$1.25, making a profit of 65 cents per year and the fowl still left, which was worth 50 cents, which makes a fair profit for the owner. He keeps no old hens.

The most interesting part of his talk, in many ways, was his method of marketing. He found that about 30 per cent of eggs sold were unfit for use and the dealers must pay less to make up for this loss. He found that he could always sell well in large cities, for New York alone consumed one billion eggs per year. The thing to do was to find a good market and put up the eggs well. His are gathered every day, cleaned and neatly packed. No bad eggs are allowed to get in.

To him it seemed the cold storage men were a factor for good, even if they did make immense profits, for they held eggs and so distributed them over the whole year, making it possible for some men to make money if the hens were made to lay during the fall and early winter. As most eggs are produced in three months of spring, eggs were of no value until storage began; most eggs being produced on the farm and not on special farms, the factor of storage made it profitable for the farmer who does not devote all his time to chickens.

Van Buren Co.

C. N. FREY.

EXTRA PROFIT IN POULTRY.

Within the past few years the poultry business has gone through many changes for improvement, and the poultry plant can now be truthfully called a poultry factory, for poultry management has practically been brought down to a scientific management.

The most uncertain part of the chicken business has been the hatching and raising of the chicks, but through the wonderful development of artificial incubation and brooding, this has been made certain and easy. Some make a specialty of hatching because they understand the business and have at hand means of getting maximum results. They can furnish young chicks to those who are not in the chicken business extensively enough to buy an incubator for their own use, cheaper than they could raise them by the old methods.

There is an opportunity in nearly every neighborhood for someone to do custom hatching, and many have found this business a good source of profit. This business has developed to such proportions that there are incubators on the market especially for those who wish to engage in this work. These machines are made sectional, and additions can always be made to them as business increases.

An investigation of this branch of work may result in a well established business which will become a valuable source of extra income from your poultry plant.

Open Front Poultry Houses.

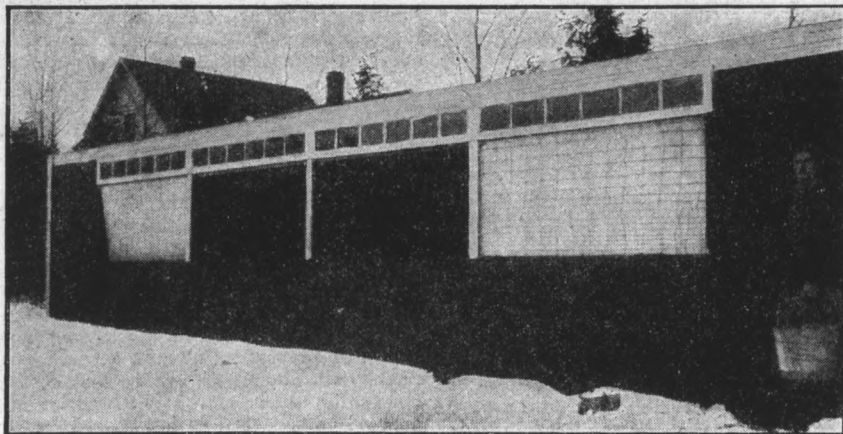
In the October 25 issue of the Michigan Farmer I noticed the article on "Unusual Experience with Open Front Poultry House," by Anna W. Galligher, Ohio, in which she flatly condemns the open front house, saying that it may be good enough for a heavy breed with small comb and wattles, but for Leghorns it is a "delusion and a snare," where the mercury goes down to zero every winter.

I feel that something is decidedly wrong somewhere, either mismanagement or in the construction of the house. Weather conditions in St. Clair county, Michigan, are certainly more severe than in Ohio, and my experience proves to me beyond any doubt whatever, that the open front poultry house properly constructed and intelligently managed, is a decided success. I breed the Anconas, a fowl very similar to the Leghorns, with comb and

open. I usually close the curtains on frosty nights, or nights when it looks as though it might storm.

The back and roof are boarded with matched lumber. The rafters at the back are sawed off flush with the studding, the boards of the back run right up to the top of the rafters and the first board of the roof is nailed to the edge of top board of back, which makes the house eaveless. A good grade of building paper is put on next, running down over the edge so as to cover the roof and back. On top of the paper I put on a good rubber roofing paper. This makes an air-tight job of it. No winds find entrance, which I think is the essential point in constructing an open front house.

My birds have access to the entire floor space, as the nests are all elevated and the feed hopper with compartments for



A Practical Open Front House.

wattles fully as large, and they do well in my open front house, having no trouble with frozen combs at all. Even during the cold winter of two years ago, the general health of the flock has been exceedingly good.

The floor of the coop is dry and covered with straw from four to eight inches deep, into which their grain is fed them. It is the exercise they get digging after the grain that keeps them warm and healthy, even with the mercury at zero and below.

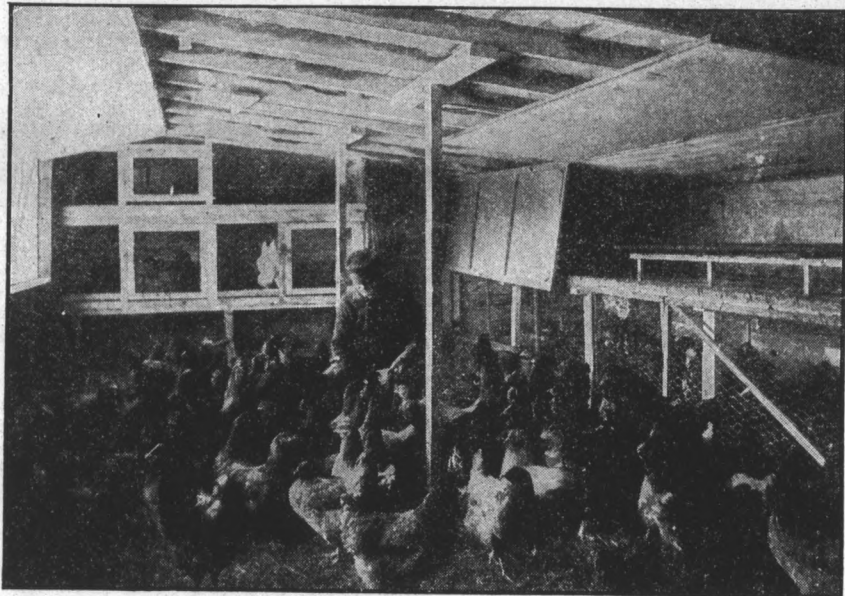
Description of House.

Perhaps a description of my house would be of interest. As I have no yard for my hens I built my house 16 feet deep so as to give the birds all the room

dry mash, grit, oyster shell, charcoal and beef scrap, as well as the drinking fountain are placed upon a platform 20 inches from the floor. This keeps the feeds and water free from the flying straw and chaff. The roosts are placed at the back and to one end, they are raised three feet from the floor and are filled with removable dropping boards. The roosts are hinged at the back so they can be hooked to the top when cleaning the dropping board.

Roosting Quarters.

Now I come to the main feature of the roosting quarters—the back, top and ends are boarded up with matched lumber, closely fitted, the dropping boards are also made from matched lumber so no draft can reach fowls from below. Thus



Showing Interior of Open Front House.

possible. It faces the south, is seven feet high in front and five feet at back and is 33 feet long, shed roof style. The proportions of the front and the depth allows the sun to reach all parts of the floor during the day. The lower three feet across the front of my house is boarded up with drop siding. This gives the birds protection from the cold winds, and is much appreciated by them. The open space in the front has poultry netting nailed to the outside, to keep the fowls in, and four cotton-covered frames each 3x6 ft. fitted to the inside and hinged at the top so they can be hooked back to the rafters. These curtains are regulated according to the weather, if a cold south wind is blowing or a storm blowing in on the birds the curtains are shut down. Sometimes only one or two of them and sometimes all are closed, but on bright sunny days all curtains are wide

the roosts are enclosed on three sides, and the front is fitted with two cotton-covered frames, these frames are hinged at the top and hooked up during the day and on mild nights, but on cold nights when the mercury gets near zero the curtains are closed and hooked fast for the night, this keeps the birds warm and comfortable all night, even if the mercury does drop to 25 degrees below zero. In the morning when I open the roosting curtains, the birds come out in the best of spirits and begin work at once, as they get their morning meal of mixed grain at this time, which is scattered in the straw. For best results the roosting closet should be nearly full of chickens as the warmth of their bodies is what keeps them warm. The same holds true to the house, try and keep as many birds as your house will hold without crowding.

St. Clair Co.

G. A. BALDEN.

Wisconsin Wins In Big Hatching Contests Every Year

Winner 1910-1911-1912-1913

Mrs. J. McMahon, Veedersburg, Ind., won in Missouri Valley Farmer Hatching Contest, hatching 125 chicks from 126 eggs.

Mr. C. B. Armitage, Atwater, Ohio, won in Successful Farming Contest, hatching 181 chicks from 181 eggs in two hatches.

Mrs. J. W. Mize, Vaughn's Mills, Ky., won in Successful Farming Contest, hatching 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.

Thos. J. Collier, Mgr.

These contests were open to all makes regardless of price and prove beyond question that the famous Wisconsin machines are the best for the money in the world.

I stand ready to prove to you that Wisconsin Incubators are the best built and best equipped machines in the world for the money. You can't get bigger or better hatchings even if you pay twice the price. I build the outer walls of my incubators of Genuine California Redwood—costing 4 times as much as materials some manufacturers use. If you will write for my catalog, I will gladly mail you a sample of the lumber so you can see the quality and compare it with others. If you do this I know you will order a Wisconsin. One hatch will pay for your machines and more. If you are not perfectly satisfied, simply write me—send the goods back and I'll not only return your money, but pay the freight charges and charge you nothing.

ORDER DIRECT FROM THIS AD
130 Egg Incubator
Chick Brooder
Both Machines \$10
For Only
 Freight Paid East of Rockies

130 Egg Incubator and 130 Chick Brooder Both for \$11.50

Natural Finish California Redwood

Why Take Chances
 Get This Free Book
 Find out what an incubator is made of before you buy.

Wisconsin are bigger, better, more value than ever—no increase in price. 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 high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others we will feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Money back if you are not satisfied.

WISCONSIN INCUBATOR CO., Box 148, RACINE, WIS.

There is Ready Money in Baby Chicks

You pay about two cents apiece for hatching eggs in season; you can sell Baby Chicks for 15c apiece. Install a

CANDEE INCUBATOR

Hot Water Sectional—Automatic

—in any clean cellar or basement and you will have a modern farm machine that will produce money quick. This is a wonderful thing when you stop to think that nearly all the other products you use machines for, are not sold until fall. By selling Baby Chicks and hatching eggs for other people, you get a cash income in spring.

THE CANDEE INCUBATOR IS AS SAFE AS THE KITCHEN STOVE

It doesn't cost much, and you can set it up in a few hours. The coal costs but a few cents a day. There is an automatic regulator on the heater and each 300-egg section has a separate automatic thermostat regulator. This complete regulation and the hot water heat makes stronger, sturdier chicks. These features are found only in the CANDEE INCUBATOR.

Be the one to start a Custom Hatchery Business in your neighborhood. Write us for free booklet that tells you how.
Candee Incubator & Brooder Co., Dept. X, Eastwood, New York.

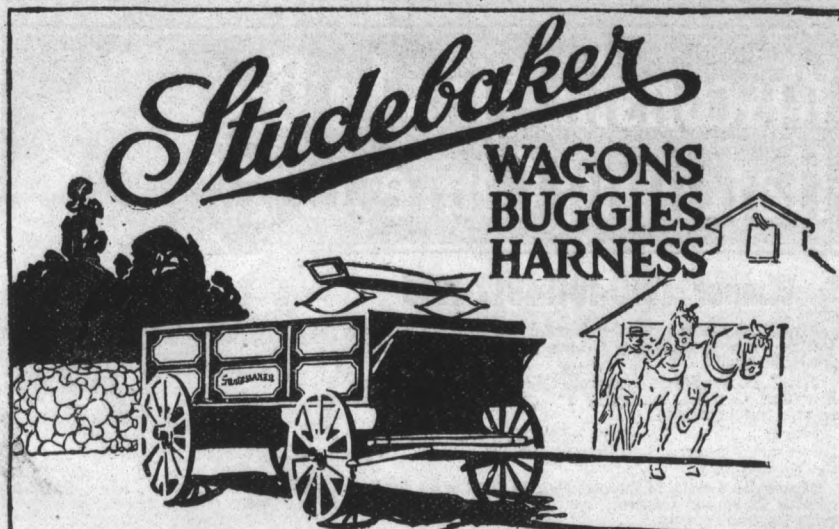


16 Trays Hold 75 Eggs Each

Add Extra 600-Egg Sections at any Time

This 1200-Egg CANDEE can earn \$288 in 189 days hatching eggs for other people. You can make even more money selling Baby Chicks. A 6600-egg machine can earn \$1056 in 126 days; \$1584 in 189 days.

When writing advertisers please mention The Michigan Farmer



A Studebaker wagon bought in 1868 — and working today

AWAY back in 1868 Mitcheal Everman of Centerville, Ia. bought a Studebaker Farm Wagon for \$110.00. The wagon has faithfully served three generations of farmers and C. H. Everman, grandson of the man who bought the wagon, writes "there is not a crack in the hubs." Perhaps you would like to read Mr. Everman's letter. It would be difficult to write a more convincing argument in favor of Studebaker Farm Wagons.

Here is the letter:

Studebaker, South Bend, Ind.—I have a Studebaker Regular Farm Wagon that was bought in Centerville, Ia. by my Grandfather, Mitcheal Everman, in the year 1868—and has been in constant use in the family ever since. The wagon cost my grandfather \$110.00 and has the same wheels, axles, skains and bolsters on it today as when it was bought and there is not a crack in the hubs. The wagon is in reasonably good repair and I have recently been hauling 1½-yard loads of sand in it.

C. H. EVERMAN, Mystic, Ia.

WHAT THIS PROVES

It proves that the wagon bought by Mr. Everman was made of the best material and workmanship—that's why it is still working—it proves that it pays to buy the best. Studebaker wagons are the best.

Even if a Studebaker wagon costs a little more at the time of your purchase—if it will last a lifetime, it is the best wagon to buy.

Studebaker Wagons today are built of the very best material and because of the improved

method of manufacturing they are even better than they were in 1868—and the price is less.

Just remember that Studebaker has been building wagons for over sixty years and during all that time their one effort has been to build not the cheapest, but the best—that is the reason they are the largest wagon builders in the world.

Studebaker buggies are also built to last a lifetime and have no equal in style and finish.

See our dealer or write us

STUDEBAKER South Bend, Ind.
NEW YORK CHICAGO DALLAS KANSAS CITY DENVER
MINNEAPOLIS SALT LAKE CITY SAN FRANCISCO PORTLAND, ORE.

Studebakers last a lifetime

7.35 LOWEST PRICE YET **155 EGG**
FOR BIG INCUBATOR
Set Up Ready For Use

Think of it! The old reliable Progressive 155-Egg Incubator for \$7.35. Money back with 8 per cent interest if not satisfied. Wonderful bargain! Only incubator with hundreds of dead air cells. Copper hot water boiler, double disc regulator, deep nursery, double doors, egg tester, safety lamp—every big feature—all for \$7.35 freight prepaid E. of Rockies. Incubator and Brooder ordered together, \$9.85. Send your money now, or, if you want more facts, write for our Big Free Book. **PROGRESSIVE INCUBATOR CO.** Box 164 Racine, Wis.

SIMPLICITY Combined
Hatcher and Brooder
"BETTER THAN A HEN"

That is saying a whole lot, but it is true, and if you will give the SIMPLICITY a thorough trial, you will be convinced. The construction of the SIMPLICITY being round, eliminates the cold corners. Side-wall heating system assures an even distribution over the eggs. Diffusion system of ventilation is obtained by use of the open front, thereby retaining the natural moisture of the egg. Automatically regulated throughout. Absolutely sanitary and odorless, fire proof. Not an experiment. Thousands of pleased customers. Write to-day for circular and get the facts of this 20th Century method.

INDIANAPOLIS CORRUGATING CO.
824 Drovers St., Indianapolis, Ind.

MONEY MAKING POULTRY
Our specialty. Leading varieties pure bred chickens, turkeys, ducks and geese. Prize winners. Best stock and eggs. Lowest prices oldest farm, 29th year. Fine catalog FREE. **H. M. JONES CO., Box 138, Des Moines, Ia.**

PFILE'S 65 Varieties
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.

LEE'S LICE KILLER
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. **GEO. H. LEE CO., 991 HARNEY ST. OMAHA, NEB.**

This Key to Poultry Profits Mailed FREE

This is the famous Old Trusty book that gave half a million people the right ideas for making chicken profits. Let me send it to you, too. We offer you no untried experiments. If the Old Trusty doesn't do its part to make you successful, you trade back. It's the highest grade hatcher made, at a price you can't resist, based on selling 100,000 machines this year. Write me now.

OLD TRUSTY Makes Big Hatches in Coldest and Warmest Weather—month after month, year after year!

Three or four times as many in use as any other. It's because it's practical—simple. Anyone can operate it. Highfalutin' instructions are not needed. For good average hatches in coldest winter as well as in summer, Old Trusty outranks all other incubators.

I give a 20 year guarantee—30 to 90 days' trial—pay the freight and will ship your hatcher the same day your order arrives. Write today for the book—now is the time to start. Address: **JOHNSON, Incubator Man, - Clay Center, Nebraska**

\$5.00 less than anyone else could sell it for.

The Size of the Poultry Flock.

Ordinarily the farmer does not give much attention to the size of the flock, especially as a matter of forethought. The season's work in hatching is often started without any definite idea as to the number of chickens to be raised for the coming season. This is undoubtedly due to the fact that the luck in hatching has a great deal to do with the ultimate size of the flock. It may often be determined by the hen's attitude in the matter; if a great many of them become broody, a large number of eggs are set, and even with fair results in hatching, a fairly large number of chickens are raised. However, those who make a business of poultry, give the matter of the size of the flock considerable consideration. They have a definite idea of how many hens they want to keep through the winter for laying purposes, and about how many eggs will have to be hatched to leave them a flock of the desired size. They consider forethought in this matter very essential because they have poultry houses which will hold a certain number of hens, or if they should desire to increase their flock, they will have to build enough more houses to accommodate the increase. It is a matter of economy in management that they have the houses filled to their capacity. While the farmer is generally in the business on a smaller scale, he will also profit from planning the size of the flock before he starts the season's hatching.

Proper Housing Essential.

Probably one of the greatest failings in the care of farm poultry is the lack of proper winter housing for the hens. If the house available for the chickens is of fair size and the result from hatching should be poor, a few hens would be huddled together in a house altogether too large for their well-being. On the other hand, it is just as bad to crowd a large number of hens in a small and unsuitable house. Such crowded conditions will tend to unsanitary conditions unless special care is given with reference to cleanliness. Even regardless of this the hens cannot produce maximum results when not given sufficient room for proper exercise. A few years ago we thought 25 chickens was a unit for figuring the size of the flock. This was probably due to the fact that to get fertilized eggs it was best not to have more than 25 hens to one rooster. However, as the matter of fertility in eggs is only important during the hatching season, it is not necessary to have the roosters with the flock except at that time, and in fact, if eggs are wanted for consumption purposes, it is better not to have the roosters with the flock, as infertile eggs keep better than fertile ones.

Amount of Space for Hen.

Probably the most important thing to take into consideration in planning the size of the flock is the amount of space available for housing the hens during the winter. The amount of floor space in the coop is generally the determining factor in this matter. Regarding the amount required for each hen, authorities differ and the general opinion of this matter is changing. A few years ago it was thought essential to have six square feet per hen, but now there are but few who advocate more than five, and there are some who are making success with less than two square feet per hen. When the larger space per hen was in vogue, closed poultry houses during the winter were thought essential. In such houses the ventilation was not of the best, and for that reason the hens were given more room than they are now. In fact, in making a success out of the present popular open-front houses, it is necessary to have enough hens in the coop so that they can keep warm from the heat generated by their own bodies.

The last United States census shows that the average number of hens on the farm is a little over 53. The average in Michigan is a little less, being about 51. Undoubtedly, in most cases on the general farm, the hens are all in one coop, so the number of hens in one coop averages about 50. We have nothing that will give us the size of the hen coops on the farm, but from our knowledge, we know that they vary greatly in size. For this average sized farm flock the floor space of the house ought to measure about 12 feet by 18 feet; such a house could be built for about \$25. With proper housing provisions, this average sized farm flock of 50 hens can be taken care of as easily as 15. Above that number

the labor in caring for the chickens increases in proportion to the size of the flock.

Number of Hens in a Coop.

There is considerable difference of opinion regarding the number of hens which should be kept in each coop for best results. We know on one hand, of a man who is making a success with 1500 hens in one coop, and on the other, one who is making good with only six hens in a coop. The latter works on the general idea that the best results in production of eggs is gotten out of the small flocks. The man with the large flock works on the idea that it is much more economical to take care of chickens in that way; both, however, are advocates of a small floor space per hen, one allowing about two square feet per hen and the other about three square feet. In deciding whether one is to keep his chickens in small flocks or not, he must use his own judgment as to whether the better results obtained from small flocks will be enough to pay for the extra labor involved. It seems, however, that with the exception of this man advocating six hens to the coop, the general tendency in commercial poultry raising is toward larger flocks.

The Maine experiment station which has been carrying on valuable work in poultry culture has found through their experiments that large flocks give the biggest profits. This they found a great disadvantage on account of the extra work in taking care of the hens; now they are advocating about 300 hens to the flock, with about two square feet of floor space for each hen. When this small space is allowed, they advocate that the laying houses be of the continuous type and that they be so arranged that the hens can go from one end of the coop to the other. By this arrangement the hens do not feel their confinement as they have plenty of opportunity to walk from one end of the coop to the other and in that way get exercise which they would not get if the small amount of floor space was allowed in a small coop. Of course, where hens are kept under these conditions, special attention must be given to keeping the coop sanitary, as neglect in this respect would soon be a cause of disease in the flock.

Number of Hens to Support a Man.

Occasionally the size of the flock is determined by the amount of money a person desires to make out of it. It is estimated that a flock of 1000 hens will produce profit enough to support a man. To get a good flock of this size, it is necessary to hatch about 3000 chickens, of which about one-half would be roosters. The other 500 is allowed for those which die during infancy, and also for the purpose of culling out the weak ones before putting the chickens in their winter quarters. The breed also has to be taken into consideration when this matter is given thought, as more hens of the lighter weight breeds can be kept in a specified space than those of the heavier kinds. A general rule for this is that one can keep about one-fourth more the number of the light breeds than of the heavier ones in the same space.

There is no doubt but that it pays to plan the size of the flock in the spring. The few things mentioned above should be taken into consideration and then the ultimate size determined according to your best judgment in the matter. After this is determined all efforts should be made to bring the flock to the desired size, even in spite of bad luck, and plans should be made accordingly. Failure is too often due to the lack of forethought and foresight.

FOR NEXT WEEK.

"A Bachelor's Experience," an interesting account of a failure in poultry raising.

CATALOG NOTICES.

Prairie State 1914 Catalog published by the Prairie State Incubator Co., Homer City, Pa., is a 112-page illustrated book containing much information of practical interest to the poultryman, aside from a description of the Prairie State line of incubators and brooders and poultry accessories. Mention the Michigan Farmer when writing for this catalog.

Wisconsin Incubators, made of genuine California redwood, manufactured by the Wisconsin Incubator Co., Racine, Wis., are illustrated and described in a new 32-page catalog sent by this firm on request. If interested in incubators or brooders, write them for this catalog of the Wisconsin line of goods, mentioning this paper.



Jim Rohan, Pres.

Jim Rohan and Winners of Belle City's Eight World's Championship Hatches

Mr. Geo. W.
Black, Ind.
Winner 1911Mr. Wm. C.
Schott, Iowa
Winner 1913Mrs. Laura J.
Clark, Illinois
Winner 1911Mrs. Alta
Hamlyn, Ind.
Winner 1913Mr. F. E.
Bennett, Ohio
Winner 1912Mrs. F. H.
Osman, Ohio
Winner 1910Mrs. M. J.
Clifton, Okla.
Winner 1910"Tycos" Cup,
won by the
Belle City

Write For My Free Book "Hatching Facts" Get the Whole Story

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

8-Times World's Champion Belle City

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.

Big Free Book "Hatching Facts" Tells All—Send for It—A Postal Brings It

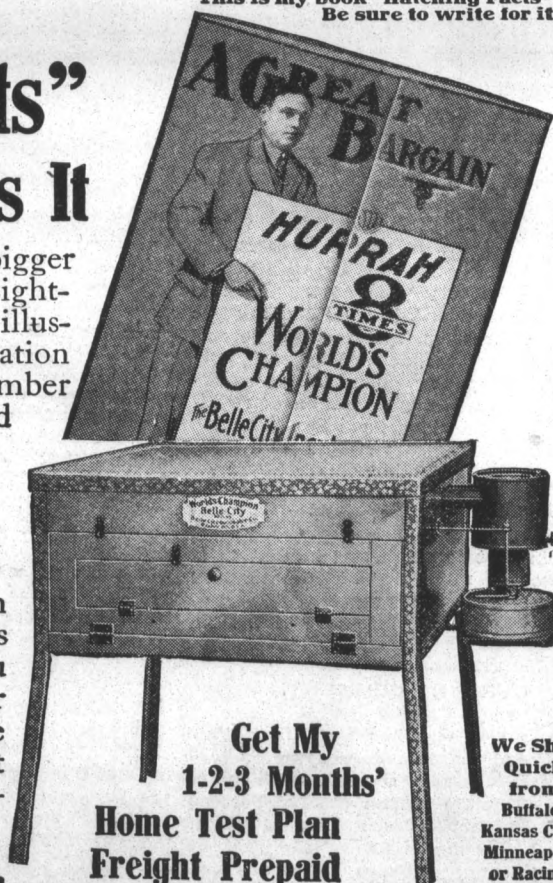
Win big poultry success. It tells the poultry raisers how to score bigger hatches than ever. Best of all, these stories are told by the users of the Eight-Times World's Champion Belle City themselves—in their own words. It is illustrated by pictures from actual photographs of their big hatches. There is information in this book that will interest father—mother—sons—daughters—every member of the family. It tells you how to make a success with poultry *anywhere* and

How to Make Big Money on a Small Investment

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, Pres., Belle City Incubator Co., Box 14, Racine, Wis.

This is my book "Hatching Facts"
Be sure to write for it



**Get My
1-2-3 Months'
Home Test Plan
Freight Prepaid**

**We Ship
Quick
from
Buffalo,
Kansas City,
Minneapolis
or Racine.**

The Michigan Farmer

Established 1843.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan.
TELEPHONE MAIN 4525.NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—604 Advertising Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.M. J. LAWRENCE.....President
M. L. LAWRENCE.....Vice-President
E. H. HOUGHTON.....Sec. Treas.I. R. WATERBURY.....Associate
O. E. YOUNG.....Editors.
B. W. MUTH.....
F. A. WILKEN.....
ALTA LAWRENCE LITTELL.....

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

TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues.....\$1.00
Three years, 156 issues.....1.25
Five years, 260 issues.....2.00

All sent postpaid.

Canadian subscriptions 50c a year extra for postage.
Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts checks and post-office orders payable to, the Lawrence Publishing Co.

WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit, brought against any subscriber to The Michigan Farmer by the publisher of any farm paper, which has been sent after the time ordered has expired, providing due notice is sent to us, before suit is started.

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, FEB. 7, 1914.

LINCOLN.

OUR cover design for this week, naturally recalls the most beloved of all Americans, the one who was born on the twelfth day of February in the year eighteen hundred and nine, in a lonely little log cabin in the woods, and fifty-six years later amid the tears of a nation was tenderly borne to the tomb, while the whole world stood uncovered, revering him as the friend of all humanity.

Lincoln's place in history is assured. Nothing need now be done to secure his fame. The words of Lowell have been amply verified:

"Great captains with their guns and drums,

Disturb our judgment for the hour,
But at last silence comes:

These are all gone and, standing like a tower,

Our children shall behold his fame,
The kindly-earnest brave, far-seeing man,

Sagacious, patient, dreading praise, not blame,
New birth of our new soil, the first American."

But because Lincoln's name is in every heart a synonym of that which is lovable, wholesome and for the general good, a mighty emprise in behalf of the general welfare may well bear its admirable exemplary influence.

The great Lincoln Highway from coast to coast which is being promoted by public spirited citizens and aided by private subscriptions of patriotic people, will be the splendid fruition of a great purpose, and its mighty influence in behalf of good roads everywhere may well repeat from ocean to ocean the sweet spirit of good will toward all men that constantly radiates from that great name.

Regardless of the exact route finally selected for this highway, its probable geographical location will be such that it would not be very wide of the mark to say that Mason and Dixon's dividing line has been forgotten, and instead we will behold the great Lincoln Highway uniting us as a great people, binding us together in love—a mighty nation of righteous purpose reaching from Sea to Sea.

"The Seas that gird our land with blue,
The winds that make it wave with wheat,

Are witnesses forever true
That strength and freedom here shall meet."

And in that strength and in that freedom,
We can re-echo the pledge that

"Government of the people, by the people,
For the people, shall not perish from the earth."

CURRENT COMMENT.

There has been, from time to time during the past 20 years, some discussion of the merits of the Torrens system of land titles among Michigan people, and some effort on the part of public spirited citizens to secure the enactment of a law legalizing the system in our state, making it optional on the part of property owners to make use of the system or not as they might desire. It has, however, been found difficult to secure the passage of such a law on ac-

count of an apparent lack of public sentiment in its favor, since it has naturally been opposed by the people who are interested in the abstract business in the various counties and who are men possessing considerable political influence.

That the people of the state have taken little active interest in this matter is not to be wondered at, since the average man has had little knowledge of the system or its advantages as compared with the system of land title registration at present in use with which all are fairly familiar. Recent discussions of these questions have made it more apparent than ever that there is a general lack of information on this subject, and on the assumption that Michigan Farmer readers would be glad to know more about the Torrens system, so-called, and its advantages as compared with the system of land title registration now in use, a series of articles from the pen of a disinterested authority on the law of real property will appear in this and succeeding issues of The Farmer.

These articles should be carefully read by every subscriber to the end that he may gain a better understanding of the problem involved and thus be in a position to form a more intelligent opinion regarding the merits of a question which is certain to become an important issue in the Legislature at no distant date.

Michigan's automobile industry has developed so rapidly and attained such large proportions in the commercial activity of the state, that every person in the state has at least an indirect interest in its future and will profit to some extent from its continued prosperity. A prosperous outlook for this business has, perhaps, a more direct relation to the general prosperity of the state, including its agriculture, than would a similar outlook in any other line of our commercial activity even if it were to be considered independently. But the very nature and use of the product of the automobile industry is such that its prosperity depends not a little upon the prosperous condition of other lines of business, which fact gives added importance to the automobile outlook as an index of the general prosperity of all industries in which every person has a more or less direct interest.

While the winter season is naturally the quiet season in the selling end of the automobile trade in Michigan and other northern states, the winter automobile shows stimulate buying, and the number and interest of the patrons of these shows may, as experience has shown, be taken as a reliable index of the outlook for the ensuing season. The season of big automobile shows opened with the New York show three weeks ago, and our eastern representatives report a larger attendance and greater interest and enthusiasm on the part of the patrons than ever before. At the Detroit Automobile show, held at the new Ford Branch Building, which afforded much larger space for exhibits and visitors than has ever before been available for this show, the attendance far exceeded that of previous years while the number of orders taken for cars exceeded even the most sanguine expectations of the Detroit automobile dealers, under whose auspices the show is staged. Nor was the crowd in attendance conspicuous for the proportion of "society people" in attendance; it was a cosmopolitan crowd, fairly representative of all classes, including farmers, who came to see what the trade had to offer this year in the way of practical vehicles designed for utility and service as well as pleasure. Despatches from Chicago, where the winter automobile show was held last week, indicate that the same general interest was exhibited, showing that the interest is not local but general in character. Such a general interest in the year's development in automobile construction, which is emphasized at these shows, cannot but indicate that the automobile outlook for the coming year is flattering, which, in other words, means that the labor which depends upon this industry for a livelihood will be well employed and is a good indication that this will be a general condition in other commercial activities, thus insuring an active demand for and a maximum home consumption of the products of Michigan farms.

In addition to the general interest in the automobile outlook, in which every Michigan Farmer reader should share for the above mentioned reasons, a more immediate interest is doubtless felt in the development of the machines themselves by the large class of readers who have been considering the purchase of a machine for their own use. For the benefit

of such readers we will say that there seems to have been a quite general appreciation on the part of manufacturers that the outlook for the industry would be bettered by devoting more attention to the demands of the practical business men and farmers who use automobiles for business as well as pleasure, and the greatest development of the year in the manufacture of automobiles has been in the production of medium priced cars adapted to country as well as town use and of a type of construction which experience has shown would give a maximum of service at a minimum of first cost and maintenance expense. There has also been a tendency toward lighter weight, which means economy in maintenance as well as construction, where proper materials are used, and greater care is exercised in this factor of production than ever before. While the big, luxurious and expensive cars were present as usual at the Detroit show, there was a larger number of well-designed models adapted to the use and resources of the average man than ever before, and among them many models designed especially for the needs of the country user who can get better values for his money in cars at from less than \$500 up to \$2,500 in cost than ever before. Many of these models will be found advertised in standard farm papers during the coming season, which is an indication that the manufacturers have designed them particularly to meet the needs of country use, which fact may well inspire confidence in the mind of the prospective purchaser that they will afford satisfaction in service.

Auto trucks of many types were in evidence at the show, and the fact that considerable interest was taken in this department of the exhibit by country people would seem to indicate that the range of usefulness of this type of vehicle will be broadened in direct proportion to the permanent improvement of the highways of the state. The new cycle cars which are now bidding for recognition in the town trade aroused curiosity, rather than interest, on the part of country visitors, who are critical buyers of automobiles as well as other commodities, and who exhibit a knowledge of automobile values which might well excite the envy of city business men. This good business sense is a factor in their prosperity, without which the automobile outlook would not be as bright as is indicated by this auspicious opening of the selling season of 1914.

HAPPENINGS OF THE WEEK.

Interest in the Mexican situation is now centered about Torreón, where Huerta's troops are gathering to stay the progress of Gen. Villa, the rebel chief. It is estimated that there will be 12,000 federal troops to defend the position. Gen. Villa's headquarters are now at Juarez where he is making preparations for the attack.

The German bark "Hera" went on the rocks near Falmouth, England, in a gale Saturday night, and 19 of her crew were drowned.

Sensational charges have been made against the administration in the Province of Quebec, and as a result three officials directly charged have resigned from their positions on the Cabinet.

A heavy gale which covered the eastern lake region last Saturday broke down the electric cables connecting Niagara Falls with Toronto, Hamilton and other Canadian cities, plunging the municipalities into complete darkness.

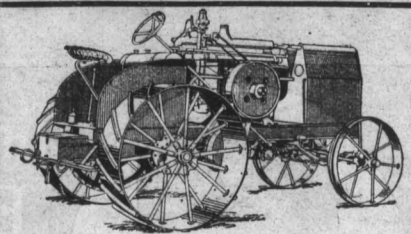
Congress has passed a measure which provides that post office money orders may be paid at any money order office. It is expected that the President will sign the bill, and the postal authorities believe that the new system will double the volume of the money order business, which now yields the government a net income of more than five million dollars.

Former United States Senator Shelby M. Cullom, of Illinois, died in Washington last Friday. Funeral services were held at Springfield, Ill. In point of service, Senator Cullom was the oldest in the United States Senate.

A campaign has been started by organized labor which is designed to force Congress to incorporate in a pending Anti-trust Bill, a provision exempting labor organizations and farmers' associations from prosecution under the Sherman Anti-trust law.

In the rifle contest at Washington the rifle teams of the Michigan Agricultural College and the Massachusetts Agricultural College are tied for first place in Class A at the close of the fourth week of the shoot.

Another ocean disaster occurred January 30, when the ocean liner "Nantucket" collided with the liner "Monroe" off the coast of Virginia, sending the Monroe with 41 persons to the bottom. Survivors of the Monroe have brought charges against the owners of the Nantucket, charging that the latter boat was proceeding through a thick fog under full steam, making her a menace to other boats in her course, and contributing directly to this accident, in that the Monroe was unable to move out of the way of the oncoming vessel after the latter was sighted.



HUBER "FIFTEEN-THIRTY" FARMER'S GAS TRACTOR

A two-cylinder opposed engine.

Uses Gasoline or Kerosene.

Outfit is the lightest for power produced.

Get the most profit and pleasure out of your farming by using one of these Tractors. You will save on expense and do your work better and quicker.

Ask for descriptive literature.

THE HUBER MFG. CO.,

666 Center St., Marion, Ohio.

BIGGER CROPS

WITH LESS WORK and MONEY

The Imperial Pulverizer does the work of a land roller, pulverizer, clod crusher and leveler at ONE trip over the plowed field. Does the work better and leaves a better seed bed.

IMPERIAL PULVERIZER

is the only machine that packs the subsoil and leaves the surface loose to retain moisture. Saves cost of 2 extra machines—saves two extra trips over the field.

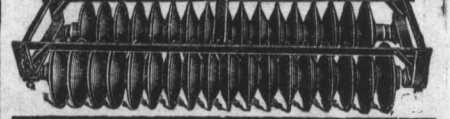
Write at Once

for Booklet

PETERSON MFG. CO.,

146 River St.,

Kent, Ohio.



This Steel Forge

Will Save Its Cost in 30

Days on Your Farm



Make blacksmith bills smaller by doing repair work at home. Our Forges are used by farmers in every State and foreign Countries. Blower is 11 1/2 inches

diameter. Hearth is 30 1/4 inches high. Total height of Forge 43 inches.

Positively Guaranteed to be as large, durable, do as much work as any \$10 forge made and to be as represented or money refunded.

Special Winter Offers

Until March 31, 1914 we offer our two styles of Farm Forges at \$3.75 and \$4.00 each. 1 pair of tongs and 1 Anvil and Vise combined \$1.75 extra. Prompt shipments. This offer may not appear again. Write today. Send stamp for Catalog No. 38 and testimonials.

C. A. S. FORGE WORKS, Saratoga, Mich.

Use the Cheapest Pumping Power

Let the free wind pump your water. Don't use expensive gasoline or wear your life out on a pump. Get a

STAR WINDMILL

that will save hours of drudgery and hundreds of dollars in fuel bills. It lasts longer than any other pumping power, often giving 25 to 40 years service. SEND FOR FREE BOOK about the STAR.

Flint & Walling Mfg. Co.

13 Oak Street

Kendallville, Ind.

CARBO STEEL POSTS

Flexible

are the backbone of good farming—good farming. Raise farm's value and improve appearance. Permanent—won't burn, break or bend. Only flexible, self-anchoring line posts made—guaranteed. Carbo Posts anchor direct in ground—no concrete or special tools required. Resist wildest stampede; are fire, frost and lightning proof. Reduce stock insurance. Ordinary staple fastens any kind of fencing. Burning fence lines will be compulsory in few years. Do it now with our heavy corner, gate and end posts—anchored—can't pull up.

Write for Post Facts

and prices on yard and field posts. State your needs and ask for introductory proposition L. We have 12,000 dealers. Ask for name of dealer near you.

Carbo Steel Post Co., 929 Rand McNally Bldg., Chicago, Ills.

RHODES DOUBLE OUT PRUNING SHEAR



Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

RHODES MFG. CO.

615 S. Division Avenue, GRAND RAPIDS, MICH.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

ONE of the oldest cities on the earth today is the Chinese capital. Although its early history is more or less shrouded in obscurity, yet records exist which leave little room for doubt that a city stood on the present site as long ago as the twelfth century B. C. This city was destroyed by the Emperor Tsi-shih-hwang-ti, who built the great wall in the year 221 B. C. Subsequently it was re-erected, though it did not attain to any prominence until the fourth century of our era, when it appeared as a capital of a Tartar state under the title of Ya-chow. In the year 936 A. D. the city was taken by the Kitan Tartars, and became in turn their capital. It remained the seat of government during various dynasties of the Tartars until 1215, when the Mongols took it and degraded it to mere provincial rank. Kublai Khan made it his capital in 1260, and built up a new and beautiful city which he called Khanbaligh. This was the place which made such an impression on Marco Polo during his travels, from the extreme richness of its splendor. It was in those days a far greater place than it is now, as is proved by the traces of the old walls still to be seen. In 1367 the Ming dynasty succeeded that of the Mongols, and in 1644 the present Manchus conquered the Mings. During all these changes Peking remained the capital and, although the city has decreased in size, most of the present palaces were founded by the Mongols and succeeding dynasties have added to their magnificence. This was notably the case with the Mings, who appear to have given every encouragement to the arts during their sway. It is not, however, with the life of these great emperors that I wish to deal, but to give some idea of the unique and even wonderful means that were adopted to ensure the perpetual honor of their memory.

The tombs of the Mings are among the most extraordinary magnificent spectacles of China. Leaving the grim, frowning walls of the old Tartar city behind me early one morning in October, I journeyed along that maze of ruts and hummocks and mud which does duty for a road to Nankow. I was accompanied by an interpreter, "Chen Lung!" (That was not his real name, but it is about the only Chinese name I ever really remember, and which took me some time to learn. Chen Lung was an emperor of China, and the greatest of all its rulers as a patron of the arts. Everything I looked at in a curio shop in Peking they told me was made in the time of Chen Lung. That was to impress upon me how much more valuable it was than if it had not been made in the time of Chen Lung, even although it might look just the same. In consequence of the perpetual repetition of this name I could remember it better than any other, so I adopted it for my servant). Chen Lung and I found ourselves in that strongest and most unresilient of vehicles—a springless Peking cart—among the ruts and hummocks. The motive power was furnished by three fine mules, while a third smaller one, bearing some bedding, etc., followed behind. The driver sat at the base of the left shaft, I sat on the right. The shafts of a Peking cart are the most comfortable part of it; the man who sits inside does not have a happy time, as the bumping and battering from side to side would make splendid training for the prize-ring. Chen Lung did the training. We reached Nankow some time before nightfall, and put up at a native inn. I will not attempt to describe a Chinese inn here but, owing to the intentions of the numerous able-bodied insects which were also lodging there that night, I was compelled to leave the bed soon after I got into it and pass the balance of the

The Ming Tombs, Peking

By W. R. GILBERT.



Magnificent Marble Memorial Arch on the Road to the Tombs of the Mings.

night curled up on some horse-rugs in the cart. We started off again early the next morning. From Nankow there is a fairly good road to Ch'ang-ping-chow, a charming picturesque old walled city of considerable size, where most of the shops seem to be for the sale of coffins. There is no more welcome present a son can give his father in China than a nice coffin; it relieves the parent's mind of anxiety that he may not be consigned to a nice one. A little beyond this town we entered on the ancient imperial roadway leading to the beautiful valley in which are embosomed the mausoleums of thirteen of the emperors who ruled China during the dynasty of the Mings.

When we had ridden a few miles along

this road we came to a superb marble pailow (or memorial arch), magnificently carved, said to be the finest in all China. It is divided by pillars into five openings, and must be nearly 100 feet in width. This is the first feature of the approach to the central mausoleum of the Emperor Yungloh, and was erected by his successor, Hungli. A mile further on there is another archway of red brick, crowned with yellow tiles; just beyond this there is a large pavilion of red brick which contains a huge marble tortoise, bearing on his back a marble tablet engraved with a poem in praise of Emperor Yungloh (1403-24). There are many such monuments in North China. The tortoise is an emblem of longevity, and thus the

cenotaph symbolizes the hope that the virtues recorded on the tablet may live forever in the memory of the descendants of the deceased. At the corner of this building are four lofty carved pillars, on the top of each of which a griffin disports himself.

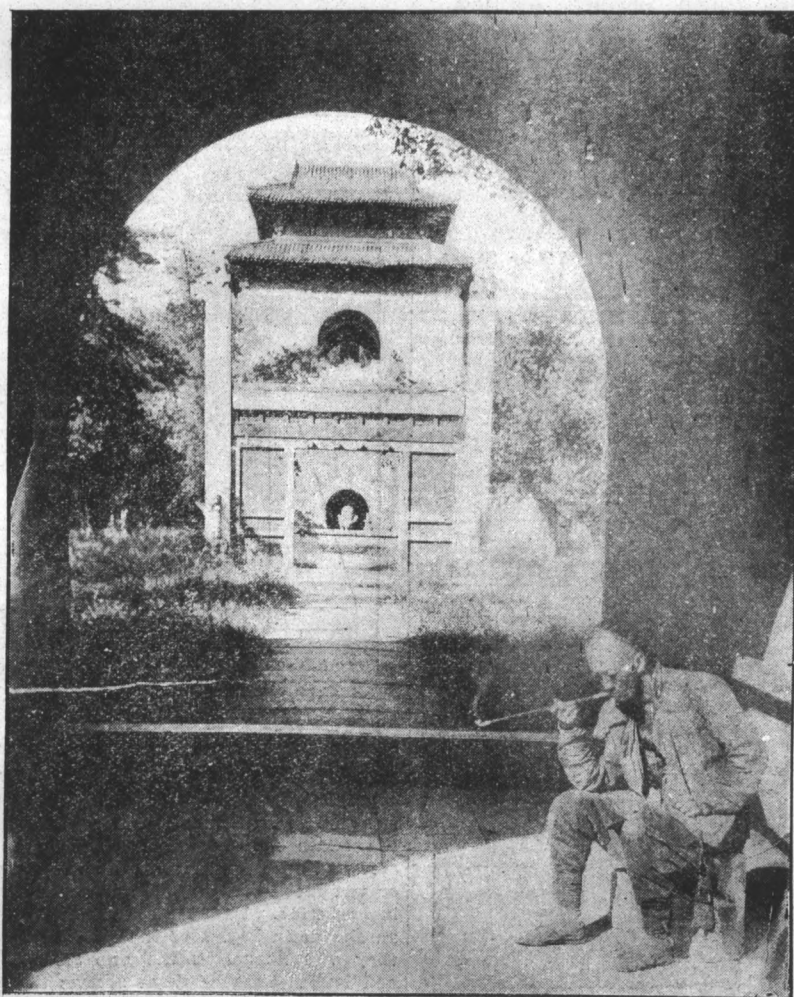
Just beyond this pavilion begins the most singular feature of this interesting region—a mile-long avenue of immense stone figures and animals. At the head of the avenue are two more tall pillars, beautifully carved with waves, then, on either side of the weed-overgrown, paved roadway, facing each other, are male and female lions sitting, then a pair standing, then two pairs of curious creatures with dragons' heads and bulls' bodies, then two pairs of horses, camels and elephants and queer mythical creatures with scales. It is interesting to note that the elephants' fore legs are bent the wrong way, an error also made by the celebrated Japanese wood-carver, Hidari Jinoro, who thrived in the sixteenth century. All these creatures are male and female, much in excess of the natural size, and each is carved from a monolith of hard blue

stone. The distance from figure to figure is about 200 feet. Beyond the animals are two pairs of gigantic marble soldiers and two pairs of priests or civil dignitaries in the costumes of the time.

The end of this avenue is graced by another gateway, tripartite arched, and thence we rumbled along the paved road over two fine old bridges now badly ruined, and slowly up hill among millet fields into a beautiful grove of persimmon trees, their branches almost breaking with the luscious golden harvest. This pretty orchard reached to the very walls, enclosing Yungloh's tomb. Entering the enclosure I found myself in a beautiful park with pines and leaning oak trees. Before me rose an immense hall fully 200 feet in length and half as deep, crowned with a tile roof of imperial hue. The approach to this hall was a marble stairway richly carved with writhing dragons and the clouds from which they emerge. The whole building was girdled with a beauteous parapet and double balustrade of carved marble, and in front of it, at either end, charming little shrine pavilions peeped from the trees deeper in the woods. The ponderous roof of the hall was supported by thirty-two enormous boles of teak, 30 feet high and four feet in diameter. They were round and smooth, veritable arboreal wonders from the forests of Siam, and were brought to Peking overland. A huge altar and a few urns and candlesticks are the sole furnishings of this massive sanctuary.

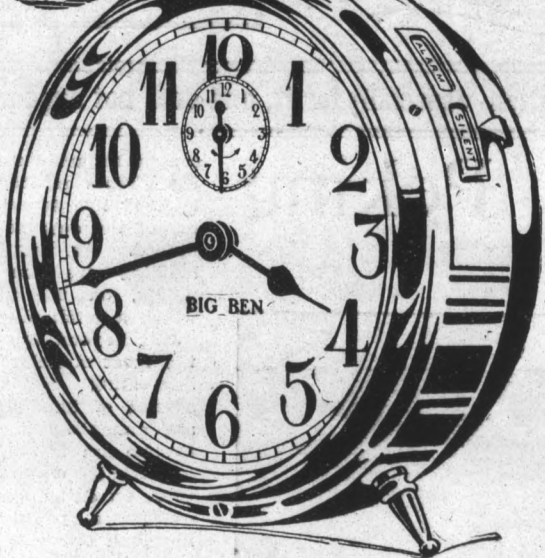
Beyond this hall the park extends far, and is even more beautiful as one penetrates deeper into its mysteries. Then there was another pavilion to pass through, beyond which, as the watchman opened the gates, framed in the gloom of the doorway, appeared the holy of holies, the approach to the tomb itself. It was a tall brick pavilion; its yellow roof and uncared-for walls, like all the rest, were softened and beautified by the impress of neglect and the touch which only time can give. Swallows, those restless denizens of the old and crumbling, twittered in myriads around the "old grey pate" of the tower; insects were noisily humming, cicadas droned monotonously in the oak trees, and now and then the shrill crow of a pheasant would come from the woods. It was a scene of infinite peace. Whenever I look at the picture I there made of the old watchman drowsily sucking his pipe in the doorway, I feel oppressed with something of the feeling of awe and loneliness and sadness which filled me at the time.

Entering the deep tunnel which pierced to the pavilion's heart, I found it led at right angles up a gentle incline, and



Tomb of Emperor Yungloh, most Renowned of the Ming Line of Chinese Rulers.

Big Ben



Hitch Your Sleeping Schedule to Big Ben

Big Ben will wake you early enough for profitable before-breakfast action. His gentle get-up call starts the day with a flying start on thousands of farms.

For your accommodation he rings TWO WAYS. He'll get you up by degrees or in a hurry. Set him either way you wish—to give one long five-minute ring, or ten short rings at one-half-minute intervals, until you're wide awake.

He stands 7 inches tall; is triple-nickel plated over a tested implement steel coat, the handsomest and truest thoroughbred in the clock world. He has big, bold numerals and hands that show the time plainly at a glance, large keys that anyone can wind easily, and such a pleasant tone that you are glad to get up when he calls.

Big Ben makes early rising easy. He's the leader of the early morning brigade. His cheerful "good morning" ring calls millions of live wires to action. Thou-

sands of successful farms are run on a Big Ben schedule. He starts you off right in the morning and keeps you right all day. From "Sun up" to "Lights out" he regulates your day. He'll work for 36 hours at a stretch and overtime, if necessary. The only pay he asks is one drop of oil a year.

He is sturdy and strong—built to last a lifetime. Yet under his dust-proof steel coat is the most delicate "works." That's why his on-the-dot accuracy has won him fame.

Big Ben's wonderful sales are due to his having "made good." His biggest hit has been with folks with the "make good" habit. He stands for success—that's why you'll like him for a friend.

When 3,000,000 families find Big Ben a good clock to buy and 20,000 Jewelers prove he's a good clock to sell, it's evidence that he is worth \$2.50 of your money. Suppose you trade \$2.50 for him today.

If your Jeweler doesn't sell Big Ben, a \$2.50 money order sent to his makers—Westclox, LaSalle, Illinois—will bring him to you in a hurry, express charges prepaid.

New Model 27 Marlin REPEATING RIFLE

.25 Rim Fire—for all game smaller than deer. Uses cartridges of surprising accuracy up to 200 yards, powerful and reliable but cheap because rim-fire.

Rifle with round barrel \$13.15

Made in .25-20 and .32-20 calibres also; octagon barrel only; \$15.

Use both regular and high velocity cartridges. Powerful enough for deer, safe to use in settled districts, excellent for target work, foxes, geese, woodchucks, etc.

Its exclusive features: the quick, smooth working "pump" action; the wear-resisting Special Smokeless Steel barrel; the modern solid-top and side ejector for rapid, accurate firing, increased safety and convenience. It has take-down construction and Peavy Bead front sight; these cost extra on other rifles of these calibres.

Our 128 page catalog describes the full Marlin line. Sent for three stamps postage. Write for it.

7 Shots

The Marlin Firearms Co. 127 Willow Street New Haven, Conn.

TRAVELING SALESMEN

EARN \$1000 TO \$5000 A YEAR

You can learn to be a salesman in eight weeks by mail and be earning while you learn. No former experience required. Write today for particulars, list of hundreds of good openings and testimonials from hundreds of our students who are earning \$100 to \$500 a month. Address nearest office. Dept. 111

National Salesmen's Training Association
Chicago New York Kansas City San Francisco

CASH PAID FOR STAMPS especially want Canada & U. S. used prior to 1870. Advise what you have. F. E. GREEN, Empire, C. Z.

GOVERNMENT FARMERS WANTED MAKE \$125 monthly. Free living quarters. Write, OZMENT 17 F. St. Louis, Mo.

Army-Navy Auction Bargains

SADDLES \$3.00 up NEW UNIFORMS \$1.50 up
Shoes, pr. 1.85 " Army Revolvers 1.65 "
TEAM HARNESS 21.85 " " HAYSTACKS .19 "
Leggins, pair .18 " " Swords .25 "
TENTS 2.85 " " 7 Shot Cartridges 2.95 "
Colts Cal. 45, Revolvers . . . \$7.50 up. Cartridges 1 ea.
Sp'ld. Mauser Sp'ld. Rifle 11.85 Cartridges 2 ea.
Army Breech Loading Rifle Cartridges 2 ea.
420 Large page CYCLOPEDIA CATALOGUE. Over 5,000 illustrations. BEST BOOK PUBLISHED ON WAR WEAPONS mailed 25c. Est'd 50 years.

Francis Bannerman, 501 Broadway, New York City

WANTED—Railway mail, Clerk-Carriers and Rural Carriers. Examinations soon. I conducted examinations. Trial Examinations Free. Write OZMENT, 17 F. St. Louis.

HEAVY CANVAS wagon covers 5x12 \$2.39 prepaid. Other sizes proportionate prices. Canvas for all purposes, Imperial Mfg. Co., 24 Tracy St., Buffalo, N.Y.

Just Out—We Want to Send You Our Big New Premium CATALOG

SAVE YOU BIG MONEY

on Groceries, Clothing, Furniture, Shoes and Other Household Supplies

Contains 150 pages of money saving items. Write a postal for it today and see how you can get our Guaranteed Groceries at less than store prices. For instance: Laundry Soap at 2 1/2¢ a bar; Baking Powder at 7 1/2¢ a can; Toilet Soap (3 bar box) 12 1/2¢—everything at a big saving.

2000 Premiums Given

with orders for these Guaranteed Products. Thirty days' trial—no money in advance—money back if not satisfied. Write for our Catalog and learn how to furnish your home throughout without a cent of extra cost on our money saving Factory-to-Home Plan. (192)

CROFTS & REED CO., Dept. A125 Chicago

Oak Rocker No. 90175 Given with a \$10 Order

thence by another turn to an embowered terrace from which a prospect of glorious beauty opened out. Beyond the pavilion lay a further large enclosure containing a round mountain, covered with oak and other trees—an enormous artificial mound of earth in the heart of which Yunglo lies buried. How beautiful, how peaceful, how impressive it all was, and how pathetic. All this greenness—for which, but a few hundred years ago, so much that is so wondrously beautiful was conceived and effected, so much that proved the old geomancers who selected and approved the site were real artists—to be so neglected and all but forgotten! The emperors who used yearly to offer up sacrifices at these tombs do so no longer. For 200 years this tribute has been deputed to a mere descendant of the Ming line. Twice, it is said, this deputy proceeds to the tombs each year, spring and autumn, to sacrifice animals and other food and silks and perform the ceremonial of ancestral worship. The sharp, serrated outline of the western hills half encircled the lovely valley, forming it into a bay, a beautiful wooded sea, from the green depths of which the yellow roofs of twelve other similar mausoleums arose, each in its own magnificent setting. Truly a regally conceived and carried out resting place this for the remains of those great emperors who ruled China in the zenith of its modern history. Thirteen of the sixteen emperors of the Ming dynasty are buried here; the others, the first two and the last, Ch'ung-Ch'eng, who committed suicide on Coal Hill in the Forbidden City on the capture of Peking by the Manchus, are buried at Nanking

on the Yang-tse-Kiang, where somewhat similar buildings and an avenue of animals like that described above are to be seen.

High on the utmost peaks of the hill, at the foot of which lies this peaceful garden of sleep, could be seen the long grim line of the Old Wall, that greatest monument ever erected by human hands, which this sturdy Chinese family defended for nearly 300 years against the Manchus invaders, who, in the end, overthrew them and established the present dynasty. Standing on the terrace of the tomb, and overlooking the beautiful scene, one could not help but reflect on the touching history of that old monarch—sixteenth of a line which had served China so long and so well. Surely his heart must almost have burst with grief when Fate cruelly decreed it should be his lot to live and see his country overrun with rebels and his capital falling before its enemies. Can one wonder that, broken-hearted, he betook himself to one of the pavilions of his palace and ended his grief with his life? The rebels took possession of the city, made their leader emperor for a few days, then were driven out by the Chinese, assisted by the Manchus, who then seated themselves upon the throne which they still occupy.

I left these fine old places with many regrets and a great longing that the time might some day come when I should once more see these beautiful structures and monuments; for, notwithstanding the meanness and neglect that now surround them, they tell most pathetically of splendors long since faded, and of another China than that which exists today.

NOBODY NEEDS TO ASK.

BY CHAS. H. MEIERS.

A little girl one evening ran
To meet her weary Dad,
And grasped him by the sturdy hand
To show that she was glad
To see him coming home from work.
Her smile and gentle touch
Relieved his weary, toil-worn heart—
You need not ask how much.

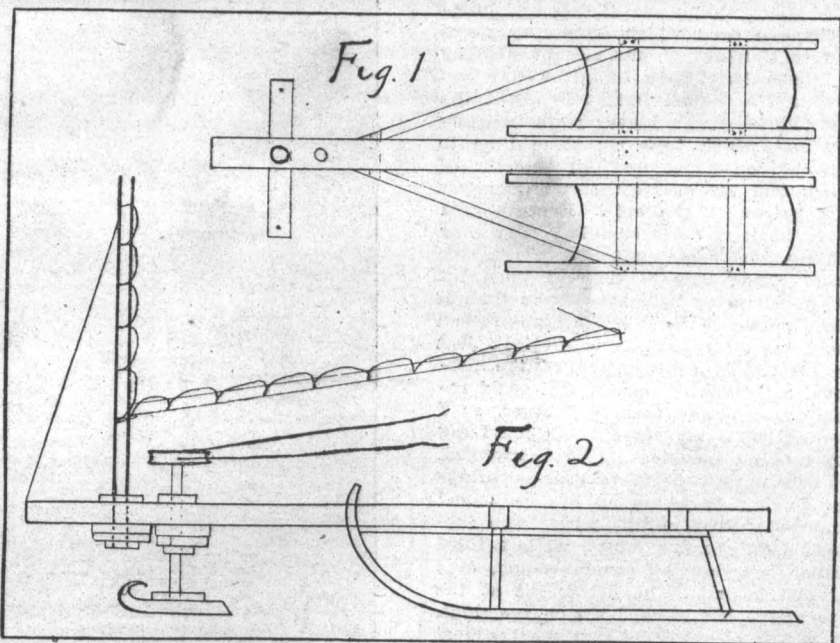
Another little girl came home
From school one day and sang
A sprightly song the while she helped
Her mother; and it rang
Within the mother's mind next day
And lightened every task.
How much that mother loved her girl
Nobody needs to ask.

A NEW KIND OF ICE BOAT.

BY GEO. E. WALSH.

There is no end of pleasure with an ice boat, and every boy longs to own one, but too often they are so difficult to build that one never realizes his ambition. A new kind of an ice boat which any two boys can build at little expense is here illustrated. If each boy has a sled, the chief foundation of the boat is ready at hand. Then hunt up an old skate, and the third leg of the boat is ready.

The two sleds, which should be of one counterbalances the other. One



How two Boys' Sleds can be Easily Converted into an Ice Boat.

equal height from the ground and about the same length, are joined together, and the skate runner is used in front for steering. You will need a plank eight or ten feet long, one inch thick and four inches wide. Fasten crosspieces to this, as shown in Fig. 1 of the illustration, so they will fit across the two sleds front and back. Two or three screws through these crosspieces into the sleds will hold them firmly together. Then run similar handles the sail and the other steers by pulling the front skate around as desired. For an ice boat of this size and construction, the handle of a long wooden hay rake will make the best mast. It is light and strong, and will hold a sail of sufficient size. If this cannot be obtained, any stick will do. Even a green sapling cut in the woods will answer, although it will be much heavier. Common unbleached muslin or light

canvas will make the sail. This should be cut and hemmed all around on your mother's machine to prevent raveling. Lace it to the mast and boom with stout fish line. With a needle that has a big eye the lacing can be done quickly and easily.

The mast, when in position, should be braced on the sides with stout fish line or small rope, and by another in front. The pull of the sail will keep it from falling forward. If one has the sleds and skate, the total cost of building such a boat should not exceed a couple of dollars. If you have some old unbleached muslin or light canvas for the sail it will cost a good deal less. You may be able to pick up enough lumber to make the framework. An ice boat of this description can hardly blow over if running loaded. The weight of the two operators will keep it steady in the stiffest gale. It can be guided easily with the front steering gear. Of course, you cannot sail as close up in the wind as with a regular ice boat because the flat runners of the sleds will not cut into the ice as the sharp runners of an ice boat built for speed. But you can sail before the wind and beat back and forth with the wind on your beam. In fact, you can do all the stunts except sailing close into the wind.

LINCOLN, THE MALIGNED.

BY J. M. MERRILL.

THE greatest soul born to the world in six thousand years. The greatest of all other Americans, from Washington to Jackson, pale into insignificance beside the grandeur and nobleness of the immortal Lincoln.

Born under the curse of slavery, he came into his own in later years as the emancipator of a race. The gibes and jeers of men higher up, when speaking of the "poor white trash" from whom Lincoln sprung, had no power to retard the rise of the gaunt Kentuckian to the head of the greatest republic the world has ever known.

With no pride of ancestry, with no apparent hope of winning from the autocratic slave-owners of the time one atom of respect, this boy from the floorless log cabin of a slave state, forged for himself a name that will live among the immortals while the earth continues to roll on its axis.

Perhaps it is well that the present generation knows little of the ungenerous treatment the man Lincoln received at the hands of his fellow men. He was certainly far from honored, hardly respected, by a majority of his countrymen at the time of the great war through which the nation passed with Lincoln as its guiding star. His friends were even as Christ's among those he loved and sought to make his friends. In his own time he was not fully understood. Great and patriotic though he was, he was yet a partisan, accomplishing the successes that have made his name immortal as the leader of a sectional party, a party, however, dedicated to freedom and the advancement of the human race.

He was labeled "usurper" and "tyrant" by those of the opposite faith. His every act, fraught with an intense desire to serve his country and save the Union, was misrepresented, twisted into evil designs upon the perpetuity of the Union itself.

Serene, uncomplaining, the man pursued the course he had marked out, fulfilling every pledge made in his inaugural message, not turning aside to smite the lying enemy that sought to tear him from the high place he held in the hearts of the best thinking people of the age.

"My fellow citizens!" thundered a speaker from the stump during that memorable second campaign for the presidency, "on election day you will hurl the tyrant Lincoln from the chair and place in his stead that gallant soldier and Christian statesman, George B. McClellan!" And the crowd went wild, "yah-yahing" for the deposition of the "tyrant!"

Partisanship ran wild, and yet it was but part and parcel of the sentiment of nearly one-half the people of the northern states and all the southern half of the Union at that time.

Fifty years later and every section of the whole nation vies in doing him honor. How strange, and how pathetic, that a minority president, hated by half his people during all the years of his incumbency of office, should find honor and sanctified love in every American home half a century after he has been gathered to his fathers and can no longer appreciate the tardy justice of the millions.

Greatest Cream Separator Offer

The Melotte—the wonderful Melotte—the great French-Belgian Separator—the prize winner all over Europe—now shipped anywhere in the U.S.—and on the most sweeping introductory offer. The best of all separators in Europe or America—yours on this Rock-Bottom free trial offer—at the same price you would have to pay in Belgium. Send coupon for great special offer—today.

Wonderful Record

Half a million Melottes are in daily use all over the world. The Melotte has won over 180 International prizes. One machine has been running in the factory at Remicourt, Belgium, the equivalent of 54 years of actual work without appreciable wear. Think of it!

The reasons for its superiority are plain. The Melotte bowl hangs down from a single perfect bearing and spins like a top. It will continue spinning for half an hour after you stop turning the crank unless you apply the brake. This patented self-balancing bowl is entirely automatic. Balance is so perfect that it is impossible for it to vibrate and effect the skimming efficiency like other separators. Bowl chamber is made of special cast iron, porcelain lined with white bath tub enamel. The Melotte is easiest to clean, sanitary, and lasts a lifetime.

This is positively the first bona fide, no-money-down offer ever made on any cream separator. No manufacturer of any cream separator ever dared make such a startling proposition before. All others who have ever pretended to offer you a free trial or to send their separators without any money down have taken care to get something out of you first. But we don't want anything. The Melotte, introduced only one year ago has swept the country. And now the duty is off—the superb Melotte comes in free—you get the full benefit

Free Duty—Save \$15.25

The high tariff has been cut right off—the great Melotte comes in absolutely free of duty! You win! The American farmer can now get the world's best—the grand prize winner of all Europe—at a price \$15.25 lower than ever before. The Chicago price is the same price you would pay if you bought the machine in Belgium, plus only \$1.75 for water freight. You cannot compare any other separator to the Melotte—the latest and most improved in design, construction and operation. The tariff and patent arrangements have kept it off the American market. Now it is here and sent to any responsible farmer on the most liberal free trial offer ever made. The Melotte is absolutely guaranteed for 15 years.

Sent Without A Penny Down —30 Days Free Trial

Your simple word that you would like to see this wonderful imported cream separator in your own barn or dairy house brings it to you instantly. We neither ask nor want you to send us a penny. You set it up—give it a thorough test with the milk from your own cows—a free trial in every sense of the word. No C.O.D.—no lease or mortgage. If you decide to keep the Melotte, you can keep it on extremely easy

Monthly Payments

These monthly payments are so small that you will hardly notice them. You only pay out of your increased profits. You don't need to be without a cream separator when you can have the Melotte right in your dairy house while you are paying for it. In reality you do not pay for it at all—it pays for itself. We want to demonstrate and prove that the Melotte does pay for itself.

Valuable Book Sent FREE

Place your name on this coupon, cut it out and mail at once. We will send you our great free book, "Profitable Dairying" telling you everything about cows and dairying—how to feed and care for cattle—how to make more money than ever before out of your cows. This book is written by two of the best known dairy scientists in the country: Prof. B. H. Benckendorf, Wisconsin Dairy School Agricultural College, Madison, Wis. and K. L. Hatch, Winnebago County Agricultural College, Winnebago, Wis. Does not contain a word of advertising.

We will also send our Free Catalog, describing fully the Melotte Self-Balancing Bowl Cream Separator and telling all about the great Free-Duty offer and extremely liberal terms. Send coupon—Don't delay.

Henry B. Babson, Agent in the U. S., 19th St. & California Avenue Dept. 4342 Chicago, Ill.



Imported Direct from Belgium

World's Grand Prize Winner

Are Your Coal Bills Too High?

The one certain way to reduce coal bills $\frac{1}{2}$ to $\frac{2}{3}$ is by using an Underfeed furnace or boiler. Thousands of Underfeed users have written us such statements as "Coal bill \$16.22 for 7 rooms;" "\$5.40 to heat 4 rooms;" "Reduced coal bills from \$109 to \$53;" "Underfeed reduces coal bill 60%;" "A great fuel saver;" "Have cut coal bills \$70 each winter for 9 years;" "Saved \$122 a season;" "I have divided my coal bill by five;" "Even temperature with no smoke or dirt."

25,000 Underfeed Users

For over ten years Underfeed furnaces and buckwheat hard coal yield in the Underfeed more heat, cleaner heat, even heat, than most expensive coal burned in other heaters. And 25,000 Underfeed users have proved it!

With the Underfeed, coal is fed from below. All the fire is on top. Smoke and gases are burned up making more heat with no smoke, soot, cinders, smell and dirt. Soon pays for itself. Adapted to warm air, steam and hot water heating.



Cut-out View Underfeed Furnace

50% Saving Guaranteed

A saving of 50% in your coal bills guaranteed with an Underfeed, when properly installed and operated. A \$750,000 Corporation backs this guarantee. So you take no chances. If the Underfeed doesn't make good, we will. Take the first step toward slashing your coal bills $\frac{1}{2}$ to $\frac{2}{3}$ by sending in the coupon today—NOW!

The Peck-WILLIAMSON Co. 1313 Fifth St., Cincinnati, Ohio

Get the Startling Facts Now!

The Peck-WILLIAMSON Co. 1313 Fifth St., Cincinnati, Ohio (13)

I would like to know how to cut my coal bills from $\frac{1}{2}$ to $\frac{2}{3}$ with an Underfeed.

Warm Air.....Steam or Hot Water..... (Mark an X after system interested in)

Name

Address

My Dealer's Name is

Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable.

Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

WILSON EAR DRUM CO., Incorporated 784 Inter-Southern Bldg. LOUISVILLE, KY

BARGAINS, BARGAINS, BARGAINS,

35 piece dinner set \$3.50; Set silver plated knives and forks \$1.50; Pair lace curtains $2\frac{1}{2}$ yards long \$1; Nice table cloth 72x72 \$1; 6 nice face towels 13x28 $\frac{1}{2}$ 50 cents. STANDARD SALES CO., 35 Main St., New Harmony, Ind.

GOVERNMENT POSITIONS PAY BIG MONEY. Office and other examinations everywhere soon. Get prepared by former U. S. Civil Service Sec.-Examiner Real courses—the result of Government experience—Write now for booklet 87 with valuable information Paterson Civil Service School, Rochester, N. Y.

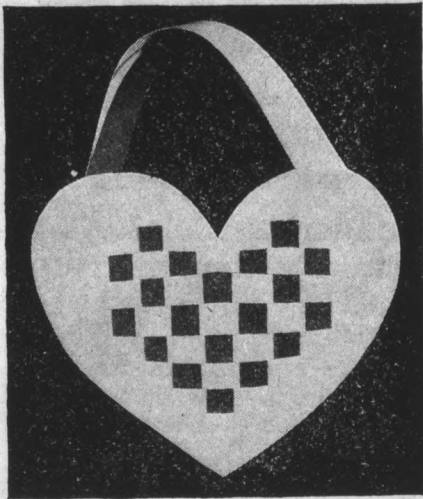
LEARN AUCTIONEERING

And become independent. Write for catalogue of World's Greatest School. Jones Nat'l School of Auctioneering, 14 N. Sacramento Blvd., Carey M. Jones, Pres., Chicago, Ill.

For a February Birthday

[By LURA W. CALLIN.

HOW many of the boys and girls who read The Farmer have a birthday in February? What a fine thing it is for you to celebrate your birthday along with so many other great and noted men, and sometimes on the very same day. We always think of George Washington first in February, I suppose because we get a holiday in school, and then we think about his hatchet and the cherry tree, but do we always remember that George Washington as a boy liked to ride the colts and had to do chores just as the boys of today have to do? His telling the truth about the cherry tree is no more than many, many other boys and girls may be doing, just at this present time, some loyal, beautiful deed that is a test of your character and a help to others. Lowell the poet had a birthday the same day as Washington, the 22nd, so we sometimes celebrate them both the same day. Then Lincoln's birthday, the 12th, is another good day for a birthday. I wonder why we do not use an ax and a book to decorate on Lincoln's birthday just as we use the hatchet on Washington's. You remember how he used to split rails in the day time and then spend long hours at night reading the life of Washington by the firelight? Then there is Longfellow's birthday on the 27th and we like to



fold. Now while we are waiting for the day to come we can make some candy boxes.

For the heart-shaped one, which has to hang up or be carried, make a white heart and cut slashes across the middle and lace strips of red paper into them to make the checks. Touch the ends of the strips on the back with paste so they will not slip when all are in place. Put the paste on with a toothpick. When dry, paste a red heart on to the back, putting the paste only on the edges; then put on the handles as shown—a red one and a white one—sticking a pin through both thicknesses until they are dry.

For the other one take a piece of red paper six inches square, lay the heart pattern down four times with its point to the center of the square, marking around it each time; then cut out the hearts, all but within an inch of the center which we leave for a bottom to the basket. Paste a white strip across the bottom, up the sides and then some, sticking above the heart; paste another crosswise of this strip and over the other two hearts; bend the sides up, lace cord around the corners and paste on a red handle. The corners may be tied with baby ribbon if preferred. Fill the boxes with candy, some moxyo hearts included.

Even if only the home folks are at your party, the little baskets are lovely little decorations for the supper table and pretty souvenirs of your birthday.

THE TWO BROWNING.

BY CARL S. LOWDEN.

In a volume of poems, called "Lady Geraldine's Courtship," Elizabeth Barrett paid a dignified and graceful compliment to Robert Browning, and a little more than a year later the two were married, or to be exact the marriage occurred in 1846. Very soon after the publication of the book the attention of Mr. Browning was called to the compliment, and though he did not know Miss Barrett, except through her growing reputation as an artful writer, he personally gave her his thanks. Then the acquaintance developed into love, and marriage, and an alliance of two people of genius.

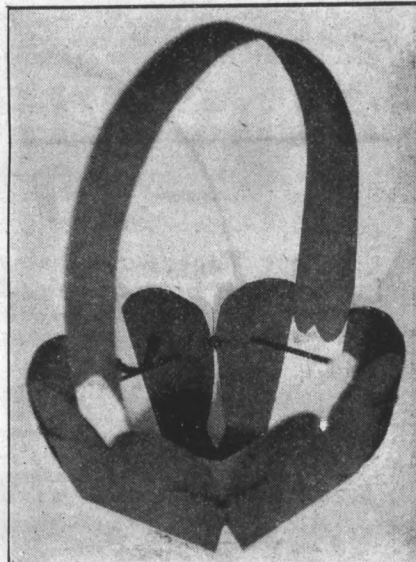
When a very young girl Miss Barrett was severely injured by a fall from her pony, and from that time her health was never very good. She still retained her brilliancy which had been early notice-

able, and she studied quite extensively, with the result that in 1826 there appeared her book, "An Essay on Mind." Her family moved to London; then, shocked by the death of her brother by drowning, she became an invalid and remained in her sick room for years and years.

She is universally considered England's greatest poetess. In all her verse there is much lyric beauty, religious feeling, warm feminine sympathy, and noble sentiments. No writer has exerted a better, gentler, happier influence. These are her best volumes: "Seraphim and Other Poems," 1838; "The Cry of the Children," 1844, the first protest against child labor which started a great wave of reform in that direction; "Casa Guidi Windows," 1848, dealing with the struggles of the Italians for liberty; and "Aurora Leigh," 1857, a novel in blank verse.

Robert Browning has been called the greatest English poet since Milton, but whatever his fame his wife justly shares it with him. Some of his verse are gems that will shine for ages, and his dramas, while not well adapted to stage portrayal, are read widely today by thinking people with a philosophical turn of mind. "Sordello," and "The Blot on the Scutcheon" are the best of these. He published "Men and Women," his greatest book, in 1855. This was followed by "The Ring and the Book" in 1869, and his entire poetical works in 1863.

The poet was a deep thinker, and even rugged, and at times obscure in his meaning. But there are many gems in his work that are as clear as quartz crystal, i. e., in which the meaning is unmistakable. He is remarkable for his boldness of thought, lofty aspirations, and grip of human passion. He wrote of passion, and displayed much dramatic energy and power of analysis. All his verse possesses the lyrical quality, and he is subtle, strange, minute, intellectual, imaginative, and whatever he paints he paints vividly. "Memorabilia," which is



given below, is a typical example of the suggestiveness, vividness, and mystery of his poetry:

Ah, did you once see Shelley plain,
And did he stop and speak to you,
And did you speak to him again?
How strange it seems and new!

But you were living before that,
And also you were living after;
And the memory I started at—
My starting moves your laughter!

I crossed a moor, with a name of its own,
And a certain use in the world no doubt,
Yet a hand's breadth of it shines alone
Mid the blank miles round about:

For there I picked up on the heather
And there I put inside my breast
A moulded feather, an eagle-feather!
Well, I forget the rest.

From the "Cry of the Children," by Elizabeth Barrett Browning, I take the following verse which is the protest of the tired, worn-out children, toiling day after day in the unhealthy shops of London:

For, all day, the wheels are droning,
Turning;
Their wind comes in our faces,
Till our hearts turn, our heads with
pulses burning,
And the walls turn in their places:
Turns the sky in the high window, blank
and reeling,
Turns the long light that drops adown
the wall,
Turn the black flies that crawl along the
ceiling:
All are turning, all the day, and we
with all.
And all the day, the iron wheels are
droning,
And sometimes we could pray,
"O, ye wheels!" (break out in a mad
moaning),
"Stop! be silent for today!"



hear about him, for he is called—what? The "children's poet." That is the right answer. And then there is the only chance of all the year of someone having a birthday on the 29th, and having a party only once in four years, and every boy and girl whose birthday is on the 29th should have a party every birthday. Doesn't that sound fine?

But I think that the most popular birthday is that of St. Valentine. It comes so conveniently in the middle of the month, and hearts and valentines are so pretty to decorate with. It does not matter whether your birthday comes before or after, they are equally appropriate.

When you send out the invitations to your party, cut hearts out of red paper and, having the invitations, "Come to my Partyday," written on white paper fold them neatly and slip through two slits cut in the heart and then write the guest's name on the other side. To cut a heart pattern, take a square of paper as long as you want the heart, fold in the middle, then take a spool and mark a half circle at one end of the paper (the spool should be large enough to touch the paper at the three edges) then slope off with a straight line to a point at the



Pavilion Court of Tomb of Emperor Yunglo. (See "The Ming Tombs, Peking.")

Change bitter butter to better butter

Whether you make your own butter or have it made at the creamery, you know that bitter-tasting salt is bound to affect the flavor of the butter. And the price you get for the butter depends mainly on its flavor.



It's easy to prove whether the salt you are using is bitter or not. Test it thus: Make a little brine. If the brine tastes bitter—change to Worcester Salt.

Worcester Salt leaves no bitter taste.

It is always sweet and savory. More—its pure, uniform crystals work into the butter evenly, making "mottling" impossible to occur.

For better butter-flavor and better butter-prices, see that the salt used is always

WORCESTER SALT

The Salt with the Savor

For dairy use, Worcester Salt is put up in 28, 50 and 56 pound bags. The bags are made of the best quality of Irish linen. Good grocers everywhere sell Worcester Salt. Get a bag.

Write for the Worcester Cook Book. It contains recipes for all kinds of savory dishes. Prepared by Mrs. Janet McKenzie Hill, editor of the Boston Cooking School Magazine. Free on request.

Worcester Salt Company

Largest Producers of High Grade Salt in the World
New York

Keep Your Feet Dry



whatever the weather; and you need not wear clumsy rubbers, either, if you will occasionally treat your shoes with

DRI-FOOT

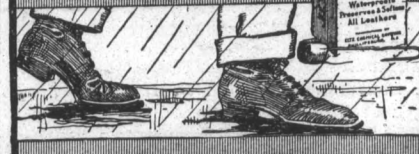
Waterproofing for Shoes

It keeps the leather soft, pliable and waterproof without making it greasy or oily. Doesn't prevent polishing. Makes shoes wear longer. Good for black or tan. Get a can of your shoe man or general store.

25c full size can

If they haven't it, send their names and we'll supply you.

FITZ CHEMICAL COMPANY
673 Broad St., Phillipsburg, N. J.



HAVE BETTER LIGHT

NO SMOKE
NO SMELL



WITH THE "PERFECT" BURNER
Wonderful new invention—turns dim red flame into big brilliant, white, steady light. As good as gas or electricity. Works on any lamp. No smoke, no smell. Makes one lamp do work of three. Prevents eye strain. Saves oil. Fine for all night use. Guaranteed. Price 20c. for No. 1 or No. 2 lamp, or No. 2 Cold Blast lantern, by mail prepaid. Agents Wanted. Write quick. Perfect Burner Co. 673 Spitzer Bldg. Toledo, O.

BETTER LIGHT

from any kerosene lamp or lantern than from electricity or gas. WHITE FLAME BURNERS give a soft white light equal to three ordinary lamps. NO MANTLE TO BREAK. Safe and Reliable. Delights every user. \$5 to \$15 daily. Everybody buys. AGENTS Write quick for particulars and territory. Complete sample postpaid 35c. stamps or coin, 3 for \$1. Money back if not satisfactory. White Flame Light Co. 39 Clark Bldg., Grand Rapids, Mich.



Woman and Her Needs

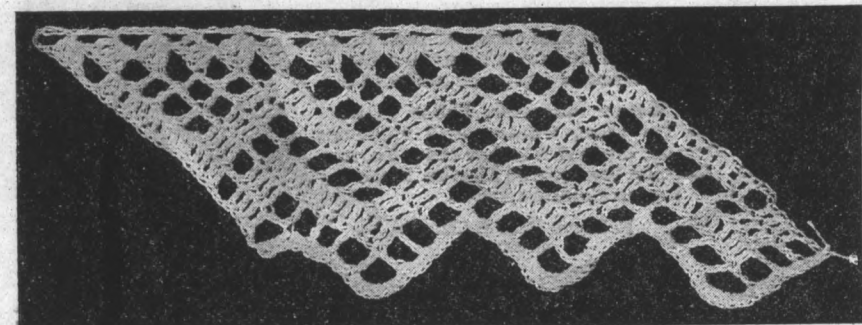
At Home and Elsewhere

Time and Labor Savers

TIME and labor savers are the crying needs of the busy housekeeper in these days of no help, or at best inefficient help. The quickest way to do things, providing it is not a bad way, is the slogan of women.

For that reason I never roll out tea biscuit, or baking powder biscuit, as some call them. Neither do I carefully work the shortening into the flour as per old-fashioned method. I melt my shortening, one tablespoonful to a cup of flour, and set it aside to cool while I sift flour, baking-powder and salt. Then I take a perforated spoon and stir the milk into the dry ingredients, add the melted shortening, stir or beat briskly, and drop by spoonfuls into gem tins. To my notion, these are really more digestible than the old-fashioned biscuits, as they have more crust and are crisper than the rolled ones.

I may have all the scientific cooks in the country against me, but I never "carefully work the butter" into anything any more, unless I have absolutely nothing before me that day but baking the one thing I am at work on. I melt my butter for cakes and let it cool, as hot butter will make the cake tough, then I cream with the sugar in a few minutes as possible. The lard for pie crust I always melt and mix into the flour with a perforated spoon, instead of painstakingly cutting it into the flour with a knife as my cooking teacher taught me. If I am not absolutely scientific, I think the end, time and strength saving, justifies the means, and my cakes are always light and pie crust flaky.



If we are to have muffins for breakfast I save time for the extra 40 winks in the morning, which tired women always crave, by getting the muffins ready the night before. I sift all the dry ingredients together and leave them in the mixing bowl; measure the shortening in a tin ready to melt in the morning, and by-the-way, I always melt it in one of the divisions of the gem tin so that one is already buttered; count out the eggs and measure the milk. These I put all together on the kitchen table, cover with a clean cheesecloth, and in the morning it is but a minute's work to have them ready for the oven.

Since I have used a coffee percolator I get my coffee ready the night before, too. The percolator top fits tightly enough to keep in the aroma, and the water does not touch the coffee so no flavor can be extracted.

Of course every woman knows that she can make crust enough for a half-dozen pies and keep it for several days so long as it is kept cold. Cover it tightly and set it out doors in winter, and on the ice in summer. It takes but little longer to make a large quantity than it does for one pie, and you are saving time for some future day.

In making cookies time may be saved by dropping the dough on the baking sheets instead of rolling and cutting. The little cakes you turn out are as appetizing as cookies and you are better able to enjoy them because of the rested feeling.

You can save time when cooking potatoes and parsnips by cooking them in the skins and removing the peeling after they are cooked. It takes much less time to remove the jacket from a potato after it is boiled than it does to pare or scrape

before cooking. And parsnips may be more quickly peeled by scrubbing, boiling, then dropping in cold water and slipping off the skin, than by scraping before cooking.

A great convenience and saver of money, if you use a two-burner gasoline stove, is the oven. I use mine constantly, as one burner will heat it enough for general cooking. It will hold four things, a roast, with the potatoes, a pudding, a second vegetable, and anything you may wish to "warm over." If my supper is to be a "warmed over" one, the oven is invaluable, for everything is better done in the oven than it is if reheated in hot fat, the time-honored method for preparing potatoes and meat for the second serving. Potatoes may be diced, mixed with white sauce, dotted with butter, covered with grated cheese or buttered crumbs and put in the oven for 15 minutes. Cold meat simmered in gravy and covered with a crust or with cold mashed potatoes and baked 20 minutes appears like a new dish to the family. Cold vegetables may be reheated in the oven, the soup brought to the boiling point there, and the mince pie heated enough by putting it on top of the oven and turning a basin over it.

BIAS CROCHETED LACE.

BY ELLA L. LAMB.

Chain 33.

First Row.—Shell 4 tr in 6th st from hook, ch 2, skip 2, 16 tr in next 16 st. ch

2, skip 2, 4 tr in next 4 st, ch 2, skip 2, 1 tr, turn.

Second Row.—Ch 5, 4 tr in next 4 tr, ch 2, 1 tr in next tr, ch 2, skip 2, 1 tr, ch 2, skip 2, 1 tr, ch 2, skip 2, 1 tr, ch 2, skip 2, 4 tr in next 4 tr, ch 2, 1 tr in next tr, ch 2; shell 4 under ch at end, ch 1, 1 long tr with thread over hook twice, turn.

Third Row.—Ch 5, shell 4 tr under ch in last row, ch 2, skip 3, 1 tr in tr, ch 2, 1 tr in next tr, ch 2, 4 tr in next 4 tr, ch 2, 1 tr in next tr, 15 tr in next 15 st, ch 2, skip 2, 1 tr in 3d st, turn.

Fourth Row.—Ch 5, skip 3, 1 tr in 1st tr, ch 2, skip 2, 1 tr, ch 2, skip 2, 1 tr, ch 2, skip 2, 1 tr, ch 2, skip 2, 4 tr in next 4 tr, ch 2, 4 tr in next 4 tr, ch 2, 1 tr in next tr, ch 2, 1 tr in next tr, ch 2, 1 tr in next tr, ch 2, shell 4 tr under ch at end, ch 1, 1 long tr with thread over hook twice. Turn and repeat from first row. Finish edge by double crochet around the points after length is made.

DIFFERENT KINDS OF CLEANSERS.

BY CHARLOTTE BIRD.

To Clean Carpets.—The following is an excellent method for cleaning carpets. This is to be used while the carpet is on the floor and only a small part is to be done at a time. Take two bars of good laundry soap and with it combine four ounces of borax and eight ounces of sal soda. Dilute these ingredients in two gallons of water. When ready for use, apply with a brush and at once take up the suds and wipe well with a dry cloth. If this is used properly, it will clean a carpet as effectually as a professional cleaner would do it.

To Dry-clean Delicate Clothing.—Buy a cake of magnesia and use it on gloves, white woolen suits and white hats. When

a white or light woolen garment is taken off, the magnesia should be rubbed all over it and the garment be laid between folds of white tissue paper. In two or three days, when the garment is taken out and well shaken, it will be found quite clean and fresh-looking. On white hats and gloves it is to be used in the same way. It is superior for white satin shoes, felt hats, lace yokes, and fine laces which cannot endure water.

To Clean Mud Spots off Silk.—Peel a potato and cut it into small pieces. Over it pour half a pint of boiling water and let it stand for 12 hours. Then add enough pure spirits of wine to give the feel of very thin starch. With this liquid quickly sponge the spotted silk and rub each spot carefully, thoroughly wetting it. Then on the wrong side press with a cold iron, always being careful to pass the iron lengthwise over the goods.

To Renovate Velvets.—If soiled, clean. Sponge thoroughly on the right side. Have ready a hot smooth surface of some kind, like the plate of a cook stove. Lay the back of the damp velvet on the hot surface and with a soft brush vigorously brush the right side till it is dry. The nap will then stand up well and the velvet will look almost as good as new. A velvet ribbon can easily be cleaned by using a common flatiron. This is the method used by milliners. If it is used at home, it may result in a considerable saving of the millinery bill, because the woman who trims the hat will not have to do it.

To Remove Iron Rust.—Saturate the spots thoroughly with lemon juice and salt and then lay out in the sun. As a general thing, more than one application will be needed, but that will be simple. If clothes are boiled in a bag, they are not likely to get iron rust.

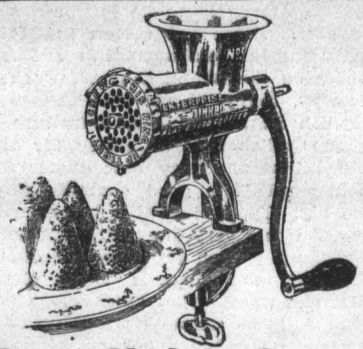
Dry Starch as a Cleaner.—A little starch in the rinse water when one is washing windows, mirrors, lamp globes or glassware is a great aid. Allow the glass to dry before polishing. It will then polish beautifully with very little rubbing. Dry starch may be used to remove grease spots from linen or other white clothing or from table linen. Cover the spot with the powdered starch, let it lie for an hour or two and then brush off. The grease will have been absorbed and brush off with it. If persistently applied, it will remove stubborn grease spots like those from vaseline, especially if laid in the bright sunlight.

Easy Way to Clean Windows and Mirrors.—Wet Spanish whiting with water to a paste and apply to windows or mirrors. When dry, merely rub off and the glass will be bright and clean. Woodwork may be cleaned in the same way. To be sure to avoid lint on windows and mirrors, wash with a piece of chamois, though with the whiting this is hardly necessary.

To Clean Hairbrushes.—In about a pint of hot water dissolve two teaspoonfuls of powdered borax and wash the brush thoroughly. Rinse well in clear water. This thoroughly cleanses the brush and also leaves the bristles stiff. The same is a very good wash for the scalp. It will loosen dirt and dandruff and removes the oil from the hair. But the hair must be rinsed well afterward, because this is otherwise too drying.

To Wash a Sweater.—So often a sweater, no difference how expensive, is ruined in the washing, because it then loses its shape never again to regain it. A good white soap should be used in water from which the chill has just been taken. The sweater must not be rubbed but carefully squeezed in the suds till the dirt comes out. Then squeeze, do not wring it, and rinse in clean water of the same temperature. Again the sweater must not be hung up in the regular way but placed in a clean pillow-case. Then pin the pillow-case to the clothes-line in a sunny, airy place. Washed in this way, the sweater will keep its shape and be as nice as new. The knitted caps so popular now, can be washed in the same way.

To Wash Print Frocks, Gingham and Muslins.—Make a gallon of flour starch and strain it as usual. Pour half of it into two pails of soft water and wash the cottons in it till they are clean. The



Getting Meals for Company

Thanksgiving, Christmas and other holidays generally mean company and lots of extra work getting meals. If you had an

ENTERPRISE

Meat AND Food Chopper

you would be delighted and surprised to see how easy it is to get a meal for a large company. You can have the daintiest dishes—good things that tickle the palates of your guests—and yet they will be inexpensive. But it is for everyday use that this chopper pays for itself over and over again.

If you do any butchering, you will find it just the thing for chopping sausage meat. It is the one chopper that gives the chopping cut—does not squeeze, mangle or crush. It really chops meat and other food, using a four-bladed knife that chops clean and fast. A minute is time enough to chop sufficient for a meal for a good-sized family. This chopper is without an equal. If you want a still lower-priced machine, ask to see the

ENTERPRISE FOOD CHOPPER.
Costs from \$1.25 to \$2.25, according to size.
Send 4c for "The Enterprising Housekeeper," our new cookbook. Full of good things to cook and know.

Go to your dealer and he can show you the ENTERPRISE line

THE ENTERPRISE MFG. CO. OF PA.
Dept. 48 Philadelphia, Pa.



Buy the Battery that's Built for Business

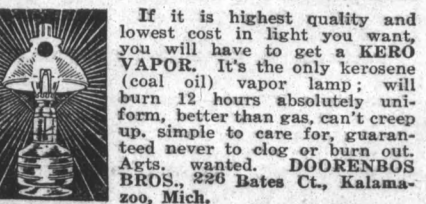
Costs No More—Lasts Longer

Columbia Patented Batteries have been doing good work for a quarter century. They're just right for your gas engine, bell, telephone, tractor, barn lights or auto. Used and sold all over the world. Easy to buy.

THE NATIONAL CARBON CO.
Cleveland, Ohio



THE BEST LIGHT CO.
280 E. 5th St., Canton, O.



Silver Herring 3c.

SELECTED QUALITY.
Don't miss this bargain while the catch is good. Packed in strong, tight wooden packages. Our herring are known to be the finest flavored of any. Get our price list for other varieties.

WISCONSIN FISHING CO.
Department Y, Green Bay, Wis.

rest of the starch is to be put into the rinse water. Rinse the cotton goods in this and hang in the shade till dry. Then iron them on the wrong side. If washed in this way, they will not fade.

To Polish Highly Finished Furniture.—A piano polisher is authority for the statement that the very best duster for polished wood is a good chamois skin, not too big. Dip it in either hot or cold water and wring very dry, so that it feels merely damp. Then go over the dusty surfaces till the chamois looks dirty. Wash it clean and wring hard before going on. A little ammonia in the water helps remove possible finger marks. Always keep changing the water so long as it grows dirty and always be sure that the chamois is clean and well wrung out.

To Wash the Hair.—If your hair tangles easily when being washed, braid it in several small braids before allowing the water to touch it.

Cut Lemon as a Cleanser.—If the top of a kitchen table or the bread and meat board are rubbed with cut lemon and then rinsed with cold water, they will be beautifully white. Cut lemon rubbed on the hands will whiten them and remove stains, even decided and extensive ones. It will also make the skin smooth.

LETTER BOX.

Even 1914 Girls Have Ideals.

Is life worth living?
Depends on the liver.

Dear Deborah:—Don't you think you ought to see a doctor? Have you been reading the "American Girls as a Frenchman Sees Them?" or is it just because you live in the city and I live in the country, that I can see and know some delightful, industrious, modest girls with ideals, and you can't?

Besides that, I can remember knowing girls some years ago, silly, giggly girls, with apparently no ideas above "beaus and clothes," who have grown into fine women and mothers of fine children.

So, "I doubt not through the ages one eternal purpose runs." Just take off your blue goggles and substitute rose colored "specs" and you'll "perk up" some, too.

—E. W. McC.

HOME QUERIES.

Household Editor:—What are cutlets?
—Miss B.

Cutlets are steaks from veal, lamb, mutton or pork.

Household Editor:—How do you braise beef?
—Cook.

Braising is a long, slow process of cooking for tough pieces of meat. The meat is placed in a kettle which can be tightly covered, on a bed of chopped vegetables, carrots, celery, onion, etc. A cup of the chopped vegetables is placed on top of the meat, then salt and pepper added to taste, and about a pint of boiling water. Then the kettle is covered tightly and put on the stove where it will just simmer for several hours, or until the meat is tender.

Household Editor:—Which would you advise me to use in bread, milk or water?
—Beginner.

If you live on a farm and have plenty of milk, use it by all means. It makes a more nutritious loaf, though it is slower in rising.

Household Editor:—What is wrong with the sentence, "He has just went."—J. L.

You are using the past tense of the verb instead of the participle to form a perfect tense. It should read, "He has just gone."

Household Editor:—In the Michigan Farmer of January 10, "The Numerous Women's Exchanges" is spoken of in an article by "Hilda Richmond." I have tried unsuccessfully to find a women's exchange where I could sell some fancy work. Could you give me any information regarding the same.—Mrs. J. F. F.

Address to Woman's Exchange, Detroit or Chicago.

Household Editor:—Would like to ask some of the ladies of the home department if they will please give me directions for making "salt and corn starch beads?"—M. H.

Directions are given in a separate article.

Household Editor:—Can you tell me what is the trouble with my buckwheat cakes? One morning they will be all right and then the next, although I can see no change in them, they will be raw when fried.—Mrs. M. A. M.

Household Editor:—Can you tell me how "everlasting yeast" is made or started first? I have used it, getting a starter from a friend, for a number of years, but it accidentally got thrown away. I have been unable to get any since and fail to have as good bread with the yeast cakes.—M. E. S.

Household Editor:—I would like some of the farm women who do not have a bathroom and bathtub to tell me how to bathe half-grown children and themselves. Has someone thought of a home-

made bath spray that can be used with waterworks in the home?—A Subscriber and a Greenhorn from the City.

SALT AND CORNSTARCH BEADS.

BY EDNA M. BROWN.

These beads are pretty, serviceable and inexpensive and will make a very appropriate gift for sister, mother or grandmother. Black ones with gold beads strung between and scented with rose perfume are a good imitation of the rose beads that are so difficult to make.

Mix one-third cup of cornstarch with water to make thin paste. Put in the coloring. Now put one cup of fine table salt, being sure it is very fine, on the stove in a small pan. Stir constantly until it gets as hot as possible without burning. Stir the starch into the salt well. Now mold, by rolling with hands, into beads the size of a pea, although other sizes and shapes are just as pretty. Put a pin through the center of each bead. A shoe box cover is a very good thing to stick them into to dry.

The coloring is quite an important feature. Water colors are the best, I think, but bluing, fruit coloring and black ink can be substituted. Pure white ones are very pretty. String them with smaller beads, steel or gold.

SHORT CUTS TO HOUSEKEEPING.

To hold machine stitching so it will not need tying, take two or three stitches, lift the foot and begin over again. At the end of the seam, turn the goods and stitch back a few stitches over what has been done. This will not do for very fine sewing but looks well enough for common work. It is more quickly done than tying and stays better.—V. H. K.

Before putting away the best silver dissolve some collodium in alcohol and with a soft brush cover the silver with this preparation, which forms a thin coating and keeps it from tarnishing. When unexpected company arrives wash the silver in hot water and it will be bright and ready for use.—L. M. T.

Flour makes coarse and sticky salad dressing. Use cornstarch instead, and add a few drops of dandelion butter color. Vinegar saved from spiced pickles give a fine flavor to dressing.—F. H.

FASHIONS BY MAY MANTON.

Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of ten cents.



No. 8029—Fancy Blouse, 34 to 42 bust. With long or elbow sleeves, with or without peplum and chemisette.

No. 8037—Fancy blouse, 34 to 42 bust. With kimono sleeves perforated for three-quarter length.

No. 8050—Semi-Princesse gown, 34 to 42 bust. With three-piece skirt, long or three-quarter sleeves.

No. 8058—Two-piece skirt with drapery, 22 to 32 waist.

No. 7833—Three-piece skirt, 22 to 32 waist. With high or natural waist line, draped or plain, round or straight corners.

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

Recipe for Aristos Biscuits

2 level cups Aristos Flour
1 cup sweet milk or water
½ teaspoonful salt
1 heaping tablespoon lard
1 heaping teaspoon baking powder

Send a postal for the Aristos cook book. It contains excellent practical recipes and is yours for the asking. Address The Southwestern Milling Co., Kansas City, Mo.



ARISTOS
FLOUR

This Trade Mark

on Every Sack

Mayer

HONORBILT
SHOES

Mayer Honorbilt Shoes lead in style and are unapproached in wearing qualities. They look, fit, feel and wear right. They give you the latest style, absolute satisfaction, and genuine comfort. These splendid shoes are not equalled by other shoes selling at anywhere near the same price.

Made for Lasting Service

Only the choicest upper leather, fine oak tanned soles and the best of materials go into Mayer Honorbilt Shoes. They are made to last and hold their shape. Buy Mayer Honorbilt Shoes and get the greatest shoe values obtainable.

WARNING—Always be sure and look for the Mayer name and trade mark on the sole. If your dealer cannot supply you, write to us.

We make Mayer Honorbilt Shoes in all styles for men, women and children: Drysox, the wet weather shoe; Yerma Cushion Shoes; and Martha Washington Comfort Shoes.

F. Mayer Boot & Shoe Co.
MILWAUKEE



For Men
Women and
Children

Dr. Wiley Says

"Out of respect to one's skin and one's purse, buy plain standard soaps, cold cream and "Vaseline" sold as such."

Vaseline

Reg. U. S. Pat. Off.

is as standard as air and sunshine. Nature's own healing balm. First aid for the little hurts. Keeps the skin smooth.

Vaseline sold by drug and department stores, everywhere, or sent to you direct on receipt of price—10c. for a full-sized bottle.

Write for our new illustrated booklet describing the various forms of "Vaseline" and their many uses.

CHESEBROUGH MFG. CO.

(Consolidated)

33 State Street

New York City



MORE LIGHT THAN 20 LAMPS

You can have better light and more of it than you've ever enjoyed before, if you'll just order a "COLEMAN AIR-O-LITE"

the simplest, safest, least expensive lamp of them all. Gives you less trouble—no wicks to trim, no chimneys to clean. Fill only once a week, clean only once a year. 300 candle power at only a third of a cent per hour. Over 500,000 now in use. Every lamp guaranteed for 5 years. No danger even if tipped over. No smoke, no smell, no soot, no glare, no flicker. Just brilliant, steady, perfect light. Write for free literature and Agents' Money-Making Proposition. Send to nearest address of

THE COLEMAN LAMP COMPANY,

220 St. Francis Ave., Wichita, Kan. 1021 Summit St., Toledo, Ohio.

Grange.

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

THE FEBRUARY PROGRAMS.

Suggestions for Second Meeting.
Fifteen minutes' song practice.
Roll call, responded to by each giving a favorite quotation.
What improvement in our rural school can our Grange champion and push to a reality? Discussion.
A new book I have read.
Orchestra music.
How make a day at Grange or farmers' institute worth more than a day at home? by a man and woman.
Character song.
Refreshments of home-made candy, furnished by young ladies.

CONSERVING YOUNG PEOPLE.

Among the multitude of things said about conservation, nowhere has there been reported a better bit of conservation than that described by a Grange correspondent at Mancelona, in Antrim county.

She writes: "Our young people have organized a club where they meet once a month and have a dancing party. The older members also belong. No one is allowed at this party without the Grange password, or an invitation card signed by the one who gave it, therefore no undesirable are allowed to enter the outside door. The young people have their own music and the church members, mothers, and fathers of these girls and boys are all there and join with them. Prof. W. D. Henderson, of the University, who was here to lecture for us, attended one of these parties and thought it the finest company of young people he had met, gave a little talk to them, and said he wished the churches would adopt the plan of bringing their young people together in a social way."

Now, isn't that a sane way for a Grange to lead the social life of its neighborhood and conserve its most precious assets? Besides the social parties, these young people have a degree team which is being coached by a Spanish War soldier, in which they are receiving fine military drilling. They are also organizing an orchestra and contemplate giving a play in the near future. Can anybody imagine that young people at this place find country life "poky" or "lonesome"? You may be confident that there are older people there who are "taking thought" along the line of saving their young people!

JENNIE BUELL.

AMONG THE LIVE GRANGES.

East Casco Grange, of Allegan county, conferred the subordinate degrees upon a class of 12 during January.

Clinton Pomona had an attendance of 200 at its meeting with Bingham Grange, Jan. 21, every subordinate in the county, excepting Wacousta, being represented. Bengal Grange will entertain Pomona during the present month, date not yet announced.

Stanley Home Grange, of Calhoun county, mourns the death of Sister Eliza Hickling, which occurred Jan. 21. Space will not permit the publication of the resolutions of sympathy forwarded by the Grange committee composed of B. W. Phillips, Mrs. C. W. Toland and Mrs. F. D. Cotton.

Ionia Pomona initiated a class of eight in the fifth degree at a meeting held with South Boston Grange on Jan. 22. The meeting was well attended, Berlin, Keene and South Boston Granges having the best representation.

Pipestone Grange, of Berrien county, installed officers as follows during the past month: Master, O. A. Robinson; overseer, Ralph Lavanway; lecturer, O. O. Sutherland; steward, Dowell Williams; assistant steward, Harold Masters; lady assistant steward, Aletha Sutherland; chaplain, Katie Sutherland; secretary, Nelson Sutherland; treasurer, Clark Lavanway; gate keeper, Alfred Johnson; Ceres, Elsie Johnson; Pomona, Mary Skoda; Flora, Miss Nettie Williams.

Nunica Grange, of Ottawa county, had a pioneer and Michigan day program in January. Such meetings tend to give a clearer understanding of the conditions under which the early settlers lived and a correspondingly greater appreciation of the debt which the present generation owes to those hardy pioneers who, in many instances, left home and friends behind when they set out to subdue the trackless wilderness. This Grange will have a short Lincoln program on Feb. 7, and this meeting will be a public one.

COMING EVENTS.

Pomona Meetings.
Eaton Co., at Charlotte, Saturday, Feb. 7. The meeting is to be a county rally, with each of the first four degrees exemplified by different subordinate degree teams.

Charlevoix Co., with Wilson Grange, Thursday, Feb. 12. Subordinates requested to send in reports early.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—Jas. N. McBride, Burton.
Vice-president—J. F. Rieman, Flint.
Secretary-Treasurer—Mrs. C. P. Johnson, Metamora.

Corresponding Secretary, Mrs. J. S. Brown, Howell.

Directors—Wm. T. Hill, Carson City; Jerry Spaulding, Belding; R. J. Robb, Mason; Joseph Harmon, Battle Creek; C. B. Scully, Almont; C. T. Hamline, Alma.

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 DISCUSSIONS.

Hold Annual Oyster Dinner.—The Hadley and Elba Farmers' Club held its annual oyster dinner at the Hadley Town Hall on January 15. Rev Eberhardt gave a paper on Michigan Road Law, which was well discussed. Adjourned to meet at Lone Elm Farm with Mr. and Mrs. C. P. Johnson on February 19, when the following program will be rendered: Roll call, Washington and Lincoln stories. "Is an allowance for women a proper method of conducting the finances of the household?" Kate Pathi, Beulah Schrader. Reading, Mrs. Chas. Farrar. "Taxation Reforms," W. E. Ivory, Fred Selby. We hope to have a large company present.

First Big Meeting of the Year.—Ceresco Farmers' Club held a delightful meeting at C. B. A. Hall in Ceresco, Jan. 28, being entertained by Mrs. L. L. Lewis. Over 100 partook of the bountiful picnic dinner spread on the two long tables. A number of old members were present that have not attended the Club for some time. After the secretary's report, singing and prayer, Mr. Brown, of Battle Creek, took a few snapshots of the meeting, to be shown in Battle Creek at the round-up. A very interesting paper on "Women's Suffrage" was read by Mrs. Jessie Underwood; a short one by Mrs. P. M. King. Both were freely discussed. When this Club meets there is something doing. Everyone happy and having a good time. We have to thank Postmaster James Hughes, of Marshall for two fine recitations, and all went home feeling that the time was well spent.—Mrs. P. M. King, Cor. Sec.


Discuss Practical Topics.—The Deerfield Farmers' Club met at the pleasant home of Mr. and Mrs. Albert Cameron, Jan. 24. After a sumptuous dinner was served, they were called to order and a fine program was rendered. The topics of the day were "Mid-Winter Farming;" "Balanced Rations for Sheep, Cattle and Hogs;" "The proper time of Marketing our Animals." These were discussed by Mr. Max L. Johnston and others. Many valuable and interesting points were brought out. After a few selections and a number of recitations, the Club adjourned to meet with Mr. and Mrs. Chas. Bemiss in February.—Mrs. John F. Lutz, Cor. Sec.

Hold Annual Meeting.—The Wixom Farmers' Club held its annual meeting, January 14, at the K. O. T. M. Hall at Wixom, entertained by Mr. and Mrs. B. T. Nicholson and Mr. and Mrs. R. D. Stephens. After partaking of a bountiful dinner, the president called the members to order. The following officers were elected for the ensuing year: President, B. T. Nicholson; vice-president, David Gage; recording secretary, Mrs. E. M. Moore; corresponding secretary, Mrs. R. D. Stephens; treasurer, R. D. Stephens; organist, Mrs. Eugene Furman. The question discussed, "What can I do to improve the efficiency of the Club?" was ably handled by B. A. Holden, who gave us an interesting talk, followed by other members of the Club.—Mrs. R. D. Stephens, Cor. Sec.

Mere Man Has Innings.—The January meeting of the Indianfields Farmers' Club was held at the pleasant home of Mr. and Mrs. Albert Arnold, where a royal welcome was extended to all, and was on the program as "Gentlemen's Day." The men rose to the occasion, took entire charge of the dinner, which was perfection, ready on the stroke of twelve, and served to "queen's taste" by Amos Andrews, Jr., and his able assistants. The social hour gave many practical ideas to aid housekeepers and farmers alike, then the program proper began. R. W. Black read a fine paper on "Co-operation of City People and Farmers;" Wm. Sheppard's talk which followed was "Good Will." He said in part that good will and charity toward the world in general was the keynote of our life. That flowers were better enjoyed by those who live than when on their casket. Castle Taggett's paper was a view on "High Cost of Living," and Robert Park's "Poetry of Farming." Considerable amusement and sound sense were derived from the debate: "Resolved, That the farmer has more enjoyment throughout the year than the merchant." Affirmative, I. N. Taggett, James Paul; negative, Chas. Smith, Mrs. Ellen Purdy, the latter being "fresh" recruit. The negative won, after a spirited talk. Robert Park, Wm. Eldridge, Amos Andrews, Jr., were elected honorary members of the Business Men's Association. The Club's February meeting will be at the home of Mr. and Mrs. Wm. Eldridge.—Margaret Arnold, Rec. Sec.

GET "YOUR BARGAIN BOOK" FREE

1108 PAGES



BUY at the Nation's Gateway and Save Money

60% of all your home and family needs originally come from or thru New York—the gateway of the Nation. Why not buy here—first hand—and cut out a lot of unnecessary expense—all middlemen's profits.

Our Mammoth New Catalog is Now Ready

We want to send you a copy at once, FREE and postpaid. It contains 1108 pages of remarkable bargains on everything your family needs, Wearing Apparel, Furniture, Carpets, Rugs, Stoves, Farm Machinery, Vehicles, Harness, etc.

We want you to see this wonderful collection of high grade merchandise, gathered from all corners of the world. We want you to have this "Bargain Book" in your home from which you can buy all your home and farm needs and save a lot of money. Every article is sold on our BROAD, LIBERAL GUARANTEE to please you or money refunded.

A Postal Brings It

Just drop us a postal or letter today and we will send it to you FREE and POSTPAID. No matter how many other catalogs you have received by all means get this one—YOUR BARGAIN BOOK—just out—direct from New York—the home of lowest prices, newest styles—and choicest merchandise. SEND TODAY.

The Charles William Stores
1017 Stores Building, 115 E. 23rd Street, N. Y.



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 competitive 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



9 CORDS IN 10 HOURS

RUNS EASY No Backache Weighs only 44 lbs. EASILY CARRIED SAWED DOWN TREES

BY ONE MAN. It's KING OF THE WOODS. Saves money and backache. Send for FREE catalog No. B44 showing low price and LATEST IMPROVEMENTS. First order gets agency. Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

JOE WING SAYS:

The Excelsior Clover and Alfalfa Drill will revolutionize agriculture in America.

Order one of these Govt. Endorsed Machines for your farm and secure a perfect stand of clover or alfalfa.


Drop us a card now for complete details of field trials in your vicinity and our series of Educational Bulletins.

EXCELSIOR DRILL CO.,
Dept. 8 Springfield, O.



MILNE STUMP PULLERS for trees or stumps. You can pull trees faster than you can cut them down. New All-Steel machines. Stump-anchored or self-anchored. Unbreakable; rapid; powerful. Double, Triple and Quadruple Attachment, also Rotary Power for sawing, grinding, etc. Write for free catalog.

MILNE MFG. CO., 875 Ninth St., Monmouth, Ill.



J-M ASBESTOS ROOFING

Made of Asbestos and Trinidad Lake Asphalt—all mineral. Contains nothing to deteriorate. Never needs coating, gravel or other protection. Cheapest-per-year roofing. Gives perfect fire protection. Write for Book No. 8240.

H.W. JOHNS-MANVILLE CO., New York and All Large Cities



Pull Big Stumps Quick and Easy \$1280 from 40 acres the first year stumps are out.

Pulls an acre a day. It doubles land values. Enables you to grow crops instead of paying taxes on land that yields nothing.

HERCULES Stump Puller

More power than a tractor. 60 per cent lighter, 400 per cent stronger than cast iron puller. 30 days' free trial. 3-year guarantee to replace, free, all castings that break from any cause whatever. Double safety ratchets insure safety to men and team. Accurate turning means light draft. Mail postal for free book showing photos and letters from owners. Tells how to turn stump land into big money. Special introductory price proposition will interest you. Write now.

HERCULES MFG. CO., 137-22nd St., Centerville, Iowa

From Michigan



BIG MONEY MAKING CROPS with A.A.C. Fertilizers

THE best is none to good for you. About a thousand tons of surface soil are cultivated to the acre, and it is hard to understand why an application of a few hundred pounds of good fertilizer will make such a wonderful increase in the crop, but it is a fact. Our fertilizers are quickly soluble and are so compounded that they thoroughly enrich the acre of soil, just as a few drops of bluing will color a large amount of water.

About seven million tons of fertilizers are used in this country every year. We supply a large portion of this from our factories, located from Maine to California.

We furnish a fertilizer with 34% available phosphoric acid; special grain fertilizer 2-12-3 and 20-4 analysis; also half potash fertilizer for muck land. We make the best goods most suitable for different crops grown on all kinds of soil.

Write us for further information. We will send you a booklet on fertilizers, also a large handsome calendar.

We want agents for unoccupied territory under our Consignment Contract. Send your name and address. We are sure we can interest you.

The American Agricultural Chemical Co.
Detroit Sales Department, Detroit, Mich.

Also Cleveland and Cincinnati. Address nearest office.



Get this Book Free

If you own cows or stock send for this book, mentioning whether or not you now have a silo. The book is full of good ideas for making more money from stock. Also TELLS ABOUT THE

BLIZZARD ENSILAGE CUTTER

Rapid—big capacity—simple—almost runs itself—economical—safe. Write for book today—a postal card will do.

THE JOS. DICK MFG. COMPANY
182 Tuscarawas St. Canton, Ohio

Steel Shoe Book Saves You \$20!

1 Pair Outlasts 3 to 6 Pairs All-Leathers **FREE**

The comfort, economy and durability of Steel Shoes is amazing. Thousands throwing away leather-soled shoes, boots, rubbers, etc. Steel Shoes keep feet dry. No colds, sore throat, rheumatism. Saving in doctor's bills more than pays for them. They fit fine and feel easy—no corns, bunions or soreness. Write postal for book. The Sole of Steel, learn how to save \$20 shoe money.

N. M. RUTHSTEIN, The Steel Shoe Man. Dept. 224, Racine, Wis.

Here's a Better Tire

We want *you* to share the confidence we have in Ajax tires. *You* can know, as do we, that their quality is in-built, that they are better than other tires!

Our assurance to you is the written guarantee of 5,000 miles. This is 1,500 miles more than the implied life (3,500 miles), verbally expressed, of other standard tires.

You get 43% more guaranteed-in-writing miles with Ajax tires, and at about the same prices.

Will you make this investment? Will you save this \$4.00 to \$20.00 a tire, according to the size you use? Send for *new* Ajax Booklet. See the Ajax dealer. He's near at hand. Better decide early.

Guaranteed
In Writing
for
5000
MILES

**AJAX
TIRES**

Plain Tread Non-Skid

Guaranteed
In Writing
for
5000
MILES

"While others are claiming Quality
we are guaranteeing it"

AJAX-GRIEB RUBBER COMPANY
1796 Broadway New York City
Factories: Trenton, N. J.

Farm Commerce.

Getting More for the Egg Crop—No. 1.

MICHIGAN'S hens lay over six hundred and fifty million eggs annually. Of this number about 68 per cent, or 426,820,652 eggs, are sold off the farms where they are produced. Much loss occurs in the distribution of these 426,820,652 eggs. A considerable portion of this loss can be saved to the farmer, and it shall be our purpose to point out some of the ways of realizing more for the eggs raised on our farms than we are now getting.

What we shall say is based upon the experience of farmers and poultrymen who read this paper. In our issue of December 20 we published a list of questions framed to bring out the practice of those who answered them. Many farmers and farmers' wives made answer and these answers constitute the foundation of the following paragraphs:

Let us go for a moment back to the production phase of the egg business, for it is here that the farmer has all the control over conditions that man can have, and it is here that a considerable loss can be saved.

The First Step.

A dozen eggs of uniform color and size will sell for more than a dozen irregularly shaped and variously colored eggs. (We have in mind, of course, a discriminating market where eggs sell on merit). If, then, the farmer can persuade his hens to lay a high per cent of uniform eggs he will realize more from them than he will if the percentage of such eggs be low, other things being equal. Can the farmer, through care in selecting his fowls, increase the per cent of uniform eggs? The readers of this journal who answered the questions referred to seem to think that he can.

In going through the numerous answers it was apparent that those who had mongrel stock were not getting the satisfactory returns from eggs that those who had high-grade or pure-bred stock, taking the answers as a whole. Some there were, who made enviable successes with ordinary hens, but these persons had other advantages of which more will be said later.

As has been stated, one way to get more for the eggs produced on farms is to have those eggs as uniform as possible, and the first step in the attainment of this end is to develop a flock of hens that are closely alike in conformation, vigor, etc., so by breeding up the flock to conform to some ideal, the farmer will increase his chances of financial success with chickens. Hens of the same breeding will produce eggs more nearly alike than will mongrel stock.

How to Do It.

Although it is no impossible task to breed up a flock of common chickens so they will lay eggs similar in shape and color, the most satisfactory way of securing such fowls is to get a start with pure-bred stock. Here one not only has the advantage of his own efforts in get-

ting a good flock, but also the accumulated efforts of many who have gone before. In other words, success is nearer at hand where one starts with pure-bred stock than it is when he seeks to get high-grade birds from common ancestors.

A word of caution is needed here. Many readers will call to mind that they themselves, or neighbors, have succeeded with common birds. Some of those answering the queries have done so, and it is easy to be led to think that the advantage of having a uniform flock of hens amounts to nothing. But these men succeeded in spite of the handicap of working with common stock. They were particular about the care the stock received, the cleanliness of the premises and houses, the grading and packing of the eggs, and these influences brought them success without the help of pure-bred stock. It is altogether probable that with a uniform flock their success would have been greater, or attained more easily.

Another Essential.

Besides the kind of chickens kept, another important factor to be considered when seeking to increase the revenue from the poultry is the sanitary condition of the houses. The answers referred to brought out the fact that there is a wide variation in the number of times that poultry houses are cleaned. Some clean their buildings annually, others twice a year, a few every three months, while still others who sent their answers on well-headed stationery are not satisfied unless the work is done every week. The percentage of successful poultry keepers seem to be greatest in the class that pays the strictest attention to cleanliness.

Naturally, in the production of eggs, the one place where cleanliness has the greatest influence on the price is in the nests. If these are allowed to become filthy, not only will the hens be tempted to steal their nests away, but the eggs laid in such nests are quite certain to be graded lower because of being dirty. This dirt impairs the appearance, and exposes the eggs to infection from which they are apt to decay more quickly than where they are kept clean. Consequently, the demand for eggs from such producers is slow and the price offered is below what would be given for eggs laid in clean nests, if the eggs are offered in a discriminating market and it is only in such markets that we can expect to have the greatest success.

A uniform flock of hens and clean quarters are, therefore, two fundamental conditions in securing the highest values for eggs, and every person who keeps chickens for commercial egg production should provide them. In our next installment we shall deal with methods of getting eggs ready for the buyer, and in the third article we will consider the relative advantages of selling to grocers, to wholesalers, to retailers and to consumers.

Grape Growers Hope to Get Together.

CO-OPERATIVE organizations have had their ups and downs in Michigan, but there is steady gain all the time in spite of repeated failures, for the principle of the thing, the spirit of it, is universally recognized as being absolutely right. Co-operation must come. In this connection it will be interesting to watch developments among the grape growers of southwestern Michigan within the next few days. The State Horticultural Society will meet at Benton Harbor, February 5-6, and the St. Joseph Michigan Fruit Association will meet at St. Joseph, February 7, with co-operation or federation for more intelligent marketing of products as leading topics on the programs.

A Comprehensive Scheme.

Eben Mumford, of East Lansing, head of farm experimental work in Michigan, a practical grape grower, and a member of the Southern Michigan Fruit Association of Paw Paw, is supporting a get-together plan which may eventually mean a federation of all grape associations of Michigan, New York, Ohio, Pennsylvania,

and possibly other states, following the example set by the citrus fruit associations of the west. The federation will not swallow up the individuality of local associations but the plan simply means a central bureau with interchange of reports of local crop conditions, estimates of visible crop supplies, market information and uniformity in the system of marketing. There is possibility also for great help to growers in the way of getting baskets, spray material and supplies at low rates and for education in cultural methods.

A Central Market Exchange.

Berrien county has at least four fruit associations while in nearby counties there are many others. Speaking of this movement H. C. Radtke, former secretary of the Berrien County Grape Association, says: "The plan is to federate these associations to the extent of creating a central marketing exchange. A report of the supply and where it is, and of the demand and where it is, will be gathered at the exchange, and then the only thing that remains will be to direct the



Books by a farmer

We employed a practical farmer to travel all along the Cotton Belt Route, in Arkansas and Texas, and talk with the farmers themselves; get pictures of their farms and their personal statements. Because he was a farmer this man knew what you wanted to know about these sections, and he tells you in these free books (new editions). Scores of actual photograph pictures of the farms he visited. You must not miss reading these books if you are interested in a better location. Send me your name and address today.

E.W. LABEAUME, Gen'l Passenger Agent
St. Louis S.W. Ry. (Cotton Belt Route)
1126 Pierce Bldg., St. Louis, Mo.

"A Kalamazoo Direct to You"

And Gas Stoves Too

Quality
Ranges
Bargain
Prices

This Free Book

shows why there is a Kalamazoo customer at every other post office in the United States. Don't pay fat profits to local dealers. Order direct from the largest direct dealing stove makers in America. Save nearly half what dealers ask.

30 Days' FREE Trial Year's approval test—\$100,000 Bank Bond—freight prepaid. Easy payments or cash. Kalamazoo Ranges are most handsome, convenient, economical and durable, with all latest improvements. One of them is just your style at your price. Free Book and low factory price prove it. Free Trial and Guarantee make you sure. Write for book now anyway to protect yourself against poor quality or high prices elsewhere. Ask for Catalog No. 113

Kalamazoo Stove Co., Mfrs., Kalamazoo, Mich.
We make a full line of Stoves, Ranges, Gas Stoves and Furnaces. We have three catalogs. Please ask for the one you want.

LET THE WIND PUMP YOUR WATER FOR NOTHING

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

SAMSON WIND MILL

SEND FOR CATALOG

We also build Ideal Feed Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candle Sticks

STOVER MANUFACTURING COMPANY
311 Samson Avenue, FREEPORT, ILLINOIS

PUMP GRIND SAW Made for Hard Use

Wood Mills are Best. Engines are Simple

Feed Grinders, Saw Frames, Steel Tanks

CATALOGS FREE

AGENTS WANTED

Perkins Wind Mill & Engine Co. Est. 1860
125 EAST ST.
Mishawaka, Ind.

It's No Joke to Be Deaf

—Every Deaf Person Knows That. I MAKE MYSELF HEAR

After being deaf for 25 years with these Artificial Ear Drums, I wear them day and night. They are perfectly comfortable. No one sees them. Write me and I will tell you a true story, how I got deaf and how I make myself hear. Address: Medicated Ear Drum

Geo. P. Way, Artificial Ear Drum Co., Pat. Nov. 2, 1903.
6 Adelaide St., Detroit, Mich.

\$40 PER MONTH AND EXPENSES paid good men for taking orders. Steady work. Apply Protective Nurseries, Geneva, N. Y.

supply to the demand. The exchange by wire will apportion the orders among local associations and tell each one what markets to ship to. The local secretary will then notify the members to bring in their crops and he will look after the shipping. Each local association now markets independent of the others, and the logical markets for one are the logical markets for the others. This means a headlong rush, each for himself and the devil takes the hindmost when the market is glutted. This is ruinous competition. A federation accomplished this year will save to the producers thousands of dollars on the 1914 crops, which will be lost to them under the present system of marketing.

A Reporting Service.

It is the plan of members of the federation to exchange information through the season, from the time the vineyards start to bud in the spring. For instance, if New York's prospects for a full crop were hurt by winter-killing or by frost, the correct extent of the damage, not mere newspaper rumor by excited or ignorant correspondents, would be circulated throughout the organizations. These reports would continue throughout the year, with special attention to conditions of markets in the shipping season. There would be no piling up of shipments in one territory, with the inevitable rejection of cars and losses, since reports of sales would be made each day to the bureau. The plan is endorsed by some of the leading growers of southwestern Michigan and by growers of other states and some definite action is expected soon.

Kent Co.

A. GRIFFIN.

Crop and Market Notes.

New York.

Genesee Co.—Sleighing and good roads continue. Very low mercury about 13th made a splendid ice crop possible. Fall sown grain and seedlings remain nicely covered. A few potatoes are being marketed at 65c. Beans are not moving much. Farmers are busying themselves getting up their supplies of fire wood, attending social events, and doing chores which should include the drawing and spreading of manure. Following are the dealers' not the retail prices: Butter, dairy 30; creamery 33c; pork, dressed 10½c; alive 8c; eggs, fresh 34c; spring chickens 14@16c; fowls 14c; lambs, dressed 14c; wheat 97c; oats 45c; beans, pea, \$1.90 per bu; beans, medium \$1.90; red kidney \$2.50; red marrow \$2.65; cabbage \$20 per ton; hay, loose \$11@13. Good cows and horses somewhat scarce, and prices very high. Many farms offered for sale, but not many changing hands. Most of them are held too high.

Ohio.

Hardin Co.—Farmers are busy getting up the supply of wood and some are getting out some lumber to do the season's repairing and building. There will be quite an amount of ditching done here as soon as the frost is all out of the ground, lots of tile being hauled. The roads are in good shape yet, not much heavy hauling allowed on the stone roads when they are not frozen. There is not a great deal of live stock being fed here this winter. Eggs are scarce. Butter 28c; hay \$10 per ton; hogs 8c.

Greene Co.—The weather now is cold, but enough snow to protect wheat, which with seeding, was in good shape. About the usual number of cattle are being fed this winter, but this is more of a dairying country. There are two creameries at the county seat which pay from ½c to 2c above Elgin. Hens have not begun to lay much yet; eggs are 30c per dozen. The roads are in good shape now, and some farmers are hauling wheat at 92c and corn at 56c. Hauling wood and manure and feeding stock are the principal work being done now.

Sandusky Co.—Wheat and winter seeding are good. Farmers are busy cutting wood, butchering and hauling road material. There are plenty of western cattle being fed. Hogs are about all sold. Mud roads are very bad. The law requires all dirt roads to be dragged after January 1. Some corn is being sold. Hens still on strike for more feed and better care. Local prices are: Wheat 94c; oats 38c; corn 74c per cwt; hogs \$7.90; eggs 30c; butter 30c; mixed hay, loose, \$13. There is not much straw sold here.

Indiana.

Allen Co.—The coldest weather this season was experienced a few days ago when the thermometer registered eight above zero. Hens have begun to lay, and eggs will go no higher. Road conditions previous to late cold spells were bad, and traveling was done under a hardship, as heavy loads were impossible. The roads now have improved somewhat, but a thawing spell will make them practically impassible.

Illinois.

Marion Co.—The weather has been mild so far this month, with very little snow or rain. The roads are in condition for hauling good loads. There is no stock on feed except a few hogs. Live hogs selling at \$7.50, dressed, \$9.50@10. Hens have begun to lay some; eggs are 30c. Wheat and seeding are apparently in good condition. Farmers are not selling anything. Most of them are buying corn, which is shipped in, paying 73@75c per (Continued on page 152).

Splendid SILVER Premiums For "Sunkist" Orange Wrappers

Go to your local merchant in town and get "Sunkist," the most delicious navel oranges grown. Save the wrappers and you have a choice of 27 pieces of handsome Rogers Silverware for your table.

The Pick of 6,000 California Orchards

Luscious—thin-skinned—juicy—seedless oranges. The finest you ever tasted! "Sunkist" oranges fairly make you smack your lips for more!

Each is *glove-picked*, unspotted and unblemished. Buy them by the box—they're cheaper that way, and last for weeks, firm, solid, perfect.

Beautiful Orange Spoon

For 12 "Sunkist" orange or lemon wrappers and 12c we'll send you a beautiful orange spoon, 40-page recipe book and complete list of our silver premiums. "Red Ball" wrappers also accepted. Get the fruit from your home merchant. Send wrappers to us.

California Fruit Growers Exchange
146 N. Clark Street
Chicago



(213)

Twelfth Year of JACKSON Success

Jackson

"No Hill Too Steep—No Sand Too Deep"

"Olympic Forty" \$1385;
"Majestic," a big four,
\$1885; "Sultan Six," \$2150.
Write for catalogue today.

JACKSON AUTOMOBILE CO.
1508 E. Main Street, JACKSON, MICH.
978 Woodward Ave., Detroit, Mich.

Harvey Bolster Springs

make any wagon a spring wagon. Prevent damage to eggs, fruit, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer.

MADE LIKE FINEST AUTO SPRINGS

Very resilient and durable. The standard springs of America since 1889. 40 sizes—fit any wagon—sustain load up to 5 tons. If not at dealer's, write us. Catalog and list of proof free.

HARVEY SPRING CO., 752-17th St., RACINE, WIS.

GUARANTEED

Good CIDER

that will make you big profits, is made with the Mount Gilead Cider and Grape Juice Press. Sizes 10 to 400 barrels daily. Hand or power. All power presses have steel beams and sills. We make cider evaporators, apple-but-ter cookers, vinegar generators, cider and vinegar filters, etc. Fully guaranteed. Write for catalog. We can show you how \$1200 a year can be made in the cider and vinegar business.

HYDRAULIC PRESS MFG. CO.
131 Lincoln Ave., Mt. Gilead, Ohio

BY EVERY TEST

The Strite Governor and Variable Speed Pulleys have proved the best for driving cream separators, washing machines and churns. Our Bierman Clutch talks for itself. Ask your dealer or write us direct.

STRITE GOVERNOR PULLEY CO.,
303 South 3rd St. Minneapolis, Minn.

Maple Syrup Makers

The experience of thousands proves the

Champion Evaporator

The best for quality of syrup convenience and durability. It will save you labor, time and fuel. Material and satisfaction guaranteed.

Write for catalog, stating number of trees you tap.

Champion Evaporator Co.,
Hudson, O.

WE WILL PAY YOU \$120

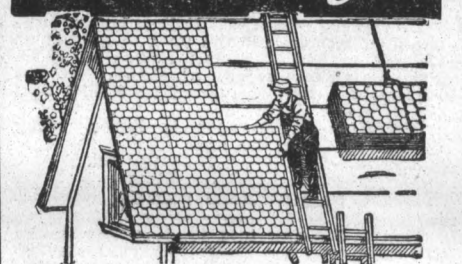
to distribute literature in your community. Sixty days' work. Experience not required. Man or woman. Opportunity for promotion. Spare time may be used. International Bible Press, 576 Winston Bldg., Philadelphia, Pa.

\$10 HERTZLER & ZOOK Portable Wood SAW

Guaranteed 1 year. Cheapest and best—only \$10 saw to which ripping table can be added. Operates easily. Get catalogue now and save money. No middleman's profit.

Hertzler & Zook Co., Box 23, Belleville, Pa.

Lowest Price Ever Quoted on STEEL Shingles



Write us the dimensions of your roof and we will make you a price on the complete job that will simply startle you. For we not only manufacture the finest of STEEL Shingles, but our prices, quality considered, are lowest. Made so because we sell direct to users and because we now have 125,000 customers. Even if you've only a small shed to roof, don't fail to get our offer. We positively guarantee to save you big money.

Edwards STEEL Shingles

do not burn or rot or rust. Far outlast ordinary wood, prepared paper, composition and corrugated steel. Come in big sheets, hence very easily put on. No painting, no special tools, no expert workmen. Edwards STEEL Shingles won't rust. First, because Edwards, by his famous "Tight-cote" Process, dips each sheet of steel in melted zinc after cutting. Thus the edges, as well as sides, are rust-proof. Other makers don't go to the expense of galvanizing the edges. Second, Edwards protects each nail hole, by a close-fitting over-lap. (See picture at left.) No chance for rust to get a foothold. This is Edwards' Interlocking Process, the patents for which are valued at \$100,000.

Freight Paid

The price we quote includes the freight; in fact, it's the entire, total cost of a new roof. It is the lowest price ever made on a good roof. Just get it. Then see if any other concern can sell so low. If we could only print the price here, we know we would win you. But that's not possible, because raw steel goes up or down every few days. And that, of course, changes our price. Just now raw steel is not advancing, so our price on Steel Shingles is very low. Write at once and get the benefit of present prices. If you can't give dimensions of your roof, write us on coupon below and get prices. Ask for booklet 267

This Brings Big Offer!

THE EDWARDS MFG. CO.
217-267 Lock St., Cincinnati, Ohio

Please send Book on your Steel Shingles, together with latest Freight-Paid Prices.

Name _____
Address _____

Markets.

GRAINS AND SEEDS.

February 3, 1914.

Wheat.—In spite of the snow storm which covered the northern states tolerably well, the wheat market remains about steady with prices a fraction below those of last week. An improved call for flour, better demand from Europe, and failure of the crop in the southern hemisphere contributed to the strength. One year ago the price for No. 2 red wheat was \$1.11½ per bu. Quotations for the past week are:

	No. 2 Red.	No. 1 White.	May
Wednesday	99	98½	1.03½
Thursday	99	98½	1.03½
Friday	98½	98	1.02½
Saturday	97½	97½	1.02
Monday	97½	97½	1.02
Tuesday	97½	97½	1.02

Chicago, (Feb. 3).—No. 2 red wheat 96¼@97c; May, 93¼c; July, 88¼c per bu.

Corn.—Values have been well maintained. The cold wave at the end of last week gave the trade an impetus, and the expectation of colder weather to occur this week added sufficient strength to overcome liberal selling by heavy holders. On the Detroit Market the cereal holds steady with the lower grades weakest. One year ago the price for No. 3 corn was 50c per bu. Quotations for the past week are:

	No. 2 Mixed.	No. 1 Yellow.
Wednesday	64	66
Thursday	64½	66½
Friday	64	66
Saturday	63½	65½
Monday	63½	65½
Tuesday	63½	65½

Chicago, (Feb. 3).—No. 2 white corn, 64¼c; May, 66½c; July, 65¼c per bu.

Oats.—While oat values have fluctuated a fraction of a cent the market is firm and steady with dealing slow. Visible supply shows a decrease. Demand continues steady. One year ago the price for standard oats was 35½c per bu. Quotations for the past week are:

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

Chicago, (Feb. 3).—Standard 40¼c; May, 39¼c; July, 39¼c.

Beans.—Market dull. Prices are steady. The local board of trade quotes immediate and prompt shipments at \$1.85; February \$1.92 per bu. Chicago reports a steady trade. Pea beans, hand-picked, choice, are easy at \$2.05@2.10; common, \$1.75@2; red kidneys, choice, steady at \$2.95@3 per bu.

Rye.—This cereal rules steady. No. 2 is quoted at 66c per bu.

Barley.—At Chicago barley is quoted at 50@75c per bu., while Milwaukee quotes the malted grades at from 57@73c.

Cloverseed.—Market is active at unchanged values. Prime spot is quoted at Detroit at \$8.75 per bu; March at \$8.80. Prime alsike is steady at \$10.75. At Toledo prime cash is quoted at \$8.77½ and prime alsike at \$10.75.

Timothy.—Prime spot is lower, being quoted at \$2.50 per bu.

Alfalfa.—Steady at \$7.25 per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ¼ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$4.80; straight, \$4.50; spring patent, \$5.10; rye flour, \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$25; coarse middlings, \$27; fine middlings, \$29; cracked corn, \$29; coarse corn meal, \$28; corn and oat chop, \$25.60 per ton.

Hay.—Trade is dull with prices lower. Carlots on the 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 is fair. No. 1 timothy \$21@22; No. 3 to standard \$16@20.50; light clover mixed \$18.50@20; clover \$17@18 per ton for large bales.

Chicago.—All grades lower. Choice timothy is quoted at \$15@16 per ton. No. 1, \$13.50@14; No. 2, \$11.50@12.50.

Straw.—Easy. Rye \$8@8.50; oat straw \$7@7.50; wheat straw \$7@7.50 per ton.

Chicago.—Quotable as follows: Rye \$7@7.50; oat \$7@7.50; wheat \$6.50@7.

New York.—Rye straw \$16@17 per ton; oat straw \$10@11.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market quiet with prices unchanged. Quotations: Extra creamery 28c per lb; firsts 26c; dairy 21c; packing stock 18c.

Chicago.—The feeling is quiet. Dealers seem to be waiting developments. Prices are slightly lower. Quotations: Extra creamery 26¼c; extra firsts 24¼@25c; firsts 23@24c; seconds 21½@22c; ladies, 20c; packing stock 12@19c per lb. according to quality.

Elgin.—Market easy at 26¼c per lb., which is 2c lower than last week.

New York.—Market conditions are quiet with prices on better grades about 2½c lower than last week. Quotations are: Creamery extras 26¼@27c; firsts 25@26c; seconds 23@24¼c; packing stock 19¼c per lb.

Eggs.—Market steady with prices about 2¼c lower than last week. Current receipts of fresh stock is quotable at 28¼c per dozen.

Chicago.—A week feeling prevails with

prices about 2c lower than last week. Quality of receipts irregular and ungraded stock sells to disadvantage. Quotations: Miscellaneous lot, cases included 26@27c, according to quality; ordinary firsts 26c; firsts 27@27½c; refrigerator stock steady at 23@25c for April firsts.

New York.—Market continues firm with prices unchanged. Quotations are: Fresh gathered extras 34@35c; extra firsts 32½@33c; firsts 31½@32c per dozen.

Poultry.—Local market holds firm with prices slightly higher on springs and hens and lower on turkeys and geese. Quotations: Live.—Springs 15@15½c; hens 15@15½c; turkeys 18@19c; geese 14@15c; ducks 17@18c.

Chicago.—Market is firm with good demand. Prices are unchanged. Quotations on live are: Turkeys, good weights, 16c; others 12c; fowls, choice 15c; spring chickens 15c; geese 10@12c, according to quality; ducks 15c.

Cheese.—The market continues firm with prices unchanged. Quotations on Michigan flats, 15@16c; New York, 17½@18c; brick 16@16½c; Limburger 14@15c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices unchanged. Quotations: No. 1, \$4.50@5.50; No. 2, \$2.50@3.50 per bbl. At Chicago apples are meeting good sales at prices about 50c higher than last week. Values for country picked range from \$5.50@6 per bbl. No. 1 Jonathans are selling for \$5@6; Spies are \$5.50@6; Baldwins are \$5@5.50.

Potatoes.—The local market is quiet with prices lower. Quotations are: In bulk 60@62c per bu; in sacks 65@67c per bu for carlots. At Chicago prices are slightly higher, Michigan white selling at 62@67c per bu. In New York the market is sluggish with Michigan potatoes selling at 73@74c per bu. In Pittsburgh prices are lower with market not active. Michigan stock is held at 65@66c in bulk.

Onions.—On the local market prices are steady. Quoted at \$1.35 per bu. for yellow and \$1.50 per crate for Spanish. At Chicago trade in domestic stock is fair with prices unchanged. Sacks 65@70 lbs. Michigan grown sell at \$1.25@1.50.

Cabbage.—Steady with prices unchanged. Good quality is quoted at \$2.50@2.75 per bbl. At Chicago the trade is only fair. Weather too warm for brisk trade. Prices are unchanged. Quotations: Holland \$1.90 per bbl.

GRAND RAPIDS.

Saturday's heavy snowfall tends to make conditions quiet this week in nearly all lines. The potato market continues slow, the prevailing price paid at nearby loading stations being around 45c. Poultry is quiet with not much change in quotations. Dressed hogs are worth around 10c. Eggs are worth 30@31c; dairy butter 24c. Hay on the city market is bringing \$16@19. Grain prices as follows: Wheat 93c; oats 39c; corn 65c; rye 55c; white pea beans \$1.60.

PRICES ON DETROIT EASTERN MARKET.

A good volume of business is being done by the farmers at steady prices. Potatoes around 80c per bu; cabbage 80c; onions \$1.25@1.35; apples \$1@2; carrots 60@65c; lettuce \$1; celery 15@30c per bunch and offered more freely; loose hay dull with the top price at \$17 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

February 2, 1914.

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

Receipts of stock here today as follows: Cattle 145 cars; hogs 75 double decks; sheep and lambs 50 double decks; calves 500 head.

With 145 cars of cattle on our market here today, and 25,000 reported in Chicago, the good fat cattle, weighing from 1300 up, sold full strong to 10c higher than last Monday. All other grades sold from barely steady to 10@15c per cwt. lower, and at close there are at least 20 loads of cattle here unsold. The weather is fine and we do not see any reasons why these cattle should not be well cleaned up tomorrow.

Receipts of hogs here today were light, and with strong demand from all sources, market was higher; about everything is selling at \$9.05, excepting pigs and roughs. Pigs as to weight, and quality, sold from \$8.85@9.05. Roughs \$8@8.25; stags \$6.50@7.50. Late market was rather dull and it looks like present prices are plenty high.

The market was active today on heavy lambs and sheep, but dull on heavy lambs. Prices 15c higher than the close of last week. Choice heavy lambs selling mostly at \$8.25. Heavy lambs selling from \$7.25@7.50. We look for slow trade on heavy lambs all the season. Most of the orders calling for lambs weighing from 75 to 80 lbs. Look for shade lower prices on lambs last of week with moderate receipts, but with heavy receipts will sell considerably lower.

We quote: Choice lambs, \$8.15@8.25; heavy do, \$7.25@7.50; cull to fair do, \$6@8; yearlings, \$6.50@7; bucks, \$3.50@4.50; handy ewes, \$5.50@5.60; heavy do, \$5.25@5.35; wethers, \$5.75@6; cull sheep, \$4@4.50; veals, choice to extra, \$11.75@12.25; fair to good \$10@11.50; heavy calves, \$5.50@8.

Chicago.

February 2, 1914.

Cattle, Hogs, Sheep.

Receipts today 21,000 37,000 35,000

Same day last year..19,202 43,273 24,900

Receipts last week..49,763 138,135 107,135

Same week last year..41,919 189,201 64,200

Mild weather is retarding the sale of

beef everywhere, and it is accumulating

in the coolers, the result being a poor

demand for cattle. This week opens with

a moderate run of cattle, but while choice

lots are bringing steady prices, with no

large number on sale, others are slow and a dime lower. Hogs opened 5@10c higher, with sales at \$8.35@8.65 and the best stags bringing \$9.15, while the best pigs went at \$8.30, but long before the close the market was dull and lower. The hogs received last week averaged 220 lbs., comparing with 208 lbs. a month ago, the average having been gaining every week since then. The average weight stood at 217 lbs. one year ago, 216 lbs. two years ago, 228 lbs. three years ago and 211 lbs. four years ago. Sheep and lambs are neglected and 10@25c lower, top lambs being taken at \$8 and best ewes at \$5.50.

Cattle of the better class had a very good demand last week at unchanged prices for the best part; the percentage of these not being over large, but the too generous offerings of short-fed and warmed-up cattle had to sell slowly, and prices were largely 15@25c lower, with the spring-like weather much of the time unfavorable for the consumption of beef.

The greater part of the steers went at \$7.90@9.10, the choice to fancy class of heavy cattle bringing \$9@9.50 and good to prime handy yearlings taken at \$8.40@9.25. Buyers got all the poorer light-weight steers they cared for at a range of \$6.60@7.75, a medium class selling at \$8@8.45 and good weighty steers at \$8.50@8.95. Butchering and canning cows and heifers had a good outlet, only the less desirable kinds selling off a little. Butcher lots brought \$4.80@8.50, sales being made of 83 head of fancy South Dakota Hereford heifers that averaged from 1173 to 1196 lbs. at \$8.50, and sales of fancy heifers included one at \$9 and one at \$9.35. Cutters sold at \$4.20@4.75, canners at \$3.45@4.15 and bulls at \$5@7.75. Stockers and feeders, although a little lower in price, were still very high, even if there were no further transactions at \$8.15@8.25. Feeders that carried a good deal of weight sold usually at \$7@8.10, while stock steers brought \$5.50@7.65, only a choice class of yearling stockers selling anywhere near top figures. Stock and feeding cows and heifers sold fairly at \$4.85@6.85 and good to choice stock calves at \$7.50@8.25. The calf market suffered a sharp decline in prices, with sales at \$4.50@10.50 for coarse heavy to prime light vealers, a limited number selling up to \$11 early in the week. Milk-ers and springers had an extremely poor demand at \$5@7.50 per head, and the common cows sold all of \$10 lower than at the highest time of the present season.

Hogs rallied in prices last week after some sharp declines, eastern shippers increasing their purchases after early limited buying. They were large purchasers on Monday, but held back during the following two days, becoming better customers by Thursday. Early big declines in prices caused many intending shippers from feeding districts to wait for rallies in the market, and much smaller receipts of hogs made buyers hungry for them. The big packing firms were disposed to hold back when prices were on the up-grade, but the smaller killers came to the front, and it was found impossible to stop the advances. The spread in prices for hogs has narrowed a good deal in recent weeks, but choice hogs still sell at a fair premium over the best light weights, although the average weight of the hogs coming to market has increased materially. The hogs have had time to grow, and furthermore their owners are no longer afraid of slumps in prices that will curtail their profits. The demand for provisions is liberal, and the fresh pork trade was never better. Much higher prices prevail for hogs and provisions than a year ago. The week closed with hogs selling at \$8.25@8.60, comparing with \$8.15@8.50 a week earlier, the week's receipts falling off enormously. Pigs closed at \$6.25@8.25 and stags at \$8.65@9. Prime light hogs sold within a dime of the top figures.

Sheep and lambs of superior quality sold well during the early part of last week, but prices declined later on continued good offerings, all descriptions of flocks suitable for slaughter selling off more or less. Feeders, as usual, furnished an exception, showing little weakness, with ready buyers for such as were offered. Hay-fed Montana and Idaho lambs on the feeder order were in fair supply, but very few Colorado lambs showed up, higher prices relatively in the Missouri river markets diverting them there as a rule. When the week closed lambs had recovered and sold at \$6.25@8.15, while feeding lambs were taken at \$6.50@7.25. Sheep, on the other hand, were largely 25c lower, wethers going at \$5.25@6, ewes at \$3.50@5.50 and bucks at \$3.50@4.25, while yearlings brought \$5.75@7, top for the heavy lots being \$6.75.

Horses were not offered in excessive numbers last week, so that it was possible for sellers in a majority of cases to dispose of their offerings without further breaks in prices. Early activity was followed by rather slow markets after Tuesday, and at no time was there any especial demand for the class of heavy drafters selling at \$275 and upward. Drivers were salable in a small way at \$75@150, and farm workers brought \$140@200, with mares wanted as high at \$225. Most of the horses sold at \$140@265.

Washara Co.—The best of wagon roads were ended yesterday by a light snowfall; however, not enough for any sleighing yet. Farmers are commencing

to market potatoes, 48@50c per bu. for white stock; inferior varieties 40c. The mild winter has caused stock to eat less than usual, and there is plenty of roughage. Hens are practicing the egg-laying stunt, and eggs are down to 27c. Taxes are two-thirds higher than last year. This makes the farmers sit up and take notice of politics as nothing else could do.

Missouri.

Polk Co.—Wheat and grass in excellent condition, and on account of unusually mild weather feed of all kinds is more plentiful than expected earlier in the season. (There is a decrease of 10 per cent in the number of cattle, hogs and horses in the county, over that of a year ago. The reason is the drouth and consequent scarcity of feed. Prices good except for horses. Let's feed on hand than for any time within the last 12 years, except roughage in the form of corn fodder and silage. Corn 85c; wheat 90c; hay \$17.50.

Colorado.

Kit Carson Co.—Weather has been fine all this month, but December was a bad month. There was lots of snow, and a good many range cattle and sheep died in the storms. Very much bad weather will cause a scarcity of feed. Stock is looking good so far. Produce is bringing good prices. Butter-fat 28c; eggs 35c; corn 80c; wheat 75c; potatoes \$1.50 per cwt; hogs \$8.

to market potatoes, 48@50c per bu. for white stock; inferior varieties 40c. The mild winter has caused stock to eat less than usual, and there is plenty of roughage. Hens are practicing the egg-laying stunt, and eggs are down to 27c. Taxes are two-thirds higher than last year. This makes the farmers sit up and take notice of politics as nothing else could do.

Missouri.

Polk Co.—Wheat and grass in excellent condition, and on account of unusually mild weather feed of all kinds is more plentiful than expected earlier in the season. (There is a decrease of 10 per cent in the number of cattle, hogs and horses in the county, over that of a year ago. The reason is the drouth and consequent scarcity of feed. Prices good except for horses. Let's feed on hand than for any time within the last 12 years, except roughage in the form of corn fodder and silage. Corn 85c; wheat 90c; hay \$17.50.

Colorado.

Kit Carson Co.—Weather has been fine all this month, but December was a bad month. There was lots of snow, and a good many range cattle and sheep died in the storms. Very much bad weather will cause a scarcity of feed. Stock is looking good so far. Produce is bringing good prices. Butter-fat 28c; eggs 35c; corn 80c; wheat 75c; potatoes \$1.50 per cwt; hogs \$8.

ROOF YOUR SILO

With a Permanent Roof



To insure permanence the Silo roof must be built and nailed on rafters regardless of whether it is a stave, steel or masonry silo.

The beveled or keystone construction of the stave silo demands a rafter built roof to keep the silo perfectly round.

The wind plays havoc with an insecure roof. It's a long ways to the top of your silo. Put on a rafter built roof that will stay put, such as the

ECONOMY STEEL SILO ROOF

First in Strength and Permanence. For any kind of silo. Galvanized steel. Rust and fireproof. Cheapest and Most Durable.

FIRST EXPENSE—LAST EXPENSE

No silo complete without the Economy Roof.

Demand of the stave silo salesman or the man who builds you a masonry silo that he complete it by putting on our Economy Roof. There is no roof just as good or that will last as long.

Don't be satisfied with "just a roof." Insist on the Economy. All silo manufacturers can and the best will supply the Economy Roof. If yours won't write us.

Circular mailed FREE on request.

ECONOMY STEEL PRODUCTS COMPANY,
28 North Third Street, Des Moines, Iowa.

TRAINED CANARIES

The Most Wonderful Singers in the World GOLDEN OPERA SINGERS (name copyrighted). Trained in Germany to sing the most beautiful melody, and to imitate the flute, violin and beautiful bell tones. A constant delight to the whole family. Sold on TWO WEEK'S FREE TRIAL with an ABSOLUTE GUARANTEE OF SATISFACTION. Your money back without question if not satisfied. Send for our free book that tells what they can do, how they are trained and how we ship them all over the world. Write today.

CUGLEY & MULLEN CO., 1269 Market St. Phila., (The Largest Bird Store in the World.) Guaranteed Talking Parrots as low as \$5.00.

Get Low Prices on Berry Boxes and Baskets

Write for our Free Catalog! Shows you how you can save money by buying direct from the largest Berry Box and Basket Factory in the Country. (3)

NEW ALBANY BOX & BASKET CO., Box 112 New Albany, Ind.

Holstein Cows at Auction

Sale, Thursday, Feb. 12, 1914.

35 head of high grade Holstein Cows. All sold without reserve, as I intend keeping nothing but registered cattle. Conveyance meets all electric cars at Yorkton Cemetery.

GEO. RATTENBURY
Wayne County, Northville, Mich.

TOO LATE TO CLASSIFY.

2 Clydesdale and 1 Percheron Stallion, choice animals; one weighs 2100 lbs. Price right. JOSEPH PHILLIPS, Maidstone, Ont., Can.

For Sale, Lafrin Imported Black Percheron Stallion 8 years old, weight 1900 lbs. A sure foal getter and absolutely sound. Change of business requires owner's time. Write Geo. Benson, 917 Crescent Place, Fort Huron, Mich.

PERCHERONS STALLIONS AND MARES

Black and dapple gray. Prize-winners at Detroit and London, Ont. Reasonable prices and easy terms. Send for circular. F. J. SULLIVAN, Oulettes Ave., Windsor, Ont.

PERCHERONS We have 10 high class stallions. Brood mares and young stock. Prices to sell. All registered. Pioneer Stock Farm, John Schipper, Fillmore Center, Mich.

AT PRIVATE SALE

One registered Clydesdale stallion, coming 2 years old, sound, with lots of quality. Will weigh 1900 at maturity. Will be priced very reasonable. One good boned mare, 5 years old, sound, well broken. The trotting mare, Miss Ortolan, 2:33¼, sound, lady broke, 10 years old. Here is the bargain of Michigan for a gentleman driver and she can trot to her record this year. Get the price on this one. Address

STARWEATHER STOCK FARM, Northville, Mich.

GOOD CIGARS Direct to you from factory. Fifty post paid for one dollar. WATERLOO CIGAR CO., Waterloo, Ind.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
February 5, 1914.

Cattle.

Receipts, 995. Butchers 700 to 800 average 10c higher; others steady.
We quote: Extra fat steers, \$8.25@8.75; good steers, 1000 to 1200, \$7.50@8; steers and heifers, 800 to 1000, \$7@7.50; do that are fat, 700 to 800, \$6.75@7; do 500 to 700, \$6@6.75; choice fat cows, \$6@6.25; good do, \$5.50@5.75; common cows, \$4.50@5; canners, \$3@4.25; choice heavy bulls, \$6.50@7; fair to good bolognas, \$5@6.25; stock bulls, \$5@5.75; choice feeding steers, 800 to 1000, \$6.50@7; fair do, \$6.50@6.75; choice stockers, 500 to 700, \$6.50@6.75; fair do, 500 to 700, \$6@6.25; stock heifers, \$5@6; milkers, large, young medium age, \$5.50@5.5; common milkers, \$4@5.00.

Spicer & R. sold Sullivan P. Co. 4 steers av 985 at \$7.85, 2 do av 1000 at \$7; to Bresnahan 2 cows av 1080 at \$5.50, 1 cow wgh 1000 at \$4.25; to Newton B. Co. 11 steers av 973 at \$7.70, 3 do av 866 at \$6.75, 7 do av 823 at \$7.25, 3 cows av 1043 at \$5.50, 2 bulls av 870 at \$6.50; to Bresnahan 2 canners av 900 at \$4.50, 2 do av 910 at \$4.50; to LaBoe 10 butchers av 100 at \$6.75; to Mich. B. Co. 30 do av 888 at \$6.75, 1 cow wgh 800 at \$4, 3 do av 1140 at \$5.50, 3 do av 1043 at \$5.75, 1 bull wgh 1130 at \$6.50, 1 cow wgh 960 at \$5.75; to Thompson Bros. 4 cows av 950 at \$5.25, 1 do wgh 1050 at \$4.75; to LaBoe 1 steer wgh 930 at \$6.75, 2 cows av 825 at \$5.25.
Bishop, B. & H. sold Mason B. Co. 1 bull wgh 580 at \$5.75; to Sullivan P. Co. 2 steers av 925 at \$7.10, 1 bull wgh 900 at \$6.50, 3 steers av 1210 at \$8, 2 do av 1160 at \$7.50, 8 do av 782 at \$7, 2 heifers av 690 at \$6.50, 3 butchers av 883 at \$6.90; to Bresnahan 1 cow wgh 930 at \$4.75, 5 do av 1044 at \$4.50; to Parker, W. & Co. 21 steers av 1136 at \$7.75, 5 do av 1052 at \$8, 2 cows av 1200 at \$6, 22 steers av 1103 at \$7.50, 3 cows av 1133 at \$5.85, 1 bull wgh 1670 at \$6.65, 2 cows av 850 at \$4, 2 do av 925 at \$4, 2 do av 975 at \$6, 3 do av 1070 at \$5.50, 4 do av 990 at \$5, 3 do av 1147 at \$5.50, 1 bull wgh 1730 at \$6.60; to Mich. B. Co. 6 butchers av 1146 \$6, 3 steers av 1060 at \$7.65.

Roe Com. Co. sold Sullivan P. Co. 5 at \$6; to Sullivan P. Co. 3 cows av 960 at \$6, 3 do av 673 at \$4, 4 do av 1145 at \$5.75; to Bresnahan 2 canners av 790 at \$5.75; to Mich. B. Co. 5 butchers av 710 at \$6.50; to Breitenbeck 10 cows av 1055 at \$5.40; to Sullivan P. Co. 3 butchers av 790 at \$6; to Hammond, S. & Co. 1 cow wgh 840 at \$5.30; to Thompson Bros. 5 do av 1042 at \$5.25; to Goose 6 butchers av 345 at \$5.50; to Newton B. Co. 11 do av 1000 at \$6.90, 1 heifer wgh 880 at \$7; to Hammond, S. & Co. 14 steers av 907 at \$7.40; to Sullivan P. Co. 2 do av 860 at \$6.50, 8 do av 1009 at \$7.25, 10 do av 1113 at \$7.50; to Parker, W. & Co. 8 do av 1171 at \$7.75; to Goose 1 bull wgh 1570 at \$7; to Newton B. Co. 3 steers av 960 at \$7.75; to Mich. B. Co. 3 cows av 923 at \$6; to Sullivan P. Co. 7 butchers av 781 at \$6.90, 1 cow wgh 980 at \$5.25; to Hammond, S. & Co. 1 do wgh 1000 at \$4.25; to Kamman B. Co. 10 steers av \$23 at \$7, 7 do av 886 at \$7, 4 cows av 1100 at \$5.90.

Veal Calves.

Receipts, 406. Market steady. Best, \$11@11.50; others, \$7@10.50.
Haley & M. sold Newton B. Co. 4 av 145 at \$11, 1 wgh 110 at \$11, 2 av 145 at \$10.50; to Sullivan P. Co. 1 wgh 200 at \$12.

Spicer & R. sold Parker, W. & Co. 2 av 260 at \$10, 7 av 145 at \$11, 2 av 140 at \$11.50, 5 av 125 at \$11.50; to Goose 11 av 145 at \$10.65, 3 av 130 at \$11.25.

Roe Com. Co. sold Goose 1 wgh 140 at \$8, 1 wgh 120 at \$8.50, 2 av 170 at \$11, 2 av 140 at \$8.

Sandall sold Parker, W. & Co. 8 av 105 at \$10.50.

Weeks Bros. sold Thompson Bros. 3 av 130 at \$11.25.

Sheep and Lambs.

Receipts, 6036. Market steady at last week's prices. Best lambs, \$7.50@7.75; fair to good lambs, \$7@7.35; light to common lambs, \$6@7; yearlings, \$6.25@6.75; fair to good sheep, \$4.75@5.15; culls and common, \$3@4.

Bishop, B. & H. sold Nagle P. Co. 224 lambs av 70 at \$7.40; to Sullivan P. Co. 33 do av 75 at \$7.50, 37 sheep av 100 at \$4.75, 101 lambs av 70 at \$6.60, 36 do av 65 at \$7, 7 sheep av 101 at \$4.50, 21 do av 90 at \$4.25, 21 lambs av 65 at \$7.25, 11 do av 60 at \$6.50, 10 do av 63 at \$6.60, 28 do av 75 at \$7.50, 19 sheep av 115 at \$4.50; to Young 43 lambs av 83 at \$7.40; to Harland 14 do av 85 at \$7.50; to Hammond, S. & Co. 201 yearlings av 100 at \$6.60; to Parker, W. & Co. 197 do av 100 at \$6; to Thompson Bros. 19 lambs av 60 at \$7.25; to Kull 46 yearlings av 90 at \$6.35; to Newton B. Co. 59 do av 90 at \$6.35; to Hammond, S. & Co. 113 lambs av 75 at \$7.50, 18 do av 55 at \$6, 14 sheep av 100 at \$4, 73 do av 125 at \$5, 197 lambs av 35 at \$7.90; to Fitzpatrick Bros. 21 do av 80 at \$7.75, 22 do av 100 at \$7.25, 9 do 130 at \$5.10.

Hogs.

Receipts, 3782. Market 5c higher; looks like \$8.60 for all grades up to noon.

Bishop, B. & H. sold Parker, W. & Co. 610 av 210 at \$8.70, 1015 av 190 at \$8.65, 500 av 180 at \$8.60, 200 av 170 at \$8.55.

Roe Com. Co. sold Sullivan P. Co. 215 av 210 at \$8.70.

Spicer & R. sold Hammond, S. & Co. 150 av 215 at \$8.70.

Put Animal Matter Into Your Soil

You have often noticed how heavy vegetation grows over the place where you have buried a dead animal. Have you ever figured out the reason why? It is because the soil is fertilized by Animal Matter which is recognized as being the highest grade of fertilizer.

DARLING'S
High Grade FERTILIZERS

are strong in this animal matter. That is why they have been so uniformly successful in greatly increasing crop yields.

Our rendering Plant—the largest independent Plant in the country—gives us the best facilities for preparing Animal Matter Fertilizers.

Get our free booklet, "The Soil Builders." It tells all about Animal Matter Fertilizers, and how they will increase your crops. Send for your copy today. A postal will bring it.

AGENTS—Men in all lines of business now represent us. Some of our best agents are farmers. If we have no agent in your vicinity get in touch with us and we will explain our exclusive territory proposition.

DARLING & COMPANY 4275 Ashland Ave.
CHICAGO, ILLINOIS

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. **BATEMAN MFG CO.** Box 1045 Grenloch, N. J.

HOME MIXED FERTILIZERS
SAVES MONEY BETTER CROPS

The purchase and home mixing of fertilizer materials saves from \$4.00 to \$8.00 per ton. Then, too, you know the sources of plant food are genuine and the best. No room for fraud. Home mixing is urged by all Experiment Stations, Agricultural Colleges, Institute Lectures, etc. Opposed only by fertilizer manufacturers. We are the largest importers and distributors, and the pioneers of home mixing. We carry full stocks of Sulfate of Soda, Potashes, Acid Phosphate, Bone Tartrate, Blood, Basic Slag, etc., at all principal points at all times for prompt shipment. Write for quotations and our free booklet on "HOME MIXING—HOW AND WHY."

NITRATE AGENCIES COMPANY.
McCune Building, Columbus, Ohio.

CLOVER CHEAP

Now is the Time to Buy Prices lowest in years. Buy before advance and save money. Get our special low prices and free samples of our Iowa Grown New Crop Reclaimed Tested Clover and Timothy Seed. Also Alfalfa, Alsike, Sweet Clover. All kinds grass seed. 76-page catalog free, quoting all field seeds. Save money by writing at once. **A. A. BERRY SEED CO.,** Box 131, CLARINDA, IOWA

SOY BEANS
COW PEAS

low prices on them. **L. C. BROWN, LaGrange, Ill.**

FOR SALE, SEED CORN.

I have without doubt the finest, the largest and the most productive yellow dent corn ever produced. It can be relied upon on account of its immense yields, at least 25 per cent and often 50 per cent more than can be obtained from the average old type corns planted. Write today for samples and prices of the County Club Farm.

M. S. ZACHARY, Jacksonville Illinois.

"Strawberry Plants That Grow"

Including the BEST of the FALL-BEARERS. Also RASPBERRY, BLACKBERRY, CURRANT and GRAPE PLANTS in assortment. CATALOG FREE.

C. E. WHITTEN, Box 14, Bridgman, Mich.

Stadler's Animal Matter FERTILIZERS

Are now Licensed and for Sale in Michigan. "BEST IN THE LAND."

Manufactured by

The J. L. & H. Stadler Rendering & Fertilizing Co., Cleveland, Ohio

Attractive Proposition for local Agents.

Burpee's Seeds

are supplied every year direct to more American planters than are the seeds of any other growers. Do your seeds come direct from Philadelphia? If not, we should like to make your acquaintance. Simply send us your address (a postal card will do) and you will receive Burpee's Annual for 1914, a bright book of 182 pages, which has long been recognized as "The Leading American Seed Catalog." Kindly write to-day! Address

W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia

SEED BOOK FREE

RATEKIN'S BIG BOOK ON CORN GROWING is now ready for you. It tells how to grow big crops and all about best varieties of corn for your locality, also all about the best Seed Oats, Wheat, Barley, Speltz, Grass, Clover, Alfalfa, Pasture and Lawn Mixtures. Potatoes and all other Farm and Garden Seeds. This Book is FREE to all who are interested in the crops they grow. A Postal Card will bring it to your door. Write for it today.

Address **RATEKIN'S SEED HOUSE, Shenandoah, Iowa, Box 2**

1913 RECORD
Magnificent Crops in all Western Canada

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; 32 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.

Apply for descriptive literature and reduced railway rates to Superintendent of Immigration, Ottawa, Canada, or to Canadian Government Agent.

M. V. MacInnes, 176 Jefferson Avenue, Detroit, Mich.

I want to rent a farm on thirds, everything furnished. I write full particulars. Dairy farm of 100 acres preferred. Address, M. Michigan Farmer, Detroit.

FARMS AND FARM LANDS
FOR SALE OR EXCHANGE

150 FARMS FOR SALE—Near Phila. and Trenton markets, good R.R. and trolley facilities, New out-lot. Est. 20 years. **Horace G. Reeder, Newtown, Pa.**

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

WHY RENT when we sell the best land in the north-west on crop payment plan? **RED RIVER VALLEY LAND CO., Fargo, N. D.**

BARGAIN—80a. of heirship property, good soil and water. Large house, 2 barns, chicken coop and wagon house. Good for stock, 4 miles from town. Good roads. **R. F. D. & 'phone, \$90 a. Mrs. P. F. Knapp, Sunfield, Mich.**

WANTED A buyer for good, well improved farms in Coffee County, Tennessee. Will sell right and make terms. Address **MAY & ASHLEY, Owners, Manchester, Tennessee.**

Sunny Tennessee Farms—Best and cheapest, improved, corn, wheat and grasses. 70 acres \$850, 100 acres \$900, free list. **JENKINS & SON, Huntingdon, Tenn.**

For Sale or Exchange—100-Acre in Colorado, good soil and crops. Rural delivery, telephone, best opportunity. Dairying, stock raising, free range, \$15 per acre, 57 miles from Denver. **J. ARETA, 1222 N. Sarah St., Mishawaka, Indiana.**

Virginia Farms and Homes.

FREE CATALOGUE OF SPLENDID BARGAINS. **R. B. CHAFFIN & CO., Inc., Richmond, Va.**

FARMS—Four Bargains, 40% for \$2800, 60 acres for \$3500, 74 for \$4200 and 105% for only \$5000. Jackson County Farms, Nicely located. Good buildings. For good farms write. **BYRON STILLSON, Jackson, Michigan.**

120-A, BELLEVILLE—8-room house, living water, good fences, \$85 per acre.
80-A, Washington—8-room house, barns, 10 A. timber, fruit, road house, \$80 per acre.
FRANK E. BRIGGS, 819 Pine Bank Bldg., Detroit, Michigan.

FARMS, GOOD, CHEAP, PROFITABLE. **UNUSUAL OPPORTUNITIES NOW.** State Board of Agriculture, Dover, Delaware.

MICHIGAN FARMING LANDS

Near Saginaw and Bay City, in Gladwin and Midland Counties. Low prices. Easy terms. Clear title. Write for maps and particulars. **STAFFELED BROTHERS, 15 Merrill Building, Saginaw, (W. S.), Michigan.**

For Sale Farm—120 A. near Brighton. Large barn, all necessary buildings, 4 A. orchard, 15 A. timber, on milk route, telephone, good water. Sales about \$3000 a year. **F. S. Conely, Brighton, Livingston Co., Mich.**

78 Acres Best Clay Loam—Slightly rolling, 14 miles from Detroit, 3 miles to stone road. Plenty good water. Can't be flooded. Well fenced, tiled and drained to nearby river. 7-room house, 2 barns, 10 ton silo, all outbuildings, \$100 per A., \$2800 down, balance 5%. Owner **F. H. Leverenz, 1185 Forest Ave. E., Detroit, Mich.**

MONEY-MAKING FARMS—21 States; \$15 to \$50 per acre. stock and tools often included to settle quickly. More for your money in productive land near good markets here today than elsewhere on earth. Get the facts. Big Illustrated Bargain Sheet free. **E. A. STROUT FARM AGENCY, Station 101, New York City.**

CALIFORNIA

Dollars, not bushels, correct measure of values. Forty acres at FAIRMED, will produce more net dollars than 160 acres in Michigan. Best grazing land in state. Farm land prices. Michigan land taken in exchange. **F. P. TOMS, 21 McGraw Bldg., Detroit.**

New York Grows Everything

sited to temperate zone. Grows more apples than all States west of Missouri River combined. New York surpasses every western state in value of products per acre, but western average value of New York farm only \$53.75. Reliable descriptions, owners' prices, views, maps, found in free book of the **FARM BROKERS ASS'N., Sec. No. 3, Oneida, N. Y.**

45 BU. OF WHEAT PER A.

Was the yield of this farm last year. 100 bu. corn, 28 bu. beans, no waste land, level, black loam, clay subsoil, tile drained, well fenced, close to Lansing, on main road, milk route, tel., 9 room farm house, general farm, gambrel roof barn 40x60, one 30x40, painted, in good condition, richest farm in Michigan, small orchard. 100 acres, \$100 per acre. Write for catalog.

Standard Real Estate Company, Lansing, Michigan.

BURLINGTON COUNTY, N.J.

FARM OF 348 ACRES—Suitable for dairy, fruit and potatoes. Farm of 170 acres, one of 80 acres, another of 70 acres, and others. Desirable country, residence near Crosswicks, N. Y.; large, well arranged house, suitable buildings, 20 acres of land. Prices and particulars on application. **JOHN L. HUTCHINSON, 1002 Drexel Bldg., Philadelphia or Brodowntown, N. J.**

SPECIAL

Low-Headed Two-Year Apple Trees

We have pruned thousands of Baldwin and Stayman apple trees to very low, perfect heads, just as they should be in orchards. These trees are larger, straighter and have bigger and more fibrous root systems than average trees on the market.

They are started or headed, as they must be to bear early and to yield the heaviest crops. You can get as good trees by planting our best Berlin-grown one year stock and pruning it into perfect shape as it grows, but these special two-year trees save one season's work and twelve months waiting.

Such Trees Never Were On the Market Before

Heretofore two-year apple trees were trimmed too high in most nurseries. You can't readily buy low-headed, ready-shaped two-year trees elsewhere. With them the big pruning job is over. Budded from bearing orchards, grown at Berlin, these trees will make fine orchards quickly. They are absolutely hardy in Michigan and the north. They will require less work and less expense in their care, will bear earlier, and will catch the wind less than common trees.

The Harrison 1914 Catalogue

tells how we grow trees so well, gives planting plans and directions and is full of information. WRITE TODAY for it, and tell us about your planting plans.

HARRISONS' NURSERIES

Box 484 :-: Berlin, Md.



Let Me Send You
MY NEW BIG BOOK
"Why, How and When to Spray"

FREE



EVERY farmer, truck- or fruit-grower needs this book. It is more than a catalog. Contains 74 different illustrations from photographs of insects and plant diseases that rob the grower of his profits. It gives full details as to how to combat these pests, the various remedies which have proven successful and directions as to how and when to apply them. The book also contains illustrations, some in color, of the famous HURST SPRAYERS—28 different styles and sizes—from small hand power outfits to large gasoline engine sprayers for field and orchard. It explains in detail the liberal terms on which HURST SPRAYERS are sold—

10 Days FREE Trial—5 Year Guarantee

No Money In Advance—No Freight To Pay

I will ship you any HURST SPRAYER on 10 days free trial, without one cent in advance—no bank deposit—no agreement to keep and pay for the machine unless you are thoroughly satisfied. Our liberal selling plan gives you your own terms of payment. The sprayer will pay for itself in the extra profits of one season. I want to tell you about our



Money Saving Offer

This offer goes to the first buyer in each locality this season. So write today. Tell me what size sprayer you need or what you have to spray and get my big free book and raise bigger, better crops, and increase your profit.

E. H. LAMIELL, General Manager

THE H. L. HURST MFG. CO., 247 North St., Canton, O.



Know Before You Plant That Your Trees and Shrubs Will Bloom as You Expect

Shrewd people buy merchandise from established houses—houses that will be in business when they need service. Why should not a planter buy his Trees, Shrubs, Vines, Roses, Bulbs and Seeds with the same precaution? How disappointing it is, when your trees or shrubs have leaved out, to find something you did not order—something you do not want. Have you ever had this experience? Don't take any risk when ordering. Buy direct of the producer and at first cost. We have a reputation at stake. Have been in business 60 years and expect to continue indefinitely. You always know where to find us. 46 greenhouses.



1,200 acres. 192-page Catalog FREE Write for it today. It's interesting and valuable.

THE STORRS & HARRISON CO., Box 271, PAINESVILLE, OHIO



Deming Spray Pumps



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

Sprayers for Many Purposes

We make bucket sprayers and knapsack sprayers, barrel sprayers and strong power sprayers. There is a Deming Sprayer for every need. Whether you garden for pleasure or grow truck or fruit for profit—Deming Sprayers, Nozzles and "Deco" Hose will prove of great help.

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



Green's Trees

Buy Direct and Save Half

Deal with us, the growers—not with agents. You save half and get better trees. Whatever you want for the Fruit Garden or Orchard—we have it.

A Big Supply of Apple and Peach Trees

Pear, Plum, Quince, Cherry, Grape Vines, Ornamental Trees, Roses, Plants, Best New Fruits. All of them finest stock—true to name.

Our 35 years' reputation for square dealing is your guarantee. We deal direct by catalogue only. There's no Nursery like Green's for value. Our finely illustrated catalogue gives practical, useful information on care of fruit trees. It's free. "Thirty Years with Fruits and Flowers" or C. A. Green's Book of Canning Fruits sent free also. Write us today.

GREEN'S NURSERY CO., 30 Wall St., Rochester, N. Y.



When writing to advertisers please mention the Michigan Farmer

Horticulture.

Pruning the Grape Vine.

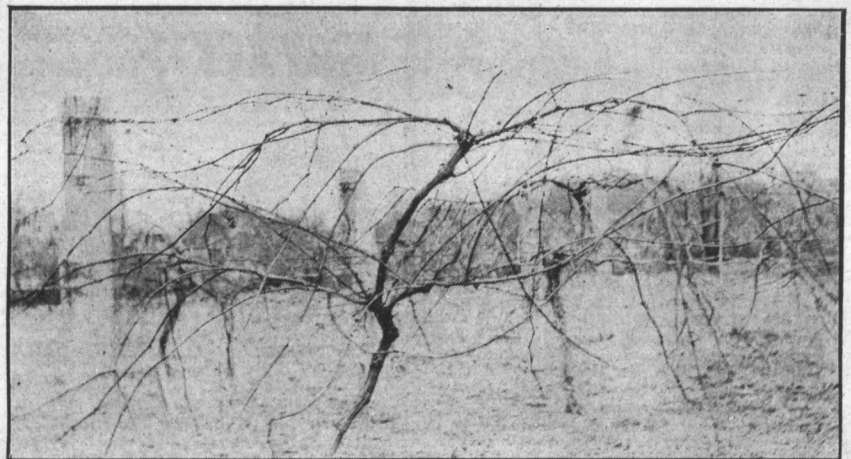
The grape vine lends itself to numerous methods of pruning. It can be trained to most all forms, even stand abuse in the way of pruning and still come back with a crop of fruit the next season, in fact, it suffers more from the lack of pruning than from the various butcherings it may get.

There is no doubt that trellises as used in most vineyards are most suitable for training the grapevine. The method of training in fanshaped form against a wall as practiced in Europe, the training over arbors, or the method used in the west of cutting back to a thick stubby trunk, show no advantages for commercial purposes in this part of the country. The grape arbor is becoming a thing of the past on account of the necessity of spraying the vines, which is an inconvenient thing to do when the vines are trained in this way.

There are various forms of trellises used for vineyard purposes. The four-wire system with the wires running parallel in

of the vine is run nearly to the top wire. From the trunk four arms are started, one each way on each wire. In the spur system, these arms are permanent and the laterals are cut back to spurs of about two buds each. The common fault with this system is that there is a tendency for the spurs nearest the trunk to die, and in a short time there will be a considerable length of arm without any spurs on it. This puts the bearing wood too far from the trunk.

The arm renewal method is the most simply and practical way of pruning. Each year the arms are renewed. The arms which produced the new bearing laterals are cut back to the laterals nearest the trunk. These are cut back so that they contain about ten buds each, and are tied in place on the wire to serve as the arms for the coming season. Thus only about forty buds are left on the vine, and the pruning can be done with about eight cuts, four for cutting back the old arms and four for shortening the laterals



Grape Vine Before Pruning.

a horizontal plane, and the system in which wires run vertically, being attached to an upper and lower wire, are used by many. There are objections to such systems, however. In the case of the first system the vines form an arch with the bearing wood on the under side. This makes it necessary to get down on the knees to pick the fruit, and also makes it hard to spray so as to thoroughly cover the fruit. The fruit is considerably hidden from the sun, and does not get a free circulation of air, both of which are important factors in the control of fungus

left. When there is a good strong lateral coming from the trunk which is well placed for an arm, it is advisable to spur it back so that it will produce shoots which may be useful for arms, should the laterals on the old arm be too far from the trunk. By this method, the bearing wood is always kept close to the trunk.

Correcting Bearing Habits.

On many varieties there is a tendency to produce more fruiting wood on the upper arms; the lower arms bearing few or weak laterals. This can be rectified by cutting the top arms back to eight buds and leaving the lower ones about twelve buds long. Some varieties, such as the Delaware, are liable to overbear. This also can be corrected by a more severe cutting back of the new arms, leaving in all from thirty-two to thirty-six buds in all.

More than one trunk for a vine is not necessary or advisable for this method. The vines cannot be confined to their proper space, the arms cannot be trained as well, and the vineyard as a whole has not as good an appearance when more are used. Should the trunk become too old to be of value, one of the strongest shoots which often start at the base of the trunk can be left and encouraged in an upward direction. After it is two or three years old, and is capable of producing good arms, the old trunk can be cut off close to the ground.

The pruning should preferably be done in the late winter or early spring. If it should be done in the fall or early winter, it is very likely that the canes will freeze back from the ends a little, which would make it advisable to go through the vineyard in spring again to cut off the frozen ends. Pruning after the sap has started is not advisable, as the vines will bleed. While this will do no serious damage, it is a waste of vitality which might have been conserved. When doing the pruning, always have in mind that it is more desirable to err on the side of pruning too much than not enough.

Regardless of its late bearing feature, the Northern Spy should be set by Michigan growers, as it grows to perfection in this state and has a market reputation which will not be supplanted by that of any other variety.



Pruned by Arm Renewal Method.

troubles. The latter system makes pruning hard, because it is necessary to do quite a little to prune properly by this method.

The most practical method of wiring is the two-wire system where the wires run parallel in a vertical plane with one about two feet above the other; this system permits of a good circulation of air through the vines, and makes spraying and picking easy.

Most Practical Method.

Pruning on this kind of trellis can be done either by the arm renewal or the spur systems. In either case, the trunk

SPRAY We Make Sprayers For Everybody

Bucket, Barrel, 4-Row Potato Sprayers, Power Orchard Rigs, etc.

There's a Field sprayer for every need, pronounced by all experts the world's best line.

THIS EMPIRE KING

leads everything of its kind. Throws fine mist spray with strong force, no clogging, strainers are brushed and kept clean and liquid is thoroughly agitated automatically. Corrosion is impossible. Write for directions and formula. Also catalog on entire sprayer line. We have the sprayer to meet your exact wants. Address
FIELD FORCE PUMP CO.,
18 Eleventh Street, Elmira, N. Y.

MAY'S SEEDS

Northern Grown

Write today for

MAY'S NEW CORELESS

This new variety of Tomato is a wonder; vigorous grower, very prolific, bearing in clusters; round, solid, bright red; splendid keeper; unequalled for canning or table. Packet 10c, 3 packets 25c.

Write today, now for our new 1914 Catalog, a perfect guide for growing everything for Home or Farm, in Seeds, Bulbs, Plants, Shrubs and Trees. SENT FOR THE ASKING

L. L. MAY & CO. FREE
ST. PAUL, MINN.

CARFF'S SEED CORN

5000 bushel crop 1912 Tested and sure to grow. Finest quality. 20 leading varieties. Also Seed Oats, Barley, Grass Seed, Potatoes, etc. Samples on application. 1000 acres. Be sure to get our new catalog. Write today. W. N. Scarff, Box 67, New Carlisle, O.

Knight's FRUIT NONE BETTER PLANTS

For over thirty years KNIGHT'S PLANTS have been making big money for our customers. This season we are offering a piece of \$100.00 IN GOLD FREE for the most productive strawberry patch. This contest is fully explained in our KNIGHT'S BOOK ON SMALL FRUITS. It's FREE. Write for a copy today before supply is exhausted. DAVID KNIGHT & SON, Box 410, Sawyer, Mich.

Guaranteed Fruit Plants

Healthy, northern grown Strawberry, Raspberry, Blackberry, Currant and Grape plants—all covered by the following liberal guarantee:—All plants guaranteed to be first-class and true to name, packed to reach you in good growing condition (by express) and to please you, or your money back. You take no chances. Send for catalog today. O. A. D. Baldwin, R.R. 16, Bridgman, Mich.

SEEDS

Wing's Quality Seeds produce the choicest vegetables and flowers. Grown with great care for those who appreciate quality. No matter what you need, Garden, Field or Flower Seeds, we have them and offer only the best varieties grown. Fully described in our free catalog. Write for it to-day.

WING SEED CO., BOX 142 MECHANICSBURG, O.

That Red Pure Seed Book

is the talk of the country. Gal- loway's Pure Seed Book. Get it today free. Send postal tonight. It's New, Different and Original. Full of pure field, farm and garden seed, plants and shrubs at right prices. Full of illustrations and valuable information. A postal will do. GALLOWAY BROS.—BOWMAN CO., 184 Galloway St., Waterloo, Iowa

Apple Trees 5¢

Peach 7c, Cherry 14c, all grafted. Concord Grapes \$2 per 100. Catalpa Seedlings 18 to 24 inches, \$4.50 per 1,000. We pay freight on 10 tree orders. All kinds of trees, shrubs, etc., flower, vegetable and field seeds. 10 big pkgs. vegetable seeds, early varieties, 25c. Catalog free.

GERMAN NURSERIES AND SEED HOUSE
29 Court Street Beatrice, Neb.

Apple, Peach,

Cherry and other Fruit Trees, Small Fruit Plants, Shrubs, Ornamental Trees and Roses. Hardy, vigorous trees from the famous Lake Shore regions of Northern Ohio. Send for Catalog. Address
T. B. WEST, Maple Bend Nursery.
Lock Box 137, Perry, Ohio

TREES

We grow our trees; guarantee them healthy, hardy and true; sell them at reasonable rates, direct from nursery; and deliver the size you pay for Catalogue.

TREES

A big lot of the best APPLE and PEACH ever grown, at special prices. All kinds of Trees, Plants, Vines, Roses, Shrubs, etc. Catalogue all about them FREE. BARNES NURSERIES, Collins Hill, Cincinnati, Ohio. RELIABLE SALESMEN WANTED.

STRAWBERRY PLANTS

RASPBERRY—BLACKBERRY—CURRANTS Our own growth, all fresh, warranted to grow and of best quality. Eggs for hatching, catalog free, Bridgman Nursery Co., Stahelin & Son, Box 34, Bridgman, Michigan.

PEACH TREES, Orchard Size, 4 & 5c each Elberta, etc. New catalog free of all kinds of nursery stock. W. A. ALLEN & SONS, Geneva, Ohio.

TROUBLE DEPARTMENT.

Varieties of Strawberries for Light Soil.

Kindly advise me as to what are the best varieties of strawberries for light soils and which will also be good for canning factory purposes or market.

Van Buren Co. J. J. G.

Varieties of strawberries which produce berries rather soft in texture and not of very high quality are generally those which do best on light soils. Such varieties grow large plants and are moderately good runner makers. Uncle Jim or Dornan, as it is sometimes called, is probably the most popular variety of this kind. Clyde and Bederwood are also popular.

Varieties which do the best on light soil are not generally the best for canning purposes as they give a light colored product but are fairly good for market purposes as they are large and attractive.

Even varieties which do well on light soil need considerable fertility and if the soil lacks in fertility or humus it would be well to fertilize the soil before setting the plants.

Unproductiveness of Apple Trees.

What are some of the reasons 20-year-old apple trees do not bear?

Van Buren Co. J. J. G.

This question is hard to answer without knowledge of local conditions. Some varieties often do not bear under conditions which encourage their wood growth instead of fruit bud formation. In other cases the tree may not bear on account of the lack of proper pollination. If the trees blossom well and do not produce fruit this is a likely cause. If they do not produce blossoms, the article in the Michigan Farmer of December 20, 1913, on "Tree Growth and Production," may have some valuable suggestions for you.

Varieties of Sweet Apples.

What varieties of sweet apples could you recommend? How is Jacob's Sweet? Tolman Sweet has been a shy bearer with me.

J. M. G.

There are no varieties of sweet apples which are more in favor than Tolman Sweet and Bailey Sweet, the former being a yellow apple and the latter a red one. Jacob's Sweet ranks next in importance and is preferred by many. None of the good sweet apples are blessed with a great amount of productiveness. Sweet apples can not be recommended to any great extent for commercial purposes.

Varieties of Apples.

I have read about half a dozen nursery catalogs and cannot decide upon the varieties to set in a ten-acre orchard I am going to plant. I want kinds which bear young so that I can get the benefit of the fruit. How about Wagener, McIntosh, Grimes, Jonathan, Delicious, Stayman, Winesap, Wealthy? I have been buying Rome Beauty, Spitzenburg, and Winesap. Can any of the above varieties be set 30 feet apart?

I have an orchard of 100 trees about 40 years old. A year ago I was disgusted but last year I took better care of the trees and now feel more like taking care of an orchard. Will the scale spraying in March be effective enough so that the spraying just before the blossoms open can be left out. Will spraying in the past make more effective the present season's work?

Saginaw Co. J. S.

We do not doubt your bewilderment regarding the varieties of apples to set after reading a half dozen nursery catalogs. The nursery catalogs tell the truth but they give a description of the varieties at their very best. They can not take into consideration local conditions so the grower has to use his own judgment regarding the selection of varieties after getting all the information he can from nursery catalogs, farm papers, bulletins and other sources. Advice on this matter is the hardest there is to give.

Duchess, Wealthy and Wagener are well known early bearing varieties. They should be set on the heavier orchard soils otherwise they will have a tendency to overbear. Jonathan, Grimes and McIntosh are also fairly early bearers. They need fairly rich soil to do the best and need especially good care in spraying and other orchard operations to bring them to perfection.

Stayman Winesap, and Delicious we can not recommend for this state. In a few places in the northern part of the state the Delicious does well but we have not found it a general success. Rome Beauty does well in some places in the southern part but is generally not a variety for this state. Spitzenburg is often a light and late bearer, and the regular Winesap will not do at all in this state.

Thirty feet would be a little close for setting any of the above varieties, especially if the soil is heavy. Thirty-three feet would be a better distance. The method of setting trees described in the article on "Unusual Methods of Orchard-ing," which appeared in the Michigan

Farmer of January 24, will undoubtedly be of interest to you.

No man will go far wrong financially taking care of a good apple orchard. The whole trouble in most cases is that the care is not good enough. There is no reason why we should not successfully hold the markets of Michigan and nearby places against competition from western apples when we will give the same care and attention to our fruit they do. When we do that, the western people will be to a great disadvantage.

If it is desired to make only one spraying before the blossoms the scale spray should be put on very late in March or early in April. The longer you can wait before the leaves come out the better the fungicidal effect.

Although you may get better results in an orchard which has been quite thoroughly sprayed in past years, the possible beneficial effect of the past season's work can not be relied upon as the results depend upon the weather conditions of the particular season and the thoroughness with which the work was done during that season.

FACTORS INFLUENCING VARIETIES.

There is little information available on the influence of local conditions, especially those of soil, on different varieties of fruit. We know in a very general way that some varieties do well on one kind of soil and are practically a failure on another. We also know that some varieties will stand neglect better than others, but we have nothing to offer the man who wishes to set an orchard, as to which varieties would do the best on his proposed orchard site. Also, our knowledge of the resistance of varieties to diseases and insects is quite limited.

It is for the purpose of getting better knowledge along these lines that the questions below are printed. It is hoped that everyone who has had any experience will answer at least those questions he can. The summary of the answers received will undoubtedly give us something interesting and valuable. The more answers received the more valuable the summary will be. The information we receive will be given our readers as soon as a sufficient number of questions have been received to make the information valuable.

The Questions.

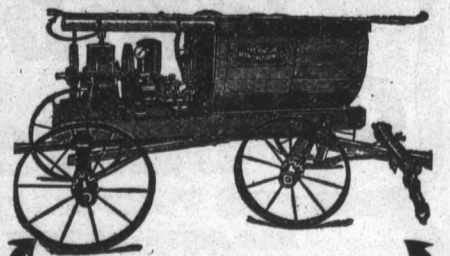
1. What is the character of the top soil of your orchard?
2. How deep is the top soil?
3. What does the sub-soil consist of?
4. Has the orchard been cultivated? How much?
5. If not cultivated tell treatment.
6. Have cover crops been used? If so, give details.
7. Have you fertilized the orchard any? If so, with what?
8. What is the general lay of the orchard suite?
9. Is the orchard well drained?
10. Does it have pockets or low places in it?
11. How often do you spray each year?
12. With what have you sprayed?
13. What varieties have done best? Give age of each?
14. When did each of the successful varieties start bearing?
15. What is the average yearly production now?
16. Which varieties bear annually? Which do not?
17. Have you done anything to bring the trees to annual bearing?
18. Have they made a good growth? How much a year?
19. What varieties have not done well? How old are they?
20. Can you account for their not doing well? Cause, if any.
21. At what age did they start bearing?
22. How often do they have good crops?
23. Have they made good growth? How much a year?
24. Are these trees in an unfavorable location?
25. What varieties, if any, do you find specially susceptible to any particular insects or diseases? Give details.
26. Are there individual trees in the orchard which are in any way different from the surrounding ones? If so, state difference and probable cause.
27. If a peach orchard, is its location fairly proof against spring frosts?
28. Have you had trouble with the "littles" and the "yellows"?
29. What treatment do you give for these troubles?
30. Are you sure that the condition the trees are in is not due to your soil, sap restriction or some other cause instead of being the diseases mentioned above?
31. General remarks bearing on this subject.

For your convenience in answering the questions just use the number of the question. We would especially like answers with reference to apples, peaches and pears.

Remember that your experience, however small, will add to the value of the results we get.

Kindly address answers to the horticultural department of the Michigan Farmer.

HARDIE JUNIOR



The Sprayer With a Mission That Meets the General Demand

Just the machine the spraying world has longed for. A small but highly efficient, power sprayer at half the price of other outfits. A machine having high pressure that can be used anywhere for all kinds of spraying.

The Hardie Junior is the biggest little Power Sprayer ever made.

Never before have you been offered such an efficient sprayer for this very low price.

\$140 COMPLETELY EQUIPPED TRUCK \$25.00 EXTRA

Freight Prepaid to your station.

Twenty-five thousand growers endorse the Hardie Sprayers as the best. They are noted in every section of the United States for their

High Pressure, Large Capacity, Light Weight, Accessibility of all parts and Freedom from experimental risks.

Before buying a sprayer of any kind, let us tell you all about our 1914 sensation, "The Hardie Junior." Sit down now and write for a catalogue. We manufacture all sizes and styles of hand and power sprayers.

THE HARDIE MFG. CO.
HUDSON, MICHIGAN

GOOD SEEDS BEST IN THE WORLD

Prices Below All Others

I will give you a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded. Big Catalog FREE

Over 700 illustrations of vegetables and flowers. Send yours, and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Illinois

MILLIONS of TREES PLANTS, VINES, ROSES, ETC.

The oldest, largest and most complete nursery in Michigan. Send for catalog. Prices reasonable.

I. E. ILGENFRITZ' SONS CO.

The Monroe Nursery

962 Front St., East MONROE, MICH.

NEW STRAWBERRY

Nearly 100 Varieties to Select From.

We guarantee our plants to be high-grade and equal to any. Our 18th annual catalogue is ready. Write for one.

THE FLANSBURGH & POTTER COMPANY.
BOX 354, - LESLIE, MICHIGAN.

TREES at Half Agents Prices

From nursery direct to you at wholesale. Guaranteed—First Class—True to Name and Free from Scale and disease. We pay freight and Guarantee safe delivery. Catalog Free. The Wm. J. Reilly Nurseries, 24 Osmian Street, Danville, N.Y.

Look! Read and Save Money

We have a big Stock of Apple, Peach, Pear, Cherry, Plum trees, at 3c & up. Shade trees, Berry plants, Roses, Shrubs, Etc. Seed Corn, Potatoes & Oats. We were formerly at Moscow, but have better facilities now to serve our Patrons. Send for Catalogue. ERNST NURSERIES, Box 2, Eaton, Ohio.

Hill's Evergreens Grow

Best for windbreaks. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown—low priced. Get Hill's free illustrated evergreen book and list of Great Bargain Offers—from \$4.50 up per Thousand. 56 years experience. World's largest growers. Write. D. HILL NURSERY CO., Inc. Evergreen 220 Cedar St., Dundee, Ills. Specialists.

PLANT NORTHERN GROWN TREES

Start with the best trees you can buy. We offer hardy, healthy, acclimated nursery stock of every kind. Grown in the heart of the Michigan Fruit Belt. Guaranteed true to name fruit trees and ornamentals at wholesale prices. Write To-Day for

Catalog with Wholesale Prices FREE

It will save you money to investigate our special offers. Catalog shows what we sell. Send for it. A postal will do.

Celery City Nurseries, Box 112 Kalamazoo, Mich.

Strawberry Plants

Guaranteed as good as grows at \$1.00 per 1000 and up. Catalogue FREE. ALLEN BROTHERS, R. 9, Paw Paw, Mich.

Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS I

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
THRUSH,
DIPHTHERIA,
SKIN DISEASES,
RINGBONE,
PINK EYE,
SWEENEY,
BONY TUMORS,
LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
PARASITES.

REMOVES

BUNCHES or
BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

**The Accepted Standard
VETERINARY REMEDY**

Always Reliable. Sure in Results.



None genuine without the signature of
The Lawrence-Williams Co.
Sole Importers & Proprietors for the
U.S. & CANADA. CLEVELAND, OH.

CAUSTIC BALSAM IS THE BEST

Your Gombault's Caustic Balsam is the best I know of. I have bought four bottles for my neighbors, and two for myself. I have cured a sweetened horse with the Balsam.

—Louis Miller, Sharon, Wis.

GOMBAULT'S CAUSTIC BALSAM IS EXCELLENT.

Having read an advertisement in Wisconsin Agriculturalist about your Gombault's Caustic Balsam, I have tried some of it and think it excellent.—J. M. Woradzowsky, Big Flats, Wis.

Sole Agents for the United States and Canada.
The Lawrence-Williams Co.
TORONTO, ONT. CLEVELAND, OHIO.

Live Stock.

Wintering the Store Hogs.

WHEN we speak of the store hogs on the farm, we refer to all the hogs kept that are not being prepared to go to market within a short period of time. Such a classification includes the breeding stock, and the fall pigs which are too young to fatten for market before spring.

The Brood Sows.

It is a matter of prime importance that the brood sows have the right kind of feed and the right kind of treatment, for on them we depend for a supply of pigs for the pork hogs next year. If they are judiciously handled and fed during the winter our chances for a liberal supply of pigs are good. If we neglect, abuse or overfeed the brood sows we are pretty sure to reap sad disappointment for the neglect and improper management.

During the periods of high prices the breeding stock is very often spoiled with kindness. In other words, they are likely to be over fed, confined too closely, and not compelled to stir around enough to enable them to maintain a healthy condition of their own body or transmit a good degree of life and constitutional vigor to the pigs.

The sows should be compelled to take considerable exercise every day during the winter. The sows of the improved breeds that are what we call easy keepers, are inclined to spend too much time in the nest. They should have a yard in which they can exercise at will during pleasant weather, and the feed trough should be far enough away from the nest to compel them to exercise considerably during stormy weather in going to and from the feeding place.

A place in which to sleep should be provided where they can be comfortable. It should be dry and free from cold draughts of air. A damp place in which to sleep invites rheumatism and many other diseases. A comfortable place in which to sleep and kind treatment will insure, in almost any representative of the improved breeds, a good disposition, while a cold, damp nest, and harsh treatment will insure a resentful and disagreeable disposition. The character of the animal often reflects the real character of the owner.

I am not an advocate of the starving process during the winter, for the brood sows. I am in favor of generous feeding of feeds of the right kind. The exclusive corn diet has been so often condemned that it is not necessary to repeat it now. Corn and oat chop mixed with an equal amount of wheat bran and middlings makes nearly an ideal mixture with which to make sloppy feed for the brood sows. If three to five per cent of the mixture is oil meal it is better. With such a mixture the bowels will not become constipated and serious troubles from that direction can be avoided.

The amount of feed to use each time and each day, depends on the size and requirements of the animals. Three to four pounds of the grain to a hundred pounds of weight, is all that is generally required to keep the sows in good condition. If a moderate feeding of clover, alfalfa or sweet cornstalks is allowed each day, less grain will be required and the sows will be benefited by such feeds.

If the sows are in good condition at farrowing time they can give the pigs a good start, for like a cow giving milk, they can give of what is stored within them. If they are emaciated they can not give the pigs a good start in life, and they will fall behind in the race with the pigs from a sow in good condition. Where the fleshy sow fails is in not taking a sufficient amount of exercise during the winter.

The Young Pigs.

There are a good many who declare that there is but little, if any, profit in raising and selling pork from fall pigs. In my own experience, I have been able to get excellent results from the fall pigs for several reasons. One has more time in the winter to devote to the pigs than in the summer, and if properly cared for as to nesting places, the vigorous appetite which the cold weather encourages, will enable one to make more rapid gains in growth than most men are likely to get on their pigs during the summer. To begin with, the fall pigs should be

taught to eat a good quality of sloppy feed before they are weaned from the sow. They should have a warm, dry place in which to sleep. It is in not furnishing the right kind of a sleeping place that most men fail with the pigs. They will not eat well, nor can they thrive well; if they are not made comfortable during the time they are in the nest. Remember that pigs go outside to eat and then go to the nest to rest, sleep and make meat out of the feed which they have consumed.

The feed mixture recommended for the brood sows is an excellent feed for the store pigs until they are put up to fatten for market. With such a mixture the pigs can be allowed to eat all they can hold at each feeding, and if they are allowed to take the proper amount of exercise in the open air, they will be ready for the next meal when feeding time comes.

With pigs, it is worth the while to give the sloppy feed warm. I do not mean to cook it, but give it agreeably warm at feeding time; they will eat more of the feed and a little fuel needed to heat the feed is cheaper than animal heat. Mix the feed with hot water and then put in the skim-milk and table wastes and you will have something they will relish and thrive on.

Feed only as much as they will eat up readily each time. If there is any feed left in the troughs after they have taken all they want, clean it out at once. An empty, clean trough for pigs to come to at feeding time, is a good appetizer.

By close attention to the needs of the pigs, a rapid growth can be secured during the winter, and at present prices for grains and pork hogs, liberal profits can be realized.

Wayne Co.

N. A. CLAPP.

SUGGESTIONS FOR IMPROVEMENT OF THE STALLION LAW.

This was the subject of an address by J. S. Montgomery, of the Minnesota Stallion Registration Board, St. Paul, Minn., at the recent meeting of the Michigan Horse Breeders' Association, who spoke as follows:

The selection of a good sire is the keynote to successful horse breeding. The general standing of the horses of this country must be changed by the use of pure-bred sires. After this, the next point of importance is that the colts must be carefully reared.

It appears to me that the first question a horse breeder should ask himself when he goes to look at a stallion who is to sire colts for him, is, "what would this horse be worth castrated and on the Chicago market?" This is a question which, when correctly answered will often answer the question as to whether the horse is a desirable sire or not. There are few people who do ask themselves this question because, if they did, they would not be breeding to so many stallions who, as geldings would not be worth more than \$100 on the Chicago market. Breeding to such scrub stallions cannot help but have its corresponding results in the cause of live stock improvement in this country. The same kind of economy which would induce some farmers to sow wild oats instead of tame oats, is identical with that which causes some owners of mares to breed to grade or dunghill stallions.

The first laws for the licensing and registration of stallions were passed in 1905 and their purpose was to encourage the use of high-grade sires. The movement has steadily increased until now 19 states of the union have such laws. Wisconsin and Minnesota were the first two to begin this work and now the movement has spread to provinces of Canada where laws of like nature are in operation. The chief purposes of the laws enacted thus far have been: 1, to properly designate the stallions, and 2, to label them as to soundness or presence of diseases which might be transmitted. Since the passage of these laws, many states have showed a marked decrease of the numbers of grade and scrub stallions as compared to the number in the state previous to the passing of the law. In Minnesota in 1908, only 27 per cent of the stallions standing were thoroughbred and



Get My Big New Book—Now Ready

If you don't read another word of it, read pages 7 to 11 and pages 24 to 32—**FREE** sure! Those pages alone will make it impossible for anyone to ever fool you on buggy value. Let me send this book to you at my expense—then see how

It Shows You How to
Save \$25 to \$40

on every buggy you buy. It shows you how all Phelps Split Hickory Buggies are made of tough, sinewy Second-Growth Hickory—split, not sawed.

Then you will know why nearly 200,000 men have bought Phelps Buggies—why Phelps is the leading direct-to-you buggy maker in the world.

It is your duty to get this book—get posted on buggy prices. Send postal for it today, sure.

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

Shows
125
Styles



PHELPS shows you in his book more different buggy styles than you could see in 40 ordinary carriage shops "rolled into one." Every one sold on an iron clad guarantee for 2 full years with 30 days' road test free. That's how he has built up his enormous business.

Be sure and write today



2-Year Guarantee



If You Had Your Leg Cut Off

you would insist upon the wound being carefully dressed and cared for; why not give the same care to the minor injuries of daily occurrence? The danger of blood poisoning is as great in one case as in the other. Use **OXALBITOL** for dressing wounds. It is an antiseptic dressing that has merit and is sold by mail only. Price 35 cents. Money returned if not satisfied. **OXALBITOL CO., Honesdale, Pa.**

Save Work, Time, Money

By using our low down steel wheel wagon



Electric Handy Wagons saves high lifting, lightens draft, don't rut roads. Spokes don't loosen—wheels don't dry out or rot. Write for free book on Wagons and Wheels. **Electric Wheel Co., 35 Elm Street, Quincy, Ill.**

WE WILL GIVE YOU A New Roof FREE

We will replace without cost to you at any time within thirty years of date of purchase, any

AMERICAN INGOT IRON ROOF

that rusts out. Being pure iron it cannot rust out like steel. No painting or repairs required. Our bond protects you. Inexpensive and easy to put on. Fire-proof and lightning-proof. First cost the only cost. Write for catalog.

American Ingot Iron Corn Cribbs, Stock Tanks, Troughs, Wire Fences, etc., are rust proof and cheapest in the end. Booklet Free. Write for it. **THE AMERICAN IRON ROOFING COMPANY**
Elyria, Ohio Sta. 12 Middletown, Ohio



in 1913 the number had increased to 46 per cent of the total number of stallions which were thoroughbreds. Further than this, about five per cent of the purebreds and a large percentage of grades were debarred from service by the presence of a transmissible disease. The enactment of the stallion registration laws, together with their enforcement, has eliminated fake registrations and pedigrees. Previous to the enactment of the law, there were companies whose business it was to make out fake registrations and pedigrees for grade or scrub animals and these were sold to the owners so that they would have some papers to show to the mare owners who came for service. Other unscrupulous importers would tamper with pedigrees and transfer the pedigree of a horse which had died to a scrub or grade horse and fix up the descriptions and change the dates of service and foaling so as to make the pedigrees seem genuine. The law has stopped such practices and has given the horseman of Minnesota a security from fraudulent companies which was not had before.

In general, Horse Breeders' Board should be:

1. Representative of the breeders.
2. Connected with the Agricultural College.
3. Free from political control.
4. Empowered to issue licenses.
5. Provided with ample funds, and
6. Able to give the keepers of thoroughbred and sound stallions security against the invasions of the scrub stallions.

Question 1.—What are the duties of the board after the so-called half-law has been passed?

Mr. Montgomery:—In Minnesota the Stallion Registration Board is composed of three members who are the president of the Horse Breeders' Association, the head of the Animal Husbandry Department, and the Veterinary Division of the Agricultural College. This combination makes one that represents the breeders for it has their chief executive, and it makes a board that is free from political influence, supposedly, for these men do not get any pay for serving, not even a per diem expense.

The systems of examination which have been worked out in Minnesota are rather unsatisfactory. There the examinations are made by any local veterinarian at a fee that is agreeable to both himself and the horse owner and the papers are sent in to the board. The board, however, reserves the right to have another examination made by their own representative and if the local veterinarian's report has not been correct, he is prohibited from making any more examinations. That is, the board will not accept the results of examinations made by him.

Unsoundness has been definitely defined as cataract, roaring, bone spavin, gleet, curb, glanders, and other diseases which are likely to be transmitted to offspring.

Question 2.—Does this not inflict some hardship on owners who have just recently purchased stallions and then find that they do not come up to the requirements of the law?

Mr. Montgomery:—Yes, it does, but we find in Minnesota that people will be more careful about buying horses. However, in Pennsylvania and Kansas, the lawmakers feared that the stallion law would leave a community without stallions except scrubs and so their laws are such that scrub or grade stallions may be stood up until a certain time provided that their exact pedigree and condition of soundness is conspicuously posted in the place where they are stood. In Minnesota, the classes of breeding stock are divided into pure-bred, grade and mongrels or scrubs. Of the first, both parents must be registered horses; of the second, either the sire or dam must be registered horses and their papers must be produced as evidence that the stallion is a grade. The mongrels or scrubs are not licensed at all.

Question 3.—If it is necessary to prosecute scrub stallion owners, who does the prosecuting and how are the funds furnished?

Mr. Montgomery:—We have never had only about 15 cases to prosecute in Minnesota, but of these only one ever went to the jury and only one was lost, and this was due to a flaw in the paper made out by the attorney. The complaints of scrub stallion owners must be made to the State Registration Board and they in turn complain to the county prosecuting attorney. He has no option in this matter, he must prosecute and the county stands the expense.

Look Out for Hog Cholera!

Can Be Prevented—Can't Be Cured

Don't be the man who locks the stable door after the horse is stolen. Don't wait until cholera breaks out in your own neighborhood before you try to save your herd. "An ounce of prevention is worth a pound of cure"—and in this case a little prevention without one penny of risk may mean the saving of many hundreds of hard-earned dollars. You can't afford to risk another day's delay—especially when I offer to do for you what I have done for thousands of farmers, and before you pay me a single penny. Read my offer below:

Act Quick—Don't Wait Until the Scourge Sweeps Off Your Hogs

Your only hope lies in prevention, and the time to act is now. The first step is to get rid of the disease-breeding, treacherous stomach and intestinal worms—the pests that not only rob your animals of their food but, what is still worse, sap their vitality and make them easy victims of cholera and other contagious diseases. Worms are often so deadly in their attacks that they are mistaken for the cholera scourge itself. Rid your hogs of these disease-breeding pests—do as thousands of other farmers are doing—feed Sal-Vet—get rid of the WORMS—and you will have less to fear from cholera and similar fatal diseases.

I'll rid your hogs of worms or no pay. I'll drive out the blood-sucking, life-sapping, disease-breeding parasites which are the cause of 90% of all live stock ailments. I'll do for you what I have done for thousands of farmers. I'll prove it before you pay. I'll do it with Sal-Vet—the greatest worm destroyer and live stock conditioner ever discovered—the most widely known and used live stock preparation on the market. You take no risk whatever. Sal-Vet has saved millions of dollars worth of hogs because it promptly gets rid of the destructive WORMS and puts all farm animals in a vigorous, healthy condition enabling them to better resist contagious diseases. Read the letters below.

The Great
Worm
Destroyer

SAL-VET

The Great
Live Stock
Conditioner

"After all other remedies had failed, 'Sal-Vet' destroyed the worms in one of our horses. It surely does the business all right, and I consider that it keeps the digestive organs in good condition and does better work generally than many other remedies."

CHAS. PETT, Muskegon, Mich.
"My pigs were full of worms, and did not thrive at all. After feeding 'Sal-Vet' a short time, I was convinced that it is a wonderful worm de-

stroyer. It was not long before the pigs were cleaned out thoroughly, and began to grow."

BEN A. BAUGHMAN, Northville, Mich.

Rt. 45, Box 53, Clarksville, Mich.

"Some of our neighbors have lost all their pigs, and some of ours were not doing well either, but since feeding 'Sal-Vet' to them, they are doing fine."

ISENBARGER BROS., Rt. 2, Battle Creek, Mich.

"I have found that 'Sal-Vet' and worms do not agree at all—the worms have to get out when 'Sal-Vet' comes in."

JOSEPH BLOUGH,

"'Sal-Vet' has been a great help to my stock, especially to my horses, which are looking better than they have for a long time. Also fed 'Sal-Vet' to my hogs, which are now entirely free from worms."

ORSA RUPLE, Rt. 3, Watervliet, Mich.

I'll Feed Your Stock 60 Days Before You Pay

All I ask is the privilege of sending you as much Sal-Vet as you need to last all your stock 60 days. I don't ask you to send me a single penny in advance or to take any risk. Simply place Sal-Vet where your hogs, sheep, cattle and horses can run to it freely and they will doctor themselves. Sal-Vet is a medicated salt. It requires no mixing, no dosing, no drenching, no starving. No trouble at all.

Send No Money—Just the Coupon

Simply fill out the coupon, tell me how many head of stock you have, and I'll ship you enough Sal-Vet to last all of them 60 days. When it arrives pay the freight charges and at the end of 60 days report results. If Sal-Vet does not do what I claim, I'll cancel the charge—you won't owe me a penny. Send today. Address

SIDNEY R. FEIL, President

THE S. R. FEIL CO., Man'g Chemists
Dept. MF CLEVELAND, OHIO

PRICES: 40 lbs., \$2.25; 100 lbs., \$5.00; 200 lbs., \$9.00; 500 lbs., \$13.00; 1000 lbs., \$21.12. No orders filled for less than 40 lbs. on 60-day trial offer. Never sold in bulk; only in Trade-Marked "Sal-Vet" packages. 60 day trial shipments are based on 1 lb. of Sal-Vet for each sheep or hog and 4 lbs. for each horse or head of cattle, as near as we can come without breaking regular packages.

SIDNEY R. FEIL, Pres.
The S. R. FEIL CO.
Dept. MF 2-7-14 Cleveland, Ohio

(162) Ship me enough SAL-VET to last my stock 60 days. I will pay no freight charges when it arrives, agree to report results promptly in 60 days, and will at that time pay for it if it does what you claim; if it does not you are to cancel the charge.

Name.....

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

Shipping Station.....

Number of Sheep.....

Hogs..... Cattle..... Horses.....

P.H.O.S.P.H.O.R.U.S
THE MASTER KEY TO PERMANENT AGRICULTURE
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.

DAYBREAK ROCK PHOSPHATE
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 on Rock phosphate, and state where you saw this ad.

FEDERAL CHEMICAL COMPANY,
Ground Rock Department COLUMBIA, TENN.

IT PAYS TO DEHORN
Dehorned cows give more milk; take less room; are gentle and easily handled. Dehorned steers fatten quicker and are not dangerous. Horns cost money; remove them with the new Improved Keystone Dehorner—quickest, cleanest, strongest and most satisfactory. Clean, shear and sliding cut; no crushing; no bruising. Money back guarantee. Send for booklet.

M. T. Phillips, Box 126 Pomeroy, Pa.

MINERAL HEAVE REMEDY
In use over 50 years
CURES HEAVES
Booklet free
\$3 Package CURES any case or money refunded
\$1 Package CURES ordinary cases. Mineral Heave Remedy Co., 463 N. Fourth Ave., Pittsburgh, Pa.

Mention the Michigan Farmer when writing to advertisers.

FEEDING
Empire MOLASSES 12 1/2¢
TRADE MARK REGISTERED
One pound of molasses to ten pounds of feed increases efficiency of ration 25 per cent. Try it. Cut price \$7.00 per barrel (56 gallons), f. o. b. Pennsylvania Factory. You take no risk—money back if not satisfied after feeding half a barrel. Order quick. WATTLES & COMPANY, Box 13 Litchfield, Michigan



The Healthy Herd

Hundreds of herds are kept in the prime of health and productiveness by the occasional use of KOW-KURE, the great cow medicine. KOW-KURE has no equal in the cure of the common cow diseases of Abortion, Retained Afterbirth and Barrenness. It is also a positive cure for Bunches, Milk Fever, Scouring, Red Water and Lost Appetite.

But it is better to prevent than to cure. The periodical use of Kow-Kure in small doses will effectually prevent these diseases, and make the healthy herd pour a constant stream of profits into your pockets.

If you have a backward cow, buy a 50c package of KOW-KURE, and give according to directions. It will do wonders. 50c and \$1.00 packages at all feed dealers and druggists.

Dairy Association Co.,
Lyndonville, Vt.



SAVE- THE- HORSE



REGARDLESS of price or any other reason Save-the-Horse is the cheapest remedy known. It goes through and through both bone and tissue—it works inside, not outside. And Produces a Cure That Withstands Every Test. No Scar or Loss of Hair. Horse can work as usual.

Why We Can Make a Contract to Cure.

Greenwood, Ind., March 10, 1913
Troy Chemical Co., Binghamton, N. Y. I have cured the horse of bone spavin. I also recommended it to a neighbor who cured a bone spavin. Frank Stevens.

We Originated the plan of treating horses—Under Signed Contract to Return Money if Remedy Fails. You risk nothing by writing; costs nothing for advice and there will be no string to it.

OUR LATEST Save-the-Horse BOOK is our 18 Years' Discoveries—Treating Every Kind of Ringbone—Thoropin—SPAVIN—and ALL—Shoulder, Knee, Ankle, Hoof and Tendon Disease—Tells How to Test for Spavin; how to locate and treat 58 forms of LAMENESS—Illustrated.

OUR CHARGES for Treatment ARE MODERATE. But write and we will send our—BOOK—Sample Contract and Advice—ALL FREE to (Horse Owners and Managers—Only). Address,

TROY CHEMICAL CO. 20 Commerce Ave., Binghamton, N. Y.
Druggists everywhere sell Save-the-Horse WITH CONTRACT, or we send by Parcel Post or Express paid.

Grinds Oat Hulls at One Grinding

Fine enough to feed swine. Only grinder for the price that does this. Grinds ear corn, screenings, seeds, hay or any grain. 1 set buhrs grinds 1,000 to 3,000 bushels.



Letz Self Sharpening
Silent Buhr
Feed Mill

Write, giving H. P. of your engine and we'll tell you how you can try this Force feed mill 10 days at our risk. Letz Mfg. Co. 210 East Road Crown Point, Ind.



Get More Money

for your crop, by installing a

NAPPANEE SILO

Let us tell you about its many superior features.

Work and material fully GUARANTEED.

AGENTS WANTED.

Address the manufacturers
NAPPANEE LBR. & MFG. CO.
315 Madison Street,
NAPPANEE, INDIANA



W. H. EDGAR & SON,
132 Lafayette
Bldg., Detroit, Mich.

I have.....head of
cattle.....sheep.....hogs
and.....horses. Send me
your trial proposition to prove that
Buckeye Feeding Molasses will benefit
all of them.
Name.....R. F. D.....
P. O.....State.....

Mail this
Coupon
Today

Question 4.—What fees are charged in Minnesota?

Mr. Montgomery:—There we charge \$2 for the first registration, \$1 for each renewal (made once a year), and 50 cents for a transfer. We should like it and it would be much more satisfactory to have the fees enough so that the board could hire their own veterinarians to go and do the examining. This is done in North Dakota, where \$5 is charged for registration and from this amount a fund is provided which enables their board to hire their own examiners who are given a per diem salary.

Question 5.—How often are the examinations made?

Mr. Montgomery:—The first examinations are made about the time the stallion is three years old, and every four years thereafter until the stallion has reached the age of ten years. The board, however, reserves the right to have an examination made at any time and if the stallion is found defective, he is rejected or so placarded. If, at the end of ten years the stallion shows no serious weaknesses, it is a pretty sure bet that he has no transmissible faults.

Question 6.—Supposing that a horse goes until he is three or four years old and then on account of some accident becomes unsound, should he be rejected?

Mr. Montgomery:—The board should be allowed to use their discretion in this matter. If they decide that the strain causing the weakness has been a very slight one, then the weakness is the fault of the stallion and such a weak individual should not be used as a breeding sire. If, however, the stallion should go lame and weak or become spavined from nothing but the wear and tear of use, then he surely is weak and should not be used as a sire with the expectation of getting the best type of foals.

FEEDERS' PROBLEMS.

The Feeding Value of Bean Pods.

Kindly inform me regarding the feeding analysis of bean straw, or bean pods as some call them. Also the feeding value of tankage for hogs, and how much of it to feed to growing pigs.

Clinton Co. L. W.
Unfortunately we have not at hand the chemical analysis of bean pods showing their content of digestible nutrients. They would probably, however, be quite closely comparable to pea vine straw, which has the following content of digestible nutrients: Protein, 4.3; carbohydrates, 32.3; fat, 0.8. Soy bean straw has the following content of digestible nutrients: Protein, 2.3; carbohydrates, 40; fat, 1 per cent. The difference in the protein content of these two roughages is probably due to the fact that the soy bean stalk is much coarser. As there would be a larger proportion of pods to straw in the bean pods than in the pea vine straw, the bean straw would probably be still richer in its protein content. It is certain that bean pods have a high feeding value, particularly for sheep.

The Feeding Value of Tankage.

Tankage contains the following percentage of digestible nutrients: Protein, 31.7; carbohydrates, 15.3; fat, 13.6. It is a valuable food for balancing up a ration in which corn is the principal grain, the most economical results being obtained when not over 10 per cent of tankage is used in the ration.

An Equitable Price for Pasturing Stock.
I wish to get the prevailing price, or at least the right price, for pasturing stock by the month in summer. I do not mean a mere subsistence ration, but using supplementary cut feed when necessary to keep stock growing fast. As stock varies in weight, I want the price by the pound. I know of a case in which a man feeds stock in winter on a contract which pays him two cents per pound of weight of cattle in the fall for maintenance and six cents per pound for the gains made during the winter. It would seem as though some such basis would make an equitable arrangement for the summer feeding of stock, but am not sure what would be an equitable price.

Benzie Co. E. H. A.
This proposition of figuring out an equitable price for the pasturing of live stock is a most interesting one. The example given as applied to the winter feeding of live stock introduces a new element in the attempt to figure out the relation between the cost of maintenance and the cost of gains in fattening stock. It would seem to be quite difficult if not impossible to arrive at absolutely correct figures as to these two costs under farm conditions. This is a proposition for experiment station work, and would seem to be a profitable field for such investigation. The difficulty in figuring this proposition out on an accurate basis is increased by the fact that younger animals make much cheaper gains than

those which are older and heavier. In ordinary practice, when stock is taken in to pasture, the remuneration is based on rental value or an arbitrary price of so much a head, but the proposition of supplementary feeding would make the plan suggested in this inquiry a more equitable one. We are not prepared, however, to suggest the proper price under this plan. The development of the plan, or data relating to the application of a similar plan to this problem, would be interesting if tried by this inquirer, or if any Michigan Farmer reader has had experience along this line.

Sweet Clover as a Forage Crop for Hogs.

Would readers of the Michigan Farmer give their experience with sweet clover as a forage crop for hogs? When to sow it and how long after, before big enough for pasture. Also, what chance has spring rye of producing a paying crop in Van Buren county?

Van Buren Co. V. V. R.
Experience with sweet clover in Michigan is rather limited, but those who have tried it claim it is a forage crop of no small value for any kind of live stock. If hogs are to be pastured on it, the pasturing should be commenced as soon as it gets six or eight inches high and then not overstocked, since the animals will become accustomed to eating it much more readily if turned on when it is small. Alfalfa would be a much better forage crop for hogs, provided it can be successfully seeded.

Spring Rye.

Spring rye does not usually yield quite as well as winter rye, and unless the straw is badly needed, would not in the writer's opinion, be a particularly valuable grain crop to grow.

LIVE STOCK NEWS.

There is every reason to expect a good market for choice flocks of lambs, yearlings, and sheep during 1914, the year starting in a most promising manner. As was the case last year, the crop of native lambs will be short, and during a large portion of the year western sheepmen will be depended upon for furnishing supplies of live muttons. Only for a comparatively brief period can the sheepmen of Kentucky and Tennessee be depended upon for furnishing spring lambs, and it is an undisputed fact that western range flocks have been largely marketed, high prices tempting owners to sell. Of late fat stock has been selling extremely well, with lambs bringing the best values seen in a long time. Extremely few feeders are coming to market in Chicago, and good feeding lambs bring very high prices. Recently prime fat lambs of handy weight sold in Chicago as high as \$8.40 per 100 lbs., with feeding lambs of the best class going up to \$7.10. Fat yearlings, wethers and ewes have sold correspondingly high. There is a lull in the demand for breeding ewes, with yearlings preferred.

Recent shipments of underweight hogs, weighing from 140 to 190 lbs., have been made from Iowa shipping points to the Chicago market, as interior Iowa packers and small butchers in Ottumwa and other places refused longer to purchase such offerings. The constant marketing of pigs and light-weight hogs is bound to make a big hole in future supplies of matured hogs, and this can hardly fail to place values for such on a considerably higher level. The cause of this immature marketing is unquestionably the extreme dearth of corn, many stock feeders being unwilling to run up large feed bills and preferring to sell their corn at the high market prices prevailing everywhere. Within a short time the average weight of all the hogs marketed in a week in the Chicago stock yards fell off to 208 lbs., a shrinkage of seven pounds from the average weight of the preceding week. Meanwhile the packers have been making generous profits on hogs and pigs cut up into fresh meats or into cured meats and lard, the biggest profits being obtained from pigs and underweights, these selling at a large discount from prices paid for much heavier hogs.

There is always on the advent of winter a large movement of partly fattened flocks of lambs and sheep to Chicago and other markets, many owners not being provided with sheds for shelter, and then there are many sheepmen who fight shy of large winter feed bills, this being especially the case at a time like the present, when corn is selling at rarely equalled prices, because of the short crop harvested this year. Where flocks are well finished it is all right to get them to market without any unnecessary delay, and putting on too much weight on lambs and yearlings should always be avoided, but there is no greater mistake than that of sending to market either sheep or lambs before they are properly fattened. Monday is the big day for receipts in the Chicago stock yards, and on a recent week the receipts on the opening day aggregated 51,235 head. Sheepmen are reminded that seldom has there been a year when prospects for fat live muttons were better than they are now.

The packing2 concerns report liberal profits from their business of the past year, Armour & Company leading off with gross earnings of \$350,000,000, the largest ever made. The total net income was \$11,356,094, and the net earnings applicable to dividends were equal to 30.79 per cent on the \$20,000,000 capital stock. The regular dividend rate is 10 per cent.

It will last 'till Doomsday

It cannot swell, shrink, burn down, fall down, blow down or wear out. Buy it now, and your great grandchildren will rise up and call you blessed.

B. V. T. SILO

The B. V. T. is built of glazed vitrified hollow tile made from the finest Brazil Fire-Clay. More lasting than granite. It's reinforced with steel rods that cannot rust, because they are bedded in cement.

The B. V. T. Silo is air-tight, sun-proof, frost-proof, fire-proof, and as nearly time-proof as a solid rock.

No Leaky Air-Joints

You know leaky joints mean spoiled ensilage. Eliminate this, and the silo will do perfect work. Notice the end-view of the B. V. T. See the double inside and outside walls, the triple dead-air-chambers.

Our book explains how this construction (found only in the B. V. T.) insures air-tight joints. B. V. T. Silos are fully guaranteed. We assume all risk. Write today for FREE booklet G. Brazil Hollow Brick & Tile Company Brazil, Indiana



The Hinge-Door SILO

Write today for Free Book telling all about the greatest of all Silos—

"The Silo That Gives Satisfaction"

Hinge-Door prevents freezing in Winter and drying in Summer—saves time and work. Get our offer today—also get offer on the Lansing Silo and the light-running Silberzahn Silage Cutter—Address nearest office, Dept. 15.

Woods Bros. Silo & Mfg. Co.

General Offices: Lincoln, Nebraska
Lansing, Mich., Maryville, Mo., Minneapolis, Minn., East St. Louis, Ill., Topeka, Kansas, Lexington, Ky., Denver, Col., Spokane, Wash., West Bend, Wis.

The Watch Tower of Prosperity

THERE'S NOT AN UNTRIED FEATURE ON THE GUARANTEED

INDIANA SILO

Get ready to build a silo for 1914. We have a special EARLY BUYERS' Proposition which will be of interest. A new book by Benjamin Quod, "The Watch Tower of Prosperity," our new catalog and other literature will be mailed free upon request. Write for them today. Address nearest office.

THE INDIANA SILO CO.

582 Union Bldg., Anderson, Ind.
582 Bile Bldg., Kansas City, Mo.
582 Indiana Bldg., Des Moines, Ia.

THE ROSS SILO

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

Extra Heavy Hoops and Lugs Roof Rafter and Anchors furnished FREE. Backed up by 33 years of experience. Write for catalog which explains all. AGENTS WANTED.

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

The Glazed Tile Steel Reinforced Guernsey Silo

THE FREE GUERNSEY BOOKLET contains valuable information that every prospective silo buyer should have. Tell why Guernseys are proof against moisture, air, sun, wind, fire and time—No painting, no repainting. Agents wanted. Write for booklet, guarantee, etc., FREE.

Guernsey Clay Co., 1102 L.O.O.F. Bldg., Indianapolis, Ind.

SAVE ON YOUR SILO

Be an early buyer and save money on a Kalamazoo Wood or Tile Silo. Galvanized All-Steel Door-Frame provides continuous opening and safe, convenient ladder. Your choice of Tile Block Silo or seven kinds of wood—all Kalamazoo Quality. Catalog and special offer, free on request. Write today. KALAMAZOO TANK & SILO CO., Kalamazoo, Mich. Minneapolis, Minn., Kansas City, Mo., No. Ft. Worth, Tex.

BOWSER SWEEP MILLS

Different from all others. 4 or 2 horses. Grind Corn with chucks and all small grains. (Also make 10 sizes of bolt mills) FREE—Booklet on "Feeds and Manures" D.N.P. Bowser Co., South Bend, Ind.

Horse overshoes that are sharp-shod for icy weather. Buckled on in one min. Let us send you 1 or 2 sets C.O.D. by Par. Post, \$3 per set delivered. Extra treads with sharp calks 30c each, guaranteed to prevent slipping. Write for circular. Herman Mfg. Co., 1420 Pa. Av., Washington, D. C.

Veterinary.

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

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

Hard Milker.—I have a two-year-old heifer that freshened a short time ago and it is almost impossible to milk her, but her udder is normal. A. C. B., Onsted, Mich.—Milking will be made easier by gently and gradually expanding the teat canal, but be sure and use thoroughly sterilized expanders; or, milk her through milking tubes, but be sure and boil them for ten minutes each time they are used, for if you do not disinfect them or sterilize them you are almost certain to infect her udder and ruin her.

Rheumatism.—I have a last spring pig which was a runt when I bought her; she was nearly as big around as she was long. I fed her milk, corn and some oats until corn ripened in the fall, since then fed her mostly corn with some middlings. She was nearly ready to butcher when a week ago she went down in her hind legs. Have given her sodium salicylate in 10 gr. doses three times a day; this helped her for a few days, but she does not improve much and I would like to know if her meat would be fit for food? I. H. R., Coats Grove, Mich.—All things considered I believe you had better slaughter her and I know of no reason why her meat would not be fit for food as her trouble is brought on by feeding her too much corn. If you treat her, give her 20 grs. sodium salicylate and 10 drops fluid extract nuxvomica at a dose three or four times a day. Also discontinue feeding her corn, but feed oats, oil meal, tankage, middlings and roots.

Weak Stifle Ligaments.—Puffy Hocks—Roarer.—I have a three-year-old cow that drags toe and has had stifle trouble for 12 months. I also have a suckling colt that has been troubled since weaning time with puffy hocks and this same colt rattles in throat when running. U. G., Leslie, Mich.—Apply cerate of cantharides to stifle of cow once a week and you may apply the same remedy to hock joint of colt every two weeks and rub throat with camphorated oil once a day.

Hogs Eat Chickens.—I would like to know if anything can be done to prevent my hogs from eating chickens? Rev. V. B., Whitney, Ind.—I know of no way of preventing a hog from eating chickens after they have contracted the habit.

Barrenness.—I have a five-year-old cow that has had three calves; came fresh last time two months ago; two weeks later was bred and she seemed to remain in heat for two weeks; was bred again and has been in heat ever since. I had a Vet. examine her, but found her in a normal condition. A. A. P., Bourbon, Ind.—Give your cow 1 dr. urotropin at a dose in feed twice a day for a week—then give her a teaspoonful of powdered nitrate of potash at a dose twice a day and if she has a vaginal discharge, inject her with the following lotion made by dissolving 1 dr. permanganate potash in a gallon of water daily.

Articular Rheumatism.—I have a mare 12 years old that has periodical attacks of lameness affecting left fore leg, but have been unable to correct or locate her trouble. Occasionally she is used for light work and runs out pleasant days. A. A. P., Bourbon, Ind.—I am inclined to believe that your mare suffers from rheumatism of joints, or it is possible that she met with sprain of coffin joint and recovers after a long rest. Mix together equal parts turpentine, aqua ammonia and raw linseed oil and apply to coffin joint every day or two. Give her 1 dr. sodium salicylate at a dose in feed three times a day, or give her a teaspoonful of powdered nitrate of potash at a dose in feed night and morning.

Fibrous Tumor.—I have a cow that is troubled with a sort of malignant elbow tumor. I cut it off with a string, wound healed, but it seems to persist in growing and at one time it broke open and has remained raw ever since. The healing remedies I have used fail to do their work. A. M. C., Lexington, Mich.—Apply one part iodoform and nine parts powdered alum twice a day, but I am not sure that you will be able to effect a cure without having the entire bunch cut out.

Cowpox.—I have a cow that has spots on her bag and teats that appear like black blood blisters which vary in size of a small pea to end of little finger. The skin on these blisters is rather tough and when broken some blood escapes. Some of these blisters are filled with yellow water. J. L. R., Clarksville, Mich.—I am inclined to believe that your cow suffers from cowpox and if you will dissolve ¼-lb. hyposulphite of soda in a gallon of clean water and apply to sores after blisters are open, she should soon get well. If these sores are inclined to bleed, apply alum and water, 2 ozs. dissolved in a quart of water. Give cow 3 ozs. of epsom salts in a quart of water as a drench daily. This disease is usually spread by the milker.

Heifer Falls to Come in Heat.—I have a two-year-old heifer that came fresh last May and has not been in heat since. E. J., Remus, Mich.—Give your heifer 1 dr. ground nuxvomica, 2 drs. ground capsicum and ¼ oz. ground ginger at a dose in feed three times a day. She should be fed stimulating food.



HEWO BELGIANS They Are Here!

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
Wabash, Indiana
More than a quarter century with the breed.

Metz Bros, Niles, Mich.

We have a fine lot of imported and American bred

Percheron Stallions

on hand and we can sell them for less money than any other importer. Write us your wants.

METZ BROS., Niles, Michigan.

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, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address

KREKLE'S JACK FARM
West Elkton, Ohio.
Branch barns, Clinton, Ind.



FOR SALE

2 Pure Bred Registered Suffolk Stallions 9 years old. Absolutely sound, good stock getters, good to work and as quiet in harness as any mare or gelding. One imported from Suffolk weight 2000 lbs. Other Canadian bred weighs 1800 lbs. Both are registered in American and English Registration Books, and are good enough to go in any show ring; also 3 span of mules and 35 other horses. All horses not sold before Feb. 10th, will be sold at auction at Almont, Mich. on that date. For particulars address

FRANK BISHOP, Almont, Michigan.

3-Percheron Stallions-3 4-Percheron Mares-4

All choice and Registered in the Percheron Registry. Having sold our farm they will be sold at bargain. Write for what you want or come and see them. Farm near the station.

PARSONS & BALDWIN
Watervliet, Berren Co., Michigan.

18 Percheron Stallions

2 to 4 years old, blacks. Also young mares.
A. A. PALMER & SONS,
BELDING, MICH., 1½ Miles from Orleans.

PUBLIC SALE MULEFOOT HOGS

Feb 12th, 1914, four miles west of Milan, Mich. 25 mulefoot hogs, 5 Poland China bred sows, 8 head of grade draft horses and colts, cow and calf. Write for sale bill. **C. F. BACON, Milan, Michigan.**

BREEDERS' DIRECTORY.

ABERDEEN-ANGUS

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

Longwood Farm Aberdeen Angus cattle for sale. Young bulls and heifers, good individuals and well bred. **Marshall Kelly, R. R. 10, Charlotte, Mich.**

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

Guernseys—Four-year-old bull, A. R. Breeding. Three pure-bred heifers. Two high grade heifers. Two bull calves. **G. A. Wigant, Watervliet, Mich.**

IF YOU WANT GUERNSEYS—We want you to consider this opportunity. We have a herd of the most popular Imported and American Breeding and will sell a number of young bulls and heifers. **Village Farm, Grass Lake, Mich., G. W. Allen, Sup.**

WANTED A NUMBER OF GUERNSEY COWS. tuberculin tested, give price and breeding, can also use a few heifers. Address Box A, The Mich. Farmer.

FOR SALE—Holstein Bull Calf sired by Nicholas Hengerveldt Polkadot No. 97618, sired by King Segis Pontiac Polkadot No. 7587. A full brother to King Segis Pontiac Alcantara No. 7962, who sold for \$10,000 at Syracuse June 1910. Dam, Ruth Korndyke Darkey No. 175172, E. E. Stroud, R. 3, Charlevoix, Mich.

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

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

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

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

BULL CALVES—Sired by Albina Bonte Butter Boy No. 93224 whose dam as a Jr. 4 Yr. old has 7 day A.R.O. record Milk 604.8 lbs. Butter 27.08 lbs. **W. B. READER, Howell, Michigan.**

FOR SALE—Holstein Bull Calf mostly white, nicely marked and a beauty, from a registered sire and a high grade dam, 1 mo. old \$20. Also a few choice barred rock cockerels \$1.50. **Hillcrest Farm, Kalamazoo, Mich.**

REGISTERED HOLSTEINS—Did you read my ad last week's Farmer. I have another bull 75 percent same breeding, same age, price and terms. Write for pedigree. **HOBART W. FAY, Mason, Michigan.**

"Top-Notch" Holsteins.

Choice bull calves from 1 to 3 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices.
MOPHERSON FARMS CO., Howell, Michigan.

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

FAIR LAWN FARM

OFFERS YOU A FINE

HOLSTEIN BULL

Just Ready for Service.

6 Dams Ave. better than 25 lbs.
Butter in 7 days.

WRITE OR COME.

REED & KNOWLES, Howell, Mich.

Bigelow's Holstein Farms

Breedsville, Mich.

Have for sale several fine young bulls out of cows with high official butter and milk records.

Send for circular.

Some Holstein Bargains.

Minuto Butter Boy 3d. No. 71404—Dam, Paline DeKol Pride, No. 53183. Butter in 7 days, 26.83 lbs. milk 508.61 per cent of fat 4.22. His sire Minuto Butter No. 28908, with 11 A. R. O. daughters, and he by Pontiac Butter Boy, with 57 A. R. O. daughters.

Handy Walker Segis, 13 months old, by a grand son of King Segis, 7 A. R. O. daughters and out of a 22-lb. dam.

Star Pontiac Bonheur, 13 months old, by a grand son of Pontiac Korndyke, 77 A. R. O. daughters, and out of a daughter of Rosa Bonheur 5th, Colantha Lad, 10 A. R. O. daughters. DON'T buy a bull until you know about these three.

FIVE A. R. O. cows, each with a heifer calf, sired by Minuto Butter Boy 3d. No. 71404. A BARGAIN to some one wanting 10 females. Write or come QUICK if you want any of the above bargains.
L. E. CONNELL, Fayette, Ohio.

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

High-Grade Cattle—High-Grade Farmers

The pure-bred Jersey Cow

is one of the most high-grade animals ever developed by man. The high-grade farmer demands the high-grade cow. No breed equals the Jersey for the economical production of high-grade milk and butter. No breed equals the Jersey for intensive farming.

Send for information to
THE AMERICAN JERSEY CATTLE CLUB
324 W. 23d Street, New York

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

JERSEYS—Six bull calves one to twelve months old, solid color, good breeding. **MAHLON INSKEEP, Holly, Mich.**

MAPLE Lane Register of Merit Jersey Herd—Tuberculin tested by the U. S. Bureau of Animal Industry. Bull calves from cows of R. M. test. No females less than \$100. Average of R. 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.

4 REG. SHORTHORN BULLS
From 5 to 13 mos. old, color red. Write for pedigree and prices. **Wm. D. McMullen, R. R. 9, Adrian, Mich.**

DAIRY BRED SHORTHORNS—of best bates Strains bred 26 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.

9 Shorthorns—Bulls from 8 to 12 months old. Best of breeding. Write for pedigrees. **W. W. KNAPP, Howell, Mich.**

SHEEP.

SHEEP SHEARING—Done by experienced men with up-to-date machinery. For information address. **E. S. Bartlett, Peacock, Mich.**

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS, "the sheep man of the east." Oxfords, Shropshires, Rambouillet, Follies Delaines, **PARSONS, R. 1, Grand Ledge, Mich.**

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2½ miles E. Morrice, on G. T. R. R. and M. U. R. **J. Q. A. COOK**

HOGS.

DUROCS & VICTORIAS—Prize winners at the large fairs. Choice stock for sale. **STORY FARMS, Lowell, Mich. City Phone 55.**

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

BERKSHIRE For Sale—Sow bred for April farrow. ing and a choice lot of fall pigs either sex. **A. A. PATULLO, Deckerville, Michigan.**

Chester Whites—Spring and summer pigs, write us your wants. Price and sale by right. **Meadow View Stock Farm, R. F. D. No. 5, Holland, Mich.**

O. I. C.—Boars all sold. A few gilts bred for April and May farrow. **C. J. THOMPSON, Rockford, 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.**

WRITE US Your Wants For Reg. Chester White Swine, Holstein Bulls, Scotch Collie pups. Sept. pigs now ready for shipment **RAY B. FARHAM, Bronson, Michigan.**

O. I. C.—Spring boars all sold. Have a fine lot of O. I. C. spring gilts, Sept. pigs, ready to ship, not akin. Lengthy Prince No. 2816, head of herd. (Will weigh ½ ton when mature.) **A. Newman, R. 1, Marlette, 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.**

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

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

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan. "How to Make Money from Hogs." **G. S. BENJAMIN, R. 10, Portland, Mich.**

O. I. C.—Swine, Holstein Bull calf, Bt. R. and White Leghorn Chicks. Write me your wants. **FRED NICKEL R. No. 1, Monroe, Michigan**

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 growing. 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.**

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

Duroc Jersey Gilts of the large heavy boned type, bred for April farrow. Also fall pigs, pairs not akin. **F. J. DRODT, Monroe, Mich. 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 McNeill, Station A, R. 4, Bay City, Mich.**

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

Durocs—25 large high class sows, bred for March & April to Parney Crimmon, Cherry Advance & Oakland Fancy. Write or come & see. **J. C. Barney, Coldwater, Mich.**

DUROC JERSEY BRED GILTS to farrow in March and April of the best blood lines. **W. C. TAYLOR, Milan, Michigan.**

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

DUROCS—Fall yearling sows and spring gilts, bred for March and April farrow, bred to two of the best bred boars in the state. Also a few boars (all are improved) Come or write. **H. G. KEESLER, Cassopolis, Mich.**

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

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

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

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market in 6 months. Why? Because we've bred them that way for 20 years. Buy a bred sow or some pigs now, and make more money. 50 bred sows, 100 fall pigs. Poland China history free. **J. C. BUTLER, Portland, Mich.**

Poland China—Sows bred, also summer and fall pigs, from large, prolific sows. Barred Rock cockerels, \$1 each. **ROBERT NEVE, Pierson, Mich.**

Poland China Bred Sows Fall Pigs and Minorca cockerels. Satisfaction guaranteed. **R. W. MILLS, Saline, Michigan.**

POLAND CHINA Bred sows and fall pigs prices right. **G. W. HOLTON, R. No. 11, Kalamazoo, Mich.**

Large Type P. C.—Bred gilts ready to ship weighing from 300 to 325 lbs. Sired by and bred to the largest boars in the state and from dams weighing up to 700 lbs. Come and see and be convinced. Expenses paid if not as represented. **W. E. LIVINGSTON, Parma, Mich.**

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.**

LARGE T. P. C.—Some extra good gilts. No better breeding to be had anywhere. Can Spare Big A Wonder, extreme long body and heavy bone, weight 300 lbs. **H. O. Swartz, Schoolcraft, 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 pigs, not related for sale. Satisfaction guaranteed. **G. C. KREGLOW, Ada, Ohio.**

YORKSHIRES—Boars all sold. Have a few sow pigs being held for last of April and May farrow. **OSTRANDER BROS., Morley, Mich.**

LARGE YORKSHIRES—Fall pigs, both sexes, pairs not akin. Yearling sows bred for March farrow. **GEO. L. McMULLEN, Grand Ledge, Mich.**

YORKSHIRES—For sale Yorkshire gilts, bred for April farrowing. **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!!

BANG!!

No Money Down

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. That's our policy. 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. 600 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 Composition Roofing, Hardware, Carpenter's and Blacksmith's Tools, Wire Fencing, No prospective builder should be without it. It is Free.

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 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 get 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 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, Furniture, 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. DUCELLO.

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 5CD-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 6 room house, with all necessary plans and complete instructions for installing, for \$45.00.

Iron Pipe and Fittings

Good iron pipe in random lengths for gas, oil, water and conveyance of all liquids; size 3-8 to 12 inches; our price on 1-in. per foot 3c; 1-1/2 inch 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 illustrated 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 stock, 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.



Our House No. 6A

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.

No Worry No Loss No Waste

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 pencil 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 upon reels about 100 lbs. to the reel. Lot 2-CD-36 per 100 lbs. \$1.95. Galvanized barb wire, light weight, best grade, best made. Put up exactly 80 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, \$1.85. Write for our free Wire and Fence Catalogue. Gives valuable information to any land owner. Fill in the coupon below.

SMOOTH GALVANIZED WIRE 100lbs. \$1.00

Suitable 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 8,000,000 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.

Fill in This Coupon

HARRIS BROTHERS CO., Dept. C. D. 43 Chicago

Send me free of cost the following catalogs. (Place an X mark in square opposite the catalogs you wish)

- | | |
|--|--|
| <input type="checkbox"/> Catalog of 50,000 Bargains | <input type="checkbox"/> Building Material |
| <input type="checkbox"/> Plan Book of Houses & Barns | <input type="checkbox"/> Roofing, Siding and Ceiling |
| <input type="checkbox"/> Wire and Fencing | <input type="checkbox"/> Plumbing & Heating |
| <input type="checkbox"/> | <input type="checkbox"/> Paint |

My Name is.....

My Address is.....

County..... State.....

R. R. P. O.

HARRIS BROTHERS CO., 35th and Iron Sts. Chicago