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

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

VOL. CXLIV. No. 2
Whole Number 3817

DETROIT, MICH., SATURDAY, JAN. 9, 1915.

50 CENTS A YEAR.
$2 FOR 5 YEARS.

The Gasoline Engine on the Farm.

THE gasoline engine is the most inexpensive and successful power that can be used on the farm. This is a fact to which up-to-date farmers everywhere are fast awakening. On a great many farms, my own farm included, the gasoline engine has found a place of its own and on some of the most progressive farms there are from four to a half dozen engines in use, ranging in size from the two horse power for use around the dairy, for pumping water, washing, sawing wood, and other small jobs, to the massive 40 horse power tractor which in spring and fall is used to do the plowing and fitting, and at harvest time to do the threshing and run the ensilage cutter, etc.

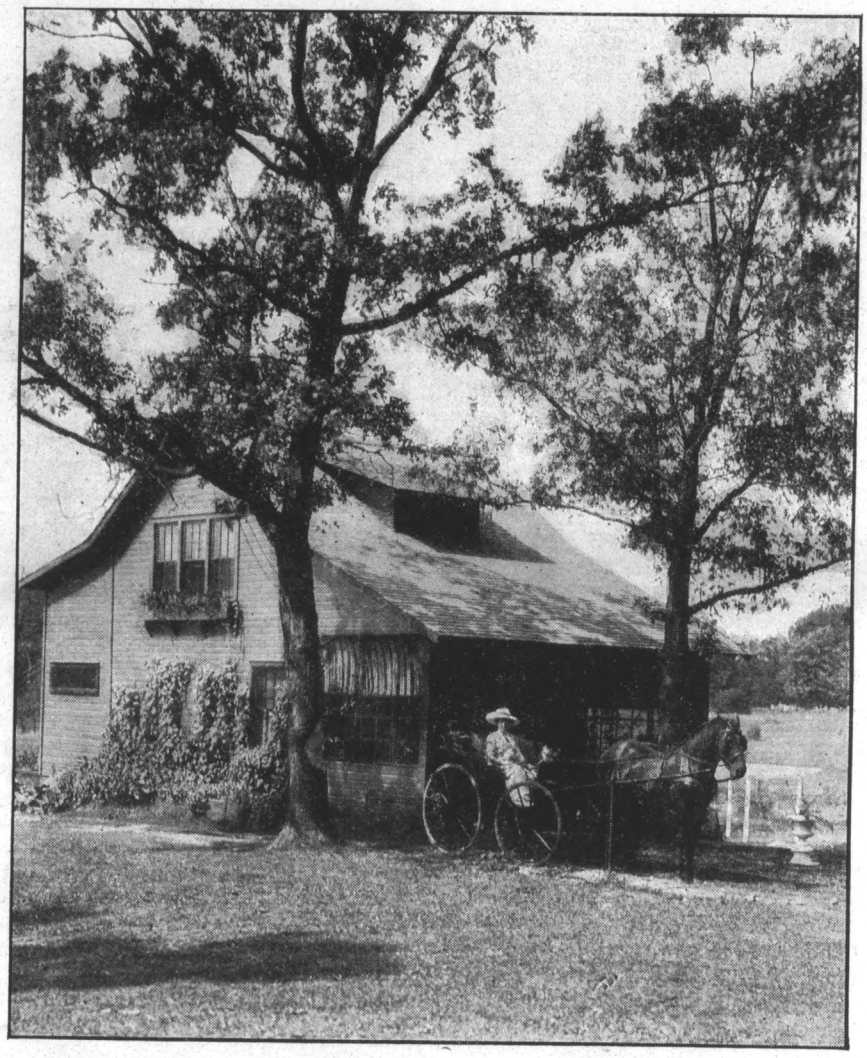
The galosine engine can be used equally as well on the small farm as on the large one. Practically every farmer, no matter what the product of the farm may be, can find profitable use for a gasoline engine. A small engine can be used to good advantage on the small farm, while on the large farm use will be found for three, four or perhaps more.

My first experience in using a gasoline engine on my farm was about six years ago when I bought a two-horse power. It proved to be such a labor saver, doing its work at very little expense and causing no trouble at all, I was not long in buying a larger one, this latter being a six horse power. These engines have saved me a great many dollars and while they have done a great amount of work I cannot tell but that they are in as good condition as when I purchased them. I have had to buy some repairs but the parts needed have been so few and the cost so small that I can hardly consider them. There is no machinery used on the farm that has no parts which will not eventually break or wear out, be it gasoline engines, mowers or any other machines, but I am enabled to say that my engines have caused me less trouble and expense in this respect than any other machinery used on my place during the past six years.

Study the Engine Carefully.

When I purchased these engines I studied them carefully until I fully understood their operation and had the boys and hired men to do likewise. There is not a person on the place who can not run them. Even my wife operates the small engine when using the washing machine, cream separator, etc. There is no danger in using a gasoline engine for when something goes wrong with it all it will do is to stop.

When a man begins to consider seriously the purchase of an engine he will often ask these questions: "What size shall I buy?" and "what will this size cost me?" These questions he may answer for himself by inquiring first of some manufacturer of farming implements as to the amount of power required to operate the machines he intends to use. Then, when he has an idea of the amount of power he will need, he can ask some reliable engine maker the cost of an engine of suitable power. For the average sized farm where one engine is to be used a six horse power will supply sufficient power to run the forge, a work shop, drill, etc., for the repair of tools and implements, a cream separator, churn, butter worker, pump and wood saw, and also a very important outfit on the farm, namely, the electric generating plant for supplying light for the farm buildings and house, and power for the washing machine, or heat for toaster and flatiron. And thus the engine gives the farmer the privileges and conveniences of the city, besides the use of electricity for heating and lighting purposes, which help in eliminating the risk of fire.



The Bungalow is an increasingly Popular Type of Farm House. (See P. 34).

In using the engine about the dairy it is best to use a line shaft large enough to accommodate belts from the cream separator, churn, butter worker and pump. By using pulleys of the right sizes the correct speed for each may be obtained, which is a most essential point to bear in mind when setting up the engine, as a few revolutions per minute more or less will make a large difference in the satisfactory running of a fine geared machine, such as a cream separator. At the barn the engine will perform most satisfactory work in operating the fanning mill, feed grinder, cutting box, bone cutter, etc. It is best to have such machines as will be convenient to operate at once connected on the line shaft, that is, as many as the horse power of the engine will run without overloading it.

Power Considerations.

The normal speed of an engine is the velocity or number of revolutions of the fly wheel per minute that will best enable it to carry its full rated load constantly. Supposing, for instance, that the engine will carry a six horse power load at 380 revolutions per minute with the greatest fuel economy; more power is obtained with increased speed, but it requires more fuel and unless the valve areas are large enough the economy will not be as good. The normal rating by manufacturers should be the best speed for greatest fuel economy. It is true that at a higher speed more power may be developed but it will not be in keeping with the increased amount of fuel used. We may get more work out of a poor horse by feeding him with plenty of fancy selected food but he won't last long, whereas with a better horse we can get the same work done on more plain and less expensive food and he will last longer. Of course, I don't mean to feed good horses carelessly. I use these expressions simply to illustrate a point.

An engine used for sawing wood, grinding grain and cutting ensilage must be built rigid and strong. For wood cutting the outfit may be mounted on wheels for the sake of easier transportation. The amount of work done will depend, of course, on the kind of wood sawed, soft wood being easier sawed than hard wood, and more will be cut if the sticks are small. A three horse power outfit will keep two or three men busy and will saw soft wood up to eight inches in diameter.

For feed and ensilage cutters the power required varies greatly with the size and make of the cutter and the height to which the corn is to be elevated and whether a blower or carrier is to be used. Self-feeding cutters, with carriers and 12-inch knives, will require from six to eight horse power. If a blower type of machine is used the power will have to be increased about 50 per cent.

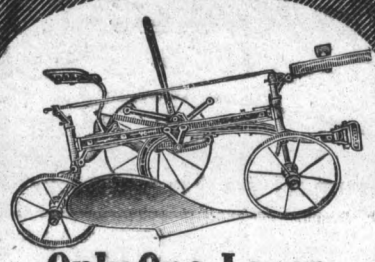
A great deal of care should be exercised in the selection of an engine for grinding purposes, especially to make sure of having enough power as grinding is a steady drag, being one of the hardest kinds of work on an engine. Each horse power will grind from two to five bushels of corn per hour, depending upon the amount of moisture in the grain, the make of the mill and the fineness to which the grain is to be ground.

In the barn the engine will perform a large number of jobs better and in much less time than if done by hand, and here also it is well to use a line shaft and have as many machines running at once as the power of the engine will warrant. It is in the dairy that one will find the engine very useful, as it will be used morning and evening to furnish the power for running the cream separator, and during the week it will be found indispensable for running the churn, butter worker, and pump.

Factors in Successful Operation.

Some farmers who contemplate buying a gasoline engine may think it is a curious, stubborn thing that will go when it feels like it, and wont go when it don't feel like it, and that the operator is helpless till the engine gets ready to start. This is all wrong. When the engine runs there is a cause or reason why it runs, and when it stops there is a cause or reason why it stops. If the owner will learn the reason or cause that makes his engine run, he can find out readily why it stops. Gasoline engines are built on mathematical and scientific principles. In the economy of progress in any line or direction three factors at least must usually be present. Given two, we may find the other and we reach the progressive result. Take a young man with health and energy and without judgment he may prove a failure. Combine judgment with health and energy and we have success and progress, and so on through the var-

The New Janesville Plow



Only One Lever Needed

We have done away with the bothersome second lever. This one lever working with the foot lift controls the plows while plowing deep or shallow.

Operate Foot Trip Only

Set the depth lever to plow as deeply as you wish, and you are fixed for the day's plowing, operating the foot lift only at the ends of the field. Simply press the foot trip, and the plow enters the ground point first; touch it again and out it comes. This simplicity in construction takes a whole lot of work and worry out of plowing as you go round after round in any kind of a difficult field.

Floating Bottoms Assured Depth

The depth of the furrow is the same all over the field, up hill or down, as well as in the hard spots. This is regulated automatically by the hang of the plow bottoms in the frame. The plow bottoms have just enough motion at the cutting edge of the shares to take away the "pinch" at the plow points as they turn over the furrow. It is somewhat like the flexible movement that you get in a spade when digging into hard ground, you must work the handle a little before the spade will enter. This easy motion reduces the all-day pull of the team as the plows glide through the soil.

Easier Pulling

Don't forget the sun-baked fields in the late summer when your poor horses will have to sweat and pull to turn over the hard ground, or next spring when the work is rushed and your colts are green. This flexible movement is found only in a plow like the Janesville. The proper suck of the bottoms is self-regulating according to the depth you are plowing, and as the shares become dull more suck is added, another feature found only in the Janesville.

No other wheel plow hugs the furrow wall like this New Janesville. This provides steadiness, allows more tug room, insures even width of furrows, and makes easier work for you and the horses.

These are only a few features found in this New Janesville, but they help take the hard work out of plowing. You save your team, you have an easier day yourself, and you speed up good plowing with less effort.

Write for Booklet

of many actual field scenes showing how the six times World's Champion won with Janesville Plows. It's the secret of all good plowing and how it is done. Write for copy.

THE JANESVILLE MACHINE CO.
49 Center St. Janesville, Wis.
Established 1859
Builders of Harrows, Planters, Cultivators and

JANESVILLE PLOWS
Manufacturers of Farm Implements
With S. & S. Auger Twist Moldboards

Your Land Will Not Grow Clover Profitably

Because years of farming has used up the Phosphorus in the soil. Daybreak Finely Ground Phosphate Rock will supply the Phosphorus at a cost of $1 per acre per year.

"$4,000 worth of clover from 40 acres," "2½ tons increase from 1,000 pounds of Phosphate, an average of ½ ton per acre from each dollar's worth of phosphate" are reports from some of our customers.

Write us today for phosphate prices and we will send you "The Farm That Won't Wear Out," by Dr. C. G. Hopkins.

FEDERAL CHEMICAL CO.,
Ground Rock Dept.
10 Bank St., COLUMBIA, TENN.

Government Farmers Wanted:—Age 21 to 50. Make $125 monthly. Write, OZMENT, 17 F, St. Louis, Mo.

ious departments of knowledge and progress in any line. Now, all the gasoline engines are dependent absolutely on three grand factors or principles, which must be present to secure their proper movement and capacity. The absence of either is a dead failure of the engine to move. I will place these factors in order in the relation of the progress of the gasoline engine movement.

We must have, first, a good electric spark. It is folly to try to start or run the engine unless we have this and the wires must be in proper shape, tight and trim, and the connections all good to carry this spark to the igniter, which is in the cylinder. I have seen an expert come to a dead engine that could not be started and with his fingers trace the trouble to a broken insulated wire. The insulating casing on the wire prevented the break from being seen and it was found by tracing all along the wires by pressure of the fingers. After trying the usual methods to start the engine without success, the expert traced the wires and in five minutes from the time he arrived the engine was at work. A 30-mile trip had been taken to do a very simple thing.

Second, the engine must supply to the cylinder a proper amount of mixture of gasoline and air. Too little gasoline will not do and too much will flood the cylinder and extinguish the spark. Just the right quantity comes to the operator by experience. A knowledge of the proper color of the exhaust and the sound and time of the explosions will soon be acquired. The instructions which accompany the engine are generally very clear on these points. Every user of a gasoline engine should carefully study its principles and the instructions which come with it.

Third, the engine must have good compression. That is, the piston or plunger must fit the bore in the cylinder snug and close so there is no leak at the time of the explosion of the charge that the full force of the explosion may be exerted on the head of the piston and drive it back with all the power of the explosion of the charge of gasoline and air.

Considerations in Purchasing.

If these three factors or essentials be present, first a good live spark, second gasoline and air gotten to the spark at the right time and in the right quantity and mixture, and third, good compression in the cylinder, the engine will go. Now, the facilities for connecting these three factors in their proper relation and timing the explosion to strike the piston head just when power is needed to drive it out and maintain a suitable speed for the work to be done, are the parts that make up the advantages of the different styles of engines that are competing for purchasers.

Simplicity is a cardinal point in every class of machinery. If we can combine simplicity with good service, it will always be welcome. Complicated parts that are not readily seen and difficult to get to, make lots of trouble. The engine that will start up under its load and do the work required of it, and at the same time has fewest complicated parts to worry and annoy the owner out in the country away from expert service, is the engine that will prove most satisfactory.

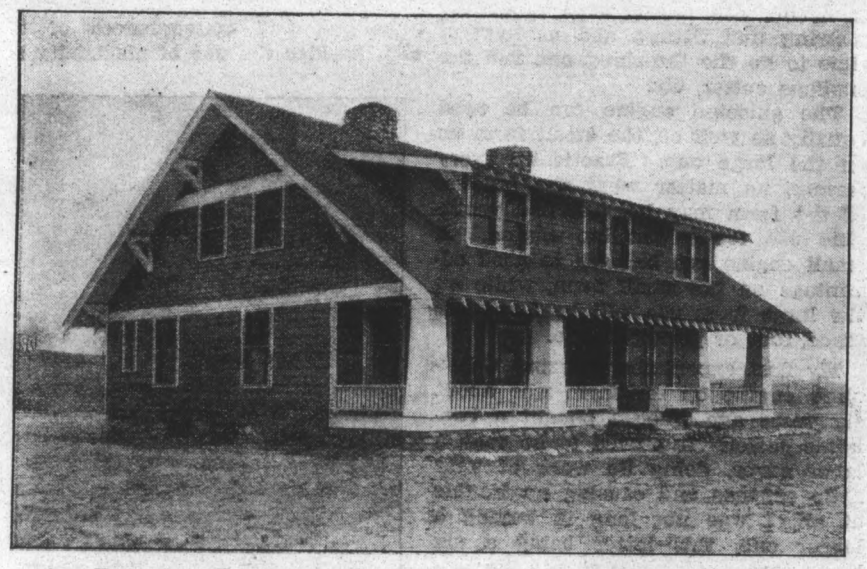
In view of the above facts it is a good plan when one is going to buy an engine, to write and get the literature from several gasoline engine manufacturers or dealers, as he will then have a number of different styles of engines to select from and will be much more certain to purchase an engine that will give him entire satisfaction than he will if he answers the advertisement of or inspects the engines of only one dealer. Before I purchased my six horse power engine I wrote to nine different engine firms and while one man's engine might have been just as good as another's, the engine I selected appeared to me to fit my case exactly, and it did. I know of no investment that will pay a farmer better than a gasoline engine.

Illinois. W. M. HARDY.

This is the tenth of 52 special articles to be published in consecutive issues of the Michigan Farmer. The subject of the special article for next week will be "Canning Factory Crops for the General Farmer."

PLANNING THE FARM BUILDINGS.

The planning of farm buildings is a very important consideration on any farm where new buildings are being erected or old ones rebuilt. If one takes pains to notice the almost universal absence of any well defined plan of arrangement or grouping of farm buildings on the great mapority of farms, he will appreciate this fact the better. In former days, it was the almost universal practice to follow the particular style of architecture with which the local carpenters were familiar, and as in most cases the farm buildings were built piecemeal as the owners could afford the general lack of a comprehensive plan in their arrangement and grouping was a natural result. At present, however, rural architecture has progressed to a marked degree and the country is better supplied with capable mechanics than in pioneer days. Farmers are also generally better able to finance their building operations than was the case even a few years ago, hence there is less excuse now for a lack of forethought in the planning of farm buildings and their arrangement and grouping in a manner which will conduce to the economic operation of the farm and at the same time best serve the comfort and convenience of the family.



Bungalow Farm Home of E. J. Eustick, of Leelanau County.

In the building of houses more decided changes have occurred in very recent years than with other farm buildings. The bungalow type of house is perhaps the latest development in this change, but whatever the type of house built, there is a very noticeable tendency toward utility rather than ornamentation, and of substantial construction rather than fanciful finish. This change is undoubtedly in better harmony with the natural surroundings of the country than the type of country homes which have been built in any period since the Colonial styles were in vogue. The main point to be observed in this connection is that the modern house should be built to facilitate the convenience of the family and at the same time so carefully planned as to present an attractive appearance.

In the planning of barns and other outbuildings, better judgment has ordinarily been used than in planning farm houses, particularly since the more recent development of our dairy industry and a general appreciation of sanitary considerations connected therewith. Here, again, utility should prevail, coupled with as large a degree of good appearance as can be secured. There is as great opportunity for the careful planning in the grouping of the smaller outbuildings and equipment as the planning of the more important units of the farm plant.

The illustration on the opposite page shows a case in point. Here, although apparently but a few hogs are maintained on the farm, a concrete feeding floor has been constructed to prevent waste in feeding. It is built next to a granary or small building where feed is stored for the hogs. The sleeping pen for the hogs is little more than a continuation of the feeding floor roofed over in a cheap manner. This is located in a small hog lot adjacent to the barnyard so that the hogs can be admitted to the yard if it is desired to have them follow cattle. In the background will be noticed a portable chute which is used for the loading of hogs when they are taken to market. Also there is a set of platform scales, a very essential feature of farm equipment. Altogether this simple scene shows the use of considerable thought in planning the smaller details of farm buildings and should prove an inspiration and suggestion to any reader who contemplates making even minor improvements in his farm buildings during the coming year. It will pay to give the proposition as careful consideration as the owner of this group of buildings has evidently done.

MICHIGAN EXPERIMENT ASSOCIATION.

Annual Meeting and Seed Exhibition.

The fourth annual meeting of the Michigan Experiment Association will be held at East Lansing, January 14-15, 1915, directly following the meeting of the State Live Stock Associations. The annual exhibition of corn, grains, etc., will be open from January 12-15. Premiums are offered in the usual classes of corn, oats, wheat, rye, beans, etc. Through the courtesy of the Michigan Bean Jobbers' Association, the bean section will be considerably enlarged. In the bean classes, two samples will be required for each entry—one to be a well picked sample, the other a sample of the crop as it came from the thresher. These will make it possible to locate some of the best crops of beans, those of the right type, comparatively free from disease and in other respects well suited to use for seed purposes.

The association members and others interested in improved seeds are urged to be present. The program is designed to be especially helpful along the line of better varieties, seed selection, sale of pedigreed seeds, etc. The variety testing and breeding work carried on by the College will be brought up to date. The question of securing suitable alfalfa seed for Michigan planting will be up for discussion and a representative of the great alfalfa seed producing section of the northwest will be present to address the association. The discussion of vetch and sweet clover as suited to Michigan conditions will occupy a prominent place on the program.

For further information and for premium list write to V. M. Shoesmith, Secretary, East Lansing, Mich.

"Try-a-bag" of fertilizer. Our brands are soluble and active, and not only increase yield, but improve quality and hasten maturity. Agents wanted. Address American Agricultural Chemical Co., Cleveland, Cincinnati, Detroit or Baltimore.

Good Roads News.

THE fifth biennial report of the state highway department shows that townships, counties and the state have expended a total of very close to $50,000,000 on good roads in the past 13 years. This sum does not include the money that has been spent this year.

Wayne county members of the Legislature will strongly oppose any attempt at the coming session to revive the horse power automobile tax. Wayne road officials favor an amendment to present law regarding state awards, on the ground that Wayne and many of the smaller counties are not getting just returns. It is claimed Wayne has paid in $416,000 under the state reward system and has received in return but $82,000. Commissioner Hines strongly favors retention of the present county road system.

Good roads officials of Michigan and Ohio met at Monroe and a committee of 15 was appointed to devise ways and means of improving the highway between Monroe and Toledo.

Muskegon county has voted that hereafter the city and every township can get free gravel for street or road improvement work from either of the two county pits. The only charge made is for clearing and keeping pits clean. The wages of the county road crew are reduced from $2 a day to 20 cents an hour.

Berrien county has awarded contracts for building about 31 miles of waterbound macadam roads in 1915. The Good Roads Supply & Construction Co., of Chicago, will build the following: Territorial road, 3.6 miles, $24,009.35; Napier road, 2.2 miles, $17,000; Pipestone road, 4 miles, $28,871.10; Paw Paw river road (long section), 3.1 miles, $21,146.97; Paw Paw road (short section), three-fourths of a mile, $5,940. The Lehigh Stone Co., of Kankakee, Ill., will build as follows: Galien-Buchanan road, 6.4 miles, $36,759.15; Galien-Stevensville road, 3¾ miles, $20,566.65; Lake Shore road, six miles, $42,977.09. The Elkhart Bridge & Supply Co., of Elkhart, Ind., will build the culverts and bridges, at cost of $3,910.90. After 1915 it will be possible to travel from Watervliet and other points in Berrien county through to Chicago, a distance of nearly 150 miles, on improved stone roads.

The European system of planting fruit trees along the highways is recommended for adoption in this state by the Michigan Good Roads Association.

Warden Russell, of Marquette prison, Warden Fuller, of Ionia, and other Michigan penologists, oppose the plan of prison labor on roads. The ground taken is that the work deprives men of schools and library advantages, regular baths, etc., and is a survival of the old system of hard labor, and opposed to the new penology.

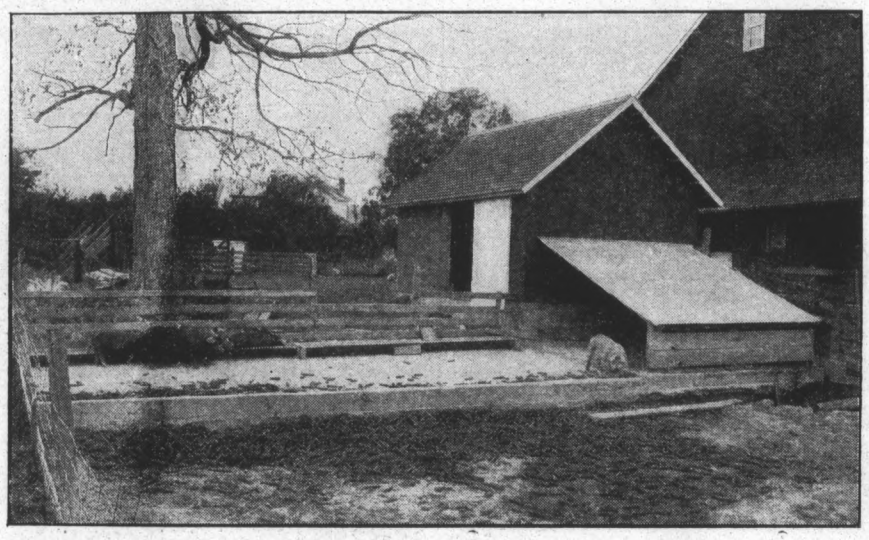
A good roads meeting was held recently at Lapeer, called by Mayor Frary of that city, and with about half of the townships represented. It was the sense of the meeting that Lapeer county should bond for sufficient money, probably $500,000, to build 239 miles of improved highways, following the plan that was carried out in Genesee county. A committee was named with at least one member in each township, to circulate petitions asking the supervisors at the January session to submit the proposition of a bond issue for action at the spring election.

Kent Co. ALMOND GRIFFEN.

MICHIGAN'S CHAMPION CORN HUSKER.

P. E. Thomas, of Kent county, claims the championship of Michigan for corn husking. He established a new record this year on the farm of R. G. Brumm, in Barry county, when he husked 146 bushels in 10 hours, an average of 14 3-5 bushels per hour, or one bushel to each 4 2-7 minutes. His best time during the day was 15 bushels in 40 minutes. Mr. Thomas' grandfather was an expert husker and at one time did even better than the grandson's best record, husking 168 bushels in 10 hours. His father husked 147 bushels in 10 hours. Mr. Thomas has made a business of husking corn for 17 years. He says the corn in Mr. Brumm's field is the best in which he ever worked. The corn is of the Folsom's yellow dent variety. Mr. Brumm's field contains 8 1-6 acres and the total yield was 1,143 bushels, an average of 140 bushels per acre. There is no question about the correctness of Mr. Thomas's record, as accurate time was kept on his work and on the measure of his corn by Mr. Brumm. Mr. Thomas says he expects to beat his own record and that of his grandfather next year.

Kent Co. A. D. S.



A Good Job of Planning—(See Planning Farm Buildings, Page 34).

MORE BIG EARS OF CORN.

I saw in The Farmer of November 28 the report of a large ear of corn that had 24 rows and 1,152 kernels. I can beat that. I have one with 28 rows and 1,205 kernels.

Calhoun Co. F. PITTLEKOW.

In a recent issue of the Michigan Farmer I noticed the reports of different parties, of big ears of dent corn. Now let me report an ear of Yellow Flint corn, Compton's Early Flint, which is one foot in length, has 14 rows of corn thereon, that number 840 kernels.

Lapeer Co. M. A. CRAWFORD.

Thirty-three to 35 degrees is the best temperature for storing potatoes. A thermometer does not cost much and at least one should be hung where the potatoes are stored. It may save many bushels of potatoes. It is a good plan to test the thermometer. This can be done by securing a standard thermometer. Put them both in water for a few minutes and see if they register the same.

$5 Outfit FREE
This Offer For January Only



Manson Campbell

Corn Grader Free My Corn Grader that grades Seed Corn perfectly for your drop planter, now goes **Free** with my Chatham Machine. Formerly it sold for $5.00 extra.

Wild Oat Separator Free
My new Wild Oat Separator can be had free in place of the Corn Grader Apparatus. FREE, remember, with any Chatham, New Gang takes out every Wild Oat—from wheat, barley and flax—gets them—EVERYONE.

I announce **for the next 30 days** absolutely the **lowest prices and most liberal terms ever known.** This Offer Extraordinary is made possible only through tremendously increased sales and consequent reduction in factory costs.

Reduced Prices The total cost of my Chatham Grain Grader and Cleaner with all equipment and attachments is almost $10.00 less than a year ago. That's an astounding saving on a machine of this kind.

Liberal Credit I now sell for cash or on long time credit, requiring no security except your personal promise. You can wait till next October to pay, if you wish.

Free Trial I now ship on **wide open free trial,** no matter where you live—no money down—no deposit—no notes or promises to pay until you have had a full month's home test and have decided you want to keep the machine.



Write
This offer is so **special** that I reserve the right to withdraw it in 30 days. If you want to take advantage of it ACT AT ONCE.

Send Postal today and get, **by return mail,** my Special 30 Day Proposition and Free Book, THE CAMPBELL SYSTEM OF BREEDING BIG CROPS.

The Manson Campbell Company
Dept. 60
Detroit, Michigan
Kansas City, Missouri
Minneapolis, Minnesota

Chatham Grain Grader and Cleaner, with 1915 equipment, handles practically every Grain and Grass Seed grown on American Farms.

WHEAT and RYE
Removes Wild Oats, Chess, Cockle, Wild Buckwheat, etc., from ALL kinds of wheat. Grades all varieties; excels hand picking.

OATS
Removes mustard, kale, wild peas, quack grass, cockle and other ordinary weeds. Blasts straw joints, chaff, thistle buds. Separates timothy, wheat, vetch. Grades out twin oats, pin oats, hull-oats. Makes perfect grade for drill.

BARLEY
Brewers and seed grade free of Wild Oats and Mustard or any other weed.

BEANS and PEAS
Cleans, grades and removes splits and defectives from 18 varieties, including cow peas.

CORN
Blasts cobs, chaff, silks. Removes broken grains, shoe pegs, tips, butts and uneven kernels; grades flat, even grains for 98% perfect drop.

CLOVER
Removes buckhorn and 62 other weeds without waste

TIMOTHY
Removes plantain, pepper grass and 33 other weeds. Saves volunteer timothy from oats and wheat.

ALFALFA & FLAX
Removes dodder and foxtail; heads, stems, fibers, wild oats, mustard, barnyard grass, false flax, broken wheat. Blasts out shrunken, frozen or droughted seed

Backed by my Free Service Dept. (extra screens and sieves free) I guarantee you can do all these things.

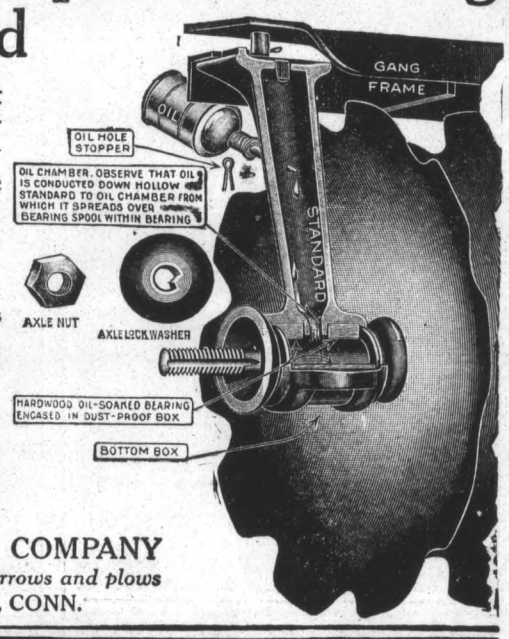
A New Dust-proof Bearing Perfectly Oiled

Here is an improvement that tells in still another way of durability, efficiency and light draft found in the

Cutaway (CLARK) Disk Harrows and Plows

The illustration in this announcement shows how our hardwood oil-soaked bearings are now encased in metal dust-proof boxes; and how the oil is conducted inside of the bearings. Could it be simpler? Could it be improved?

Ask your dealer to show you a CUTAWAY (CLARK) disk harrow or plow. If he doesn't handle them, write us at once for free catalog.



THE CUTAWAY HARROW COMPANY
Maker of the original CLARK disk harrows and plows
992 MAIN ST., HIGGANUM, CONN.

New KEROSENE LIGHT BEATS ELECTRIC OR GASOLINE
10 Days FREE—Send No Money



TWICE THE LIGHT ON HALF THE OIL

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days, then you may return it at our expense if not perfectly satisfied. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 14 leading Universities show that it

Burns 50 Hours on One Gallon common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

$1,000.00 Reward will be given to the person who shows us an oil lamp equal to the new **Aladdin** in every way (details of offer given in our circular). Would we dare make such a challenge if there were the slightest doubt as to the merits of the **Aladdin? GET ONE FREE.** We want **one user in each locality** to whom we can refer customers. To that person we have a special introductory offer to make, under which one lamp is **given free.** Write quick for our 10-Day Absolutely Free Trial Proposition and learn how to get one **free.**

Men with rigs make $100 to $300 per month Delivering the ALADDIN on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 31 calls." Thousands who are coining money endorse the Aladdin just as strongly.

No Money Required We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory.

MANTLE LAMP COMPANY, 614 Aladdin Building, Chicago, Ill.
Largest Manufacturers and Distributors of Kerosene Mantle Lamps in the World

WHAT DO YOUR SAVINGS EARN?
We offer for the safe investment of your funds
MUNICIPAL BONDS
Yielding from 4% to 6% income, many issues tax free.

These bonds are paid from taxes—by coupons collectable thru any bank—and all the property of the Cities, Counties or other Political Subdivisions issuing them is pledged for the prompt payment of principal and interest.

We absolutely own all the bonds we offer and have spared no time and expense to make sure of their security and legality.

They are in denominations of $100, $500 and $1000, and can be purchased on

OUR PARTIAL PAYMENT PLAN

if you so desire. This is explained in general information given in free booklet "Bonds of our Country," which will be sent on request. Write for one today.

BOND DEPARTMENT
THE NEW FIRST NATIONAL BANK, - COLUMBUS, OHIO

When writing to advertisers please mention the Michigan Farmer

New Free Catalog
IS SEEDS
Mail a postal today for your copy of the finest seed catalog Isbell ever published. Tells all about the best old and new varieties of vegetables, flowers and field crops. Many of them never advertised before.
From Grower to You
We grow thousands of acres of hardy seeds here in the north. Your money back if the seeds do not please on arrival. See the photographs of our seed farms and methods in our new catalog.
Wholesale Prices
Buy from us and save the retailer's profit. Get more seed and better, fresher seed for your money. 200,000 satisfied customers plant Isbell's Northern Grown Seed every year.
10c for 25c Worth
Mail five 2-cent stamps and get five full-sized packets—melon, radish, cucumber, beet and lettuce. These five packets free if you place an order later. Judge our whole line by these five samples. You'll not be disappointed.
120-Page Book FREE!
Our fine 1915 SEED ANNUAL is worth money to you just for the new varieties it tells about. Be sure to send for a copy. Tear out this advertisement now as a reminder—or write us a postal at once.
S. M. ISBELL & CO.
Seed Growers for 36 Years
804 Pearl Street, Jackson, Mich.

It's easy to garden with Iron Age tools.
IRON AGE WHEEL HOES AND DRILLS
mean a big variety of fine vegetables, with drudgery - stooping, hoeing and hand-weeding cut out.
In one operation the tool shown below will open its own furrow, sow in continuous rows or drop in hills, cover the seed with loose soil, pack it with roller, and mark the next row. A boy can do it. A three minutes' chance and you have a wheel hoe cultivator that can't be beaten. 33 combinations at $2.50 to $12.00. Straight planting; clean, close, safe cultivation. Ask your dealer to show them.
Write us today for free booklet "Gardening With Modern Tools."
No. 6 Drill and Wheel Hoe
BATEMAN M'F'G CO. Box 2412 Grenloch, N. J.

10 Packages 25c
Send 25c and I will send you these seeds, one regular sized package of each: Acme Tomato, Ponderosa Tomato, Early Spring Cabbage, Premium Late Flat Dutch Cabbage, Davis Perfect Cucumber, Hoodoo Muskmelon, Big Boston Lettuce, French Breakfast Radish, Mixed Zinnia, Mixed Poppy. All kinds of fresh Garden, Flower and Farm Seeds. Nebraska upland grown Alfalfa a specialty.
TREES—Large assortment of Fruit and Forest Trees, Grape Vines, Berries, Flowering Shrubs, Roses. First class stock. Low prices.
Send for illustrated 1915 Seed and Tree Garden Book, full of helpful information. It is free.
GERMAN NURSERIES & SEED HOUSE
Box 78 (Carl Sonderegger) Beatrice, Neb.
SEEDS & TREES THAT GROW

WEEDLESS FIELD SEEDS
We are trying with all our might to furnish absolutely pure, Red, Alsike, Mammoth, Alfalfa, Timothy, Sweet Clover, and all other field seeds, with all *blasted* and *immature* grains removed.
Write today for free samples and instructions "*How to Know Good Seed.*"
O. M. SCOTT & SON, 26 Main St., Marysville, Ohio

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 today.
WING SEED CO., BOX 142 MECHANICSBURG, OHIO

CLOVER CHEAP
Now is the Time to Buy
Prices decidedly lower. Buy before advance and save money. Get our special low prices and free samples of our Iowa Grown New Crop Recleaned Tested Clover and Timothy Seed. Also Alfalfa, Alsike, Sweet Clover. All kinds grass seed. 92-page catalog free, quoting all field seeds. Save money by writing at once.
A. A. BERRY SEED CO., Box 131 CLARINDA, IOWA

SAVE 50 per cent.
ON TREES
Buy direct from our Nurseries and get best, reliable, hardy nursery stock at a saving of fully one-half. Write today for free copy of 1915 catalogue.
CELERY CITY NURSERIES,
Box 112, Kalamazoo, Michigan.

Strawberry Plants
Guaranteed as good as grows at $1.00 per 1000 and up. Catalogue FREE.
ALLEN BROTHERS, R. 9, Paw Paw, Mich.

NEW STRAWBERRIES CATALOG FREE to all
Reliable, interesting and instructive—All about the New Everbearers and other important varieties. Address
C. N. FLANSBURGH & SON, JACKSON, MICH.

Strawberry Plants, vigorous northern Michigan stock $1.65 per 1000. Valuable illustrated catalog free.
Mayers Plant Nursery, Merrill, Mich., Bohemian Nurseryman.

SWEET CLOVER Seed for Winter Sowing. Price and circular how to grow it Free. JOHN A. SHEEHAN, R. 4, Falmouth, Ky

The Fruit Tree's Nursery Days.

(Continued from last week).

IN three weeks the wound is healed and strings are cut. A man with a sharp knife goes along the row and cuts through the string up the back of the seeding. If the budding has been done properly, the bud by this time is united with the seedling and needs no further protection. The leaf stem drops off the bud, leaving it exposed for the winter, just as it would be if it were back on the limb or scion of the parent tree from whence it came.

Oftentimes these buds, especially the more tender varieties, freeze out during severe winters. If three-fourths of them are alive in springtime and start to grow, the nurseryman considers it a good stand. Late in September, the seedlings are plowed up to, not, however, so as to cover the bud. In March of the following year, men go through the rows with pruning shears and cut off all the seedlings just above where the bud was inserted, two inches above the ground. The field of seedlings then look to the inexperienced man as though they were worthless. The brush is all carried out and nothing remains to be seen but the stumps of these little trees, but the live buds are in these stumps and, as soon as the warm days come, they start rapid growth. Apple, European plum, pear and sweet cherry buds grow up into straight whips four to six feet high by September. Sour cherries do not grow so tall, but develop more branches. Peach buds develop very many branches.

Early Care of the Trees.

As soon as the bud and the natural suckers or "sprouts" from the seedling are about two inches long in May, men go through the rows to "sprout" the seedlings. All the suckers are removed, so as to give the bud every chance to make the best growth. The bud itself is not touched. No knife work is necessary. The suckers are tender and are pulled off easily with the fingers. No attempt is made to prune the buds during the first season. They are cultivated and grubbed from April until August 1. This is done so that they will make a vigorous, healthy growth. In September or October, they are shovel-plowed up to, leaving the ground about six inches higher around the trees than it is in the center of the row. These buds are now called yearlings. Very few are dug up for market, except peaches. All peaches are dug, however, when they are yearlings.

Outdoor winter trimming of the buds starts about February 1 and continues until the work is finished in March. All the branches are cut off close to the trunk and the bud headed back. Apple buds may be headed as low as 18 inches and as high as 36. Most nurseries head all their standard kinds at about 30 inches from the collar.

The Second Year in the Nursery.

We are now at the beginning of the second year of the bud's life. Instead of little stumps two inches high with tiny buds in them, we see rows of straight whips, all cut to a uniform height, say about 30 inches above the ground.

In May, they are ready to be "rubbed down." Beginning one and one-half feet from the top, all the new growth is taken off to the bottom of the tree. Thus the trunk of the tree is formed and all the growth goes into the top. The nurserymen are not particular how many limbs are left to grow. Sometimes only four or five develop on one tree, while the next tree may have a dozen. Four branches are considered sufficient to make a first-class tree. Where more than four limbs are on a tree, many of them are cut off during the summer for scions for budding. If, however, they are not thus used, the nurseryman sends the tree on to the fruit-grower with sometimes eight or ten or a dozen branches on it. Cultivation is kept up this year just as thoroughly as during the two preceding seasons.

Digging the Trees.

The trees are ready to be dug about October 20. The first heavy frost ripens up the wood, and the leaves begin to fall. The trees cannot be dug, however, until all the leaves are off, and it is often necessary in the early fall to strip them by hand. In the olden days, the nurserymen dug trees with big spades. It was very hard work and the roots of the trees were oftentimes badly injured when dug in this manner, especially if the ground should happen to be dry and hard. The modern way is to use a tree digger. It consists of a strong steel scoop that runs under the row of trees, lifting as it goes, dirt, roots and all, five or six inches, and loosening the ground around the roots so that a boy can pull the trees out of the ground with one hand. This steel scoop has a beam on each side with wheels to regulate it just like a plow. It goes down under the trees from one and one-half to two feet. Twenty horses are necessary to haul this digger in heavy ground. The horses go in single file, ten on each side of the row. Two heavy ropes extend from the whiffletree on the digger to the leading horse, and the tugs of each horse on the string are attached to these ropes. The digger is usually held by four men. The horses in the string play an important part in steering it. If the digger crowds the row on one side, the horses on that string are held back a trifle until the digger again runs into the right position. It cannot be steered by the men like a plow. The horses must betrained and made to help in keeping it straight



Bundles of Trees "Heeled in" Awaiting Shipment.

HURST SPRAYERS
FREE TRIAL
No money in advance—no bank deposit. We pay freight. Five year Guarantee.
30 DIFFERENT STYLES
For field, orchard and garden. Man, horse and engine power. All give high pressure, perfect agitation and are easy to operate. Brass ball valves, plunger, cylinder, etc. Guaranteed for 5 Years. We pay freight. Write today for our big Free Book—"WHY, HOW, AND WHEN TO SPRAY" and special free sprayer offer to first buyer in each locality this season. Be first and save money.
THE H. L. HURST MFG. CO., 242 North St., Canton, O.

SPRAY Rigs of All Sizes For All Uses
Junior Leader Orchard Sprayer with 2 H. P. engine, 3-plunger pump.
High pressure. Automatic agitation of liquid, suction strainer is brush cleaned. We also make Bucket, Barrel, Mounted Potato Sprayers, etc.
Junior Leader Sprayer
A SPRAYER FOR EVERY NEED
Free catalog. Spraying formulas and spraying directions. Address
FIELD FORCE PUMP CO., Dept. L, Elmira, N. Y.

MAKE YOUR ORCHARD PAY
There will be no trouble about it if you use high pressure Hardie Sprayers. They are made by sprayer specialists.
Hardie Sprayers
Over 30,000 successful commercial growers use them because they must have the best. There is a perfectly designed Hardie hand or power sprayer for every spraying purpose. Send postal for free catalog and free book of spraying directions with formula.
THE HARDIE MFG. CO.
Hudson, Michigan.

Spray
The Morrill & Morley Way
The ECLIPSE Spray Pump has been in service 20 years. Durable, efficient, economical. The U. S. Department of Agriculture uses it, and you can make it profitable in your orchard, vineyard or potato field. Catalog sent free, on request.
Morrill & Morley Mfg. Co., Box 6, Benton Harbor, Mich.
Eclipse Spray Pump

Maloney's FREE TREE CATALOG Ready
Write today for big Maloney catalogue, it tells how we, the largest growers in New York State grow our own trees and sell our choice stock direct at wholesale prices. We recognize our responsibility to fruit growers and have issued a novel wholesale catalogue that explains our nursery business. Send for copy now.
MALONEY BROS. & WELLS CO. Box 96, Dansville, N.Y., Dansville's Pioneer Wholesale Nursery

SCARFF'S BERRY PLANTS MILLIONS OF THEM.
1200 acres fruit plants, trees, farm seeds. 26 years experience. Send addresses of 5 fruit growers and get fine currant bush and catalogue FREE—special quality bargains.
W. N. SCARFF, New Carlisle, Ohio

Peach and Apple Trees 2c and up
Pea, Cherry, Plum, Grapes, Strawberry, etc. Catalog Free
TENN. NURSERY CO., Box 62, CLEVELAND, TENN.

STRAWBERRY PLANTS.
1000 for $1 as per new offer in free catalogue. 100 varieties and Everbearers listed. Seed corn, potatoes, raspberries, vines, shrubs, fruit trees and everything.
ALLEGAN NURSERY, - Allegan, Michigan.

STRAWBERRY And all small FRUIT PLANTS, catalog of bargains free. Black Berry, Raspberry and Shrubbery. Everbearing Strawberry plants free for a list of your fruit growing friends names.
Bridgman Nursery Co., Box 9, Bridgman, Mich

HILL'S EVERGREENS GROW
Best for windbreaks, hedges, screens. Free Catalog.
D. HILL NURSERY CO., Inc., 2301 Cedar St., Dundee, Ill.

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

WANTED—RYE and VETCH MIXTURE SEND SAMPLES FOR BID TO
YOUNG-RANDOLPH SEED CO., Owosso, Michigan

under the trees. Somtimes a big stone throws the digger out, and it chops off very many trees at the collar before it is stopped.

Grading the Trees.

After the digger runs under the trees, they may be left with perfect safety just where they stand for a week or ten days until the nurserymen get around to pull them out, sort and tie them and haul them to the packing ground. Two-year trees are sorted into four grades. These grades are standard throughout the country as well as in western New York. All trees eleven-sixteenths of an inch and over in diameter two inches above the collar, that have a balanced head with at least four limbs on it, that will go from five to seven feet high from the collar, and that have a good root system, are first-class, two-year trees. Second class trees measure five-eighths to eleven-sixteenths inch in diameter at the collar and are from four to six feet in height; third-class half to five-eighths inch in diameter, three to four feet high; fourth-class three-eighths to half inch in diameter, two and one-half to three feet high. Due allowances are made for sour cherries, dwarf pears and apples, as regards height, in grading them. They do not naturally grow as tall as the other kinds. However, no allowance is ever made for lack of measurement at the collar. If the tree does not measure eleven-sixteenths of an inch, strong, it must go into the second grade.

Storing the Trees.

Peach trees are usually put on the market at one year old, and they are graded differently from pears, apples,, plums and cherries. The first grade measures nine-sixteenths of an inch and up in diameter at the collar, and runs from four to six feet in height; the second grade seven-sixteenths of an inch in diameter, and the third grade five-sixteenths of an inch in diameter. First-class trees are tied neatly in bundles of ten, with two labels on each bundle, indicating the variety. Fifteen trees of the second class are put in one bundle, twenty of the third class, twenty-five of the fourth class.

Most trees are dug, sorted and tied in bundles in this manner in the fall and kept in cold storage over winter, to be shipped to planters early in the spring. The cold storage is not necessarily frost-proof. It is usually made of brick, with double windows and doors to keep out severe cold, and is well ventilated. The trees are packed in the storage plant in tiers from the ground to the ceiling. A layer of damp excelsior is put between the roots as the trees are laid down. No excelsior is placed around the bodies and heads, for these overlap each other in the center of the tier, with the roots all facing toward the outside. When the tier is all laid up to the ceiling the work is not complete until dry excelsior is stuffed around the outside of these roots, so that they will not be exposed to air currents and to light and become dried out.

Selling the Stock.

Early in March the nurserymen begin to pull these trees out of these tiers for shipment to southern and western points. In April the shipping season is at its height, continuing well into the middle of May. The nurserymen each have their own system of selling and billing out and packing their trees. Some firms sell through agents, others advertise their trees in the farm papers and sell direct to the planter through the mails. Fifteen years ago, but little mail order business was done; the bulk of the trees being marketed by fruit tree agents. Today, however, the mail order nursery business has grown to such an extent that millions of trees are sold in this way.

The selling season begins about September 1 of each year and is at its height in the following February and March, continuing well into the month of May. Many nurseries make special inducements to their patrons to send their orders to them early in the season, so that they can plan in advance their great task of shipping trees to all their customers at just the right time, in the early days of April.

..New York. MARTIN KING, JR.



Winter Scene in a Block of Apple Trees.

LIVE STOCK IN SPRAYED ORCHARDS.

There seems to be considerable anxiety over the probability of injury to live stock from the poisoned spray that falls on the grass in the orchard. In most cases each animal would need to eat about a wagon load of grass at a meal to get enough poison to cause injury. With the exception of hogs, live stock should not be allowed to pasture in the orchard. This is not on account of probable injury to the live stock but to the trees. If the orchard is in sod the grass should be mowed and allowed to remain on the ground as a mulch to prevent the loss of moisture. Hogs may be very useful in an orchard by way of keeping the soil loosened up and by destroying the insect-infested apples that fall to the ground.

There is sometimes danger in poisoning poultry in an orchard, not from the fowls eating the poisoned grass, but from eating large quantities of worms that have been poisoned by the spray. Beneficial birds are also frequently poisoned in this way. In commercial orchards where the spraying is done early in the season, the insects are killed while very small and therefore do not contain enough poison to cause injury. The chief danger comes from spraying trees badly infested with full-grown insects of the canker worm type.



Tool Requirements

What do you expect of a hammer—a rightly formed handle that can't work loose or come off—a face you cannot batter—the true hang and balance for straight driving? Then you must get a hammer on which this name appears.

KEEN KUTTER Tools

No matter what kind of tools you want, this name signifies that every requirement in quality and service will be met.

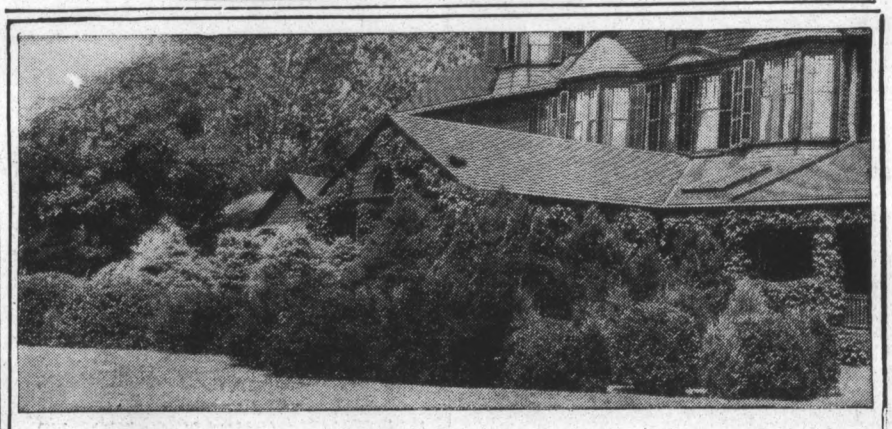
Every tool bearing the Keen Kutter trade mark is guaranteed for quality. That trade mark means that the dealer is authorized to return the price if it doesn't give satisfaction.

Send for our Home Furniture Design Booklet No. AS-976.

If not at your dealer's, write us.

Simmons Hardware Company

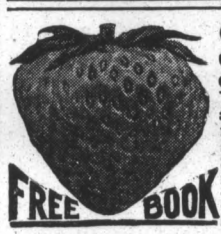
St. Louis New York Philadelphia
Toledo Minneapolis Sioux City Wichita



Established for 61 years. Seeds, bulbs, plants, shrubs and trees of the best quality. Sixty acres of home grown roses.

Our new illustrated catalog No. 2 describes the above. Catalog No. 1 gives detailed description of fruit and ornamental trees. Either or both mailed upon request.

THE STORRS & HARRISON CO.
Box 536, Painesville, OHIO
Nurserymen, Florists and Seedsmen



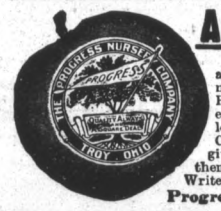
Strawberries
Grown the Kellogg Way Yield $500 to $1200 per acre. Get our beautifully illustrated 64-page book and learn how it's done. Send no money. The book is FREE.
R. M. KELLOGG CO.
Box 575, Three Rivers, Mich.

LIME
Pulverized magnesian lime rock for "sour" soils. Write for LOW Summer Prices direct to you from Muskegon and Benton Harbor, Michigan.
LAKE SHORE STONE CO., Milwaukee, Wis.



For Testing Our named varieties of HARDY Foster Mother Root Apple Grafts make vigorous, early bearing, heavily fruiting, clean hearted, long lived trees. To prove their worth, we offer 6 Grafts (rooted) for testing, if you will send 10c to help cover cost and mailing expense. They will bear barrels upon barrels of apples in a few years' time. Catalogue telling about other Blizzard Belt fruits, EVERBEARING STRAWBERRIES, etc., FREE. Write today.
The Gardner Nursery Co., Box 850 Osage, Ia.

LIMESTONE
For General Farm Use.
Finely pulverized, made from highest high calcium stone. Quick shipments in closed cars. Let us send sample and price.
Northern Lime Co., Petoskey, Mich.



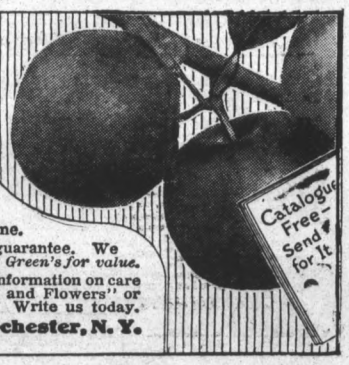
APPLES Get the Book
Our new catalogue illustrates and describes great values in nursery stock, Apples, Peaches, Pears, Berries, Ornamentals, etc. Everyone writing for catalogue will receive FREE, a Clematis Paniculata. We will give our friends thousands of them. We have one for you. Write now and mention this paper.
Progress Nursery Co., Troy, O.

LIME—You should get the highest grade of limestone manufactured. Buy it upon the basis of analysis. We manufacture the highest grade pulverized limestone sold in Michigan. Let us prove it. Ask for sample and analysis.
CAMPBELL STONE CO., Indian River, Mich.

SWEET CLOVER SEED.—White and large biennial yellow. Prices and circular on request. EVERETT BARTON. Box 129, Falmouth, Kentucky.

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., Box M, Fostoria, 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., 29 Wall St., Rochester, N. Y.



Nice Bossy--Father Says You're Giving an Awful Lot of Milk Now!

It is a common thing to hear cow owners express their enthusiasm for *Kow-Kure* after using it on sickly or "backward" cows; and no wonder. *Kow-Kure* has such a wonderful effect on the genital and digestive organs that many cow ailments commonly regarded as very serious can be prevented or promptly relieved by following the simple directions. If you have never used *Kow-Kure*, we want to send you our useful free treatise on cow diseases, "The Cow Doctor."

You can buy *Kow-Kure* in 50c or $1.00 packages from druggists and feed dealers.

Dairy Association Co.
Lyndonville, Vt.

KOW-KURE

Built Up To A High Standard Not Down To A Price

The New Galloway SANITARY Cream Separator

is made so good in my factory that I will send it anywhere in the United States without an expert to set it up, to any inexperienced user for a 90-day free trial, to test against any make or kind, that even sells for twice as much and let the user be the judge. It's the most modern, the most sanitary, the most scientific, the cleanest skimmer, the most beautiful in design of any cream separator made today and I have seen them all.



$42.50
500 lbs. Capacity
90-day free trial.
10 years' guarantee.
R-1 rev.

Travel 20,000 Miles

look over every factory in the United States and all the foreign countries—you won't find its superior at any price. Made in our own factory from the finest material, on the best automatic machinery, by skilled workmen, in tremendous quantities, all parts alike, interchangeable and standard, and **sold to you for less money** than dealers and jobbers can buy machines not as good in carload lots for spot cash.



Get My 1915 Catalog Free

It's so good that no dairyman who owns 2 or 100 cows can afford to be without it. All I ask you to do is first get my 1915 sliding scale, profit-sharing price schedule before you decide to purchase any cream separator of any make, kind or at any price. Just drop me a postal. Address

Wm. Galloway, Pres.
Wm. Galloway Co.
173 Galloway Station
Waterloo Iowa

$15.95 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 machines. **Western orders filled from Western points.** Whether your dairy is large or small write for our handsome free catalog. **Address:**

AMERICAN SEPARATOR CO.
BOX 3061 Bainbridge, N. Y.

Only $2 Down
One Year to Pay!



$24 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. **Guaranteed a lifetime.** Skims 95 quarts per hour. Made also in four larger sizes up to 5 1-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

ALBAUGH-DOVER CO. (12)
2195 Marshall Blvd. CHICAGO

No. 5½

Dairy.

CONDUCTED BY COLON C. LILLIE.

WET OR DRY GRAIN FOODS.

It has always been quite a question whether grain foods should be fed wet or dry. We have tried at various times to get our cows accustomed to eating their grain rations and silage mixed together, but the practice has always resulted in decreased yields of milk. Some feeders claim that the main reason that wet grains produce better results is because the cows get more water into their systems than they do when they are turned out to water once or twice a day. This is a strong argument, but our cows have water basins at their sides and still give more milk when fed wet grains. I like to feed a little dry grain on the silage to make it appetizing, and moisten the main part of the grain before feeding time. Many experienced feeders claim that it is better to feed the grain ration dry, but so long as we can get more milk by wetting the grains we shall continue to feed them in that condition. One of my neighbors made considerable sport of me for wetting my grain feeds. One day I made him an offer to feed his cows one week and by wetting his grain rations increase his milk yield from 34 cows one can (eight gallons) a day, or forfeit $25 cash. Well, the cows gained the one can in four days. This man is now feeding wet grains. I am not sure that it would pay to wet the grains under all conditions, buf I am sure that under ordinary farm conditions it pays to moisten the grain a few hours before feeding time. This may not always work out when cows are kept under such conditions as they are at the experiment stations, but it does on an average dairy farm.

New York. W. MILTON KELLY.

SORGHUM, (SUGAR CANE), VS. CORN FOR COWS.

Is there any advantage over corn in raising Early Amber sugar cane or sorghum? Do milch cows relish it as well as corn fodder? Can a larger bulk of it be grown to the acre than of corn fodder? Does it cure well? Are there any other gains in it?

Gratiot Co. F. W. B.

Sorghum is not superior to corn in any way for food for dairy cows. Sorghum may grow better down south in a semi-tropical climate than corn, but it does not in Michigan. Several years ago I experimented with sorghum as a cow and stock food, and came to the conclusion that we here in Michigan had better stick to corn.

You can grow a good crop of sorghum and stock will eat it with apparent relish, but you can grow as large or larger crops of corn, and stock like it better. Both of these crops, to get their greatest food value, should be ensiloed, because they are preserved with the greatest economy and with the least loss, also they are preserved in a succulent state which preserves their digestibility and their palatability.

If you must try sorghum, do so on a small scale or in an experimental way. Put in one-quarter or one-third of the field to sorghum and the balance to corn. You will find sorghum has no points of superiority over corn, and you will grow corn instead of sorghum.

ROOTS VS. SILAGE.

I have no silo, so I would like to know if roots would take the place of silage, and what kind are best, sugar beets, mangle beets, or carrots. I separate my milk and sell the cream. Would roots taint the cream so the creamery would not take it?

Lenawee Co. C. R. K.

Roots are equally as valuable as silage to furnish a succulent food in the ration. Some even think they are more valuable. The analysis of the two products would seem to indicate but little difference, and cows do equally well with one as the other. So far as palatability is concerned, roots are again equal to silage, and in digestibility they are equal if not superior.

There is another factor, however, that the dairyman must take into consideration, and that is cost. The cost of producing a ton of silage is much cheaper than producing a ton of roots, and if the silage gives as good results then the dairyman should be interested in the production of silage.

There is very little difference in the food value of the various roots used for feeding purposes, and here the cost of production again cuts an important figure. Mangle wurzels can be produced more cheaply than other roots, and consequently are usually grown for stock feeding.

A JERSEY-HOLSTEIN CROSS OR GRADE.

Do you think it advisable to raise heifers that are half Jersey and half Holstein? Some think the result in milk would be Holstein quality and Jersey quantity. Does it make a difference which way the cross is made whether a Holstein sire and a Jersey cow, or a Jersey sire and a Holstein cow? Also, what is the amount of silage that should be fed? Some say 40 lbs. per day, others say all the cow will clean up, and still others say three pounds for each 100 lbs. weight of the cow. How much silage should be given brood sow, and how much to shoats?

Hillsdale Co. J. D. L. S.

The crossing of Jerseys and Holstteins is not to be recommended, in fact, the crossing of any breeds is not a good plan. The proper way is to breed cows of miscellaneous blood (or grades), to a pure-bred sire of the breed you prefer and then keep a sire of this same breed continuously. In a short time you have a herd of high grades that are highly efficient dairy animals. Now, if I had these cross-bred heifers I would raise them, they may make splendid cows. No one can tell whether they will inherit the characteristics of the Jersey or the Holstein. Probably some will inherit characteristics of one breed and some of the other, and probably some will be failures as dairy cows. If you prefer Holsteins, breed these heifers to a Holstein bull and keep on doing so. But if you prefer Jerseys, breed them to a Jersey, and don't cross again.

If you have plenty of ensilage, feed your cattle what they want. It is a good and cheap bulky food. Very few cows will eat more than 30 to 40 pounds of silage per day if they have what hay they want and a suitable grain ration.

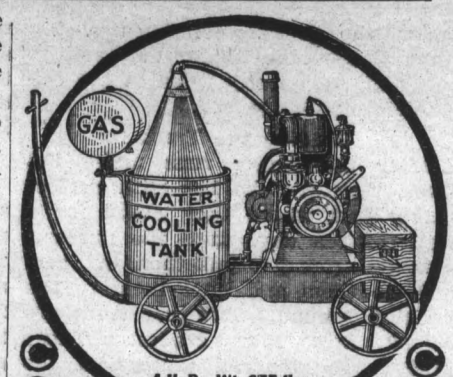
Brood sows will not eat very much silage if they can get other food. It is a bulky coarse food, and hogs will need a more concentrated ration. A little silage will do them good, but they will waste some of it.

OFFICIAL RECORDS FOR CATTLE.

I am interested in pure-bred cattle, and would be obliged if you could give me information in regard to keeping official records.

Jackson Co. M. G.

You do not say what breed of cattle you keep, so I can only give you general information on the keeping of official records. Write to the secretary of the breed association for the registration of the bull you keep and he will give you full information, furnish you blanks, etc. No matter what breed you have you must weigh and record the milk produced each day, and then once each month a representative from your association must come to your farm and see the cows milked, weigh the milk, sample and test it and make a general check on your work; this is to keep your records above suspicion. This is for yearly tests, for 30-day or seven-day tests, a representative must also check your work.



4 H. P. Wt. 375 lbs.

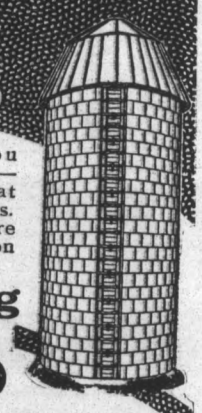
Cushman 4 H. P. Truck
For All Farm Work

This is the light-weight, quick-action Truck Outfit that has proved so handy for farm work. So light a boy can pull it around from job to job—yet it easily handles all work up to 4 or 4½ H. P. **Runs at any speed** desired, speed changed while running. Pump circulation to water tank prevents overheating even on all-day run. **Cushman Light-Weight Engines—4-Cycle—4 to 20 H. P.**—are the most useful for farm work, as they do everything heavy engines can do and so many things the big clumsy fellows can't do. Also require less fuel. 4 H. P. weighs only 190 lbs; 8 H. P. only 320 lbs. **Throttle Governor** gives steady power. Friction Clutch Pulley. On truck or skid. **Not a cheap engine, but built to run without trouble.** Engine Book free.

Cushman Motor Works
826 North 21st St., Lincoln, Nebraska

Lap-Joint Blocks

make stronger, more durable walls—you brace tile against tile—the silo material that lasts for generations. Write us—learn more about this construction in the



Lansing Vitrified Tile SILO

First Cost the Only Cost

Reinforced throughout with twisted steel—10% stronger than steel not twisted. Thin mortar line exposed between blocks—fluted end keeps mortar from slipping—gets solid grip. Write for low price offer and catalog.

J. M. PRESTON CO.
Dept. 309, Lansing, Mich.
Get our offer on Climax Silage Cutters and Bidwell *Threshers*

It lies within **your** power to wipe

Cow Abortion

out of **your** herd and **keep** it out.

Use Dr. Roberts' Treatment. Apply it yourself. Properly applied, it never fails to stamp out this disease and clean the herd. Saves lives of calves. Write at once to

Dr. David Roberts
Veterinary Company
9641 Wisconsin Ave., Waukesha, Wis.



Harris STANCHIONS

are made of high carbon steel, WOOD LINED, chain hanging and flexible. Our full line of Sanitary Stalls, including Harris New Adjustable, stands for perfect cow comfort. Economical, easily installed.

FREE ILLUSTRATED CATALOG describes our complete line of labor-saving barn equipment. Write for it today.

HARRIS MFG. CO., Box 30 Salem, Ohio

DRIED BEET PULP
PAYS

Because it Increases the Production and Lowers the Cost.

It is a vegetable feed and is not adulterated.

Order of your dealer or write.

T. F. MARSTON, Bay City, Mich.

Live Stock.

FEEDERS' PROBLEMS.

The Ration for Fattening Steers.

I have a bunch of 30 steers which I am feeding as follows: Mornings, Evergreen sweet corn, cut green and drawn from the shock. During the middle of the day oat straw and at night sugar beet tops. I have enough of the corn and beet tops to last until about January 10, when I shall open the silo. What can I add to the present ration to improve it?

Genesee Co. SUBSCRIBER.

The ration above described is a very good one to use at the start of the feeding period, particularly if a long feeding period is contemplated before finishing. If continued throughout the winter, however, it would only be sufficient to grow these cattle in fairly good flesh and would not put a degree of finish on them which would command anything like a top price on the market. Experiments as well as the experience of cattle feeders have shown that corn silage should be regarded as a roughage rather than a fattening feed, and that a liberal grain ration is necessary in connection with it to secure a desirable market finish on feeding stock. With the shock corn and sugar beet tops now fed, a desirable supplementary feed would consist of a small feed of cottonseed meal. This is the cheapest source of protein at the present time, and would aid materially in balancing this ration.

In a series of cattle feeding experiments which have now been conducted for a number of years at the Indiana Experiment Station, it has been found that the greatest economy in gains was secured by the use of corn silage in combination with oat straw as a roughage, and with shelled corn and cottonseed meal as a grain ration. The lots which have shown the best results have received from 25 to 30 pounds of silage per day, with as much oat straw as they would consume and a grain ration when on full feed approximating from 14 to 16 pounds of shelled corn and two and a half to two and three-fourths pounds of cottonseed meal per day per steer, the cattle in every case being followed by hogs, which contributed not a little to the profit in the feeding experiments.

The combination of feeds used should of course depend somewhat upon their market value. In a year like the present, when cottonseed meal is cheap and corn comparatively high, it would, in the writer's opinion, pay to feed more liberally of cottonseed meal and reduce the amount of corn fed, particularly where oat straw is used as the dry roughage in the ration instead of clover hay or some other legume. The amount of grain to be fed should, of course, depend somewhat upon the age and condition of the cattle and the length of the feeding period contemplated. The ration mentioned would be full feed for steers which are being pushed for an early finish. If it is desired to run the cattle over winter and finish them on pasture, then a much lighter grain ration should be fed. It will, however, pay to supplement the silage with a grain ration even where this is the course contemplated.

It requires not a little skill and judgment to compound a ration for feeding cattle which will insure to the feeder a maximum profit. No infallible rule can be laid down, owing to the great variety of conditions which will confront different feeders in different seasons, but save alone in the matter of selection and purchase of feeders, there is no one factor upon which the profit depends in so great degree as in the proper compounding of the ration and the adjustment of its amount to the quality of feeders in hand so as to get maximum returns for the feed consumed.

Cottonseed Meal for Horses.

Is cottonseed good feed for horses? If so how much would be a feed, three times a day?

Kalamazoo Co. J. E.

While cottonseed meal is not considered as good a concentrate to furnish protein in the ration as oil meal, it can be fed in small amounts with good results. Trials have been made at several experiment stations with a view of determining the limit of the amount of cottonseed meal which could be profitably fed. Two pounds per day is generally conceded to be a maximum amount of cottonseed meal to use in the horse's ration. With the ration fed upon the average farm it is the writer's opinion that a small amount of oil meal, even though not more than one-half pound per day be added to the horses' ration, that better results will be secured in conditioning the horses than where large amounts of cottonseed meal are used.

Forage Crops for Pigs.

I have a ten-acre field with running water at the back that I wish to use as a permanent hog pasture. The soil is in a good state of cultivation and is a sandy loam. Have pastured about 100 hogs and pigs there this year and have covered it with barnyard manure during the summer. The seeding is about gone. What would you advise me to sow there in the spring so I could have pasture as soon as possible?

Livingston Co. C. A. B.

Probably no better combination of crops for summer pasture could be used than peas, oats and dwarf Essex rape. If the field could be sown to this combination in the spring then divided and a part pastured at a time, a maximum of feed would be produced, particularly by the mid-summer sowing of rye on that portion of the field first pastured closely. These forage crops so combined as to make successive pasturing possible, will furnish a larger amount of feed during the first season than anything else which could be sown.

Corn and Cob Meal.

Please give me any information you can about the results of feeding corn and cob meal. Some claim it will injure the stomachs of animals to which it is fed. Is this true? How does it compare with corn meal in feeding value?

Grand Traverse Co. R. A. W.

Corn cobs consist largely of crude fibre, and consequently have a low feeding value, particularly where the corn is thoroughly matured. Where the corn is not so well matured, the cobs contain some available nutrients and are not so hard and difficult to grind satisfactorily. Where corn and cob meal is finely ground it has been found to give better results where corn alone is fed in the grain ration than corn meal, largely because it is believed the presence of the cob lightens up the feed to some extent. Where the meal is mixed with other grain feeds, as oats, it is doubtful if any such benefit is secured. The idea that corn and cob meal is injurious to the animal's digestion arises from the fact that there are hard, flinty particles in the meal unless it is well ground. We do not believe, however, that there need be any far of injury from this source from the intelligent feeding of cob meal. Thousands of farmers have used it with satisfaction born of experience. Unless it is well ground, however, there is little if any saving in the practice.

Pleased with Results.

The advertisement run in the Michigan Farmer has brought me buyers for all my young bulls. I am more than pleased with the results of my advertising. I hardly expected to dispose of them all.—Alvin Balden, Capac, Mich.

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

CUT OUT AND MAIL TODAY
PROF. JESSE BEERY, Dept. 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 bitted.
Pulling on one rein.
Lugging 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. Striking.
Biting.
Hard to shoe.
Bad to groom.
Breaking straps.
Refusing to hold back while going down hill.
Scaring 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 traveling. I made a fortune traveling and giving exhibitions. You have the same opportunity.



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.

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
Dept. 42, Pleasant Hill, Ohio

$6000 Extra Profit In One Year



Is the handsome sum one farmer made in addition to the income from his farm. Any Progressive Farmer can make from $1500 to $5000 extra yearly without interference with his regular work, if he will take county agency to

Build Monsco Concrete Silos

Build a silo on your own farm, use it as a sample to secure orders from your neighbors. You can also build Water Tanks, Grain Bins, Hog Houses, etc. Your profits will soon pay for your outfit and give you a handsome income besides.

Exclusive Territory

Purchase of one complete Monsco Silo outfit gives you exclusive county right. A wonderful opportunity for some one responsible farmer in your county. Monsco Poured Concrete Silos are best—cold drawn steel reinforcement makes them proof against cracking—they'll last forever. It will surely pay you to write us.

MONOLITHIC SILO AND CONSTRUCTION CO.
359 People's Gas Bldg., Chicago, Ills.



Grinds Wet Grain Without Clogging

Oat hulls and corn in husk ground fast as dry grain—also clover, alfalfa, etc. Shears grain instead of mashing. 1 set buhrs grinds 1000-3000 bu.

LETZ FEED MILL Self-Sharpening Silent-Buhr

Speedy, silent, light-running, economical. Tell us H. P. of your engine and we'll show you how to get this mill for ten days free trial.

Letz Mfg. Co., 210 East Road, Crown Point, Ind.

DEHORNING STOPS LOSS

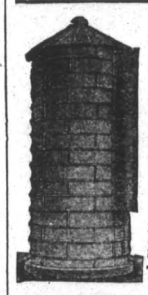
Cattle with horns are dangerous and a constant menace to persons and to other cattle. Dehorn quickly and easily with a

KEYSTONE DEHORNER



All over in 2 minutes. Not a harsh method. A clear, clean cut. Cows give more milk; steers make better beef. Send for free booklet.

M. T. Phillips, Box 126, Pomeroy, Pa.



Save an Extra 17% of Your Ensilage

No waste from leakage or evaporation as in other kinds. You keep all your ensilage sweet and fresh when you use a

ROSS In-de-str-uct-o Galvanized Metal Silo

Can't blow down, buckle, twist or collapse. Stands rigid even when empty. Fire-proof. No painting or repairs. Easily erected. No spoiled ensilage near wall. Guaranteed against silage acid. We also make the Ross Wood Silo. Write for free catalog.

The E. W. Ross Co., Box 314 Springfield, Ohio.

MINERAL HEAVE COMPOUND



In use over 50 years

Booklet Free

$3 Package guaranteed to give satisfaction or money back. $1 Package sufficient for ordinary cases.

MINERAL HEAVE REMEDY CO. 463 Fourth Ave., Pittsburgh, Pa.



EARN COST THEN PAY. TILE SILO

Chain of Kilns; Atlantic to Rio Grande

Reduces freight cost; fire and frost-proof; weight anchors itself; ample hoopage galvanized; priced at your town; 5 year guaranty; free sample.

Kalamazoo Tank & Silo Co., Kalamazoo, Mich.

Try It 30 Days at Our Risk

Buckeye FEEDING MOLASSES

W. H. EDGAR & SON, 142 Lafayette Blvd., Detroit, Mich.

I have.....head of cattle.....sheep.....hogs and.....horses. Send me your trial proposition to prove that Buckeye Feeding Molasses will benefit all of them.

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

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

Mail this Coupon Today

OHIO SILOS

Here is your opportunity to SAVE money by placing your order now for that silo and roof you're going to buy this season. We have special offer for early orders and better offer for orders to be shipped in Feb. & Mar. Agents Wanted. The Younce Mfg. Co., Union, O.

MOLASSES SAVES GRAIN LOW PRICES

WATTLES & CO. Box 13 Litchfield, Mich.

The Michigan Farmer

Established 1843. Copyright 1914.

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 OFFCE—604 Advertising Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
PHILADELPHIA OFFICE—214-218 Twelfth St.

M. J. LAWRENCE.....President
M. L. LAWRENCE.....Vice-President
E. H. HOUGHTON.....Sec.-Treas.

I. R. WATERBURY
BURT WERMUTH
F. A. WILKEN
ALTA LAWSON LITTELL
} Assoicate Editors

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

TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues..... 1.00
Three years, 156 issues.....$1.25
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 postoffice orders payable to, The Lawrence Publishing Co.

We never, unless through error, send The Michigan Farmer beyond the date subscribed to—our subscription price being always due in advance, and sample copies always free. No bills will ever be sent should a subscription through error be continued after expiration.

RATES OF ADVERTISING:

40 cents per line agate type measurement, or $5.60 per inch (14 agate lines per inch) per insertion. No adv't inserted for less than $1.20 each insertion. No objectionable advertisements inserted at any price.

Entered as second class matter at the Detroit, Michigan, postoffice.

DETROIT, JAN. 9, 1915.

A FEW LEADING ARTICLES OF THE WEEK.

The Gasoline Engine on the Farm.—The tenth of 52 special articles to be published in consecutive issues 33

Planning Farm Buildings.—A plea for the consideration of utility in planning or remodeling farm buildings 34

The Fruit Tree's Nursery Days.—Describing the methods of propagation in the commercial nursery 36

European Co-operative Agriculture, as Seen by a Member of the American Commission.—The second article in this interesting series, relating to agriculture in Italy... 43

Apple Varieties Giving Best Returns.—The fifth in the special series of articles relating to a survey of Michigan's apple industry 48

Fruit Hygiene.—A commentary on the influence of cooking on foods in general, and fruits in particular 52

CURRENT COMMENT.

Taking Stock. This is the season of the year when our merchant friends are very generally engaged in making an inventory of their stock. If we are good business farmers we will also take an annual inventory of our property, to the end that we may be able to make an intelligent estimate of the amount of our financial gain or loss during the past year. It is not, however, necessary that this inventory be taken on the first of the year. Many farmers find it more convenient to make this property inventory toward spring, when the grain and forage has been more nearly fed out, the fat stock sold and the job thus simplified.

But it is not this kind of an inventory which we had in mind in commenting upon the above subject. Important as is the matter of taking an inventory of our property at some suitable season of the year, it is probably more important to our success in life that we take similar stock of ourselves, to the end that we may recognize our own shortcomings and limitations, both as business men and citizens of the community in which we live, and put forth such effort as we may be capable of toward the removal of this handicap to successful living in the higher sense of the term.

The method by which this should be done is simple. Everyone of us is in the habit of taking stock of others' shortcomings and limitations quite as often as of their virtues and capabilities. If we would occasionally make a like impartial inventory of our own personal characteristics and idiosyncracies we would stand a far better chance of overcoming the handicaps to successful living which heredity and environment have imposed upon us.

Successful living is a far broader problem than mere business success, but even the latter is largely dependent upon a well balanced personality. A careful review of the past year will reveal to us our lack in this direction, and perhaps enable us to supply the deficiency to a degree. Our lives are largely what we make them, and we are trying to evade our personal responsibility when we ascribe our success or failure in life to forces over which we have no control. While such forces may exert a temporary influence over our lives, we can, in the main, so direct our energies and efforts as to influence for good or ill the character of our share in the world's work and the nature of our influence on the lives of others.

The Live Stock Meeting. The annual meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association, which will be held at the Agricultural College, East Lansing, Mich., on January 13-14, 1915, is one meeting of the year which every farmer who is interested in the breeding of pure-bred live stock, or the feeding of meat animals, should attend. The character of this meeting is guaranteed by the excellent program which was published in the last issue. The allied feeders' meetings to be held on Wednesday, January 13, will afford the breeder of pure-bred stock an opportunity to become better acquainted with his fellow patrons of the same breed and confer with them on matters of mutual interest. In most cases the programs which have been provided for these individual breed meetings will prove both interesting and profitable, while the banquet to be held on Wednesday evening will prove an inspiration to every breeder who attends. The barrow show will be an entertaining and instructive feature of the meeting, and the other live stock demonstrations will be scarcely less interesting.

The general meeting to be held on Thursday, January 14, will be of still greater interest to all who are interested in any department of live stock husbandry. This has been one of the best attended of state farmers' meetings during recent years, but its importance merits still larger attendance by Michigan farmers. It is a matter of common knowledge that the number of meat-producing animals on the farms of the country has decreased materially during the past decade, while the population of the country has increased at a rapid rate. This has caused a general advance in live stock prices which will be still more marked in the near future. Michigan farmers need to take cognizance of this condition and improve the opportunities thus opened to them. There is no place where they can gain the needed inspiration and a measure of valuable knowledge concerning any branch of live stock husbandry which may appeal to them, as easily and cheaply as at this general live stock meeting. May we not bespeak for this year's meeting a still larger attendance than has been secured at any of the long series of successful winter meetings held by this organization.

Plans for the New Year. The advent of the New Year is an appropriate time for the making of definite plans for next season's farming campaign. These plans should not stop with the consideration of the larger and apparently more important considerations of the season's work, but should include as well the little things which have an important bearing on the farm business, but which are far too generally overlooked by the average farmer.

For example, very few farmers use special stantionery with business-getting letterheads, yet this is a business factor worth considering and which should be included in the making of plans for the New Year. The cost of getting up an attractive letterhead, even if a cut of the farm buildings is used in it, will be comparatively small. Indeed, it will be insignificant as compared with the benefit to be derived from the use of stationery which will give you a distinct personality, even with correspondents who do not know you personally.

This is but one example among many which might be cited to show how we can plan for the new year so as to not only increase our success as farmers by the production of better stock or larger crops, but as business men and useful citizens as well. All that is necessary to that end is to devote a full measure of thought and study to the making of plans for the new year, and a high degree of energy and perseverance in the execution of those plans after they are made. Let us at least make our plans for the present new year broader and more comprehensive, and execute them in a more certain and business-like manner, than we have ever done before.

Rural vs. Urban Sanity. There has been a popular impression that, owing to the isolation of the country dweller, insanity is more prevalent among country people than it is among the residents of the cities and towns. That this idea, like many other popular notions, is erroneous is conclusively proven by data recently published by the Bureau of the Census of the U. S. Department of Commerce. This statistical information shows that of the 60,769 persons admitted to insane hospitals in 1910, 36,654 came from cities, villages, or other incorporated places of more than 2,500 inhabitants, while 30,442 came from the smaller towns or country districts, leaving 3,673 for whom the place of residence was not reported. Of more significance, however, are the statistics showing the number of admissions in proportion to the total population of each class of communities. From rural communities 41 insane persons were admitted per 100,000 population; from the urban communities the ratio was 86 per 100,000.

This difference between the proportion of inmates contributed to the hospitals for the insane by city and country is partially explained in the report by the relatively greater number of cases of general paralysis and alcoholic psychosis, forms of insanity which are directly or indirectly caused by vice or dissipation, contributed by the cities as compared with the country. The ratio of such cases per 100,000 population was 4.3 for rural communities, as compared with 18 for urban communities. But leaving all of these cases out of the reckoning, the ratio of admissions to hospitals for the insane remains much higher for urban than for rural residents the cases per 100,000 population being 68 and 37 respectively.

The conclusion which is reached from the compilation of this data is that the marked increase in insanity in the United States during recent years is due in some degree to the rapid growth of our cities. This congestion has undoubtedly increased the proportion of people to whom the mere problem of existence is often difficult of solution, as well as the proportion of those who, from compulsion if not from choice, lead the strenuous life. But the comparisons noted speak volumes for agriculture as a healthful and satisfying occupation.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Most of the changes in the positions of the armies have occurred in the eastern theater of war. The Russians have checked the German advance on Warsaw and routed the Austrian army operating in Galicia. The Germans have now launched a new campaign with the occupation of Radom and Ivangorod as objective points. Stubborn attacks have been made by the Teutons but thus far the Russians have repulsed them. The Austrian army defending territory in the southern part of Galicia has been routed and driven back across the Carpathian Mountains. This strengthens the Russian line of battle to the south and will enable them to resume their operations against Krakow, which they were recently forced to abandon by reason of Germany's success before Warsaw. The situation in Servia has changed but little. In the west the movement of troops has been on a minor scale, and nothing of importance has been reported. The British warship "Formidable," was sunk in the English Channel last week. It is not made known whether the ship struck a mine or was torpedoed; the impression is, however, that German torpedo boats were responsible. A German aerial raid was made on Dunkirk, a Belgian seaport, last week, and a number of civilians were killed or injured.

A protest has been made to England by the United States regarding the restrictions placed upon international commerce. The protest remonstrates against interference with trade between neutral nations, some of the items included in list of contraband goods, and the methods employed by British war ships in searching American vessels, or other neutral vessels, carrying neutral cargoes.

A meeting called by the International Peace Forum passed resolutions petitioning the United States Congress to call a conference of the world's nations at the close of the war to take some adequate action respecting disarmament, the establishing of a court of arbitral justice and the creation of an international police force able to enforce the decrees of the court.

National.

A scandal has been discovered in connection with the issuing of passports for reservists in this country to rejoin the German army. President Wilson is directing an inquiry, many arrests have already been made and more are expected. A high German official in this country is suspected of being connected with the affair. It is feared that the information will discredit the passports of Americans who are abroad and thereby make it difficult for them to secure the proper respect of foreign officials.

William McPherson, of Howell, formerly a commissioner of railroads for Michigan and for 11 years a member of the Industrial School Board at Lansing, died in Detroit, Sunday, after a long illness, at the age of 80 years.

An investigation of the methods employed by coroners in New York city has revealed systems of graft and ways of aiding criminals to escape justice. As a result of the discoveries a campaign is on to do away with the coroner's office.

A world-wide campaign for the emancipation of the Jews in countries where they are oppressed, especially in Russia, has been started in this country. It is planned to conduct a publicity program and to enlist the services of American representatives at peace conferences after the war to place matter before the delegates of the world powers.

The opening of the New Year brings many optomistic expressions of an outlook for increased business activity in this country. Conditions are very promising. Crops in general have been good and the prices high; the aggregate value of farm products as estimated by the Department of Agriculture reaches the enormous total of $9,873,000,000, which is $83,000,000 in excess of the previous record amount. Many idle factories are about to resume operations, money is easier and our new financial system appears to be meeting expectations. Collections are better than they were a short time ago, loans easier made and interest rates a little lower.

Two Cadillac, Michigan, concerns have received orders from the British government for products used in the manufacture of smokeless powder that will keep the plants busy for the next two years running full force.

Congress passed a new immigration bill last week which provides that all immigrants must pass a literacy test before being allowed to enter this country. The bill may be passed upon by President Wilson this week.

The British prize court in London has decided that wheat shipped to German consigners before the war and captured by British ships, was still the property of the American claimants, and ordered it paid for.

Magazine Section

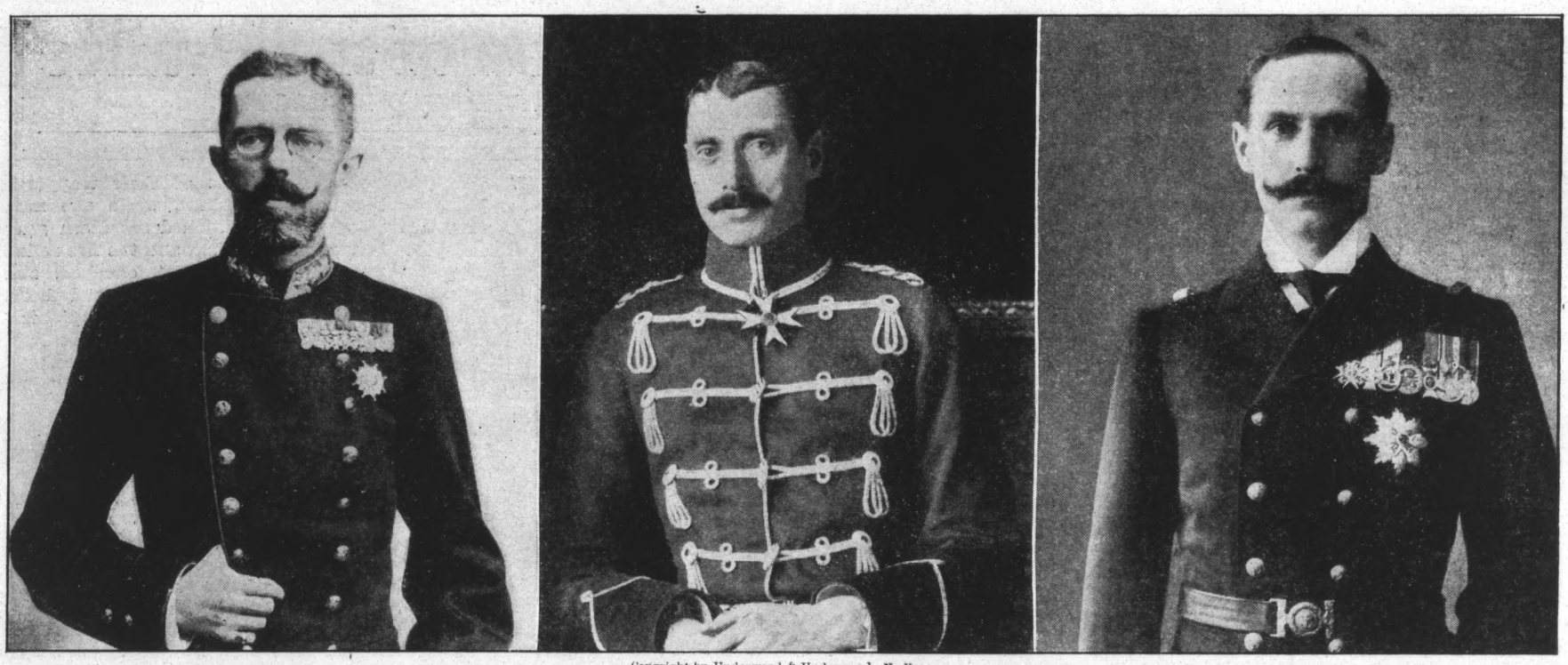
LITERATURE
POETRY
HISTORY *and*
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC *and*
MECHANICAL

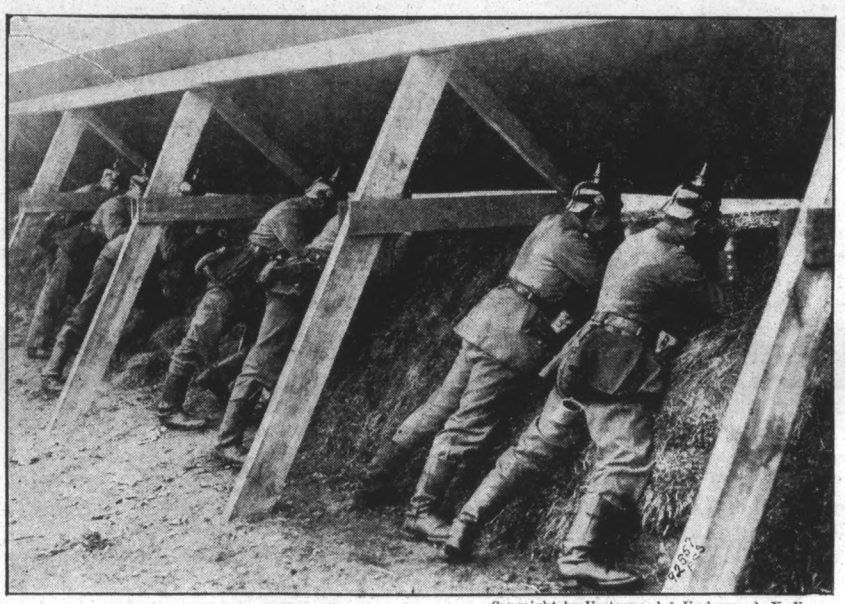
This Magazine Section forms a part of our paper every week. Every article is writtten especially for it, and does not appear elsewhere.

WORLD EVENTS IN PICTURES.



Copyright by Underwood & Underwood, N. Y.

King Gustav, Sweden. King Frederick, Denmark. King Haakon, Norway.
Scandinavian Kings Meet to Discuss Issues Growing Out of the Present European War.



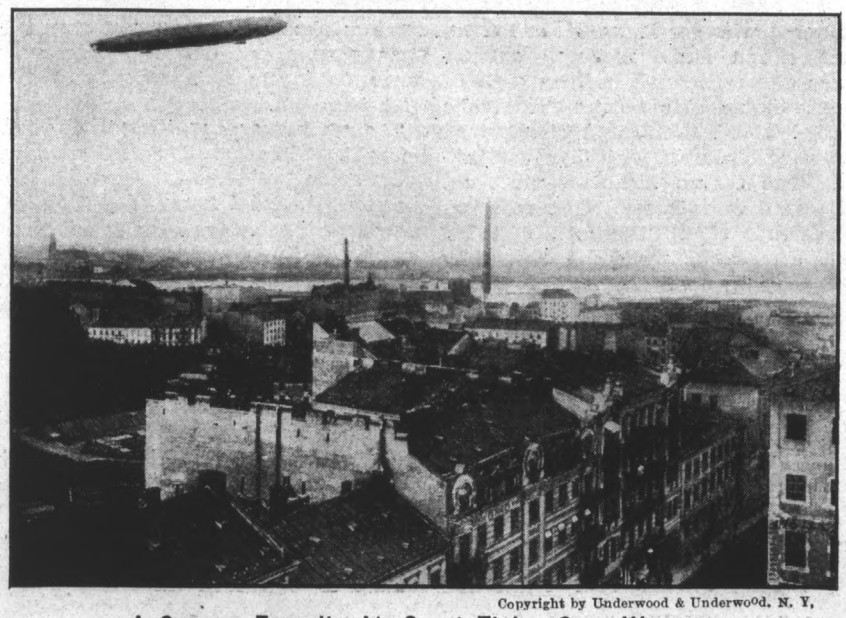
Copyright by Underwood & Underwood, N. Y.

German Sharpshooters are well Protected Against the Enemy's Fire.



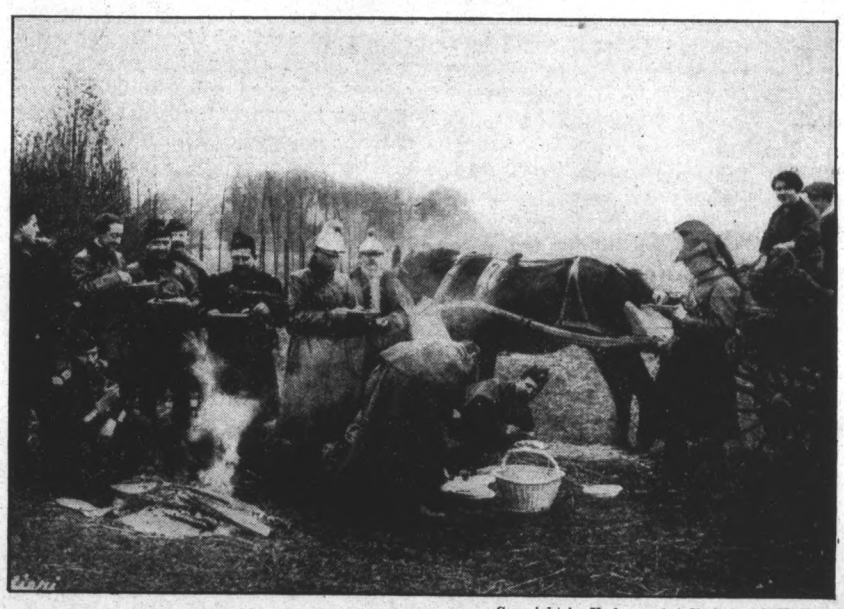
Copyright by Underwood & Underwood, N. Y.

French Restoring Houses Damaged by German Shells.



Copyright by Underwood & Underwood, N. Y.

A German Zeppelin Air Scout Flying Over Warsaw.



Copyright by Underwood & Underwood, N. Y.

French Dragoons Snatching a Bite by the Roadside.

Land O' Nod Stories.

By HOWARD T. KNAPP.

Slinker Follows a Trail.

FOR nearly a mile Billy Be By Bo Bum and Tinker Teedle Tee, the merry little elf, followed the tracks of Mr. Rabbit and Slinker the Weasel through the White Forest. Slinker had made up his evil little mind that he wanted rabbit meat for supper, and Mr. Rabbit knew it, too, and was running away as fast as he could, but Slinker was hot on his trail and Billy and Tinker were following to see what happened.

"Every dweller of the White Forest is afraid of Slinker," said Tinker Teedle Tee. "He is an outcast and hasn't a single friend among the Little People. They have good reason to fear him, for he is the most patient hunter in the big woods, and the most cruel. There is only one idea in his wicked head, to kill and kill, and kill until even his thirst for blood is satisfied. When once he starts out on a trail, he never gives up, and it is this trait that makes him such a successful hunter."

"But I don't see how he can catch Mr. Rabbit,' said Billy. "Surely Slinker, with his short little legs, can't run as fas as Bunny."

"That's just what makes me mad," replied Tinker. "If only Mr. Rabbit wasn't such a coward he could get away every time. But Bunny knows what a patient fellow Slinker is, and that makes all the trouble. When he finds out the old villain is after him, he lays his ears back flat on his neck and lights out lickety split. If he would only keep going he would soon be out of danger, but after he has run a mile or two, his courage all oozes away, leaving him shivering with fear. He is so scared he just squats down on the ground in a furry heap and stays there until Slinker sneaks up and grabs him by the throat."

"Couldn't he hide in a hole in the ground?" asked Billy.

"That would be the worst thing he could do," replied Tinker. "Mr. Weasel is more at home in a hole than he is above ground. Cruel hunters often use a ferret, who is a first cousin to Slinker, to help them catch rabbits. They put the ferret in one door of the hole and a bag over the other door. Then when Bunny comes hopping out to escape the ferret, he jumps right smack into the bag. But if there happens to be only one door to the hole, Mr. Rabbit never comes out at all. So you see, hiding in a hole would be a pretty poor way to escape from Slinker."

Mr. Rabbit had run right around in a circle, and Billy and Tinker were now back at the spot where they had started from.

"Hello, what's this!" said Tinker, a minute later, stopping so suddenly that Billy nearly stepped on him. "There's been high jinks here, that's certain, but I can't quite figure it out."

For several minutes he stood on one leg, studying the ground, the weeney copper kettle that served him for a hat cocked over one ear, giving him a most comical appearance.

"Hm-m, I'm afraid Slinker got more than he bargained for this time," said Tinker at last, scratching his chin with the toe of his pointed boot.

"Why, what's happened?"

"See that shallow hole in the snow? Well, that's where Mr. Rabbit sat down when he got too scared to run any farther. But Slinker didn't catch him, for there are Mr. Rabbit's tracks leading on through the woods. Here are Slinker's tracks and there—they aren't. They stop right short within a few feet of where Bunny sat. Now, you know a weasel can't vanish without leaving any tracks behind, but that's just exactly what he's done. What do you suppose has happened, Billy Be By Bo Bum?"

"I'm sure I don't know," replied Billy.

"Well, what do you make of that?" asked Tinker, pointing to Slinker's last track. Right over the tracks of the weasel were the marks of two large claws, and the snow nearby was beaten down, showing there had been a struggle of some kind.

"What does it mean?" asked Billy.

'It means,' replied Tinker, "that just as Slinker was about to pounce on Mr. Rabbit, Old Too Whoo the Owl dropped down on him like a lump of lead and carried him off. I'm afraid that's the last of Slinker, but it sure was lucky for Mr. Rabbit."

An Essay on Wind.

By HOWARD C. KEGLEY.

WIND is an atmospheric disturbance of the peace. It starts nowhere and stops nowhere. There are tide winds and winds that never were tied. Some winds are trade winds, and others will put a crimp in trade.

Out in the middle west, wind is usually accompanied by one of many varieties of weather peculiar to that region. If the wind swings to the northeast, the farmer fodders the cattle early in the evening, carries in a couple of cords of wood, and gets ready for a heavy fall of snow. Next morning there are rabbit tracks on the window sills, and the snowbirds are sitting on the picket fence, with feather boas snugly tied about their necks.

If the wind gets around to the northwest, look out for a blizzard. Ten minutes after the wind begins to blow from that direction, a foot of snow particles sweep down across Montana and the Dakotas, and before sunset all of the trains on the Iowa and Illinois divisions are running late. The rural mail carrier frosts his ears, the prize chickens either freeze their wattles or contract the bumble-foot, the fast mail train loses its pep and goes to sleep in a drift-filled cut, and the cistern pump has hardening of the arteries.

When the soft spring wind begins to blow from the south, country folk hasten to town and lay in enough groceries to last a month. The south wind brings a rain that swells the river, washes out all the bridges, submerges the corn land, drowns all the little chickens, and leaks through the plastering into the kitchen, so that folks have to keep a dripping pan in the center of the table to catch the sap. The only good thing about such a rain is that it fills the cellar full of water and drowns a rat that has nicked all of the seed corn in the garret.

Along toward the close of a hot summer day, when a farmer who has just mowed a big field of timothy thinks he is going to get it put up without getting any rain on it, the wind glides gracefully around to the southwest. Lookout! Lookout!

When a farmer sees thunder-heads begin piling up in the west shortly after sunset, he does the milking in a hurry. Then he goes to the house, gets a lantern, has his wife fill a big basket full of lunch, and then clasps his family to his manly bosom and legs it for the cyclone cave.

Soon thereafter the silence is fractured by a buzzing sound similar to that which is produced by a threshing machine cylinder running without grain in it. For half an hour everyone in the cellar eats bread and pickles to muffle the chatter of their teeth and make each other believe that they are not afraid, not much.

When the wind has ceased to roar, the farmer ventures forth to view the remains. His house is missing, but near at hand is one just as good, which used to belong on a farm three miles west. There is a cow on the windmill and a shoat in the single buggy, a set of double harness on an apple tree, and a span of mules in the cellar. All of the farmhouses in the neighborhood are blown away, excepting those which had heavy mortgages upon them.

No man knoweth whither the wind bloweth nor where it listeth. It comes and blows and then it goes. The wind comes from somewhere and it always goes somewhere. Some people think that it just blows and blows until it blows itself away, but I know better. When it gets through blowing it goes back to its hole and pulls the hole in after it; else why should we have the Cave of the Winds!

Winston of the Prairie

BY HAROLD BINDLOSS.

Copyrighted by Frederick A. Stokes Company.

CHAPTER XVI.

There was no confusion, and already the hired men were busy with two great machines until Winston displaced two of them.

"How that fire passed the guards I don't know, but there will be time to find out later," he said to Dane. "Follow with the big breaker—it wants a strong man to keep that share in—as close as you can."

Then they were off, a man at the heads of the leading horses harnessed to the great machines, and Winston sitting very intent in the driving-seat of one, while the tough sod crackled under the rending shares. Both the man and reins were needed when the smoke rolled down on them, but it was for a moment torn aside again, and there roared up towards the blurred arch of indigo a great rush of flame. The heat of it smote into prickliness the uncovered skin, and in spite of all that Winston could do, the beasts recoiled upon the machine behind them. Then they swung round, wrenching the shares from the triplex furrow, and for a few wild minutes man and terrified beast fought for the mastery. Breathless half-strangled objurgations, the clatter of trace and swivel, and the thud of hoofs, rose muffled through the roar of the fire, for, while swaying, plunging, panting, they fought with fist and hoof, it was rolling on, and now the heat was almost insupportable. The victory, however, was to the men, and when the great machine went on again, Maud Barrington, who had watched the struggle, with the wife of one of her neighbors, stood wide-eyed, half-afraid and yet thrilled in every fiber.

"It was splendid," she said. "They can't be beaten."

Her companion seemed to shiver a little. "Yes," she said, "perhaps it was, but I wish it was over. It would appeal to you differently, my dear, if you had a husband at one of those horses' heads."

For a moment Maud Barrington wondered whether it would, and then, when a red flame flickered out towards the team, felt a little chill of dread. In another second the smoke whirled about them, and she moved backward choking with her companion. The teams, however, went on, and came out, frantic with fear, on the farther side. The men who led them afterwards wondered how they kept their grip on the horses' heads. Then it was that, while the machines swung round and other men ran to help, Winston, springing from the driving-seat, found Dane amid the swaying, plunging medley of beasts and men.

"If you can't find hook or clevis, cut the trace," he said. "It can't burn the plow, and the devils are out of hand now. The fire will jump these furrows, and we've got to try again."

In another minute four maddened beasts were careering across the prairie with portions of their trappings banging about them, while one man who was badly kicked sat down gray in face and gasping, and the fire rolled up the ridge of loam, checked, and then sprang across it here and there.

"I'll take one of these lad's places," said Dane. "That fellow can't hold the breaker straight, Courthorne."

It was a minute or two later when he flung a breathless lad away from his place, and the latter turned upon him, hoarse with indignation.

"I raced Stapleton for it. Loose your hold, confound you. It's mine," he said.

Dane turned and laughed at him as he signed to one of the Ontario hired men to take the near horse's head.

"You're a plucky lad, and you've done what you could," he said. "Still, if you get in the way of a grown man now, I'll break your head for you."

He was off in another moment, crossed Winston, who had found fresh beasts, in his furrow, and had turned and doubled it before the fire that had passed the other barrier came close upon them. Once more the smoke grew blinding and one of Dane's beasts went down.

"I'm out of action now," he said. "Try back. That team will never face it, Courthorne."

Winston's face grew very grim under the tossing flame. "They've got to. I'm going through," he said. "If the others are to stop it behind there, they must have time."

Then he and the husband of the woman who had spoken to Maud Barrington passed on with frantic team into the smoke that was streaked with flame.

"Good Lord!" said Dane, and added more as, sitting on the horse's head he turned his tingling face from the fire.

It was some minutes before he and the hired man who came up loosed the fallen horse, and led it and its fellow back towards the last defenses the rest had been raising, while the first furrows checked but did not stay the conflagration. There he presently came upon the man who had been with Winston.

"I don't know where Courthorne is," he said. "The beasts bolted with us just after we'd gone through the worst of it, and I fancy they took the plow along. Anyway, I didn't see what became of them, and don't fancy anybody would have worried much about them after being trampled on by a horse in the lumbar region."

Dane saw that the man was limping and white in the face, and asked no more questions. It was evident to him that Courthorne would be where he was most needed, and he did what he could with those who were adding furrow to furrow across the path of the fire. It rolled up to them roaring, stopped, flung a shower of burning filaments before it, sank and swept

(Continued on page 44).

European Co-operative Agriculture As Seen by the American Commission

By WM. B. HATCH, Michigan Member of the Commission.

MY first impression of Italy was a good impression. It was received at Genoa. Walking along the streets of this city of 250,000, from the appearance of the people I would not have thought myself abroad at all. I might easily have imagined myself in New York or New Orleans. But stopping to look at the names over the doors of the business places, or stopping to inquire the way, my impression would instantly change from domestic to foreign. Unjustly to Italy, the average American impression of her people is gained from the Southern Italians, chiefly, those who peddle bananas, build railroads, and perform much of the necessary and disagreeable work here. Northern Italy is entirely different. The citizens there will rank with our best



The Old and New Methods of Transportation on the Appian Way.

citizens and they remain there in prosperous contentment. They do not come here.

The American and United States Commissions divided at Rome and Florence into five groups. From Rome one group went to Southern Italy and the island of Cicily. Another small group went to Egypt to study the cotton industry. I pass by the findings of these two southern groups in the main because they devoted their inquiry chiefly to co-operative agriculture as it affects the citrus fruit and cotton industries. These industries, to be sure, are not foreign interests to the farmers of Michigan, simply because they are staple products in a large section of our country. When the farmers in this large section are not prosperous the depression is felt throughout the north as well, as we are now witnessing in the case of cotton, for it affects the purchasing power of a very large number of our customers. Even though cotton, to some extent, comes into competition with wool, it supplies so much larger proportion of the clothing of the average citizen that it is a great economic factor in the comfort and welfare of the peoples all over the world. It is claimed by statistics that:

"Ten southern cotton producing states supply 70 per cent of the world's crop. It is the chief element in the clothing of the common people. Silk, wool and flax are the other clothing materials. The average price is about 60 cents a pound. One hundred acres of land produces 500 pounds of wool. One acre of land produced 500 pounds of cotton. Cotton must cost as much as wool, silk or flax before they can compete. That the cotton crop may be produced profitably and economically by the American farmer is an ecoonmic problem in which every citizen is interested."

We were in Rome in May. Most of the trees looked familiar. The locusts were in bloom; the elm, the sycamore and the chestnut furnished as frequent shade in Rome as in the streets of many Michigan cities. The Campania lands about Rome are by law being divided up into smaller holdings and redeemed for cultivation. Good first impressions—that the thrift and economy in the life of the common people which you get as soon as you land in Europe and which remains with you while there, and long afterward—an element in their civilization by the way, which, I believe, will need to be more largely introduced into ours if we are to successfully compete with them in the world's markets open to the most efficient agriculturalists of all countries.

Intensive agriculture organized on a co-operative basis makes the farmers in the country adjoining Rome in the valley of the Tiber look prosperous. In the earlier days silk culture seemed to have flourished to such an extent that the fields were marked by lines of mulberry trees. These are now put to double use. They are kept trimmed back to furnish tender leaves for the silk worm, and up them and stretched from one to the other are trained grape vines, while between the rows are grown grain and vegetables. Grapes and olives also cover the foot hills and the lower mountain stretches.

Another impression I received in Italy was that agriculture is given more serious attention than it is generally given in America by the state authorities and by the people generally. The Italians engaged in agriculture found, as we are finding in America, that a commercial banking system is not adequately organized to meet the needs of agriculture. A man engaged in commercial business can borrow money for thirty or sixty days, buy a stock of goods with it, turn that stock of goods into money within that time, pay his obligation at the bank, pocket the profits and repeat the process. But a man engaged in agriculture may need to buy his fertilizers and seeds and tools to work the land, require six months within which to produce the crop and another six months in which to profitably convert his raw material into the manufactured product and sell the product. If he is buying his farm, he, of course, will need a much longer term of credit. The Italians, therefore, early learned that while the organization of agriculture on a co-operative basis can be promoted with material success without first organizing the co-operative credit and finance end of it, yet, to do so, is in a measure putting the cart before the horse. No organization gets very far before it has to consider the problem of working capital. Agriculture in Italy, the same as agriculture in America, found that it was supplying the commercial banking system of Italy with a large part of its working capital, and yet, when agriculture went to the commercial banks to get part of the capital it was supplying those banks it could only get it on terms dictated by the banks. And often, as in America, commerce and manufacturers were outbidding agriculture's own capital. And agriculture's capital was more profitably tied up by the banks in commercial enterprise which flourished there, as here, to a considerable extent, at the expense of agriculture.

So co-operative credit organizations were effected among those interested in agriculture. One class of these organizations dealt with short term credit, such as was needed in buying fertilizers, supplies, agriculture machinery, etc. A long term credit was provided through a system of long term mortgage bonds. These bonds ran as long as thirty-five and even fifty years. They were issued on a fifty per cent valuation of the security back of them, and sold on a four and a half and five per cent basis, and sometimes lower than that. There was an amortization feature by which the borrower by paying in addition to the interest, a small per cent on the principal, which was scarcely noticed as a burden, at least, he thereby at the end of this considerable period paid off his indebtedness without feeling it. Furthermore, he was privileged to pay off the entire indebtedness at any time by paying a small premium.

It seems apparent that Italian agriculture protected by such a system of long term credit is much better organized and has competitive advantage over us. The borrower there cannot be molested for thirty-five years say, if he meets his modest obligation. He can lay out a constructive program of improvement of his farm with reasonable assurance of safety, whereas the American farmer pays, according to official information, an average of eight per cent for his money and he is under the constant worry, perhaps, of being called upon to supply the entire principle in a new loan as often as every five years. The Savings Banks of Italy also make these long term loans in large aggregate amounts. The Savings Bank of Florence, for example, is permitted by law to loan thirty per cent of the capital deposited with the bank on this class of securities and accordingly has over six million dollars invested in these mortgage bonds. And it has also granted loans on mortgage security in the form of open accounts. The borrower, under this system, does not withdraw all the money he is entitled to by his mortgage, but is given a check book. The borrower can return to the bank any part of the loan for which he has no use, and he only pays interest on that portion practically in use. It is loaned at a low rate of interest for the purpose of promoting agriculture.

Certain it is that the Savings Banks in Italy, are organized on an entirely different basis than the Savings Banks of Michigan for example, and, in, fact the Savings Banks of most of our states, although I understand the Savings Banks in New York and Massachusetts are organized on a mutual basis for the public welfare instead of private profit. Many of the Savings Banks in Italy are organized more purely as public utility or benevolent institutions. These institutions have no share holders, do not have to pay dividends, and all of the profits of the business go to increase the working capital and build up the reserve fund. These banks make a special feature of encouraging the formation of rural banks by placing money at their disposal. These Savings Banks are large deposit banks. The Savings Bank of Milan, for example, when the American Commission visited it, had over $160,000,000 on deposit.

Italy has practically twice the area of Michigan and fully eight times the population. In addition to the encouragement given agriculture by its Savings Banks there are over 2,000 rural banks organized on the Raiffeisen system with unlimited liability of the members. There are also rural banks with limited liability of members. And also organizations on a purely co-operative basis for insurance to buildings and health of the toilers and their live stock, for the reclamation and the improvement of land and the purchase thereof, for co-operative farming through collective leases, for



Co-operative Factory near Gargano, Italy, for the Manufacture of Taurel and Olive Oils. Has been in Successful Operation Since 1839.

the manufacture of fertilizers, olive and taurel oils, for the purchase of machinery and supplies, etc.

TIME'S FLIGHT.

BY WALTER G. DOTY.

"Seven days make one week.
Twelve months make one year."
This in school we used to speak
In a sing-song loud and clear.

Now that we are more antique,
More and more it groweth clear
That ten minutes make a week
And six weeks comprise a year.

Tempus fugit? Yes, you're right;
And, in fuging, takes our hair,
Teeth and hearing and eyesight,
Leaving aches and debts and care.

Would that we were young once more
Chanting still that same sing-song,
With vacation at the door
Full of weeks some two months long.

Let us be of good cheer, however, remembering that the misfortunes hardest to bear are those which never come.—Lowell.

Get This Car FREE

And the Agency for Your Territory



2 Passenger—4 Cylinder—Water Cooled—Shaft Drive—Selective Type Transmission

Price $425. Write Now

BEFORE YOU TURN THIS PAGE

The most wonderful offer ever made to readers of this paper. A Big Advertising Plan which you can benefit by if you send in at once. Don't let a minute slip. Send for details today. Right Now! Write your name and address plainly. Hurry for it means money to you.

Learn How to Make $100 to $400 Every Month and Be Your OWN BOSS

It's easy and we will show you how. You can become an expert automobile man in a short time. No need to leave home. Our students are coining money and you can too if you act immediately. Write today for Big Catalog and all details. Don't wait. Do it now. Send your name and full address.

You Get a Car FREE and the Agency

C. A. Coey, the world's Premier Autoist and winner of many world's records, builds this machine and makes you this offer. It's no get rich quick scheme—so don't delay writing today. It's the most important thing you can do today — just ask for details.

C. A. COEY'S SCHOOL OF MOTORING

109 COEY BLDG., 2010-12 Wabash Ave., CHICAGO, ILL.

It Pays to be an Artist



We will teach you our easy method of drawing in YOUR OWN HOME

Commercial artists earn from $15.00 to $35.00 per week.

We Guarantee You a Position or Refund Your Money.

We give each student a complete Drawing Outfit.

Write today for particulars, our literature is FREE and will interest you.

Anyone who can learn to write can learn to draw

SCHOOL OF APPLIED ART,
Dept. 11,
BATTLE CREEK, - MICHIGAN.

It Helped Us Make $30,000

So writes a **farmer and his wife** who have taken **The Breeder's Gazette** for twelve years. Thousands of farmers who have made money attribute a large part of their success to The Breeder's Gazette. It is the big, well-printed and illustrated farm weekly that **tells how other successful farmers are making money.** No matter what other papers you are receiving, you should have The Breeder's Gazette. Ask for a **free copy.**

THE BREEDER'S GAZETTE
Room 1125, 542 S. Dearborn St., Chicago

$40 and EXPENSES

EVERY WEEK Now being earned easily by many of our agents. No tone week, but every week Clean high class business. Your entire time, or just evenings, demonstrating and taking orders for the



COLEMAN AIR-O-LITE

—A beautiful, portable lamp. Makes and burns its own gas. 300 candle power, at only 1-3c per hour. No greasy wicks, no chimneys. No danger even if tipped over. Guaranteed for five years. Sells on sight. Exclusive and special proposition to agents everywhere. Write at once for catalogue and wholesale price list.

THE COLEMAN LAMP CO.
1008 Summit St., Toledo, Ohio.
281 E. 6th St., St. Paul, Minnesota.
206 N. St. Francis Ave., Wichita, Kan.
402 Akard St., Dallas, Texas.

Maple Syrup Makers

You get EFFICIENCY and SERVICE in our

Champion Evaporator.

Quick work, fuel saving, durability and BEST QUALITY of SYRUP. Write us for Catalogue.



Champion Evaporator Co., Makers, Hudson, O.

THE AWL FOR ALL $1.00 Postpaid

Sew Anything

Leather, canvas, shoes, harness, saddles, buggy tops, etc. Any material, any thickness. Myers' wonderful Sewing Awl makes lockstitch, neat, quick, easy. See that reel? It keeps the tension right. AGENTS WANTED. Big money. C. A. MYERS CO., 6324 Lexington Ave., Chicago, Ill.

Government Positions

are good. Prepare for Rural Carrier, Railway Mail, Post Office and other "Exams" under former U.S. Civil Service Secretary-Examiner. Write today for booklet 187. It's free, without obligation. Patterson Civil Service School, Rochester, N. Y.

LEARN AUCTIONEERING

at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught in five weeks. Write today for free catalog. Jones Nat'l. School of Auctioneering, 28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres'

Railway Mail Clerks, Clerk-Carriers and Rural Carriers wanted. I conducted Examinations, can help you. Trial Examination Free. Ozment, 17 R, St. Louis

ON THE EUROPEAN WAR.

BY CHAS. H. MEIERS.

They are shooting down their toilers,
over there across the sea,
And when that big job is finished, in
a sorry plight they'll be.
They'll be needing very badly things
to eat and things to wear,
And no doubt there'll be a shortage of
producers over there.
So, to keep their people eating and to
get things back in trim,
They will call upon our farmer, and
they'll send their gold to him
In return for things they must have
and have not had time to grow;
It must benefit our farmer in financial
ways, we know.

But our hearts bleed for our brothers
who go daily to their fate,
And we're praying that the slaughter
may cease at an early date;
For we would not have one soldier
killed upon the battlefield
For the whole great sum of dollars
that this monstrous war may
yield.
We would fain forego our prospects of
prosperity thus wrought,
If in view of our so doing no more
battles need be fought.
Oh, we wish that peace might triumph
'ere more fellowmen be slain!
May God help the suffering, homeless,
all whose hearts are torn by
pain!

WINSTON OF THE PRAIRIE.

(Continued from page 42).

aloft again, while the sparks rained down upon the grass before the draught it made.

Blackened men with smoldering clothes were, however, ready, and they fought each incipient blaze with soaked grain bags, and shovels, some of them also, careless of blistered arms, with their own wet jackets. As fast as each fire was trampled out another sprang into life, but the parent blaze that fed them sank and died, and at last there was a hoarse cheer. They had won, and the fire they had beaten passed on, divided, across the prairie, leaving the homestead unscathed between.

Then they turned to look for their leader, and did not find him until a lad came up to Dane.

"Courthorne's back by the second furrows, and I fancy he's badly hurt," he said. "He didn't appear to know me, and his head seems all kicked in."

It was not apparent how the news went round, but in a few minutes Dane was kneeling beside a limp blacked object stretched amid the grass, and while his comrades clustered behind her, Maud Barrington bent over him. Her voice was breathless as she asked, "You don't believe him dead?"

Somebody had brought a lantern, and Dane felt inclined to gasp when he saw the girl's white face, but what she felt was not his business then.

"He's of a kind that is very hard to kill. Hold that lantern so I can see him," he said.

The rest waited silent, glad that there was somebody to take a lead, and in a few moments Dane looked round again.

"Ride in to the settlement, Stapleton, and bring that Doctor fellow out if you bring him by the neck. Stop just a moment. You don't know where you're to bring him to."

"Here, of course," said the lad, breaking into a run.

"Wait," and Dane's voice stopped him. "Now, I don't fancy that would do. It seems to me that this is a case in which a woman to look after him would be necessary."

Then, before any of the married men or their wives who had followed them could make an offer, Maud Barrington touched his shoulder.

"He is coming to the Grange," she said.

Dane nodded, signed to Stapleton, then spoke quickly to the men about him and turned to Maud Barrington.

"Ride on at a gallop and get everything ready. I'll see he comes to no harm," he said.

The girl felt curiously grateful as she rode with her companion, and Dane, who laid Winston carefully in a wagon, drew two of the other men aside when it rolled away towards the Grange.

"There is something to be looked into. Did you notice anything unusual about the affair?" he said.

"Since you asked me, I did," said one of the men. "I, however, scarcely cared to mention it until I had time for reflection, but while I fancy the regulation guards would have checked the fire on the boundaries without our help, I don't quite see how one started in the hollow inside them."

"Exactly," said Dane, very dryly. "Well, we have got to discover it, and the more quickly we do it the better. I fancy, however, that the question who started it is what we have to consider."

The men looked at one another and the third of them nodded.

"I fancy it comes to that—though it is horribly unpleasant to admit it," he said.

CHAPTER XVII.

Maud Barrington is Merciless.

DANE over took the wagon close by the birch bluff at Silverdale Grange. It was late then, but there were lights in the windows that blinked beyond the trees, and, when the wagon stopped, Barrington stood in the entrance with one or two of his hired men. Accidents are not infrequent on the prairie, where surgical assistance is not always available, and there was a shutter ready on the ground beside him, for the Colonel had seen the field hospital in operation.

"Unhook the tailboard," he said sharply. "Two of you pick up the shutter. Four more here. Now, arms about his shoulders, hips, and knees. Lift and lower—step off with right foot, leading bearer, with your left in the rear!"

It was done in a few moments, and when the bearers passed into the big hall that rang with their shuffling steps, Maud Barrington shivered as she waited with her aunt in an inner room. That trampling was horribly suggestive, and she had seen but little of sickness and grievous wounds. Still, the fact scarcely accounted for the painful throbbing of her heart, and the dizziness that came upon her. Then the bearers came in, panting, with Barrington and Dane behind them, and the girl was grateful to her aunt, who laid a hand upon her arm when she saw the singed head, and blackened face that was smeared with a ruddier tint, upon the shutter.

"Lower!" said Colonel Barrington. "Lift, as I told you," and the huddled object was laid upon the bed. Then there was silence until the impassive voice rose again.

"We shall not want you, Maud. Dane, you and I will get these burnt things off him."

The girl went out, and while she stood, feeling curiously chilly in an adjoining room, Barrington bent over his patient.

"Well put together!" he said, thoughtfully. "Most of his people were lighter in frame. Well, we can only oil the burns, and get a cold compress about his head. All intact, so far as I can see, and I fancy he'd pull through a good deal more than has happened to him. I am obliged for your assistance, but I need not keep you."

The men withdrew, and when a rattle of wheels rose from the prairie, Maud Barrington waylaid her uncle in the hall. Her fingers were trembling, and, though her voice was steady, the man glanced at her curiously as she asked, "How is he?"

"One can scarcely form an opinion yet," he said slowly. "He is burned here and there, and his head is badly cut, it is the concussion that troubles me. A frantic horse kicks tolerably hard, you know, but I shall be able to tell you more when the doctor comes



Wash bright as new

You simply wash Mellotoned walls and they're bright as new. Do away with the expense and muss of re-papering or calcimining—paint your inside walls with beautiful Mellotone, and they'll stay like new for years.

Lowe Brothers High Standard Mellotone

is easy to apply and ready prepared. Mellotone colors are far richer and prettier than calcimine colors and they never fade. Mellotoned walls are far more cheerful than wallpaper and wonderfully durable. Not easily scratched nor marred—insure bright, clean home and easy house cleaning.

Free — The FARM HOUSE Outside and Inside

Post yourself now on 'High Standard' Liquid Paint.

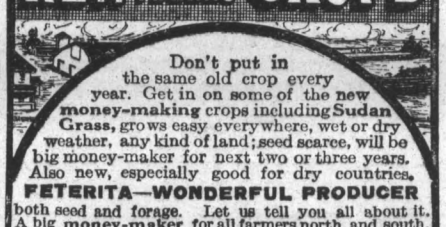
Send for our booklet and read about this paint that is scientifically made. Tested ingredients are blended (not simply mixed) in exact proportions to produce 'High Standard' paint that years of exposure tests have proved to give best results.

Free booklet and Color Pictures

Shows 18 pictures in colors of homes outside and inside. Full of paint information and ideas for getting best results in painting houses, barns, woodwork, walls, vehicles, etc. In writing, ask for the name of the nearest dealer in "High Standard" Paints, Mellotone, Varnishes, Enamels, if you don't know him.

The Lowe Brothers Co.
499 E. Third St., Dayton, O.
Boston Jersey City Chicago
Kansas City Minneapolis
Lowe Bros. Ltd., Toronto, Can.

NEW MONEY MAKING CROPS



Don't put in the same old crop every year. Get in on some of the new **money-making** crops including **Sudan Grass,** grows easy everywhere, wet or dry weather, any kind of land; seed scarce, will be big money-maker for next two or three years. Also new, especially good for dry countries.

FETERITA—WONDERFUL PRODUCER

both seed and forage. Let us tell you all about it. A big **money-maker** for all farmers north and south. Also **Imported Rape, Mangels and Vetch** seed. **Pure Alfalfa, Clover,** etc. **Write today for our 1915 Pure Seed Book.**

GALLOWAY BROS. & CO.
181 Galloway Station Waterloo, Iowa

SYKES — FREE SAMPLE — FREE ESTIMATE

Galvanized or Painted Roofing

Made of high grade open hearth metal. All galvanized Roofing and Siding have heavy coating of galvanize. Write to-day for free sample and mill price list No. 206. Send size of building, length of ridge, length of rafters and we will furnish free complete estimate of cost—without obligation on your part to buy—then make comparison and see the big saving. Also makers of galvanized shingles for houses.

30 Year Guaranteed Galvanized Roofing

Made of selected best grade No. 24 gauge basic open hearth metal with an extra heavy tight COATING OF GALVANIZE and PURE TIN. Write today for price list No. 60. When you buy from us you buy from the manufacturer.

Established 1877

THE SYKES METAL LATH & ROOFING CO.
511 River Road, Warren, Ohio.

DIRECT FROM MILL AT MILL PRICES

MONEY in PATENTS

I secure your patent or return my fee. Write for free booklet, "How to secure your patent and make your profits thereon." I assist in selling your patent.

MANSELL F. MILLS
Registered U. S. Patent Attorney
211 Commercial National Bank Bldg., Washington, D. C.

Electric Light Outfit—Operates 30 lamps. New modern Generator, Switch Board and Storage Battery, $245. Engine $40 extra. Send for description. Fair Oaks Nursery Co., Traverse City, Mich.

tomorrow. In the meanwhile you had better rest, though you could look in and see if your aunt wants anything in an hour or two."

Maud Barrington passed an hour in horrible impatience, and then stole quietly into the sick-room. The windows were open wide, and the shaded lamp burned unsteadily as the cool night breeze flowed in. Its dim light just touched the man who lay motionless with a bandage round his head, and the drawn pallor of his face once more sent a shiver through the girl. Then Miss Barrington rose and lifted a warning hand.

"Quite unconscious still," she said softly. "I fancy he was knocked down by one of the horses and trampled on, but your uncle has hopes of him. He has evidently led a healthy life."

The girl was a little less serene than usual then, and drew back into the shadow.

"Yes," she said. "We did not think so once."

Miss Barrington smiled curiously. "Are you very much astonished Maud? Still, there is nothing you can do for me, and we shall want you tomorrow."

Realizing that there was no need for her, the girl went out, and when the door closed behind her the little white-haired lady bent down and gazed at her patient long and steadily. Then she shook her head, and moved back to the seat she had risen from with perplexity in her face.

In the meanwhile, Maud Barrington sat by the open window in her room staring out into the night. There was a whispering in the birch bluff, and the murmuring of leagues of grasses rose from the prairie that stretched away beyond it. Still, though the wind fanned her throbbing forehead with a pleasant coolness, the nocturnal harmonies awoke no response in her. Sleep was out of the question, for her brain was in a whirl of vague sensations, through which fear came uppermost every now and then. Why anything which could befall this man who had come out of the obscurity, and was, he had told her, to go back into it again, should disturb her, Maud Barrington did not know; but there was no disguising the fact that she would feel his loss grievously, as others at Silverdale would do. Then with a little tremor she wondered whether they must lose him, and rising stood tensely still, listening for any sound from the room where the sick man lay.

There was nothing but the sighing of the grasses outside and the murmur of the birches in the bluff, until the doleful howl of coyote stole faintly out of the night. Again the beast sent its cry out upon the wind, and the girl trembled as she listened. The unearthly wail seemed charged with augury, and every nerve in her thrilled.

Then she sank down into her chair again, and sat still, hoping, listening, fearing, and wondering when the day would come, until at last her eyes grew heavy, and it was with a start she roused herself when a rattle of wheels came up out of the prairie in the early morning. Then a spume-flecked team swept up to the house, a door swung open, there was a murmur of voices and a sound of feet that moved softly in the hall, after which, for what seemed an interminable time, silence reigned again. At last when the stealthy patter of feet recommenced, the girl slipped down the stairway and came upon Barrington. Still, she could not ask the question that was trembling on her lips.

"Is there anything I can do?" she said.

Barrington shook his head. "Not now! The doctor is here, and does not seem very anxious about him. The concussion is not apparently, serious, and his other injuries will not trouble him much."

Maud Barrington said nothing and turned away, sensible of a great relief, while her aunt entering her room an hour later found her lying fast asleep, but still dressed as she had last seen her. Then, being a discerning woman, she went out softly with a curious smile, and did not at any time mention what she had seen.

It was that evening, and Barrington had departed suddenly on business to Winnipeg, when Dane rode up to the Grange. He asked for Miss Barrington and her niece, and when he heard that his comrade was recovering sensibility, sat down, looking very grave.

"I have something to tell you but Courthorne must not know until he is better, while I'm not sure that we need tell him then," he said. "In the meanwhile, I am also inclined to fancy it would be better kept from Colonel Barrington on his return. It is the first time anything of the kind has happened at Silverdale, and it would hurt him horribly, which decided us to come first to you."

"You must be more concise," said Miss Barrington quickly, and Dane trifled with the hat in his hand.

"It is," he said, "a most unpleasant thing, and is known to three men only, of whom I am one. We have also arranged that nobody else will chance upon what we have discovered. You see, Ferris is unfortunately connected with you, and his people have had trouble enough already."

"Ferris?" said Maud Barrington, with a sudden hardening of her face. "You surely don't mean—"

Dane nodded. "Yes," he said reluctantly. "I'm afraid I do. Now, if you will listen to me for a minute or two."

He told his story with a grim, convincing quietness and the blood crept into the girl's cheeks as she followed his discoveries step by step. Glancing at her aunt, she saw that there was horror as well as belief in the gentle lady's face.

"Then," she said, with cold incisiveness, "Ferris cannot stay here, and he shall be punished."

"No," said Dane. "We have no room for a lad of his disposition at Silverdale—but I'm very uncertain in regard to the rest. You see, it could not be done without attracting attention—and I have the honor of knowing his mother. You will remember how she lost another son. That is why I did not tell Colonel Barrington. He is a trifle—precipitate—occasionally."

Miss Barrington glanced at him gratefully. "You have done wisely," she said. "Ethel Ferris has borne enough, and she has never been the same since the horrible night they brought Frank home, for she knew how he came by his death, though the coroner brought it in misadventure. I also fancy my brother would be implacable in a case like this, though how far I am warranted in keeping the facts from him I do not know."

Dane nodded gravely. "We leave that to you. You will, however, remember what happened once before. We cannot go through what we did then again."

(Continued next week).

Only when men suffer for other people do they do their best, and bring forth in their own consciousness and into the sight of other men the best that is in them.—Phillips Brooks.

BOOK NOTICE.

When we find an opportunity to offer our readers something worth while and absolutely free, postpaid, with no string attached, we like to have them take advantage of it. We desire to mention two books offered in this way. One a very attractive book of popular songs, compiled by Mr. A. F. O'Tull, president of the Business Institute, 163 Cass avenue, Detroit. The other a book of Barn Plans issued by The Loudon Machinery Company, 1906 Briggs avenue, Fairfield, Iowa. This is one of their regular $1.00 books. Either one will be sent free if, when ordering, you mention the Michigan Farmer

TY COBB Famous Ball Player, says:

"Tuxedo is a good, pure, mild tobacco and makes a wonderfully pleasant pipe-smoke."

Ty Cobb



The World's Greatest Ball Player Smokes the World's Best Tobacco

There isn't a cross-roads village in the entire country that doesn't know and respect the name of Ty Cobb. This man has aroused the admiration of an entire sport-loving nation by his wonderful mental and physical alertness in the cleverest outdoor game man has yet devised. Ty Cobb has the two qualities most highly prized by Americans—Brains and Speed. He leads his league in batting; he is the champion base-runner; and all the time his wits and muscles work in perfect co-ordination.

Tuxedo

The Perfect Tobacco for Pipe and Cigarette

Tuxedo has made thousands of men happy, temperate and comfortable converts to the pipe, because it has made pipe-smoking not only possible but pleasant to them.

There are plenty of imitators of Tuxedo, singing out loud all about their "no-bite" tobacco. But just remember this—Tuxedo was born in 1904. Tuxedo is the original.

The famous "Tuxedo Process" is a secret known only to the makers of Tuxedo. It was the first process of this kind; and it's the best. Tuxedo absolutely will not bite your tongue.

YOU CAN BUY TUXEDO EVERYWHERE

Convenient, glassine-wrapped, moisture-proof pouch . . 5c

Famous green tin, with gold lettering, curved to fit pocket 10c

In Tin Humidors, 40c and 80c *In Glass Humidors, 50c and 90c*

THE AMERICAN TOBACCO COMPANY

160 ACRE FARMS IN WESTERN CANADA FREE

WAITING FOR YOU

Yes, waiting for every farmer or farmer's son—any industrious American who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is higher but her farm land just as cheap and in the provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads are Actually Free to Settlers and Other Land at From $15 to $20 per Acre

The people of European countries as well as the American continent must be fed—thus an even greater demand for Canadian Wheat will keep up the price. Any farmer who can buy land at $15.00 to $30.00 per acre—get a dollar for wheat and raise 20 to 45 bushels to the acre is bound to make money—that's what you can expect in Western Canada. Wonderful yields also of **Oats, Barley and Flax. Mixed Farming** is 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. Good schools, markets convenient, climate excellent. Military service is not compulsory in Canada but there is an unusual demand for farm labor to replace the many young men who have volunteered for service in the war.

Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or to

M. V. McINNES,
176 Jefferson Avenue, - - Detroit, Mich.

Canadian Government Agent.



Use NATCO Drain Tile—Last Forever

Farm drainage needs durable tile. Our drain tile are made of best Ohio clay, **thoroughly hard burned.** Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Natco Building Tile and Natco Sewer Pipe.

NATIONAL FIRE PROOFING COMPANY, Fulton Building, PITTSBURGH, PA.

RAW FURS **GEO. I. FOX**
279 7th Ave., NEW YORK
Write for Price List NOW.

WILSON'S COREGA
Holds False Teeth Firmly and Comfortably in the Mouth

Prevents Sore Gums. Corega is an Odorless, Tasteless and Harmless Antiseptic Adhesive Powder. Eat, talk, laugh, sing, cough or sneeze without annoyance or embarrassment. Dentists prescribe it. 50c, $1, $2 at drug stores or postpaid on receipt of price. Sample for 2 cent stamp.
COREGA CHEMICAL CO., 417 Charles Bldg., Cleveland, Ohio

When writing to advertisers please mention the Michigan Farmer



Woman and Her Needs

At Home and Elsewhere



Frankness or Rudeness.

I ALWAYS say just exactly what I think," boasted a woman the other day. "I'm no hypocrite. Everyone knows exactly where I stand. If I don't like a thing I say so. You don't catch me telling a woman I like her dress if I don't. If it isn't becoming I say so." And the speaker glowed as though her frankness were a thing actually to be proud of.

Knowing what her acquaintances thought of her, she has few friends, I couldn't but wonder how she would feel if others were equally frank with her. Among those who know her she is held to be the most disagreeable woman in the neighborhood, a person to be shunned if at all possible, because of her sin of frankness which she considers her chief virtue. For with her, being perfectly frank is only an excuse for unpardonable rudeness. Her truthfulness is not to be counted unto her for righteousness, it is simply brutality.

This woman has a sister in every neighborhood, the pest who can always be counted upon for hurting your feelings if she gets a chance under the guise of being strictly truthful. Of course, we have been all taught the heinousness of lying, but most of us have been taught also that it is better not to tell the whole truth when that truth is going to give pain and will do no good.

What is the use, for instance, of telling a woman her new hat is most unbecoming, or that she looks a fright in green, if she is satisfied with her possessions and thinks she looks charming. It is merely a matter of opinion anyway. She thinks she looks well and you think she doesn't. How do you know which is right? Why say what you think, then, and make an enemy for life, just because you want to be quite frank with everybody?

Why tell a growing girl she is awkward? Granted she is, it doesn't put her at her ease and make her more graceful to be thus ridiculed. Why remark on the first baby's large nose and badly shaped head? Maybe he is a homely little monkey to you, but to his parents he is the most beautiful sight on earth. Why hurt them just for the sake of always telling the truth. Again, the matter is only one of opinion. Perhaps your opinion is wrong.

There are many things even the best intentioned of us say which we needn't, and still we need not be accused of falsehoods. We do not like our neighbor's house, or the new curtains, or the parlor rug, and in an indiscreet moment we criticise. They are offended and we think they are too touchy. But are they? Is it not rather, that we are rude and set our judgment up as better than theirs.

After all, so many things are just relative, mere matters of opinion, and one person's is as good as anothers. If we insist on speaking our minds in order to be cleared of any suspicion of duplicity we are not proving things are as we say, we are simply telling how they look to us. And to the other fellow they may have a different aspect.

Years ago when I was a country school-ma'am it was brought to my attention, this difference in viewpoints. It happened on a nasty, drizzling gray March day. I stood at the hall window, wretchedly homesick, watching the children straggling in, and wishing myself dead, or back with mother, it didn't matter much which. The "queer" girl of the high school paused by my side.

"Isn't it a beautiful day?" she said.

"I don't see it," I snapped shortly. "It's nasty and sloppy and raw and thoroughly disagreeable."

"It doesn't prove there's no beauty there because you con't see it," she replied.

Then I looked at her, her shining eyes, her glowing face, and I saw she really did see beauty out there somewheres. For the first time I realized that two presumably human beings could look at the same thing at the same time and each see something entirely different.

For the painfully frank person this is a good thing to ponder over. Because you think a thing to be the truth it doesn't follow that you are right. So don't always insist on saying exactly what you think. Instead of being admired for your brave truthfulness, you are more often cordially detested for your rudeness.

DEBORAH.

The Domestic Crucible—6.

Grace Encouters a Shortage in Fuel.

AS the clock on the mantel chimed eleven, Grace Ludlow looked up with a guilty start, from the absorbing task of arranging her wedding gift china on the buffet. Eleven o'clock already, and not a thing prepared for dinner! Worse still, not a thing thought of. Her mind took hasty stock of the pantry shelves. Why, there wasn't even a dessert ready, for the first time in her married life, and only an hour in which to prepare for two hungry men!

Her one excuse, good enough for her but rather frail to offer John, was her passion for pretty things, and the joy she took in arranging and re-arranging the few choice pieces of Dresden, Haviland and fine crystal she had received at the time of her wedding. She shook her head ruefully at the shining array, and fancied the cut-glass bowl winked back impudently at her dismay.

"You are to blame, and you know it," she said severely. "But, of course, John will think I am, though he may not say it. Well, there's no time to stand around thinking up excuses," she was in the kitchen as she spoke. "I must run out to the garden and dig potatoes and see what else I can scare up."

The phone tinkled and she paused to count the ring. Six short, their ring! Well, she wouldn't answer it. But if she didn't it would be sure to be John's mother, and Grace knew she would get red in the face when Mother Ludlow asked her where she was at 11 oclock Thursday morning. She'd have to answer the phone if dinner was late.

The caller proved to be, not Mother Ludlow, but a neighbor who wanted the recipe for the salad Grace took to the Ladies' Aid last week. If she only dared say she was in a hurry and would call up in the afternoon! But this particular neighbor would be insulted if she did, so there was no help for it. She gave the recipe, listened to a long-winded account of what happened at the grange the night before, and promised to send over the pattern for her new negligee, all with an agonized eye on the kitchen clock, whose hands were maliciously moving towards 11:15, with more than necessary alacrity.

At last she made her escape, only to stumble over a chicken with a broken leg at the doorstep. Her tender heart would not let her hurry on, the chicken simply had to be taken in and put in a basket, to be further ministered to later. In the garden she dug potatoes with furious speed, cutting half of them in two with the hoe and leaving the other half in the hill, with reckless disregard for the starving poor she had been told were in the city. Fresh lettuce was jerked out of the ground and thrown on top of the potatoes. Beans? Heavens, no, she couldn't cook butter beans today, but she might manage asparagus. What on earth to do for dessert, there was no pie, pudding, cake, nor even cookies. Thank goodness, there were plenty of berries, and the men would have to be satisfied with them without cake, though she knew they would expect it. She certainly had spoiled those men, but they always praised her baking so she had enjoyed the spoiling process.

It was 11:40 when at last she returned to the house, and then she had left the berries to be picked while the men were eating the dinner. She dropped the lettuce into a dishpan of cold water and dumped the potatoes into another pan to be scrubbed.

"They'll have to take them in jackets today," she said. "They can pare them quicker than I can now." In a twinkling the potatoes were scrubbed and ready for boiling.

"Why didn't I start the fire before I went out and have plenty of boiling water ready," she demanded of herself. "They'll be forever getting started now."

She flew to the wood-box, then paused aghast. Not a stick of wood, not even a chip! Only a few burnt matches and a scrap or two of paper. Those two men had marched off to work that morning and left her to fill the wood-box. Of course, it would have to be on a day when everything else was behind. There was no help for it, she'd have to carry in wood, a thing she'd vowed never to do. She dashed out to the wood-yard, only to find there was not a stick split. The anger which she had been choking down flamed in a white heat. Of all things, to leave her to split wood! She would never do it, so there.

But even as she vowed, she had snatched up the axe and was looking about for a smooth straight block without knots. John Ludlow would get a piece of her mind. Did he think she was going to be cook and chore boy, too? The axe struck the block squarely and a smooth straight stick fell off. She struck again, swiftly but surely. He ought to be ashamed of himself. What did he think women were made of? The savage joy of smashing things calmed her a bit, and the rage with which she first attacked the block of wood began to subside. Ashamed of himself, so he had, and she would tell him so, and something else besides. A fifth and sixth stick fell beside the others. But did men ever feel ashamed about such things? Her father had never acted as if he was upset over it when she or her mother had been forced to split the wood and carry it in, and many a time she had done it at home. But she wasn't going to do it again in her new home, not if her name was Grace Ludlow.

She snatched up the armful of wood and hurried back. A generous dash of kerosene on the dry wood took the place of kindling, and she slammed the potatoes on the stove and started to wash the asparagus as the men turned the teams into the barnyard.

"What, no dinner," John demanded ten minutes later. "What have you been doing?"

"Splitting wood most of the time," Grace replied severely. "It seems to me if I do the cooking the least you can do is to see that I have fuel to cook with."

"Lots of it in the back yard," John replied amiably, turning into the washroom. "Help yourself. It's all yours."

"I did help myself today," Grace followed him to the door, "but I'll never do it again."

"You did it lots of times at home and it never hurt you," John spluttered up through hands filled with water which he was dashing over his hot face. "You were splitting wood when I drove up the day I asked you to marry me. That's why I asked you."

Grace turned back to the kitchen. That day was too recent, the memory too fresh to quarrel over anything like splitting wood, when she had done it all her life at home. But she must make John see it really was his work. Some other time, she was mostly too blame for the late dinner today, anyway.

"Maybe it doesn't hurt me," she called back, "but I am not going to do it again. I always told mother it was a man's work, but she spoiled father and I had to keep it up."

"No danger of your spoiling me," John stopped to rumple her hair as he spoke. "Can we begin on the bread and butter?"

"Yes, go on," Grace answered. "And I'll show you next time how little I intend to spoil you," she added under her breath.

THE FEDERAL MIGRATORY BIRD LAW.

The federal government now protects our insectivorous and rodent-eating birds from their human enemies at all times, whether that enemy be the plumage-hunter, the trapper of song birds, the market-hunter with his repeating shotgun or the unthinking small boy with his sling-shot. The new law is so comprehensive and adequate that the extinction which threatened every wild bird in the United States is now averted and the birds that remain have a good chance

of perpetuation and even of substantial increase. Game birds may be killed at specified times, but they are adequately safeguarded and the pernicious practice of spring shooting is prohibited.

Nevertheless, the battle to save the birds is still on and is yet to be won, for the fate of the birds depends upon the enforcement of the new law. And the enforcement of every law depends largely upon public opinion. The new law, being revolutionary in its character and from its nature difficult of enforcement, needs the loyal support of all good citizens. Every club woman should bestir herself. The opportunity has come at last. Let us seize the opportunity and save the birds!

It is the economic side that is now pushed to the front. In the growing of our food products it is war between the producer and the insects, weed seeds and rodents, with animal losses running into billions of dollars. It is on these three pests that the birds principally feed. If through the enforcement of this law we can bring back the birds as they were a few years ago these frightful losses will be greatly decreased.

Michigan's Happy Babies—No. 8.

By DEBORAH.

WHILE this department is intended for bottle-fed babies, as most nursing babies are healthy and happy anyway, there is much that the nursing mother could learn with advantage to herself and her child. Perhaps the most important thing she can learn is the need for regularity in the hours of feeding. We realize that for ourselves we should eat regularly three times a day, with no mincing between meals, but somehow many of us think that baby can be fed at any hour and still not be hurt by it. On the contrary he should be fed just as systematically by the clock as we feed ourselves.

Day, in the feeding schedule, is from seven o'clock in the morning until nine at night. For the first day of baby's life he should nurse but four times in the 24 hours, or once every six hours. On the second day, there should be six nursings, or once every four hours. Beginning on the third day can be put on the regular schedule of once every two hours during the day, with two night feedings, making ten feedings in all. With the beginning of the third week you may begin to lengthen the interval between feedings, making it a few minutes longer each time until there is two and one-half hours between the meals, with one night feeding, or eight feedings in all. At three months begin to lengthen the interval to three hours, and at five or six months drop the night feeding entirely, feeding every three hours during the day for the first year, or six times a day.

To dispense with the night meal entirely seems to many mothers an impossibility. But a healthy baby can be trained to this if the mother has sufficient will to stick to any course which is for the baby's best interest and her own good. If the baby is fed regularly during the daylight hours, and given sufficient food at each time, he does not need anything to eat during the night. Thousands of babies sleep all night long after the sixth month, thus giving the mother the rest she needs. And every well baby could be trained to do so. Many a mother takes her baby to bed with her and lets it nurse during the night whenever it whines. They arise in the morning, tired out with the drain on themselves and the lack of sleep caused by a restless baby in bed with them all night. Baby is cross and fretful. He has not slept properly because his stomach was uncomfortable from his all too frequent feedings. Both mother and child are nervous and cross and happiness is out of the question. If the mother would, instead, put the baby in a crib or basket by the side of the bed and not feed him at all during the night, both would arise refreshed and happy in the morning. If the baby cries the mother who has fed him properly during the day knows at once it is not food he needs, and she refrains from feeding him. Turning him in the crib, putting on dry napkins, giving him a drink of water, hot if it is a colicky cry, will quiet him. On no account take him into bed with you as it will not do either one of you any good. If he is sick you will know it by the character of his cry. If he simply wants you to give in and feed and cuddle him, you will know that, too. In that case let him cry it out. The crying will not hurt a six-months-old baby and you will be beginning your lessons in discipline.

Not only should the time of feeding be regulated by the clock, but the time baby spends at the breast should be regulated. Ten minutes is sufficient for him to get all the food he needs, and he can just as well be trained to that time, as to be allowed to take a half hour. Ten minutes six times a day means one hour out of every day, which for the average mother is quite all she can afford to spare from her work. That ten minutes every three hours is a good thing for her, as it gives her just so many intervals of rest. Any longer adds to her worries by piling up work which she sees no time to do.

"Clock-work" babies have been laughed at by many women who brought up their children by guesswork and had fat babies. But the mothers who have persisted in adhering to system have always been rewarded by babies who could be depended upon to sleep nights and get through the teething period with little disturbance. Besides, they learn unconsciously, habits of regularity which will stick to them through life and save them much trouble in later years. By all means inject regularity and system into baby's life, even if you do not need to depend upon the bottle.

SEND FOR THE BABY CHART.

Several letters have been received asking for help with the baby's diet, and other information. While many of these letters are very clear and give all the necessary information for a diagnosis, others simply say "baby is restless," or "baby cries," and tell nothing to show what might be making him cry. For the use of mothers who desire the benefit of this department the editor has prepared charts to be kept faithfully for a week, and then mailed with a self-addressed and stamped envelope asking for the desired information. These charts may be secured by any mother who will send a stamp, and when returned, properly filled out, the editor will gladly advise as to diet and care. No medical information can be given.

HOME QUERIES.

Household Editor:—I saw in the last issue of the Michigan Farmer a lady asking for a recipe for making apple butter. Stew the apples, then take one cup of sugar to two cups of apple sauce until the pan is full, I use a granite pan. Set in the oven and bake from two to three hours. Stir it often as it will scum over the top and burn if not stirred.—M. J. P.

Household Editor:—Could you tell me what molasses is made from?—A Reader.

Molasses is made from sugar, corn and maple sap. I am afraid someone has been playing a joke on you.

Kresge's Free Katalog Is Full of Bargains Like This:

10¢ FOR SPLENDID QUALITY PERCALE DUSTING CAP



AX35. The Dusting Cap shown in the picture is a wonderful bargain and is an article that every woman should have who has house work to do. It keeps the loose hairs from falling from the head, and also keeps dust and grit out of the hair. It is made of good quality percale in medium dark colors in stripes, neat checks and dotted effects. Made full size to fit any head, elastic in the back to insure a close fit over the hair. Be sure to order one of these durable quality Dusting Caps before you begin your Spring House Cleaning. A regular 15c value, our special price only 10c postage 1c extra, 11c in all.

FREE Write for Kresge's Katalog of the World's Best

Write Today



5 & 10¢ BARGAINS

Kresge's Katalog illustrates thousands of the world's best 5 and 10 cent bargains in laces, embroideries, dry goods, notions, enamelware and household necessities—nothing over 10 cents. It doubles the buying power of your nickels and dimes. All orders shipped promptly.

Kresge guarantees to please you or return your money. Write to nearest point. Detroit, Mich., or St. Paul, Minn., for a copy of Kresge's Free Katalog of the world's best 5 and 10 cent bargains.

Our References: Any Bank in the world and millions of customers

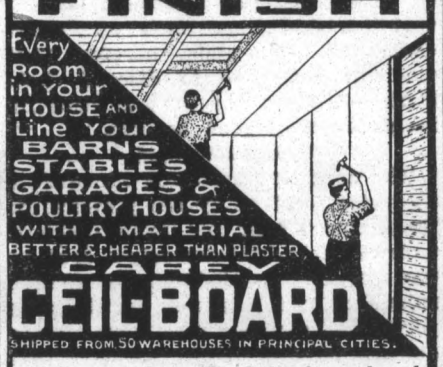
Address: Office Box A 8

S. S. KRESGE CO., Detroit, Mich. St. Paul, Minn.

The Original Parcel Post 5 and 10c Store

With over 100 Branches

FINISH



SHIPPED FROM 50 WAREHOUSES IN PRINCIPAL CITIES.

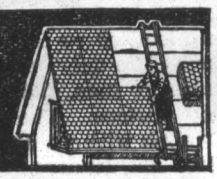
It comes in sheets 32 and 48 inches wide and 7 to 12 feet long. Is nailed to studding or over flat surfaces. Can be applied in freezing weather. Put it up yourself. Can be painted or papered. Moisture, sound, heat and cold-proof.

—Free Samples.—

THE PHILIP CAREY COMPANY

21 Wayne Avenue, Lockland, CINCINNATI, OHIO.

Save on STEEL Shingles



Won't Rot Rust or Burn

Edwards STEEL Shingles now cover 135,000 roofs. Cheaper than wood shingles. Last 5 times longer. Edwards patented "Tightcote" process prevents rot, rust, fire. Patent Interlocking Device makes roof absolutely watertight. Go on easily with hammer and nails.

Dipped in molten zinc after they are cut—no raw edges to rot. You also have free lightning insurance under our $10,000 bond—another advantage.

Special offer now at lowest factory prices. Direct to you. We pay shipping charges. Save money by acting Now. Write for big free bargain book 167 Give size of roof if possible.

THE EDWARDS MANUFACTURING CO.

117-167 Lock Street Cincinnati, Ohio



Special Trial Order.

A one cent post card will deliver—Charges Prepaid

To Try Before You Buy

in your own home one of our regular $10.00 combination DUST-VAC VACUUM CLEANERS and CARPET SWEEPERS. If entirely satisfied, take orders from only two of your neighbors for $7.50 eachand keep yours FREE. Every machine guaranteed five years—Delivered prepaid. You run no risk, send no money. Try before you buy. Agents wanted everywhere. Liberal commission.

THE LACE-OMETER CO.

Adrain, Mich.

FURS and SKINS

Send us your **Raw Furs and Hides** and we will tan and make them into nice coats or fur sets (for men and women) robes, rugs or gloves, as ordered. We also **Buy Raw Furs. Send for Catalog**

JOHN W. MERCKEL & CO.,

Mnfg. Furriers,

Breitmeyer Bldg., Detroit, Mich.

26 Assorted Quilt Pieces 6 Inches Square 15c.

$ DRESS CO., 17 John R. St., Detroit, Michigan.

LET US TAN YOUR HIDE.



Cattle or Horse hide, Calf, Dog, Deer or any kind of skin with hair or fur on. **We tan and finish them right;** make them into coats (for men and women), robes, rugs or gloves when ordered.

Your fur goods will cost you less than to buy them, and be worth more. **Our illustrated catalog** gives a lot of information which every stock raiser should have, but we never send out this valuable book except upon request.

It tells how to take off and care for hides; how and when **we pay the freight both ways;** about our safe dyeing process which is a tremendous advantage to the customer, especially on **horse hides and calf skins;** about the fur goods and game trophies we sell, taxidermy, etc. If you want a copy send us your correct address.

The Crosby Frisian Fur Company,

571 Lyell Ave., Rochester, N. Y.



Ride a RANGER

bicycle and *know* you have the best. Buy a machine you can **prove** before accepting.

DELIVERED FREE on approval and *30 days' trial* **NO EXPENSE** to you if, after trial you do not wish to keep it.

LOW FACTORY COST, great improvements and values *never before equalled.*

WRITE TODAY for our *big catalog* showing our *complete line* of 1915 bicyles, **TIRES,** sundries and parts, and learn the wonderful *new offers* and terms we will give you. Auto and Motorcycle Supplies at *factory to user prices.* **Do not buy** until you *know* what we can do for you. A postal card brings everything.

Mead Cycle Co., Dept. L-77 Chicago

Michigan Farmer's Club List.

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

EXPLANATION.—The first column gives the paper's regular subscription price. The second column price is for the Michigan Farmer and the other paper, both for one year. Add 50 cents when the Michigan Farmer is wanted three years, or $1.00 if the Michigan Farmer is wanted five years. The third column price is for those who are paid ahead on the Michigan Farmer from one to five years and want the other paper only; such orders must be sent to us direct. All combination orders may be given to our agents or sent to us, as is most convenient.

Any number of other papers may be added at third column prices. Write for prices on publications not listed. We can save you money.

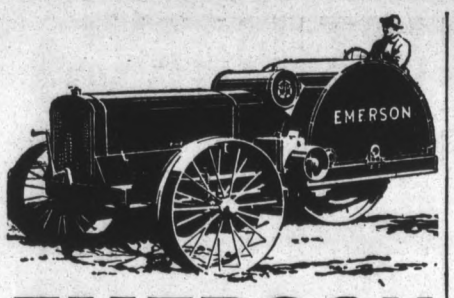
We send sample copies of the Michigan Farmer only.

Mention if you are a new or renewal subscriber. Renewals will be dated ahead from their present date.

Allow monthlies three to four weeks and semi-monthlies two weeks before making complaint, if not received. We forward orders day we receive them.

NAME OF PUBLICATION.	See explanation above.		
Daily, (6 a Week) on R. F. D. only.	$	$	$
Free Press, Detroit	2 50	2 50	
Journal, Detroit	2 50	2 50	
Times, Detroit	2 00	2 00	
Herald, Grand Rapids, Mich	2 50	2 00	
News, Grand Rapids	2 00	2 10	
Press, Grand Rapids	2 00	2 25	
Courier-Herald, Saginaw, Mich	2 50	2 00	
News, Saginaw	2 00	2 00	
Tribune, Bay City, Mich	2 00	2 10	
Blade, Toledo, Ohio	2 00	2 05	
News-Bee, Toledo, Ohio	2 00	2 05	
State Journal, Lansing, Mich	2 00	2 00	
Chicago Herald	3 60	3 10	
Morning Tribune, Detroit, 1 year; Michigan Farmer 3 years	2 00	2 00	
Tri Weekly Newspapers			
World, N. Y., City	1 00	1 20	75
Semi Weekly Newspapers			
Journal, Detroit, Mich	1 00	1 15	70
Weekly Newspapers			
Blade, Toledo, Ohio	1 00	1 00	55
Commoner, Lincoln, Neb	1 00	1 05	60
Enquirer, Cincinnati, O	1 00	1 05	55
Produce News, Chicago	1 00	1 05	60
Cattle, Sheep, Swine, Poultry, etc.			
American Bee Journal, Hamilton, Ill. (w)	1 00	1 50	60
American Poultry Journal, Chicago, (m)	1 00	1 20	75
American Poultry Advocate, Syracuse,	50	80	35
American Sheep Breeder, Chicago (m)	1 00	1 35	90
American Swineherd, Chicago, (m)	50	75	35
Breeders' Gazette, Chicago, (w)	1 00	1 45	95
Poultry Weekly, Boston, Mass	1 00	1 30	85
Fruit Belt, Grand Rapids, Mich	1 00	70	25
Green's Fruit Grower, Rochester, (m.)	50	80	35
Hoard's Dairyman, Fort Atkinson, Wis.	1 00	1 20	75
Jersey Bulletin, Indianapolis, Ind. (w)	1 00	1 35	90
Kimball's Dairy Farmer, Waterloo, Ia. (s-m)	1 00	1 05	75
National Sportsman, Boston, Mass. (m)	1 00	1 15	70
Poultry Keeper, Quincy, Ill. (m)	50	80	35
Poultry Pointers, Grand Rapids, Mich.	50	70	25
Poultry Success, Springfield, O. (m)	50	75	25
Reliable Poultry Journal, Quincy, Ill. (m)	50	80	35
Swine Breeders' Journal, Indianapolis, Ind. (s-m)	50	80	35
Popular Magazines.			
Everybodys Magazine, N. Y. City. (m)	1 50	1 60	1 15
Etude, Philadelphia, Pa. (m)	1 50	1 60	1 15
McClures, Magazine, N. Y. City. (m)	1 50	1 60	1 15
Musician, Boston, Mass. (m)	1 50	1 55	1 10
People's Home Journal, N. Y. City. (m)	50	85	40
Red Book Magazine, Chicago, Ill. (m)	1 50	1 55	1 10
Review of Reviews, N. Y. City. (m)	3 00	3 00	
Ladies' or Household.			
Delineator, N. Y. City. (m)	1 50	1 60	1 15
Designer, N. Y. City. (m)	75	1 05	60
Housewife, N. Y. City (m)	50	80	35
Ladies World, New York City	1 00	1 15	70
McCall's Magazine, N. Y. City. (m)	50	75	30
Mother's Mag., Elgin, Ill. (m)	1 50	1 55	1 15
Pictorial Review, N. Y. City. (m)	1 00	1 00	60
Woman's Home Companion, N. Y. City. m	1 50	1 60	1 15
Womans World, Chicago, (m)	35	60	15
Today, Chicago (m)	50	70	20
Religious and Juvenile.			
American Boy, Detroit Mich. (m)	1 00	1 00	55
Boys Magazine, Smethport, Pa	1 00	75	30
Little Folks, Salem, Mass. (m)	1 00	1 20	75
Young People's Weekly, Elgin, Ill. (w.)	75	95	50
Youths Companion, Boston, Mass	2 00	2 25	2 00

NOTE—If the Michigan Farmer is wanted 3 years add 50 cents to the second column price, or $1 if wanted five years.



EMERSON
Farm Tractor
Model L—12-20 H. P.
All-the-Year-Round Power For the Small Farm

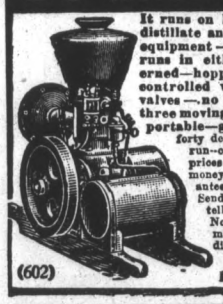
HERE is a tractor that can be used to advantage on *any* farm. It has four cylinders, two speeds forward—both on direct—and reverse. It is light, economical of fuel and built for work in practically every soil condition. It has ample power for pulling plows, drills, harrows, binders, etc., and operates the farm belt machinery as well.

Simple and Accessible

The Emerson Farm Tractor is built for the hardest service. Simplest and strongest gearing. Large diameter and wide driving wheel. Transmission runs in enclosed dust proof oil filled case—preventing wear. The operation is so simple that anyone can run it. Does more work than horses—costs less. Write today for free folder illustrated in colors.

Let the Emerson Farm Tractor Do YOUR Work
A SIZE FOR EVERY FARM
Emerson Model L—4 Cylinders—2 Speeds
Big Four "20" —4 Cylinders—3 Speeds
Big Four "30" —4 Cylinders—3 Speeds
Big Four "45" —6 Cylinders—3 Speeds
The Emerson-Brantingham Implement Co. (Inc.)
Good Farm Machinery—Established 1852
781 S. Iron Street Rockford, Illinois

TAKE OFF YOUR HAT TO THE
MYERS PUMPS, HAY TOOLS AND DOOR HANGERS possess selling merits, give satisfaction, and are durable. Look For The Name MYERS before you buy. Ask your dealer or write us.
MYERS
PUMPS
HAY TOOLS
TAKE OFF YOUR HAT TO "The Myers"
DOOR HANGERS
F. E. MYERS & BRO.
ASHLAND PUMP AND HAY TOOL WORKS
405 Orange St. ASHLAND, OHIO.

20 Reasons Why You Should Investigate the **SANDOW Kerosene** Stationary ENGINE

It runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory prices based on enormous out put—30 day money-back trial—10 years ironclad guarantee. Sizes, 1 1-2 to 18 horsepower. Send a postal today for free catalog which tells how Sandow will be useful to you. No go-betweens. Pocket agents' and middlemen's commissions by dealing direct with factory. (602)
(602) Detroit Motor Car Supply Co. 164 Canton Ave., Detroit, Mich.

Duplex FARM Tool Grinder

Grinds your plow shares, cultivator points, axes, sickles, knives and all tools. Edge or side of wheel can be used.
No Engine too small for it. Will last a lifetime. Special attachment for grinding discs furnished free. Write for circular.
Pays for itself in one season.
Duplex Mill & Mfg. Co., Box 408, Springfield, O.

Farm Commerce.

Apple Varieties Giving Best Returns.

By J. W. FISHER.

TWO of the prime essentials for profitable varieties of apples for the commercial orchard are the ability to bear large crops and the ability of the fruit to command a good price when placed on the market. Bearing this in mind when the survey questions were prepared, each grower was asked to give the yield for each variety of apples in his orchard for the years 1909 to 1912 inclusive, and also the price received per barrel for each of these varieties for the same years.

Yield Per Acre.

The figures on the yield per acre show that the Baldwin heads the list with an average of 70.7 barrels to the acre for the four years. Then comes in order the Fameuse, R. I. Greening, Red Canada, the Russets, Hubbardston, Wagener, Northern Spy, Oldenburg, Stark and Tompkin's King following in the order named, the latter having an average yield of 56.1 barrels. The average for all the varieties was 58.7 barrels. It is interesting to note that the chosen six of the commission men as explained in the previous articles in the series, are included in the list of the twelve leading varieties of Michigan as far as yield is concerned. It is plain, therefore, that we will not have to discard their choices because of failure to meet the requirement of good bearers.

Prices Received.

The next test for these varieties is the price received by the growers for the matured fruit, for heavy crops of unmarketable fruit are only a drug on the market. In studying the figures submitted by the growers for the price per barrel at which they were able to dispose of their fruit, we find that the Red Canada leads all other apples with a four-year average price of $2.76, although the Jonathan runs it a close race for first place, with an average of $2.75. The Northern Spy makes a good third with a showing of $2.57. Again, we find the selection of the commission men justified for five of the varieties chosen are among the six leaders as to price, the Oldenburg being the only one chosen by the commission men that does not sell for top prices. The Oldenburg ranks twelfth with an average price of $2.20. The six leaders, Red Canada, Jonathan, Northern Spy, Tompkin's King, Baldwin and Rhode Island Greening, ranging in the order named, from from $2.75 to $2.31, all rank well above the average price of $2.26 for all varieties pooled.

Some interesting tables were prepared by multiplying the average yield for each variety by the average price received per barrel for that variety, in an endeavor to roughly approximate the average returns per acre for each variety, and to show which are the most profitable varieties to plant. It was noticed that the returns per acre for the different varieties were much more uniform than might have been expected, after a hurried glance at the wide range in both yields and prices. But it must be remembered that a low yield is offset to some extent by a high price, and vice versa, and consequently the returns per acre may be equalized.

Gross Returns Per Acre.

In tabulating these fictitious returns per acre, the Red Canada leads all the varieties with $164.32, with the Baldwin a close second with $164, followed by the Rhode Island Greening, the Fameuse Northern Spy, the Russets, Delicious and Tompkin's King, ranging in the order named down to $131.30 for the last. The Oldenburg, sixth in the list chosen by the market men, ranks tenth with approximate returns of $134.80.

So much for the different varieties. Pooling all the varieties under one average for each year for both yield and price, we secure the data contained in the following table:

Year.	Av. yield per acre (barrels).	Av. price received per bbl.	Av. est'd returns per acre.
1909	59.9	$2.41	$144.36
1910	35.9	2.72	97.65
1911	69.3	2.26	156.62
1912	661.	1.85	122.29
4-year av.	58.7	2.26	132.96

The average yield per acre for all four years is 58.7 barrels. It is interesting to contrast this with the average yield (64.1) reported for Niagara county, New York, for the five years 1902 to 1906 inclusive, and for a four-year average in Ontario county, New York, of 58.4 barrels per acre, which figures check up well with the results of this survey.

Compared with New York Surveys.

The second column gives the average price received per barrel for all varieties for each of the four years, and the four-year average. A marked correlation is noticed between the size of the crop and the selling price, which vary inversely. Thus in the year of least yield, 1910, the largest price per barrel is received, i. e., $2.72. The four-year average for all varieties is $2.26, and may be considered as the average price received by the Michigan apple grower for a barrel of apples during the years 1909 to 1912. In the New York Survey of Niagara county already referred to, the average price from 1902 to 1906 was found to be $1.98, while in Orleans county the price was $1.39. The variability of apple prices in the same year is well brought out by the data in the New York surveys for 1904 which show that in Niagara county the average was $2.32, while in Orleans county (in the same year) it was only $1.46.

Average Returns Per Acre.

In the third column are given the estimated returns per acre for all varieties for each year and the four-year average. The reader must bear in mind that these figures were obtained by multiplying the average yield per acre for each year by the average price per barrel for the corresponding year, and that these results are merely approximations. However, they will tend to bring out one point very clearly. It has been claimed by many economists that in years of large crops the farmer really makes less than in years of scarcity when the gross returns per acre are figured up. The results here given would tend to show that this is not true, for the lowering in the price in the event of a large crop is not sufficient to offset the increase in the yield, and consequently the gross returns are greater despite the lowered prices. Of course, these figures represent the gross returns per acre, and a larger crop would increase the labor and handling expense for the orchard and this would tend to lessen the net profits.

The four-year average for the estimated gross returns per acre is $132.96. Comparing this with the results in New York we find that the average income per acre in Ontario county was $111.00 and in Niagara county $109.20.

Accurate account of all costs and business transactions have been kept in the Auchter Orchard, a commercial orchard in New York state, and it was found that the average yield for ten years was 116.8 barrels, of which 79.2 was barrel stock and 37.6 was evaporating stock. Thus even if we discard the evaporating stock we still have left a yield of barreled stock which is well above the average New York or Michigan yield. I mention these figures simply to show that these averages are very conservative and that where an orchard is run as a commercial proposition the yield is greatly increased over these general state averages.

Also, in the average price received for apples in this orchard over a ten-year period, we find that it is $2.60 a barrel for firsts and seconds. This is also well above the state averages and shows the effect of the personal factor in marketing. In this orchard the ten years showed an average annual net income of $93.75. Michigan can undoubtedly show orchards with just as good results.

Some Average Prices.

An interesting comparison may be obtained by correlating these results with those found in the survey of prices on the New York apple market for the past twenty years. In this survey it was discovered that the average wholesale price for all varieties on the New York market were as fol-

Relative Production of Cereal Crops.

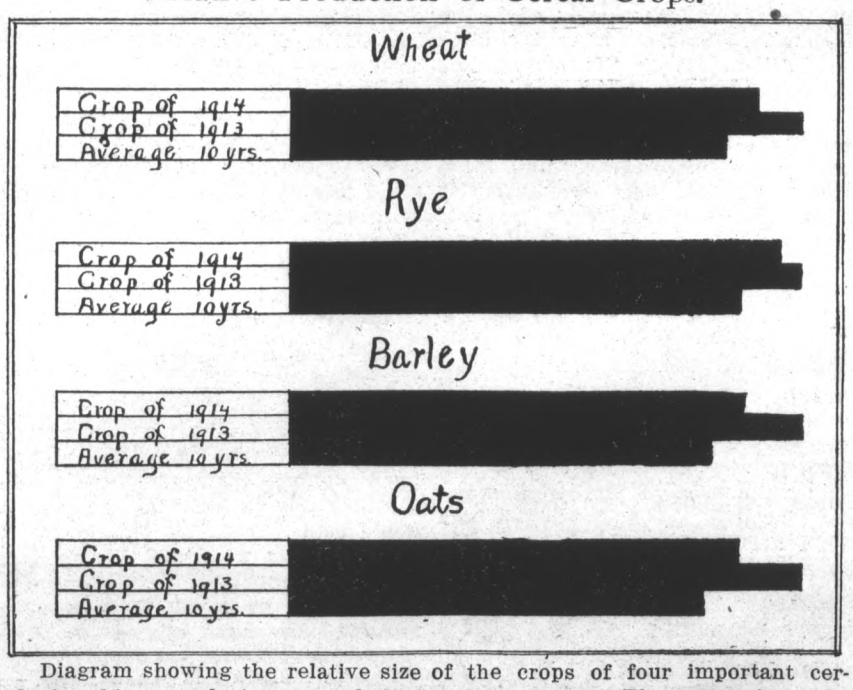


Diagram showing the relative size of the crops of four important cereals for this year, last year, and the ten-year average. The comparison covers the crops of the important producing countries of the northern hemisphere. In each case it will be observed that this year's crop is below that of last year, but slightly larger than the ten-year average.



Don't Miss the Big Money

THE virgin soil that the stumps keep out of cultivation in the best soil you have. You can pull out an acre or more of stumps in a day at a cost of from 3c to 5c per stump. No matter how big or tough the stump, it walks right out when the Hercules gets hold of it. With the stump come all the long tap roots that spread out in all directions. The land is left ready for cultivation.

HERCULES
Triple Power Stump Puller

Let us send you proof that thousands of farmers have made big money by the Hercules. Get our money saving proposition.

HERCULES MFG. CO.
137 23rd Street, Centerville, Iowa



We Make Portable Hand Pullers



Light For All The Family

The most economical and efficient lighting system known is the wonderful Tures System. From the simple two or three-light system up to the most comprehensive plant for any purpose the principle is the same. Light your entire premises, inside and out, by

THE WONDERFUL TURES LIGHTING SYSTEM

Our illustrated book tells you all, and a copy of it will be sent FREE to any address. Agents are making big money selling our Portable Gasoline Lamp which generates 400 candle-power at a cost of less than half a cent an hour. Send for our free book.

The TURES Mfg. Co.
390 Sixth Street Milwaukee, Wis.

See What You Save



All big wires—open hearth steel—extra heavy galvanized—rust-proof—never sags—lifetime service.

Empire Fence at These Prices

Freight prepaid to any point in lower peninsula, Michigan. Gates, Steel Posts, etc., same lasting quality, at proportionately low prices.

Send for FREE Fence Book

11 bar 48 inch all No. 9 fence at 41c per rod
10 bar 47 inch all No. 9 fence at 37c per rod
9 bar 39 inch all No. 9 fence at 34c per rod
11 bar 48 inch Empire Junior at 27c per rod
10 bar 47 inch Empire Junior at 25c per rod
9 bar 39 inch Empire Junior at 23c per rod

Order *direct* from this advertisement. Whether you order or not, send for free book of Fence Facts.

Bond Steel Post Co., 16 Maumee St., Adrian, Mich.

WHY NOT

Use The J. L. & H. Stadler Rendering & Fertilizing Co's Animal Matter Fertilizers?

"Best In The Land"

Honestly made at the largest rendering plant in Ohio from strictly first class materials, thoroughly mixed and guaranteed to be in the best drilling condition. We have numerous agents in Michigan but if we are not represented in your community, write us direct for prices and terms.

The J. L. & H. Stadler, Rendering & Fertilizing Co., Cleveland, Ohio.

ELECTRIC Steel Wheel Handy Wagons Are Big Money SAVERS!



No more high lifting or pitching. Saves you work and lightens draft nearly 50%. Don't rut fields or roads. We also furnish Electric Steel Wheels to fit ANY wagon. Wheels can't dry out or rot. Send for free book of facts and proofs.

Electric Wheel Co., 35 Elm Street, Quincy, Ill.

Just Say "Saw your ad. in the Michigan Farmer" when writing advertisers.

lows: From 1893 to 1903, $2.77, and from 1903 to 1913, was $3.00, or an increase of 23 cents a barrel. However, this increase is more apparent than real, since the higher price of labor, barrels, etc., will nearly balance the additional income.

Questions were also asked as to the average prices received for cider apples. From the results submitted it is safe to assume that 25 to 30 cents per cwt., was a fair average price for Michigan cider stock apples during the years 1909 to 1912.

In next week's article we will summarize the question of the choice of varieties and will give especial attention to the answers submitted by the market men in answer to the question, "Do you think an orchard of Northern Spies is a good investment despite the long time required for them to come into bearing?"

Crop and Market Notes.

Michigan.

Cheboygan Co., Dec. 28.—We have about eight inches of snow and good winter weather. Fall sown grain went into winter in good shape. Wheat, oats and corn were above the average while potatoes and beans were not so good. Apples were plentiful and low in price. Resorters are about the best paying crop we have here in the summer season. Corn 35c a basket; potatoes 20c, wheat 95c; eggs 30c; butter 28c.

New York.

Genesee Co., Dec. 21.—Snow has come, and there has not been sufficient rain. Potatoes were an immense crop, yielding as high as 350 bushels per acre. Beans rather poor, five to 10 bushels per acre. Corn good, 60 to 100 crates per acre. Condition of wheat good, but would be better had we more rain. Farmers have plenty of feed for home use. Most of surplus grain has been marketed. Foot-and-mouth disease has thus far prevented feeding of stock. Potatoes are marketed conservatively at 28@30c; beans $2.25@2.90; butter 30@37c; pork 10c; hogs 8c; eggs, fresh 36c; spring chickens 13c; fowls 12c; ducks 14c; lambs 15c; turkeys 18@20c wheat $1.04; oats 50c; cabbage, Danish $8 per ton; domestic $3; hay, loose $11@13.

New Jersey.

Monmouth Co., Dec .28.—Potatoes and corn yielded well. No beans are raised in this section. Wheat and rye looking well. About one-third of the grain crop still in farmers hands, with enough feed for home use. Hogs are the only live stock being fed for market. Farmers are marketing wheat, rye and poultry, and some pork. Rye 80@95c; wheat $1; poultry 16@25c; pork 8½@9½c. We are having unusually cold weather for this time of year.

Ohio.

Medina Co., Dec. 22.—Ground covered with snow, which is fine for the wheat and meadows. Markets are dull because of quarantine, but are improving of late. Many hogs are being held for better prices. Hens are not laying well. Hay $13 per ton; wheat $1.20; oats 42c; hogs $6.70; chickens 10c; butter 32c.

Clermont Co., Dec. 22.—The weather last week was very cold for December. Low as 10 degrees below zero. Have about six inches of snow which makes very good sleighing. Some corn to husk. Not much land changing hands this winter; prices from $100 to $200 per acre. Stock buyers are again buying stock. No hoof-and-mouth disease reported in this county. Hogs $6.35; lambs $6.50; cows from $50@100. Chickens 10c; eggs 36c; butter 23c; corn 75c; wheat $1.13; hay $13.

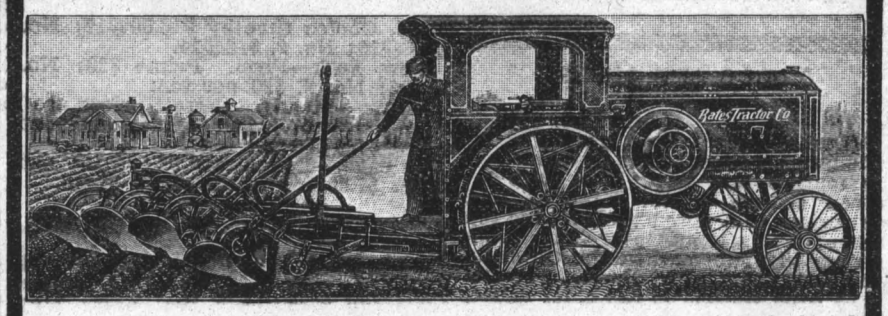
Crawford Co., Dec. 22.—We had a dry fall but at present the weather is very cold, with six inches of snow, which will protect winter crops. Farmers had been prepared for winter; some corn is in the shock that had been left for feeding cattle. Many fat hogs are ready for market but the prices are unfavorable. The foot-and-mouth disease caused the farmers trouble in marketing their stock. Cows are dropping off in the milk yield since winter set in, and the change of feed. No grain is moving to market. Wheat $1.13; oats 45c; corn, new 60c; old corn $65; hens 10c; butter-fat 33c.

Indiana.

Daviess Co., Dec. 20.—Fair crop of late potatoes and corn. Beans a short crop. Wheat prospects poor. Damaged by fly. Farmers getting short on hay and roughage on account of much cold weather and heavy feeding. Very little corn and wheat to sell. Less than the usual number of cattle and

(Continued on page 50).

The Bates All Steel Oil Tractor and Plows



IT is LIGHT IN WEIGHT and won't pack the ground, as it has wide wheels and is ALL STEEL. Will take the place of many horses and men. One man can do a lot of work in one day. You will get your plowing, harrowing, discing done on time and as you want it done. It operates on the CHEAPEST GRADE KEROSENE.

Two Sizes—15 H. P. Pulls Two Plows; 30 H. P. Pulls Four Plows.

Plows are connected directly to the draw bar of the engine. You can back them into the very corners of the field and plow every foot of land. Look at the cut. **Outfit turns square corners.** Man stands in cab and handles plows easily. It will drive all your farm machinery. Send us only a postal and tell us size of farm and which size you are interested in.

BATES TRACTOR CO., 107 BATES ST., LANSING, MICH.

MORE POTASH COMING

American crops and soils are still as hungry for Potash as before the outbreak of the European War, which curtailed the Potash shipments.

Some of the Fertilizer Companies are trying to induce farmers to buy the one-sided low Potash or no Potash fertilizers of a generation ago. This means a fertilizer that is profitable to the manufacturer, but not the best for the farmer. When the Syndicate in 1910 started the direct sales of Potash to dealers and farmers at reasonable prices, Potash sales increased 65 per cent in one year, a clear proof that farmers know that Potash Pays. They know that Potash gives good yields, good quality and resistance to plant diseases.

Many of the Fertilizer Manufacturers are willing to meet the farmer's wishes and sell him what he thinks he needs. These manufacturers are now willing to furnish as much Potash as they can secure. They offer goods with 5 per cent and even in some cases 10 per cent Potash, if the farmers insist on it.

Shipping conditions are improving, more Potash is coming forward although the costs of production and transportation are higher. The higher price of fertilizers is not due wholly to the slightly higher cost of Potash. Much of the Potash that will be used in next spring's fertilizer had reached America before the war started.

There is no substitute for Potash.

We can no more return to the fertilizer of twenty years ago than we can return to the inefficient farm implements or unprofitable live stock of that period.

H. A. HUSTON.



80 HEAD

For Immediate Sale

60 STALLIONS Ready for Service.

20 Brood Mares with foal, also some Yearlings and 2-year-old Fillies.

All of these at your own price.

Write now before they are gone.

JOHN CRAWFORD,

Importer. - - Byron, Michigan

COOKED FEED Saves You Money

Learn what agricultural college and experimental station men say. Write for printed matter on the

"Farmers' Favorite" Feed Cooker and Boiler

Just the thing for cooking feed for poultry and stock, heating water for cows—butchering of hogs—washing, etc., rendering lard and tallow, sterilizing dairy utensils, boiling sap, etc. 6 sizes. Satisfaction guaranteed. *Write today.*

LEWIS MF'G CO., 64-78 Owego St., Cortland, N.Y.



BURNS ANY FUEL

NO BRICK FOUNDATION.

PUMP GRIND SAW Made for Hard Use

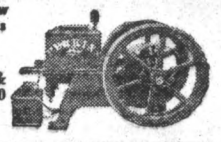
Wood Mills are Best. Engines are Simple



Feed Grinders, Saw Frames, Steel Tanks

CATALOGUES FREE AGENTS WANTED

Perkins Wind Mill & Engine Co. Est. 1860
135 MAIN ST.
Mishawaka, Ind.



"More Potatoes"



From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

A. J. PLATT, MFR.
BOX J STERLING, ILL.

LILLIE'S SPECIAL BRANDS

BUFFALO FERTILIZER

Made from best material. Always reliable. Lime, Potash, Acid Phosphate, Nitrate of Soda.

Agents wanted in unoccupied territory. Ship direct to farmers in carlots. Fertilizer questions answered and farm soil surveys made on request.

Colon C. Lillie, Sales Agt., Coopersville, Mich.

WANTED:—Northern Grown Seed Beans as free from Blight and Anthracnose as possible, good yielders, early maturity and uniformity desired. Send samples and quote prices and full particulars. Producers Elevator Co., Sandusky, Mich.



UDDER-EASE promptly cures and prevents udder troubles *of all kinds;* indispensable in dairy. Send name and address for big 12-oz. $1 can Udder-Ease, use it 15 days, then pay if satisfied. Write today.

Hitch-Tetherow Pharm. Co.
336 R. A. Long Bldg. Kansas City, Mo.

Money-Saving 20-Day Offer

60% DIGESTER FEEDING TANKAGE

(With Blood Meal)

Matures your hogs quicker for market, saves feed and labor, reduces danger of cholera, and adds one-third to your profit. Special price for 20 days on any amount from 100 pounds to carload. *Write quick.*

ALFALFA

GUIDE—Not a catalog—It is crammed full of valuable information—sent Free.

SILOS

Self tightening hoops; swinging doors; cannot blow down. Best silo made. Write for illustrated folder.

FERTILIZERS

Seven potash brands. No matter what your soil conditions, our fertilizers mean bigger bank accounts.

THE FARMERS' FERTILIZER COMPANY, Columbus, Ohio

Markets.

GRAINS AND SEEDS.

January 5, 1915.

Wheat.—After a short period of reactionary sentiment that developed in the market last week, the bulls regained control of the situation and sent prices to a new high level for the season. In fact, prices are now higher than they were when the Germans were advancing upon Paris. The demand from Europe is the chief cause, although news from other points added strength to the market. Foreigners are buying liberally in the United States and in South America. Every available ship is taken to transport the grain and high freight rates are being paid in order to deliver the wheat, the demand is so urgent. The visible supply is nearly a million bushels less than a week ago. Primary receipts have also been lighter. Exporters fear that if they do not secure the grain now they will be unable to get it later. Domestic millers are good buyers. Flour is firm. One year ago the price for No. 2 red wheat was 98c per bushel. Quotations are as follows:

	No. 2 Red.	No. 1 White.	May.
Wednesday	1.26	1.23	1.31
Thursday	....	....	....
Friday	....	....	....
Saturday	1.28½	1.25½	1.33
Monday	1.31½	1.28½	1.35½
Tuesday	1.34¾	1.31¾	1.38½

Chicago, (Jan. 4).—No. 2 red wheat $1.29¼@1.37⅞; May $1.34½; July $1.22.

Corn.—The corn market is strong. On Monday it opened with an advance and kept on moving up until the close, when prices were one and a half cents higher than on Saturday. Foreign demand and the strength of the wheat market were credited with bringing about the firmer feeling. It is also known that feeders are using more of this grain than they were. The foot-and-mouth disease is now well under control and this gives the farmers more heart to fit their stock for the better trade. One year ago No. 3 corn was quoted at 64c per bu. Quotations for the past week are:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	69½	70½
Thursday	....	....
Friday	....	....
Saturday	69	70
Monday	70½	71½
Tuesday	71	72

Chicago, (Jan. 4).—No. 2 yellow corn 69½@70c; May 75¾c; July 76⅝c per bushel.

Oats—Prices have also advanced for this grain but the margin is narrower than for corn and wheat. Foreign buyers have apparently been less urgent of late and this causes a quieter tone. The volume of trading is ordinary and the visible supply shows a slight increase. One year ago standard oats were selling at 41c per bu. Quotations are as follows:

	Standard.	No. 3 White.
Wednesday	52½	52
Thursday	....	..
Friday	....	..
Saturday	52½	52
Monday	53	52½
Tuesday	53	52½

Chicago, (Jan. 4).—Standard oats 51½@52c; May 55c; July 53⅛c bu.

Rye.—A strong demand and small supply have resulted in further advances. No. 2 is now at $1.12 per bushel.

Beans.—Market is firm at advanced quotations. At Greenville farmers are selling on a $2.40 basis. Detroit quotations are: Immediate and December shipment $2.57; February $2.85; May $2.90. Chicago prices are steady. Stocks are small. Pea beans, handpicked, choice, quoted at $2.70@2.80; common at $2.40@2.55; red kidneys choice, at $3.25@3.50.

Clover Seed.—Transactions are on a higher basis with the tone steady and business moderate. Prime spot $9.60 per bushel; March $9.75; prime alsike sells at $9.30.

Toledo.—Easy. Prime cash $9.60; March $9.70; prime alsike $9.35.

Timothy Seed.—Higher. Prime spot $3.50 a bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent $6.50; second $6.10; straight $5.90; spring patent $6.80; rye flour $6 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran $26; standard middlings $27; fine middlings $32; coarse corn meal $30; corn and oat chop $27 per ton.

Hay.—Quotations are steady. Carlots on track at Detroit are: New, No. 1 timothy $16@16.50; standard $15@15.50; No. 2, $15@15.50; No. 1 clover and mixed $13@13.50.

Chicago.—Demand good, offerings small. Choice timothy $16.50@17; No. 1, 15@16; No. 2, $13@14.

New York—Firm. Prime $23; No. 1, $22; No. 2, $20 per ton.

Straw.—Steady. Detroit prices are: Rye straw $7.50@8; wheat and oat straw $7@7.50 per ton.

Chicago.—Rye straw $9.50@10; oat straw $7.50@8; wheat straw $7@8.

DAIRY AND POULTRY PRODUCTS.

Butter.—Offerings increasing and market is easy at a 1c decline. Extra creamery 33c; firsts 30c; dairy 21c; packing stock 20c lb.

Chicago.—Trade is steady at prices 1c over last week. The supply is increasing and the demand falling off, so lower prices are anticipated. Extra creamery 34c; extra firsts 32@33c; firsts 28@30c; seconds 24@37c; packing stock 21@20¾c.

Elgin.—Dullness after the holidays has caused a decline of 1c in price, the quotation being 33c.

Eggs.—Light supply holds market firm at unchanged prices. Fresh stock sells at 34c per dozen; current receipts 30½c.

Chicago.—Market firm for strictly fresh stock because supply is limited; other grades are in moderate supply. Prices higher. Miscellaneous lots, cases included 25@34c; ordinary firsts 31@33c; firsts 34@35c per dozen.

Poultry.—Offerings have fallen off and an advance in prices is expected unless supply increases. Springs 12@12½c; hens 8@11½c; ducks 13@14c; geese 12@13c; turkeys 15@16c.

Chicago.—Market quiet as buyers are holding off expecting heavier receipts and lower prices. Turkeys 13@14c; fowls 13c; springs 13c; ducks 13½@14c; geese 11@13c.

Pork.—Market steady for dressed hogs, light weights selling at $8.50@9 per cwt; heavy $7@8.

Veal.—Quoted steady at 11@11½c for fancy and 8@9c for common.

FRUITS AND VEGETABLES.

Apples.—Market is showing activity and demand is increasing at present prices. Baldwins $2.50@2.75 per bbl; Greenings $2.75@3; Spy $3@3.25; Steele Red $3.50; No. 2, 40@50c per bushel.

Chicago.—Market quiet, especially on common storage stock. Refrigerator stock moving more freely at moderate prices. Prices quoted are for refrigerator stock. Common storage sells for 50c@$1 less. Baldwins $2@2.50; Kings $2.75@3.25; Wageners $2.25@2.50; Jonathans $3.50@4; Greenings $2.75@3.25; Northern Spy $3@3.50. Western box apples are selling for 75c@$2.25 per box.

Potatoes.—Market steady with no change in prices. Carlots 35@38c per bu; in bulk 40c per bu. in sacks; at Chicago market is steady at slightly increased prices. Michigan white, in bulk, are quoted at 35@45c per bu; at Greenville, Mich., 27@29c in bulk.

WOOL.

In spite of the holidays, a large amount of business was done in the wool markets and the aggregate of sales for the week ending December 31 exceeded those of the previous week. Had desirable qualities been in larger supply, the sales would have been much larger. Prices are higher in many lines and firm in others. Fleeces have not been moving quite as freely, though fair transfers have been made and it is believed that Ohio quarters will soon be at the 30c level. Michigan unwashed combing ranges from 26@29c; do. clothing 23@27c. The total 1914 clip for the United States is estimated at over 18,000,000 less than that of 1913.

GRAND RAPIDS.

The bean market continues active, with $2.60 being paid early this week in Saginaw and eastern Michigan district, also at Moseley, in Kent county, and other places. Some sections are reporting $2.40 as the prevailing price paid farmers, so that perhaps $2.50 would be a fair average, for the state. The potato market continues slow. Some advances have been made in live poultry, with fowls at 10@11c; ducks 14@15c; geese 11@12c; turkeys 16@17c. Dressed hogs are around 8¼c. Lettuce from the greenhouses has doubled in price in the past week and sales are reported at 10c. The mills are paying $1.19 for best red wheat. Hay is bringing $10@12 on the city market.

DETROIT EASTERN MARKET.

There was a good market Tuesday morning. Both sellers and buyers were well represented. Apples, cabbage, potatoes and pork were the main offerings. Potatoes were firm at 45c; apples offered freely with culls and lower grades ranging from 50@75c, while better stock sold at 80c@$1, a few good Spies were held at $1.25; cabbage 40@50c; carrots 50c; celery 25c per large bunch; beets 35c; eggs 45c per dozen; pork $9.50 for heavy and $10.50 for light. Loose hay offerings are limited and sell readily at $18@20 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

January 4, 1915.

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

Receipts here today as follows: Cattle 170 cars; hogs 130 d. d.; sheep and lambs 85 d. d.; calves 800 head.

With 170 cars of cattle on the market today, and 23,000 in Chicago, and Chicago reported much lower, our market was all the way, on all grades of cattle from 25@40c per cwt. lower, and in more instances 40c lower than there were instances of 25c lower. At the close there are at least 40 cars of cattle unsold. With the close in Chicago last week, we anticipated a good strong cattle market here today. While they were estimating 16,000 in Chicago today, but when they came in with 23,000 it took the starch out of everything and the market was dull and draggy from start to finish. Our advice to all our shippers is to ship just as few cattle from now until the last of this week as possible, for we certainly will have a decidedly better market next Monday.

We had a fairly liberal run of hogs today, but quite a number of them did not get yarded in time to sell. The early offerings were rather light and were taken principally by shippers at strong Saturday's prices. Good weight hogs selling at $7.40; yorkers generally $7.50, and a few selected at $7.55 and $7.60, and strictly pig weights up to $7.75; roughs $6.50 and stags $5@5.75.. Our market closed strong and with a good clearance it looks like a good market here tomorrow.

The market was active today on lambs and sheep, dull on heavy, with prices a quarter lower on lambs than the close of last week; choice handy lambs selling at $8.75. We look for steady to strong prices the balance of week.

We quote: Lambs $8.60@8.75; cull to fair $5@8.50; yearlings $6@7.50; bucks $4@4.25; handy ewes $5.25@5.50; heavy do $4.75@5; wethers $6@6.25; cull sheep $3.50@4.25; veals, choice to extra $12@12.50; fair to good $7.50@11.50. Heavy calves $6@8

Chicago.

January 4, 1915.

	Cattle.	Hogs.	Sheep.
Receipts today	24,000	64,000	30,000
Same day 1913	22,109	41,413	36,473
Last week	47,621	199,841	79,171
Same wk 1913	42,513	160,296	90,961

Cattle receipts today were large for these times of quarantines and interrupted trade, and business was late in opening. It was thought that sales would be made about 10@15c lower. Hogs opened 15c lower for the best than Saturday's best time, with a $7.25 top, but the later demand was so good that sales were made at $7.30. Hogs received last week averaged 222 lbs., comparing witr 227 lbs. a week earlier, 209 lbs. a year ago and 227 lbs. two years ago. Only 26,491 hogs were shipped from here last week, compared with 52,089 a year ago. Sheep and lambs are largely 25c lower today, with top lambs bringing $8.60.

Cattle receipts last week were very much larger than the phenomenally small numbers marketed a week earlier, when owners were holding back on account of the recent sensational slump in prices. The week was broken by the New Year's holiday, closely observed in the stock yards, and while the receipts in ordinary times would not have been considered large, there were all the cattle needed at a period when quarantine conditions exist. Limited numbers of strictly prime beeves such as were not offered during the previous week sold much above prices realized at that time, but the rank and file of the cattle received sold lower, with the largest decline recorded for cattle in quarantine. The bulk of the steers marketed brought $7.50@9.50, with the choicer lots taken at $9.20@10.20 and the poor class of thin, lightweight steers at $5.50@7.50. Fair steers brought $7.60@8.20, medium steers $8.25@8.70 and good steers $8.75@9.15. Butchering cows and heifers brought $5@8, with scattering sales of prime heifers up to $8.75, while cutters sold at $4.60@4.95, canners at $3.50@4.55 and bulls at $4.85@7.50. Yearling steers sold well or otherwise, according to their quality, sales being made anywhere from $7.50 up to $9.75. Calves were in good demany at $4.50@10 per 100 lbs. for coarse heavy to prime light vealers. During the latter part of the week cattle were largely sold at 15@25c below Monday prices, quarantined offerings being severaly discriminated against by buyers, and cattle on the stocker and feeder order sold badly, the absence of demand from feeding districs continuing to give local slaughterers complete control of the market. It is a pity that so many thin cattle are being sacrificed, as it is almost a certainty that stockmen who hold on to maturity will reap liberal profits, notwithstanding the high price of corn.

Hogs are considered as sure to sell well for months to come, with a smaller supply in the country than will be needed by the packers, and owners are more hopeful of the future than they were some months ago. This is shown by the decreasing percentage of pigs and underweights that are coming to market. The undertone of the market has been growing gradually stronger, with prime pigs of the heavier class selling as high most of the time as prime matured swine. There is an extremely large consumption of fresh pork, and cash trading in cured meats is also on an extensive scale. December hog receipts were unusually large because so many were liquidated on account of the foot-and-mouth disease, but the Chicago receipts for 1914 were the smallest since 1910. Hogs coming to market average well in quality, and the bulk of the offerings sell within a narrow range of prices. The best prices of the week were paid Saturday, when hogs brought $7@7.40, with pigs going at $5.50@7.30.

Sheep, yearlings and lambs of superior quality sold wonderfully well last week, with a pronounced lack of matured stock, and sheepmen had no reason to complain of the prices obtained. The worst feature of the market was the wretched service rendered by some of the railroads. It is a poor time to ship in immature flocks of lambs, and owners who do so are likely to regret it later, when lambs are almost certain to sell decidedly higher. Receipts have been largely from Iowa, Illinois, and Wisconsin. Lambs closed at $6.25@8.85, yearlings at $6.50@8, wethers at $4.75@6.75, ewes at $4@6 and bucks at $3.50@4.50; prices were much higher than a year ago.

CROP AND MARKET NOTES.

Continued from page 49).

hogs on feed. Cattle 7c; hogs 6½c; butter 30c; eggs 33c; milch cows $50@100. Horses are cheap.

Elkhart Co., Dec. 28.—The weather has been cold and stormy with a large amount of snow. Farmers are kept busy doing chores and cutting wood. Some fall plowing has been done. The quarantine has been partially raised and live stock is moving freely. Little corn is being shipped on account of the short crop. A smaller number of pigs are being fed this winter than usual. Grain and feed in good demand. Corn 60c; wheat $1.16; oats 50c; butter 28c; eggs 35c; turkeys 17c; chickens 9c; hogs 7c.

Missouri.

Warren Co., Dec. 22.—The crops of late potatoes, beans and corn were all good. Wheat and rye are in excellent condition. Enough corn and corn stover in farmers' hands for home use, but no hay. Most of them are buying alfalfa hay at $15 per ton. No surplus of grain for sale. Some hogs and sheep are being fed but practically no cattle. Wheat $1.10; corn 75c; oats 55c; butter 30c; eggs 35c; turkeys 14c; springs 12c; hens 12c.

Kansas.

Dickinson Co., Dec. 22.—A heavy fall of snow on December 22. A nice even eight inches of snow, which covers all the fields and did an immense amount of good for moisture and protection to the wheat. Corn husking is done, only a light crop. Wheat nearly all hauled off while the roads were in good condition. Farmers feeding quite a good many cattle and hogs; feed is plentiful and stock is looking well. Quite a number of hogs dying with cholera. Wheat $1.10; corn 65c; poultry 11c; eggs 30c; butter 30c.

Franklin Co., Dec. 28.—December has been a stormy month and the temperature has reached eight below zero. About four inches of snow fell the 20th and there has been some rain and sleet. Ice is eight inches thick and is being stored in the ice houses. Potatoes yielded between 75 and 100 bushels per acre, and not very good quality. Beans are not grown in quantities here. Corn made between 15 and 25 bushels per acre. Wheat is in excellent condition, very little rye is sown. The farmers have an abundance of rough feed and plenty of oats and some corn. There are very few keeping stock for market. Nearly all the hogs have been sold, or died, as cholera has been quite prevalent here. There is very little surplus grain; a few held their wheat and are now marketing it for $1.09 per bushel. Corn 58c; oats 36c; hens 8c; eggs 28c; butter-fat 29c.



A Pot of Gold

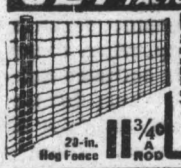
is in the old farm—no matter how run-down it may seem.

Proper soil management will uncover it. Our Special Crop Bulletins tell how.

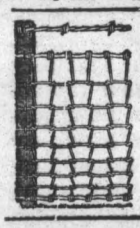
Write for your free copies today.

The Middle West Soil Improvement Committee
of the
National Fertilizer Association
918 Postal Telegraph Bldg.,
CHICAGO 13

GET UNITED FACTORIES PRICES BEFORE YOU BUY FENCING



See how the United Factories plan of selling direct from their 20 factories saves you a lot of money. UNITED FENCING has double grip, non-slip lock, one-piece stay wires, wavy strand wires, best heavily galvanized wire. Shipped on 30 days' trial without pay in advance. Get free catalog.
28-in. Hog Fence 11 3/4c A ROD
THE UNITED FACTORIES CO.
205 Factories Bldg., Cleveland, O.



FARM FENCE
41 INCHES HIGH FOR
Stays only 6 inches apart. Wires can not slip. 100 styles of Farm, Poultry and Lawn Fencing direct from factory at money saving prices. Ideal Galv. BARBED WIRE $1.45 80-rod spool. Catalog free.
21 CENTS A ROD
KITSELMAN BROS. Box 278 Muncie, Ind.

BROWN FENCE DIRECT FROM FACTORY
WE PAY FREIGHT
Over 150 styles for every purpose—hogs sheep, poultry, rabbits, horses cattle. Also lawn fence and gates.
13 CENTS PER ROD UP. ALL DOUBLE GALVANIZED
Write now for new catalog and sample to test.
The Brown Fence & Wire Co., Dept. 49 Cleveland, Ohio

Michigan White Cedar FENCE POSTS
GEORGE M. CHANDLER, Onaway, Mich.

WHITE CEDAR FENCE POSTS—Michigan White Cedar Fence Posts, 7 ft., 8 ft., and 10 ft., lengths Special attention given to farmer club orders. Write for prices and terms. F. G. COWLEY, Oscoda, Mich.

WANTED—AN IDEA: Who can think of simple thing to patent? Protect your ideas, they may bring you wealth. Write for "Needed Inventions" and "How to Get Your Patent and Your Money." RANDOLPH & CO., PATENT ATTORNEYS, DEPT. 67, WASHINGTON, D. C.

IDEAS WANTED—Manufacturers are writing for patents procured through me. 3 books with list 200 inventions wanted sent free. Advice Free. I get patent or no fee. R. B. OWEN, 125 Owen Bldg., Washington, D. C.

RABBITS
TURKEYS
DUCKS
GEESE
CHICKENS
HOGS
VEAL, ETC.

Our Present Specialties
Rush consignments forward by express. Prompt sales and quick returns assured by our 26 years in one store.
CHAS. W. RUDD & SON,
Commission Merchants, Detroit.

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

Our 20 Years Experience.
Handling Poultry, Calves, Pork, Wild Rabbits, Butter, Eggs and General Produce in this market should be of value to you. Best prices. Honest treatment.
NAUMANN COMMISSION CO.
Eastern Market, :-: Detroit, Michigan

FARMERS—We are paying five to eight cents above highest Official Detroit Market quotation for newlaid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich

CASH PAID For Butter, Eggs, Poultry, Calves, Hogs, Potatoes and Apples.
Write us before selling elsewhere. CAMPBELL BRO'S. CO., 245 Napoleon St., Detroit, Mich

POTATOES—HAY—More Money if you Consign to THE E. L. RICHMOND CO. Detroit. 21 years in business. Reference your Banker

BUY FEED-CAR LOTS Cotton seed—Oil Meal, Hominy, Gluten, etc. Save money. Ask price. J. E. Barett Co., Red Mill, Jackson, Mich.

Griggs, Fuller & Co., Wholesale Commission House, Detroit. Want your apples, potatoes, poultry and rabbits. Quick returns.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
December 31, 1914.

Cattle.

Receipts 769. Market steady. Best heavy steers $8@8.75; best handy weight butcher steers $7@7.50; mixed steers and heifers $6.75@7.25; handy light butchers $6.50@7; light butchers $5.50@6.25; best cows $5.75@6; butcher cows $5@5.50; common cows $4.25@4.75; canners $3@4; best heavy bulls $6@6.50; bologna bulls $5.50@6; stock bulls $4.50@5.

Roe Com. Co. sold Sullivan P. Co. 2 canners av 800 at $4; to Kamman B. Co. 2 steers av 1100 at $6.75, 6 cows av 980 at $5.50, 9 butchers av 911 at $6.25, 11 do av 830 at $6.85; to Bresnahan 6 do av 600 at $6.35, 3 cows av 737 at $5.50, 9 steers av 733 at $6.25; to Sullivan P. Co. 2 cows av 1080 at $5.50, 7 do av 1040 at $5.35, 1 canner weighing 800 at $4, 4 do av 855 at $4, 12 butchers av 835 at $6.25, 1 bull wgh 1570 at $6.50, 2 cows av 880 at $5.50; to Parker, W. & Co. 24 butchers av 745 at $5; to Hammond, S. & Co. 3 cows av 840 at $4.25, 3 do av 1170 at $5.50, 2 oxen av 1520 at $5.75, 6 butchers av 666 at $6; to Newton B. Co. 11 cows av 1037 at $5.35, 1 do wgh 1190 at $4.75, 1 do wgh 750 at $5, 1 bull wgh 860 at $5.50, 18 butchers av 900 at $6.40; to Goose 9 cows av 1060 at $5.25; to Mason B. Co. 4 steers av 762 at $6.30; to Rattkowsky 4 cows av 1017 at $5.30, 2 do av 885 at $4.50.

Haley & M. sold Sullivan P. Co. 2 steers av 985 at $6.75, 2 do av 900 at $7, 2 do av 1210 at $8.25, 1 do wgh 1180 at $6.50, 5 cows av 1064 at $5.90, 1 bull wgh 1000 at $5.90, 1 do wgh 1000 at $6, 4 cows av 827 at $4.60; to Goose 2 do av 900 at $4.50, 4 do av 1100 at $5.60, 2 bulls av 1035 at $6, 1 cow wgh 1200 at $5.50; to Sullivan P. Co. 2 steers av 950 at $7.25; to Rattkowsky 1 cow wgh 1150 at $4.60, 7 do av 1030 at $5.25, 4 do av 960 at $4.75, 2 do av 520 at $5.10, 4 do av 892 at $4.75; to Hammond, S. & Co. 3 cows av 910 at $4, 2 butchers av 825 at $6.25, 6 do av 708 at $6.10; to Thompson Bros. 1 bull wgh 1750 at $6.75; to Bresnahan 2 heifers av 615 at $6.

Sandal sold Kamman 3 butchers av 697 at $5.25; to Mason B. Co. 2 cows av 1100 at $4.50; to Sullivan P. Co. 1 do wgh 970 at $5.75.

Veal Calves.

Receipts 455. Market strong. Best $9@9.50; others $6@8.50.

Haley & M. sold Thompson Bros. 8 av 175 at $9.25, 6 av 160 at $8.50; to Parker, W. & Co. 7 av 155 at $9.50, 13 av 150 at $9, 2 av 125 at $8.50; to Goose 3 av 180 at $8.50.

Spicer & R. sold Shaparo 1 wgh 170 at $9.50, 5 av 125 at $8.75; to Parker, W. & Co. 2 av 115 at $8; to Mich. B. Co. 1 wgh 150 at$7.50.

Roe Com. Co. sold Sullivan P. Co. 6 av 165 at $9; to Rattkowsky 3 av 150 at $9, 8 av 160 at $8.25.

Sheep and Lambs.

Receipts 6,790. Market steady. Best lambs $8@8.50; fair lambs $7@7.75; light to common lambs $5.50@6.75; fair to good sheep $4@4.75; culls and common $3@3.50.

Roe Com. Co. sold Sullivan P. Co. 25 sheep av 125 at $4.25, 18 do av 150 at $4.75, 26 do av 90 at $4.50, 8 do av 100 at $3.50, 12 lambs av 75 at $7.25; to Nagle P. Co. 89 do av 75 at $8, 45 do av 82 at $8, 12 sheep av 115 at $5, 26 lambs av 95 at $8.10, 132 do av 83 at $8, 87 do av 85 at $8; to Barlage 21 do av 83 at $7.75, 27 do av 75 at $7.25.

Johnson sold Sullivan P. Co. 84 lambs av 90 at $7.60.

Spicer & R. sold Parker, W. & Co. 65 lambs av 80 at $8.25; to Sullivan P. Co. 60 do av 85 at $8.10; to Shaparo 8 sheep av 120 at $4.50; toThompson Bros. 37 do av 100 at $4.40, 25 lambs av 55 at $7; to Parker, W. & Co. 5 do av 51 at $6.50; to Thompson Bros. 66 do av 60 at $7.12½; to Fitzpatrick Bros. 17 do av 55 at $6.75, 33 sheep av 125 at $4.50; to Nagle P. Co. 32 do av 115 at $4.60, 15 lambs av 55 at $7, 67 do av 85 at $8.25.

Hogs.

Receipts, 14,283. None sold up to noon; prospects 5c higher, $6.95@7.

Bishop, B. & H. sold Hammond, S. & Co. 2500 av 200 at $6.90.

Haley & M. sold Parker, W. & Co. 450 av 200 at $6.90.

Spicer & R. sold same 510 av 200 at $6.90.

Roe Com. Co. sold Sullivan P. Co. 750 av 200 at $6.90.

Friday's Market.
January 1, 1915.

Cattle.

Receipts this week 855; last week 752; market dull. Best heavy steers $8@8.75; best handy weight butcher steers $7@7.50; mixed steers and heifers $6.75@7.25; handy light butchers $6.50@7; light butchers $5.50@6.25; best cows $5.75@6; butcher cows $5@5.50; common cows $4.25@4.75; canners $3@4; best heavy bulls $6@6.50; bologna bulls $5.50@6; stock bulls $4.50@5.

Veal Calves.

Receipts this week 492; last week 361; market steady. Best $9@9.50; others $6@8.50.

Sheep and Lambs.

Receipts this week 7,517; last week 5,068; market steady. Best lambs $8 &8.25; fair lambs $7@7.75; light to common lambs $5.50@6.75; fair to good sheep $4@4.75; culls and common $2.50@3.50.

Hogs.

Receipts this week 15,878; last week 11,643; market 10c higher; all grades $7.00.

Veterinary.

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

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

Loss of Appetite.—My hogs appear to have an appetite for swill and slop, but very little for grain. Our local Vet. told me to feed iron sulphate one teaspoonful to every 100 pounds of weight of hogs, and a teaspoonful of sulphur daily for five days, but this has not helped them. J. S., Blissfield, Mich.—Mix one part powdered sulphate iron, one part salt, two parts of ginger, four parts ground gentian together and give each full grown hog a teaspoonful at a dose in feed once or twice a day. If they have many worms give ½ oz. of equal parts of fluid extract spigelia and fluid extract of senna daily for a few days.

Loss of Appetite—Looseness of Bowels.—I am anxious to know what ails my cows; they appear dumpish, refuse to eat but little sweet bran or nice bright ensilage. Their excrement is black and they are quite thirsty. C. N. B., Lake Ann, Mich.—Give each of your cows ½ oz. hypo-sulphite of soda and ½ oz. of ground gentian at a dose, either in feed or as a drench in water three times a day. For your mare that is troubled with looseness of bowels, give her ½ oz. ground ginger, 2 drs. of ground cinnamon and 1 dr. of ground fenugreek at a dose in feed three times a day. Change her feed.

Injured Shin.—I have a colt seven months old who injured shin when cast; local Vet. applied remedies which partially healed wound, but a gathering takes place similar to an abscess, pipes formed, Vet. cut leg open, scraped bone and removed pipes, then leg healed fairly well, but it is now swelling again and I think will break. She is not lame, but I would like to heal this wound. D. S., Big Rapids, Mich.—When leg was injured wound was perhaps infected, covering of bone injured, and possibly air affected bone, causing it to become slightly diseased. Your Vet. did the right thing and it will be no mistake to continue his treatment. Apply one part iodoform and nine parts boracic acid, covering sore with oakum and a bandage. The colt should be kept in a clean place, free from foul odors.

Lice on Cattle.—I would like to know what will kill sparrow lice on cattle. F. H., Ceresco, Mich.—Apply one part coal tar disinfectant and 19 parts lard once a day; or apply Persian insect powder every two or three days. You had better select one of the commercial coal tar disinfectants that are regularly advertised in this paper, for they are reliable.

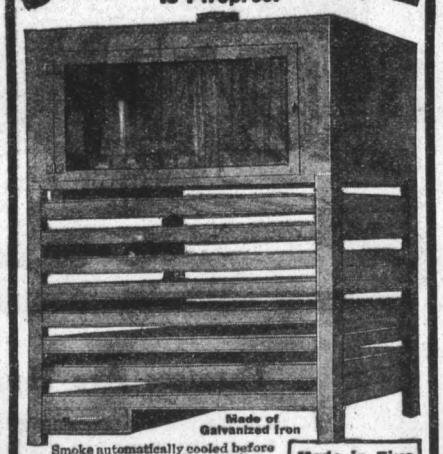
Cow-pox.—The lower part of bag and teats of my cow are covered with blisters which later on form a dry scab, but they do not seem to be deep. A. L., Port Huron, Mich.—Apply one part oxide of zinc and four parts vaseline to sores ond give each cow ½ oz. of hypo-sulphite of soda at a dose twice a day.

Solidified Bursal Bunches.—I have a mule that is ten years old which has wind galls on both hind legs, causing soreness and lameness. H. N., Clarkston, Mich.—Apply one part red iodide mercury, one part powdered cantharides and eight parts lard.

SMOKE Your Hams and Meats In the Up-to-Date Smoke House

Cures 4 to 32 hams in 40 hours. Requires only ½ bu. corn cobs, ½ bu. sawdust and a little seasoning bark for fuel. Occupies small space. Can be operated in the house, back porch or any convenient place.

SMOKE HOUSE Is Fireproof



Made of Galvanized Iron

Smoke automatically cooled before reaching hams by traveling 30 feet—back and forth—from fuel box to drum. Drum is insect proof; can be removed and used as store house for meats after curing. Has glass in door.

The Up-to-Date Smoke House is as great an improvement over the old-fashioned method as the kitchen range is over the old fire place for cooking. Send for folder which pictures and describes all sizes. Address Dept. E

Made in Five Sizes — From 4 to 32 Hams
BARGAIN PRICES IN ALL SIZES
Guaranteed

SMOKE HOUSE CO., 5543 S. State Street, CHICAGO

Barred Rock Cockerels—$2 each, 3 for $5, large, farm raised, from bred to lay stock. order now Egg-A-Day Poultry Yards, R2, Ceresco, Mich.

Wanted—A capable, experienced farmer, to rent on equal shares 320-acre farm. One mile from two railroad centers, or will sell farm. For particulars address Box 304, Vassar, Mich.

Wanted to hear from owner of good farm for sale. Send cash price and description. D. F. BUSH, Minneapolis, Minn.

WANTED, to buy a farm of 70 to 100 acres. Near Saginaw or Detroit, from owners only, give full particulars, lowest price in first letter. Ed. Feige, 874 Fairview Ave., Detroit, Mich.

New Modern 7 Room House, Elegant inside finish, all polished oak floors, barn, garage, large piece land, all kinds fruit, 80 rods from Central State Normal School, will trade for good farm land. William J. Cooper, Mt. Pleasant, Mich.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

Good Farms Around Lansing, and East Lansing residence properties. J. D. TOWAR, East Lansing, Michigan.

Live Stock Proposition—800 acres excellent grazing Will lease on share increase 100 acres plow land. Write Postmaster, Fox Islands, Mich

MICHIGAN FARMING LANDS

Near Saginaw and Bay City, in Gladwin and Midland Counties. Low prices: Easy terms: Clear title. Write for maps and particulars. STAFFELD BROTHERS, 15 Merrill Building, Saginaw, (W. S.), Michigan.

FOR SALE—In whole or part, 320 acre southern Michigan farm. Good soil, buildings and fences. Immediate possession. O. S. SCHAIRER, 214 Dewey Ave., Swissvale, Pa.

Old People Must Sell their home. Send for photo and descriptions, 9 acres: keeps 2 cows and one horse and poultry. A nice home, only $1200. Easy terms. Close to church, store, school, mill. Hall's Farm Agency, Owego, Tioga Co., N. Y.

WANTED to hear of good farm or unimproved land for sale. Send description and price. Northwestern Business Agency, Minneapolis, Minn.

280-Acre Stock Farm for Rent—Excellent proposition for a hustler with little means. Address Lock Box 58, Allegan, Mich.

THE SOUTH offers unequalled opportunities for farmers, with its mild climate, ample rainfall, two to four crops a year, great possibilities in live stock, dairying and food crops, low cost lands and good markets. Let me send you information. M. V. RICHARDS, Ind. & Agri. Commissioner, Room 78, Southern Railway, Washington, D.C.

Farm Of 180 Acres Choice land fronting Lake Huron in Sanilac Co. Has 2 large barns, 1 barn 40x70 with cement basement floors and mangers, has 20x40 wing with dairy room in connection, other barn 40x60. One 9 room dwelling in good condition all painted. One 6 room tenament house. Home has pneumatic water system in house & barn. Nice orchard, young orchard coming on. 100 grape vines in bearing. Will bear the closest investigation. Reasons for selling going into business. Wm. Wagner, Forestville, Mich.

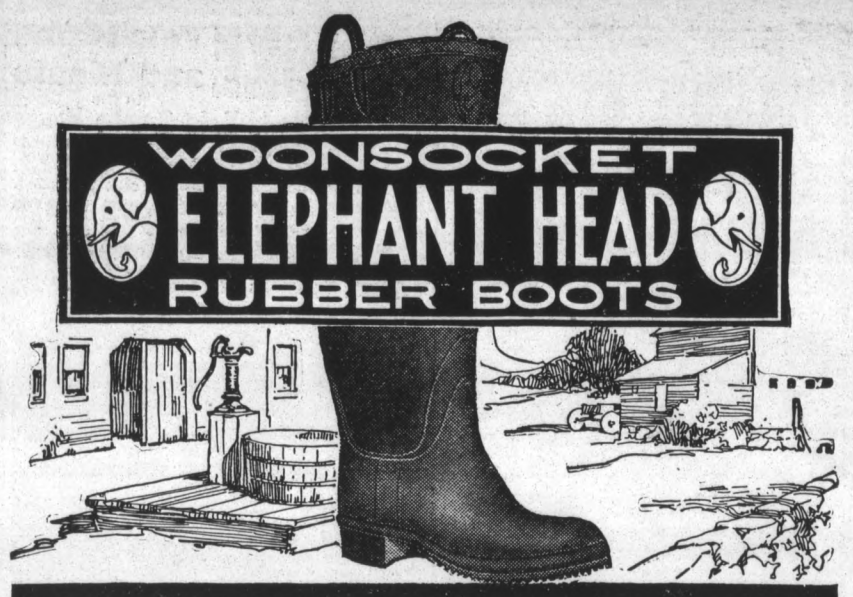
FARMS, GOOD, CHEAP, PROFITABLE
UNUSUAL OPPORTUNITIES NOW.
State Board of Agriculture, Dover, Del.

Colorado Lands

can be bought at reasonable prices. There is land in plenty in the shallow water district. Lands irrigated, non-irrigated and sub-irrigated. All near the railroads and handy to good markets. The crops you can raise are many: Sugar beets, potatoes, fruit, wheat, oats, corn, etc., as well as alfalfa and other forage crops.

For free information regarding these lands and glorious climate, write today. Also ask for free literature and information regarding cheap state lands.

R. A. SMITH.
Colonization and Industrial Agent, Union Pacific R. R. Co., Room 3821, Union Pacific Bldg.
OMAHA, NEB.



Farmers Are Healthy Men—Why?

A famous physician was recently asked why farmers lived longer than city men. In reply he said, "Of course an outdoor life is healthful, but I believe one of the reasons why farmers are long-lived and healthy is because they keep their feet dry."

The surest and cheapest way to keep your feet dry is to wear ELEPHANT HEAD RUBBER BOOTS. They are made of pure-gum rubber, selected duck, reinforced at every seam and joint and lined with soft, warm wool.

They cost less because they last longer.

All the better dealers sell ELEPHANT HEAD RUBBER BOOTS. You can depend on anything you buy in the stores that have them.

WOONSOCKET RUBBER CO., Woonsocket, R. I.

OF KNOWN VALUE
STANDARD
FARM PAPERS

BEST FOR THE READER
THEREFORE
BEST FOR THE ADVERTISER

	Guaranteed Circulation	One Line	1,000 Lines
Ohio Farmer, Cleveland, Ohio, (Rate 60c per line.)			
Michigan Farmer, Detroit, Mich. (Rate 40c per line.)	256,861	$1.12½	$1.12½
Pennsylvania Farmer Philadelphia, Pa. Rate 25c per line.)			
Indiana Farmer, Indianapolis, Ind.	57,101	.25	.25
The Progressive Farmer Birmingham—Raleigh Dallas—Memphis.	174,121	.80	.80
Breeder's Gazette, Chicago, Ill.	98,558	.60	.60
Prairie Farmer Chicago.	100,000	.50	.50
Hoard's Dairyman, Ft. Atkinson, Wis.	67,820	.40	.40
Wisconsin Agriculturalist, Racine, Wis.	63,454	.30	.30
The Farmer, St. Paul, Minn.	140,855	.60	.55
Wallace's Farmer, Des Moines, Ia.	80,000	.40	.40
Kansas Farmer, Topeka, Kan.	61,253	.30	.30
Oklahoma Farm Journal, Oklahoma, Okla.	51,894	.25	.25
	1,151,917	$5.52½	$5.47½

These publications are conceded to be the authoritative farm papers of their individual fields. For further information address

GEORGE W. HERBERT, Inc.
Western Representative, Advertising Bldg., CHICAGO, ILL.

WALLACE C. RICHARDSON, Inc.
Eastern Representative, 41 Park Row, NEW YORK CITY.

The Michigan Farmer One Year
The New York (3-a-week) **World** One Year
Both for only $1.20.

The New York World comes to you three times each week thus giving you practically a New York daily. The New York World is unexcellee as a newspaper and will keep you posted on thd new ₀of the world. Send all orders to THE MICHIGAN FARMER. Detroit, Mich.



Bugs eat crops—birds eat bugs—the Farm Journal is the best friend the birds have.

Crop losses from insects run into millions every year. If it were not for the birds these losses would be billions. In Massachusetts alone birds eat 21,000 bushels of bugs per day.
The Farm Journal, America's leading farm paper, originated and is the official organ of the Liberty Bell Bird Club—190,000 members, who are helping save those millions of crop losses. You can get the Farm Journal 5 years for $1. Money back any time you ask for it.

The Farm Journal
182 Washington Square, Philadelphia

Only $2 Down
One Year To Pay



$35 NOW Buys the Famous "Chicago" (1)
visible typewriter, guaranteed 10 years. This wonderful machine will do anything that any hundred dollar machine will do and more —Does beautiful, even work. Almost impossible to get out of order. You save $65 by buying direct from the factory. For only $2 down we will send typewriter on approval for

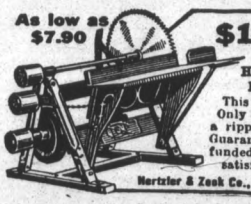
10 DAYS' FREE TRIAL

If satisfied you can pay the balance at the rate of only $3 a month until machine is paid for. If not pleased at end of 10 days just return the outfit at our expense and every penny you paid us will be refunded. You take no risk.

FREE!—Leatherette Carrying Case with brass locks and trimmings will be sent to those who order promptly. Write TODAY for Free Catalog Folder.

Galesburg Writing Machine Co., Dept. 636, Galesburg, Ill.

As low as $7.90



$10,000.00 Backs This Hertzler & Zook Portable Wood SAW

This is the cheapest saw made. Only $7 90 saw frame to which a ripping table can be added. Guaranteed 1 year, money refunded and all charges paid if not satisfactory. Write for catalog.

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

BOWSHER SWEEP MILLS



Different from all others. 4 or 2 horses. **Grind Corn with shucks** *and all small grains.* (Also make 10 sizes of belt mills)

FREE—Booklet on **"Feeds and Manures"**

D.N.P. Bowsher Co., South Bend, Ind.

Practical Science.

FRUIT HYGIENE.

BY FLOYD W. ROBISON.

One great difference in the method of preparing food by civilized people and savages consists in the cooking of foods. Most of the food eaten by civilized man is modified by varying processes of cooking. Certain foods are eaten raw, but the generally accepted opinion as shown by public custom, concedes a marked improvement in most food products due to cooking. The purpose of cooking and what is accomplished by cooking, do not seem to have necessarily followed each other. Without doubt the main purposes in cooking food have been to improve its palatability and at the same time possibly to increase its adaptability to different individuals.

Cooking of Food a Necessity.

Certain types of foods are almost wholly inedible unless cooked. Potatoes, for example, a comparatively modern food, are not considered edible unless cooked. The reason for the cooking of potatoes, therefore, has been the rendering of the product edible. Just what is accomplished by cooking may explain why cooked potatoes are more edible than are raw ones, but the reason for these things was not at all apparent undoubtedly, at the time it was found desirable to cook potatoes for food.

Animals Can Eat Foods Raw.

Domestic animals can assimilate potatoes without great difficulty, even when they are raw, an accomplishment in a large measure denied to man, because of the difference in his physiological make. The intestinal canal of domestic animals is much longer and the digestive treatment more severe than in the case of man. Consequently it is desirable in preparing for food for man the same classes of food products that are used for domestic animals, to give to the digestive apparatus of the man some handicap, which is accomplished by a preliminary treatment, as in the cooking of the food. This has been enlarged upon to a remarkable degree in the last decade through the introduction of foods in which the preliminary treatment has been carried even beyond that of cooking. For instance, in certain types of breakfast foods, a malting or digesting process has taken place in the food factory and in this way the processes of digestion in the body are even more facilitated. It is questionable, however, if it is desirable to extend any further than is necessary this preliminary treatment and therefore, particularly with robust and healthy individuals, if the food products may be prepared by a proper cooking in such a way as to render accessible to the digestive juices the various food nutrients contained in the food, it is ample and, indeed, preferable to the use of the so-called, but incorrectly so-called, pre-digested foods.

Cooking of Food Breaks Down the Fiber Wall.

In the cooking of foods, and in this respect fruits likewise, the most desirable thing accomplished undoubtedly is the breaking down of the cellular structure of the fruit. The fruit protoplasm is encased within a cellulose wall and if the fruit nutrients yield themselves up to the digestive juices of the body this cellular encasement must be broken down or dissolved. In some individuals the power of attack of the digestive juices towards this structure seems to be very limited. Of a consequence these individuals find difficulty in the eating of raw fruit. Cooking, however, ruptures the cellulose wall either by heat expansion or by dissolving, and in this way exposes the inner contents to the direct attack of the digestive juices. Chemically the cooking of fruit usually is accompanied by a loss of moisture and likewise, at the same time, a loss of nutrient matters, but in most fruits the cooking juices are retained or set aside as an added dish, and are thus utilized so that there is no waste in this particular.

Fruits Contain Much Acid.

Most fruits contain a considerable amount of organic acid. For instance, apples contain varying quantities of malic acid, which is the characteristic acid of apples. Currants and gooseberries, likewise, contain considerable quantities of this organic acid. Lemons, oranges, grapefruit, grapes, etc., contain considerable amounts of such acids as tartaric acid, citric acid, etc.

Why Cooked Fruit is More Sour than Raw.

A very common observation, and curiously enough, an observation which has never been explained in a wholly satisfactory way, is the fact that while raw fruits may be palatable because of a not excessive acidity, when these same fruits are cooked it becomes necessary to add sugar to them before they can be eaten. Let us take a well-known example, plums. Plums, when ripe, are a delicious article of food eaten raw. These same plums, however, cooked are so sour that they can scarcely be eaten without the addition of sugar, and it has been supposed that the cooking of plums increases the acid content. Scientifically it has not been easy to understand why this could be. It would be much easier to suppose that the cooking of fruit decreases acidity than that it increases it, were it not for the fact that the common observation indicates that the acidity has been increased, at least comparatively. Some experimenters have undertaken to ascertain if there has been an actual increase in acid, and it has been found that the cooking of fruit does not increase the acidity. One experimenter claims that the increased acid flavor is due to the fact that cooked fruit usually contains the skin, which is commonly rejected if the fruit is eaten raw, and as an instance he cites plums, gooseberries and currants. While we believe that a certain amount of acid substance exists around the fruit inside of the skin, at the same time it seems that the greatest amount of sugar is also present at these places, and in our experience we are not familiar with the removal of the skin from gooseberries and currants when they are eaten raw.

A good many of the fruits contain cane sugar, or sucrose, which is one of the sweetest sugars we have, and when the fruit is eaten raw the taste of the cane sugar, or sucrose, is quite pronounced, and has the effect of counteracting a considerable quantity of acid. When the fruit is cooked, however, due to the organic acid present in the fruit, most, if not quite all, of this cane sugar becomes inverted, that is, changed to invert sugar, and is not then so sweet. In our judgement this is the reason why cooked fruits are so much more sour than raw fruits, not because there is a greater content of acid present but because there is a much smaller quantity of cane sugar present.

CATALOG NOTICE.

"Deming Sprayers for Perfect Fruit," is the title of the 1915 catalog published by the Deming Company, of Salem, Ohio, manufacturers of hand and power pumps for all uses. This is a profusely illustrated catalog of 44 pages describing a large line of spraying equipment, pumps, etc. Write for a copy, mentioning the Michigan Farmer.

Poultry and Bees.

State Beekeepers' Meet.

THE annual meeting of the Michigan Affiliated Bee-keepers' Association was held in the Entomology Building of the Michigan Agricultural College, East Lansing, on Wednesday and Thursday, December 9-10. President Morse, after welcoming the beekeepers to the convention, spoke of the necessity of awakening the Michigan beekeepers' interest in the work of the association.

Mr. David Running, of Filion, Mich., entertained the meeting with a valuable address on "Our Apiaries and the Production of Extracted Honey in Huron County." The speaked stated that where one was keeping more than a hundred colonies and was depending on the nectar from one source alone, as from clover, then it paid well to establish outyards, with from fifty to a hundred colonies in one location. From his own experience he stated that even when the extra expense of travel and maintenance of the outyards, was taken into consideration the increased crops more than overbalanced the extra outlay.

Outyards Profitable.

Mr. Running stated that he had no trouble in getting a location for his bees, as the farmers in his locality appreciated the immense good the bees do in pollenizing the clover blossoms and so increasing the yield of seed, knowing this, the farmers welcomed an apiary on their farm. The bees are moved to the outyards in the spring of the year, just as soon as the roads are good, usually about the time dandelions are in bloom.

Conditions there call for treatment quite different from that in Michigan. Bees fly nearly every day of the year and gather pollen almost every month of the year, with a little nectar coming in sometimes during the winter months. The spring flow of nectar commences in February and continues, with intermissions, from that time until the main flow closes in August or September.

The sources of nectar are many, including fruit bloom, willow, muskadine, wildgrape, cottonwood and other honey producing plants.

The president next called on Mr. Frank Pease, Marshall, Mich., whose topic was, "Living in the North and Keeping Bees in the South."

Usually, beekkeepers live in the south and keep bees in the north, but Mr. Pease lives in the north in winter and keeps bees in the south in summer. The southern yard is situated in Louisiana and Mr. Pease gave a very interesting account of beekeeping in that part of the country.

While the address of Mr. Pease was very enjoyable, most of the Michigan beekeepers seemed to be satisfied that the Wolverine state offered more attractive conditions than those enjoyed farther south.

Beekeeping to Become a Specialty.

"The Future of Beekeeping" was the next subject. Mr. E. D. Townsend, of North Star, Mich., is running about eleven hundred colonies at the present time and with almost forty years' experience in beekeeping, the convention listened with much interest when he took up his subject.

Mr. Townsend believes that the future will see fewer beekeepers but more colonies kept. Beekeeping will enter the field of specialties and one will have to specialize and keep many colonies in order to successfully compete with others and to assure a livelihood for himself and family.

A discussion of bee cellars was led by Mr. L. Griggs, of Flint, Mich. The speaker stated that he was building two bee cellars and wanted to get as much information as possible, on their correct construction, from the beekeepers present.

(Continued next week).

A HATCH EVERY MONTH.

A farmer of my acquaintance who is engaged in the poultry business in a small way, has an excellent method, which, it seems to me, is well worthy of being followed by many others in these times of high meat prices. This man is not keeping hens with a view to bringing in cash, but solely with the purpose of providing eggs and poultry for the table. It may be at times that he sells a small surplus. His plan is to hatch out chicks at all seasons, planning them as one would a succession of garden vegetables. For instance, if he were starting in the spring, he would hatch one or two flocks practically every month of the year. By having this constant succession of pullets reaching the laying age, a goodly supply of eggs is always available. Under this plan he can depend entirely upon hens for hatching, as he keeps nothing but R. I. Reds, which are excellent mothers. He also has a broiler or roaster ready at hand for the table at all seasons.

Rats More Serious than Vermin in Winter.

In order to insure success with chicks hatched in the coldest weather, warm, sheltered quarters are absolutely necessary. It is also necessary to set the hen where the eggs will be free from drafts of cold air. A corner of the poultry house may be fitted up for setting hens and the newly-hatched chicks that will insure a fair hatch and keep the young birds comfortable. Lice and vermin will not trouble in winter but it will be necessary to keep a sharp eye out for rats. These pests seem worse in winter, as much of their regular food supply is cut off by the cold. On the whole, however, I do not think it more of a task to raise winter chicks than summer ones. The extra work necessary to keep them warm is offset by insect pests and diseases which have to be fought in summer but from which they are practically free in winter.

It is possible to do a poultry business of this kind without artificial hatching or brooding, but if one were to launch out on a considerable scale incubators are necessary. I have never seen a flock of hens that would produce sitters when they were most wanted, and it is important to hatch out the chicks at just the right time if one is in the business for the greatest profits. Winter layers of Reds, Rocks and Wyandottes should be hatched in April. Later ones do not commence laying until the severely cold weather comes on and then they are apt to produce only in a desultory and unsatisfactory manner. Good winter layers should get down to work before the cold becomes severe. In order to produce many of them it is necessary to have an incubator, as, my experience has been, that hens do not become broody, except in infrequent cases, until the middle of April.

Incubators Necessary for Larger Hatchings.

During the summer, fall and winter the old hen is all right for hatching, but if one cares to get a flock of a hundred or more of the same age, it takes rather too many of the layers away from duty. Again, the artificial method becomes almost indispensible. In short, a small, all-the-year business can be carried on successfully with the aid of the setting hen, but the more extensive attempt requires the incubator and brooder.

New Hamp. C. H. CHESLEY.

Moist Heat for Big Hatches

THE only possible way to get perfect hatches is to have the right heat. The X-Ray Incubator with its wonderful new heating principle produces natural moist radiation just like the heat under the mother hen. No other machine has it. No other machine can use it.

X-RAY Radiator and Vapor Generator

When the heat enters the egg chamber it strikes the X-Ray Vapor Generator. The heat then passes to the X-Ray Radiator which carries it to the farthest corners. Every ray of heat must pass through this mild vapor before it reaches the eggs and every egg gets its share alike.

Fifteen New Special Features

We now have ready the finest illustrated and most completely descriptive incubator catalog we ever published. Send for a copy. It is free. It tells all about the exclusive X-Ray features. The X-Ray Central Heating Plant—saves 75c to $1 per hatch. *Big Oil Tank requires only one filling to hatch.* The X-Ray Egg-Tray leaves entire space available for eggs. The X-Ray Automatic Trip—the X-Ray Regulator automatically operates it to shut off or let on flame to just the right size for the right amount of heat. X-Ray Hinged Glass top. X-Ray material and finish. *Send for book No. 29 Today.*

X-RAY INCUBATOR COMPANY Des Moines, Iowa



THE X RAY

Only one filling, only one gallon of oil to hatch.

FREIGHT PREPAID

$7.25 Mankato Incubator

Only 7

You couldn't buy better at two or three times the price. California Redwood case, triple walls, asbestos lined, pure copper tank, surest automatic regulator, safety lamp, everything.



Comes set up—ready to use. 250 Egg

Free Book of Incubator Facts

Free Trial—strong money back guarantee. 120 chick brooder $2.50; 240 chick brooder $4.00—and up. Write for free book today.

Mankato Incubator Co., Box 717, Mankato, Minn. only $10.25

Throw Pearl To Your Hens

Then watch results. There's no better grit—no better egg maker—no better health food for all poultry than

PEARL GRIT

It makes shells, makes eggs, makes feathers. It serves a double purpose. Send for prices and our new valuable poultry booklet.

THE OHIO MARBLE CO., 418 Cleveland St., Piqua, Ohio

Join World's Champions



13 more championships won by owners of Belle City hatching outfits. Makes

Belle City

21 Times World's Champion

Free Book "Hatching Facts" tells whole story. My $800 Gold Offers come with outfit shown in actual colors, Jim Rohan, Pres



Freight Prepaid. 1, 2 or 3 Months' Home Test

Free Book—Money-Back Guaranty Hatching

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



Crown Bone Cutter

BEST MADE Lowest in Price

FEED your hens cut green bone and get more eggs. With a Crown Bone Cutter you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalog.

WILSON BROS., Box 251, EASTON, PA.

Michigan Livestock Insurance Co.

Capital Stock—$100,000. Surplus—$100,000

Home Office—Charlotte, Michigan.

Only Home Co., in Michigan.

COLON C. LILLIE President.

H. J. WELLS, -:- Secretary-Treasurer.



POULTRY PAPER 44-124 PAGE periodical, up-to-date, tells all you want to know about care and management of poultry for pleasure or profit. Four months for 10 cents.

POULTRY ADVOCATE, Dept. 117, Syracuse, N.Y.

POULTRY.

BARRED PLYMOUTH ROCKS

"Hoosier Strain." Established in 1892. Winner of 11 first prizes at Chicago, Cincinnati and Indianapolis in two years. 300 fine Cockerels, some good cock birds, hens and pullets in any number. All stock shipped subject to approval. Prices reasonable. Write your wants. G. Earl Hoover, R.7, Matthews, Ind.

MAMMOTH Bronze Turkeys and Toulouse Geese Barred Rock Cockerels. Reg. Berkshires, both sex. CHASE'S STOCK FARM, R. 1, Mariette, Mich.

Mammoth Bronze Turkeys—Pairs not akin. Toms $6.00; Hens $4.00. COLLAR Bros., Coopersville, Michigan.

White Holland Turkeys, B. P. Rock Cockerels, S. S. Hamburg Cockerels, R. C. Leghorn Cockerels, Indian Runner Ducks. Prices will please you. Riverview Farm, R. No. 8, Vassar, Mich.

Pekin and White Indian Runner Ducks—Stock and prices will please you. H. V. Hostetler, Route 1, St. Johns, Mich

Chicks: We ship thousands, different Varieties, prices right, order now for spring delivery, free booklet. Freeport Hatchery, Box 12, Freeport, Mich.

65 Breeds—Chickens, ducks, geese, turkeys, guineas, hares and dogs. Stock and eggs reasonable. 60-page catalog free. H. A. SOUDER, Box 50, Sellersville, Pa.

50 Leading Breeds pure bred chickens, ducks, geese, turkeys. Fowls, eggs, incubators at lowest prices. Catalog 2c. W. A. Weber, Box 914, Mankato, Minn.

Buff Rocks, both sexes from 12½ lb. First Chicago Cock. Cockerels $2 up. Hens and pullets $1 up. BIRD LAWN FARM, Lawrence, Mich.

R. C. & S. C. Rhode Island Red Cockerels; also eggs in season. Strong birds from good ancestors, "Satisfy customers". Jennie Buell, Ann Arbor, Mich.

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

A fine bunch of R. and S. Comb R. I. Red cockerels for sale, very reasonable. Also Buff Orpington and White Runner Drakes. O. E. Hawley, R. No. 3, Ludington, Mich.

SILVER LACED GOLDEN and WHITE WYANDOTTES—A fine lot of White cockerels weighing 6 to 8 lbs. at $2 and $3 each. Browning's Wyandotte Farm, Portland, Michigan.

BARRED AND WHITE ROCKS—Large farm raised utility Cockerels. $3 two for $5. Bred for beauty and business. Order from this ad. Eggs in season. RIVERVIEW FARM, Box 798, Union City, Michigan.

BARRED ROCKS—Pullets and Cockerels, $2 and $3 each. Eggs for hatching and Baby Chicks. W. C. Coffman, R. No. 6, Benton Harbor, Mich.

White Leghorns Day-Old-Chicks. Write for circular. We guarantee satisfaction to all our customers. MAPLE CITY POULTRY PLANT, Box C. Charlotte, Michigan.

PINE CREST WHITE ORPINGTONS—The great winter layers, winners at State Fair, pullets, cockerels, hens, also collie puppies. Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

DOGS AND FERRETS.

Trained Running Fox Hounds—30 Fox and Coon hound pups, Ponies. Send stamp. W. E. LECKY, Holmesville, Ohio.



2000 Ferrets for sale. Write for price list. It's free. Guarantee safe delivery. DeMoine Bros., Box 41, Jamestown, Mich.

Ironclad TRADE MARK

Mrs. C. F. Merrick, Lockney, Tex., with her 140 egg Ironclad Incubator wins in the Mo. Valley Farmer and Nebr. Farm Journal Big Hatching Contest. She placed 148 eggs in the incubator and hatched 148 strong chicks. Think of that. You can now get these famous winners, made of Calif. Redwood.

WINS In 2 Biggest HATCHING CONTESTS Ever Held

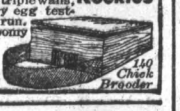
140 Egg Incubator / Chick Brooder } BOTH FOR $10

If ordered together, 30 days trial, 10-year Guarantee. Order direct from this advertisement—money back if not satisfactory. Incubator is covered with galvanized iron, triple walls, copper tank, nursery egg tester. Set up ready to run. The Brooder is roomy and well made. Send for free catalogue.

Freight Paid East of Rockies



Made of Redwood covered with galvanized iron.



140 Chick Brooder

Ironclad Incubator Co. Box 107, Racine, Wis. (3)

RECORD HATCHES



155 EGG Set up ready for use

Mrs. Halton of N. Vernon, Ind., reports two 100% hatches from her old reliable Progressive Incubator. Only incubator with double walls and hundreds of dead air cells. All wood parts California Redwood. All set up ready to use. No extras to buy. Money back guarantee.

$7.35 LOWEST PRICE YET FOR 155 EGG INCUBATOR

Self-regulating and ventilating—copper boiler—hot water heat, safety lamp, egg tester, 2 doors—thermometer. Freight prepaid E. of Rockies.

Incubator and Brooder both for $9.35. Order now or send for our big, free Incubator Book.



Progressive Incubator Co. Box 164, Racine, Wis

MONEY IN POULTRY AND SQUABS Start small. Grow BIG. Get winter eggs. Keep healthy fowls. Save your chicks. Foy's big book tells how. Describes largest poultry and pigeon plant. Shows fowls in natural colors; how to feed for eggs, how to select best layers. Mailed free. F. FOY, Inc., Box 57, Des Moines, Iowa



Do you want to save money and raise all the Chicks?

The Ideal Colony Brooder COAL-BURNING SELF-REGULATING



With SHAKING and DUMPING GRATE Adjustable Hover Chicks always Visible

Price $19.00; including Automatic Regulator, $24.00. Economical and safe. 100 per cent efficient. Large and small farms use the Ideal with success. Vastly superior to oil burners. The Ideal Fresh Air System gives perfect satisfaction. Many testimonials showing the wonderful results obtained during ZERO weather in the cold spring of 1914. Write for free booklet. Learn to brood chicks without loss. Make two chicks grow where only one grew before.

LIBERTY STOVE COMPANY, 114 "M" Second Street, Philadelphia, Pa.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—R. J. Robb, Mason.
Vice-president—C. J. Reed, Spring Arbor.
Secretary and Treasurer—Mrs. J. S. Brown, Howell.
Directors—Alfred Allen, Mason; Joseph Harmon, Battle Creek; C. B. Scully, Almont; C. T. Hamline, Alma; W. K. Crafts, Grass Lake; Edward Burke, St. Johns.
Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

Associational Motto:
"The skillful hand with cultured mind is the farmer's most valuable asset."

Associational Sentiment:
"The Farmer: He garners from the soil the primal wealth of nations."

WHAT THE LOCAL CLUBS ARE DOING.

The conference of local Club workers was held on the morning of the second day of the Associational meeting, and was, as usual, an interesting phase of that event. To many of the older Club workers present the most pleasing feature of this session was the presence of former associational President L. D. Watkins, who gave a short talk reminiscent of his Farmers' Club experience. He recalled his presence at the first associational meeting held more than a score of years ago, at which time he drafted the first constitution and by-laws of the organization. He also told of being instrumental in the organization of one of the very first Farmers' Clubs in the state. It was indeed a pleasure to his many friends to listen to Mr. Watkins' talk and to meet him in the intervals between the sessions which he attended.

Ex-president A. B. Cook presided over the conference, suggesting that the delegates present brief and concise reports of the work of their local Clubs, in order that as many as possible might be heard from during the session.

The first delegate to report was Mr. Hamline, of the Arcadia Club, who reported twelve meetings during the year, and an average of 60 in attendance.

Delegate Cook, of the Washington Center Farmers' Club, reported a fair degree of interest and attendance. This Club uses yearly programs, and a question box is made a feature of its meetings. The Club is largely interested in public questions. He spoke of the relation of the local Clubs to the State Association, making the objection that under the present system the tendency was to maintain large local Clubs when more and smaller Clubs would better serve the communities in which they exist.

Mr. Alfred Allen, of the Ingham County Club, reported a successful Club year for his organization. Eleven meetings, two of them special events, were held during the year. These specials were a woman's meeting in November and a children's day in August. He spoke of the corn club work and science contest which was conducted by the Club during the year entry in which was limited to members of Club families. The regular meetings are held at the homes of the members, with good attendance, 175 being present at the last meeting. Printed programs are used by this Club.

The delegate from the Bedford Farmers' Club, which is now in its second year, reported the organization in a prosperous condition. Twelve meetings were held during the year, including a Club Fair at which 500 exhibits were made, the delegate asserting that it was better than the county fair. The interest taken in the work of this Club was shown by the high average attendance, which was reported at 125.

Mr. David Gage, delegate from the Wixom Farmers' Club, spoke of the social work in which that organization has joined with the other local organizations in the community, as carried on during the past year. This included a picnic on July 4, and a fair in October, at which $100 in cash premiums was paid. The five societies engaged in this community work have a federated committee which has charge of the special events. The Farmers' Club holds 11 meetings during the year, these being all-day meetings held on the second Wednesday of each month. The Club membership includes 60 families.

The delegate from the Odessa Farmers' Club, of Ionia county, gave an interesting report of this Club, which was organized in 1888. The Club uses yearly programs, and holds 12 meetings during the year, including a midsummer picnic.

At this point Chairman Cook commented on the desirability of a fixed place of meeting for the local Clubs. He described the method which is followed by the Maple River Club, of which he is a member. In this Club an alphabetical list of the members is made, and the members entertain in alphabetical order, and in case they desire to change this order of arrangement, they make a special arrangement with some other member of the Club to exchange meeting dates with them. This has worked out much more satisfactorily than any other plan tried, as it automatically fixes the meeting place. New members are added at the foot of the list, and are not required to entertain until their regular turn under this arrangement.

CLUB DISCUSSIONS.

Hold Annual Meeting.—The Indianfields Farmers' Club was entertained at the pleasant home of Mr. and Mrs. A. J. Pattison, December 17. Seventy members and invited guests were present. After the sumptuous dinner, served by Mrs. J. W. Paul and her able assistants, President Eldridge gave a fine report of the proceedings of the State Association of Farmers' Clubs in Lansing, which he attended as a delegate. A welcome card to the Club was read from Mrs. and Rev. T. D. Denman, former members of the Club, wishing each member a merry Christmas and a happy and prosperous New Year, and wishing they might be at the meeting, too. Officers were then elected for the coming year. Mr. Eldridge was elected for the third term; vice-president, S. G. Ross; secretary, Margaret Arnold; treasurer, Ellen Purdy; organist, Mrs. C. A. Taggett; chorister, I. N. Taggett. Readings were given by Mrs. Ella Andrews and Clara Miller. Everyone present had a most enjoyable time. The next meeting will be held on January 21 at the home of Mr. and Mrs. R. W. Black.—Margaret Arnold, Sec.

Best Meeting of the Year.—The 50 or more members and guests of the Thornapple Farmers' Club, who gathered at the home of Mr. and Mrs. Chas. Campbell in December, enjoyed the best meeting held in many months. The dinner was all that could be desired, the business routine short, and the literary program interesting. In Mr. Shaw, the M. A. C. sent the best speaker ever heard at the Farmers' Club. His talk was practical and interesting, and the readiness with which he answered all questions showed a thorough knowledge of his subject, "Which is more profitable, feeding lambs or steers?" When a speaker from the M. A. C. is sent to any Club, farmers should put forth an extra effort to avail themselves of the opportunity to hear him. They may not agree with all his ideas, but it is seldom that some good cannot be gleaned from the talk of men who have made a study of that branch of farming on which they speak. During the stock discussion, the ladies adjourned to the parlor where Mrs. Katherine Reed, of Washington, D. C., entertained them with a display of nuts from Europe, Asia, South America, Mexico and our own United States, telling many interesting facts about the culture of them in their native countries and of their introduction in this country.—M. M.

Grange.

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby.

THE GRANGE SPEAKER AND THE POMONA.

In the early part of the winter of 1907 I received a letter from Brother George B. Horton, then master of the Michigan State Grange, in which he said: "I have a new plan for sending state speakers to Pomonas and rallies. It is going to be a winner." Soon after, those of us who were chosen by Brother Horton to represent the Order at meetings like those referred to above, were called to Jackson for a conference.

The meeting has been a bright spot in my memory all these years. There Brother Horton gave to us his ideal of a Grange address. He outlined a message which he wished us to carry to the Granges of the state. He did not expect us to deliver this message in his words, but he did ask us to tell everywhere of the necessity of organization, and always to keep "The Grange" at the front.

Pomonas securing state speakers were asked to pay four dollars, and the speakers were privileged to charge the balance of their expenses and per diem to the State Grange.

Any Pomona or rally management had the privilege of calling for any speaker on the list, without regard to his location, and it so happened, now and then, that speakers were obliged to travel long distances and spend a considerable time to visit one Pomona, or attend a single rally. This made the plan an expensive one for the State Grange, and so a number of changes have resulted from time to time, until now we seem to have settled down to a charge of one-half the per diem and expenses to the Pomona or rally calling for a state speaker.

The cost is therefore less to the State Grange, but correspondingly more to the local management, and the only practical course open to the Pomona or rally managers in most cases, is to secure the services of someone who is near by.

We believe there is a better method than the present one, and we crave the indulgence of the readers while we try to discuss it.

We patrons are talking much about co-operation in these days, and it is altogether proper that we should, but we need to practice more of it in our Grange work.

If the Pomonas in contiguous counties would get in touch with each other, and co-operate in the holding of their meetings, arranging for these meetings upon consecutive days, a speaker might easily be secured for all of these meetings at very small cost alike to the local managements and to the State Grange. The per diem of state speakers is but three dollars per day, and the traveling expenses would be very light if the speaker simply passed from one county to another.

If the Pomonas were willing to pay the original four dollars, there would be very little left for the State Grange to pay. Speakers might visit three or four Pomonas where they now attend one, and the expense to the state organization would be even less than it is now. May we not suggest that Pomonas in nearby counties take up this matter and endeavor to make arrangements accordingly?

And now may we consider for a little time another phase of this question? It is the experience of everyone who has gone out to address Pomonas and Grange rallies, that too often the meetings have not been well worked up, and the attendance is very small. If it is worth while to secure a state speaker at a public Grange meeting of any kind, it is very important that the public shall be there to hear him. The Grange getting the speaker loses its own money and wastes the funds of the State Grange if it does not secure a good attendance at the meeting.

When any local Grange organization asks for a state speaker for whose services the State Grange is to pay in part, it is under moral obligations to make the most of its opportunity. No effort therefore, should be spared to get the people who are not members of the Order, out to these meetings.

The Pomona should advertise its meetings in the papers, should have announcements made at other public gatherings, should use the telephone, and in many cases it will be found wise to send written invitations to those outside of the Grange gates, whom we can best reach in this way.

(Continued next week).

AMONG THE LIVE GRANGES.

The Bazaar held by the Plymouth Grange last Saturday was a great success. The booths, consisting of a baked goods booth, and others for fancy goods, candy and vegetables, parcel post and a fish pond, were all well filled. The last two created considerable merriment for both old and young. At eight o'clock the hall was well filled with men, women and children to witness the play, "The Podunk Limited." While the audience was waiting for the train the Grange orchestra rendered a selection, and recitations and musical selection by members were given. After music by the orchestra, the "Podunk Limited" arrived. The Limited was bound from Podunk to Plymouth, where all passengers changed cars for Chicago and St. Paul. All of the characters taking part did exceedingly well and the play was thoroughly enjoyed by all. After the play what was left of the vegetables, etc., were auctioned to the highest bidder.

Kent County Pomona Grange No. 18, held its December meeting with Carlisle Grange in Byron Township, with a very good attendance. The principal address of this meeting was given by Myron Walker, U. S. District Attorney, who spoke on "The Father and the Boy." He complimented Kent County Grange for setting apart one of the year's programs for the children. He said that the farmer could raise no crop so useful as the boys and girls. All parents should be the companions of their children, join them in their play, and enter into their life so that they will confide in you. Fathers should take the boy in partnership and live their life before the boy so that they will be better boys than we have been. The father in his home life should set the example for the boy. Hon. Huntley Russell entertained with his songs, which was greatly appreciated, and Mr. W. H. Webb, of Ohio, spoke on the "Brotherhood of Man," and said in part: "We are only what others are." He spoke of the great work the Grange was doing in rural advancement, giving us the best kind of an education. The recitations, music and entertainment furnished by Carlisle Grange was most excellent, and this Grange should be complimented on the number of young people who gave their time and talent to help entertain Kent County Pomona Grange at this meeting. The following resolution was unanimously carried: Be it resolved, that it has been brought to our notice of the organization of the Grangers' Life Assurance Association, home office Lansing, Michigan. Whereas, the purpose of this life assurance association is to take over the present Grange Life Insurance Company and add to the capital of the same, thereby becoming an old line legal assurance reserve association, acting and operating under the legal reserve insurance laws of Michigan. The officers of this association are all leading members of the Grange in whom we have the utmost confidence. Therefore we heartily indorse the movement and believe the Grange can and should have a life assurance association covering the entire United States and we further recommend all subordinate Granges in Kent county to assist in this movement.—Mrs. R. S. Colman.

LOESER BROS.

Buy pure bred STALLIONS and MARES now, we have both Imported and Home Bred Stock, and for quality our Belgians and Percherons cannot be excelled. It will pay you to see our horses.

LIGONIER, IND.



JACKS AND MULES
Raise mules and get rich. 230 head fine large Jacks, Jennys, and mules 14 to 17 hands high. Large registered Jacks and Draft Stallions, cheap now. Mules by the pair or carload. Stock guaranteed. Write for prices today. Address
KREKLER'S JACK FARM
West Elkton, Ohio.
Branch Barns, Clinton, Indiana.

PERCHERON STALLIONS
FOR SALE.

15 two and three-year-olds, black. These are good weights and desirable horses of our own breeding. We sell direct to the farmer at reasonable prices, and invite inspection.

A. A. PALMER & SONS,
R. R. Station Orleans. P. O. Belding, Mich.

Registered Percherons, BROOD MARES, FILLIES AND YOUNG STALLIONS at prices that will surprise you. L. C. HUNT & CO., Eaton Rapids, Michigan.

PERCHERONS—Imposant, one of the heaviest horses in state, at head of stud. Brood Mares as good, young stock for sale. CHAS. OSGOOD & SONS, Mendon, Michigan.

Pigeon Pony Farm—Reg. Shetland Ponies, mostly spots, 1 spotted stallion and young stock for sale. Dr. W. T. Morrison, Pigeon, Mich.

FOR SALE—Span of Mules, 3 and 4 years old, well broke, kind and right. For particulars address W. G. REEVES, Stockbridge, Mich.

FOR SALE—1 pair of 2-year-old mare colts, ¾ Scotch Clyde; 1 brood mare ½ Scotch Clyde, in foal, 12-yr.-old. Good ones. Jesse B. Parshall, R. 6, Howell, Mich.

FOR SALE—Registered Percheron Stallion Mares and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Profit From Hogs. Our free book, "The Hog from Birth to Sale," tells how to make big profits. Send for it today THE L. B. SILVER CO., 196 Vickers Bldg., Cleveland, Ohio.

BREEDERS' DIRECTORY.

CATTLE.

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

AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels; Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

MILO D. CAMPBELL. CHAS. J. ANGEVINE.

BEACH FARM GUERNSEYS
OUR HERD BULLS ARE:
1st Rosett's Stranford of Ingleside No. 22533 with six dams that average 706 lbs. fat.
2nd Violet 3rd, son of Iowa No. 24107, with four dams that average 697 lbs. fat and three sires with over 90 A. R. Daughters, and his grand dam is champion three-year-old cow of all breeds.
3rd Horizon No. 23091 whose dam made 632 lbs. fat.
Bull calves from these Sires and A. R. Dams and also a few older Bulls for sale.
EVERY BULL GUARANTEED TO PLEASE.
CAMPBELL & ANGEVINE,
COLDWATER, MICHIGAN.

BUY GUERNSEYS FOR PEOFIT.
QUANTITY and QUALITY
combined with economical production makes The GUERNSEY Cow most desirable.
Send for literature.
GUERNSEY CATTLE CLUB
Box 25, Peterboro, N. H.

Gurnseys—Famous May Rose Strain. A select herd. Tub. Tested. Several A. R. O. Cows. J. K. Blatchford, Windermere Farm, Watervliet, Mich.

We have for sale a number of pure Guernsey cows, heifers and bulls, also Berkshire hogs. VILLAGE FARM, Grass Lake, Michigan.

HEREFORD; Three bull calves and one two year old. ALLEN BROS., Paw Paw, Michigan.

Hereford Bulls for Sale—We offer a few yearling bulls and some Polled bull calves about seven months old. These are well bred, good animals and will be priced right. BEAVER LAKE RANCH CO., Alpena, Mich.

ROOKWOOD HERD—Herd headed by Beauty Walker Pietertze Prince 2nd No. 19658. His Dam is the largest record daughter of Rooaervelt DeKol. Bull calf for sale, dam and sires dam average 28.36 lbs. butter in 7 days also calf from untested dam. Tracy F. Crandall, Howell, Mich.

Magnificent Holstein Bull Calf
From a 30-lb. bull and an 18-lb. three-year-old dam. A fine individual. Write for particulars.
HILCREST FARM,
Kalamazoo, Michigan

Holsteins For Sale—16 head of grades, consisting of 5 cows, 5 heifers coming 2 yrs. old and 6 calves from 1 to 7 mo. old. Walter Sprague, Waldron, Mich.

FOR SALE.
BIGELOW'S HOLSTEIN FARMS
Three Fine Young Bulls
Ready for Service
from 18, 20 and 20-lb. cows, each one giving over 10,000 lbs. milk a year—prices, $100, $125 and $150. The two oldest nicely marked—the other has black back and sides, with some white. DeKol 2nd, B. B. 3rd, and King of the Pontiacs' blood.
BIGELOW'S HOLSTEIN FARM
Breedsville, Mich.

FOR SALE
Ready for light service from a 30-lb sire,
HOLSTEIN BULLS
rich in the blood of Hengerveld De Kol, Friend Hengerveld De Kol Butter Boy, and Pontiac Korndyke, three his sons, King of the Pontiacs, and Pontiac Aggie Korndyke. Pedigrees on application.
ED. S. LEWIS, Marshall, Mich.

HATCH HERD
REGISTERED HOLSTEIN-FRIESIANS
YPSILANTI, MICH., offers
HERD HEADERS from choice A. R. O. dams and King Pontiac Jewel Korndyke, 50 dams in his pedigree average 31.25 pounds in 7 days. Average per cent of fat of three nearest dams 4.37. Sires in first three generations in his pedigree have 500 A. R. O. daughters. Prices reasonable.
Make your own selection at Ashmoor Farms, Tecumseh, Michigan, R. F. D. No. 2, or address
HATCH HERD, YPSILANTI, MICHIGAN.

High Class HOLSTEINS My herd is headed by Smithdale Alcartra Pontiac, whose is the famous Alcartra Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred. Farm ½ mile from court house. SETH B. RUBERT, Howell, Mich.

Only $75. Magnificent Registered Holstein bull calf, from A. R. O. 25 lb. cow, by 25 lb. bull. Best blood lines. Excellent individual. ROUGEMONT FARMS, Detroit, Mich.

34.31 lb. 3½-yr.-old sister 22.92 lb. dam. A son of Johanna Korndyke DeKol delivered when 2 mo. old on easy terms. Martin L. McLaulin, Redford, Mich

For Sale, Reg. Guernsey Bulls, Berkshire hogs, sow and gilts bred for spring farrow. Write JOHN EBELS, R. 10, Holland, Michigan.

7 Mo. old Holstein Bull—Sire has 34.31 lb. sister—Dam has 25.77 lb. sister. De Kol 2d, Butterboy 2d breeding. Price low, quality considered. ELMER E. SMITH, Redford, Mich.

What is the best thing, $50 will buy? Registered Holstein Bull, 3 months old, large, clean, straight, heavy boned fellow. Delivered free, with all papers, safe arrival guaranteed. Hobart W. Fay, Mason, Mich.

"Top-Notch" Holsteins.
Extra large fine young bull, ¾ white, born Oct. 4, 1913. Dam has official record of 29.40 lbs. butter in 7 days, 117.50 lbs. in 30 days. Sire's dam is a 22.64 lb, 4 yr.-old daughter of a 30.59 lb. cow.
McPHERSON FARMS CO., Howell, Michigan.

Holstein-Friesian Cattle. Young bulls ready for service out of A. R. O. cows. Satisfaction guaranteed or money refunded. Jones & Lutz, Oak Grove, Mich.

Holstein-Friesian Breeder—The best families of the breed represented. D. D. AITKEN, Flint, Michigan.

ESPANORE FARM,
LANSING, MICHIGAN.
OFFERS FOR SALE A
YOUNG HOLSTEIN BULL CALF.
Write for particulars.
A Few Choice Heifers for sale.
CHASE S. OSBORN, ADAM E. FERGUSON, } Owners.

HOLSTEINS FOR SALE
5 Good Bulls, ready for service.
10 Very Choice Bull Calves.
2 Two-year-old Heifers, bred.
1 Six-year-old grand-daughter of King Segis, due in December.
L. E. CONNELL, Fayette, Ohio.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISHBECK, Howell, Michigan.

HOLSTEIN BULLS READY FOR BUSINESS. World record stock $100 to $300. LONG BEACH FARMS, Augusta, Kalamazoo Co., Michigan.

Holstein Bull Calf; Born Sept. 11, Splendid individual, well grown, nicely marked. His dam and sire's dam have A.R.O. records that average 7 days Butter 24.86 lbs. Milk 557.8 lbs, both as 4-yr-olds. W. B. READER, Howell, Michigan.

MICHIGAN HOME AND TRAINING SCHOOL
LAPEER, MICHIGAN
Breeder of High Grade Holstein Cattle. Lists and prices upon application.

Jerseys. Bulls ready for service, extra quality sired by Jacobs's Fairy Emanon, No. 107111, from high producing dams. SMITH & PARKER, Howell, Mich.

Lillie Farmstead—Jersey Cattle, Yorkshire Hogs, Oxford Sheep. Write for what you want. COLON C. LILLIE, Coopersville, Michigan.

NOW IN SERVICE—A Son of the $50,000 sire King Segis Pontiac Alcartra, GREGORY & BORDEN, Howell, Michigan.

MAPLE Lane Register of Merit Jersey Herd—Tuberculin tested by U.S. Government. For sale, Register of Merit cows, also bulls, bull calves and heifer calves, having from 3 to 7 Register of Merit dams in their pedigrees. IRVIN FOX, Allegan, Michigan.

JERSEYS—For list of stock for sale and Jersey facts write A. F. EDISON, Sec. M. J. C. C., 326 W. Bridge, Grand Rapids, Mich. If a breeder and a member of M. J. C. C. send list of stock for sale to the above.

The Wildwood Herd Registered Jerseys.
Herd headed by Majesty's Wonder No. 90717, a son of Royal Majesty and Derry's Jolly Togo 122984, son of Togo's Lad. Bulls and heifers offered for sale from the above breeding, from high producing dams. ALVIN BALDEN, CAPAC, MICHIGAN.

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

Jersey Bulls for Sale from high producing dams, with testing A50 lbs. records, also on semi-official test. C. B. Wehner, R. 6, Allegan, Mich.

JERSEYS—YEARLING BULL READY FOR SERVICE. Also bull calves. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.



Purebred Registered
HOLSTEIN CATTLE

$14,105.50 in prize money was divided amongst 225 breeders of purebred registered Holstein cattle during last year. This is a part of our system of Advanced Registration of milk records. The prizes, 673 in number, range from $40 to $5. Breeders are limited to three prizes in each of our four divisions. Wealthy owners have no advantage over those of limited means. Here is an additional reason for purchasing purebred registered Holstein cattle.

Send for FREE *Illustrated Descriptive Booklet.*

The Holstein-Friesian Association of America,
Box 164, Brattleboro, Vt.

Shorthorns—Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Crum. Secy. Cent. Mich. Shorthorn Breeders' Assn., McBride, Mich.

DAIRY BRED SHORTHORNS—Young Bull 9-mo. old for sale. Price $125 cash or good note, J. B. HUMMEL, Mason, Michigan.

RED SHORTHORN BULL FOR SALE—A proved sire, Whitehall Sultan blood. W. E. MORRISH, Flushing, Michigan.

FOR SALE—Shorthorn Bulls, red and roans, by sons of Avondale and Victor Linwood both International winners. John Schmidt, R. 2, Reed City, Mich.

Shorthorn Cow—For sale Marion's Pride 2nd No. 142734 due to calve 1st of Feb. Also two Heifers. A. A. PATTULLO, Deckerville, Michigan.

SHORTHORNS: 6 CHOICE YOUNG BULLS FOR SALE
W. W. KNAPP, Howell, Michigan.

DUAL PURPOSE SHORTHORN CATTLE—Young bulls for sale. All my cows are hand milked. M. A. BRAY, Okemos, Ingham Co., Michigan.

SHEEP.

I AM SOLD OUT of rams but have a few aged, bred, OXFORD-DOWN EWES at farmers prices. M. F. GANSSLEY, Lennon, Michigan.

RAMS—SHROPSHIRES OXFORDS AND HAMPSHIRES. Good strong well wooled fellows ready for business. Shipped to you without the money. Isn't that fair? If so write KOPE KON FARM, Kinderkook, Michigan.



IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Sheepman of the East."
I sell and ship everywhere and pay express charges. Write for club offer and price list. Oxfords, Shropshires and Polled-Delaines.
PARSONS, Grand Ledge, Mich. R 1.

Reg. Ramboillet Sheep—Percheron Horses and Polled Durham and China Hogs, bred from registered stock. J. L. A. SMITH, Morrice, Mich.

INGLESIDE FARM offers 14 recorded shropshire ewes of good ages which are being bred to an imported ram. HERBERT E. POWELL, Ionia, Mich.

REGISTERED OXFORD EWES—$10 to $15. Rams all sold. B. F. MILLER, Flint, Michigan.

HOGS.

BERKSHIRES—Twenty-four choice gilts, yearling and mature sows, bred for spring farrowing priced to sell. B. B. REAVEY, Akron, Michigan.

BERKSHIRES—Open or bred sows. Registered. $30 for choice, all guaranteed. G. H. RIDER, Almont, Mich.

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

ROYALTON BRED BERKSHIRES—Six weeks old pigs, both sexes, registered stock with papers, at farmers' prices. D. F. VALENTINE, Sup't., Temperance, Michigan.

HAMPSHIRE Swine—Breeding stock of all age from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 9, Decatur, Ind

Hampshire swine, some good Boars for Breeding and some Fall pigs both sexes at right prices. West Wind Farm, Pontiac, Mich. E. P. Hammond, owner, N. A. Wiser, manager.

Anything in Reg. Chester White Swine. 10 weeks old pigs $10. Reg. Holstein Herd Bull cheap. RAY B. FARHAM, Bronson, Michigan.

CHESTER WHITES. August and September pigs, from sires ex Chickasaw Bud, Modeler, Bronson King. A certificate of registry with each pig. John Gintling, Bronson, Michigan.

O. I. C.—Bred sows and spring pigs, large and growthy. Pairs and trios, not akin. Write your wants. GLENWOOD STOCK FARM, Zeeland, Mich.

O. I. C. Swine—Service boars, also gilts of Spring farrow, place your order with me before they are sold. Get my price on pairs and trios of Aug. and Sept. farrow. A. J. GORDEN, R. No. 2, Dorr, Michigan.

O. I. C's—Spring pigs, pairs and trios, no. akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Michigan.

O. I. C.—10 good boars, $18 to $25 each. One very choice boar $30. Registered free. C. J. THOMPSON, Rockford, Michigan.

O. I. C. Three serviceable boars, gilts and yearlings bred for March and April farrow. Also Sept. pigs. H. W. MANN, Dansville, Michigan.

O. I. C's—STRICTLY BIG TYPE. For 12 yrs. I have been breeding for size and length with quality. Lengthy Prince one of the largest boars the breed ever produced, heads our herd, assisted by White Monarch and Frosts Choice, 2nd. prize under six Months boar at Mo. Inter State Fair 1914. Stock for sale at all times, prices reasonable. Address, NEWMAN'S STOCK FARM R. No. 1, Marlette, Mich.

O. I. C's—Nothing for sale at present. Satisfaction always guaranteed. A. R. GRAHAM, FLINT, MICHIGAN.

O. I. C.—Spring boars all sold. We have some fine fall pigs ready to ship. JOHN BERNER & SON, Grand Ledge, Michigan.

O. I. C. Bred Sow Sale Jan. 21, will sell 40 head of very fine stock, also a few extra good last spring boars, ¼ mile west of Nashville, Mich. Write for catalog at once. Otto B. Schulze, Nashvilll, Mich.

O. I. C's—One boar. Gilts bred for March and April farrow. Aug. and Sept. pigs. I pay express. C. P. ANDREAS, Dansville, Mich.

O. I. C's—I have some good Sept. boars ready to ship. Farm 2 miles South-West of Ovid. J. W. HOWELL, R. No. 7, Ovid, Michigan.

FOR SALE—SIX O. I. C. BOARS, weight from 75 to 100 pounds, and they are dandies. Price $12 each if sold soon. Pedigree with each one. F. W. MACKINDER, Harrisville, Michigan.

O. I. C's—Good thrifty stock for sale at all times. Choice sows bred for Spring farrow. TED DRAPER, Manith, Michigan.



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." O. S. BENJAMIN, R. No. 10 Portland, Mich.

O. I. C. Choice gilts bred for spring farrow. Sept. pigs, serviceable boar weighing 330 lbs. price $30. The long bodied and big boned kind. Alvin V. Hatt, Grass Lake, Mich.

DUROC JERSEYS
From Prize-Winning Stock.
Write, or better still, come.
Brookwater Farm, Ann Arbor, Mich., R.F.D.7.

DUROC JERSEYS—Fall pigs either sex, sows bred for spring farrow and Bronze Tom Turkeys. Bert Sweet, R. No. 1, Hudsonville, Mich.

Duroc Jerseys; A few choice boars and bred gilts, Also S. C. W. Leghorns and Buff Rock Cockerels. J. McNICOLL, Sta. A, R. No. 4, Bay City, Michigan.

Duroc Jerseys—15 spring boars and 15 sows; also 60 fall pigs from the principal strains; pairs and trios. S. C. STAHLMAN, Cherry Lawn Farm, Shepherd, Mich.

DUROC JERSEYS—Aug. and Sept pigs with plenty of size and great quality. Also gilts bred to prize winning stock. F. J. Drodt, R. No. 1, Monroe, Mich.

Bred Sow Sale of O.I.C. and Chester Whites
ON JANUARY 22,
included in this we have 40 choice gilts and ten tried sows and ten boars, these are good herd boars that we have used ourselves and they were in our show herd also all the sows from our great show herd. Write for catalogues and pictures, come and spend one day with the biggest and leading heard in the state. We also have fall pigs and service males for sale. Shipped C. O. D. so You Can See Them Before Pay For Them.
ROLLING VIEW STOCK FARM,
Cass City, Michigan.

DUROC JERSEYS—3 Spring boars and 25 bred gilts ready to ship.
CAREY U. EDMONDS, Hastings, Michigan.

CHOICE DUROC GILTS
Bred to Highland King, Fancy Col. Again or Cherry Prince for sale. This is one of the strongest trios of herd boars in any one herd in the state. We also have a few spring males for sale.
Send for catalog of our Bred Sow Sale
FEBRUARY 23, 1915
Remember we have 200 sows and gilts to select from.
KOHLI & MISHLER, New Paris, Indiana.

Duroc Jerseys—Aug. pigs either sex. Also 3 Holstein bull calves and White Wyandotte roosters at reasonable prices. E. H. Morris, Monroe, Mich

DUROCS—A few good boars, weight 200 lbs. $25. Can ship anywhere in Mich. About 30 gilts will be bred for April, best blood lines. Also Holstein Calf. H. G. Keesler, R. No. 5, Cassopolis, Mich.

DUROC JERSEY—Bred gilts for March and April farrow; bred right and priced right. W. C. TAYLOR, Milan, Michigan.

DUROC JERSEYS—Spring pigs of either sex at reasonable prices. Pairs not akin. W. J. BAUMAN, Burr Oak, Michigan.

POLAND CHINAS—Spring pigs either sex. From growthy stock and large litters. L. W. BARNES & SON, Byron, Michigan.

POLAND CHINAS—60 head registered boars and sows; fine stock. A. G. MEADE, Colby Ranch, Stanton, Michigan.

LARGE TYPE P. C.—Either sex, pairs and trios, not akin. Am booking orders for bred gilts. W. J. HAGELSHAW, Augusta, Mich.

Big Bone Poland China Brood Sows—Bred for spring farrow. Fall pigs at great bargains. Write today for special price list. MAPLEWOOD STOCK FARM, Allegan, Michigan.

Big Type Poland China Boars and Gilts plenty of size and great quality. I know I can please you. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

Large Strain P. C.—One extra good fall yearling and the best lot of spring boars from large litters of the best breeding; 9 sows farrowing 88 pigs. H. O. SWARTZ, Schoolcraft, Michigan.

Large Styled Poland China Gilts bred. Grothy fall pigs not akin. Choice B.P. Rock cock'ls at bargains. Robert Neve, Pierson, Mich.

Poland Chinas of the big type. March and April farrow. The kind that please our customers. A. A. WOOD & SON, Saline, Mich.

Poland Chinas, either sex, all ages. Something good at a low price. Bargains in boars ready for service. P. D. LONG, R. F. D. 8, Grand Rapids, Mich.

Poland China Sows and Gilts bred for March and April farrow. Also fall pigs, satisfaction guaranteed. C. W. ROLTON, Kalamazoo, Mich.

THE FARMERS' HOG.—Butler's Big Boned Prolific Poland Chinas grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. 50 big boned, long bodied, sows, also 100 fall pigs at farmers' prices. Buy one and make more money on your hogs. P. C. History Free. J. C. BUTLER, Portland, Mich.

Large Type P. C.—Largest in Michigan. Bred Gilts, sired by and bred to the great boar, Big Desmoines No. 194477, weight 1065 lbs. at 31 months, and out of sows that weigh up to 700 lbs. Gilts of March and April farrow weigh from 250 to 325 lbs. Come and see. Expenses paid if not as represented. W. E. LIVINGSTON, Parma, Mich.

MEDIUM type P. C. Boars, one dandy yearling. A few big type sired by Big Smooth Jumbo, priced right. R. J. LANE, R. No. 7, Clare, Michigan.

MULE FOOTS. 45 head of all ages. Spring boars, bred gilts, fall pigs, pairs not akin. Can ship anywhere in Mich. C. F. BACON, Ridgeway, Mich.

Yorkshire Swine—We have some nice May pigs, both sexes. Write for description and prices. OSTRANDER BROS., Morley, Michigan.

50 YORKSHIRES—All ages. Red Polled Cattle, Oxford Down Sheep. W. P. Rocks. I. R. Ducks. E. S. CARR, Homer, Mich.

FOR SALE—Yorkshire gilts bred for early spring farrowing. WATERMAN & WATERMAN, Meadowland Farm, Ann Arbor, Michigan.

YORKSHIRES
The large, long-bodied, prolific kind. Gilts bred for September and October farrow. A choice lot of spring boars and gilts. Prices reasonable.
W. C. COOK, R. 42 Ada, Michigan.

"My stock has derived much benefit from the use of SAL-VET. I had a bunch of hogs that had not been doing well, and I expected to lose at least two of them. They were thin, and all out of condition, with rough coats, but since I have been feeding them SAL-VET they are looking fine, and taking on flesh."

FRANK KARM, Monroe, Mich.

"SAL-VET has kept my sheats in good condition this winter. I feel that I would have lost many of them without it. It is the best stuff I ever fed to hogs."

C. E. DINUIS,
Rte. 1. Tecumseh, Mich.

"I have used SAL-VET for the past 60 days, and find it all you claim. As a tonic, it is superior to any I have ever used, and it costs less; in spite of the fact that we have had a hard winter, my stock have done very well. Have fed it to sheep and hogs with very best results."

FRANK J. KARM,
Monroe, Mich.

"Whether on account of the use of SAL-VET or in spite of it, I don't know, but the neighbors say that Woodrow's pigs this year beat anything that they ever saw, and I am an amateur."

A. G. WOODROW, Xenia, Ohio.

"Fed SAL-VET to my hogs with good results, although they were in pretty bad shape when I received it. I am well pleased with it."

JACOB KLEM, Sr.,
St. Anthony, Ind.

The Best Protection Against Live Stock Losses

DOCTORING is of doubtful benefit when animals are suffering from dangerous diseases. Remedies are of little value in preventing the spread of infectious diseases after animals have been exposed. The best protection at all times—always available—is PREVENTION. Animals kept free from worms, and in healthy, thrifty, vigorous condition are well fortified to RESIST diseases. Run-down, worm-infested stock lack the vitality to resist infection—they are the first to suffer, and least likely to recover.

The danger from stomach and intestinal worms is not over-drawn. Veterinarians, Farm Papers, Agricultural Experiment Stations and thousands of Farmers and Breeders are fully alive to the situation. Hogs, Sheep and Lambs are the greatest sufferers, but Horses and Cattle become badly worm-infested.

Stock losses due to worms runs into the millions yearly—the waste of feed is enormous—the risk of disease because animals lack vitality is great. You can stop YOUR losses—rid your stock of worms—put them in condition to better resist dangerous diseases, by allowing them to have free access to

TRADE MARK

SAL-VET



REG. U.S. PAT. OFF.

The Great Worm Destroyer — **The Great Live Stock Conditioner**

I don't ask you to take the slightest risk in proving my claims. You can feed SAL-VET 60 days AT MY RISK—no money down—prove its value as a worm destroyer and conditioner, without taking any chances whatever.

Animals take readily to SAL-VET—relish it—go to it naturally and freely. It can be fed as you would feed salt, or mix it with the mash or slop. Feed it regularly—your animals will shortly be rid of worms—they will do better—gain faster, get more good from the ration fed. SAL-VET is highly endorsed by thousands—read the letters of a few.

"I fed about 600 lbs. of SAL-VET to 300 lambs which were badly infested with stomach worms. The lambs were weighed up this week to a Chicago concern and pronounced by their buyer to be one of the best lots he had purchased this year. They made an average gain of 40 lbs. per head. I will never again attempt to feed lambs without using SAL-VET."

W. S. PATTON, Plattsburg, Ohio.

"Before I received your SAL-VET in November, all of my hogs were sick, and I had 41 head of them. Started to feed SAL-VET and saved 20. I am very sorry I did not get your remedy sooner, as I give the preparation credit for having saved the above. Neighbors all around me had the same trouble with their hogs and the disease made a clean sweep in some of these cases. I consider SAL-VET O. K."—ED. WOLFE, Edinburg, Ill.

"For the past two years, we have fed SAL-VET with excellent results, and therefore, take pleasure in recommending it as a worm destroyer and conditioner. Since feeding SAL,VET, our lambs have been entirely free from worms. Considering the excellent success which we have had with SAL-VET, I am perfectly willing that you should make public use of my endorsement. I cannot speak too highly of SAL-VET."

D. J. GEIKEN, Supt. Sheep and Hog Dept.,
N. D, Agricultural College, Fargo, N. D.

"My SAL-VET is all gone, and as common salt does not begin to take its place, I want you to send me another keg at once. I am sure that $5.00 worth of SAL-VET saves me $10.00 worth of feed; all of my sheep, cows, and horses are doing remarkably well. My experience has been that SAL-VET and worms cannot dwell together."

E. A. BONTRAGER, Fairview, Mich.

Don't Misunderstand My Offer

Tell me how many head of stock you have, or how many you want to feed. I will ship you enough SAL-VET to last them for 60 days. You to pay the freight charges and feed it according to directions; at the end of 60 days report results. If SAL-VET has not done all I claim—I'll cancel the charge and you will owe me nothing. Fill in the coupon and mail it to me today.

SIDNEY R. FEIL, President

THE FEIL MFG. CO., Chemists

Dept. MF — **Cleveland Ohio**

FILL OUT THIS COUPON

SIDNEY R. FEIL, Pres.
THE FEIL MFG. CO., Dept. MF 1-9-15 Cleveland, Ohio

Ship me enough SAL-VET to last my stock 60 days. I will pay the freight charge when it arrives, agree to report results promptly in 60 days, and 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.....

Shipping Sta.....

Number of Sheep..... *Hogs*..... *State*.....

Cattle.....

Horses.....

(223)

PRICES

40 lbs	$2.25
100 lbs	5.00
200 lbs	9.00
300 lbs	13.00
500 lbs	21.12

No orders filled for less than 40 lbs. on this 60 day trial offer. Never sold in bulk; only in Trade-Marked SAL-VET packages. Shipments for 60 days' trial 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 sized packages.

Look for This Label

on all SAL-VET packages. Don't be deceived by imitations. Don't buy "Sal" this or "Sal" that. Get the original genuine SAL-VET.