

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
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50 CENTS A YEAR
\$2 FOR 5 YEARS.

Little Stories About Big Farmers.

How a New York Fruit Grower Combines General Farming and Sheep Raising with Fruit Growing.

THE farm is a wondrous canvas on which the farmer unfolds the landscape of his ideals. This landscape does not imitate nature, but it finds itself on the study of nature—takes from it the things which best accord with its own intention, and then bestows on them that which nature does not possess—the heart and the mind of man. The character of the man inevitably reveals itself in the spirit and execution of his work. The man stands higher than his work, higher than his ideals. He uses the farm for a setting, and deals with the picture after his own fashion. A 350 acre farm, adorned with improvements, trees, crops and sheep, making a landscape of beauty, peace and plenty, reflects the heart and the mind of Clark Allis, of Orleans county, New York.

This farm, as the writer saw it last fall, is a memorable example of what a man with a heart as well as a mind can accomplish as a constructive farmer. Its original methods and activities bear the impress of a man who has his heart and his mind in his work. If a man can be judged by his farm, home life and surroundings, a high quality of manhood is linked with this man's success. He loves his farm, his trees and sheep; his business acumen makes them pay. The farm represents the unfolding and expression of his ideals.

In discussing his methods, Mr. Allis said: "In farming as well as in other enterprises, the more pleasure we take in our work, the more profit we usually receive, and the more profit we receive the more our pleasure increases; and while the love of money may be and often is the root of all evil, we all try to help it get a deep root. For the last twelve years we

have been successful with apples and sheep, and that success has come from hard work and attention to details. Commercial orcharding and sheep farming work well together on the same farm. My aim is to develop a system of agriculture which will simplify the labor problem, manufacture as much fertility as is possible on the farm and grow fine apples. Apples, beans, alfalfa and rye are our main crops and our live stock con-

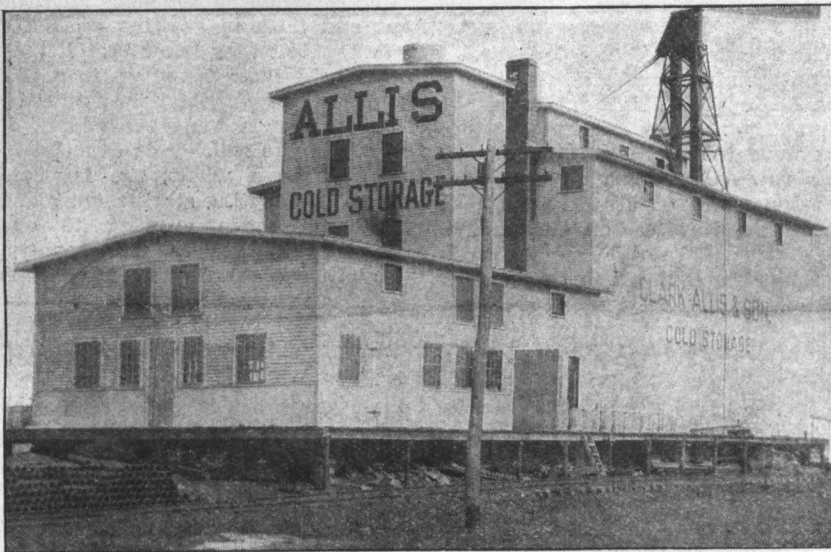
labor and get maximum returns from each man and team is a problem that must be solved by establishing the proper correlation between the crops grown and the animals kept on the farm. Apples and alfalfa are the main crops, and they are non-competing, that is, the harvesting of the alfalfa comes at a time when the fruit crop is not requiring immediate attention. The object on this farm is to grow a sufficient acreage of alfalfa to provide

sown and the following spring two or three quarts of alfalfa seed is sown on each acre of ground. This helps to inoculate the ground, and the owner believes that it is a great help toward securing a good stand of alfalfa when the ground is plowed and seeded to alfalfa.

All the fields and orchards are fenced and arranged so that the sheep can be changed from one field or orchard to another as the occasion requires. In this way the fields and fence corners are kept free from noxious weeds and nothing is wasted. Beans are the chief cultivated crop, from 25 to 40 acres are grown annually on the farm. As a rule, beans are not a highly profitable crop, yet it fits into the rotation nicely, is easy to raise and the stalks and pods furnish ideal roughage for the sheep. Alfalfa thrives on this farm, although it requires plowing and reseeding every five or six years. By the liberal use of lime and growing alfalfa for a number of years it is no longer difficult to secure a good stand. This is a general outline of the system of farming practiced by Mr. Allis.

Apples the Main Money Crop.

Apples are the leading money crop, from 5,000 to 9,000 barrels being produced annually. In one orchard of 30 acres which Mr. Allis bought about nine years ago, about one-half had been in sod more than thirty years. The trees were set 30x30 feet. The first year the soil was mulched with sheep manure and pastured with sheep but such a heavy crop of bluegrass resulted, the leaves of which evaporated so much moisture, that he plowed it the following winter. He left a portion in sod to experiment farther to determine which was the best method, but it required only a



The Storage House—the Outside Siding is of Corrugated Iron made to resemble Common Wood Siding.

sists of from 300 to 400 sheep. With these crops and animals we aim to perfect a system of agriculture adapted to the present economic conditions."

An extensive farming business in order to be remunerative requires the employment of competent labor. How to increase the efficiency of employed

employment for the men and teams at the time when it is fit to cut and make into hay. Rye is grown for a winter grain, pasture and cover crop. In preparing a field for alfalfa it is planted to beans and as soon as the beans are harvested the ground is harrowed and seeded with rye. At the time of seeding timothy seed is



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A first class married man to work on 200 acre farm, to begin April 1st. State age, experience, references and size of family.
MEYER BROS., Howell, Mich.

best method, but it required only a few years to discover that the best crops of fruit were produced on the cultivated area. One portion of the orchard, the former owner said, did not produce enough to pay, so he cut every other row out lengthwise to get land to raise crops on, leaving the trees thirty feet apart in the rows and the rows sixty feet apart north and south. If he had cut the trees cornerwise every other row the orchard would have been much more valuable.

In this orchard he has raised heavy crops of mammoth clover and alfalfa which were cut and put under the trees with an ordinary side delivery hay rake. The clover and alfalfa died out and it was again plowed and reseeded to clover under the trees and alfalfa in the space between the rows. Mr. Allis said: "Some years when hay has been scarce and high in price it has taken nerve to keep up the mulching with hay which was very heavy and made a heavy covering under all the trees, but I knew if it was once drawn away it might get lost and never find its way back again. It has paid me to leave the hay under the trees for the orchard is in fine condition and bears every year; not all the trees, but many of them do, not the entire tree but one side of the tree or limbs in different places on the tree. I paid \$7,000 for the farm of fifty acres and it has paid for itself every two years since I bought it. The late Prof. Craig, of Cornell, said this was the next to the best orchard he had ever visited.

The Treatment of One Orchard.

"Another of my orchards was in sod when I bought it. This was manured with sheep manure and tilled. The trees were too close so I had every other row cornerways pruned very severely, cutting off all the limbs that touched the row left on either side. This orchard did not blossom heavily the following spring but every blossom had set for the trees were over-loaded and broken. We kept it tilled until very late in the summer and kept the apples growing and it was well we did, for the season was very dry. We found two Baldwins in that orchard, 14 inches in circumference, one 14½ inches. I feared the dry weather and so worked the orchards later than I liked to, and that year I helped the apple crop, but in the orchards I worked latest the cover crop was about minus. This orchard had never produced many apples until I bought it, but since I have cultivated it it has had fine crops of fruit. I am convinced that more apples can be raised by tillage than by sod and will continue to cultivate most of the time, although it is a disagreeable task to harvest a crop of apples from a tilled orchard.

"All of the orchards I had up to six years ago I had bought and from what I had seen of orchards in other states I thought I would raise an orchard to suit my own ideas, so I took a piece of new land that two years before was covered with stumps. These had been removed with dynamite and one crop of beans raised on the land.

Method of Setting Orchard.

"I bought No. 1 trees that had been fumigated and inspected by two New York inspectors and declared free from scale. The trees were set just the opposite of the Stringfellow method. I did not trim the roots unless broken nor the tops except to get the right number of limbs, and did not cut back at all. As the field was near the road I had lots of advice about the way to trim the tops, but they did not get trimmed and never have been trimmed yet. In the new woods dirt, and being well set, they did not know it was a dry year and but three or four died on the 20 acres."

The trees in this young orchard are set 42 feet apart with Baldwins and put in three fillers to each Baldwin, 21 feet apart, of early bearing kinds, like Alexander, Wolf River,

Maiden Blush, Twenty Ounce, McIntosh Red, and Rome Beauty. Cover crops are grown and left on the ground and by the time the trees are ready to produce heavy crops of fruit the soil will be in better condition than it was when first plowed. The trees have never been pruned except to remove the water sprouts and limbs that cross. The owner's theory is that too much pruning throws them to producing wood instead of fruit. Some of these young trees produced choice fruit this year. Mr. Allis said: "I am proud of this orchard and I hope to make it one of the best orchards of its size in the country. I have some ideas of my own about how to raise apple trees and I am going to put them into practice."

Sheep and Alfalfa.

Mr. Allis is a sheep and alfalfa enthusiast. He has spent years in developing a system of flock management adapted to his farm. By raising from 30 to 40 acres of alfalfa, 25 to 40 acres of beans, 40 to 50 acres of timothy and alfalfa and quite an area of pasturage, and at times allowing the flock to range in the orchards he keeps a flock of about 300 breeding ewes; about 150 of which are bred to drop fall lambs. No artist ever painted a pastoral scene that was more beautiful and inspiring than the one presented by these robust ewes and their lusty young lambs as they roamed contentedly in a field of green, luxuriant rye.

Men of vision do not place all their hope and faith in growing crops for market, albeit they know that if they are to hold their farms up to a fair standard of productivity they must be constantly augmenting the supply of fertility in the soil. It is doubtful if, taking it as a whole, the intricate process of adapting stock raising and commercial apple growing to one farm is surpassed in this country. Certainly there are few fruit farms where such provision is made to maintain soil fertility and keep the orchards, pastures and meadows free from weeds.

Cold Storage House Helps Solve the Marketing Problem.

The market problem requires study and attention. The time and expense of hauling fruit to storage, or to the cars, together with the disadvantage of having the control of the fruit pass out of his hands as soon as unloaded, convinced Mr. Allis that a storage house was an economic necessity. He located his storage on the New York Central Railroad within a few rods of a trolley depot, giving a trolley as well as freight service. A switch handling eleven cars was built alongside of the storage house. To this storage the apples are hauled unsorted, from the orchards, the grading is done over a Trescott grader at the storage, with no loss of time before the apples are under refrigeration. The loss of time in hauling to town is not all the loss, for many times at the storage teams must wait one or two hours to unload.

After interviewing and corresponding with men who had studied cold storage problems for years, he decided that the gravity brine system was by far the best, as the expense of machinery, cost of operating, and efficiency of the storage were all in favor of this system. The system in use is very simple, consisting of a tank, or as many tanks as there are rooms for cold storage, the tanks being located at the top of the building. Each tank is insulated heavily, has two trap doors the size of the top, and is full of coiled pipes which go to its own room where there is a double set of coils usually hanging from the ceiling in the center of the room. The coils have a return to the top of the pipe system in the tanks, and are filled with a chemical solution of calcium chloride which stands a very low temperature without freezing.

In one end of the storage is located (Continued on page 315).



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Descriptive matter free. Write for it.
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A HILLSDALE COUNTY FARMER'S EXPERIENCE WITH ALFALFA.

"When I decided to put out a field of alfalfa I gave a lot of time during the winter of 1911-12 to reading up on the subject of planting," said Myron G. Wood, of Hillsdale county, to the writer a few days ago. "I found all sorts of experiences and a great variety of opinions relative to the preparation of the soil, the time of seeding, and the method of seeding. Out of the mass of information, and misinformation, I gathered enough to direct me in the course I afterwards took."

Then Mr. Wood proceeded with his story, which was entirely one of experience, beginning at the very first. He said he laid off a field of 24 acres of old land, land that had been cleared and worked for 60 years, of a gravel soil, but in a fairly good state of fertility. This field he plowed the first thing in the spring, as soon as frost was out of the ground.

"As soon as the ground was plowed I put a common harrow into it and smoothed it down," continued Mr. Wood, "and from that time until I decided to sow I had this ground worked completely over every week. Once I dug it up with a disc harrow, but generally I used a common drag or a float—anyway, I kept the surface of the ground stirred, and below the rather shallow seed-bed I aimed to have the earth so packed that it would hold the moisture it had at the time of plowing, for fear that the worst might happen and we might be short of rain after I had sown the seed."

With this sort of preparation Mr. Wood sowed his alfalfa seed on the twelfth day of June, using inoculating material which he got from the M. A. C. His seed came up, and, although the summer was generally accounted as a hard one on new seeding, thrive and did so well that before the first of September Mr. Wood had cut his first crop of hay from it. Since that time it has improved, and during the summer of 1913 he cut three crops of such proportions that he had to stack a good part of it, although he has large barns.

Not content with this experience, Mr. Wood put out 12 acres during last summer, simply repeating his experience of the year before, although the weather conditions were again exceedingly adverse.

"There was one thing about my experience," said Mr. Wood, in conclusion—for just then dinner was announced and your correspondent was a guest for that pleasant function—"that was entirely new to me. The first field I sowed to alfalfa lay near a back road. It was an old highway, only a mile long, but never had been used much. In some way I created enough local fame in the preparation of that soil so that farmers began to drive by to see how I was getting on and, after the seed was sown, to see if any of it came up, until that back road was, for the first time in its career, placed on the map. During that summer I believe more teams drove over it than had passed that way in a whole year at a time before I became famous as a planter of alfalfa. Yes, there was a little pigeon grass in my first crop of hay off the 24 acres, but each cutting since then has shown less of the weed." V. S. P.

FAVORS SEEDING ALFALFA WITHOUT NURSE CROP.

Upon reading an article in your valuable paper by Colon C. Lillie on sowing alfalfa, I take issue with the gentleman. Although he may be right on the soil referred to, I find from bitter experience that the nurse crop should be eliminated and the alfalfa seed should be run from the grass seeder into the large drill hose and sowed as you would wheat or oats at a medium depth. I think the soil culture the most satisfactory.

Calhoun Co. W. A. HOWARD.

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With corn coming into this country from Argentina and Africa, to take the place of the soft corn which was grown in the Corn Belt, much of which could not be shipped and could not be fed because of immaturity, it is high time that the West should wake up to the importance of not only producing more corn per acre, but corn that is mature and well ripened and which will grade No. 1 and 2. This can be helped along in the West as it is in the East by the use of available fertilizers which not only increase yield but hasten maturity and improve quality.

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Ask any one of the three offices named above for information and an entry form.

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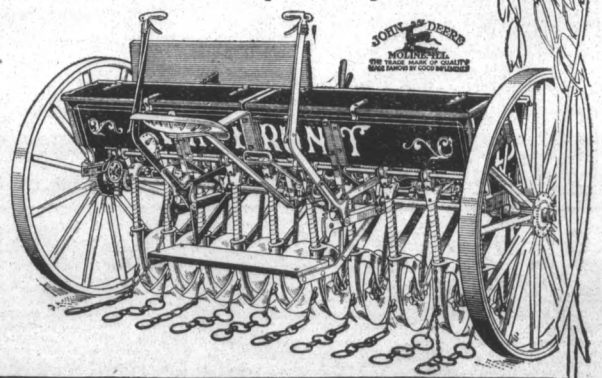
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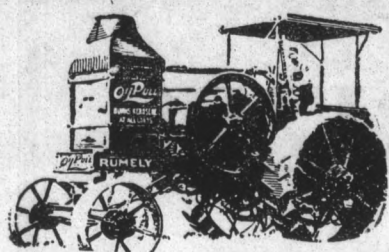
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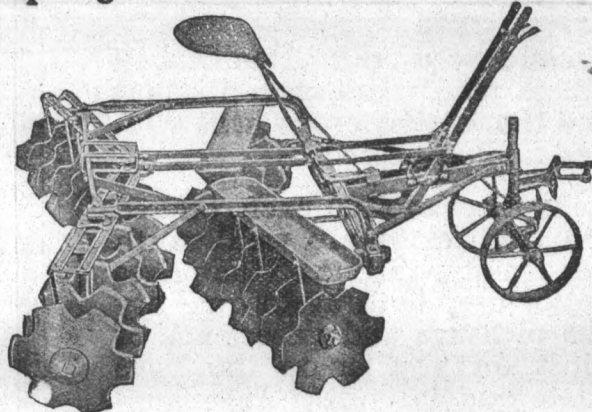
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Don't wait until you drive into the field to find the old harrow worn out. Here are two machines in one, giving you perfect level cultivation and thoroughly pulverizing the soil in one operation. The front gangs throw the soil outward, rear gangs throw inward, allowing penetration of moisture and air. The Dayton is an all steel, durable, serviceable harrow with a flexible, adjustable, rear frame. Front truck takes up all neck weight, two levers control all gangs, wood bearing journal boxes. Low hitch—perfect balance—means light draft. Furnished with cut or round discs, and if desired with a seeding attachment.

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THE NATIONAL CORN SHOW.

The Sixth National Corn Exposition held at Dallas, Texas, February 10 to 24, was the best agricultural, educational exhibit ever held in America, according to the opinion of Col. Lamson Schribner, who has had charge of all exhibits made by the United States Department of Agriculture, both in America and foreign countries.

In addition to the exhibits of their products, including grains, grasses, fruits and other crops, 37 states made educational displays of the work done by their experiment stations. The exhibits were arranged in such a manner that scientist or layman could easily understand the points illustrated without the aid of a demonstrator.

Nebraska, perhaps, had the largest and best exhibit, showing the amount of water necessary to produce one pound of the different farm crops. Minnesota, Missouri, Indiana, Illinois, New York, California, Wisconsin, and other states had exhibits similar to that shown by Nebraska. Liberal prizes were offered in all the classes and competition was never keener nor general quality of exhibits better.

The greatest competition was for the Colorado oat trophy. This trophy has been won for two years in succession by exhibits from Alberta. The oat growers of the United States tried their best to keep the trophy from going back to Alberta, but did not succeed. Alberta won, but with the closest competition ever held at the Corn Exposition. Montana won sweepstakes for the United States but had to give the trophy to Alberta as sweepstakes for the world.

Illinois won sweepstakes and the Kellogg trophy for the best single ear of corn. Sweepstakes on ten ears, and first, second and third on bushels went to Indiana. The world sweepstakes on wheat and barley went to Montana.

Michigan won in the "World's Class," first and fifth, on beans, first on pop corn, third and fourth on soy beans. Michigan had the only exhibit of peppermint and fiber flax. At the Michigan booth there was a disappointment because no potatoes or apples were shown.

Texas furnishes a great many patrons to our summer resorts and our sanatoriums. They had boasted to their friends what delicious fruit they ate while in Michigan, and were disappointed at not seeing any at the Michigan booth. To illustrate—two ladies came to the booth and one said to the other, while looking at a sample of Stowell's Evergreen sweet corn grown by J. W. Chapin, of Eden, "There is the kind of corn I was telling you about. I had to bit twice before my teeth would reach the cob. How I wish we could grow this corn in Texas!"

The following list of prizes were won by Michigan exhibitors:

Michigan Class.

Yellow Dent—Single Ear.

First, Jessie W. Pickett, Caledonia; 2d, Thelma Knight, Hanover; 3rd, J. Robt. Dunnean, Vicksburg.

White Dent—Single Ear.

First, Rollo Simons, Jackson. Any Other Dent—Single Ear. First, Leo Wooden, Jackson; 2d, Wm. Folks, Hanover; 3rd, Frank Lowe, Hudson.

Yellow Dent—Ten Ears.

First, Thelma Knight, Hanover; 2d, J. Robt. Duncan, Vicksburg; 3rd, Jessie W. Pickett, Caledonia; 5th, L. L. Lawrence, Decatur; 5th, J. H. Landes, Shepherd.

White Dent—Ten Ears.

First, Rollo Simons, Jackson. Any Other Dent—Ten Ears. First, Wm. Folks, Hanover; 2d, Leo Wooden, Hanover; 3d, Edward Prowant, Davison; 4th, David Dunlap, Gd. Rapids; 5th, Wooden Hendee & Son, Pinckney.

Flint—Single Ear.

First, Mr. Mead, Grand Rapids; 2d, George Frederick, Brooklyn.

Flint—Ten Ears.

First, George Frederick, Brooklyn; 2d, Mr. Read, Grand Rapids.

Oats—Peck—White.

First, John Schipper, Holland; 2d,

Geo. B. Shoemith & Son, Leslie; 3d, I. N. Cowdry, Ithaca.

Wheat—Peck—Winter.

First and Championship—L. L. Lawrence, Decatur; 2d, J. J. Nyenhuis, Hudsonville; 3rd, O. F. Marvin, Holton.

Barley.

First, Geo. B. Shoemith & Son, Leslie; 2d, I. N. Cowdry, Ithaca; 3rd, O. F. Marvin, Holton.

World's Class.

One Peck White Beans.

First, Geo. B. Shoemith & Son, Leslie; 5th, L. L. Lawrence, Decatur.

Ten Ears Pop orn.

First, J. L. Demarest, Flint.

Soy Beans.

Fourth, Geo. B. Shoemith & Son, Leslie.

Sweet Corn (Late) Ten Ears.

Third, J. W. Chapin.

Fourth, W. R. Roach & Co., Hart.

Sweet Corn (Early).

Fourth, W. R. Roach & Son, Hart. Ingham Co. W. F. RAVEN.

STATE CORN SHOW AWARDS.

Best single ear, Wm. Folks, honor trophy, Michigan Farmer Cup; best ten ears, Daniel Kuhn, Vicksburg, Gleaners' Cup; best ten ears, any Grange, the Grange Banner, Brady Grange, Vicksburg.

Class A—Yellow Dent.

First, Daniel Kuhn, Vicksburg; 2d, M. T. Shoemith, Leslie; 3rd, D. E. Turner, Mosherville.

Class B—White Dent.

First, W. M. Wahl, Centerville; 2d, R. D. Simmons, Jackson; 3rd, Wilford Jewett, Mason.

Class C—Whitecap Dent.

First, Lee Worden, Pulaski; 2d, Glenn Turner, Mosherville; 3rd, L. H. Runns, Adrian.

Class D—Other Dents.

First, W. C. Hendie, Pinckney; 2d, F. H. Thorn, Pulaski; 3rd, Artie Jewett, Mason.

Class E—Flint.

First, A. R. Vincent, Crosswell.

Boys and Girls.

First, Thelma Knight, Hanover; 2d, Milton Turner, Mosherville; 3rd, Harlon Turner, Mosherville.

Sweet Corn.

First, J. W. Chapin, Eden.

Pop Corn.

First, Leonard Morse, Jasper.

Editor's Note.—Michigan Experiment Association Awards will be found on page 300.

FARM NOTES.

Fertilizing the Soil for Alfalfa.

I would like your advice as to fitting up a rather lean sandy and gravelly loam of 17 acres for alfalfa. As I haven't enough manure to near cover it, I must use commercial fertilizers. I haven't tested with litmus for acidity but feel quite certain of it, because of the rank growth of horse sorrel, and so have ordered 10 tons of finely ground limestone rock. I expect to inoculate with pure culture. As the soil is low in humus would you consider it advisable to use raw rock phosphate? What form of potassium would you sow, or will the presence of the lime make enough of it, already in the soil, available?

Hillsdale Co.

G. W. B.

The amount of ground limestone which it is proposed to apply to this field would not, in the writer's opinion, be sufficient to get immediate results in neutralizing the soil acidity. Last year the writer used about two tons per acre of finely ground limestone on a similar soil to that described, and failed to get as early a development of nodules on the roots as is desirable, notwithstanding the fact that the seed was inoculated with the pure culture of the nitrogen-fixing bacteria, as it is proposed to do in this case. Where the same amount of ground limestone had been applied two or three years previous, however, an early development of the bacteria was secured. From our own experience and the testimony of others, it would seem that on this character of soil, about two tons per acre is little enough to apply of ground limestone, at least where early results are desired, although a much smaller quantity of caustic lime will act more quickly. It is probable, however, if there has been no difficulty in getting clover seeding on this soil, that the application proposed may have a very decidedly beneficial result on the success of the alfalfa seeding.

Regarding the use of raw rock

phosphate, it is generally conceded that to get immediate beneficial results from such an application, it is essential that it be applied in connection with stable manure or at least to a soil which is well supplied with humus. In a case such as described, it is the writer's opinion that it would be better to use a liberal application of a complete fertilizer, inasmuch as there would seem to be a lack of experimental knowledge as to the particular ingredients of fertility most needed.

Improving Hard Clay.

I have some heavy clay land which does not produce well, especially when planted to corn. It is white clay which works up well, but if it rains before the young plants come up, it is necessary to harrow it at just the proper time, or it crusts over badly. The corn will not grow more than half as fast on this soil as on other portions which are clay loam, and it is not nearly as large at maturity. Have five acres in clover on which I would like to plant ensilage corn; how can I improve it? I also have a piece of sandy loam in beans last year, which is badly infested with quack grass. It was fall plowed, and I thought of cultivating it from early spring until time to plant late potatoes; what kind of fertilizer should I use? Land is rather low in fertility. What fertilizer should I use on same land for oats?

Saginaw Co.

A. W.

The only thing which will remedy the physical condition of this soil is to incorporate some vegetable matter in it, which, of course, will have to be done gradually. If it is not tile drained, this would benefit it materially, although the benefit would not be as immediate as it is on a clay loam soil.

Fertilizer for Sandy Loam.

A complete fertilizer fairly rich in potash would probably be the best for both crops on this soil. For potatoes it will pay to apply 500 pounds in the row or perhaps 1,000 pounds per acre if applied broadcast. For oats a comparatively small application of say 200 pounds per acre should give most profitable results.

What Crop to Grow for Hay on Muck Land.

I have ten acres of muck well tile-drained. On five acres I would like to sow something for hay the coming spring and at the same time seed to alsike and timothy. What would you advise for the hay? The other five acres has been plowed three times. The marsh grass sod is well rotted; on a strip of this 30 feet wide (a half acre) we put eight loads (eight or 10 tons) of marl after it was plowed; on the balance we put about 40 tons of manure before plowing, no manure on the strip covered with marl. What crop or crops would you advise putting in this in the spring? This was all plowed last fall. We do not need the piece for corn.

Branch Co.

C. E.

I don't think there is anything better to grow for hay on this land where you want to seed to alsike and timothy, than oats. Oats make splendid hay. Of course, we are not used to cutting oats for hay in this country, but out west, and in many other places, and in Europe, they grow oats almost on purpose for hay, cutting the crop when the oats are in the milk and making it into hay, and it makes a splendid hay for all kinds of stock. You could mix in a little peas and that would make a little better hay because it would contain more nitrogen but you would not be so liable to get a good seeding with the peas in because of so much foliage.

I think on the balance of this field, as long as you do not want it for corn that you probably can get as much money out of a crop of barley as anything you could plant. If this land is rich and with a dressing of stable manure and the marl, I should say it would be a good place for barley. Barley is a readily marketable grain and can be sold for cash or it makes a splendid grain to feed to almost all kinds of stock. It is a good hog feed. It is a good horse feed. It is a good feed for the dairy cow. I don't know of any better general purpose feed than barley, and it will sell readily for cash if you do not need it for grain.

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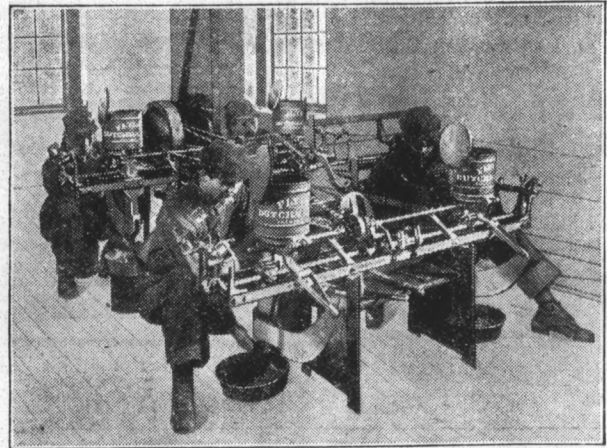
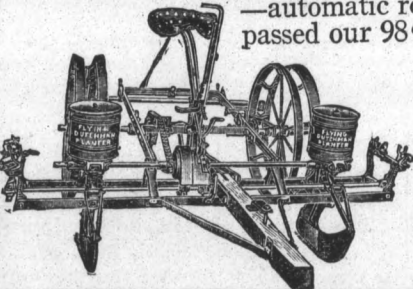
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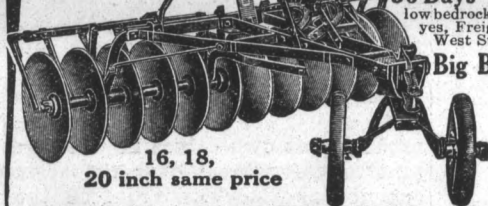
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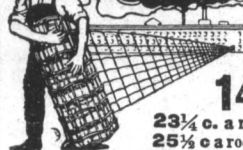
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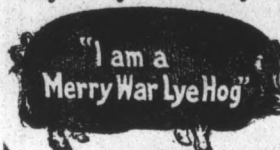
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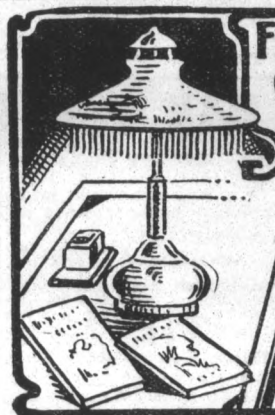
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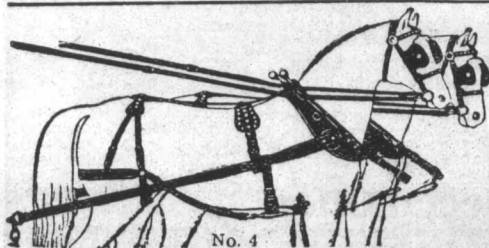
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"BABY BEEVES" MAKE ECONOMIC GAINS.

Iowa Experiment Station Results.

Many people are interested nowadays in the production costs on baby calves. To give an idea as to the cost of gains on young calves, fed until they reach the baby beef stage and weigh about 800 to 900 pounds, we present herewith the following figures collected at this station:

Calves Make Gains Cheaply.

Three groups of 14 385-pound calves each fed for 203 days, November 19, 1909, to June 10, 1913.

(Figures Based on Home Weights).

Ration fed.	Corn and cob meal, C. S. meal, Clover hay, Corn silage.	Corn and cob meal, C. S. meal, Clover hay.	Corn and cob meal, Oil meal, Clover hay.
Average daily gain.....	2.26	2.18	2.31
Average final weight.....	843	829	854
Average daily feed:			
Corn and cob meal.....	11.66	13.40	13.70
C. S. meal.....	1.84	1.84	.....
Oil meal.....	.....	.....	1.84
Clover hay.....	2.03	2.06	2.04
Corn silage.....	5.16	.....	.....
Feed for 100 pounds gain:			
Corn and cob meal.....	517	613	594
C. S. meal.....	81	84	79
Oil meal.....	.....	.....	.....
Clover hay.....	90	94	89
Corn silage.....	229	.....	.....
Cost of 100 pounds gain*:	\$6.04**	\$6.46**	\$6.23**

*Corn at 53c; C. S. meal \$30; oil meal \$30; clover \$12; silage \$3.25.

**Profit returned by hogs for each 100 lbs. gain on steers is respectively, 69c, 68c and 66c, which may be credited.

These calves were fed under direct supervision of H. H. Kildee and W. J. Kennedy, formerly of the Animal Husbandry Section.

That gains should be made, with 53c corn and cob meal, at a cost not to exceed \$6.50 for a hundred pounds in any case, is certainly gratifying to the man who is feeding calves. Comparing this cost of gain with that of two-year-olds, which under the same conditions would come up around 9 and 10, and even 11 cents, we can readily see why it is that the calves are so popular for feeding when men produce their own cattle. Heretofore, the wide margin on two-year-olds and older steers has enabled us to feed old steers even though the cost of gain was greater than the actual selling price of the cattle, nowadays, however, due to the scarcity of grown cattle the margins are becoming smaller, furthermore, men cannot always depend upon getting such cattle for their feed lots.

Some of our cooperative work has quite clearly shown that where a man produces his own calves he cannot afford to carry them over the second summer as "stockers" to feed them out before the winter. Under conditions existing at the time this test was carried on a couple of years ago, the cost of gains on the "babies" was \$4.81 a hundred less than on the similarly bred yearlings held over; the net finishing profit per head on the "babies" was \$20.13 and with the yearlings \$14.04.

Iowa. J. M. EVVARD.

FEEDERS' PROBLEMS.

Forage Crops for Hogs.

Kindly give me advice regarding rape and oats for hogs; how much of each to sow per acre. What do you think of rape, peas and oats? As I have not enough milk for all what do you think of middlings and water? Is it better to use it freshly mixed or let it sour before feeding?

Leelanau Co.

SUBSCRIBER.

Rape makes an excellent forage for hogs, and may be sown with oats and utilized in any way desired. Where oats are grown as a grain crop, rape is sometimes sown broadcast at the time of seeding the oats, and after the grain crop is harvested, the rape will

under favorable conditions make a rapid and vigorous growth, supplying a quantity of green forage throughout the balance of the season. If it is desired to use the mixture as a hog pasture, it would be advisable to sow the oats more thinly than where they are to be used as a grain crop. Peas and oats also make an excellent hog pasture, but it would, in the writer's opinion, be a better policy to sow peas and oats separately rather than in combination with rape, for the reason that more feed will be secured from peas and oats if they are allowed to reach the stage of maturity in which they will provide grain as well as forage for the hogs, while the rape

will make good hog pasture in say six weeks from the time of sowing, and can be utilized much sooner than would be profitable with the peas and oats. Four or five pounds of good rape seed is sufficient to sow per acre where the seed is sown broadcast, and about two pounds would be enough where sown in drills and cultivated, as is sometimes done.

Middlings are one of the best grain feeds for small pigs. They would be better for soaking from one feed to the next in suitable weather, but for young pigs are better fed sweet than after fermented.

Balanced Ration for Steers.

What is the best balanced ration for fattening steers? The roughage would be mixed hay and corn fodder. Wayne Co. L. V. H.

The best way to balance a grain ration for fattening steers is to add the cheapest protein concentrate available to corn as the basis of the ration. Experimental data is generally based on the use of cottonseed meal as such a concentrate. The amount fed should depend somewhat upon the age and weight of the cattle and the length of the feeding period contemplated. Two pounds per day of cottonseed meal or its equivalent in other protein concentrates would be a safe amount to use with corn with the roughage named. If cull beans are available at a cheap price, some bean meal might be substituted for a portion of the cottonseed meal or other purchased concentrate. This amount of protein concentrate would not furnish a perfectly balanced ration, but with fattening steers it is better to err in making the ration too wide rather than too narrow, as such an error is less expensive.

Early Pasture for Brood Sows.

What would you advise to sow early this spring for a forage crop for brood sows which are due to farrow in May?

Cheboygan Co.

J. A. P.

The earliest possible pasture from spring-sown crops will be by sowing peas and oats as early in the spring as possible. These should be sown rather deeply and, say three pounds per acre of dwarf Essex rape seed sown per acre just ahead of the drill will improve the quality and amount of the pasture secured.

**A SKEPTICAL OPINION REGARD-
ING THE SPREAD OF HOG
CHOLERA.**

A few weeks ago I saw in your paper some measures advocated for the prevention of hog cholera, and some people believing that the reasons for so doing are not well founded, I will give my opinion and experience.

Science and theory are good when they amount to anything, but I don't believe hog cholera is scattered by dogs, birds, or live stock, or by men going to visit their neighbors, and don't believe any of your writers can prove that it is, but I would like to know what does scatter it.

I am a drover and farmer; own four tenant farms and raise from 50 to 100 hogs every year. Never have vaccinated any of them and have had a shepherd dog most of the time; also have kicked cholera hogs around every time we have had it in our section of the country. Have bought cattle, sheep and horses for the past 15 years from people that have had hog cholera; also ship from 200 to 4,000 sheep every year from Chicago, also 100 to 700 head of cattle, feeding part of them and selling part to my neighbors. I have a field of about eight acres, with a hog pen opening into it, and there are always some hogs in this pen or the barnyard that opens into this field. I have taken these cattle and sheep through stock yards where I knew there has been hog cholera, and turned them into my yard and this small field, also have been around my hogs without changing my overshoes, rubbers, or shoes, and never kicked my dog out of the hog yard, when I knew he had been around cholera hogs and through yards where I knew cholera was present, and I have never had hog cholera. I may have it tomorrow; I do not wish to brag but I do not believe it is scattered, as your article of a few weeks ago mentioned.

I also wish to refer to Mr. A. M. Welch, Mr. Lee Spaulding, Mr. Emery Townsend and Guy Harwood, who have been large shippers of stock from the west, and taken them through stock yards where I know there had been cholera hogs. They are all raisers of quite a number of hogs, and have never had any hog cholera. The above mentioned men are some of our largest farmers and feeders. Mr. Harwood is a drover, has two dogs with him much of the time and has been among many bunches of cholera hogs the past fall. He told me he had never changed his shoes or punished his dogs because they went into the hog yard, also he said he had driven his horse through many yards where there was hog cholera, and turned him into his hog pasture and has never had hog cholera on his farm. I have visited my four farms and hog pasture more often when we had hog cholera in our district than when we were free from it, and as I have said never yet had cholera on my farm.

I know of farmers who never bought a hoof of stock off their farms that have had hog cholera. If any of our state veterinarians have any doubt as to these facts, if they will come to Ionia county I will prove the above statements so conclusively that they will be looking up other ways of scattering hog cholera.

Ionia Co. E. S. TOWNSEND.

IMPORTS OF CATTLE.

New York had liberal receipts of foreign beef in a recent week, arrivals being the heaviest on record. Two South American boats arrived, one bringing 3,000 quarters of beef and 6,969 carcasses of mutton. The other delivered 15,227 quarters of chilled beef, 2,986 quarters of frozen beef, 8,000 carcasses of frozen mutton and 7,000 carcasses of frozen lambs. A consignment of 2,000 quarters of frozen beef arrived from Liverpool. Total arrivals of foreign beef in New York for the week were equivalent to 5,825 cattle.

Now the Last Step

In Reo the Fifth

We take this year what seems to be the last step in quality, beauty, equipment and price.

The chassis embodies the best Mr. Olds knows after 25 years of car building. A better-built car cannot be conceived.

The body is the new-style stream-line body, the coming vogue. More beautiful lines are unthinkable.

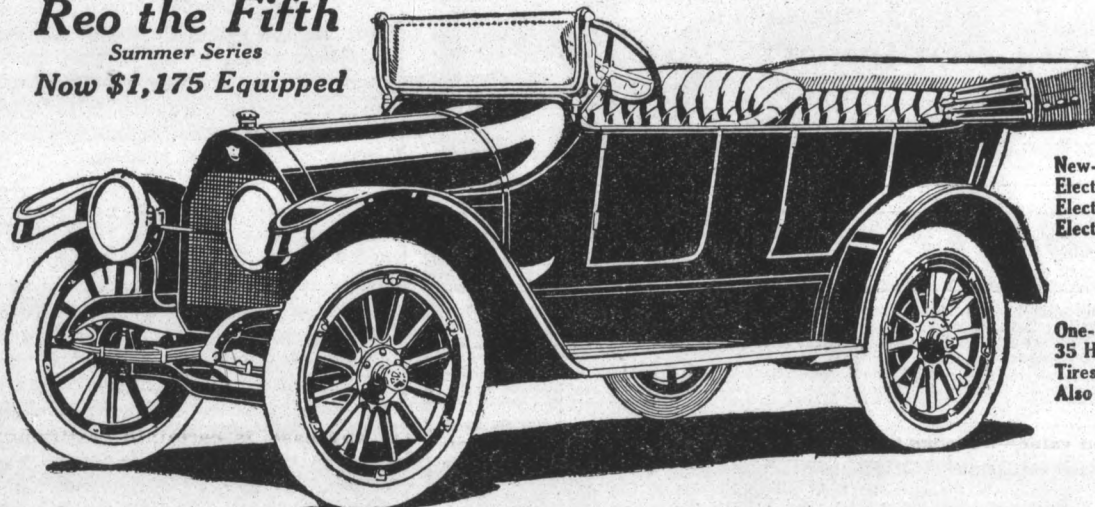
The upholstery is deep and rich. The finish is perfect. The equipment includes all that motorists desire.

And now comes a new price—a record price on a car of this class and quality.

Price \$220 Less

The price this year is \$220 less than last year's model, similarly

Reo the Fifth
Summer Series
Now \$1,175 Equipped



New-Style Body
Electric Lights
Electric Starter
Electric Horn

One-Rod Control
35 Horsepower
Tires 34x4
Also Roadster

equipped. That saving is mainly due to this: All the costly machinery for building this chassis has been charged against previous output. That cost is all wiped out. From this time on, so long as we build this chassis, this big item is omitted from our cost.

No other factory in America could offer you a price of \$1,175 on a car built like Reo the Fifth.

A Costly Car

Reo the Fifth is built in a most unusual way. The steel is made to formula, and each lot is analyzed twice. All driving parts are given 50 per cent over-capacity. Gears are tested for 75,000 pounds per tooth. Engines are given five long, radical tests.

There are 15 roller bearings, 190

REO MOTOR CAR CO., Lansing, Mich.

drop forgings. Each car is built slowly and carefully. Close-fitting parts are ground over and over. Tests and inspections are carried to extremes.

We could save at least \$200 in the hidden parts if we built you a shorter-lived car. But you get here low cost of upkeep. You get freedom from trouble. You get a car built to run for years as well as it runs when new.

Reo the Fifth is built for men who want the utmost in an honest car. For men who buy cars to keep. For men who want safety and staunchness. It is the car of super-strength.

A thousand dealers sell Reo the Fifth. Ask for our catalog and we'll direct you to the nearest showroom.

"Nothing takes the place of accuracy"

JOHN DEERE

OBLIQUE

Selection

The "Natural" drop

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

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

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

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

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

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

Free Book Gives Valuable Corn Facts

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

John Deere, Moline, Illinois

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W. W. WEAVER, READING, MICH.

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Ajax tires are guaranteed in writing for 5,000 miles. The soft-spoken implied life of other standard make tires is 3,500 miles. Why buy other tires? Why lose 1,500 miles, or 43%?

The Ajax written guarantee, born in good faith, is nine years old. It's a definite written agreement between you, the purchaser, and us, the makers. Decide now on Ajax tires for *all four wheels* of your car. You'll keep \$16.00 to \$80.00 in your pocket (according to the size).

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There's an Ajax dealer nearby. See him today. Ask him or write us for Ajax Booklets.

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In Writing
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MILES

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"While others are claiming Quality
we are guaranteeing it"

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Why-A Redwood Silo?

Because Redwood is the most permanent wood that exists. Nature seems to have made Redwood especially for silos. Redwood will not shrink or swell. It does not rot or decay. It is fire-resisting. Redwood gives the superior silage qualities of wood and has none of the faults of ordinary woods or other materials.

You build permanent when you build of Redwood. Scattered throughout Redwood are little cells containing a remarkable preservative. This protects Redwood from rot and decay. None of the ordinary wood-rotting fungi can grow in Redwood. The even structure of Redwood—the way nature has shaped its growth, with its close layers of wood cells—prevents shrinking and swelling. Its freedom from pitch gives Redwood fire-resisting qualities. Searching government tests and investigations testify to the wonderful durability of Redwood.

THE SAGINAW REDWOOD SILO

The permanence of Redwood and Saginaw Steel-Built construction—these two things give you a silo that is practically indestructible. The Saginaw Silo applies scientifically the principles of skyscraper construction. Decay, cave-ins, crumbling of walls, blow-downs, tilting or slipping of staves, or poor silage are unknown to owners of Saginaw Redwood Silos.

Saginaw Redwood Silos are made by the largest and most successful builders of silos. This leadership comes from building better silos, from giving dollar for dollar value in every Saginaw Silo.

Know about the Saginaw Silo before you build. Get the facts from silo owners. The Saginaw Silo will pay for itself the first year in feeding your stock fine, clean, succulent silage. See Saginaw Agent in your county. He is silo-wise. He will give you expert silo information. Write for Silo Book No. 117. Tell us how many head of stock you have.

THE Mc CLURE COMPANY

(Formerly Farmers Handy Wagon Co.)

SAGINAW, MICH. CAIRO, ILL. DES MOINES, IA.
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They are healthier and give better service. When the heavy coat that holds the wet sweat and dirt is removed, they are more easily kept clean, look better, get more good from their feed and are better in every way. Horses and mules take on new life and energy when clipped and naturally work better. Clipping the flanks and udders of cows prevents the dropping of filth into the milk. The best and most generally used clipper is the Stewart Ball-Bearing Clipping Machine, the only machine that can be used on horses, mules and cows without change. It turns easier, clips faster and closer and stays sharp longer than any other. Gears are all file hard and cut from solid steel bar. They are enclosed, protected and run in oil; little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade.

Price \$7.50 Get one from your dealer or send us \$2.00 and we will ship C. O. D. for balance. Your money and transportation charges returned if you are not satisfied.

It's
Easy
Action,
High
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for
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You not only shear and disfigure your sheep but lose a dollar on every six you shear the old way. Figure how much more money you'll get if you use a Stewart Shearing Machine. It's the most perfect hand-operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of latest improved Stewart pattern. Price complete, including 4 combs and 4 cutters of the celebrated Stewart quality is \$11.50. Get one from your dealer, or send \$2.00 and we will ship C. O. D. for balance. Money back if not satisfied.

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Lansing, Mich.



Practical Science.

A SOIL FERTILITY PROBLEM.

BY FLOYD W. ROBISON.

Under date of February 4, 1914, the New York Evening Post gives space and editorial to an article by a man named George Quarrie, who claims to have discovered in carbonic acid gas an elixir of life to plants.

The editor of the Michigan Farmer has asked me to examine this article and comment on it in these columns. We did not plan on giving the space that the story calls for, and yet there are some very interesting things outlined in this article which, in view of the detailed way in which, in the last few years, we have gone into these questions of plant fertility, we believe much may be accomplished by printing the story verbatim, as copied from the New York Evening Post. We will not spend much time in discussing the various points involved, for it is essentially a rudimentary and academic proposition.

There are certain very noticeable flaws in the scientific logic presented and there is an entire lack of any appreciation of modern agriculture on the part of the narrator. He speaks of the combination of ammonia and carbonic acid, and the union of the nitrogen of the air with the carbonic acid, as the condition necessary to the production of crops. Bacterial influence is entirely ignored and he evidently has not learned that nitrogen of the air becomes available to the plant in the soil through the agency of the little microbe plants that live on the roots. Again, his charging the soil with an inert gas, will, we apprehend, in actual experiment, when the same is thoroughly under control, as is not the case with the Quarrie experiment, be a far different matter from the gradual liberation of carbonic acid gas through the medium of organic decomposition in the soil. Decomposition takes place in the soil through oxidation and as the result of this oxidation small quantities of CO₂, or carbonic acid gas, are set free slowly and gradually. Remember, this is in the presence of oxygen or air in the soil. Now the introduction of considerable quantities of carbonic acid gas, not in the active state but in a passive state, as it would be when liberated from inorganic compounds such as marble and the like, would deprive the soil of the very desirable content of air, or oxygen, which it ordinarily contains under good cultivation. We think, therefore, this idea fundamentally wrong in this particular.

When he speaks of carbonic acid gas as a solvent he echoes that which has been recognized by agriculturists for a great many years, but the importance of which has not been as fully realized. Carbonic acid gas is a good solvent when liberated in the soil gradually and under conditions in which it would be liberated in the oxidation of organic matter. We have a term, chemically speaking, which distinguishes nicely between carbonic acid as liberated from organic matter in the soil, and carbonic acid as pumped into the soil in the form of a gas. The term, nascent, has been used and it signifies a freshly liberated condition. There seems to be in all agricultural and physiological processes an entire difference in the activity of a compound or element when in the nascent, or freshly liberated, state than from that in the passive state. For instance, oxygen will attack with avidity the metals when it comes in contact with them at the exact time of its liberation from another compound. Oxygen, however,

in the form of oxygen gas, as it exists in the air, may surround a metal perhaps for years without exhibiting any activity whatsoever.

When leguminous crops or other organic matter, are plowed under the soil, when there are proper conditions of cultivation with the supply, consequently, of plenty of atmospheric air, that organic matter undergoes decomposition as a result of which carbonic acid gas, or CO₂, is gradually and steadily liberated. Being in the nascent condition it rapidly and actively attacks the mineral compounds in the soil, such as the insoluble rock phosphates, and renders them available to plants.

With the above explanation we submit the article as printed in the Post, without further comment:

Mr. Quarrie's Letter.

Under present conditions, with the cost of living exceptionally high and without any immediate prospect of a change, any plan that might tend to reduce the cost of the necessities of life, ought to be a very desirable thing to know.

I have such a plan, and shall describe it in this article, a plan which would have been made public years ago, were it not that it had to wait year after year for such a financial turn as would enable me, by further and extended tests, to give more exact details.

I also confess that for a long time I intended to protect my interests, as inventor of the process—which, all will admit, every man has a perfect right to do—by applying for a patent. But for reasons not necessary to explain, both these purposes have been finally abandoned in favor of this unreserved public statement and description.

My development of new ideas relates particularly to the arts of agriculture, horticulture, arboriculture, etc. And my contention is that the tremendous change in agricultural conditions, as we pass from those halcyon days when we had merely to scratch the surface of rich, virgin soil for abundance, to the near future, with the necessity of taking hold of more or less cropped-out farms and by improved methods, raising what we need on them—that, I claim, is more or less responsible for the steady enhancement in prices of foodstuffs. For every practical farmer knows that the great question of all questions for him today is, how the land can be cheaply fertilized.

And the consumer will ultimately learn, if he does not yet generally appreciate the fact, that it is as much to his interest, as it is truly in his power, to solve that vexed question for the farmer. For nothing is more certain than it is that if the farmer has plenty of wherewithal to feed his land, the land responds with abundance to feed the people. And just as food for the land gets scarcer and dearer—as it is doing with deadly certainty day by day in America and in most other countries of the globe—so must the people's food grow scarcer, also, and dearer, and that in a direct ratio, as to the cost of production from the land.

Having been brought up on my fathers' farm, which was operated on the Lothian plan, I had a thoroughly practical training in the scientific methods included in that system of farming. Two of the best agricultural papers were taken, for the purpose of gleaned the opinions and observations of the great leaders in up-to-date agriculture, besides which various works on agricultural chemistry were consulted.

(Continued next week.)

Dairy.

CONDUCTED BY COLON C. LILLIE.

MARSH HAY AND CORN SILAGE FOR COWS.

I have some marshy land which will cut a heavy cutting of mixed hay of red-top, wild timothy and fine marsh hay. How would that hay and silage be for feeding cows, and what other feed would be necessary to make a balanced ration?

Shiawassee Co.

E. P.

A good practical ration for dairy cows can be compounded with marsh hay and corn silage as the roughage part of the ration. Of course, marsh hay would not be as good as clover or alfalfa hay, but as long as you have got the marsh hay you should use it. If you can cut it before it gets too ripe, and cure it well, the cows will eat a considerable amount of it. It is a fairly good feed and certainly would be a cheap source of hay.

Dairy cows do well on marsh pasture. When Jersey Belle of Situate made her wonderful record here a few years ago, it was wonderful for that day, all she had was marsh pasture and wheat bran. This shows that there is some nutriment in marsh pasture and therefore the hay should have some value.

With all they will eat up twice a day of good corn silage and good

silage and multiply by the depth. That will give you the cubical contents, which should be multiplied by 40, as there are 40 pounds of silage to the cubic foot. Divide this by 2,000 to get the number of tons of silage.

Now the value of corn silage is something that no two will agree upon. Prof. Haecker, who spoke upon the value of silage at the round-up institute at Lansing one year, said that at the price of feed at that time good corn silage was worth \$5 or \$6 a ton. Most people, however, would not consider it worth this much. Some people estimate the value of corn silage to be one-third the value of good timothy hay. In our cow-testing association we charge the cows \$3.50 per ton for silage, and I think probably at the present price of other feed this is a fair valuation of good corn silage.

CAN WE AFFORD TO BUY COWS AT PRESENT PRICES?

I have bought a farm on a milk route and would like more cows. Would you advise me to pay the present high prices for cows, with the prospect of butter going down, as some agitate? Or is there anything in it?

Shiawassee Co.

P. L. B.

Of course, cows are high; that is they are much higher than they have been in the past, but good dairy cows have never brought the price that they ought to bring. They have always been worth more money than you could get for them, and poor cows have always brought as much or



Triplet Heifer Calves, awarded Blue Ribbon at Michigan State Fair, 1913, Sired by Sir Double Korndyke; owned by M. L. McLaulin, Wayne Co.

marsh hay, you have got the foundation for a good ration and an economical one. Now all you have got to do is to choose some grain rich in protein to balance it. You can feed cottonseed meal, oil meal, gluten feed, dried brewers' grains, or any of the kind of foods which are rich in protein and in addition some corn meal and ground oats. Peas and oats would be splendid to use in place of corn meal and oats. You can stay in the dairy business with the assurance that if you will furnish enough corn silage you can utilize this marsh hay and get good money out of it. At first you might have to educate your cows to eat a good portion of this marsh hay, because it is not as palatable as some of the tame grasses, but by taking a little pains I think that you could soon get them to eating a good ration of it. There is one thing certain, you could feed them molasses with the hay and get them to eat all that would be desirable, because the cows are especially fond of the feeding molasses.

WEIGHT OF SILAGE—ITS VALUE.

Would you please send me the rule for measuring silo feed in a silo that is 40 ft. high and 14 ft. in diameter? I have a chance to buy the feed and would like to know what you think it would be worth a ton. It was filled in good shape and has not much corn in it.

Monroe Co.

A. D. J.

For estimating the weight of silage get the area of the surface of your

BEST ROUGHAGE TO FEED WITH CORN SILAGE.

What is the best roughage for dairy cows, along with corn silage? The question would be, what kind of roughage would contain the highest amount of protein, or to make a balanced ration.

Van Buren Co.

C. F. P.

A dairy cow should have a ration containing the food nutrients in the proportion of about one to six or seven; that is, there should be one pound of digestible protein to about six or seven pounds of digestible carbohydrates. Corn silage has food nutrient in about the proportion of one to 12, and therefore to get the protein she needs the cow has to eat an over supply of carbohydrates.

For a roughage to feed with corn silage you ought to get one that is as rich in protein as possible in order to balance up the silage. There is nothing better for the Michigan farmer

Stop Feeding Butter Fat to the Hogs

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RUNNING your cream separator at the wrong speed leaves one-fifth to one-half of the cream in the skim milk which you feed to your hogs. Yet nobody on earth can turn the handle of a separator at the right speed by "guess."

The Stewart Speed Indicator stops all the waste and pays you 20% to 50% more butter-money because it keeps you turning exactly the proper number of revolutions per minute. The "Kansas Farmer" says—"It is easy to lose the butter-fat (cream) of 2 or 3 cows in a 10 or 12 cow herd by incorrect cream separator turning." Dairy men have lost thousands of dollars just that way. But NOW hundreds of long-headed dairymen are saving the cream they used to waste—saving it by using a Stewart Speed Indicator on their separators. The

Stewart Speed Indicator for Cream Separators

goes on the crankshaft and shows how fast you are turning the crank-handle. The maker of your separator has already told you just how fast to turn it. If he says "55 revolutions" he means just that many—not even one more or one less per minute.

Just Watch the Stewart

Keep your eye on it as you turn the crank-handle. If it says "55," then you are cranking at the rate of 55 revolutions per minute. If it goes above or below that mark you must slow down or speed up, as the case may be. Keep it right there. No counting or timing is ever necessary—the Stewart tells at a glance.

"A Great Saving of Cream"

Walter L. Griffith of Wisconsin writes us: I find that the Stewart Indicator is a great help in many ways. I have found heretofore when separated milk stood, that cream would rise on it, but since using your Indicator there has been absolutely none, which in the cost of a year's time will amount to a great saving of cream. Also the cream gives a higher test and seems to be more even and of a better quality."

One dairyman with 20 cows lost \$524.10 in a year by guessing at the speed he was turning the crank handle.

Another dairyman writes that he has 8 cows and that guesswork lost him \$18.50 in one month.

How about YOU? Are you willing to throw cream to the hogs? Put a Stewart Speed Indicator on your separator and watch results. If it does not increase your cream production, then take it back within 30 days and get your money.

Price \$10—Easy To Put On

All you have to do is to tell us the name and number of your separator, and the year it was made. We furnish the Stewart complete on a new crankshaft that you can easily install—all for \$10. (If yours is a DeLaval, then no extra crankshaft is necessary.) Order from your dealer or direct from us.

Cream Literature And Butter Book—Free

You ought to have this information right now—and you can get it free by filling out and mailing the coupon below to us. Be sure to send us the coupon today.

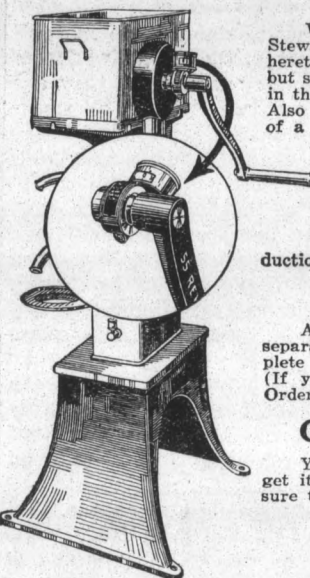
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Please send me, free, all your literature on Cream Production and the books about the Stewart Speed Indicator for Cream Separators.

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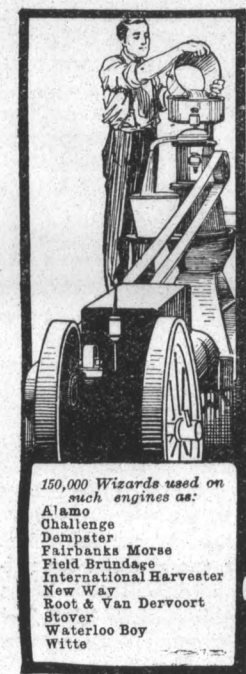
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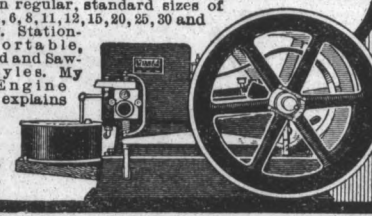
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The Melotte—the wonderful imported French-Belgian Melotte—the world's grand prize winning cream separator, now offered to any responsible American farmer on the first bona fide free trial, no-money-down offer ever made on any separator, and at the same price you would pay in Belgium, plus only \$1.75 for water freight.

All other who have pretended to offer you a free trial have taken care to get something out of you first. But we don't want anything.

The Melotte, introduced only one year ago, has swept the country. And now the duty is off—the Melotte comes in free. You win!

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You win on this tariff reduction. The Melotte—the wonderful imported French-Belgian cream separator—the prize winner all over Europe—now offered at an unheard of price in America. The duty is cut right off. You get the full benefit. Save \$15.25.

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

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than clover or alfalfa hay. Both of these are comparatively rich in nitrogen. Common clover hay contains the food nutrients in the proportion of one to six, and alfalfa hay is even richer in protein. So we would say that the very best roughage to feed in connection with corn silage is alfalfa hay, the next is clover hay. Then we have soy bean hay, cowpea hay, or pea and oat hay, their values being in the order named. Any of these hays with a very little additional grain that is comparatively rich in protein, will make a balanced ration with corn silage. Corn and ground oats with a very little cottonseed meal would be excellent for this purpose. Peas and oats ground together are also good.

I think we should have a little concentrated food in the ration for a dairy cow even though we exactly balance the ration with roughage, because the cow cannot consume enough to meet her food requirements.

FEEDING YOUNG CALVES.

The greatest mistake made in feeding young calves, that is, calves from the time they are born until they are two or three months old, is overfeeding. Of course, I refer to feeding skim-milk. If one feeds whole milk there is no danger. Nature has made whole milk so that the calf can take all of it that you can coax it to take without injurious effects. But when you unbalance the ration by taking the fat out of the milk, and then try to make up by feeding a larger quantity of skim-milk, serious results may follow. When calves begin to scour after they have been started on skim-milk it is almost absolutely sure that you are over-feeding. Cut down on the milk.

It is barely possible, of course, that you are feeding the milk cold. This ought not to be. The young calf ought to have the skim-milk direct from the separator, or if the milk goes to the creamery and comes back cold then it should be warmed up. I know of no better way to do this than to have a little agricultural steam boiler and turn the hose into the can of milk until it is warmed to the proper temperature. You don't want it real hot at one feed and then cold at another. It should be given at the same temperature. If you separate the milk on the farm right after milking and feed it directly to the calves they will get used to it at this temperature.

Of course, the calf ought to have something besides skim-milk; it isn't a balanced ration. You should get some fat from another source, and as I have explained many times, there is nothing better than ground flaxseed gruel for this purpose.

The calf should be started on roughage just as soon as possible. Give him just a little wisp of clover hay when he is two weeks old. He may eat only a spear of it at first, but will gradually eat more until he relishes clover hay and will eat large quantities of it. Next give him just a little handful of good corn silage. At first he may not like it at all, but if he leaves any in the manger take it out and put in some fresh. Soon you will find that the calf likes silage.

Start him on grain by giving him a little ground oats as soon as he is through drinking his skim-milk. Do not give him over a tablespoonful at first, and gradually increase it as he grows older. In this way we don't depend entirely on skim-milk.

Of course, the calf ought to have whole milk, its dam's whole milk, for the first two weeks anyway. Then gradually take out a little of the whole milk and put in skim-milk and increase the skim-milk until you take the whole milk entirely away from it. When you have done this substitute a spoonful or a gill of ground flaxseed jelly. If pains are taken not to over-feed, you will be certain to have thrifty calves.



Pure Milk Means Concrete Dairy Buildings

Every dairyman who intends to stay in business is rapidly replacing his old wooden buildings with modern structures of concrete.

Health regulations are very strict; unsanitary cow barns and milk houses are no longer tolerated. To furnish certified milk it is necessary to have floors and platforms of non-absorbent material, gutters of cement only, inside wall surfaces smooth, tight and water shedding, floors clean and water tight. There is a way to fulfill all these requirements—build of concrete. Specify

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Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

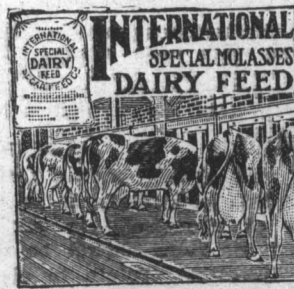
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Mr. J. P. Goodall of Capron, Ill., writes us as follows: "I have used International Special Dairy Feed for two years, feeding 4 pounds per day mixed with ground corn and oats and by using your feed as above I have obtained an increase of one-third in milk production. My cows always keep healthy and eat with a relish."

International Special Dairy Feed costs less per ton than ground corn and oats. For each ton of International Special Dairy Feed that you will buy and use along with other grain feed you will make an extra profit of \$10.00 to \$15.00.

International Special Dairy Feed is also extensively used as an entire grain ration and used in this manner will produce more milk at less cost than can be obtained from any other method of feeding.

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NATIONAL FIREPROOFING COMPANY, Fulton Building, PITTSBURG, PA.

DAIRY NOTES.

The Art of Milking.

An efficient milker is of more importance than the ordinary farmer who keeps cows realizes. I venture to say that 90 per cent of the cows in this country today do not yield what they would if they were properly milked. Leave conditions with reference to feed, breed and care, exactly as they are, and the cows would produce more if they were properly milked. My opinion, which is based on observation and experience with a great many hired men is, that few people are A. No. 1 milkers. I presume that the per cent of good milkers among cow owners who do their own milking is a great deal larger, and yet I suspect even here the art of milking is one that has never been fully acquired by a great many of them. It is very evident to my mind that no cow will ever make a record worth bragging about unless she is milked by one who understands not only the art but the science of milking, by one who realizes that the hand-milker has to take the place of the calf, that it is his duty not only to draw the milk from the cow efficiently, but that likewise he should get her to think well of him so that she will endeavor to do her best by him. Perhaps you will say that there is more sentiment in this than ought to be, but I don't believe it. I know well enough that a cow who likes her milker will give more milk for him than she will for anyone else. Some cows are so notional that you can scarcely change milkers and get anything like fair results.

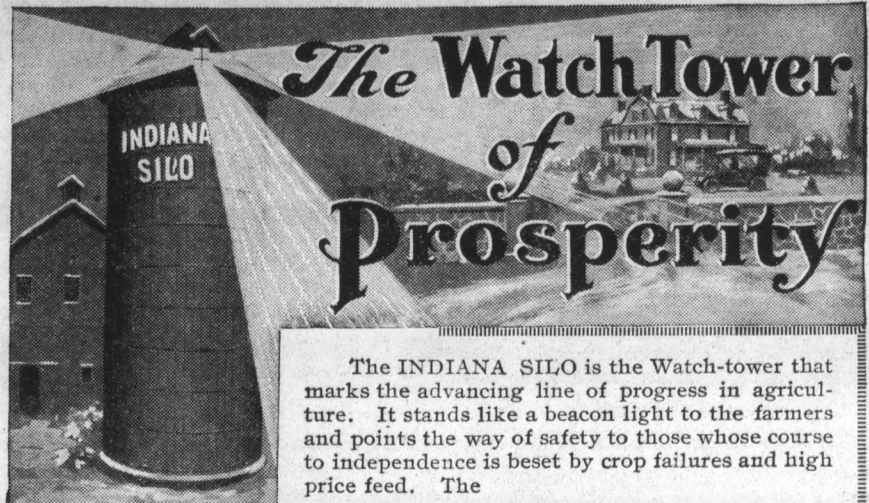
Milking is not as simple a thing as some people would think. There are many things to take into consideration. In the first place, you must have a good large strong hand with plenty of forearm muscle, and you need the knack of milking, which some people never get. They don't seem to know that you must shut down the forefingers in front first, to press the milk down to the end of the teats, then the balance of the hand to squeeze the milk out. And yet it is all done so near together that the

movements of the different fingers of the hand would seem to one that it was all done at once. The man who simply opens and shuts his hand is not a good milker. The hand should not only be opened and shut, as suggested above, but it should be done in such a way that the udder is massaged. There should be a gentle, firm pressure every time the hand is opened and shut. Some people pull down strongly on the teat. I am sure this is wrong. But every time the hand is opened it should reach up to the udder with an upward pressure to imitate the calf. The thumb and forefinger of each hand should massage the udder at every stroke of the milker.

Everyone giving advice about milking says that the cows should be milked regularly. That goes without saying. They should be milked at the same time of day, week in and week out. Regularity has a great deal to do with all animal life. Then another standard advice is to milk the cow clean. Keep on milking until no more comes. This encourages her to give more milk. Advice is also given to milk as rapidly as possible. And again, we are told not to strip with the thumb and forefinger, but grasp the teat with the whole hand. Of course sometimes cows' teats are short, but if a man reaches up on the udder, as I have stated, with the thumb and forefinger at every stroke it is a pretty short teated cow that he can't handle without stripping, which is simply pulling the teats, and not real scientific milking.

KINDNESS TO THE KINE.

The dairy cow is easily influenced one way or the other, by feed, weather, general surroundings and even psychological influences. Wrong thought waves, as our mental therapists call them, will cause the cow to use energy to overcome their effect which would otherwise be used in making milk. Use cheery words in the cow barn, even if you have just come from domestic disturbances. It will mean money in your pocket.



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The INDIANA SILO is the Watch-tower that marks the advancing line of progress in agriculture. It stands like a beacon light to the farmers and points the way of safety to those whose course to independence is beset by crop failures and high price feed. The

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Get ready to build a silo for 1914. We have a special EARLY BUYERS' Proposition which will be of interest. A new book by Benjamin Quod, "The Watch Tower of Prosperity," our new catalog and other literature will be mailed free upon request.

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More INDIANA SILOS are in use on American stock farms than of any other make.

The contents of an INDIANA SILO are never endangered as the INDIANA SILO never gives trouble while filled.

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It gets all the butter fats in record time as proven by many testimonials. 200,000 satisfied users prove the "Challenge" which is guaranteed to do the work right or money is refunded. Durable, practical, sanitary. FREE Descriptive Circular gives sizes and prices, with valuable hints on butter making. Write Today. Mason Mfg. Co., Box 211, Canton, Ohio

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Give it any fair test that you would give any harness. We know it would cost you \$5 to \$8 more to get as good. Full description of this and double harness in our big, new catalog. Write for it.

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Try it 30 days—prove it off a hatch—prove its value. Incubator is made of California Redwood—hot water heat, big chick nursery. Our price 135 CHICK BROODER Both for \$9.45 only

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Still you don't have to pay cash until you see it—examine it—test it—even put it on your roof if you wish. We are willing to prove its value and worth in any way that is fair and square. Write us for samples and estimates.

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See it before you pay—if not as to quality and price you don't have to keep it or pay us a penny. Style shown 13 1/2c per rod and up

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DETROIT, MARCH 14, 1914.

CURRENT COMMENT.

The new method of conducting the State Round-up Farmers' Institute, or "Farmers' Week," as it has been rechristened, which was adopted for the current year, as described in the announcement appearing in these columns, was a complete success. Everywhere the large number of farmers and farmers' wives in attendance at the Agricultural College last week were heard to express their commendation of the new plan of holding the meeting.

Under this plan the Institute became a practical short course of one week's duration. The program was divided into several sections, including the following: Soils and Crops, Dairying, Animal Husbandry, Horticulture, Poultry, Farm Mechanics, Domestic Science and Domestic Art. In each of these different sectional meetings which were held during the morning and afternoon of each day throughout the week in different classrooms, with practical demonstrations in many cases, there were a total of from 20 to 30 lectures, covering many phases of each special line of instruction. In addition to these practical lectures, there was held at the afternoon sessions of the first two days, a Women's Congress, in which broad questions relating to women's sphere of work were discussed by competent local and outside speakers. The afternoon programs on Thursday and Friday were similarly devoted to the country Life Conference sessions, as were those of the evenings following these special programs.

Throughout the week, evening sessions were held in the main audience room of the new Agricultural Building, these programs being devoted to the discussion of broad rural topics by speakers of note. The Women's Congress above mentioned was well attended by a larger number of farm women than have attended the Round-up Institutes in recent years. The Country Life Conference was a great success, country life activities being discussed from every standpoint by speakers who were thoroughly familiar with their topics, the result being that the interest of the audience was maintained throughout the sessions, and there can be no doubt that great benefit will be derived from these discussions. Space will not permit of anything like a complete report of any of the sessions. With this larger development of the Round-up Institute, it is necessary for those who would secure a maximum of benefit from this activity in the interest of

country life, to attend its sessions, and there is no doubt but that those who attended this year will exhibit an enthusiasm with regard to these meetings which will stimulate attendance from their several communities so that next year Farmers' Week will be far better attended than it was this year, although it was estimated that something like 900 farmers and farmers' wives were present to participate in the meetings.

In connection with the other activities of the week, the Michigan Corn Improvement Association met, and in addition to conducting a section of the program, held the Annual State Corn Show, a report of the awards of which appears in another column. Also the Michigan Experiment Association held a like meeting and exhibit of products shown by its members, awards of which are also given in another column. These two organizations were amalgamated under one head, and in the future the corn improvement work and corn show will be conducted by a committee of the experiment association. Officers of the latter association were elected as follows: President, C. B. Scully, Almont; secretary, Prof. V. M. Shoemsmith, East Lansing; executive committee, D. E. Turner, Mosherville, J. R. Duncan, Vicksburg, L. L. Lawrence, Decatur, C. H. Hunsberger, Grand Rapids. Committee of the Association were also appointed as follows: Corn improvement, small grains, alfalfa and forage crops, soil fertility, boys' and girls' clubs.

In addition to the program as above outlined, numerous conferences of considerable import to rural affairs were held during the week.

Altogether, "Farmers' Week" may be considered a happy development of the Round-up Institute, and no one who was present at the sessions of last week will for a moment doubt that Farmers' Week has come to stay, and will remain a permanent function of the College and Institute organizations combined.

Those who are alive to the present situation have been not a little concerned

The Seed Bean Problem. about the future of our bean industry, which is such an important factor of Michigan agriculture. For some years the fungous diseases which attack the bean crop, particularly anthracnose and blight, have annually assumed a more serious aspect. Some scientific research work has been done in an attempt to discover preventive measures, but up to the present time, nothing definite has been developed along this line. It has been ascertained, however, that the ravages of the disease can be materially lessened by the planting of the cleanest seed available.

During the latter part of February a meeting was held which was attended by representative farmers identified with leading farmers' organizations, bean growers, representative bean dealers and experts from the Agricultural College, for the purpose of discussing the problems involved and arriving at some conclusion as to how they might be most successfully solved. Last week another conference was held at the Agricultural College, at which a special representative of the Department of Agriculture was in attendance, and the matter was further discussed. It is possible that a state or federal representative may be placed in the field to organize bean growers for the purpose of conducting a disease-free seed propaganda and such other matters of importance to bean culture as may properly be taken up by such an organization with the ultimate aim in view of extending its activities to a better solution of the marketing problem after the crop has been grown.

Whether these plans mature or not, every bean grower should give individual attention to the matter of seed selection this year. There is plenty

of testimony to show that proper selection of seed beans has a very material effect upon the destructive presence of these fungous diseases, and consequently upon the yield. Northern grown beans have been demonstrated by many trials to be far more free from these diseases than most of our home-grown seed. Before planting, and indeed, before planting time, a sample of the home-grown seed should be submitted to Prof. Muncie, of the Department of Botany, East Lansing, Mich., for an examination to determine the presence of spores of these fungous diseases in the beans, and in the event that they are pronounced infected, no time should be lost in securing seed as free from these diseases as possible. The bean dealers have become awakened to the importance of this matter, and are planning on the distribution of northern grown seed at a minimum of cost to the southern Michigan grower. There is need of co-operation all along the line if Michigan's supremacy as a bean growing state is to be maintained, and every Michigan Farmer reader who is a grower of beans should take an immediate and direct interest in the proposition.

HAPPENINGS OF THE WEEK.

National.

Texas rangers crossed the border last Saturday night and recovered the body of Clemente Vergara, the American ranchman who was executed by the Mexican Federals three weeks ago. It was found in a roughly made grave in the Hidalgo cemetery, and showed signs of frightful torture and mutilation. Gov. Colquitt declares that he did not instruct the rangers to cross the border, as Secretary of State Bryan had forbidden such a course.

"General" Kelly's army of 1,500 unemployed men who started a march from San Francisco to Washington, was shipped back to San Francisco by special train. A fund of \$2,500 was raised by California citizens for this purpose.

A fire which spread with great rapidity and got beyond the control of the fire department completely destroyed the large Missouri Athletic block in St. Louis and caused the death of over 100 men, who were roomers there, early Monday morning, March 9. The cause of the fire is not known.

The breaking of a four-foot water main in Fifth avenue near Broadway and a series of gas explosions, which followed, resulted in the injury of nine persons, the destruction of a large section of pavement and the flooding of the new Broadway subway excavation and many cellars. A broken gas main fed a pyramid of flame 15 feet high, in the center of the street for three hours.

That the New York Industrial Workers of the World is maintaining a fake army of unemployed is recognized by most New Yorkers. When given an opportunity to clean sidewalks at 20 cents per hour they rejected it scornfully, stating that they should receive 30 cents an hour for such work. They are living on the charity of the city which, they say, is their's by right. It is claimed that many of this army are anarchists, socialists, and others who are emissaries of the seekers for social unrest.

The Hannon House, the only hotel in Au Gres, and the oldest inn north of Bay City, was destroyed by fire last week.

MICHIGAN EXPERIMENT ASSOCIATION AWARDS.

Wheat.

First, Early Winsor, R. H. Gillette; 2nd, Shepards Perfection, L. L. Lawrence, Decatur; 3rd, Red Wave, L. L. Lawrence, Decatur.

Oats—Class A, Worthy and Alexander.

First, Alexander, D. E. Turner, Mosherville; 2d, Worthy, H. C. Hoopinger; 3rd, Alexander, D. E. Turner, Mosherville.

Class B.

First, Long's White Tartar, D. E. Tartar, Mosherville; 2d, Swedish Select, M. T. Shoemsmith, Leslie; 3rd, Big Four, D. E. Turner, Mosherville.

Beans.

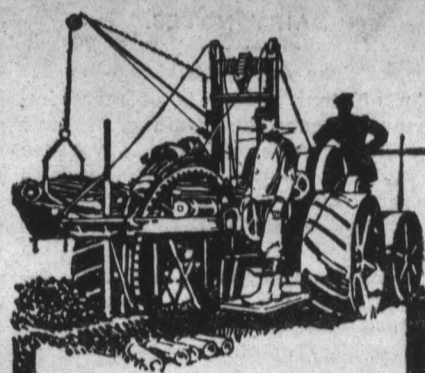
First, D. E. Turner, Mosherville; 2d, M. T. Shoemsmith, Leslie; 3rd, L. L. Lawrence, Decatur.

Soy Beans.

First, M. T. Shoemsmith, Leslie.

Vetch.

First, L. L. Lawrence, Decatur.
Editor's Note.—State Corn Show Awards will be found on page 292.



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and are absolutely guaranteed against choking if properly handled. They are the simplest machines on the market, having only about half as many parts as others. Only 41 inches high—hence easy to load. Built along scientific lines for biggest results and longest service. No gears to wear or break. Two levers completely control the machine. The perfect "New Idea" conveyor cannot break, warp or rot. The double cylinder and special distributor (shown below) make "Nisco" and "New Idea" the most efficient spreaders on the market today.

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The FARM BOY
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SCIENTIFIC and
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Intensive Farming in Little Belgium.

By PROF. ALFRED VIVIAN.

IN less than one hundred miles from England, the land of large estates, we find ourselves in a country of tiny holdings. The average size of the farms for the whole country of Belgium is only five acres, while in the part visited and sometimes known as Flanders, the farms are even smaller than the average just stated.

Belgium has an area of only 11,373 square miles and supports a population of over seven million people largely on the land, for by far the larger proportion of its inhabitants are engaged in agricultural or horticultural pursuits. A density of 600 persons to the square mile, most of whom are tilling the soil, means that no one farm can have a very large area.

Belgium boasts that her average yield per acre is one of the highest, if not the highest, in the world, and it is easy to believe that such is the case. Our observations in this country are confined to the northern portion, or Flanders, and this is the part of the country which is most intensely cultivated, and which brings up the average production for the whole country; for in the southern part there is much rough land which is considerably lower in fertility.

It is natural to ask the explanation of this high yield per acre and the answer is not hard to find. The Flemish farmer uses manure in enormous quantities. He not only applies all produced on his own farm but procures all possible from the city. Many of them save the human manure as well, and all is carried to the field. He also uses large quantities of commercial fertilizers and lime. The figures showing the amount of fertilizers used by this little country are almost past belief.

Many of the farmers buy the separate ingredients and mix them at home to suit the land and the particular crop to be grown. In other cases the farmers of a locality form an association and place an order for a large amount of a fertilizer to be mixed by the manufacturer in such proportions and from such ingredients as the society dictates. This formula is generally based upon the recommendation of the district representative of the state department of agriculture.

But manure, lime and fertilizers are not alone sufficient to account for the abundant crops raised. Quite as important a factor is the tremendous amount of hand labor put upon the crops produced on these small farms, an amount which is certainly a revelation to one used to seeing most of the soil management operations rather imperfectly carried out by the use of modern machinery.

But this is only one side of the story, for while the Flemish farmer is to be admired for the remarkable yield he is obtaining, we can not paint a very lovely picture of the life on the average farm of Flanders. Here everybody works hard from early morning till late at night. Husband and wife and all the children who are large enough to do anything at all are in the field all day long. The

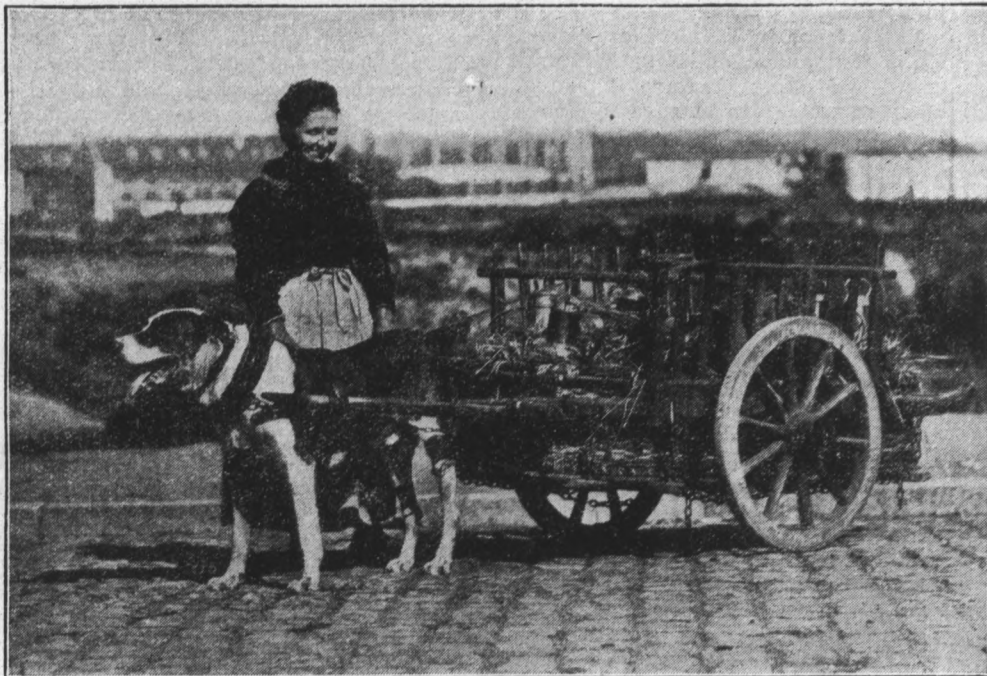
he is not needed to transport the milk and the vegetables to the city he must do odd jobs of hauling in the fields. On one farm we saw three cows, a dog and a dankey all doing their part in the farm labor. In this case the farmer complained that because he had cows to work the government called his dog a pet and, therefore, assessed him the \$2.40 which is the regular tax on pet dogs, and which is

One of the farmers said that everybody on the farm must work hard because rents are high, taxes higher and the general code of living high. Every inch of ground is made to produce something to sell, and practically all of the good things grown on the farm are sold. Even if they could afford to use them the housewife has no time to prepare them for she is in the fields all the day long.

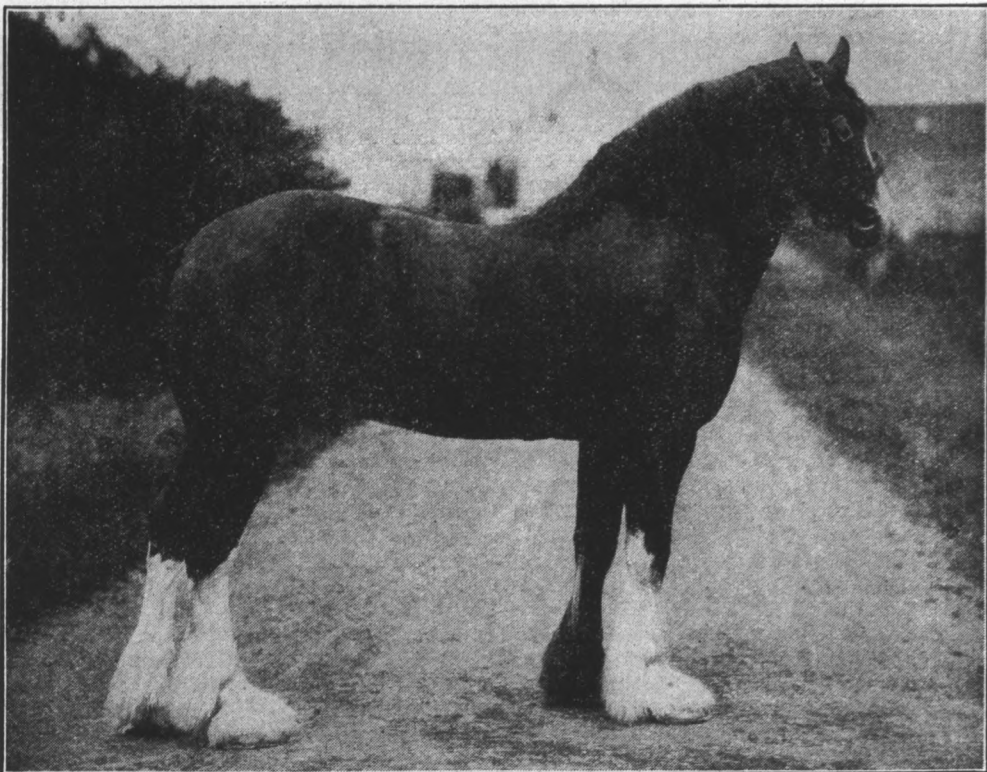
We entered the house on one of these farms and the moment the front door was opened our nostrils were assailed by such a cow stable odor that we almost lost courage to proceed. The first room was evidently used for a combination of kitchen, dining-room and several other things. The dirty dishes were standing around in untidy confusion, and everything looked as uninviting as could be. The next room was a sleeping room, and when the guide opened the door to the third room, what was our surprise to find facing us three mild-faced cows quietly chewing their cuds and taking a little well-earned rest. We realized then the source of the powerful odor that first greeted us. Just outside the back door was the pig-sty, an absolutely dark closet, containing two pigs, the only living things on the farm that do not work. But as the guide said, what can be expected in these homes other than dirt and neglect. The women have no time for housework. It is get up early in the morning and go to the fields; come in at noon and get what can be most hastily prepared; work all afternoon till dark; and after a make-shift supper go to bed, too tired out to do anything else. Not a pleasing picture is it? And not typical of the whole of Belgium, but unfortunately it is true of many localities. Yes, the yield per acre is obtained but the price paid for it is too high.

A redeeming feature is that over 50 per cent of the farms are owned by the men who farm them. Some of these farmers own an acre or two, which takes only a part of their time to cultivate, and they work for the larger land holders at odd times. For such labor they receive \$3.50 a week, the average wage of a day laborer. Only a few farmers board their help and when they do the wage is 20 cents a day and board. Skilled labor, such as that of the various builders' trades, is paid only 80 cents a day.

On the large farms the house and barns are arranged on the sides of an open court. The court is paved and the manure pile is in the center, so placed that the liquid runs into a cistern from which it is pumped up to be hauled to the field for use on various crops. While this arrangement

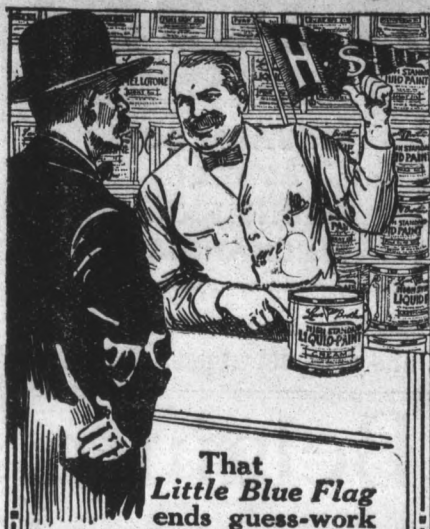


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women work side by side with the men at the hardest kind of manual labor. There can be ease for no one on these farms, so even the cow, in addition to giving her modicum of milk, must plow or harrow the field or haul the produce to market. The dog is trained to work and if fresh vegetables to be marketed.



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is preferable to the one described above, the manure pile is nearer the dining-room window than would be desired by the readers of this paper, and can scarcely be recommended to anyone having sensitive olfactory nerves.

Some of the very ordinary things of this country have a strange appearance to the visitor from America. A peculiar three-wheeled cart is much used in the flat country, especially in the fields. On this cart and on the four-wheelers as well, the team is hitched to the end of the tongue and not on each side as is the custom in other countries. In the city of Brussels the dogs are hitched under the carts and almost every kind of a delivery cart has its dog power attached.

In the vicinity of some of the large cities it was noticeable that the vegetable gardens were being worked almost entirely by women and children. Upon inquiry it was ascertained that it is quite customary for the carpenters, brick-layers, etc., who work in the city, to rent an acre or two of land near by which is run as a market garden by the wife and children with what little help the father can give upon his return at night. Such gardens are said to be an important factor in the production of vegetables in Belgium.

Large areas in Flanders are devoted to the production of horticultural crops, especially ornamental plants, many of which are shipped to America. In addition to market gardening, many acres of sugar beets are grown and a considerable quantity of flax. In fact, the linen industry is of vast importance to this country, and the Flemish people are noted weavers of linen.

The limits of this itinerary did not permit of a visit to the districts noted for the production of Belgian horses, but we had the opportunity of seeing a number of these magnificent fellows in Brussels, at the dealers' and at work on the brewery wagons of that city. No wonder that they are so popular in eastern Europe where a heavy horse is required. It is said that Belgium exports 20,000 horses a year.

One of the most unfortunate things about Belgium is that it is divided against itself. The population is made up of two elements which are at heart antagonistic. One part is closely allied to the French in language and customs, and the other (the Flemish element) uses an entirely different language and resembles the Dutch. That there is a constant friction between these two factions was made very apparent in even so short a visit as this one.

Some of the farmers complained bitterly of the laws protecting game. We were shown several instances of damage done by rabbits and one man remarked that in spite of the damage they did, it was safer to kill a man than a rabbit. In fact, the brother of one of the men visited, was killed as a poacher not so very long ago. For a short time every fall small birds may be killed and in the windows of Brussels were displayed thousands of these little things, one of which would not make a good mouthful. They are considered great delicacies, but it would almost require a microscope to find the meat on some of them.

Some excellent fruit was in evidence in a few of the places inspected. Upon inquiring what became of the fruit we were told that most of it was shipped to England, and some of it came back as marmalade. The more handsome fruit is grown in paper bags, which are fastened over the fruit when it is very young. A pear tree with all the pears enclosed in these water-tight bags presents a strange appearance to one unaccustomed to seeing them so ripened.

Most of Flanders is so low and flat that drainage becomes a serious problem, and while the water can be removed rather easily in the summer,

the winter drainage is much more difficult. The market gardener must have early crops ready for sale before the ground can be worked in the spring. To accomplish this he divides the ground into plots about six feet wide, digs a trench about one and one-half feet deep between the plots and thus has what is practically a series of raised beds. These he plants in the fall with spinach, parsley and other crops required for the early spring trade. These beds are now green with the young growth of these plants which will remain alive during the winter, ready to start vigorous growth in the spring, and will be ready for the market much earlier than if the planting were delayed until spring. After these crops are re-

moved the land is again leveled for the regular summer culture.

Belgium is taking up the matter of agricultural education in earnest. The teaching of agriculture is required in all rural schools. There are several agricultural and horticultural schools and a large amount of extension work is being done. It is fully appreciated that something must be done to make agriculture more attractive to the bright young men and to keep them on the farms. Like most other countries Belgium has been tardy in giving agriculture the recognition it deserves. She is earnestly trying now to remedy that defect. If she will but follow the lead of her able director of agriculture a new era will open for the Belgian farmer.

No. 923 Valerian Street--Part II.

By J. deQ. DONEHOO.

"Is is false, uncle," protested the girl, with flashing eyes. "My dear father wished nothing of the kind, unless it was with my own free will and consent. As for this gentleman, who has just so gallantly attempted to snatch me from your clutches, never can I heartily enough thank him for what he has tried to do; but if this were to be the last work I ever uttered, solemnly do I declare that I never saw him before, that I do not so much as know his name. Even you, fiend as you are, would certainly not, then, murder him in cold blood on my account?"

Radway, at last finding his tongue, here attempted to answer what Landis had said to him, and to protest that the girl had spoken simply the truth. But the elderly man, with an angry voice, interrupted him.

"A likely tale, indeed," he sneered. "Oh, I know, Miss Eloise, that you are clever enough to meet an emergency like this, and he, of course, has sense enough to follow your lead. But your lover he is, for all your denials; no other would have risked his life for you as he has done. He is in my power, and he dies—he dies, I tell you, unless you yield at once. He dies, do you hear? I am tired of this praeastinating—arguing—this constant surveillance. Hah! I have touched you at last. Have you the effrontery now, minx, to deny that he is your lover?"

The expression upon the girl's face, which had caused her uncle to ask the last question, fully revealed the solicitude she felt for Radway. This feeling predominated above all manifestations of fear for herself and repulsion at the fate that awaited her. Her voice was choked with sobs as she spoke.

"These, my kind deliverer, are no vain threats. I know him; for months past this legal guardian and unnatural relative of mine has kept me a close prisoner, threatening me with all kinds of indignities, unless I would consent to marry my cousin Edward here, his son, and a reprobate entirely worthy of him in every particular, save that of the possession of brains. His main reason for wishing this union is that he might be able to retain possession of my fortune, which would, now that I have recently passed the age of eighteen, be subject to my own control in case I had a husband. My uncle is fully capable of murdering you, and will certainly do so, as he threatens, if I do not accede to his terms. And I do yield this far, that I hereby offer, Henry Landis, to sign any papers you may offer me, making over to you every cent of property I possess, on condition that you permit this gentleman and myself to leave your house in safety. I will further swear never to trouble you again, or to make any claim upon you whatever."

"Oho, my clever Eloise, and do you really think that your dear old Uncle Henry is a bird to be caught with

such chaff?" sneered Landis. "Let you escape and marry your enterprising fortune-hunter at the office of the first justice of the peace, then return as his wife, with a criminal warrant for you affectionate guardian? Tut, tut, girl, a truce to this child's play. I am not a fool, and, by the eternal God, you'll be joined to your cousin tomorrow, or this fellow's carcass re- mains on these premises until the Day of Judgment. I'm simply not going to have him leave here, after what he's seen, unless you submit to my will. But the moment that ceremony is performed, he can go."

"O, my God, uncle, have mercy upon me, your own Brother Edward's daughter," implored the girl, throwing herself upon her knees before Henry Landis, and clasping her hands as if in prayer. "Take from me everything I have, drive me forth penniless from this house, but spare this man's life, and do not force me into a union that I hate and abhor. For God's sake, spare me."

"Oh, cut out that melodramatic rot, and get up, Eloise," commanded Landis, entirely unmoved; "it is idiotic. Be reasonable. Edward may not be an intellectual colossus, but he'll be kind to you after you are his wife. So will I. You will have just as good a husband, and just as happy a lot, as falls to the average wealthy married woman in New York. What more do you expect? Would you prefer to have this fellow throttled, and to mope out the rest of your life here a prisoner under close surveillance?"

"Have some mercy, as you hope for the same," wailed the girl, rising at last with a gesture of despair, and looking at Radway in a manner that went to his heart. "Will no other sacrifice avail? Then, Henry Landis, under compulsion I consent. At six tomorrow evening I will marry Edward, that the murder of my benefactor may not rest upon your soul, or in any degree on mine. When I am his wife, you are to release your prisoner. Beware how you try to deceive me. I have at least a little of your own determined spirit, and I shall know how to avenge myself if you play me false."

"I object to this, I absolutely refuse to be a party to this sacrifice," shouted Radway, furiously. "It is infamous, you cowardly assassin, you damnable—"

As Radway began thus to speak, Landis made a motion to the swarthy man who was called Tony. That individual had stealthily placed himself behind the young man. Instantly he plied his hands, as quickly put a gag into his mouth. The girl started as though to go to his rescue, but her uncle stopped her with a menacing gesture, although he spoke words that were for him unusually conciliatory, so overjoyed was he that he had at last gained his point.

"Ah, my dearest Eloise, did you not protest that he was not your lover?"

(Continued on page 304).

Some Tricks With a Violin.

By B. H. NANCE.

MOST critics condemn imitative or trick playing as the lowest form of art, but trick playing scarcely ever fails to rouse interest, at least, if not wonder and pleasure. Some of the greatest masters of the bow have employed it, but most violin tricks do not require more than ordinary skill to render them effective. The violin is so much like the human voice in tone that it readily lends itself to counterfeiting almost anything which may be imitated with the voice. The following tricks, most of which are my own, can be readily performed by any boy or girl who can play a few simple tunes. In all trick playing it is well to prepare the listener for what he is going to hear. You then have his imagination to aid you.

For instance, when I play Dixie, to imitate the sound of people cheering, I first make a little speech like this: "Did you ever hear Dixie played with the cheers? You know how a crowd always cheers when Dixie is played. Well, in this solo you are supposed to hear the band playing the air. Suddenly the cheers break out, drowning the music. So you hear first music then cheers, and then music again."

The Dixie trick was suggested by what was one summer a weekly occurrence in my home town. The air Dixie always closed the open air band concert and the crowd always cheered and would never wait until the piece was through to do it. As I heard the performance from the veranda of my home, I could hear first cheers and then music and vice versa. I heard it so much that at last I conceived the idea of imitating it. I got the sound in my mind until I could think it, that is, hear it in my mind. I can imitate upon the instrument anything which I can think, from a steamboat whistle to a hand-organ.

I perform the Dixie trick as follows: I play the air in the key of C, which is the one it is usually written in, and which does not go beyond the first position. To make the matter easy of comprehension without writing out the notes, I will employ the words of the song. I play the first line of the song: "Oh, I wish I was in the land of cotton;" then I stop playing the air and give four cheers. To make the cheers I place my hand in the second position, that is, grasping the fingerboard where it is joined to the violin; I make the first cheer by placing my little finger on C, which is about as high as it will conveniently go, and drawing it rather slowly down to B. This easily gives the effect of a somewhat hoarse cheer. For the next I place the fourth finger a little higher and draw it down as be-

fore; for the next a little higher still, and for the fourth and last I place the fourth finger just as high as I can get it and draw it down very swiftly to give the effect so often observed in cheering, of a high, excited voice that rises above the rest.

Now to return to our tune. It takes a very short time to play the cheers, but in order to give the proper effect we must leave out some of the tune for the band is supposed to have been playing on while the shouts drowned it. So I leave out the next line and begin very fast and spirited: "Look away, look away, look away, Dixie Land." It is a good plan to repeat the first part of the tune with the cheers about three times, before playing the chorus in the regular way. I have seen a group of listeners sit quite silently through the first rendering of the air, smile at the second, and break into laughter at the third as if it took some time for their minds to grasp the idea. If you like, you may add some cheers at the end of the chorus, but I do not.

Can you imitate a cock crow? If you can, I will tell you how to do my "roosters' chorus;" and if you can't, I believe I can show you anyway. You have heard late at night one solitary old bird set up a sonorous, muffled "cock-a-doodle-doo" which would be promptly taken up by forty-even others at varying distances. The birds with which I am familiar end the "cock-a-doodle" with a "doo-oo-oo" which dies down lingeringly. For the first crow begin with A-flat on the D string and use the notes as follows: A-flat, C, E-flat, C, E-flat, D, and C. All the notes except the A-flat are on the A-string. Render them in the time of a "cock-a-doodle-doo." For the mournful "doo-oo-oo" I draw the third finger from D down to C in a lingering sort of way. For the echoing answers to our lone bird I repeat the "doo-oo-oo" a fifth higher and lower, and then all over the instrument, making it louder and softer as fancy dictates.

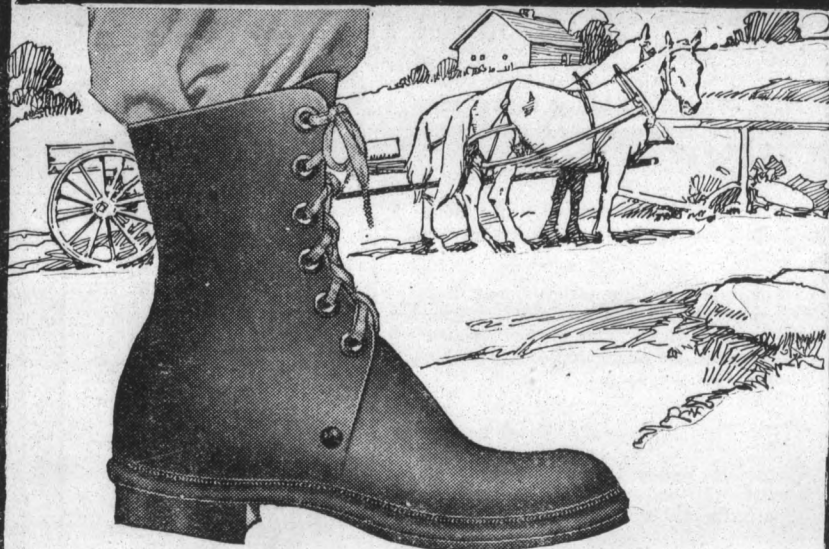
Another imitation I call the "campaign speaker." To do this well you must have a certain speaker in your mind; indeed, I have the words in my mind, and as long as I can find words I can go on with the speech. However, I pitch my speaker's voice at about C on the D string, let it gradually rise and finally, as he gets excited, break on D sharp. Then he pitches it at G, calming himself, as you notice a speaker do after a thrilling point, and slowly works up again. Observation of an orator until you can hear in your mind his tones rolling on and on, is the best preparation for an imitation of this kind.

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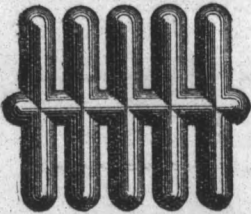
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an insect about the size of a wasp, called a mud dauber. If you are familiar with his buzzing song it may be perfectly imitated on the violin, beginning at A on the D string and going slowly up to D sharp and down again. The dauber sings his song as he plasters his house, beginning slowly and working up to a noisy crescendo.

A trick sometimes seen in vaudeville is that of one person bowing and another fingering the same violin. This is a great deal harder than it looks, and, for my own part, I never have been able to do either, familiar as I am with the instrument. Bowing and fingering are so connected in my mind that it takes one to make sense of the other. I can not think a tune unless I do both.

Possibly the oldest and most widely known violin trick is the playing of "Pop Goes the Weasel" and placing the instrument in various difficult positions while a bit of the tune is thrummed with the fingers. Its main difficulty lies in finishing the tune in the new position as evenly as before. If I remember correctly, the violin is first placed as usual, then reversed on the lap and played like a cello; then placed on the opposite shoulder, then on the back, then on the top of the head, and, finally, the bow is firmly gripped between the knees and the violin taken in both hands and rubbed against its hair. For the first part of the tune, the instrument is placed on the left shoulder as usual.

Another trick as old as it is beautiful is the imitation of an organ playing "Nearer, My God, to Thee." Chords on four strings can not be played softly on the violin on account of the curvature of the bridge, so the screw at the end of the bow is removed, letting the hair swing free from the stick. The violin is then placed inside of the bow, so to speak, for the hair goes over the strings and the stick below the body of the instrument, while the ends of both stick and hair are firmly grasped in the bow hand. Then the air is played and the effect is exactly like an organ.

Scotch and Irish fiddlers were once fond of imitating the bagpipe by placing a thin glass tumbler on the instrument while playing, or by tuning the G string to A and playing the tune on the D string, the G string being continuously sounded. However, so few people nowadays have ever heard a bagpipe that this is hardly worth while.

An old-time way of employing a would-be musical friend is to have him keep time across the strings with knitting needles while you play. He takes one in each hand and plucks them back and forth, giving the effect of two instruments. This is spirited and pretty.

A rather effective way to conclude a simple solo is to repeat the last line or so in natural harmonics, which are produced by placing the finger on the string lightly instead of pressing it to the fingerboard, and bowing a little more lightly than usual. The effect is flutelike and pretty.

One may quite often make an effective solo from a simple song by playing it through once as written and repeating an octave higher. The piano accompaniment will chofd just the same.

No. 923 VALERIAN STREET.

(Continued from page 302).

Why, then, are you so deeply concerned about him? Don't worry. Tony will take him to the strong room and keep him safe, but treat him with all consideration. I pledge you my word, that he shall go out of the front door unharmed the moment you are Edward's wife. You may even kiss him good-bye, if you think there will be any satisfaction in that."

Radway heard, as he was helplessly dragged along, the poor girl moaning and weeping in the distance. Almost

was he beside himself with humiliation and impotent rage, as he reflected that he who had posed as a deliverer was himself to be rescued from death only by the greatest sacrifice a woman can make—one that would forever separate him from Eloise, for whom he would gladly now, if that were possible, yield up his life itself.

Thrust by Tony into the place mentioned by Landis, his pinions and gag removed, Radway at once began to take account of his position. He was in a room in the third story, having but one door, which was securely locked. Two windows looked out from it over the city, but these were protected by heavy iron bars. The young man suddenly remembered, however, that his pockets had not been searched, and that he still had his revolver. This also meant that the skeleton keys were yet in his possession.

Elated by the possibilities growing out of these facts, the prisoner went to the door and tried the keys in its lock, soon finding one that readily opened it. He at once relocked it, however, without venturing out in the hall. Then he hid this precious means of deliverance, along with its fellows and the revolver, under the mattress of his bed.

It was well that he did so; for in a few minutes Tony returned, and announced that he would have to search the prisoner, a matter that had previously been overlooked. Radway sullenly submitted, nor did the swarthy man discover anything which he thought it necessary to take away.

After Tony had gone Radway threw himself upon his bed, but not to sleep, although it was now long after midnight. He had resolved that at three o'clock he would make a reconnaissance and a dash for liberty, if there was any possible chance.

With all his senses alert he lay, then, while the weary hours dragged by, and now, when it was within ten minutes of the hour he had determined on, he heard a noise in the hall, just outside his room. What was that? he asked himself. Surely it was the sound of the softest of footsteps right before his door. That it was, beyond question, and now the lightest possible rapping became audible.

"It is I, Eloise," a voice whispered. "Can you hear me? There is no person on the floor, except you and me. Oh, if I could only get hold of the key that Tony carries, so as to let you out. I have a rope concealed in my room, if I could but get to you."

Noiselessly then did Radway secure the skeleton key and the revolver. Quickly he opened the door and stood face to face with the girl. Almost did she fall into his arms, such was her frank joy at seeing him.

"Saved," she panted, under her breath. "It is a miracle. There is a window, a small one, without bars, in the bathroom next to this. I will hurry and get the rope. And you have a revolver, too."

In less than a minute she silently returned, carrying a light, strong rope such as is used for fire-escapes. Then she led the way into the bathroom of which she had spoken.

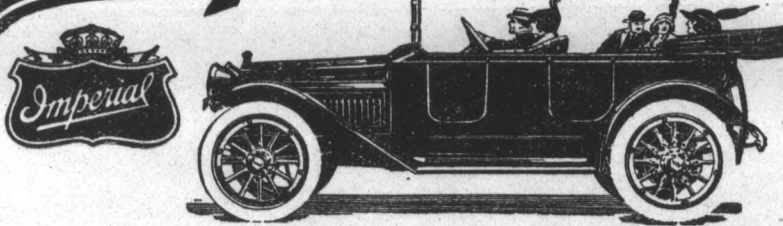
"I have long had this hidden," she explained; "but I never dared to use it. I do not believe I should ever have the courage to go down it alone, but now, with you here, possibly I may nerve myself up to it."

In a low voice Radway tried to reassure her, as he fastened the rope to the sill of the one unguarded little window, which he opened. He told her that she had already displayed courage vastly greater than was required for the proposed descent.

"I shall let you down first," he whispered. "That will not be so difficult for you, nor so frightful, as if you were to attempt to slide down the rope. Only have confidence in me, and all will be well."

Carefully Radway fastened the rope about the girl, then he helped her to get through the little window, at

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which she trembled a great deal, but proved very brave after all. When he felt that her body was fairly launched out into space, he braced himself firmly, and sought, by producing friction against the window-sill, to control the playing out of the line.

Eloise could not, however, by the exercise of all her self restraint, suppress a faint exclamation of terror as she felt herself swiftly descending. Then, in tears over the manner in which her cowardice had imperilled her companion, she sent up, as she landed in Trafalgar Way, the signal that all was well, and disengaged herself.

For Radway to descend was the work of but two or three seconds, yet was it already evident that the alarm had been given. Lights flashed out in the house, the front door opened, and Tony rushed down the steps just as the fugitives, arm in arm, reached Valerian street.

"Stop," he shouted, advancing threateningly and drawing a murderous looking knife. "Stop, or I kill you."

"Advance but one step further, you hired assassin, and you die," roared Radway, furiously, pointing the revolver full at the swarthy man, who, utterly surprised and cowed, turned and fled, to hold farther consultation with Henry Landis and his son upon the front steps of the house, where they had just appeared.

The escaping prisoners hurried on unmolested. It was but two blocks further—a blissful journey—to a passing car and freedom from all danger.

And Radway didn't under the circumstances care who overheard him, when, at that hour in the morning, and amidst the burr of the trolley and the clatter of the wheels, he looked into the radiant face of his companion, more lovely than ever now, in the fullness of her joy over her unlooked for deliverance, and calmly proposed to her their immediate marriage.

A FEW SMILES.

A Walking Telephone.

"That Dr. Schmidt is always talking about his connections with all the best people."

"Yes; he's a regular telephone, isn't he?"

Valor.

A man saw a little boy scampering down the street. "What are you running so fast for?" he inquired of the boy. "I'm trying to keep two kids from fighting," said the lad almost breathlessly as he turned and glanced anxiously up the street. "Who are the boys?" asked the man. "Tommy Smith and me," replied the boy.

Kin.

"Something has got to be done about this pig stealing," declared the fat man in the Cheatem store. "Last week one of my neighbors lost one, and last night another disappeared next door. It's getting so now that none of us are safe."

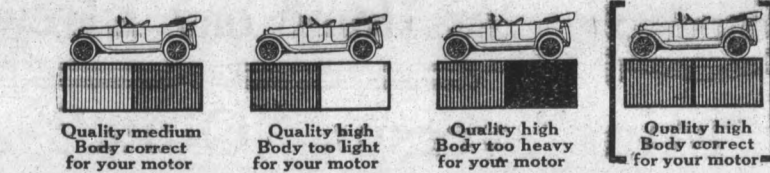
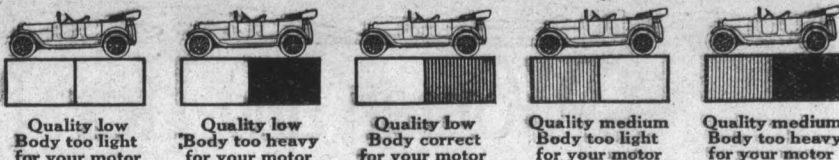
Chivalry.

Visitor—You say that old reprobate over there used to be one of the politest men in town? I suppose he'd give up his seat in a street car to a woman.

Native—Polite? Say, stranger, that man gave up his seat in heaven for a woman.

Pork.

The noted Rabbi Hirsch had risen to give his seat to a lady, but before she could take it a burly young fellow slid into it. The Rabbi looked very meaningfully at him, and after an uncomfortable silence, the young fellow finally blurted out: "Well, what are you glaring at me for? Want to eat me? Er?" "No," calmly replied the Rabbi, "I'm forbidden to eat you—I am a Jew."



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Correct Lubrication

Explanation: In the schedule, the letter opposite the car indicates the grade of Gargoyle Mobiloil that should be used. For example: "A" means "Gargoyle Mobiloil A." "Arc." means "Gargoyle Mobiloil Arctic." For all electric vehicles use "Gargoyle Mobiloil A." The recommendations cover both pleasure and commercial vehicles unless otherwise noted.

MODEL OF CAR	1910	1911	1912	1913	1914
Abbott Detroit	A	Arc	A	Arc	Arc
Alco	Arc	Arc	Arc	Arc	Arc
American	A	Arc	A	Arc	Arc
Apperson	Arc	Arc	Arc	Arc	Arc
Autocar (2 cyl.)	A	Arc	A	Arc	Arc
Avery	A	A	A	A	A
Buick (2 cyl.)	A	A	A	A	A
Buick (4 cyl.)	Arc	Arc	Arc	Arc	Arc
Cardiac	A	A	A	A	A
Case	A	A	A	A	A
Chalmers	Arc	Arc	Arc	Arc	Arc
Chase	B	B	B	B	B
Cole	A	Arc	Arc	Arc	Arc
E. M. Ford	Arc	Arc	Arc	Arc	Arc
Flanders	E	E	E	E	E
Ford	A	A	A	A	A
Franklin	B	A	A	A	A
G. M. C.	A	A	A	A	A
Haver 6-44	A	A	A	A	A
Haver 6-60	A	A	A	A	A
Haynes	A	A	A	A	A
Hudson	Arc	Arc	Arc	Arc	Arc
Hupmobile	Arc	Arc	Arc	Arc	Arc
I. H. C. (4 cyl.)	A	A	A	A	A
International	A	A	A	A	A
Intervale	A	A	A	A	A
Jackson (2 cyl.)	A	A	A	A	A
Jeffery	A	A	A	A	A
Kelly	Arc	Arc	Arc	Arc	Arc
King	A	A	A	A	A
Kline-Moff	Arc	Arc	Arc	Arc	Arc
Knock	B	A	A	A	A
Kirt	A	A	A	A	A
Lozier	Arc	Arc	Arc	Arc	Arc
Mack	A	A	A	A	A
Mack Jr.	A	A	A	A	A
Marion	A	A	A	A	A
Marmont	A	A	A	A	A
Maxwell (2 cyl.)	E	E	E	E	E
Maxwell (4 cyl.)	E	E	E	E	E
Metter	A	A	A	A	A
Mitcheil	Arc	Arc	Arc	Arc	Arc
Moline	A	A	A	A	A
Moline-Knight	A	A	A	A	A
Moon (2 cyl.)	A	A	A	A	A
National	A	A	A	A	A
Oakland	A	A	A	A	A
Oakville	A	A	A	A	A
Overland	A	A	A	A	A
Packard	Arc	Arc	Arc	Arc	Arc
Packard-Detroit	E	E	E	E	E
Pathe	Arc	Arc	Arc	Arc	Arc
Patheford	Arc	Arc	Arc	Arc	Arc
Pearson	Arc	Arc	Arc	Arc	Arc
Pierce-Arrow	Arc	Arc	Arc	Arc	Arc
Pope	Arc	Arc	Arc	Arc	Arc
Pope Hartford	A	A	A	A	A
Premier	A	A	A	A	A
Rambler	A	A	A	A	A
Regal	A	A	A	A	A
Reo	A	A	A	A	A
Selden	A	A	A	A	A
Speedwell	Arc	Arc	Arc	Arc	Arc
"Mead"	A	A	A	A	A
Stevens-Duryea	Arc	Arc	Arc	Arc	Arc
Studebaker	E	E	E	E	E
Stutz	A	A	A	A	A
Vale 9-45	A	A	A	A	A
Vale 9-50	A	A	A	A	A
Walter	A	A	A	A	A
White (2 cyl.)	Arc	Arc	Arc	Arc	Arc
Winton	Arc	Arc	Arc	Arc	Arc

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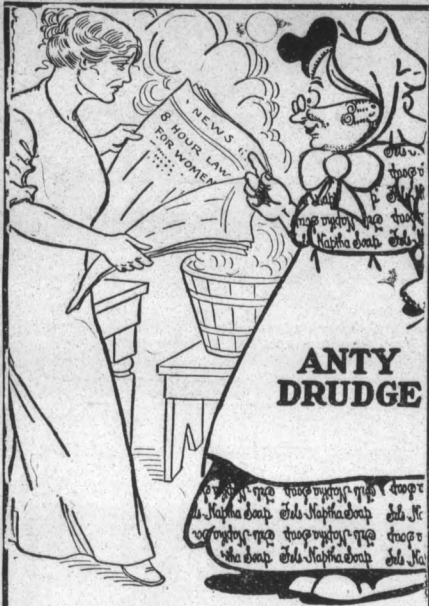
Sling or fork style—three types. Construction can't be bettered. Without changing pulleys or re-ropeing, these carriers can be adjusted to hang parallel or at right angles to barn so you can drive in or pull up at end to unload.

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Mrs. Grumble—"I see by this paper that most of the states are passing laws to prevent women from working over eight hours a day. That applies to everybody except us, I guess. We country women can work all day and half the night and nobody cares."

Anty Drudge—"The way you work is enough to make anybody gloomy. But you can make your own eight-hour law if you want to. Just use Fels-Naptha Soap. It will get your work done for you in even less than eight hours ever day, *even washday*."

Fels-Naptha Soap stops overwork and overtime. It's better than any laws, *because it gets the work done, instead of just preventing you from working.*

On wash day, soap your clothes with Fels-Naptha and put them to soak for 30 minutes in cool or lukewarm water, then rub them a bit with your hands or on the washboard, rinse and hang out. Fels-Naptha does everything as quickly and easily.

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Fels & Co., Philadelphia.



"Mine" versus "Ours."

COMING home on the car during the recent cold snap I overheard two men talking:

"I always burn coke in MY furnace," said one. "My wife wanted hard coal for this weather, but I can get just as good results from coke and I stuck to it."

"Well, I use coal in MY furnace," said the second man, "and MY house is always at summer temperature. But then, MY house is well built, and it would be warm anyway."

I mentally stuck my fingers in my ears at this point, for fear, like Samantha Allen, I might "rise up in meetin'" and say something. As it happened I knew both men. I knew the wife of the first speaker run the furnace herself, that she shook it down mornings, filled it up three or four times a day, carried out the ashes, and that, if her worthy mate, who declaimed grandly about HIS furnace, ever touched the fire at all, it was only after much grumbling on his part and a half hour's nagging on the part of his wife. I knew that the second speaker, who boasted of his well built house, "his," not "ours," had not put a cent into the place after the first payment of \$500; and that his wife was taking in roomers to keep up the regular monthly payments and pay the taxes. Yet these two worthies talked loudly and grandly of "MY" property, never even honoring the women who did more than their share, by saying "we" and "ours."

As I got off the car I glanced at the window of a dry goods store. Across the glass blazed the words, "John Smith, Drygoods and Notions." Again I mentally spit sparks and breathed forth flame. Mrs. John Smith had put as much capital into that store as Mr. John. She was a more experienced salesman, a better manager and a harder worker than her husband. And yet John couldn't add the two little letters "Co." after his name to show that his better half had a part in the business.

As I came into "our" own house I just caught my own better half's remark to a neighbor:

"I think I'll have MY house painted gray this spring."

Then, indeed, the volcano which had been smoldering for blocks back broke forth.

"Your house," I said, with what was calculated for withering scorn. "Well, while you're having your house painted gray, I think I'll have MINE painted bright red. That will be my protest against the habit of men calling everything MINE."

The scorn was wasted, however, for friend husband simply grinned that maddening, tantalizing grin which men know how to assume when they are wrong and won't admit it. The neighbor left hastily, remarking that he had to go home and feed HIS chickens, and husband took refuge in man's haven from domestic storm, the paper.

Why do men insist on it? I've often wondered just what satisfaction they get out of always saying "I do," and "MY house," "MY auto," "MY farm," instead of "we do," and "ONR house, auto and farm." So far as my observation of men goes there is only one time when men are willing to give their wives the credit of ownership. That is when the children are sick or need discipline. Then it is

always, "you had better tend to YOUR child," or, "see, now, what YOUR son has been into."

I suppose the fact that the man does the actual work which brings in the money prompts him to regard what that money purchases as his own personal property. He does not take into consideration that a lazy, shiftless wife could cost him more than he earns, and that it is his wife's hard work and thrift which accumulates the property, as much as

his own earnings. Marriage is an equal partnership so long as there is work to be done, but when it comes to reaping the rewards of the labor, one of the partners becomes silent, and you know which one she is.

"You never hear a woman say 'Mine.' It is always 'Ours,' even when her money has paid for the property. Why is it men can never be thoughtful enough to make that little concession to the women who are backing them? It is a small thing to do, but it would mean a big thing to the hardworking wives who toil early and late, only to be regarded in the light of a dependent. DEBORAH.

A St. Patrick's Day Party.

Household Editor:—Can you give me any suggestions for a St. Patrick's party?—E. G.

GREEN, especially the shamrock, should be the keynote of the decorations. If you live where it is impossible to get fresh shamrock, paper may substitute, and bunches of paper shamrocks may be pinned to draperies, fill vases, and be massed in the center of the table.

A great deal of merriment may be furnished by means of the toy snakes and toads which chase unthinking persons and are drawn back by a cord. If your crowd dances, confine them strictly to the old-fashioned square dances, eliminating entirely all the new round dances, even the waltz and two-step. Let the music be furnished by one violin and a base viol. If they do not dance, they may try their wits on piecing together maps of Ireland, naming its chief cities, its important industries and some of its heroes. During the evening have someone sing "The Wearing of the Green," and "The Harp that Once Through Tara's Hall."

For refreshments serve tea and potato chips, pistachio ice cream and shamrock-shaped cakes with green icing or with white icing decorated with green shamrock leaves.

If it is not convenient to buy the potato chips they may be made at home. Pare firm, good potatoes and cut into even slices. Fry in deep fat until a good yellow color, drain and sprinkle with salt. Reheat in the oven when ready to serve. The tea served with these should be black, and with it offer either cream and sugar or lemon, sugar and a few cloves.

For the pistachio ice cream, use your favorite vanilla ice cream recipe and use equal amounts of almond and vanilla as flavoring. Color with green vegetable color, which you should be able to buy at any good drug store or grocery. It should be a delicate green, a little lighter than the shamrock.

If you cannot afford to buy moulds for your cakes, you can buy a clover-leaf-shaped cutter. Make a good sponge cake and bake in sheets so that when done the cake will be about two inches thick. Then cut out individual cakes and frost all over.

To frost, make a fondant icing. For the fondant, put two cups of sugar and a half cup of water in a saucepan and stir until it begins to boil. When the sugar begins to accumulate on the side of the pan, wash down with a brush dipped in cold water. Cover, and let boil until a soft ball can be formed when dropped in cold water. Then pour out on a large platter low, which has been brushed with cold

water and let stand until the top is easily dented. Work with a spatula until it can be formed into a ball in the hands, and then knead like bread. For the frosting, put the fondant so prepared into a double boiler, add a little simple syrup, and your green vegetable coloring after the fondant has melted. When the mixture is thin, dip into it the cakes to be iced, seeing that every particle of the cake is coated.

If you prefer white cakes with green decorations use your own favorite icing, or leave the fondant uncolored until all the cakes are dipped. Then add a few drops of coloring and trace the leaves with a forcing bag and tube. If you have no bag, press bits of angelica into the icing before it hardens.

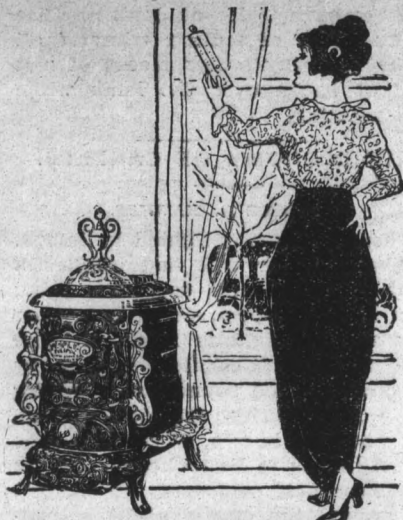
KINKS IN KITCHEN CHURNING.

Butter making on the farm is commonly done in the winter time at irregular intervals. The cream is usually collected in small lots from day to day and held until a sufficient quantity is on hand to churn. This method is quite frequently attended with many difficult churning that vex the inexperienced butter maker.

Under such circumstances, one of the first kinks met with in churning is the condition of the cream. It may be too thick, which makes it very sticky; or too thin, in which condition the fat globules are so far apart that they gather with considerable difficulty. If the cream is separated so it will contain from 25 to 30 per cent butter-fat, it should be in good condition to churn readily.

Cream does not sour so readily in the winter time owing to the low temperature, so it is often too sweet when put into the churn. Sweet cream is extremely viscous, or sticky, so does not release the fat readily during the process of churning. The remedy in this case is to set the cream in a warm place where it may be kept at a uniform temperature of 70 degrees F., or room temperature, until it becomes rather sour to the taste before it is put into the churn.

Another common kink is low churning temperature. In the summer time when the churn, the cream, and the surroundings are warm, the cream will churn with little difficulty at about 54 degrees, but in the winter when these conditions are all reversed it may require a temperature of 62 degrees or more to get results. The particles of butter-fat have to be in a plastic condition in order to collect in the churn. If the temperature is too low, then the fat globules may strike one another several times before



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This picture, recently taken, shows her condition and appearance at this time. Write Mrs. Taylor. In treatment of this case plaster paris was not used. The



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sticking to each other, thus prolonging the churning. A dairy thermometer is an actual necessity in every home where cream is handled. Guessing at temperature is certainly out of date where butter is worth 30 cents per pound.

Another trouble is found in the butter-fat itself. Butter-fat is composed of several fats varying in degree of hardness, also in relative amounts. In the summer time when the cow has plenty of green succulent grass the soft fats are present in comparatively large amounts. In the winter time when the cow is on dry hay and grain feed just the reverse is true. To overcome this in churning, feed the cow on corn silage or root crops to supply the necessary succulence in her feed so as to keep the proper balance between the hard and the soft fats in her milk.

Occasionally difficult churnings may be traced to some cow that is well along in her lactation period and about ready to be dried off. Advance in lactation period frequently results in reducing the amount of soft fats and increasing the hard fats. It may also be attended by a material reduction in the size of the fat globules. On account of the small size and firmness they do not readily adhere to one another during agitation. A good remedy is to raise the churning temperature of the cream. This softens the fat globules besides rendering the cream less viscous so the fat globules are more readily released.

The last thing is the way the churn is filled. Under no conditions should the churn be filled more than half full, and with small churns one-third full is sufficient. The butter-fat globules are brought together during the agitation and unless there is room left in the churn the concussion or force with which the globules strike one another will not be sufficient to cause the particles to cling together. —G. L. Martin.

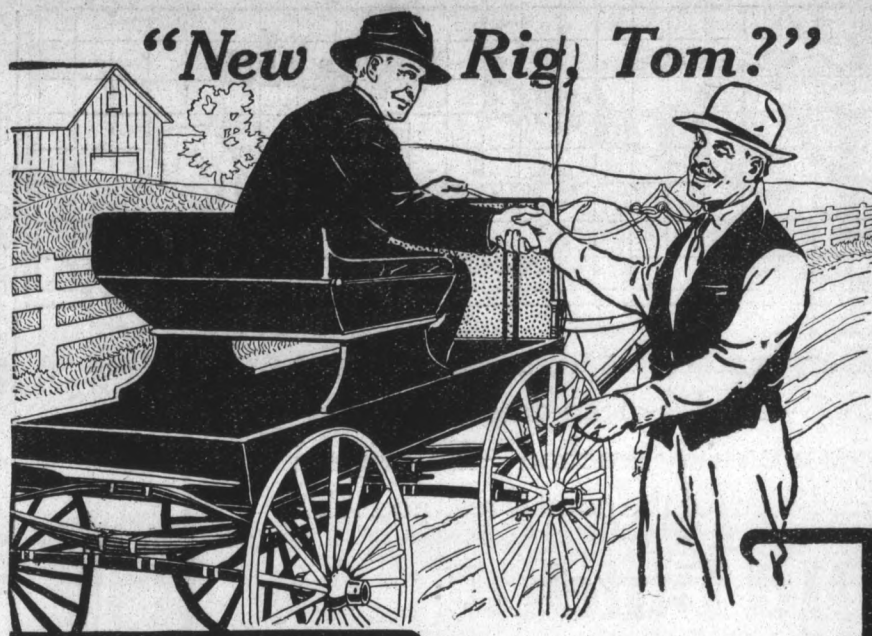
FARMWOMEN'S CLUBS IN BELGIUM.

The following information relating to Farmwomen's Clubs in Belgium is from the Bulletin of Economic and Social Intelligence, published by the International Institute of Agriculture.

The chief cause which stimulated the formation of such institutions, was the necessity of impeding the rural exodus which is constantly assuming more alarming proportions and which extends also to women.

It was justly thought that one of the most effective means of combating this movement was by turning directly to the women; causing them to appreciate the benefits of rural life and warning them against the dangers and the so-called attractions of cities, at the same time giving them professional instruction by means of which they would be in a position to do better work in some special branch of agriculture, poultry-keeping, dairy work, gardening, etc. The travelling schools of housewifery have been in existence for several years, and were explained in a recent issue of The Farmer. It became necessary to unite the farmwomen in permanent associations; and so the first Cercle des fermieres was formed in 1906. They multiplied so rapidly throughout Belgium that by the end of 1912 there were 183, with 21,460 members.

The organization of such clubs is very simple. During the session of an agricultural school for girls, and with the help of the pupils themselves, members are recruited from amongst the housewives of the neighborhood, and thus the nucleus of the club is formed. The club is administered by a president, two vice-presidents, a committee of three and a secretary, who is ex officio a member of the committee. The members' contribution is 50 centimes. With the capital formed by these contributions the society's needs are provided for.



A quart can of Acme carriage paint and a brush is all you need to have that old rig look like new instead of shabby. A couple of coats given to that farm or road wagon will add to its appearance and add to its life. Use it on your farm implements and lawn swings. It keeps the weather out.

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Garden Hoe
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Price \$0.65



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No. KSD4
Price \$1.00

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No. KSB14
Price \$0.75

—like to work in my garden—'cause I love to see things grow, an' I'm partial to the flavor of dewy-fresh vegetables. I've always used Keen Kutter garden tools, 'cause there's somethin' about 'em 'at saves a feller's back. They've the right feel in your hands, too. I can't explain it, but those Simmons people put somethin' in their garden tools that helps me get better crops out of my truck-patch. Guess it's 'cause I like to use 'em.

KEEN KUTTER Garden Tools

have the good name that comes from forty-five years of tryin'—tryin' to make better tools all the time—yes, an' succeedin', too. The Simmons people sell everything they make with a sure-enough guarantee. They tell all Keen Kutter dealers that they can hand back the money to any man so minded to want it. Now, that's square, I'm thinkin', and the right way to do business. It's the same with all Keen Kutter tools. I've always had a cabinet of 'em for the wood-workin' jobs on the place and they've always stood up and worked. That's my kind of tools—and yours, too, I take it.

Tom Profit.



AVERAGE 17c. A POUND FOR YOUR HOGS

Butcher your hogs, cure your meat with Wright's Ham Pickle and smoke it with Wright's Condensed Smoke. Sell meat by parcel post to city people.

Let Uncle Sam Be Your Errand Boy.

Wright's Ham Pickle, a scientific combination of meat curing materials all recommended by Dept. of Agriculture. A \$1.00 box cures a barrel of meat.

Wright's Condensed Smoke, a liquid made from hickory wood, for smoking all meats. A 75c bottle smokes a barrel of meat. Send names of five neighbors who cure meat for Free Sample and book.

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Cleans Painted Walls Quickly Easily

Every particle of dirt disappears at once—hard-to-clean cracks and crevices are easily reached—the original brightness of the paint is restored with

Old Dutch Cleanser

Don't Be Without It

10c Large Can



A Brown Bread Recipe

1 cup Aristos flour 1 teaspoon soda
2 cups graham flour 1 cup molasses
2 cups Indian meal 3½ cups milk
A little salt

Beat well and steam for four hours. This is for sour milk; when sweet milk is used use baking powder in place of soda.

There's *more* and *better* bread in every sack of Aristos Flour. For cake, biscuits and pastry—all home-baking—Aristos is the perfect flour.

See for yourself. Order a sack from your grocer today. Know all about this valuable flour.

Send a postal for the Aristos cook book, mailed FREE. Many practical and unusually excellent recipes. Address The Southwestern Milling Co., Kansas City, Mo.



**ARISTOS
FLOUR**

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HALLMARK SHIRTS

are guaranteed to keep indefinitely the very thing you like best about them—their distinctive coloring. They never fade, in tub or sun or perspiration.

Patterns that embody newest styles and rare good shirt taste.

Sold everywhere—at \$1, \$1.50 and upward

SLIDEWELL COLLARS

will give you new sensations in neck comfort. At your dealer's,

15c—2 for 25c

HALL, HARTWELL & CO.
Troy, New York

THE CHILDREN'S HOUR.

BY MRS. F. NISEWANGER.

In full, happy homes, there are few hours of the twenty-four that are not the children's in some material sense, but some little part of each day should be set aside as theirs exclusively, in a somewhat different way.

The hour before bed time seems to be a little the most appropriate time for this, when most of the day's duties are ended and mother and the children can forget all the little trials and vexations that may have protruded during the busy, nerve-straining daylight hours, and draw closer together in a cheerful, helpful talk, or in the telling or reading of a favorite or suitable story. Whatever the day may have been the children, big and little, should go to their rest with nothing but happy impressions and loving memories.

A group around mother's chair or couch at the fireside, or a happy bedful or two with mother sitting near, for the winter evenings; and for the summer, a pretty spot on a twilight lawn, a cozy corner on a porch, a hammockful in the moonlight, or cushions and light in a cool room example a proper environment for confidence, love, and intelligent enjoyment.

A course of entertaining reading and story telling is delightful for this "hour," beginning with the myths and fairy tales so dear to little people and usually carrying some valuable lesson; extending into the larger story-world and the realm of travel where a series of tours with an entertaining author are most enjoyable and instructive. From here, on into the wonderland of science where there are so many wonders of nature, so many stories of the universe written up in a style that appeals to young people while teaching them much that they are longing to know, much that many of our schools fail largely, or entirely, to give.

These hours thus spent together will be valued highly as they come, and in the years that are coming will be held priceless. They are fleeting hours that merge all too quickly into memory, for childhood's years pass swiftly. It pays big to make each day yield something that no future can take away.

HOME QUERIES.

How can I rid house plants of thrips or lice?—Inquirer.

Make a strong solution of tobacco water and spray the fern thoroughly every two or three days. It will not do simply to sprinkle it with the tobacco water, you will need a fine spray which will reach every part of the plant.

Household Editor:—When is the best time to serve fruit, before the meal or at the close?—Mrs. K. L.

Before the meal is considered better. If at breakfast, it is better to serve sweet fruits, as bananas, dates, etc., or home-grown fruits that have little acid.

Household Editor:—A recent speaker on household topics advised against using a feather duster, but did not say why. Why are they not just as good as a cloth?—Beginner.

Feather dusters and dry cloths both are apt simply to stir up the dust and leave it in the air to settle again when the housekeeper is through with the dusting. The best thing to use is a cloth moistened with furniture polish or a chamois skin wrung dry as possible out of warm water. Either will take up the dust and remove it from the room. Kitchen and pantry should always be dusted with a damp duster to prevent dust settling in the food.

Household Editor:—How should a leg of lamb be prepared for roasting?—Cook.

The outer skin should be removed and the meat dredged with flour and sprinkled with salt and pepper. You can remove the bone if you wish and

stuff the cavity. If you don't like the strong flavor of mutton trim off all the fat and lay a few pieces of salt pork or bacon over the lamb while it is roasting.

THE ECONOMY OF CANDLES.

BY EDITH G. HAWKES.

Where a house is lighted by lamps, the housekeeper will find candles a great convenience, to use when going from room to room, or to use when only a small light is required. The ordinary tallow candles, bought by the dozen or the pound, are good for this purpose. They are most convenient when cut in two, as the new ones are so tall as to be topheavy. To fix the lower half so it may be lighted, cut around the candle about half-an-inch below the new top—gently, so as not to cut through the wick, and the pieces of candle will cut off readily, leaving a new wick ready to light. These pieces, together with the old candle ends, when wrapped in a piece of paper, or scattered over the kindlings, are good to start the morning fire.

To remove the old candle and drips from the candle-stick, pour hot water over the sides of the candle-stick, turning it around so all sides will be heated. The wax can then be easily removed with the point of a knife. Before inserting a new candle, dip the lower end in hot water to soften it, and insert it while the candle-stick is still warm. It will then fit and stay firmly in place.

Be sure to get candle-sticks that are convenient to hold and have good saucers to catch the drips. Often the common tin ones are the most convenient. With two or three of these and a small supply of candles always on hand, the housekeeper can save both time and oil.

FASHIONS BY MAY MANTON.

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



No. 8193—Boy's suit, 2 to 6 years.

No. 8186—Child's dress, 6 months, or 1 year and 2 years.

No. 8198—Girl's long-waisted dress, 4 to 8 years.

No. 8179—Girl's coat, 10 to 14 years.

No. 8199—Girl's coat, 10 to 14 years.

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

The Protestant Episcopal Church is planning to provide pensions for clergymen of that denomination.

Liberal increases in wages have been made to the employees of the electric lines of Oregon by James J. Hill, the owner.

35 BUSHEL PER ACRE
was the yield of WHEAT

160 ACRES
FARMS IN
WESTERN
CANADA
FREE

On many farms in Western Canada in 1913, some yields being reported as high as 50 bushels per acre. As high as 100 bushels were recorded in some districts for oats, 50 bushels for barley and from 10 to 20 bushels for flax.

7 Keys arrived in the country 5 years ago from Denmark, with very little means. He homesteaded, worked hard, is now the owner of 320 acres of land. In 1913 had a crop of 200 acres, which will realize him about \$4,000. His wheat weighed 68 lbs. to the bushel and averaged over 35 bushels to the acre.

Thousands of similar instances might be pointed out the homesteaders in Manitoba, Saskatchewan and Alberta.

The crop of 1913 was an abundant one everywhere in Western Canada.

Ask for descriptive literature and reduced railway rates. Apply to
Superintendent of Immigration,
Ottawa, Canada,
Canadian Government Agent.

M. V. MacInnes,
176 Jefferson Avenue,
Detroit, Mich.

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ROSENTHAL Cyclone Feed Cutter & Silo Filler

Loses you no time in Rush Season. Three sizes—6 to 18 H. P. Self-feed, with automatic speed control; direct drive to main cutter-head shaft, 2 3/8 in. in diameter, with powerful fan on same shaft. Will not break. Will not clog. Emery wheel attached.

Build by manufacturers of **ROSENTHAL CORN HUSKERS AND SHREDDERS.** Sold on Trial and Backed by Guaranty.

Write for catalog. State power used.

Rosenthal Corn Husker Co., Box 2, Milwaukee, Wis.

The "Berlin Quart"

The White Basket

That secures highest prices for your fruit. Write for 1914 catalog showing our complete line and secure your baskets and crates at WINTER DISCOUNTS.

The Berlin Fruit Box Co.
Berlin Heights, Ohio.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

For Sale, in whole or part, 320 acre Southern Michigan farm. Good soil, buildings and fences. Must sell soon. O. S. SCHAEFER, 214 Dewey Ave., Swissvale, Pa.

FOR SALE—Michigan farms, all descriptions. Some on easy terms. Large list free. **ISAAC KOUW & CO.,** Holland, Michigan.

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

MICHIGAN FARMING LANDS

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

IDEAL DAIRY FARM—230 acres fine level dark loam with clay subsoil, flowing well, spring stream. Best dairy proposition in Gladwin Co. Two telephone lines, R. F. D. 4 miles to Gladwin. Write at once for full description. I have other small farms. U. G. REYNOLDS, owner, Gladwin, Mich.

166 ACRE Tile-drained farm on paved road leading into Detroit. All under plow. Clay loam. House, barn, etc. Near Detroit Toledo Electric Line. Write to suit. James A. Hurst, 1029 Hammond Bldg., Detroit, Mich.

NEW YORK FARMS Are the best anywhere, and lowest priced. We show and sell them every day, winter and summer. Ask for list.

McBURNIE & CO., Fisher Bldg., Chicago, Ill.

FOR SALE—A fine 240 acre limestone farm in North Michigan. Excellent improvements. Will sell for price of buildings. Also few Tennessee farms. Write for descriptive circulars.

J. H. ASHLEY, Manchester, Tennessee.

Death Forces This Homestead on market for immediate sale. 82 Acres; 6 acres wood, balance cultivated. 9-room house, fine cellar, basement barn 36x43, oil, 14x25; hen and dog house, concrete floors. Fruit, 34 mile to school and church. Includes 1 cow, 15 sheep, 50 hens, 2 wagons, mowers, rake, plows, harrow, hay fork, ropes, all small tools, all for \$2700. Part cash. **Hall's Farm Agency,** Owego, Tloga Co., N. Y.

FARMS FOR SALE IN NEW YORK STATE For information concerning the great agricultural advantages in New York State, and description of 1200 cheap dairy, fruit, and general farms. Address, **CALVIN J. HUSON** Commissioner of Agriculture, Albany, N. Y.

FOR SALE FARMS 100 acres all under cultivation, buildings and fences, cost over \$3000 will take \$5000, \$2000 down, balance on time or city property, sandy and clay loam, close to school, daily mail, telephone, 2 1/2 miles to R. R. station. 160 acres, all under cultivation, buildings cost over \$5000, will take \$12,000, \$4000 down balance on time or city property, sandy and clay loam, 2 1/2 miles to R. R. station, side track on farm, creek running through farm, over 10,000 young peach trees, 900 young apple trees, strawberries, raspberries, blackberries, daily mail, telephone, 5 ton scales in barn. Owner, **A. E. CRAMTON,** Vassar, Michigan.

300 Acres \$2900
Live Stock and Tools Included

Ten cows, 6 other cattle, mare, colt, poultry, all machinery, wagons, harness, household furniture and lot of gathered crops go with this splendid well located farm if taken now; cuts 50 tons hay, pastures 40 head, 1000 cords hardwood, 100,000 ft. timber, 200 apple trees, 400 sugar maples; 7-room house, running spring water, big barn, many other buildings; owner retiring; only \$2900, on easy terms; full details, "Strout's Winter Farm Bargains." Write today for your free copy. R. A. STROUT, Farm Agency, Station 101, Union Bank Bldg., Pittsburg, Pa.

Grange.

EATON'S BIG MID-WINTER MEETING.

"Do you consider that the joint sessions held last year between Barry and Eaton Pomona, contributed much toward the increased attendance you are having this year at your regular Pomona meetings?" I asked Pomona Lecturer Mrs. Bernice Curtiss, as we looked over a company of 600 patrons assembled in Masonic Temple, on February 7, in Charlotte. She assured me of this, and said that at the last regular, which was known as "Governor's Day," some 800 people from all parts of the county poured into Eaton Rapids to welcome our Schoolmaster Executive. When a single Grange gathering uses three halls simultaneously, as was done at Charlotte, and keeps something of high order going every moment from 10:00 a. m. to late evening, it shows that it has members who are active and interested in Grange work.

While last year much effort was devoted to making great entertainment and social events of the joint meetings, no less effort this year is being spent to make the single county meetings helpful to the subordinates within the county. Therefore, this first meeting of the year was held at Charlotte where there is a local membership of upwards of 300. This Charlotte Grange had, the previous week, given a class of 73 the fourth degree in fine form, using two halls and serving a banquet to its entire membership at the close.

The well-planned program for Pomona, with this splendid Grange as hostess, was designed to aid other subordinates to attain corresponding success. Four teams, from as many Granges, conferred the subordinate degrees and Pomona added the fifth. These degrees were all excellently rendered and called upon the floor more than 100 different members. The third degree was exemplified by a Charlotte team which had put much



A Progressive Eaton County Grange Degree Team.

painstaking thought upon bringing out the symbolic interpretations by means of a ladies' court which shifted its scenes in adaptation to the charges of the ritual. This work was based upon the plans of Mrs. Sadie Holland, of Millis, Mass., whose little illustrated book upon Grange ritual is putting living meanings into forms of initiation, which too often have remained cold and dead. Interspersed among the degrees, came bits of instrumental music, songs and brief addresses, so that no time should be lost. In the afternoon Past National Lecturer N. P. Hull, discussed legislative measures espoused by State Grange. In another room the State Lecturer spent the afternoon in conference with lecturers upon their individual problems. In the evening the young people kept "open house" at their Grange home to all who waited over for late trains.

Who is leading this Eaton county movement? The officers and past officers of Pomona, headed by Master Ernest Pray and Lecturer Mrs. Curtiss, who are ably assisted by local officers. Programs for the remainder of the year are already well blocked out and work has begun upon their details. The plan of asking two or three small Granges to unite as host for one Pomona meeting is to be tried out this year. The summer rally will be a tri-county picnic upon the fair grounds at Charlotte, in which Calhoun and Barry unite with Eaton. Pageants and a demonstration parade are being planned for this great outdoor event in June.

The half has not yet been told, but limits forbid more than a few further words. The great-big, splendid-best thing I saw in Eaton was the recognition of children. Children were everywhere, in beavies and swarms.

JENNIE BUELL.

Farmers' Clubs

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

Associational Motto:

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

CLUB DISCUSSIONS.

Discuss Taxation Problems.—The Howell Farmers' Club, of Livingston county, is still thriving under the same conditions which have always characterized this Club, viz., the discussion of the live topics of the day. A committee is appointed to bring in several questions, but this does not bar out any who wish to put questions or inquiries before the Club. The January meeting was held at the home of Mr. and Mrs. F. R. Crandall. The important question for discussion at this meeting was the tax problem, which was well handled by Mr. Roy E. Dannen, who told of the different kinds of taxes and the one that was of most interest to the farmers, and said he did not wish to say as yet whether he was a single taxpayer or not. Silas Munsell gave a fine talk on "The New Currency Law," which was also discussed by others, many thinking we would have no more money panics. The February meeting was held at W. H. Peavy's. The notable feature of this meeting was the large attendance of many young and successful farmers. This meeting was entirely given over to a religious program, although politics and religion are never barred from our discussions. The young people furnished the fine readings and music, while F. R. Crandall gave a splendid paper on, "Piety in the Home," which, to be appreciated must be heard. Mrs. Jos. S. Brown had a paper on "The Relation of the Church to Society and Society's Obligation to the Church." These papers were discussed and af-

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IN EACH TOWN and district to ride and exhibit a sample 1914 Model "Ranger" bicycle furnished by us. You save everywhere by making money fast. Write at once for full particulars and special offer. **NO MONEY REQUIRED** until you receive and approve of your bicycle. We ship anywhere in the U.S. without a cent deposit in advance, prepaid freight, and allow **10 DAYS FREE TRIAL**, during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or don't wish to keep the bicycle you may ship it back to us at our expense and you will not owe one cent.

LOW FACTORY PRICES We furnish the highest grade bicycle it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct from us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offer.

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models at the wonderful low prices we can make you. We sell the highest grade bicycles at lower prices than any other factory. We are satisfied with \$1 profit above factory cost. Bicycle Dealers, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES—A limited number taken in trade by our Chicago retail stores will be closed out at once, at \$3 to \$8 each. Descriptive catalogues, inner tubes, **TIRES, COASTER-BRAKE** lamps, cyclometers, parts, repairs and parts for all bicycles at half usual prices. **DO NOT WAIT**—but write today for our Large Catalogue beautifully illustrated and containing a most complete interesting matter and useful information. It only costs a postal to get everything. Address **MEAD CYCLE CO., Dept. A77 CHICAGO, ILL.**

Empire Fence Can't Sag

Empire Fence stays hog tight and cattle tight as long as it is in use. Our Free book fully explains why the **No. 9 Empire and Empire, Jr.** fences stand up. Why the famous Empire knot holds securely—why the wires can't slip out of place. Open hearth steel, big wires, heavily galvanized, make Empire fences proof against all sorts of weather, rust and hard usage. Don't fail to write for Free Fence Book and get the truth about wire fences.

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GATES MUD SHOE

The simplest, most efficient, and durable shoe made. Indispensable to all farmers who have soft ground. Fits any horse. The balls being so attached as to readily adjust to any size foot by screwing up ONE bolt. Three sizes, give size of shoe used.

Agents Wanted.
T. TROWBRIDGE
Decatur, Mich.

The Deaf Hear

Write for our big introductory offer on the latest scientific hearing instrument, the perfected 1914 Model **New 8-Tone Mears Ear Phone**. EIGHT times as efficient, EIGHT times as powerful, EIGHT times as convenient, EIGHT times as helpful as our former One-Tone model, and with double the efficiency of our well known 4-Tone. Eight different sound adjustments, instantly changed by a touch of the finger.

Free Trial—Sold only direct from our New York office on trial at our expense. Test it for 15 days. It costs nothing if you do not want to keep it. Easy monthly payments if you wish, at the lowest net interest rate. Send for this offer and the Mears Booklet—FREE.

Mears Ear Phone Co., Dept. 4343, 45 West 34th Street, New York.

SPECIAL TRIAL OFFER

A one cent post card will deliver—charges prepaid—**To Try Before You Buy**—in your own home one of our regular \$11.50 Combination Dust-Vac Vacuum Cleaners and Carpet Sweeper. If entirely satisfied, take orders from only two of your neighbors for \$9.00 each and keep yours FREE. Every machine guaranteed—delivered prepaid. You run no risk—send no money. Try Before You Buy. Agents wanted everywhere. Liberal commissions.

THE LACE-METER CO., Adrian, Michigan.

Put Your Spring or Stream to Work

Why carry water when a **Drawbaugh Hydraulic Ram** will force it up hill without cost? No gasoline bills; ram works automatically. Guaranteed. Send for illustrated booklet.

HARRISBURG HYDRAULIC MACHINERY CO.
45 North Third St. Harrisburg, Pa.

Boys—Which Do YOU Want?

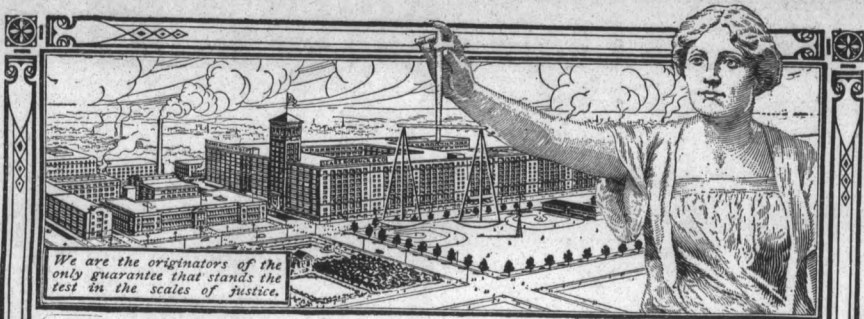
We Give You either a Genuine Hamilton Hunting Rifle or a 350-Shot All Steel Sterling Air Rifle—both sure death to game—FREE for selling our New Gold Eye Needles at 5¢ per box so easy to sell because you give a Silver Aluminum Thumb with each 2 packages.

Send No Money—We Trust You—Just order 25 papers of Needles and 12 Thumbtacks. We mail postpaid at once. Sell—return our \$1.25—choosing Premium entitled to (according to number of papers sold) from \$10 to \$200 Premium list. Just for promptness we give an extra handsome prize to the one who today

WAVERLY SUPPLY CO., Box 724, Monongahela, Pa.

AGENTS can make \$5 to \$10 a day by selling my safety OIL LAMP, **BURNERS AND LAMP GLASS.** Write for free sample and particulars to **C. T. SIEBERT,** East Pittsburg, Pa.

WANTED farms from owners for sale. We have direct buyers. Send description. Magazine, particulars free. Western Sales Agency, Minneapolis, Minn.



David Bradley MANURE SPREADERS

The 1914 Bradley, although strengthened, simplified and otherwise improved over previous models, sells for exactly the same prices. \$69.50 for the 55-bushel complete machine. \$74.50 for the 65-bushel size and \$42.50 for the 55-bushel spreader box.

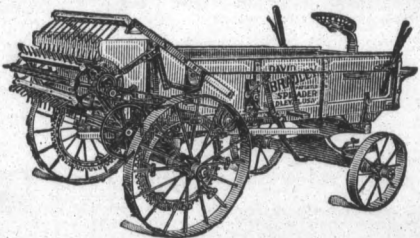
Whether you want a complete spreader or a spreader box, you will find it in our big General Catalog, or if you prefer, send for our new Spreader and Implement Book which contains descriptions and illustrations of the complete line of Bradley plows, cultivators, harrows, spreaders, planters, etc., besides buggies, wagons, harness, gasoline engines, supplies for dairymen, poultrymen, fruit growers and bee keepers. Just say "Send me Spreader Book No. 75M78" on a postal card and mail to

Sears, Roebuck and Co., Chicago

LEWIS Coutant, Horton, Kansas, is one of the thousands of farmers who are thankful they purchased a David Bradley Manure Spreader.

He says the Bradley is all we claim, that it works perfectly, runs easily and is always ready for work. He wouldn't sell it for twice its price if unable to obtain another, and he thinks he saved at least \$30.00 by purchasing it in preference to any other make.

The Bradley is a two-horse machine under all conditions, rough or smooth ground, rain or shine. Any boy who can drive a team can handle it. It's guaranteed to equal any other spreader at any price, at any time, anywhere. If it doesn't, we will trade back, returning your money promptly. You are the sole judge of your own satisfaction.



Farm Commerce.

Factors Influencing Bean Prices.

A FAMOUS humorists once truly said, "Never prophesy unless you know," and this is an observation that applies properly to the bean market. Last October there was every indication of a \$2.00 price for beans on the farm. The previous crop had been well cleaned up, meat and dairy products were high, and while the duty had been reduced to 25 cents per bushel, the reports on the foreign crop were not favorable to expect imports of beans. One large line elevator man, who was also a bean grower, privately expressed himself as a farmer, that he would get \$2.00 for his crop.

The orders for 1913 crop started in brisk to show that the demand was good. Then enters the speculative element as a bear to depress the market and accumulate stocks of beans, awaiting the advance that seemed so certain. The farmer who had plowed, planted and cultivated with care and with almost feverish excitement, had seen the crop safe in barn or stack, had then drawn a breath of satisfaction and feeling of well done. The speculator with less feeling than the train robber, and with the cool, calculating face of the poker player, figures on reaping where he had not sown. The speculator had no investment in lands nor had he employed labor except possibly a typewriter. Thousands of circulars are sent to the wholesale trade by the speculator, offering beans at a price away below what the legitimate elevator man was quoting. The legitimate distributor of the crop finds in the unprincipled broker and gambler the same interference in distributing beans that the farmer had to contend with in dry weather, anthracnose, blight, and rain in harvest time.

The Outlet is Obstructed.

When Hutchinson and Leiter were grain gamblers, they were obliged to put up large sums of money and take grain as it was offered them, to sustain the market. The bean gambler takes no such chance, for he can rely on 75 per cent of the crop being marketed in the first 100 days after threshing begins. The speculator throws obstacles in the way of outlet to the elevator man's market, and the farmer crowds the beans on the elevator man, and the result is inevitable. Beans must drop in price. Our old friend, "Supply and Demand," like the cuttlefish, darkens the waters of real facts. When this term is used as an explanation, it fails to explain, and is, as a matter of fact, two views of the same thing. What I want to impress is that the curved line of a base ball is quite as much a fact as the old law about a body moving in a straight line.

There is another element which enters into the price of beans, and that is manipulation of demand. This gives the price a downward curve when the beans are sold by farmers. The crop grown and the desire for food in the shape of beans are not the real factors in the price making.

Another villain entered into the price drama this year, viz., that when the speculator had bought the beans at a lower price and he himself was expecting to advance the price, other speculators found that even with the duty on beans of 25 cents per bushel instead of 45 cents as formerly, that beans from Hungary could be offered on the seaboard at \$1.90 per bushel. To show how the price of beans is lowered, a broker in Chicago will quote beans at a low price on a few cars, and then comb the elevator

trade over until he finds some dealer whose credit or storage capacity absolutely compels a sale, and in this way maintains a low price level.

Even the Elevator Men Are Helpless.

If ever there was an association that lacked all the elements of a trust in being unable to control prices, the elevator men are and, more than that, don't have any better control of prices than the farmer. It is right at this point that the Michigan Bean Jobbers' Association has come to the point of saying to the farmer, "we want to work with you and between us the price of beans can be made compensatory to you and allow us a reasonable charge for handling." Here is the opportunity for the federal government to set their department of marketing to work. Organize the bean growers and allow them, in conjunction with the elevator men, to fix the price after harvesting the crop, according to the supply and demand in fact. What really childish ideas we have that the price of beans just happens because of conditions.

That some tradesman with the deceptiveness of the Oriental rather than the Anglo-Saxon idea of fair dealing, should change the growth and marketing of a necessary and staple food from a profitable business to a loss, seems almost incredible, and yet that is just what has happened this year and right now.

Better Seed Should be Available.

Another thing the federal official could do, would be to carry on a propaganda for clean bean seed. Careful selection of seed and mainly from the northern counties, if planted next year, would mean an average of not less than \$10 per acre, as compared to just common seed. The farmer in any event should establish confidential relations with his elevator man and tell him to get so many bags of the best seed he can get. Have the Agricultural College make examinations of seed samples in stock at the elevators. It is those little spots of iron-rust-looking blotches that are anthracnose spores. Get a magnifying glass and examine, so you will know beans and distinguish between blight and anthracnose.

Some Advertising Needed.

From the standpoint of food values, beans need to be popularized, for with the advanced meat prices beans make a good supplementary to a meal marked by the absence of meat. Of all vegetables or cereals that are abused in cooking, beans have the first place. The pale cooked bean with its unappetizing appearance, might do for pale people, but for those having red blood, or wanting it, beans should be nut brown and individually present, not mashed, when appearing on the table. Beans are eaten in Boston, not because the Bostonians have different tastes, but because they know how to cook the bean properly.

Why Beans Should be Eaten.

I am mapping out some work for that federal bean "push" in Michigan, but after he has preached the gospel of good seed and correct marketing, I would have him take an artist in bean cooking and demonstrate before the wives of workingmen the food values and dainty taste of well-cooked beans. I think there is none of the ordinary foods that are so high in ash as beans, viz., 4.4 parts in one hundred. The oil meal of commerce used as a dairy food only runs 6.4 per cent, while dry skim-milk powder only carries seven per cent ash, wheat flour less than 0.2 per cent, and wheat itself 1.8 per cent, corn 1.4 per cent. The question of ash or mineral mat-

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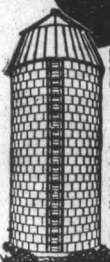
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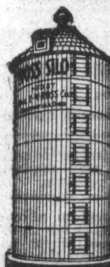
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ters in foods is large enough for a chapter by itself some time. However, the body will starve and fail to perform its functions when deprived of mineral matter quite as if other food were denied. One pound of beans bought at retail costs about five cents and contains 22.23 per cent protein and about 55 per cent carbohydrates. One pound of mutton having 17.18 per cent protein and 21 per cent carbohydrates, will cost at least three times the price of beans and have something like one-half the food value. Eggs carry 13 per cent protein and around 10 per cent carbohydrates. Meat contains practically no ash, and meat-eating animals, like dogs, make up the deficiency by eating bones. Animals consuming roughage get the mineral matter in hay and feeds. Man must secure the ash for bone making out of the cereals and fruits, and this is where the bean proves so important. Daniel in Biblical times, carried on an experiment by eating pulse—peas and beans—and was better nourished than the meat eaters.

Crop and Market Notes.

Michigan.

Saginaw Co.—A very successful Round-up Institute at Saginaw just closed. Project sanctioned for big county fair. Holstein and Pure Seed Clubs recently formed. Steady cold weather still prevails, and meadows and wheat are still protected. There has been good sleighing for the past six weeks, and about all the hay and beans have been marketed. Beans \$1.65; creameries pay 32c for butter-fat.

Lapeer Co.—March came in very cold and rough. Nearly all the snow has gone, and wheat and meadows are now unprotected and undergoing injury. Stock of all kinds bringing good prices, excepting horses which are lower at sales. Eggs scarce on account of recent cold weather. Hay maintains December prices yet. Potatoes 45c; corn 70c; wheat 90c; rye 57c; oats 39c. Public opinion seems to be in favor of the restoration of the old road district pathmaster system and the cancellation of state and county systems.

Emmet Co.—Although the snowfall during February was below normal, there was enough to make good sleighing. Some drifts but not enough to interfere with traffic. It is probable that no damage has been done the meadows and winter grains thus far. There is an average quantity of potatoes still in farmers' hands. Some are being marketed at 50c. Hens have not been very busy contributing to the egg supply, though conditions are improving. Eggs 28c; pork 10c; beef 9@10c; butter 30c.

Gratiot Co.—The cold wave that struck this section early in February continues, the mercury keeping close to the zero mark, the lowest registered being 20 below zero. More corn is being sold than has ever before been handled in the elevators. Corn, shelled, 54c; oats 37c; eggs 24c; butter 22@26c. Live stock is in good demand at high prices at auction.

New York.

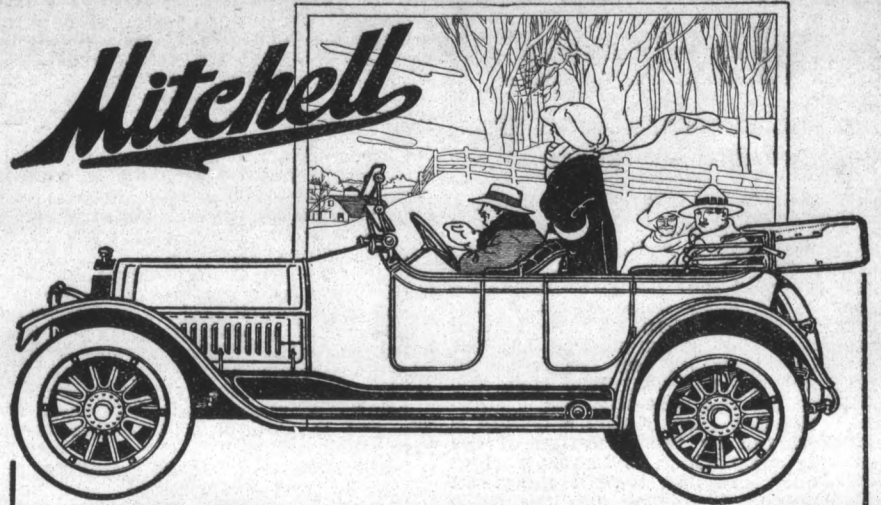
Genesee Co.—Winter grains have been covered with snow. There is just enough snow for splendid sleighing. Most of the grain is sold. There is some stock still on feed. Potatoes are being marketed at 60@62c. There are a good many auction sales, and all stock sells high. Dairy butter 27c; creamery butter 28½c; pork, alive 9c; dressed 11½c; eggs 30@32c; poultry, live 16c; lambs, dressed 14c; wheat \$1; oats 45c; beans \$1.80@2.50; cabbage \$20 per ton; hay, loose \$11 @13.

Pennsylvania.

Lancaster Co.—Winter wheat is in good condition, very little rye raised in this section. There was very little snow until February 13, when a heavy snow fell, blocking the car tracks and roads, and hindering the progress of many rural mail carriers. Most of the farmers have sold their grain and hay, but some are holding their hay for higher prices. Eggs 25c; butter 30c; chickens, live 12@14c; lard 12c.

Chester Co.—Recently the mercury dropped to zero, and about eight inches of snow fell. The roads have been in good condition all winter. Wheat and rye are in good condition. The farmers have very little stock or grain for sale. Cob corn is selling at 70c per bu; wheat 95c; hay \$15@16.50; straw \$10; eggs 30c.

(Continued on page 318).



If the average Farmer is as shrewd a merchant as he is said to be—and we *know* he is—the fact explains why so many Mitchell cars are in *daily use on the farm*.

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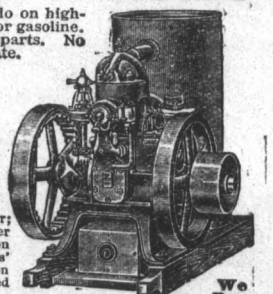
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Markets.

GRAINS AND SEEDS.

March 10, 1914.

Wheat.—Although the statistical situation is more bullish values have fallen off a fraction. While dealers had expected that the government report would show more wheat in the farmers' hands than was so held a year ago, the report showed 1½ per cent less than was on the farms in 1913 and 2.4 per cent less than the average for the past five years. However, the influence of this shortage is counteracted by the condition of the growing crop which is almost perfect with only now and then a complaint of damage. One year ago the price for No. 2 red wheat was \$1.05½ per bushel. Quotations are as follows:

	No. 2	No. 1	White	May
Wednesday	98½	98	1.01½	
Thursday	98½	97¾	1.01	
Friday	98½	97¾	1.01	
Saturday	98	97½	1.00¾	
Monday	98	97½	1.00¾	
Tuesday	98	97½	1.00¾	

Chicago, (March 9).—No. 2 red wheat 94½c; May 93c; July 87½c.

Corn.—Notwithstanding the fact that reserves of corn are smaller than they have been since 1904, the tone of the market is a little easier, with prices a fraction off. Dealers are somewhat skeptical about the influence of corn from Argentina, the crop of that country, which is now ready to gather in the northern districts, promising to be good. One year ago the price was 50¾c per bu. Quotations for the week are:

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

Chicago, (March 9).—No. 2 corn 65½c; May 66½c; July 65½c.

Oats.—With the amount of oats on farms estimated by the government reporters at a fraction above the five-year average, the market is easier with the tendency of prices downward. One year ago standard oats were selling at 35c per bu. Quotations for the week are:

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

Chicago, (March 9).—No. 2 white oats 40½c; standard 39½c; May 39½c; July 39½c per bu.

Beans.—Market is dull and easy. The local board of trade quotes immediate and prompt shipments at \$1.80; March \$1.83 per bu. Chicago reports a quiet trade. Pea beans, hand-picked, choice, are steady at \$2; common \$1.75@1.85; red kidneys, choice, \$2.80.

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

Barley.—At Chicago barley is quoted at 49@68c per bu., while Milwaukee quotes the malting grades at from 54@65c.

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

Alfalfa.—Steady at \$7.25 per bu.

Cloverseed.—Quotations are higher. Prime spot and March \$8.50 per bu; alsike at \$10.50; Toledo prime cash is quoted at \$8.65 and prime alsike at \$10.60.

FLOUR AND FEEDS.

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

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

Hay.—Best grades higher and firm. Carlots on track at Detroit are: No. 1 timothy \$15@15.50; standard \$14@14.50; No. 2, \$12.50@13.50; light mixed, \$14@14.50; No. 1 mixed \$12.50@13; No. 1 clover \$12@12.50.

New York.—Market steady. No. 1 timothy \$20.50@21; No. 3 standard \$15@20; light clover, mixed \$17.50@18.50; clover \$17@18 per ton for the large bales.

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

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

New York.—Rye straw \$15@17; oat straw \$11 per ton.

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

DAIRY AND POULTRY PRODUCTS.

Butter.—Market steady with prices unchanged, but on account of sharp declines in other places prices are expected to go lower. Extra creamery 30c per lb; firsts 28c; dairy 21c; packing stock 18c.

Chicago.—No decline noted in this market yet and receipts seem to be cleaned up pretty well. No change in prices. Extra creamery 29½@30c; extra firsts 28@29c; firsts 25½@27½c; seconds 23@24½c; ladles 20@21c; packing stock 18½@18¾c.

Elgin.—Market steady but quiet at 27c per lb., which is 3c lower than last week.

New York.—A sharp decline of about 3c was experienced here and has caused unsettled conditions. Quotations: Creamery extras 28½@29c; firsts 26@28c; seconds 23@25½c; packing stock 17@17½c per lb.

Eggs.—Prices higher than last week but it is expected that mild weather will cause a downward tendency. Current receipts of fresh stock quoted at 27½c per dozen.

Chicago.—Reduced receipts holds market firm and caused an increase in prices of about 1½c. Miscellaneous lots, cases included 26@26½c, according to quality; ordinary firsts 27c; firsts 28c; checks 23@24c.

New York.—A firm feeling prevails, and owing to light production it is expected to continue. Consumers are demanding fresh eggs and the Lenten season is increasing consumption. Prices are about 3c higher. Fresh gathered extras 34½c; extra firsts 34c; firsts 32½@33½c.

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

Chicago.—Conditions still continue steady. The good demand for springs advanced prices ½c, while for fowl there was a decline of 1c. Quotations on live are: Turkeys, good weight 17c; others 12c; fowls, choice 15c; spring chickens 17c; geese 14c, according to quality; ducks 15@16c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices unchanged. No. 1, \$5@6; No. 2, \$4@4.50 per bbl. In Chicago the market is in good condition. The mild weather has brought a lot of outside orders. Receipts light and cooler stock is getting low. Higher prices predicted if receipts are not larger. Barrel stock is quoted: No. 1 Jonathans \$6@7; Spies \$5.50@6; Baldwins are \$5.50@6. In New York fancy Baldwins are selling from \$6@6.50.

Cabbage.—Steady with prices unchanged. Good quality is quoted at \$3@3.25 per bbl. At Chicago the supply on hand exceeds demand. Prices, however, are still good. Holland or Red \$2 per bbl, \$26 per ton. In New York good stock of Danish or Holland is selling at \$22@25 per ton, while in Cincinnati New York Danish sells for \$33 per ton.

Potatoes.—Market continues firm; prices unchanged. Quotations: In bulk 58@60c per bu; in sacks 63@65c per bushel for carlots. At Chicago on account of increased receipts market is in poor shape. There was a decline of about 2c in price. Good Michigan white stock is quoted at 60@63c per bu. In New York good Michigan stock is selling for 74@75c per bu. in car lots.

Onions.—The local market is steady with prices unchanged. Quoted at \$3.25@3.50 per sack for yellow and \$1.75 per crate for Spanish. At Chicago the demand is increasing and the prices are holding up strong. Sacks 65@70 lbs.; Michigan grown sell at \$1.75.

LIVE STOCK MARKETS.

Chicago.

March 9, 1914.

Received today. Cattle. Hogs. Sheep. Same day 1913. 25,000 30,000 30,000
Same day 1913. 26,107 68,745 27,790
Last week 41,782 118,531 107,586
Same w'k 1913. 42,795 129,766 80,020

This week opens with a very slow demand for cattle, and prices look a dime lower except for the best. Hogs opened 5@10c higher, with speculators buying freely, and sales took place at \$8.40@8.80. Later the market averaged a nickel lower than at first, with packers holding off. Hogs marketed last week averaged 227 lbs., a gain of one pound over the average of a week earlier. Sheep and lambs open the week about a dime higher, with prime lambs at \$7.85.

Cattle sellers stood a much better show last week than ordinarily, as the receipts showed a steady falling off in volume, while the general local and shipping demand remained fully

normal. Naturally, cattle that were especially wanted showed the greatest firmness, and higher average prices prevailed not only for good slaughtering steers, but also for butcher stock, cutters, canners, stockers and feeders. The bulk of the beef steers went at \$8@9.25, the best class of heavy beefs bringing \$9.15@9.75, while the commoner class of light, warmed-up steers were purchased at \$7.10@8.10. There was a very good showing on Wednesday of prime cattle at \$9.30@9.75, and the best yearling steers brought \$9@9.40, with good heavy steers taken at \$8.65@9.10 and fair and middling grades at \$8.15@8.60. Butchering lots of cows and heifers had quick sales at \$5.15@8.75, while cutters sold at \$4.60@5.10, canners at \$3.60@4.55 and bulls at \$5.50@7.75. There was a larger call for good stockers and feeders, buying orders delayed by the late snow blockade showing up, and prices were on the up-grade for the desirable offerings.

Hogs were forced last week to much lower prices, the big local packing concerns taking advantage of much reduced purchases made on different days by eastern shippers to pound values until sales were made at the lowest figures recorded in four weeks.

Sheep and lambs suffered some sharp declines in prices last week because of an indifferent general demand from local slaughterers and shippers, the market being glutted at times. Eastern markets were reported in bad shape, with the best lambs selling in Buffalo 50c lower than a week earlier, and such reports were influential in weakening the Chicago market. The one pleasant item of news for sheepmen was the 10 per cent advance in wool prices in the London sale.

MICHIGAN CROP REPORT.

Wheat.—In answer to the question, "Has wheat during February suffered injury from any cause?" 27 correspondents in the state answer "yes" and 489 "no," in the southern counties 12 answer "yes" and 249 "no," in the central counties one answers "yes" and 126 "no," in the northern counties 13 answer "yes" and 94 "no" and in the upper peninsula one answers "yes" and 20 "no."

Snow protected wheat in the state and the several sections 27 days.

The average depth of snow on February 15 in the state was 7.86 inches, in the southern counties 7.06, in the central counties 8.46, in the northern counties 8.20 and in the upper peninsula 10.63 inches. On the 28th the average depth of snow in the state was 7.05 inches, in the southern counties 6.27, in the central counties 7.45, in the northern counties 7.54 and in the upper peninsula 10.40 inches.

The total number of bushels of wheat marketed by farmers in February at 96 flouring mills is 196,038 and at 93 elevators and to grain dealers 122,497 or a total of 318,535 bushels. Of this amount 237,779 bushels were marketed in the southern four tiers of counties, 69,211 in the central counties and 11,545 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in the seven months August-February, is 5,000,000.

Sixty-nine mills, elevators and grain dealers report no wheat purchased in February.

The average condition of live stock in the state is reported as follows, comparison being made with stock in good, healthy and thrifty condition: Horses and sheep 96; cattle and swine 95.

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The trade-mark is the signature of the maker; and the article he is willing to put his name to, it will pay you to investigate. This Trade-Mark on the bottom of a pair of shoes is a guarantee that everything has been done to make that shoe the best shoe of its kind.



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that ruin your fruit and destroy your trees, vines and plants. Get rid of scale, fungi and worms by spraying. Stahl's Treatise on Orchard Enemies (sent free) will tell you how to do it with easy working—and efficient—

Stahl's Excelsior Spraying Outfits

Send \$3 and we will ship outfit complete. Try 10 days and if found O. K. pay balance. If not return and we'll refund your money. Write today.

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The Department of Soils of M. A. C. reports that the roots of a maximum crop of red clover in one acre of ground contains as much nitrogen as would be added to the soil by an application of 7 tons of barnyard manure. If the soil contains acid a maximum crop of clover cannot be grown. Our Pulverized Lime Stone will remove acidity from the soil. Be sure and see our analysis. Get our prices and free samples before buying.

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DRESSED HOGS

DRESSED VEAL

POULTRY

These are our specialties just now. Our 25 years' experience has taught us how to sell them for you to best advantage. Our reputation for honest dealing and quick returns is assured by our record.

WRITE TODAY.

Chas. W. Rudd & Son, Detroit, Mich.

\$3000 Stock of Groceries In west part of Detroit. Will take \$2500. \$2000 per month business. Box H. MICHIGAN FARMER, Detroit, Michigan.

Wanted—Honest, Energetic Men

in every county to sell our big line of goods direct to farmers. EXPERIENCE NOT NECESSARY. We fully instruct you. Farmers, laborers, mechanics, or any men willing to work can make

\$1,000 to \$3,000 a year handling our big sellers. Exclusive territory given. We furnish you the capital; you furnish the team to carry the goods. Be your own boss in a pleasant, permanent and profitable business. Write at once for full particulars giving age and occupation.

THE DUOFORM CO., Dept. 2, NORTH JAVA, N. Y.



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

Griggs, Fuller & Co., Wholesale Commission House, potatoes, poultry and rabbits. Quick returns.

FARMERS—We are paying good premium above the Official Detroit Market for new-laid 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.**

EGGS, Etc.—Small consignments from producers in Michigan bring very attractive prices. Returns day of arrival. Refer to Dunn or Bradstreet. Zenith Butter & Egg Co., 855-59 Greenwich St., New York, N. Y.

FARMER AGENTS—Wanted, Farmer Agents for the wonderful Swedish Cream Separator. PRIMUS. Famous ONE-PIECE skimmer. Easiest running, easiest cleaned, closest skimming machine in the world. Completely guaranteed. Big commission Dept. "B." The Buckeye Churn Co., Sidney, Ohio.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
March 5, 1914.

Cattle.

Receipts, 1217. Market is slow at Wednesday's and last week's prices. We quote: Best steers and heifers \$8; steers and heifers, 1000 to 1200, \$7.25@7.50; do 800 to 1000, \$6.50@7; do that are fat, 500 to 700, \$6@6.50; choice fat cows, \$6@6.25; good do, \$5.50@6; common do, \$4.75@5.25; canners, \$3.75@4.25; choice heavy bulls, \$7; fair to good bolognas, bulls, \$6.25@6.50; stock bulls, \$5.75@6; choice feeding steers, 800 to 1000, \$6.75@7; fair do, \$6.25@6.50; choice stockers, 500 to 700, \$6.25@6.50; fair do, \$5.75@6.25; stock heifers, \$5@6; milkers, large, young, medium age, \$7@9; common milkers, \$4.50@5.5.

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

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

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

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

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

Veal Calves.

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

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

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

Sheep and Lambs.

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

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

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

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

Hogs.

Receipts, 3997. None sold up to noon; packers bidding \$8.60.

Bishop, B. & H. sold Parker, W. & Co. 1510 av 190 at \$8.60, 275 av 170 at \$8.55.

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

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

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

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

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TUXEDO actually soothes the nerves. It is just mild enough to keep your nervous system in poise, your muscles in tone. Unlike other tobaccos, Tuxedo burns cool and slow. There cannot be a speck of irritation in a pound of Tuxedo.

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YOU CAN BUY TUXEDO EVERYWHERE

Convenient pouch, inner-lined with moisture-proof paper 5c
Famous green tin, with gold lettering, curved to fit pocket 10c
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Joel Hillman



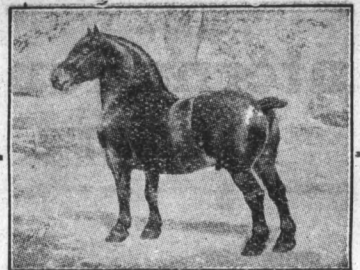
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Wabash, Indiana
More than a quarter century with the breed.

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70 Head for Sale

Percheron, Hackney and Clydesdale Stallions.

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

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Raise mules and get rich. 18 Jack and Mule farms under one management, where can be seen 250 head fine large Jacks, Jennys and Mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address



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West Elkton, Ohio.
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18 Percheron Stallions

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

A. A. PALMER & SONS, BELDING, MICH. 1 1/4 Miles from Orleans.

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Of horses and mules every Monday. Private sale, daily. From two to five hundred head always on hand. Farm mares and chunks, delivery and wagon horses pavement sore city horses, and drafters and work horses of every kind. South ST. PAUL HORSE AND MULE CO., Union Stock Yards, South St. Paul, Minn.

REGISTERED PERCHERON FOR SALE

Brood mares and Fillies. Two Stallions coming one year old, one 3-yr.-old stallion. Prize winners at farmers' fairs. L. C. Hunt & Co., Eaton Rapids, Mich.

PERCHERONS

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

Come fine young registered Clydesdale Stallions for sale from 1 to 4 years old. In the spring some will make ton horses with lots of quality and good action. Must be sold before the first of April. F. A. PETZ, Capac, Michigan.

REGISTERED PERCHERONS—FOR SALE.

Two two-year-old Stallions. Also some mares, all ages at farmers' prices. Visitors always welcome. F. L. King & Son, Charlotte, Mich.

FOR SALE—1 big, heavy boned, Reg. Percheron Stallion, 1 yr. old past. Also 2 Reg. Percheron mares in foal. M. A. Bray, Okemos, Ingham Co., Mich.

FOR SALE—3 Reg. Percheron Stallions, 3 to 7 yrs. old. For breeding and individual merit combined. Come or write, H. B. Peters, Burton, Mich. B. B. Sta., Elsie.

TOO LATE TO CLASSIFY.

21 HIGH GRADE HOLSTEINS

AT AUCTION, MARCH 19, 1914.

As I am going to keep Registered Holsteins only. 14 heifers are from the following sires—Woodcrest DeKol Lad 2nd, oldest A. R. O. sister 3 1/4 yr. 20 lb. butter, 45 lb. milk, 7 days. 5 dams in pedigree A. R. O. records average 28 lb. butter, 57 1/2 lb. milk, 7 days. Sire's grandsire, brother to sire of the 2-yr. and 3-yr. old World's Milk records, 3-yr. old World's Butter record—all for one year. Dam's grandsire brother to sire of Creamell Valle 23, 591 lb. milk World's milk record.

Sir Double Korndyke sire of the triplet heifer calves awarded blue ribbon Mich. State Fair, 1913. Dam at 3-yr. 19 lb. butter, 467 milk, 7 days. Pontiac Korndyke is the grandsire of his dam and sire. He has 11 daughters between 30 and 44 lb. 7 days. 14 granddaughters will meet Detroit Jackson Electric at Reckners going east through Dearborn 10:35. Farmington car through Redford 10:50, from Detroit 9:45, at Mill Road. Martin L. McLaughlin, one mile east of Oak on Plymouth Road.

ITHLEA STOCK FARM

Offers for sale a 6-month old son of KING SEGGS PONTIAC HOWELL, grand son of King of the Pontiacs. Dam is a grand-daughter of Pontiac Korndyke. Price \$100, delivered. Write for particulars. HERBERT L. SMITH, Shiloh, Michigan.

FOR SALE—Nine Durham and Holstein cows, six all fine stock. GEO. YORE, Hartford, Michigan.

Go South Sir

Purchase a Southern Farm

Look at the map of the United States. See how close to the big Eastern markets—by modern rapid transportation—are the states south of the Ohio and east of the Mississippi Rivers. Then consider

GOOD LAND AT \$15 AND UP AN ACRE

according to the improvements and location. Remember there are no cold winters—stock can graze on green pastures the year round, making production costs low. Expensive barns are unnecessary. Large local demand for farm products at profitable prices. Industrial opportunities everywhere. The Panama Canal will greatly benefit the South. Investigate this section of good roads, schools, churches and beautiful climate where *Living is Pleasant and Profitable*. Booklets on the States of Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky. In which are you interested? Our magazine "The Southern Field" sent on request.

M. V. RICHARDS, Land and Industrial Agt.,
Room 76, SOUTHERN RAILWAY Washington, D. C.

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Potato Profits

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

IRON AGE 100 Per Cent Planters

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

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Box 1045 Grenloch, N. J.

SCARFF'S TESTED SEED CORN

5000 bushel 1912 crop. Tested and pure to grow. Finest quality. 20 Varieties. Also Seed Oats, Barley, Grass Seed, Potatoes, etc. 1000 acres. Catalog and samples on request. Write today. W. N. SCARFF, Box 67, New Carlisle, Ohio.

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

These Seven Cows

Kept One Year On 1 Acre of Eureka Corn. This seed corn yielded over 70 tons on one acre—enough to feed seven cows a whole year. No other corn has ever equalled it.

EUREKA CORN grows tallest—has most leaves—more ears

Why plant ordinary corn that yields only 15 to 25 tons an acre, when you can get 70 tons an acre at same price. Write for our 1914 catalog, quotations and list of our wonderful varieties of big-yielding corn and seeds.

ROSS BROS. CO., 27 Front St., Worcester, Mass.

SOW GREAT DANE OATS.

THE OAT THAT HAS YIELDED AT THE RATE OF 208 BUSHELS PER Acre. Send for description and prices. W. E. MILLER, Cohoctah, Mich.

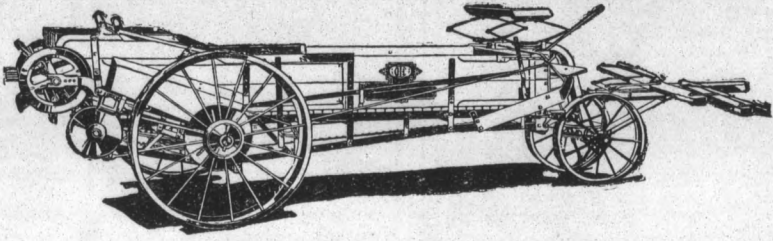
BUSHEL CRATES

We will mail sample crates to you on receipt of 15 cents in stamps. Write us for prices, etc.

SILAS LOEW & CO.
DORR, MICHIGAN.

\$18,000 Produce house, going to be sold for less than 1/2 its value. Experienced man wanted. R. OXFORD, Big Rapids, Michigan.

International Harvester Manure Spreaders



**THE I H C LINE
GRAIN AND HAY
MACHINES**
Binders, Reapers
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and Disk Harrows
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INTERNATIONAL Harvester manure spreaders have a score of good features in their construction. Each one is the result of careful field experiment.

An I H C spreader is low enough for easy loading, yet it has plenty of clearance underneath. The rear axle is well under the load, rear wheels have wide rims and Z-shaped lugs, insuring good traction under all conditions. Frame, wheels, and all driving parts are of steel. Apron tension is adjusted by a simple device. Winding of the beater is prevented by large diameter, and beater teeth are strong, square and chisel-pointed.

International manure spreaders are built in several styles and sizes, low or high, endless or return apron, for small farms or large. Examination will show sturdiness of construction in every detail. Repairs, if ever needed, may always be had of the local dealer.

Examine International spreaders at the dealer's. We will tell you who sells them, and we will send you interesting catalogues.

International Harvester Company of America

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Forkner Orchard Cultivator



Does more work with less draft and leaves a better surface mulch than any other cultivator made.

It Works Right Up To Your Trees

Cultivating the entire surface beneath low branches without disturbing boughs or fruit. Write for catalogue and free book "Modern Orchard Tillage."

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FRUIT Healthy, Hardy TREES

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Olover, 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., FOSTORIA, OHIO.**

PEACH TREES, Orchard Size, 4 & 5c each

Elberta, etc. New catalog free of all kinds of nursery stock. **W. A. ALLEN & SONS, Geneva, Ohio.**

GREAT DANE SEED OATS

—Champion beardless barley \$1 per bushel. ALFADALE FARM, R. 8, St. Johns, Michigan.

OATS—Regenerated SWEDISH select

75 cents. Sample free. Bags free with 10 bushels. O. M. YORK, Millington, Mich.

SEED OATS

—Choice reselected SENSATION OATS. 75c per bu., are heavy and yield well. **J. A. STARR, Royal Oak, Mich.**

PEDIGREED OATS—WORTHY, ALEXANDER and Other Varieties.

Oats with a pedigree, bred by the Michigan Agricultural College from individual plants, thoroughly tested at the College and various parts of the State. Highest yielding of several hundred selections and varieties—grown in Michigan and adapted to Michigan conditions. Buy direct from the grower. Address

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VEGETABLE PLANTS

FOR LARGE and SMALL GROWERS. Why bother with hotbeds and coldframes when you can buy really good plants so cheaply. They are packed so that we guarantee their safe arrival. They are true to name, hardy, well grown and produced from the best seeds obtainable, much of which we breed and grow ourselves. We also grow FLOWER PLANTS, ASPARAGUS and RUBARB ROOTS. Get our free descriptive later. Catalog free to everybody. Write for yours today.

SHEERIN'S—900,000, four grades—12½c, 10c, 7c, 6c. 500,000 peach—8c, 6c, 4½c, 3½c. 75,000 Cherry, 50,000 Pear, 25,000 Plums, 25,000 Quince, and thousands of Roses, Ornamentals, Grapes and small fruits. Secure Varieties now. Pay in spring. Place your order with the men who grow their own trees and save disappointment later. Catalog free to everybody. Write for yours today.

APPLES—The only persons by the name of Sheerin in the nursery business in Dansville.

SHEERIN BROTHERS NURSERIES, 26 Main St., Dansville, N.Y.

Horticulture.

Pruning the Apple Tree.

THERE are more "notions" about pruning than any other orchard operation. This is probably due to the fact that the principles of pruning are but little known, and we usually have nothing to guide us but our personal opinions in the matter. Therefore, the apple tree is often found to resemble everything from a rose bush to a palm tree.

We have many different ideas as to the amount of pruning that should be done, ranging all the way from no pruning at all to quite a severe cutting back each year. The no-pruning-at-all idea is not a matter of neglect but is carried out in some orchards where good fruit is grown. There is hardly any specific reason for no pruning as nature does pruning herself but her process is a slow one. Also, her objects in the matter of production are not the same as ours, therefore besides hastening the process of getting rid of useless branches we should prune to get maximum production.

Pruning the Young Tree.

Pruning should, of course, start when the tree is first set out. The pruning of the tree as it comes from the nursery depends upon the size and shape of the tree. Whatever pruning is done it should be for the purpose of balancing up the proportion between the top and the roots. The head should also be brought down to the desired height of two and a half or three feet if possible. If the tree be a number one two-year-old with the head started high, it is not advisable to cut back as far as desired as there will not be enough live buds left to make a good start in spring. Three or four side branches of about six inches in length should be left to furnish active buds for this purpose. Varieties whose character of growth is willowy may have the tops started higher than others as the weight of the fruit will bring the limbs down considerably.

Ideas in Pruning Changing.

The general tendency of pruning until the tree comes into bearing has changed during the past few years. It was thought essential to give the tree a fairly severe cutting each year in order to shape the head and make the limbs stocky. However, that was found to delay the bearing of the trees considerably and now our experience has shown that no more pruning than absolutely necessary to cut out cross limbs and those absolutely unnecessary should be done until bearing time.

To prune intelligently one must have some idea of the principles of bud formation, as one of the main purposes of pruning is to maintain the proper proportions between the leaf and the fruit buds. In spring when the tree makes its greatest growth all of the newly formed buds are leaf buds. As long as the tree continues to grow these leaf buds continue to form. It is not until after the terminal bud on the new growth is formed and the wood starts to harden up that we get any fruit buds. So, normally, from the latter part of July to late in October some of these leaf buds change to fruit buds. These fruit buds form generally on the shorter growths because such growths ripen up the quickest. If conditions are such that the tree makes considerable growth and grows late in the season, the wood may not mature properly and but few fruit buds will form.

The more we prune the more the tree puts forth efforts in the way of new growth to balance up the top

with the roots. Such growth is usually rank and is not the kind which favors fruit bud formation. Therefore young trees before bearing age should not be pruned heavily except on trees likely to overbear when young.

Variety Determines the Manner of Pruning.

The pruning of a tree depends greatly upon what variety it is as there is a great difference in the growth and bearing habits of varieties. Some varieties make large growth and will come into bearing late; others will make small growth and come into bearing early. Thus the Spy is known as a large grower and slow in coming into bearing, and the Wagener a small grower and a very early bearer. The Wagener has short spur-like growths on which fruit buds are often found. It is a variety which is likely to bear more than it ought to and brings itself to premature uselessness by overbearing. The proper pruning for this variety and varieties of this type should be to cut out a fair amount of the spur growths and leave the longer growths on which there are only a few fruit buds.

The characteristic growth of the Spy is of the long willowy kind, with but a few fruit spurs. In pruning trees of that type all of the short spurs should be religiously saved and the longer or larger limbs should be taken out where necessary. No more pruning should be done than to keep



A Cut Properly Made.

the head in good shape and fairly well opened to the sun.

The prospects for a crop should also be considered when pruning especially if that pruning is to be a heavy one, as in the case of heading the trees back. If the trees look as if they were going to have a good crop the heavy pruning can be done to better advantage than if there was no prospects for one, as the energy will go into the crop to a great extent and therefore there will not be the growth of water sprouts as ordinarily.

Low Headed Tree Best.

The low-headed vase form tree is the best for present commercial purposes. In trimming to this form care should be taken not to have too many of the main or scaffold limbs come out close together from the trunk as that would put all of the weight in one place and with a heavy crop the tree would likely split down. Crotches should, of course, be avoided in all cases.

Pruning should not be done in spasms but a little each year if necessary. In some cases a moderate pruning every two or three years may do, but in no case should it be left until the tree needs a heavy butchering.

Often an orchard is neglected be-

Famous Deming Nozzles

Garden and Orchard PAY BETTER

If Properly Cared For To take care of them means to spray. Spraying stands for bigger and better crops that bring higher prices.

Deming Spray Pumps

will help you to do more of better spraying in less time. We make more than 20 kinds—a sprayer for every purpose. All are dependable and all do thorough work. For best results adopt the ideal combination—Deming Sprayers and Deming Nozzles. Most dealers sell both.

Spraying Guide FREE

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SWEET CLOVER Seed direct from grower, price
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The White biennial. Also Alfalfa, Red, Timothy, etc.
Sample and booklet telling "How to Grow Good SEED"
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IMPROVED WHITE SWEET OATS FOR SALE.
Clean and free from weeds. Price 60c per bu. New
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RED CLOVER SEED—95% purity, 85% germination.
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fore it comes into the possession of a fruit man and is therefore in need of some drastic work. If the trees are old and too high to be of great value the tops should be cut back. There should be no hesitation in cutting back these tops to a reasonable height, no matter how large the limbs spurs left on the tree to leave about half the leaf surface of the tree, and it is also good to do this severe pruning when there is prospects for a good crop, for the reason mentioned before. It is better to do the necessary heading back one year and the thinning out of the remaining limbs the next.

Take Care in Making Cuts.

In making the cuts in this heading back, care should be taken to make them within about a quarter of an inch of a lateral limb, and on a slant as near parallel to the lateral as possible. Care in not leaving stubs is necessary for best results in this heading back work and is an important factor in the cutting off of any limb. Stubs can not heal up as there is nothing on them which will draw the sap to the wound. In cutting close to a lateral the foliage of the lateral will have the effect of causing a good circulation of sap by the wound and therefore make its healing very probable. All wounds over two inches had better be painted over with pure white lead and raw linseed oil to keep them from drying out.

One of the aims of pruning is to control the shape of the trees. This we can do to a certain extent in a practical way, but to make a Greening tree look like a Wagener could not be easily accomplished and the endeavor would spoil the tree for practical purposes. Trees which are spreading in their character of growth can be trained up considerably by cutting off the laterals which run outward from the main limbs in preference to those running inward. For trees growing not spreading enough the practice should be just the opposite.

Best Pruning Tools.

The best pruning tools for most all cases are the common hand-pruning shears and a good pruning saw. The long handled shears are not conducive to good pruning as a man is liable to become too careless with them, and it is not possible to make the cut close enough for best results.

It is better to prune any time than not at all. It is, however, an advantage to prune when the tree is dormant as one is better able to see what should be pruned. If the pruning is done in early winter the intense dry cold following may dry the wounds out and check the healing up some. The most satisfactory month for this work is March, as it is but a short time to the time when the sap flows and the healing begins. If the trees are making too much growth a slight pruning may be made during late June or early in July.

LITTLE STORIES ABOUT BIG FARMERS.

(Continued from page 290).

the ice room holding 800 tons of ice. This ice is fed into a crusher with an elevator attached which carries it about 25 feet above the roof where it is discharged into a spout with a long flexible end like an elephant's trunk, which swings with the crushed ice to each tank. As the ice goes into each tank, rock salt is scattered through the ice, the more salt used, the more intense is the cold in the solution. As soon as the solution cools, gravity takes the denser brine into the storage room and the warm brine replaces it without pumping. The circulation is continued just as long as the tank is filled with ice and salt. This is about the first successful perpetual motion machine. It is a gravity brine system with low operating expense.

The melted ice and salt all runs down through pipes in the rooms, and finally all of it is gathered into coils in one big basement room under the sorting room which has no other tank or pipe. The ice room as well as the storage tank will never be warm enough to melt ice when in use. All of the available space is utilized by having a false floor to put in the ice room when the top half of the room is empty. This gives an increased storage capacity for several hundred barrels of apples which will be moved in time to fill with ice. Each of the five rooms is a separate unit and can be run at any time absolutely independent of the other rooms. The large basement under packing room is only cold when ice is being used or the outside air is cold. A large attic holding 3,000 barrels is well insulated, has double windows and can be kept cold from the use of ventilators in storage rooms and outside air, and is used as frost-proof storage without artificial refrigeration.

Regulating Temperature in Storage House.

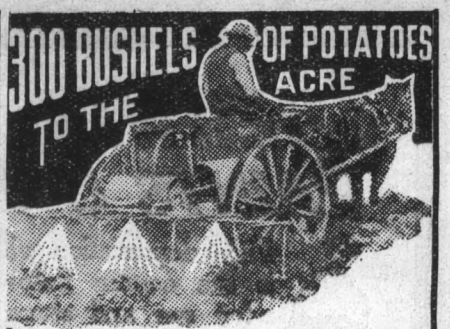
There is a large 60-inch fan in the attic which draws air from a big ventilator in the roof and is connected with a large airduct to each room. When the air is cold outdoors this fan runs at high speed, forcing cold air into any room desired by opening the gates into the room and vents to allow the warm and impure air to get out. There is a large air-tight stove which can be fired up and warm air driven into any room through the same cold air ducts should zero weather make any place in the building too cold.

An 18 h. p. gasoline engine is used to run the elevator, which will accommodate 30 barrels of apples. A dynamo and storage battery gives an excellent lighting system which costs nothing to operate after once installed, as the dynamo runs so easily it only has to run when the engine is running for other work.

The main building is 48x70 feet and five stories high. The packing room is 35x50 feet, with sky lights in the sides and a large number of windows and doors, making the lightest packing room I have ever seen. The windows and doors are double to keep it warm for winter work. The fourth floor of the main building of the wing can also be used as work rooms. Two hundred feet of platform afford accommodation for four cars at one time. The cold and common storage in this house amounts to about 15,000 barrels. The cost was approximately \$25,000.

Allie's Views on Packing and Grading.

In discussing the marketing problem Mr. Allis said: "Your article in the October 4 issue of the Michigan Farmer expressed my views of the packing and grading question. Adam was the first farmer we have any account of who had trouble in packing apples and he laid it to his wife and apple growers ever since have old Adam as an example and when the buyers find poor apples in the barrel, 'The hired man or the boys, or my wife does all the packing,' is the ready answer. But seriously, we must stop it some way, no matter who puts up the apples. At the present time, and especially last year, buyers were by far the worst sinners, for they have bought orchard runs and run in everything grown and the blossom buds for next year. I know of one of the most prominent buyers who has done more to hurt the western New York apple in the markets of the middle west, than can ever be known, and one time when I was in his warehouse where has was packing apples the farther the help threw the apples into the barrels the better packer he was considered, and as the hot weather was ripening apples up very rapidly, one can imagine what some western man will say when he buys fancy No. 1 Western New York apples." New York. W. MILTON KELLY.



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Insure your crops against a bad year—have a bumper crop in good years. You can with a Horse Power Spramotor. It does the work—does it well—four rows at a time—three nozzles to the row. Two rows at a time in vineyard and orchards.

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Spray twice, three times during the growing season. The results will surprise you. Will pay for itself many times over in a single year. When your own crops are cared for, make big money spraying those of your neighbors and friends.

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With Half the Work

Nine sprays—same nozzle—round or flat—coarse or fine—cover twice the foliage.

"Kant-Klog" Sprayer

Nozzle cleaned while working; Spray starts or stops instantly. 10 styles. Write now for special offer. Agents wanted.

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140 EGG
Ironclads are not covered with cheap tin or other thin metal and painted like some do to cover up poor quality of material. Ironclads are shipped in the Natural color—you can see exactly what you are getting. Don't class this big, all metal covered, dependable hatcher with cheaply constructed machines—and don't buy any incubator until you know what it is made of. Note these Ironclad specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering, galvanized iron legs, large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boiler, self regulator, Tycos Thermometer, glass in door, set up complete ready for use and many other special advantages fully explained in Free Catalog. Write for it TODAY or order direct from this advertisement.

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Both for \$10
Freight Paid
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140 Chick Brooder

Let Me Pay the Postage to You
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Phelps says he'll save you \$25 to \$40 on a genuine Split Hickory. Is it worth a postal to find out? Is it worth a postal to see the 125 styles of vehicles and complete line of harness all shown in Phelps' new book? Is it worth a postal to learn the reasons why nearly 200,000 other people bought

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Poultry and Bees.

Factors to Remember in Brooding.

Sunlight plays an important part in the brooding of chicks. After they know where to get warm, they should be allowed all of it possible. The first few days do not allow them to huddle in the sun in the attempt to get warm. We sometimes have found it necessary to put up a board so they could not get into the sunshine for the above reason. After they have learned where to find the source of heat, this restriction is unnecessary.

Give all the ventilation, without drafts, possible without lowering the temperature too much. We would much rather have our brooder, exercising room, properly ventilated, even though at a lower temperature, than warm and ill smelling. Fresh air in abundance is of prime importance, chicks deprived of the same are delicate, puny and although they do not die necessarily on account of the lack of same, the first thing you know they will gradually dwindle away, for no accountable reason.

Keep Temperature Up.

The temperature should be high enough to prevent crowding under the hover. A temperature of 100 degrees near the heater, with a lower temperature at various locations from the source of heat, is the most desirable. Allow the chicks to choose their own temperature. It is far better to have too high a temperature, when the chicks can get away from it, than a too low temperature. If it is too warm they can move farther away from the source of heat, but if it is too cold, all they can do is to huddle and crowd in the attempt to get warm. In this crowding a good many are trampled, the rest begin to sweat and get chilled. There is probably no other cause of such a large mortality in brooder chicks as the lack of proper amount of heat.

The interior of the brooder should be kept perfectly dry and sanitary at all times. The more often the brooders are cleaned out and thoroughly disinfected the better the chicks will be. To my way of thinking cleanliness is one of the most important essentials in the successful brooding of chicks. The more the brooder is crowded the oftener it has to be cleaned.

Do Not Overcrowd.

Another important factor we will have to recognize here, is the matter of crowding or over-crowding in the brooders. Over-crowding does not necessarily always take for granted that there are too many birds in a given space, but other factors which enter into the consideration are the amount of hover space, amount of air space, condition of the yards and exercising area, and season of the year. A brooder with a small air space is sooner over-crowded than one with a larger air space, even though the square feet of floor space are the same. A brooder located on ground used the past years for raising of chicks, is also over-crowded sooner than one located on uncontaminated ground. Then, too, a capacity of a brooder, to some extent, is judged by the heating capacity of the heater. Most kerosene brooders are over-crowded with 75 chicks and all are overcrowded with 100 chicks. Gasoline-heated brooders are not over-crowded with a flock of 200 to 300 chicks; the same can be said in regard to the coal-heated brooders. Often the rated capacity of a brooder is correct for the first week, but after this, on account of the chicks increasing in size, they are crowded, and in order to make up for this the weakest ones commence to die off.

In order to be successful in the brooding of chicks it is of prime importance that the operator watch his chicks, note their condition and wants. Watchfulness in the brooding of chicks is the price of success.

Never brood chicks of different ages in the same brooder. They will invariably not do well. In fact, in chicks of the same age, there is, after a few weeks, enough difference in the size and strength of the chicks to make it advisable to divide them accordingly, placing the large and strong chicks in one brooder and the weaker and smaller chicks in another. Try it and see. I think you will agree that it pays.

It ought not be necessary to state here, that lice, mites and chicks never do well together. It is either the one or the other will have to go. If you allow vermin to flourish, the chances are the chicks will give up a losing fight. To guard against this, disinfect your brooder regularly, at least once a week, and twice is better. See to it that the disinfectant gets well into all of the cracks and crevices.

New York.

F. W. KAZMEIER.

LIVER TROUBLES IN CHICKENS.

If there is anything wrong with the hens it is usually at this time of the year. As with people after being housed under unnatural conditions and partaking of a diet not in keeping with conditions, hens get sick. Sickness is nothing but getting rid of filth and foreign matter in the body. Some time there has to be a house-cleaning and now is about the time. The liver generally stands the brunt of this unnatural living and therefore, liver trouble.

This trouble puzzles the poultryman about as much as any disease. This is probably due to the fact that there are no definite external symptoms to indicate it. The fowls just act dumpy and do not go well, and it is not until one is killed and dressed that the diseased condition of the liver is noted.

Two Classes of Liver Troubles.

Liver troubles may roughly be put into two classes. There is one in which the liver is greatly enlarged and with considerable fat around it. This is mainly called enlargement of the liver, or fatty degeneration of the liver. The other kind presents symptoms with whitish nodules on the liver and sometimes on the spleen and other organs. Occasionally these are found on the other organs alone. These protuberances show a cheese-like appearance when cut into.

The general external symptoms of the fowl when affected with any of these troubles, are rough plumage, watery diarrhea, which is first brownish color and then yellowish, lack of appetite and an indisposition to move. The comb may be purplish at first and then as the disease progresses it turns darker, sometimes almost becoming black. Often fowls die without these external signs of the trouble. These external symptoms may also be due to other troubles than that of the liver.

Curative and Preventive Measures.

The causes of these liver troubles are conditions generally present during the winter months, such as lack of exercise and improper feeding. Often the feeding of foods too rich in albuminous matter will cause it. There is no doubt but that improper feeding conditions are the greatest cause of the trouble. Occasionally trouble with other organs will indi-

Save Your Chicks From Lice

Chicks can't get the right start in life if they are pestered with lice. These parasites inflict constant torment on chicks, keeping their vitality in a low state.

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INSTANT LOUSE KILLER

Kills lice *instantly*—as soon as it touches them. Dust it on chicks when a week old.

Destroys lice on farm stock, bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes. Sifting-top can. 1 lb. 25c; 3 lbs. 60c; Except in Canada and the far West. If not at your dealer's, write

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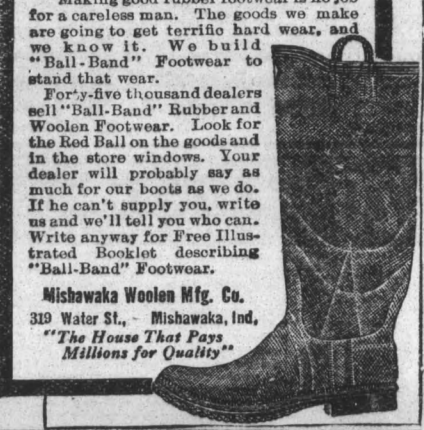
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THIS IS THE TOOTH THAT DOES THE BUSINESS

It actually cuts. Makes a finer Pull than any other Harrow, and Either the Wide, Upper Face gives Cultivator Action. For Slanting Cut, hitch to the other end.

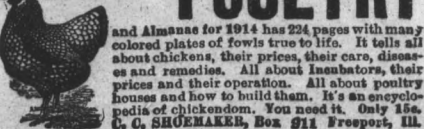
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and Almanac for 1914 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 911, Freeport, Ill.



rectly cause liver troubles very similar to the regular liver diseases.

The chief method of cure is to rectify the conditions which cause the trouble. A change of diet to a good mixture of grains, with some beef meal or bone, and plenty of green food, will help considerably. Compelling exercise by putting plenty of fresh litter in the coop and making the hens scratch for their living, is also important. Be sure that everything in the coop, including the food and the litter, is clean and sanitary. One to two grains of bi-carbonate of soda in the drinking water every day and epsom salts once a week, will do much for remedial purposes. The epsom salts should be given in doses of about 30 grains per hen and may be mixed in soft food for administration.

As liver troubles are really filth diseases, immediate and satisfactory results can not always be expected. Some fowls may be so far advanced in the disease that they may never recover. While the trouble is one that is not exactly contagious it would be well to dispose of the hens which seem most badly affected. As with many other things, prevention in this matter is much more satisfactory than a cure.

BROODING THE EARLY CHICKS.

To the small poultry raiser not equipped with all the latest devices for handling the early chicks, the brooding problem is often a trying one. If the eggs are hatched under hens two clutches may be given to one hen and the other soon returned to laying duty, yet if the weather is still cold and stormy it is best not to give one bird too many to care for. A separate building or compartment in the poultry house should be devoted to the chicks. If there are several mother hens kept in the same room they must be kept apart in some way, otherwise one of them is liable to tyrannize over the others. The house, or room, should be thoroughly cleaned and disinfected and the old birds frequently dusted with insect powder. A dust bath should also be provided, as this is nature's way of getting rid of the vermin. Chicks hatched after the weather becomes warmer are stronger and more vigorous if housed in small coops out of doors with runways attached, if full liberty is not possible.

Incubator chicks can be safely taken care of with a good brooder, no matter how cold the weather. This may be home-made after some of the many models described in poultry books and magazines, or purchased from a reliable firm. It is time to heat the brooder when the chicks begin to hatch. First have it clean and put a layer of paper at the bottom. This will help with the cleaning out. An inch of fine chaff on top of the paper helps to keep the feet of the chicks warm. The temperature should be kept in the vicinity of 90 degrees for a week, after which it may be gradually lowered to 70. As the chicks become older they exercise more and do not need so much warmth. If the little birds are found closely huddled it should be taken to indicate that more heat is needed, while if the brooder is too warm for them they will scatter. Observation of the chicks themselves will often indicate the degree of heat required. It is well to give the chicks a chance to leave the brooder by the fourth day. They may readily be taught to return to the source of warmth by gently pushing them back into the brooder with the hand. Thus a little watching and attention will be necessary for a week or so, after which to a considerable extent even the early chicks will take care of themselves. If there is a sudden cold snap they should be looked after carefully, as chilling may bring on diarrhea or other troubles.

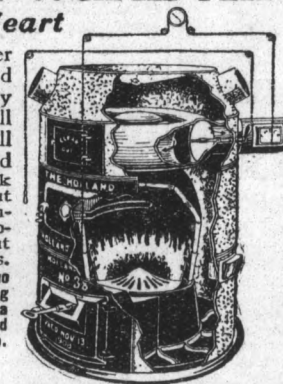
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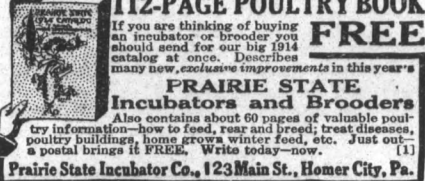
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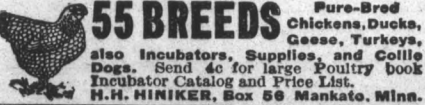
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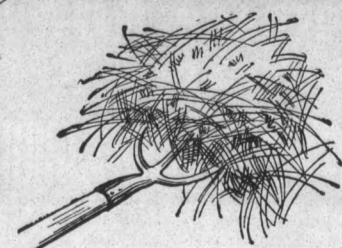
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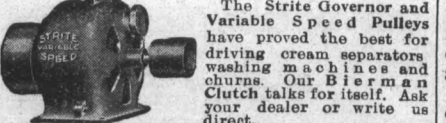


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CROP AND MARKET NOTES.

(Continued from page 312).

Kansas.

Nehama Co.—We have had cold winter weather, and the ice harvest is on. Wheat and rye are doing well, but the wheat ground will probably need rolling, on account of the severe frosts. There is a good deal of seed corn and seed oats on hand, but farmers are short on hay and grain for feed. There is a good deal of stock of all kinds still in farmers' hands. Roads are in bad condition. Wheat 76c; oats 45c; fat cattle \$7.75 @9; hogs \$7.50 @8.25; chickens 13c; cream 25c; eggs 22c. Farmers expect to plant considerable Kaffir corn this season, also squaw corn for early feed. There is plenty of home-grown corn for seed, which sells at \$1.25 @1.50 per bushel. Sweet clover is considered a profitable crop, as it resists drouth. There is plenty of farm help here for the coming season. This is a great poultry center, carloads of fowl being shipped to large cities.

Franklin Co.—February has been a very disagreeable month here, with so many changes from very cold to warm weather, and a good deal of rain and about eight inches of snow, which drifted the roads badly, but the roads are now muddy. Wheat and rye are in good condition. A few farmers have seed corn to sell at \$1.50 @2 per bu.; also seed oats at 56c. Corn and oats for feeding are shipped in. Corn 65c; oats 45c. Alfalfa is shipped in at \$12.50 per ton. Prices are much lower on feed than they were two months ago. Very few cattle are being fed, quite a number of hogs fed. The horse market is a little better than a month ago. Eggs 22c; cream 25c, which are about all the farmer has to sell now. The Grange is quite an active organization in this county. They are striving for stronger co-operation among the farmers in this section.

Dickinson Co.—A cold wave struck this county February 13, temperature going down to 10 below zero, doing some damage to the winter crops. Peaches and apricots are killed. Apples not far enough advanced. Feed is holding out well, and stock is looking fairly well. Sales are plentiful this month, and stock is selling high. Corn 73c; oats 50c; wheat 80c. Quite a little plowing was done before the late freeze.

Marion Co.—We are having real winter weather with about five inches of snow which drifted. Wheat, rye and meadows are fine, and the snow will be beneficial. Grass is all ready to start as soon as it becomes warmer. No injury to fruit is reported. Hogs are scarce. A few fat cattle are going to market. Stock cattle are high, and feed is scarce and hard to buy. Feeders having pasture are trying to buy cattle from Texas for spring delivery, no contracts made yet. Pastures will lease for less money than last year. Mules are selling high, and horses are in demand at fair prices. There have been a few sales, and a good many people are moving. Farmers are not selling much—butter, cream and eggs being about all. Cattle \$6.50 @8; hogs \$8; wheat 81c; corn 72c; oats 46c; shorts \$1.40; bran \$1.25 per cwt; best flour \$2.25 per cwt; butter 21c; eggs 21c; cream 25c.

Finney Co.—Farmers and stockmen are busy feeding and caring for cattle and calves, milking cows, and reading farm papers. Wheat is looking fine. There has not been enough snow here to make good sleighing this winter, and we have also had an unusually warm open winter. Quite a good deal of plowing has been done during the warmest spells. Practically all grain and stock have been sold. Hay \$12; potatoes 90c; apples \$1.50; coal \$8 per ton; butter 25c; eggs 21c; wheat \$1; corn 75c; cotton cake \$1.65.

Indiana.

Davies Co.—Mild open winter up to February 13. Good snow at this time with zero weather. Fine weather all through January, and a great deal of plowing was done. Most all good sod fields are plowed, and farmers are in good shape for spring work. Scarcity of feeds not noticeable, the mild winter saved feed. There are few hogs and cattle going to market; they are in good shape. The horse and cattle market is better. Farmers are beginning to look for good work horses, and offering good prices. Wheat 90c; corn 65c; potatoes \$1; eggs 25c; butter 30c; chickens 13c; horses \$150 @225; cattle \$8.50; hogs \$8.25; milch cows \$65 @100; all kinds of good hay around \$20 per ton.

Allen Co.—The snow storms and extreme cold weather that have been visiting this vicinity the last week brings visions of higher prices. Higher prices on eggs are looked for. No advance in the price of butter is looked for. The grain market is unsettled; wheat 92c; oats 38 @45c;

corn 56 @63c. All vegetables are steady. Potatoes and onions have stopped advancing. Fruits are in demand just now, and the prices are meeting with the approval of dealers and consumers. Roads are good.

Noble Co.—Weather has been very cold lately, but the wheat has a good covering of snow. Farmers are making use of the sledding in hauling logs to the sawmill for custom sawing. A good many sheep and cattle are being fed this year. Horses are high priced. Cows selling from \$60 @85; hogs 8 @8½c; not much corn being sold, only on local market at .55 @60c; wheat 88c; oats 36c; butter 26c; eggs 25 @27c; most of the poultry has been marketed.

Illinois.

Perry Co.—Temperature has been down to six above zero, and about six inches of snow is on the ground, which is fine for the wheat and grass. The farmers are selling some horses, mules and cattle. Hay \$16; corn 75c per bu; wheat 88c; oats 45c; chickens 12c; eggs 24c; apples \$1 per bu; sweet potatoes \$1.25; white potatoes, northern, \$1.20 per bu; stock pears \$1.75; coal \$2 per ton; butter 20c.

Marion Co.—We are having cold weather, the ground is frozen and there is eight inches of snow. Wheat and rye are in good condition and well protected. Farmers of this county do not have grain to market. Many of them are buying corn and mill feed, paying 70 @75c for corn. Those having silos are feeding very little grain. Fat hogs are about all sold. There are only a few cattle of the butcher class on feed, selling at 5 @6c per lb. A few fat horses and mules are being marketed at fair prices. The roads are in good shape for sleighing.

Champaign Co.—We are having the first real winter weather of the year with the thermometer near the zero point, and about six inches of snow on the ground. Some corn is being marketed since cold weather. There has been 50 to 60 per cent corn marketed, and about 15 per cent of the 1913 oat crop in farmers' hands. There is no wheat and rye raised here. Hogs are nearly all sold. There is no cholera at present. There are an unusually large number of farm sales. This winter the short crop has discouraged farmers, and they are inclined to want to change. All stock is selling lower than last winter.

South Dakota.

Deuel Co.—Wheat and rye are looking good so far, but cannot say much about it yet. Grain is about all hauled. Farmers are commencing to clean grain for seeding. Prices are fair. Wheat 75c; oats 30c; barley 50c; corn 50c; hogs \$7.50. There is about four inches of snow, and the roads are good but icy.

North Dakota.

Foster Co.—The weather has been quite cold this last week, being 26 below zero on the average, with very little snow. Roads are in fine condition. At a recent meeting of the Cattle Breeders' Association, the matter of importing pure-bred Shorthorns was discussed. Several loads of hogs were shipped last week, selling for \$6.50 @7. Cattle are nearly all shipped out. Farmers are now buying Canadian wheat for spring seeding.

Colorado.

Kit Carson Co.—The weather has been fine for over a month, and the snow was all gone, but today it is snowing and blowing terribly. The roads have been muddy. Early sown winter wheat and rye look good. Some of the farmers are getting ready to sow sweet clover. Grain nearly all marketed. Some few have wheat or corn on hand. Stock in good condition and bringing a good price at sales. Eggs 15c; cream 26c; corn 82c; wheat 75c; hogs 8c.

Nebraska.

Dawson Co.—We have had an unusually mild winter so far, making conditions very favorable for live stock. There is no snow, very little frost in the ground, and the roads are in fine shape. About the only marketing that is taking place is hay. Some horse buyers have been going through the country paying fancy prices that have a tendency to take the best horses away.

Kansas.

Cloud Co.—Cold wave and snow storm have just passed and the wheat and rye are now well covered. Much wheat is being marketed at 78c per bu., about the price received a year ago. Stock looks good. Heavy steers are higher, while cows, heifers and cream are lower than in 1913. Cream is 22c a pound; hay \$10 per ton; corn 65c per bushel.

It appears from reports that every effort will be made by the administration to have Congress enact a new law providing for a rural credit system, which will enable farmers and others in farming districts to make better use of securities.



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Ulcerated Heel—Knock-kneed.—My six-year-old mare ran in muck pasture last fall, frequently stood in creek and some time later her heel broke open and since then she has had other sores on body, but her heel is yet sore. I also have a young colt that is knock-kneed in both hind legs and I would like to know how to straighten him. F. R. G., Mayville, Mich.—Dissolve 1-4 lbs. acetate of lead, 1-4 lbs. of sulphate of zinc, 3 ozs. of carbolic acid in a gallon of water and apply to sore heels and other sores two or three times a day. Also give her a tablespoonful of Fowler's solution at a dose in feed three times a day. Give colt good care and plenty to eat and he will perhaps straighten up on his hind legs.

Bog Spavin—Indigestion.—I have a colt eight months old that has bog spavin on one hind leg. I also have a cow that came fresh two months ago, but we find it tedious to churn cream into butter that is taken from her milk. E. J. R., Yale, Mich.—Give your cow a dessertspoonful of hyposulphite of soda at a dose three times a day; change her feed and keep the cream in a place a few degrees warmer than you have been keeping it, and be sure that room is clean. Clip hair off bog spavin and apply one part powdered cantharides and six parts fresh lard every ten days.

Wart on Face.—My two-year-old heifer has a wart on side of face below eye that is about five inches in diameter; she also has other warts on neck and one on teat. Would like to know of some remedy as she is due to freshen in three weeks. T. N. V., Owosso, Mich.—Saturate the warts with pure acetic acid or strong vinegar once a day and if they are inclined to bleed, apply tincture of iron. Smearing warts thoroughly with olive oil will sometimes remove them, but if they are very large, they should either be burned off with lunar caustic or cut off.

Rheumatism.—I have two pigs five months old that are lame in hind leg and neither one of these pigs are thriving. Have been feeding milk, middlings, ground corn and oats. I have also given them some salt and wood ashes. C. E. R., Vernon, Mich.—Mix together equal parts ground gentian, ground ginger and powdered nitrate of potash and give each of them a teaspoonful at a dose in feed twice a day. If you believe they are wormy, which it is possible they are, give 1/2 oz. of equal parts of fluid extract spigelia, fluid extract senna occasionally to rid them of worms.

Nasal Catarrh.—Our house cat has spells of sneezing, is well fed, but thin. Is inclined to drool, and occasionally extends tongue out of mouth. V. L. B., Carsonville, Mich.—For every pound that your cat weighs, give 1 gr. powdered kamala, or areca nut, every other day until he has had three or four doses of this worm medicine, then give three drops of Fowler's solution at a dose three times a day. Clear out nostrils with one part peroxide hydrogen and four parts water twice a day, or apply a weak salt solution.

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Holstein Bull Calf 5 Mo. Old—A splendid individual, about 1/2 white. His six nearest dams have A. R. O. records that average butter 7 days 24.35 lbs. **W. B. READER, Howell, Mich.**

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

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

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

REGISTERED Shorthorn Bull Report 2nd 33691 R. four years old the 25th of March. Color roan. Price \$150. **J. Wallace Smith, R. No. 1, Watervliet, Mich.**

SHORTHORN CATTLE

W. W. KNAPP, Howell, Michigan.

SHORTHORN BULLS, 12 all ages. Best of breeding. Prices right. Also P. O. hogs and Oxford Sheep. **C. W. CRUM, Secy., Cent. Mich. Shorthorn Breeders Ass'n, McBrides, Mich.**

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

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

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Leicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berkshire swine. **Elmhurst Stock Farm, Almont, Mich.**

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS, "the sheep man of the east." Oxford, Shropshire, Rambouillet, Polled Delaines, PARSONS, R. 1 Grand Lodge, Mich.

\$225 buys 23 high grade Oxford sheep and lambs. Four registered, 18 ewes due to lamb in April. **B. B. REAVEY, Akron, Michigan.**

HOGS.

Durocs & Victorias—A few extra Sept. Boars and Bred gilts of the most up-to-date breeding. **Story Farms, Lowell, Mich. City Phone 55.**

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

O. I. C.—Sows bred for June farrow. We are also taking orders for spring pigs. **JOHN BERNER & SON, Grand Lodge, Mich.**

THIS

O. I. C.

SOW WEIGHED 932 LBS.

AT 23 MONTHS OLD

IONIA GIRL

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

O. I. C.'s—I HAVE A NICE LOT OF HAND. **OTTO B. SCHULZE, One-half mile west of Depot, Nashville, Michigan.**

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

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

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

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

O. I. C.—Extra choice bred gilts, service boars and the Big, beautiful Boar, not akin. **Free State Fair Winners. AVONDALE STOCK FARM, Wayne, Michigan.**

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

Chester Whites—Reg. Bred Gilts—Orders taken for spring pigs and Collier pups. **Holstein Bulls at Bargains. RAY B. PARHAM, Bronson, Mich.**

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

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

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

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

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

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

Durocs—25 large high class sows, bred for March & April to Barney Crimmon, Cherry Advance & Oakland. **Fancy. Write or come to see, J. C. Barney, Coldwater, Mich.**

DUROC JERSEYS—1 Yearling Boar For Sale **CAREY U. EDMONDS, Hastings, Michigan.**

DUROCS—Two extra Apl. gilts for Apl. farrow, \$50 each; May gilts for Apl. \$30; Apl. gilts for Apl. \$35; of the best breeding and quality, bred to the son of the Jr. Champion International. (All inbred.) **H. C. KEESLER, Cassopolis, Mich.**

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

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

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

POLAND CHINAS—Both Western and Home Bred. Either sex, all ages. Prices right. **W. J. HAGELSHAW, Augusta, Mich.**

POLAND CHINA SWINE, Shorthorn cattle, Oxford sheep and B. P. Rocks. High grade Holsteins and Guernsey calves. **Robert Neve, Pierson, Michigan.**

POLAND CHINAS—Bred sows all sold. Some good growing fall pigs. Prices right. **G. W. HOLTEN, R. No. 11, Kalamazoo, Mich.**

Poland China Boar; Sows Bred, All of the Big Type. **A. A. WOOD & SON, Salline, Michigan.**

LARGE T. P. C.—Measurements of one of my top heart girth 57 1/2, loin 50 1/2, bone small and legs 7 1/2 in. Weight close 350 lbs. Can spare Big A Wonder weight close 350 lbs. **H. O. Swartz, Schoolcraft, Mich.**

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. We have 25 big boned boars ready for service. Buy one and make more money on your hogs. You can't get any better at any price. **P. C. History Free, J. C. BUTLER, Portland, Mich.**

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Poland China Boar—Sows, all of the big type. Prices reasonable. **J. A. GOKKE, R. 4, Owosso, Mich.**

30 Poland China Fall Pigs—Good ones from immune sows \$10 and \$15 each, while they last. Bred now sale Feb. 27th, send your name for catalog if you want to buy Big Types with Quality. **Wm. Waflie, Coldwater, Mich.**

350 BIG TYPE MULE FOOT HOGS—America's Champion Hogs. Prolific, hardy. Best for Mich. Also Pones. **J. DUNLAP, Box M, Williamsport, Ohio.**

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LARGE YORKSHIRES—Fall pigs, both sexes, pairs not akin. Yearling sows bred for March farrow. **GEO. L. McMULLEN, Grand Lodge, Mich.**

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The large, long-bodied, heavy-boned prolific kind. Sows and gilts bred for spring farrow. 60 head of September, October and November pigs. Prices reasonable. **W. C. COOK, R. 42, Ada, Michigan.**

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Spring gilts, splendid ones. Fall pigs, either sex. Gilts bred for spring farrow. **COLON C. LILLIE, Coopersville, Michigan**



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You Take No Risk

I'm not asking you to BUY—I'm asking you to TRY—just try on a pair of my "steels" at home. Just SEE a pair of my "steels" before you think of buying any workshoes. Try them at My Risk. Then, use your own judgment about keeping them. If they don't suit you or fit you, I will exchange them without extra cost. If they are not NECESSARY in your work—return them—and the trial has cost you nothing.

My "steels" are shipped direct to you, from my Racine Factory which has a daily capacity of 5000 pairs. No waits—no risk—no delays—no obligation—no trouble to get my "steels."

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I don't see how you can refuse this really generous offer. I don't see how any worker who has any consideration for his feet, his health or his purse, can refuse such a plain, open, honest, straightforward, no-risk-to-him offer as I have made you.

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