

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY.
ESTABLISHED 1843.

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

VOL. CXXXVIII, No. 11.
Whole Number 3591.

DETROIT, MICH., SATURDAY, MARCH 16, 1912.

\$1.00 A YEAR.
\$2.75 5 YEARS.

ALFALFA QUESTIONS.

Sweet Clover vs. Alfalfa.

We would like an opinion in regard to sowing sweet clover, so as to get the soil inoculated for alfalfa. Is sweet clover a noxious weed if sown on the land? We are in receipt of a letter from an Iowa farmer stating that he has grown it for 11 years, plowing it up and seeding as you would June clover. We have quite a bit of sandy soil, which is somewhat rolling, so it does not need draining. Do you think that this soil is well adapted for alfalfa? Some of this soil has a gravelly subsoil. It has been somewhat run down by heavily cropping. Do you think that if we plowed this in the fall and harrowed down two or three times so a manure spreader would go over it better in cold weather and manure it, say 10 or 15 loads to the acre, and then by harrowing into the soil and keeping the weeds down until say about the first of June the following spring, that we would have a favorable chance to get a seeding of alfalfa?

Livingston Co.

E. L. G.

The question of sowing sweet clover as a means of inoculating the soil for alfalfa is one upon which authorities do not agree. Some contend that this is a good practice and that sweet clover will thrive upon soil where alfalfa will not. However, it is conceded that the same nitrogen-fixing bacteria is common to both plants. This being the case, if the bacteria is not present in the soil quite as much difficulty might be experienced in getting a good stand of sweet clover as of alfalfa. It is true that sweet clover seems to thrive wherever found along roadsides and in waste places, but as a matter of fact, it may not have been noticed at all until it had become inoculated through natural means and this inoculation had enabled it to spread and make a thrifty growth. One or two small, spindling plants of sweet clover would not make much of a showing, but when it becomes inoculated and seeded thickly and grows several feet high it is very noticeable and also a very persistent grower, which has resulted in a general idea among farmers that this is a bad weed.

Sweet clover, however, is a biennial. It grows from the seed one season and bears seed the following year, when its life's cycle is completed and the plant dies. The persistence of sweet clover along roadsides, or wherever it has become established, is due to the fact that it has been reseeded in a natural way by the abundant crop of seed which has matured each year from plants started the previous year. But there is no danger of its becoming a weed in cultivated fields. In fact, if it is kept mowed down for two or three years, or until the plants growing have matured and died, it is easily killed without any cultivation whatever.

But, as noted above, in order to secure a successful stand of sweet clover, the bacteria must be present in the soil and the soil must be a suitable home for that bacteria to develop and thus secure a perfect inoculation. If these conditions are present, then alfalfa can be seeded with nearly as great a prospect of success as can sweet clover. Hence, in the writer's opinion, it is better policy to put the soil into condition for growing alfalfa in some other way than by sowing sweet clover, since, while sweet clover may be made a

profitable forage plant or soil improver, it is not as valuable as alfalfa as a forage crop. This can be done by making the soil rich, incorporating plenty of vegetable matter in it, making an application of lime where needed and by inoculation to insure the presence of the bacteria peculiar to the alfalfa plant.

As many times stated in these columns, alfalfa adapts itself well to a great variety of soils and may be grown on almost any well drained soil, provided the same is placed in the proper condition. The method of seeding most favored by those who have had the greatest experience with the crop, is the liberal application of stable manure to a cultivated crop, then seed the alfalfa the following spring without plowing, as this method insures greater freedom from weeds, which are

will germinate quickly I will seed with about six pounds per acre, and without a nurse crop. When the plant is just large enough to mow I will cut it and leave the cutting on the ground for a mulch. I intend to repeat the cutting in this way during the whole season. I wish to use fertilizer on the whole. Will you kindly advise me through your valued paper if I am starting out right and how much fertilizer and what kind to use.

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But sown either with or without a nurse crop on ground prepared as mentioned above, there should be every reason to expect a successful stand. As to the amount of seed to sow, there is also a considerable difference of opinion. The writer has sown from six to 20 pounds. The former amount is sufficient under some conditions, but 10 or 12 pounds would be a safer dependence as conditions are not always perfect for the germination of the seed and growth of the young plants.

DISCING ALFALFA.

The illustration shows three alfalfa root-crowns. It can be seen that the method of growth is different for each crown. The one to the left of the picture has a spreading, thin growth; the center one has a compact, thick growth; and on the right a thick, spreading growth. The large shoots which form the clusters come from buds produced on the main root. These shoots also produce buds which may grow and give the whole root-crown a branched appearance. A few buds can be seen on the shoot at the extreme right of the root-crown on the left side of the picture.

Much has been said in favor of discing alfalfa for the purpose of splitting these crowns so that the pieces may spread out and make the stand over the field thicker. The object of discing so far as the plant itself is concerned is to split the crowns, and to this end it would be well for the grower of alfalfa to examine the plants closely and determine their manner of growth. An examination of the plants before and after discing will show the effect of the disc upon them, and give ideas as to how the disc should be set to give the best results. In general, it may be said that the disc should not be set at too great an angle as this would tend to cut off the root-crowns instead of splitting them. Aside from splitting the root-crowns, the discing has a beneficial effect in that it tends to kill weeds, and also to put a dust mulch on the surface of the field which helps to conserve water for the plants. Many successful alfalfa growers disc their fields until they look like gardens, and claim that this treatment really thickens the stand and increases the growth of the alfalfa. We read that alfalfa should not be pastured

because the tramping of the stocks' feet will break off the buds from the roots, causing the stand to become thin. If the tramping of stock while at pasture will do this great harm, what, then, will a disc do when set at too great an angle. It would seem from this that the best results could be obtained by setting the disc nearly straight, so that the crowns will be split and not cut off, and as many of the buds as possible left on the split crowns. In



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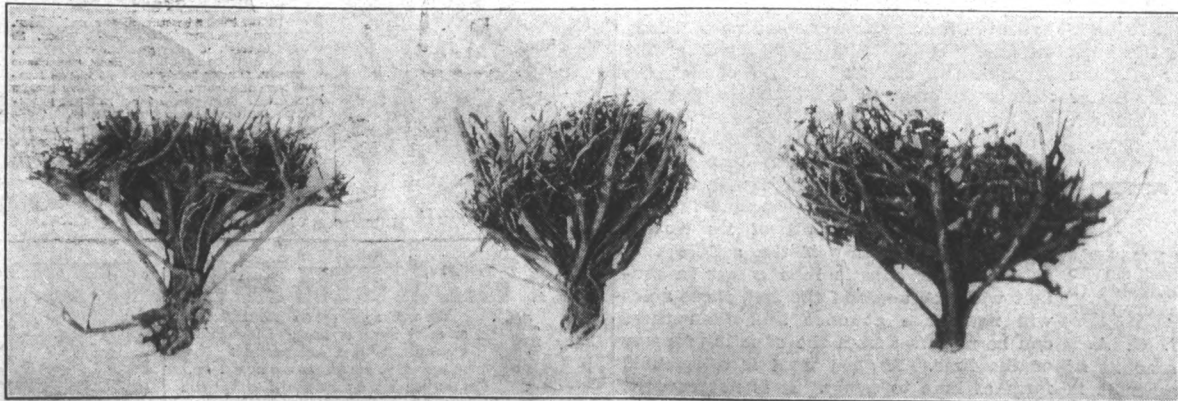
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Clipping a New Seeding of Alfalfa.

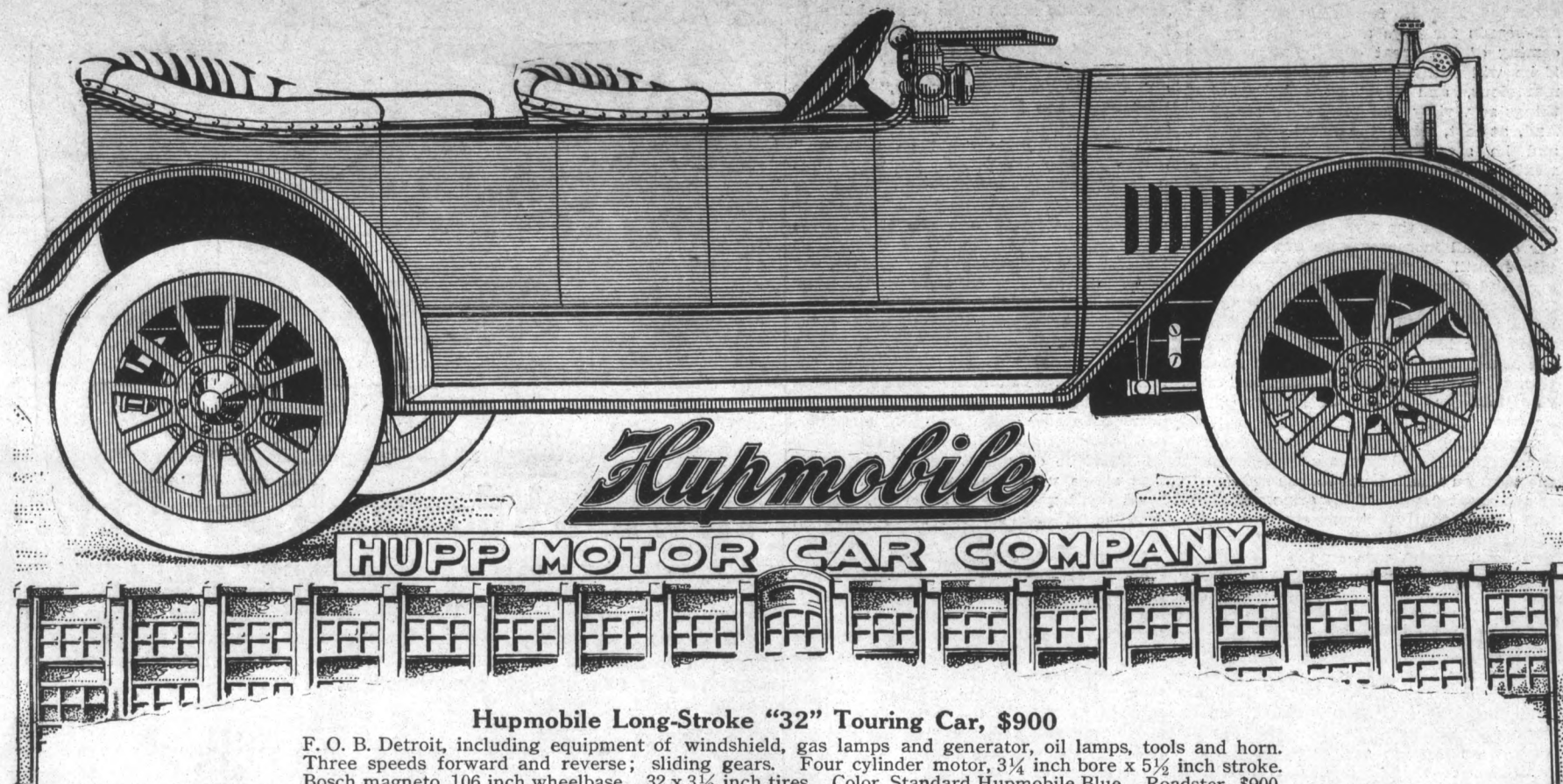
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Three Alfalfa Crowns, Showing Different Habits of Growth. (See Discing Alfalfa).



Hupmobile Long-Stroke "32" Touring Car, \$900

F. O. B. Detroit, including equipment of windshield, gas lamps and generator, oil lamps, tools and horn. Three speeds forward and reverse; sliding gears. Four cylinder motor, $3\frac{1}{4}$ inch bore x $5\frac{1}{2}$ inch stroke. Bosch magneto, 106 inch wheelbase. $32 \times 3\frac{1}{2}$ inch tires. Color, Standard Hupmobile Blue. Roadster, \$900.

'Long-Stroke' means Long-Stroke in the new Hupmobile

We have figured always that it was the wisest kind of enlightened selfishness to give more than the public expected.

Thus, only one motor in America has a longer stroke than the engine in the new Hupmobile "32."

And the car which shares this distinction with the Hupmobile sells for several times the Hupmobile price of \$900.

The relation of stroke to bore in the new Hupmobile is the mean average of the best and latest European practice.

But we did not stop with this positive assurance of greater pulling power.

The cylinders are cast en bloc and the crankshaft, of special drop forged high carbon steel, equipped with three especially liberal bearings, instead of two.

Note these evidences of extra-generous construction, one at a time, please, and compare them with other cars at the Hupmobile price.

Observe that the valves, for instance, are not only all at one side—an admirable advantage—but completely encased, yet instantly accessible and oil-tight and dust-proof.

Again, you find another evidence of careful workmanship in the manner in which the inlet and exhaust manifolds are cast integrally with the cylinder block.

You will also note the advance in construction that we have made by casting together, from the highest grade of aluminum the alloy, upper part of the crank case and the entire transmission case.

This construction is completed by making the lower part of the crank case from pressed steel.

You will see in this engine and transmission unit a triumph of mechanical adaptation, which makes for increased efficiency and space economy.

The full-floating rear axle of the Long-Stroke "32" is, in itself, a work of high degree, which places the Hupmobile in an exclusive class.

The rear axle connection is by means of a single universal joint, enclosed in a taper tubular housing which is jointed to the transmission case.

By this means we avoid the use of truss rods, yet have produced the strongest and stiffest axle possible. Each rear wheel runs on two roller bearings mounted on the axle tube, while the axle shafts are bolted to the hub flanges.

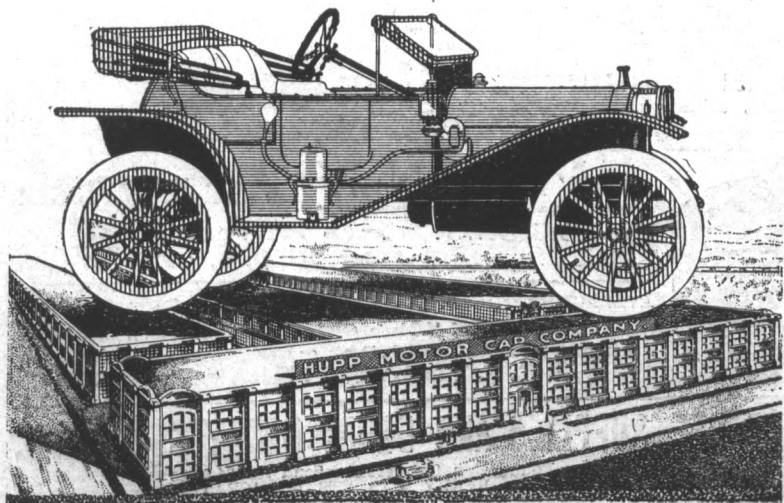
You can ascribe all these constructive advantages to the fact that the Hupmobile organization has always been held practically intact.

In every essential it is the same as it was when the first Hupmobile was built.

The chief engineer, E. A. Nelson, is the same man who designed the original Hupmobile runabout—whose priority in its own class has never been seriously disputed.

The department heads who have been associated with Mr. Nelson and the skillful workmen who have executed his designs, have remained with us in our progressive development.

We should be glad to send to your address $4\frac{1}{2} \times 8\frac{1}{2}$ photogravures and full description of this handsome car.



Hupp Motor Car Co. 1258 Jefferson Ave. Detroit, Mich.

Standard 20 h. p. \$750
Runabout

F. O. B. Detroit, with same power plant that took the world touring car around the world—4 cylinders, 20 H. P., sliding gears, Bosch magneto. Equipped with top, wind shield, gas lamps and generator, oil lamps, tools and horn. Roadster, with rear deck and steel box for tools and accessories, \$850.

A recent exhaustive report of the efficiency of the Hupmobile runabout in nearly a year of army service is contained in a booklet entitled "A Test of Service," which we will gladly send on request.

The new Hupmobile plant, now nearing completion and illustrated at the left, will have a capacity of 15,000 to 20,000 cars a year; and the Runabout—always a car of unprecedented popularity—will continue to occupy the same large part in our manufacturing plans that it does at present.

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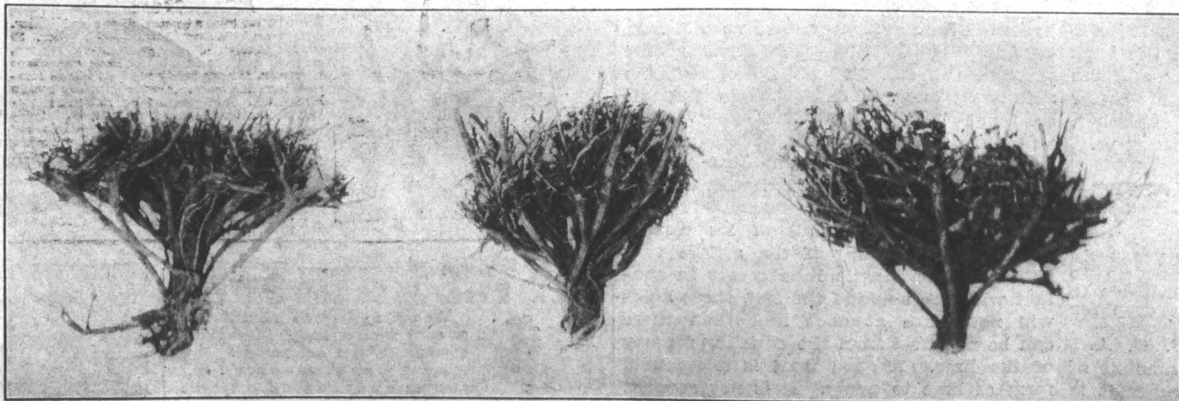
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growing alfalfa for seed, it is well not to endeavor to thicken the stand by discing. When the stand of alfalfa is thin, it is in the best of condition to grow seed. The weak plants have died out leaving only the hardy, acclimated plants which will produce the best seed. Seed that will produce hardy plants is much desired in Michigan at the present time. More seed can be grown on a thin stand than on a thick stand. In growing alfalfa seed it is best to cut once in the early part of the season for hay and then allow the alfalfa to go to seed.

Harrowing the alfalfa field produces good results on light soils and when the seeding is new; but when the seeding gets two years old, or more, and especially on heavy soils, the disc is the proper tillage implement to use. On old seedings the harrow will break off too many of the side buds and damage the crop. The harrow will not split the crowns like the disc.

The time to disc alfalfa is also important. It is a good plan to disc at least every spring. Many growers maintain that it is also good practice to disc after every cutting. When the discing is done in the spring, it should be done with a view to save moisture from being evaporated from the field, as well as its effect upon the alfalfa plant. On heavy soils that bake on the surface, the disc should be used to break up the crust before the soil gets too dry. After a cutting in the summer, the disc might well be used to break any crust that has formed. One thing, however, should be guarded against as much as possible, and that is discing when the weather is too hot and dry or when there is a probability of having a hot, dry spell just after discing. Where the stand is reasonably thick, and no crust has formed on the surface of the soil, the alfalfa field had better be left alone in the summer.

Ingham Co.

C. H. SPURWAY.

THE WOODLOT.

I have just read Edward Hutchins' article on The Farm Woodlot, found in the Michigan Farmer of January 27. I see that Mr. Hutchins makes no account of his timber except for wood, and questions whether the woodlot is profitable. I have but four acres of timber but will give you the data concerning the woodlot since it came to my notice, in 1884. My father bought the farm in that year and I moved onto it. It was all cleared except four acres and all sawing timber had been cut out of that and the tops left on the ground. Father insisted the timber was of no use except for wood and should be cut off as fast as needed. I remember his looking at a brushy growth and saying that he never saw a better place to cut ox gads. I argued for the preservation of the remaining timber and won out. I cut up the tops left on the ground, piled the brush and cut out all crooked and inferior stuff, thinning where necessary.

In 1887 a barn was built on the place and everything that could be used in the barn was cut, and the tops used for wood.

In 1897 we built a 14x20 addition to the house and got all of the frame from the four-acre woodlot, and more tops for wood.

Again, in 1909 the timber received a thinning when I built a 20x30x18 bent on the barn, getting all but siding and shingles out of the woodlot, also a lot of top wood. What, in 1884 was ox gads, in 1909 cut barn timber. In 1910 we built a 10x14 room on the house and obtained the frame and flooring from the same four-acre woodlot.

Do you wonder that I prize my woodlot? A few years ago I procured some catalpa seed from a neighbor and planted them in my garden. The next spring I had about 300 trees ranging from 10 to 18 feet in height. These I set in the open places of my woodlot and many of them are living and growing nicely, thus better providing for the future supply of timber.

Branch Co.

WM. WALBRIDGE.

A CATCH CROP FOR HAY AFTER CLOVER.

I have a field of clover two years old which will be used for pasture up to about July 1. Would it be practicable to plow this up and sow to some crop for hay, like oats and peas?

Hillsdale Co.

B. G. A.

Unless we have an unusual amount of rain in the middle of the summer it is a difficult thing to get oats and peas or any other catch crop to amount to much for hay after July 1. Usually there is not

enough moisture so that you can get good germination and a good growth. I do not think it would be profitable to sow oats and peas, as this crop should be sown early in the spring. I think you could do better with Hungarian grass than with anything that I know of. Perhaps you could get a sufficient growth of cowpeas or soy beans, but we don't know so very much about these plants. If you have got a stand of clover it occurs to me that you will stand a better show to get a crop of hay by allowing this clover to grow than you would by plowing it up and trying to put it into some other crop. If you didn't have to pasture this you could certainly get one crop of hay in about that time, and then, with a timely shower you might get a second cutting, or if you cut it in the middle of June and then allow it to grow you might get a crop of clover seed.

COLON C. LILLIE.

APPLYING LIME ON WHEAT FOR CLOVER IN THE SPRING.

I have ten acres of wheat and have a nice stand but before the winter set in I tried the litmus paper test and find my soil acid. I wanted to sow it to clover this spring, but feel certain the land is too acid. If you were confronted by this condition would you apply ground limestone to this piece of wheat or would the application injure the young wheat plant? I imagine the limestone could be applied before the frost is out.

Illinois.

E. J. C.

Since this land is acid in reaction I should not seed it to clover until I had a chance to sweeten it by applying some form of lime, but I do not believe the best way to apply lime is to top-dress it. I don't think you would get the benefit of this lime for some time to come by putting it on top of the ground. You could apply ground limestone in this way and not have it injure the wheat a particle, but you couldn't apply caustic lime. If the wheat was a little damp the caustic lime would stick to it and would injure it. Lime ought to be mixed with the surface soil so that it can neutralize the acidity in the soil. Undoubtedly, some of the lime would work into the soil and would correct some of the acidity, but you wouldn't get anywhere near its full force.

Under the circumstances, I believe the best way would be to not sow the clover seed on this field this spring, but to wait until after you harvest the wheat, and then go to work and fit up the ground in good shape. This can be done with a cutaway or a disk harrow, by being thorough with it, or you can plow the land, as you prefer, in which case it should be rolled and packed to make a good seed bed. After the land is plowed and leveled off a little then apply the limestone and work it into the soil. You certainly can get this ready so that you can sow the clover seed along about the first of August. At that time, undoubtedly, we will have some showers which will cause germination. Now at this time if you would give an application of commercial fertilizer, after you apply the lime, and mix it with the soil, it would, to my mind, practically assure a catch of clover.

With regard to the form of lime and where it can be purchased I would refer you to an advertisement in the Michigan Farmer. As to the form of lime, people have different opinions. If you can get the ground limestone fine enough it will undoubtedly work very well, but the most of the limestone that I have seen is too coarse. Where it contains particles as large as a kernel of wheat or even half as large as a kernel of wheat, it will be a long while before this does any good in the soil. To my estimation, it will be years before it will have any effect upon correcting acidity. If it could all be as fine as flour then we would get some benefit at once. Now here is where crushed burned lime or hydrated lime or marl has the advantage of crushed limestone. The hydrated lime or the crushed ground lime is fine. It will be distributed evenly through the soil and it will correct the acidity at once. I don't believe there is so much in the idea that caustic lime will burn out the humus in the soil, as some people seem to think. Just as soon as the caustic lime is mixed with the soil it becomes hydrated, or changed in form and loses practically all of its caustic properties. Certainly if the soil is very acid and this caustic lime comes in contact with the acids of the soil, these acids will neutralize at once and then there can be no harm from the caustic property of the lime. A good marl is a splendid form of lime to apply. It is not caustic, it is exceedingly fine, and you can get your benefits at once.

COLON C. LILLIE.

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No sand too deep

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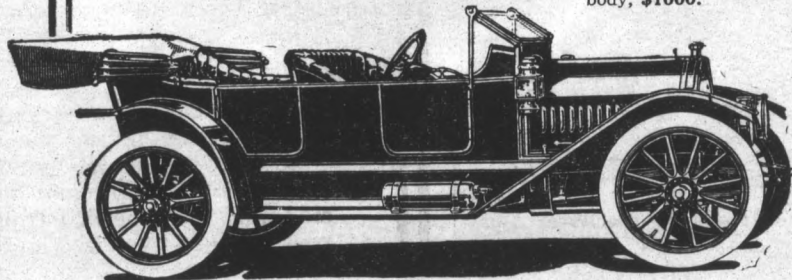
Add to these features the 118-inch wheelbase, with the easy-riding Jackson full-elliptic springs—and at \$1650 you have a car whose equal you are not likely to find under \$2500.

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Model "45"—Five-passenger touring car; 45 H. P., four cylinder, long-stroke motor, 4 1/2 x 5 1/2 inches; 118 inch wheel-base; 34x4 inch tires; full elliptic springs front and rear. Equipment—Top with top hood; windshield, speedometer, gas tank and lamps, oil lamps, coat rail and tools—\$1650.

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FARM NOTES.

Growing Big Crops of Corn.

I read an account in the Michigan Farmer of raising nearly 113 bushels of shelled corn on an acre of land. I have never raised anything near like that amount, and would like to have you tell me just how I should go about it to raise that amount of corn. How much fertilizer to use and what kind. Do I need to plant pure-bred seed? If so where would I be likely to get the best? The field I intend to plant to corn was clover cut for hay two years ago. Last year it was pasture and I am putting manure on it this winter. The soil is clay and sand.

Midland Co. W. J. H.

Doubtless the above inquiry refers to the statement made in a recent issue of the Michigan Farmer regarding the prize yield secured in the Boys' Corn Growing Contest, conducted by the department of agriculture in the southern states. It will be remembered in the account of this contest that the prize yield of corn was made by Benny Beeson, of Mississippi, who produced 227.16 bushels of corn on an acre. This record was so remarkable that the department of agriculture and commerce in the state of Mississippi has gotten out a bulletin for information on the methods used in growing the corn. This bulletin states that the county in which Master Beeson lives is just average Mississippi agricultural land with a good clay subsoil. The land was probably superior to average Michigan land, being what is known as dark upland twelve inches deep, subsoil being red clay. This is comparatively new land, having been farmed but eight years. It had grown corn the previous year and was plowed in December, 1910, and again in March, 1911. The corn was planted April 15 in rows three feet apart, with plants twelve inches apart in the drills, usually two stalks in a place. This had an ordinary application of barnyard manure, eleven loads per acre. A good stand of corn was secured and it was given surface cultivation once each week. Unquestionably this cultivation had much to do with the yield, as it is stated that the average yield on land around this plat was 28 bushels per acre.

Of course, this corn was not grown under Michigan conditions, and it is probably not possible to produce such a crop of corn in this state, even on new land, where given the best of culture. However, the way to proceed to grow the best possible crop of corn is to plow under some legume, such as red clover. In the south they use cowpeas for this purpose and accomplish the same end, viz., to add vegetable matter to the soil which will produce needed humus, then fertilize liberally with stable manure, using supplementary fertilization with commercial fertilizer if the best possible results are desired. Prepare the ground well, plant the best selected seed which has been tested for germination qualities, then give the best of care throughout the season.

Crops for Green Manure.

My farm is sand loam. We used to get a good catch of clover in wheat, but now can get nothing that way. By sowing alone can do better, but growth is feeble. What would be the best to sow to plow under to get land in condition again for clover? Have thought of Canada peas and oats. I understood peas are sowed on top and plowed under. Is this correct? How do you plow ground. Would oats be of any benefit? At what stage of growth do you plow under? How early can you sow? Land being in poor condition, would a little commercial fertilizer help growth of peas? If so what analysis would be best? Would you sow clover this fall alone or sow rye and more fertilizer, and analysis of same for clover? In short, tell me how you would handle this piece of ground to get clover growing. I shall test soil and if in need of lime will apply it.

Van Buren Co.

O. H. M.

There is no doubt but that the thing which this soil most needs to put it in condition to again grow clover luxuriantly is the addition of vegetable matter. Any kind of vegetable matter which can be most easily grown will aid in this problem of adding humus to the soil. However, unless Canada peas have been grown on this soil to an extent which warrants you in believing that they would make a good growth it is not certain that you would get a satisfactory crop. Peas, like clover, are a leguminous crop and require the presence of bacteria peculiar to the plant in the soil to make a satisfactory growth. They are also quite dependent upon a well distributed moisture supply in order to make a good growth, and if sown on this kind of land should be sown as early in the spring as is practicable. Sometimes the peas are plowed under as suggested, but in the writer's opinion it is better to drill them as deeply as possible. If a crop is being grown simply to plow

Get at it



with the Scales!

Don't guess at your crops. Get at them with the scales as this man did, and see how our fertilizers pay you good dividends.

"I will write you my experience with A. A. C. Co. Fertilizer on Oats. The yield was 70 bushels per acre of oats that weigh 40 pounds to the bushel, struck measure, on land I call very much run down.

There were 12 acres in the field. It was in beans last year and the ground was fall-plowed late for oats, and was well fitted in the spring with a spring tooth-harrow and the oats drilled in at 2½ bushels to the acre.

I commenced on one side of the field by drilling 100 pounds of Fertilizer to the acre. I increased the Fertilizer at intervals at the rate of 50 pounds each time until I got up to 400 pounds per acre leaving a drill row at each increase unfertilized. The parts that were fertilized with 100 pounds and 150 pounds each per acre were not as good as that which was fertilized with 200 pounds and over. The unfertilized strips were sorrowful looking oats by the side of the rest and attracted a great deal of attention. These strips were examined by good judges who laid their yield at from 30 to 40 bushels per acre—the yield of the whole field had no Fertilizer been used. That being the case, from 30 to 35 bushels per acre were added by using the Fertilizer.

We pulled up equal distances of rows that grew only seven inches apart, side by side, and took the dirt from the roots and weighed them and found that the fertilized row weighed over two and a half times as much as the unfertilized row. The fertilized oats stood a foot higher than the others and were much stiffer and larger, with over three times as much root as the other.

It pays well to use Fertilizer. It will add 20 to 40 bushels per acre, besides giving you double the straw and ripening your crops from a week to ten days earlier." (Name given on application.)

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There is no chance to make any money at all out of a poor crop.

Some Fertilizers are better than others. That is a well known fact. There are farmers who are satisfied with ordinary crops grown with inferior Fertilizers, because they have never used the best. While the farmer is obliged to take some chances on things beyond his control, he should not take any chances as to the Fertilizer he applies, for that is something he can control.

A A C CO. FERTILIZERS

are made not only to contain the full percentage of plant food according to guaranteed analysis, but—we go further than that. The agricultural value of our Fertilizers is given first consideration, because we look to the future. We want every farmer who uses our Fertilizer to get good results and increase his orders each season. That is why we are doing a tremendous business. Our factories never shut down.

Write for further information and agency proposition.

Every farmer should read an article by John A. Widtsoe, Ph. D., printed in our pamphlet—How to fight drought with fertility and why the richness of soil makes up for lack of moisture.

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Detroit Sales Department, DETROIT, MICH.

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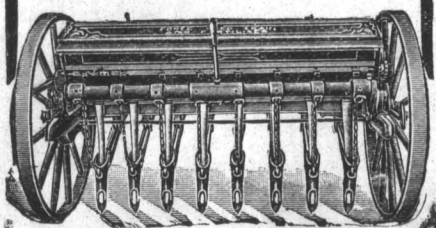
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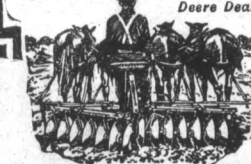
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Well drained land produces big crops. Invest in high grade clay tile and you will have a permanent drainage system. We have been manufacturing indestructible drain tile for several years. Thousands of satisfied customers. We satisfy you. Write Now for our prices.

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SPORIGIDE Sure cure for **SMUT** in oats. Guar. Simple to treat. **SPORIGIDE CHEMICAL CO.,** Atlanta, N. Y.

down there would be no object in sowing oats with the peas. Oats are sown with the peas when the crop is to be harvested for the reason that the oats hold the peas up and make the harvesting a much more simple problem. There is no doubt that a little commercial fertilizer would help the pea crop in anything like a normal season. The peas having the power of taking nitrogen from the air like clover do not need much of that element of fertility, but a little nitrogen will help to start the crop, for which reason a good grain fertilizer would probably be the most satisfactory.

The best time and method of sowing the clover seed is a subject on which those who have had experience in building up this kind of land do not wholly agree. Some have excellent results by sowing in August with a very light seeding of rye. Others find it more profitable to sow in the spring without a nurse crop. It is, in the writer's opinion, quite probable that an application of lime would benefit this soil and make it much easier to get a good seeding of the clover. However, as above noted, the essential thing is to increase its content of vegetable matter, and if peas can be grown successfully there is no better crop for the purpose. If not, the land may be sown to a catch crop, such as buckwheat or rape, and this followed by rye, the latter to be plowed down in the spring before the land is seeded to clover. In fact, the method of incorporating vegetable matter in the soil is an individual problem to be worked out in each case to the best advantage. It is also a problem which is simplified by the securing of a good stand of clover, which is in itself one of the best means of adding vegetable matter to the soil. The past two years have been very unfavorable for seeding this kind of land to clover, due to the exceedingly dry weather, and if the coming season should be a normal one less difficulty will be experienced in either spring or summer seeding. All things considered, probably the plan of sowing peas to be plowed down for late summer seeding would be as profitable as any which might be adopted in this case. The peas might be hogged down with profit and turned under late in the fall, the ground sown to rye and seeded in the spring, the rye being pastured or mown to give the clover a better chance.

TAX DISCUSSIONS.

Just a few words in reply to Mr. Reed's article in the issue of February 24. In my article in the issue of February 10, I did not criticize Mr. Reed personally, but the idea which he advanced. I agreed with him when he said he was in favor of every dollar paying an equal burden of taxation. I will agree with him again when he says that the tax law of 1890 was the best law we have had on the subject. I am glad that he agrees with me that the law just repealed was a double taxation. I did not uphold the present law, but said there was a just issue as to whether the land or the mortgage should pay the tax.

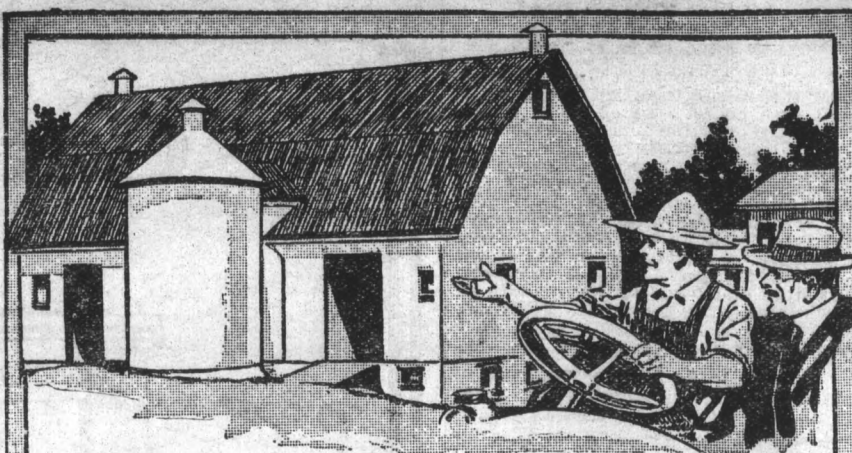
Mr. Reed suggests that I have an axe to grind. It does not make any difference as to the justness of the idea I advocated, whether I have or not. As a matter of fact, I am just a plain farmer, with a mortgage on my farm. I am paying taxes on what I own of it and what the other fellow owns, too. That is unjust. Would it remove the injustice to make him pay taxes again on his share? I think not. I would still be paying taxes on property I did not own, and there would be the further injustice of double taxation.

I gather that Mr. Reed's idea is to return to the double tax law just repealed, and not to the tax law of 1890, as that would still leave us shy the \$535,000, which would have to be made up by increasing the tax rate a small fraction of one per cent. Mr. Reed would be willing to pay his share of it, but is sorry for the rest of us poor taxpayers.

I do not see how his reference to cows and horses fits this question, his supposition exempted the horses from all taxation.

He speaks of a mortgagee in his township who will not take advantage of the present law because it is unjust. How does that help his mortgagee for more than a few cents at most? It would have helped him if the mortgagee had said to him, "As I do not have to pay any taxes on my mortgage now I will reimburse you for what taxes you pay on my share of your farm." I am for a "square deal," no more, no less.

Washtenaw Co. C. A. JEWELL.



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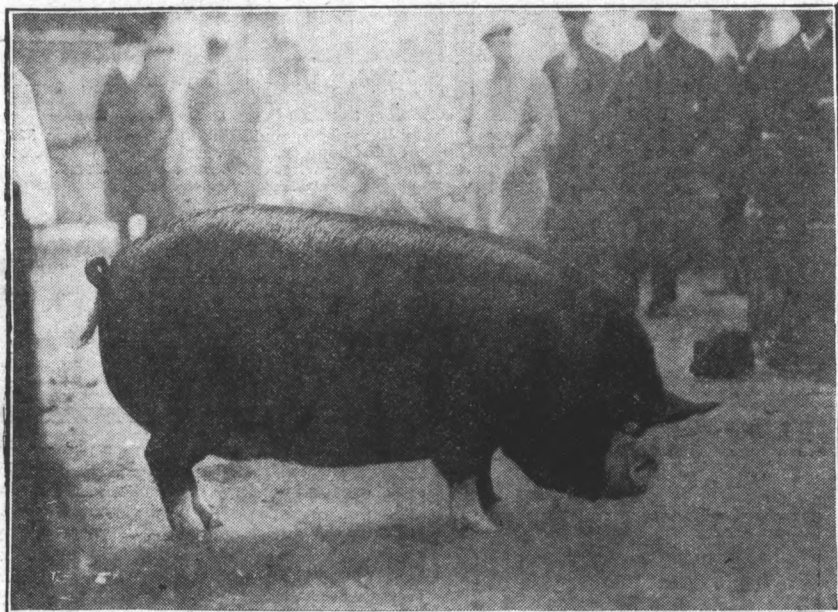
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The American hog has been aptly named the farmer's mortgage lifter. He is also the greatest machine known for changing plant food into meat, of converting corn into pork. His carcass furnishes the greatest percentage of edible dressed meat of any of the food animals. He supplies the one meat that everybody uses. Distinctively is he the farmer's meat; for rare indeed is that farmer who does not raise enough hogs to furnish him his meat supply the greater part of the year, doing his own killing, packing, and curing of the meat. Fresh pork in winter, hams in spring, salt pork and bacon in summer and fall, with lard the whole year through, the farmers calculate upon their pig crop furnishing them no small part of the income from their farm, and the better and more cheaply they are grown the greater profit will they bring to their producer.

The pig crop of 1912 is beginning to arrive on Michigan farms, and it is safe to say that if it were possible to have an account of all pigs farrowed and of those lost the total of the losses would be something astounding and would make an aggregate value which would represent a large sum to the growers. While some of this loss is inevitable, yet much of it could be prevented by the use of ordinary

something wrong. Keep everything around her quiet, and do not disturb her. Let her take care of her pigs, and the less she moves and stirs around the less danger there is of some pig being laid upon. The first two days she needs no feed except a little thin swill as a drink. After that if everything is all right the swill can be thickened, she can be fed some corn, and soon she can be on regular feed. For the best feed, skim-milk naturally comes first, but many farmers do not have this, or at most not enough for what pigs they raise, so there must be something else used. We prefer good middlings as they come from the mill with which to make the swill. To this can be added a small amount of oilmeal that has been well soaked, preferably for twelve hours previous to feeding; with this latter care must be taken not to feed too much. When the weather is cool so that the swill does not sour it is best to mix the middlings and water twelve hours previous to feeding; in other words, after you have given the morning feed mix the swill for the next feed, and then when you come to feed the next time the swill has only to be stirred and it is ready for feeding.

When grass is not available the sow should have something in its place, and we have found nothing equal to beets. Mangels are good, but the feeding sugar beet is richer and better feed. These can be fed whole, requiring no cutting or slicing. When beginning to feed them it is best to break them or cut into small pieces or slices with a knife, until the sow learns what they are; after that there



Champion Berkshire at the Great Smithfield Show, in England.

care and judgment. Any farmer knows how to grow hogs! Yes, but the display of his knowledge is many times rather peculiar, and often amazing. When told of some feed or method he will say, "I know that, but I didn't think about it; it is too much trouble, anyway, and it costs too much." It is not to things new that we will call your attention so much as to things essential and economical in starting the pigs.

The sow should have a clean, dry, warm place in which to farrow. You may expect loss of pigs if you leave the sow in a filthy bed that is wet or even damp, as well as one where the cold wind blows into or over it. The bed should be level, with not too much straw, and yet not too little. Fine wheat straw is the best, as it breaks easily and the little pigs can not become wound up in it as they can in long oat straw. The sow should be put by herself a few days before farrowing, so that she can become accustomed to her place and get her bed in readiness. This should be large enough so that when she gets up for her feed or to make a change there is room enough for the little pigs to get out of the way. A good plan to protect the pigs from being laid upon is to nail a 2x6 edgewise on the sides of the bed about eight inches from the floor, or just high enough so that it will prevent the sow from lying close to the side and at the same time permit the little pigs to run under it out of harm's way when the old sow lies down. This pen should be high enough and light enough so that one can see into it easily without disturbing the sow. For the floor we prefer plank or cement, as the sow can not root this and make a hole in her bed, although a dirt floor well packed is very good.

At farrowing time the sow should be left entirely to herself, unless there is

is no trouble about her eating them. They are a cheap feed, a good milk producer, and an aid to the digestive apparatus.

In connection with the little pigs there are some things that are essential in order to keep them growing, and in some cases to prevent actual loss. In the first place they must not be kept on the floor or in a small pen many days. When they are ten days to two weeks old they should be moved to some place where they can have access to the ground. Often we have heard men complain of losing their pigs when they are three or four weeks old, always the largest and fattest ones, and wonder as to the cause. It is generally thumps, which are due to good feeding, lack of earth and of exercise. These latter are very essential to the young pigs, and the lack of either or both generally results in loss, at least in lack of growth. So get the little pigs out on the ground as soon as possible.

Our method for handling pigs after they are old enough to move is to have a small house about six by eight feet which will hold one sow and her litter. Here should be provided a good nest of dry straw; whenever it becomes damp or dirty it should be cleaned, and fresh straw put in its place. To this bed the sow and pigs should go in and out at their own will. These little houses are put out in the field on a high, dry spot, with the door of the house facing south-east. We often place several in one field, and let the sows come to a common feeding pen, where they get their swill, corn, and beets. In this way they get plenty of exercise, and what is more important, keep their feeding place clean of all manure and filth; and when they go to their nests each sow and her litter are by themselves.

Soon the little pigs learn to follow their

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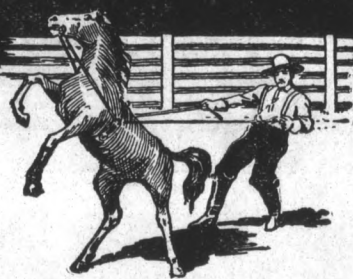
C. B. Hill, Robinson, Ill., Route No. 3, writes, "Three weeks ago I paid \$125 for a 5-year-old kicker; yesterday I sold her for \$225."



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Great Spring Introductory Sale of Williams' Guaranteed Quality Harness

Act quickly! For a short time only we are offering the most amazingly low prices ever quoted on Williams' Guaranteed Quality Harness, made from bark tanned leather, so write for full particulars at once. We have always given the greatest harness bargains of any concern in the world, but never before have we quoted such low prices as these.

Remember, these special prices are not quoted in our catalogs. We simply couldn't afford to make such prices regularly. We have prepared some special circulars describing these amazing bargains in complete detail. Rush your request for these particulars at once or order direct from this advertisement if you wish.

Now look at this bargain. We show just this one to prove what we actually are doing. And bear in mind, this is Williams' Quality Harness, protected by Sears, Roebuck and Co.'s guarantee.

¾-inch bridles; 1-inch by 18-foot lines; oiled Concord bolt hames; flat harness leather pads; 1½-inch breast straps and martingales; 1½ or 1¾-inch traces and hame tugs; folded breeching body with layer; 1-inch side straps; 1-inch double back straps; 1-inch double hip straps. XC buckles, nickel spots. Weight, boxed for shipment, about 75 pounds.

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Write a letter or simply send postal card saying you want full particulars of all of these bargains, and we will send them to you, free and postpaid, by return mail. We will also include our big Special Harness Catalog. Write today.

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Our summer importation, in our estimation the best lot of horses we have ever had at Oaklawn, has arrived. Numerous important prize-winners are included, then the high average is the main thing, as every animal would be a credit in any herd. Write us, DUNHAMS, Wayne, Illinois.

Breeders of Jacks and Percheron Horses—20 three year old Jacks, 15 yearlings. Some nice Percheron Stallions, Mares, Colts and Tamworth swine. All stock registered or subject to registry. We would be glad to have you visit our farm or write for circulars. H. T. Brown & Co., 156 W. Short St., Lexington, Ky.

JACKS and MULES

Raise mules and get rich. 18 jack and mule farms under one management, where can be seen 400 head fine large Jacks, Jennets and mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address Krekler's Jack Farm West Elkton, Ohio Branch Barn—Clinton, Indiana



JACKS.

Biggest jack offering ever made. 90-day sale on 55 head of extra big registered Mammoth Jacks at 60% of their value. Prices \$250, to \$1,200 each. I am importing 200 Percheron and Belgian mares and 80 stallions and must close out a lot of Jacks to get money and make room. Write for catalog, photograph, description and price list.

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FOR SALE—Imported Reg. Mammoth Jack. Sure, never failed to work. Colts to show breeding. Sell cheap if taken soon. Omstead & Rensch, Hamilton, Ind.

mother to the feeding floor, and then it is time to fix a place adjacent to that where the little fellows can go by themselves and get their feed. If there is any milk it should be given to them, with a little middlings mixed in it. As they grow more middlings can be used, and if necessary water can be made to take the place of the milk. Some shelled corn, soaked in water about twelve hours, should also be given them. In giving these feeds it is important that you do not feed too much. Do not overload their stomachs, but give them just enough so that they will want more, and will be on hand at the trough at the next feeding time.

If you have coal ashes or charcoal put them where the pigs have access to them; they keep their systems healthy, they are cheap condition powders, and the pigs like them. It is also a good plan to keep a box of salt where they can have access to it at all times. We have found it economical to use some of the medicated salts for this purpose as a preventive of worms. Many times pigs do not seem to make the growth and gain they should and the cause is to be found in worms. To keep such salt by them all the time is cheap and little trouble. You can fix a small box about six inches deep on one side of the feeding floor, and keep salt in it so that the pig can get it whenever he wants it.

Keep the troughs and feeding floor clean; do not let milk or swirl sour and stand in the trough, and expect the pigs to eat it and grow. They want fresh feed every time, and they should clean up their feed in a very few minutes. No feed should be left standing in the trough. It is a mistaken notion many people have as to the cleanliness, or lack of it, of a hog, for no animal appreciates it more, and on many farms, we are sorry to say, gets less of it. Feeding should be done regularly, at the same time of the day every day, not early one morning and late the next; the pigs know when it is meal time just as well as you do. It takes no more time to feed one time than another, and regularity adds to the comfort and growth of the pig. A little pig is just like any other young growing animal, it does best and grows most when given the feeds it needs most and in the way it likes best.

Washtenaw Co. Roscoe Wood.

SAVING THE LAMB CROP.

This continuous zero weather is so unusual for the time of the year and also so unfavorable for lambing season, that I felt moved to offer a few suggestions relative to the handling of young lambs under these extraordinary conditions.

Unless the sheep are kept in a very close, warm shed this kind of weather, it is liable to be pretty cold for the lambs when they first appear upon the scene. If a lamb becomes chilled before it gets dry it is apt to go pretty hard with it. If found before it has gotten too cold to walk or stand alone, it can best be warmed by the judicious use of a soapstone. The object in using this kind of a warmer is that it can be taken out to the shed where the lamb can be warmed up satisfactorily, by putting it in a box large enough for the lamb to move around in and then putting the warm soapstone, well wrapped so as not to burn or injure the lamb, under it. This will usually do the business for, in a short time the lamb will dry off and warm up and be ready for its first meal, after which it will be pretty sure to make a go of it. The value of using the soapstone in the shed is to save the bother of having the lamb in the house and also, and what is of much more importance, to avoid making any violent changes in the temperature the lamb has to breathe the first few hours of its life. If taken to a warm room to warm up the little lungs get accustomed to the warm air of the room. If the lamb is then taken out into the cold air of the shed the lungs often times cannot stand so violent a change and if left in the cold air they will begin to congest in a little while and then it is good bye little lamb. Bring them to in the shed if possible and then there is very seldom any bad effects afterwards. This is where the soapstone is especially valuable. Newly born lambs, if found at once and partially dried off, can be placed on the warm stone and, no matter how cold it may be, if they can dry off and warm up and at the same time get accustomed to the cold air, they will be able to stand mighty cold temperatures. I had one come last month when the mercury stood 20 below zero and treated in this way had no trouble at all and it is now a fine growing lamb.

Clean and Grade Your Seed Grain Free!



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You just pick out, from my catalogue, whichever size of Chatham Grain Grader, Cleaner and Separator you want me to loan you and I'll promptly ship it, freight prepaid—free. I don't want any money! It's a real free trial. Clean and grade all your seed grain. Keep the machine a month, if you please. Then return machine at my expense or buy it on my

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My price is positively the lowest ever made on a reliable grain grader and cleaner. Plenty of time to pay. Don't pay cash unless you want to.

Wonderful Machine

The Chatham handles over 70 seed mixtures—wheat, oats, corn, barley, flax, clover, timothy, etc. Takes cockle, wild oats, tame oats, smut, etc., from seed wheat; any mixture from flax; buckhorn from clover; sorts corn for drop planter. Removes foul weed seed and all shrunken, cracked or sickly grains. Takes out all dust, dirt and chaff. Handles up to 80 bushels per hour. Gas power or hand power. Easiest running mill on earth. Over 250,000 in use in U. S. and Canada.

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By Mark Havenhill, Fox, Ill. "With my Chatham Mill I found, saved and sold \$197.08 worth of timothy seed thrown in my oats by the threshing machine. What do you think of that clean-up of good money!"
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A Wonderful Seed Corn Grader

Hundreds of farmers are buying the "Chatham" for its corn grading feature alone. At State agricultural colleges it has broken all records in sorting corn for drop planters. 98 hills out of every 100 received right number of grains. Where grains were sorted by other means, only 60 out of 100 hills were right.

Chatham Grain Grader, Cleaner, Separator



1912 Model

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IT COVERS 58 FORMS OF LAMENESS—ILLUSTRATED
NOTE THE WORK THIS HORSE DOES IN FIVE DAYS.

Mr. R. H. Williams, of Sykesville, Md., Jan. 13, 1912, writes: "Troy Chemical Co., Binghamton, N. Y.—Have used Save-the-Horse five days; it is wonderful. The horse was unable to put heel to the ground, when walked she would barely touch toe and then jump with other foot. I gave first treatment Sunday. I put her in team Thursday and went for load of wood; got in place where they had to do their best or stay there. She lifted as hard as ever I saw her. Expected to see her lame next morning, but she was not. How long shall I continue to treat her?"

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Druggists everywhere sell Save-the-Horse with contract, or sent by us Exp. prepaid.

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This announcement is for the men who know a horse, who need a horse, and who are familiar with values when they find something suitable. Have you, Mr. Stallioner, spent dollars uselessly searching for a first-class Belgian stallion or a No. 1 Belgian mare for a price at which you could afford to own same? Have you, Mr. Prospective Purchaser, decided where you are going to find what you want?

We want to state here, and to state most emphatically, that our twenty-five years' buying experience in Belgium, and our selling system (all stock sold at the farm), places us in a position to sell a good stallion or a good mare at prices beyond competition.

We are talking of good horses, not the mediocre kind, and we are in position to sell this good kind at lesser figures than are demanded by some firms for the ordinary sort. If you are in the market for an extra good imported Belgian stallion or mare, come to Hewo and save all these useless side trips, secure a horse that represents every dollar that is demanded for same, and be a gainer of several hundred dollars on account of "the difference in price."

We have a number of home bred colts at extremely reasonable prices.

"Remember, Nothing but Belgians."

Don't wait to write, visit.

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Stallions and Mares of quality. At Reduced Prices.

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Take the time; come to our barn; get a Stallion. A whole barn full of good ones. Don't buy an inferior horse and complain. Buy of us and be satisfied. Our old customers buy again; why not you?

We always handle the good ones and will use you right. Give us a trial. It will be worth while.

GEORGE W. SOUERS & SONS,
601 to 949 West Matilda St.,
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Our Stallion Service book for 10c.

METZ BROS. NILES, MICH.

We have a fine lot of imported and American bred

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on hand and we can sell them for less money than any other importer. Write us your wants.

METZ BROS., Niles, Mich.

Why not buy a DRAFT STALLION

Splendid Selection of

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—AT—

BELL BROS., Wooster, Ohio.

Write for Catalog.

PERCHERON, BELGIAN, SHIRE, HACKNEY STALLIONS & MARES.

Two to 4 years old, imported and American bred. Choice colors, lots of bone, weighing or maturing 1,800 to 2,300 lbs. Three importations last few months, others to follow soon. Prices below competition. I sell them low and they go fast.

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Imported and pure bred Belgians. We make a speciality of Belgian & Percheron Stallions, all of Quality—Bone and Weight. G. & H. LOCHER, Bluffton, Ohio.

Another lamb that came a day or two before, when we had that 30 below zero weather was found by the man just after its birth and, as he did not know what to do with it at the shed he hustled it to the house at once. The lamb was a good one so we did not want to lose it. It got accustomed to the house atmosphere, and every time I took it to the barn to nurse its mother I had to be so careful that it did not get too much cold air at a time. The weather kept cold and after a short while I saw that it would have to go back to the house. The result was we had to keep it in a warm room so long that the mother partially dried up and so we finally adopted the lamb and let the ewe run with the flock. The lamb was not taken to the shed till we had a warm spell, so that it would not have to make too violent a change when going from the house to the shed and now is a bottle lamb that has to be looked after numerous times a day.

If a lamb has become thoroughly chilled and is practically helpless, it is probably best to resort to the hot water treatment to revive him, for it can be done much quicker and also more surely than with the soapstone or any other way I know of. The only difficulty with this is that one has to be so careful that the lamb is thoroughly dried before it is exposed to cold air in any way. Besides, this also involves reviving in a warm atmosphere and the consequent trouble of changing from the warm to the cold air and it will have to be done with caution if the lamb is eventually saved.

Much trouble is often experienced in handling young lambs when it becomes necessary to help the little fellows get started by using the bottle and cow's milk. If the mother has no milk or has too many lambs for the amount of milk she has, it often is necessary to help out if the lambs are saved. I have had very little trouble along this line. I try to let the lamb have its first feed or two at least, from some very recently freshened ewe, if its own mother has none, then, if necessary, we begin with the cow's milk. The great trouble most people have in feeding cow's milk is in feeding too much. Not over two ounces at a time is all they should have, but they should have this at least every two hours the first few days. If the lamb is inclined to get constipated, put a spoonful of molasses or sugar in the milk for one or two feeds and be sure that the bowels move within a reasonable time. It may be necessary to give an injection of soapy warm water to start the bowels, and this can be done with an ordinary bulb syringe. A little care and intelligent attention bestowed at the right time will make a whole lot of difference in the per cent of lambs one raises each year.

If one does not happen to have a soapstone he can use to warm up lambs, a brick will do or a few thin flat field stones answer the purpose very well. Another thing, do not have recourse to alcoholic liquors with which to revive or stimulate a young lamb. More lambs are killed than are cured by this treatment and it certainly does seem rather tough that we even have to send some of our dumb animals out of the world by the whiskey route also, simply because we have been taught that this stuff is a medicine to be used in such cases. There are a whole lot of things in this world that people know that are not so, and this is one of them.

Oakland Co. E. M. MOORE.

Live stock commission houses are advising owners of live stock to act conservatively at this time with regard to marketing their holdings and to remember that the loss of enormous numbers of pigs by sickness during the past autumn and early winter points to short spring and summer supplies of matured hogs. They also protest firmly against the steady rush to get warmed-up steers marketed at a period when there is known beyond any doubt to be a great shortage of fat cattle everywhere, to say nothing of the reduced numbers of feeding steers sent to feeding districts in recent months. Everyone admits that corn is high, but choice cattle and hogs are pretty sure to sell high for months to come. Canada, as well as the United States, reports a great shortage of cattle, while hogs have been selling in the Montreal market \$1 per 100 lbs. higher than Chicago prices. Ontario is making a short winter crop of beef, and there is a great scarcity of beef cattle all over the far western provinces of the Dominion. There is a lack of feed in Ontario, and thin cattle were few when the winter feeding season opened.

Recent unusually heavy snow storms over a wide territory of the country have caused serious interruptions to shipments of live stock resulting in extremely irregular supplies and consequent wide fluctuations in prices. In one way the snow falls have been of great benefit, however, for they have covered the winter wheat and furnished an abundance of moisture.

Dan's Picture In 14 Colors, To Hang In Your Home



FREE In 14 Colors

Do You Expect To See The Day When These Wonderful Dan Patch Records Will Be Equalled?

Dan Patch 1:55

1 Mile in	1:55
1 Mile in	1:55 1/2
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14 Miles Averaging	1:56 1/2
30 Miles Averaging	1:57 1/2
45 Miles Averaging	1:58
73 Miles Averaging	1:59 1/2
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Dan Has Broken World Records 14 Times. Dan is also Leading 2:10 Sire of the World for his age. Sire of "Dazzle Patch" the Greatest Speed Marvel of the World's History, which paced a half mile in fifty-nine seconds, and one-eighth of a mile in thirteen seconds, a 1:44 Clip, when only 28 months old, in 1911. Also Pearl Patch 4 year trial 2:04. Some of Dan's Colts will be Champion Trotters as well as Pacers. Why not Raise or Buy One!

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Reproduced on Extra Heavy, Fine Enamel Stock and in 14 Perfectly Blended Colors and Shadings by the Marvelous, Newly Invented "Original Colors" Process. Size of picture I will send you is 21 x 28 inches, making a Splendid Picture to hang in any Home or Office as it is Absolutely Free of any Advertising. It will be mailed, postage paid, in an Extra Heavy Mailing Tube to insure safe delivery.

Dan's Splendid Picture FREE—21x28

This Splendid Painting of Dan's Head was made from life and I want to personally assure you that it is as Natural and Lifelike as if Dan stood right before you, in his Present Splendid Physical Condition.

—QUICK— YOUR LAST CHANCE

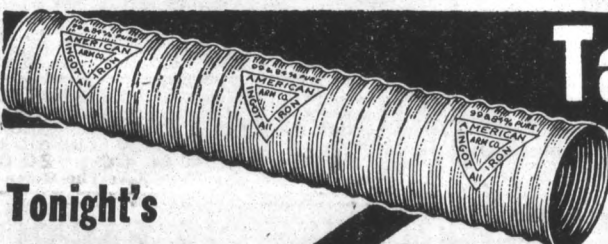
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Frost or Rust Won't Harm This Culvert

Concrete, stone, tile or brick culverts are smashed by Jack Frost. American Ingot Iron Culverts are unharmed. These culverts are not made of steel but American Ingot Iron—guaranteed 99.84% pure. Steel, on account of its impurities, rusts and corrodes quickly. American Ingot Iron, due to its purity, resists rust for many years. This is why American Ingot Iron Culverts outlast steel culverts many times over. Easy to install—never out of order.

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Leading railroads of America are displacing concrete, stone, tile and brick culverts with this wonderful metal corrugated culvert. And this after they have tried all other makes. They know that American Ingot Iron Corrugated Culverts never buckle under heavy loads, or corrode, crack or rust. Look for the triangle trademark on every piece—it

insures you getting the genuine American Ingot Iron. Only the manufacturers named below make American Ingot Iron Culverts. There's a lifetime's service in every section. Put the proof up to them. After the chores are done tonight—drop a line to the nearest manufacturer. He'll send you lots of money-saving culvert pointers.

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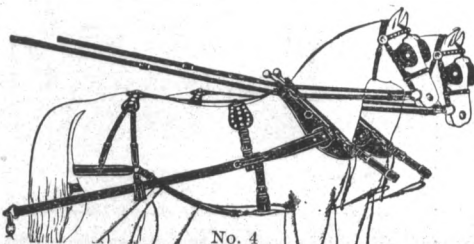
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American Ingot Iron May Be Had in Sheets, Plates, Roofing and Fence Wire



HARNESS HORSE COLLARS

Ask your dealer for the Label.

ARMSTRONG & GRAHAM

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GROW BIGGER CROPS!

Hold the moisture in your soil; make more plant food available; save both from weeds. Better cultivation will do it, and make your field out-yield one naturally more fertile. Best cultivation is done with Iron Age Cultivators. They are adjustable to all conditions—hill land, wide or narrow rows, different crops in same row, one or two rows; pivot or fixed wheel, break pin or spring hoe, or spring tooth styles; sand and dust-proof hub; re-enforced double point shovels; perfectly balanced. Built to work and last. Don't buy any cultivator until you have seen the Iron Age. Ask your dealer to show it. Backed by 76 years' experience. Write for special booklets. Complete line of farm, garden and orchard tools.

BATEMAN MFG CO., Box 1047 Grenloch, N. J.

VETERINARY

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

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

Indigestion.—Our 14-year-old horse is not thriving; have had teeth floated; he is well fed and eats plenty of food, but remains thin and out of condition. A. R. E., Otsego, Mich.—Give him 1 oz. cooking soda, 1 oz. gentian and 1 oz. powdered charcoal at a dose in feed three times a day.

Wart on Nose.—Have a three-year-old colt with bleeding wart on side of nose and would like to know if it can be removed without leaving scar. C. H. P., Marcellus, Mich.—Cut it off and apply tannic acid to wound twice a day. Unless the wart is very large no noticeable scar will be left.

Too Little Kidney Action.—am breaking two colts to drive; both of them seem to pass thick urine. Have given them buchu leaves with only fair results. L. V., Marion, Mich.—Give each of them a teaspoonful of powdered nitrate of potash at a dose in feed two or three times a day until the desired effect is produced, then give it when necessary to stimulate the kidneys into action.

Shoulder Lameness—Swollen Sheath.—Have a horse that has been lame in fore legs for the past four weeks that is gradually growing worse. He has difficulty in lifting foot, but stands fairly square on feet. His sheath is also badly swollen. E. J. S., Greenville, Mich.—His lameness is either in shoulder or elbow and he will be somewhat relieved if you will apply equal parts camphorated oil and aqua ammonia to shoulder once a day. His sheath swells for want of exercise. Give him a teaspoonful of powdered nitrate potash at a dose in feed twice a day until you can exercise him.

Chronic Grease Heel—Stocking.—What can be done to reduce a thickened hind leg caused by a bad case of scratches some 12 months ago? The one hind leg is swollen from hock to hoof. This horse is in good condition every other way. I. L. S., Hillsdale, Mich.—My advice in such cases is to leave them alone, for poor results follow treatment, no matter what is done.

Two Openings in One Teat.—One of my cows became tangled in barbed wire fence, cutting teat open, allowing her to leak milk from wound ever since she met with this accident. H. McC., Foster, Mich.—Make edges of wound raw and stitch them together or use a steel pin with string tied back of it, allowing piece to slough off. This sets up inflammation and wound may heal.

Choking.—Shortly after some of my five-months-old pigs begin to eat, they seemingly run back and fall in a sort of fit. Have given them turpentine and salt but cannot tell whether it helps them or not. T. M. V. S., Melvin, Mich.—Your pigs either choke or their feed is fed to them too cold, causing a spasm of the throat. Warm their feed and thin it so that they will not choke; also salt their food.

Indigestion—Paralysis.—We have a sow that recently had 14 pigs and seven of them lived but a short time. On opening them we found curd-like milk in stomach. One of our sheep became paralyzed without any visible cause and after death I opened her and found two lambs in uterus. Could she have been saved? W. J. B., Marcellus, Mich.—The young pigs either died from acute indigestion or congestion, the result of cold weather. Your ewe died of spinal paralysis and could not have been saved.

Chronic Cough—Tuberculosis—Barrenness.—Sometime ago I bought a sow and after getting her home discovered that she had a chronic hacking cough. Have bred her several times, but she fails to get with pig. My other hogs have been troubled with cough. A. H. L., Fremont, Ind.—I am somewhat inclined to believe that your sow may have tuberculosis affecting throat glands and your other hogs may be diseased. Better have them looked at by a Vet.

Black Teeth.—Does black teeth injure pigs, and if so, should they be pulled? C. H., Jonesville, Mich.—Black teeth seldom do any harm and when sound should not be extracted.

Ringbone—Sidebone.—I have a five-year-old horse that has a bunch at upper part of hoof and quarter that has caused lameness for the past seven or eight months. Have applied several different spavin remedies; besides, our local Vet. has treated him. He is no better. M. D., Mancelona, Mich.—Your horse has a low-down ringbone and sidebone. Either apply one part red iodide mercury and six parts cerate of cantharides every ten days or have him fired.

Vertigo—Flits.—I have a Collie dog that has fits or staggers. He walks in a sort of wabbling way and has very poor control of himself. His stomach must be out of order for he frequently vomits. This dog has heretofore had these spells every few months, but now they are only a few days apart. W. K., Ashley, Mich.—Your dog is incurable and had better be destroyed. When an ailment of this kind has lasted for two years and your dog is only three years old, I have no hesitation in believing that the most humane thing to do is to put him to sleep.

Give Your Horses a Hair Cut



before you put them at the spring work. Take off the winter coat that holds the wet sweat and dirt. Clipped horses look better, get more good from their feed, rest better, feel better and do better work.

Clip with this

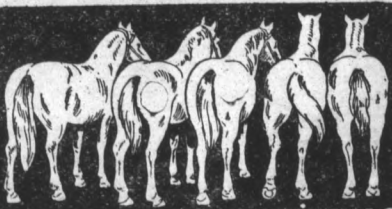
STEWART BALL BEARING MACHINE

It turns easy, clips fast and stays sharp. Gears are all file hard and cut from the solid steel bar. They are enclosed, protected and run in oil; little friction, little wear. Has 6 feet of new style easy running flexible shaft and the celebrated Stewart sinter-glass tension clipping head, highest grade. Price \$7.50

Get one from your dealer or send \$8 and we will ship C.O.D. for balance.

CHICAGO FLEXIBLE SHAFT CO.

115 La Salle Ave., Chicago
Write for complete new catalog showing world's largest and most modern line of horse clipping and sheep shearing machines.



KEEP THEM WORKING

Kendall's Spavin Cure is the old reliable, safe remedy for all cases of spavin, splint, curb, ringbone, bony growth and lameness from other causes. It keeps the horses working—not loafing. What it has done for others it will do for you. Keep a bottle of

Kendall's Spavin Cure

handy so you can use it quickly when the need arises. A one dollar bottle may save a horse for you. It's worth while to be ready. Ask your druggist the next time you are in town. Tear this advertisement out to remind you. Sold by druggists everywhere, \$1.00 a bottle; 6 for \$5.00. Keep it in the house for family use, as well as in the stable. Get a copy of "A Treatise on the Horse" at your druggist or write to

DR. B. J. KENDALL COMPANY,
Enosburg Falls, N.Y.

DEATH TO HEAVES! NEWTON'S

GUARANTEED

HEAVE, COUGH, DISTEMPER AND INDIGESTION CURE.

Cures Heaves by correcting Indigestion. Book explains, sent free. Cures Coughs, Colds, Distempers. Prevents Colic, Staggers, etc. Blood Purifier. Expels Worms. A

Grand Conditioner. A Veterinary

remedy, 20 years' sale, 50c and \$1.00 per can. Use large size for Heaves. At dealers or direct prepaid.

THE NEWTON REMEDY COMPANY, Toledo, Ohio.

WE PAY \$80 A MONTH SALARY

and furnish rig and all expenses to introduce our

guaranteed stock and poultry powders; money-back

guarantee; outfit free; new plan; ready work. Address

SIGLER CO., X 682, SPRINGFIELD, ILLINOIS

GOVERNMENT FARMERS WANTED

April 10, \$60 and

living quarters. Write OZMENT, 17 F. St. Louis.

AUCTION SALE

I, the undersigned, having sold my farm, I offer for

sale my herd of pure bred SHORTHORNS, comprising

11 head, 10 females and one male, and 30 head of pure

bred OXFORD-DOWN SHEEP, 1 buck, prize-winner at

Michigan State Fair, and 20 odd high grade ewes; one

heavy pair HORSES, Location 4 miles northeast of

the village of Uby, Mich., Huron Co., on THURSDAY,

MARCH 28, 1912. Sale starts at 1 o'clock, sharp.

Papers will be furnished with each and every head

of pure bred stock.

TERMS—All sums of \$5 and under, cash; over that

amount 8 months time on approved notes, 10 per cent.

JACOB MILLER, Proprietor, Uby, Mich.

ELMER R. PATGE, Auctioneer.

PUBLIC SALE APRIL 4th

15 Head Registered Jersey Cattle

and 20 Head Yorkshire Hogs, at

LILLIE FARMSTEAD,

Coopersville, Mich.

Also several farm horses and horse tools.

MICHIGAN AGRICULTURAL COLLEGE has for

sale cheap an aged imported Clydesdale Stallion

or will exchange for a Percheron or Clydesdale

mare. Write R. S. HUDSON, East Lansing, Mich.

For Sale—PERCHERON STALLION CHESLER No.

6126, coming 3 in May 1912. A good one.

Charles R. Dean & Co., R. No. 1, Vermontville, Mich.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS.

Herd, consisting of Trojan Erica, Blackbirds and

Prides, only, is headed by Egerton W. a Trojan Erica,

by Black Woodlawn, sire of the Grand Champion steer

and bull at the International in Chicago, Dec. 1910.

A few choice bred young bulls for sale.

WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of foremost dairy

breeds; young bulls

and bull calves for sale. Berkshire swine. All pure

Michigan School for Deaf, Flint, Mich.

Guernsey Bull, 14 months old, Reg., fine individual, for sale. F. C. Sackrider & Son, R. No. 5, Jackson, Mich.

For Sale—3 Registered Guernsey Bulls; 5 registered large Yorkshire sows, bred. For prices write John Ebels, R. No. 10, Holland, Mich.

Guernsey Bull Calves sired by half-brother of Rose of Langwater, m. 12,965.5 lbs.; b. f. 669.89 lbs., 2 yrs., 17 mo. Allan Kelsey, Lakeview, Mich.

Registered Holstein Cattle—Special prices on two bulls, 5 and 13 month old. FLOYD F. JONES, R.F.D. 3, Oak Grove, Mich.

HOLSTEIN BULL calf, sired by best son of Pontiac Butter Boy and from equally good dam. C. D. WOODBURY, Lansing, Mich.

BULL CALVES—De Kol, Hengerveld and Korndyke strains. None better at the price. Few better at any price. Tabulated pedigrees and prices on request. COLE BROTHERS, Ypsilanti Farms, Ypsilanti, Mich.

BULLS-HOLSTEIN-BULLS

Two \$50 Bulls
Two \$60 Bulls

Also 3 ready for business at very cheap prices, considering breeding. Write for description and pedigrees.

Long Beach Farm, Augusta, (Kalamazoo County) Mich.

"Top-Notch" Holsteins.

A fine, young bull, Hengerveld Winona De Kol,

No. 82754, Born Jan. 4, 1911.

Sire—King of Hengervelds, whose sire has 98 A.R.

O. daughters, 8 have records that average over 30 lbs.

butter in 7 days and 12 that average over 100 lbs. milk

in one day, and whose dam has an official record of

633.2 lbs. milk and 29.27 lbs. butter in 7 days at 4 yrs.

7 days old, and is a sister of Aggie Cornucopia Pauline,

who has an official record of 34.32 lbs. butter in 7 days,

which still stands as the World's senior 4-yr-old record.

Dam—Winona De Kol 2d, who has given 1464 lbs

milk in ten months and traces twice to Glothilde who

gave 2600 lbs. milk in one year and three times to

Pietertje 2d, who gave 3038 lbs. milk in one year,

world's largest year's record. This young bull is a fine

individual, nicely marked, with more white than

black. Price \$100.

McPHERSON FARMS CO., Howell, Michigan.

HOLSTEINS

I can please any body with a service bull, bulls

from one to ten months old, sired by Johanna

Concordia Champion. Also cows and heifers bred

to him. Write me for anything you want

in Holsteins.

L. E. CONNELL, - Fayette, Ohio.

HOLSTEIN BULLS

FOR SALE

Young bull out of a 20-lb. A. R. O. cow. Sire

Ontario De Kol Burke—every entry in his pedi-

gree has an official record. He is a grandson of

De Kol Burke. This is a finely bred youngster.

BIGELOW'S HOLSTEIN FARMS, Breedsville, Mich.

Purebred Registered HOLSTEIN CATTLE

The Greatest Dairy Breed

Send for FREE Illustrated Booklets.

Holstein-Friesian, Assn., Box 164, Brattleboro, Vt.

Holstein Herd Bull Vale Concordia De Kol Cornucopia

No. 4254. Pedigree and description

on application. One yearling bull, 3 bull calves and

4 good cows, bred to one of the best bulls in the State.

T. H. JACKSON, R. No. 3, SOUTH BEND, IND.

JERSEYS AND DUROC JERSEYS FOR SALE.

A few high class boars from such champion boars as

Orion Chief, Instructor, and King of Illinois. Also

a few bred cows, Jersey bulls, cows and heifers.

BROOKWATER FARM, ANN ARBOR, MICH., R. F. D. 7.

MARSTON FARM—JERSEY CATTLE.

T. F. MARSTON, Bay City, Michigan.

JERSEY BULL CALF

from a R. of M. cow. Cheap, considering

the quality. C. A. TAGGETT, R. No. 1, Caro, Mich.

JERSEY BULL CALF

for sale, born Feb. 11, 1911.

J. Dam and granddam, also grandsire Register

of Merit animals, high class individual.

WATERMAN & WATERMAN, Ann Arbor, Mich.

Crystal Springs Jerseys for Sale

from high testing cows. C. A. BRISTOL, R. No. 2, Fenton, Mich.

FOR SALE.

4 Jersey bulls and one or

two Jersey cows. Jersey Bull Rock eggs 1 setting.

PETER H. DOUMA, Route 2, Holland, Michigan.

JERSEY BULLS

Out of Register of Merit cows,

for sale. Also a few cows and heifers.

S. B. EASON, STURGIS, MICHIGAN.

FOR SALE—3 yearling Holstein-Friesian bulls.

also bred heifers \$150 to \$200 each. Bull calves \$40 to \$60.

33 years a breeder. Photos and pedigrees on appli-

cation. W. C. JACKSON, South Bend, Ind., 719 Rex St.

JERSEYS of the best breeding.

Cows officially tested.

A few bull calves from cows making splendid

records. SAMUEL ODELL, Shelby, Mich.

For Sale—Good Polled Durham Bull. First class

in breeding and from a good dairy cow.

J. S. FLINT, CEMENT CITY, MICHIGAN.

RED POLLED—Choice lot of females any

age, also some bull calves.

J. M. CHASE & SONS, Ionia, Michigan.

Red Polled Bulls & Heifers for sale, all register-

ed, State Fair winners. Write

WELLS PARISH & SONS, R. No. 1, Allendale, Mich.

SHORTHORN BULLS FOR SALE from

7 to 13 mos. old. JNO. LESSITER'S SONS, Clarkston, Mich.

DAIRY BRED SHORTHORN cows and heifers

and spring calves. Also Big type Poland

China pigs. ROBERT NEVE, Pierson, Mich.

Dairy Bred Shorthorns—2 bulls, 8 mos. old,

for sale. Price \$75

each, cash or good note. J. B. HUMMEL, Mason, Mich.

SHEEP.

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

Reg. Rambouillets—Wish to close out both sexes. All ages, low price. Farm—2 1/2 miles E. Morrice, on G.T.R.R. and M. U. R. J. Q. A. OOK.

Oxford Down Sheep—Good Yearling Field Rams and ewes of all ages for sale. I. R. WATERBURY, Highland, Michigan.

HOGS.

Durocs and Victorias—Young sows due Mar. & April. Bred to 1st prize and champion boar. Priced to move them. M. T. Story, Lowell, Mich.

Berkshires—Weaned pigs \$35, two for \$25. Boars ready for service \$25. Gilts safe in pig to Handsome Lee Jr., a Mich. State Fair Prize Winner \$35. Registered and transferred. Express prepaid in lower Michigan. C. C. COREY, New Haven, Mich.

FOR SALE—3-Year-Old Berkshire Service Boar. Best bred in State. Splendid individual at practically pork price. Also thoroughbred gilts. ROUGE MONT FARMS, Detroit, Mich.

FOR SALE, BERKSHIRES—2 boars & 3 gilts farrowed in June also a choice lot of Aug. and Sept. pigs, sired by Handsome Prince 8d & Marion King. A. A. PATULLO, Deckerville, Mich.

MAKE the boy a stock breeder and keep him on the farm by giving him a Berkshire gilt bred for spring farrow. Buy one now, cheap. C. S. Bartlett, Pontiac, Mich.

O. I. C. Service Boars. Gilts bred for April farrow Aug. and Sept. pigs, large, smooth and prolific. Glenwood Stock Farm, Zeeland, Mich. Phone 94

O. I. C. SWINE—Males weighing from 175 to 250 lbs. each. Also a very choice lot of gilts GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

Improved Chester Whites—A few choice young sows, bred for late March & April farrow. Also three young boars, cheap, to close them out. W. O. WILSON, Okemos, Mich. Both phones.

O. I. C's—A few tried sows to farrow in March, fall pigs, also Buff Rock cockerel and cock birds. FRED NICKEL, Monroe, Mich.

O. I. C. SWINE—My herd is chiefly descent of the Royal strain both males and females. Write for Live and Let Live price on pairs and trios, not akin.

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

O. I. C.—Bred gilts by Champion boar, \$

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

THE FARMER'S CREAMERY.

Some day the farmers of every neighborhood in which a farmers' co-operative creamery is located will wake up to the realization that this creamery was the best dairy market they ever had or ever will have, or can possibly have. In very many localities these creameries are not properly supported by the farmer. The reason to give for this non-support is extremely difficult. There is hardly a creamery in the state of Michigan but that pays the farmer all that the market will warrant, and yet, for some reason or other in many localities the farmers do not support their local creameries, but will ship their cream to centralizers, some of them in far distant cities. The result is that there is not enough patronage to the local creamery to make it profitable, and finally it goes out of business. Then, what is the result? The centralizer no longer pays the price that he formerly did because he knows he doesn't have to. The farmer's market is ruined. The competition is destroyed, and the centralizer can have his own way. The farmer then realizes for the first time that he made a mistake in not supporting his own home creamery. In some instances these creameries will be organized in the future after the farmer is held down just as long as he will bear it, and then they will be revived, and for a time will prosper again until the centralizers, in order to get more patronage, offer more for the cream than the local co-operative creamery can afford to pay and then the farmers will begin to patronize them again until they make a losing business at their own gate, when the creamery will be put out of business.

Farmers as a class, are hard people to organize, and stay organized. Their intentions are good, but they do not pay close enough attention to the affairs of the local creamery to appreciate the fact that they are getting all for their product that the market will afford. Because some centralizer is willing to pay more in that particular locality than the market will warrant, he usually makes up for this by paying less in some localities where he has put a local creamery out of business, and a farmer without investigating the matter carefully, gets the idea that the local creamery is not giving him a square deal, and he withdraws his patronage, which is just what the outside creamery is working for, and this weakens the home plant and makes it unprofitable, and the result is that the farmer destroys his own market. The farmer destroys the goose that laid the golden egg. The farmer destroys the very organization which has made dairy products profitable today. Years ago when we had no co-operative creameries butter was selling in the country stores around the state for eight and 10 cents a pound. The farmers organized, built co-operative creameries, produced their butter in a commercial way, and in uniform quality, shipped it to the best dairy market, and thus relieved the pressure on the home market, and since that day we have had a gradual increase in price until we have the maximum of dairy prices today. Now if the farmer could only appreciate this, if he could only realize that it is his duty to take care of this market instead of destroying it, he would patronize his local creamery.

A SILO FOR TEN HEAD OF CATTLE AND TWENTY SHEEP.

I own a farm of 70 acres. Do you think it would pay me to put up a silo? I milk from four to six cows, and keep from five to seven head of young cattle, three horses, from two to three young colts and 20 ewes. Will it be a labor and money-saving proposition to put one up? I am at a loss to know what to do? If I put up a stave silo what material would you use, white pine or tamarack?

Ingham Co. J. G. O.

If you have a silo you can easily keep more stock than this on 70 acres of land if you want to, and get about 50 per cent more of the food value of your corn crop. There isn't any doubt about that. I think if you will build a silo 10 feet in diameter that you would have no trouble in feeding it without loss to the amount of stock you now have. Silage is just as valuable for sheep as it is for cattle. Corn silage is not a very good horse food because horses do not do well upon such a bulky food. The stomach of the horse

is small in size compared to ruminants like cattle and sheep, and they require a more concentrated food. But you can feed work horses in the winter time when they are idle, a ration of ensilage once a day with good results.

It is practically as much labor to feed the ensilage as it would be to feed the dry corn fodder and the corn, but you save labor when you harvest the corn crop because it is put into the silo more economically than it can be husked and stored in the dry way, and then again you put it into the silo without loss. The harvesting usually comes at the time of the year before bad weather sets in, the corn is all out of the way, and is safely stored in an economical manner. You can practically double the amount of live stock on your farm if you wish to by putting the corn crop into the silo. I would have no hesitation whatever in building one on 70 acres of land, providing I wanted to keep the maximum amount of live stock that the land would support.

It doesn't matter so very much what kind of a silo you build. Simply build an air tight receptacle. You can do this by building a cement silo, a cement block silo, a vitrified tile silo, a good stave silo, or a lath and plastered silo.

If you get a stave silo I don't think there is very much difference as to what material you get. Either a cypress or a white pine will make a good silo and will last for years. I don't believe you will make a mistake if you put up a silo.

UTILIZATION OF DAIRY BY-PRODUCTS AS FOOD.

The important by-products of the dairy are skim-milk, buttermilk and whey, the aggregate food value of which is enormous. According to the Department of Agriculture, 1,600,000,000 pounds of butter are made every year in this country. It is estimated that the skim-milk and buttermilk resulting from the manufacture of this amount of butter contain in the aggregate over one billion pounds of protein and more than a billion and a half pounds of milk sugar. The whey produced in the cheese factories of the United States probably amounts to over three billion pounds, containing 31,000,000 pounds of protein and 186,000,000 pounds of milk sugar. These by-products are imperfectly used at the present time. More use is made of the skim-milk because it is now largely kept on the farm and fed to calves, hogs and poultry, and to a less extent used as human food, but it is safe to say that thousands of dollars are annually wasted in many creameries and cheese factories because the buttermilk and whey are either thrown away or put to inferior uses. In view of the high cost of foodstuffs of all kinds it is imperative that such valuable foods as these should not be wantonly wasted.

Washington, D. C. G. E. M.

PROPER MATERIAL FOR SILO IN THE SOUTH.

I desire to build a silo, in connection with a barn, to provide feed for 10 cows. Would the requirements be different for the building of such a structure in the south than in the north? What kind of building material would you recommend? Florida. O. W. J.

I do not believe the difference in climate between the north and the south would make any difference in the material for proper construction of a silo. Any material that would work well in the north would work equally as well, I think, in the south, and therefore all this talk that we have about silos will apply just as well to the south as to the north, and the same rules would govern. I would build that silo that I could build the cheapest, and have it air-tight and durable. A good stave silo made out of any good enduring wood would give perfect satisfaction, and so also would a lath and plastered silo, a cement block silo, or a grout silo, or a vitrified tile silo.

In the summer time in the south it rarely gets any hotter than it is in the hottest weather in the north, and hence if you wanted to feed ensilage in the summer time the weather there would not affect it differently than it does here. In the winter time in the south, while, of course, it is very much milder than here, yet the weather would not differ materially from our fall and spring. And any of these materials keeps the silage perfectly during these seasons of the year. The easiest way to get a silo, of course, is to buy a stave silo already made to put together, and they are efficient and lasting. If the hoops are kept tight and they are kept painted on the outside, they will last for an exceedingly long time.

TRADE

in your old separator on account of a new DE LAVAL CREAM SEPARATOR

38,796 Users did so Last Year 26,569 in the U. S. Alone

It's come to be an accepted fact that DE LAVAL cream separators are as much superior to other separators as other separators are to gravity setting systems, and that an up-to-date DE LAVAL machine will on an average save its cost every year over any other separator.

Aside from the actual saving in more and better cream and butter and in time of separation and cleaning, easier running, greater durability and less repairs, there's the pride, comfort and satisfaction which none but the owner and user of a DE LAVAL machine can feel in his separator.

In consequence thousands of users of inferior and worn-out separators of various makes take advantage every year of the educational allowances which the DE LAVAL Company continues to make and trade in their old separators.

APPLIES TO OLD DE LAVAL USERS ALSO

While all this applies particularly to the users of inferior separators it applies likewise to the many thousands of DE LAVAL machines 10 to 25 years old. They are not worn out and are still superior to other new machines of today, but there are so many improvements embodied in the modern DE LAVAL machines that these old DE LAVAL users can well afford to make an exchange and soon save the cost of doing so.

SEE THE NEAREST DE LAVAL AGENT

He will tell you how much he can allow on your old machine, whether a DE LAVAL or some other make, toward the purchase of a new DE LAVAL. If you don't know a DE LAVAL agent, write to the nearest DE LAVAL office giving make, number and size of your present machine, and full information will be sent you.

THE DE LAVAL SEPARATOR CO.

NEW YORK CHICAGO SAN FRANCISCO SEATTLE

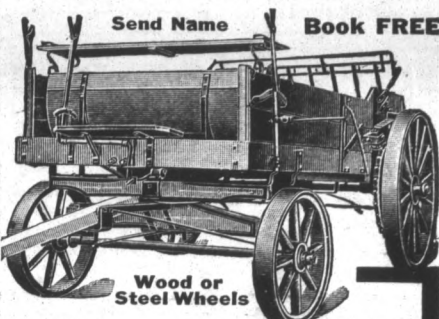
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KOW-KURE, the great cow medicine, is the only doctor the herd needs for most of the ailments peculiar to cows. A positive cure and preventive for BARRENNESS, ABORTION, RED WATER, SCOURS, BUNCHES, LOST APPETITE, MILK FEVER, GARGET and BLOATING.

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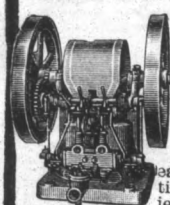
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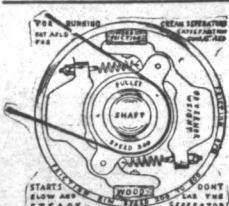
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CREAMERY FOR SALE OR FOR RENT
near Sault Ste. Marie (Upper Peninsula) Michigan. New, and in perfect order. The Upper Peninsula of Michigan holds all the State records for best dairy products. Natural conditions for dairying here are unexcelled. Jacob Bainbridge, Sault Ste. Marie, Mich.

GARGET.

I would like to ask you if, in your extensive experience with cows you have trouble with garget. Nearly every winter I have one, two, and sometimes three cows spoiled with it. Have two now, one about half through her milking period. She was taken about two months ago in front half of udder and is now nearly dry all around. This cow is six years old. Another was taken about two weeks ago in one hind quarter which is badly caked yet. This one is four years old. I followed out a prescription sent out by the Michigan Farmer, which I took to be the same thing and it has had no effect. What is the cause and is there any way to prevent it? I have been feeding eight or nine lbs. per day of two parts wheat bran and one part cottonseed meal mixed. All the shock corn they will eat twice a day is given and timothy hay at noon, with about one-third of corn taken out of stacks, which was a good crop. Is this ration fairly well balanced, or am I feeding too much? Still another question, I am thinking of building a cement block silo. Is there any objection to a cement silo, regarding the keeping of the silage?

Macomb Co.

G. A. L.

Garget, or inflammation of the udder, may be caused from a great many different sources. Sometimes a cow lies down on her udder and bruises it, and this causes inflammation or garget. Again, lying on a cold cement floor will cause inflammation, and again, too, heavy feeding of grain, especially with an excess of protein, will cause garget or inflammation. Sometimes garget comes to be chronic with certain cows. With this disease an ounce of prevention is worth a pound of cure. Remove the cause. First, of course, you have to find the cause and then remove it. I cannot tell you the cause, exactly, without a personal examination, but if you observe closely and keep watching you will find out. I am a little suspicious that you are feeding too much grain. Nine pounds of wheat bran and cottonseed meal mixed two parts to one of cottonseed meal will make over three pounds of cottonseed meal a day. I would not want to feed that much cottonseed meal to a cow, and now besides this they get practically all of the shock corn they want. You state that there is a lot of ears on this corn. This makes a heavy grain ration. In the first place I don't believe you can afford to feed so much grain. I don't believe the cows will pay for it, and I am suspicious that this has something to do with the inflammation of the udder.

There can be no objection to a cement silo if it is well built. It makes the best kind of a silo. You must remember to plaster it on the inside with a good rich coat of cement mortar then you will have a perfect building.

DOES SILAGE INJURE CATTLE'S TEETH?

I heard the other day that anyone that fed silage to milch cows had to dispose of them in about four years as the acid caused their teeth to drop out. As I thought some of building in the near future I would consider it a great favor if you would answer this question.

Oakland Co.

H. N.

I have fed corn silage now to cattle for 20 years and it has never injured any of their teeth. The remark is all nonsense. Somebody simply tells it as a joke or else they know nothing about it whatsoever. Perhaps they do it maliciously, but there is absolutely nothing in it. When the corn is allowed to mature so that the kernels are glazed and some of them dented and then put into the silo it doesn't make a very sour silage. It is only just slightly acid, and it will not injure cattle's teeth, not a bit more than eating a mildly sour apple would injure a man's teeth. It helps to clean them off and keep them in good shape.

Milkmen of Genesee county have organized an association to aid in meeting the demands made upon the individual dairymen by the municipalities in which their milk is sold. While it is the purpose of this organization to co-operate with the city authorities in so far as the demands of the latter are reasonable, yet by being organized it will be possible for the dairymen to oppose undue restrictions to their business and demand a higher price for goods produced under a more costly system.

HOLSTEIN BREEDERS TO HOLD MEETING.

The Central Michigan Holstein Breeders' Association will hold a meeting on Thursday, March 21, 1912, at 10:30 o'clock a. m., room 109 of the Agricultural Building, Michigan Agricultural College, East Lansing. It is expected that this meeting will be the banner Holstein meeting of the year.



Trying to Get Something For Nothing Never Pays

If you buy a separator at a very low price you get a separator built to meet that price. Efficiency and durability in a cream separator cannot be replaced by anything "just as good" at a low price. It takes brains, good material, and a well-equipped factory to make good separators. These things cost about the same price everywhere, and one company cannot secure them any cheaper than another. The difference in the price of separators represents a corresponding difference in the value of the machines.

I H C Cream Separators Dairymaid and Bluebell

are as good separators as can be built. If you buy an I H C you will get more years' work out of it than you could out of any other separator, consequently it is the cheapest separator you can buy.

Extra long shafts and spiral cut gears insure durability. Phosphor bronze bushings protect the moving parts. Grit and milk cannot get into the gears, yet the gears are easily accessible. These separators are easy to turn because the working parts are accurately made and perfect oiling facilities are provided.

The bowl has the most effective skimming device ever designed, and a dirt arrester chamber which removes the impurities before the milk is separated. This insures a high grade of cream and makes the bowl easy to clean. The neck bearing is simple and trouble-proof. Made in two styles, each in four sizes.

The nearest I H C local dealer will be glad to have you examine one of these separators. A post card will bring catalogues.

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The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to I H C Service Bureau, Harvester Building, Chicago, U. S. A.



BIG MONEY MAKERS

Dairy farms grow richer every year. Wheat or other farms without cows grow poorer. That is why finest homes, biggest crops and surest profits are found on dairy farms.

Follow keen dairy farmers—the men who are making money. These men select and use highly productive land and big-producing cows. For similar reasons they use and recommend the high-producing

SHARPLES Tubular Cream Separator



which has twice the skimming force of others and therefore skims twice as clean. Mr. D.

H. Mudgett, widely known dairyman of Dexter, Me., and owner of the grand Holstein shown above, is but one of many such, too numerous to mention, who use Tubulars exclusively. He says:

"Were I in the market for another separator, I should buy the Tubular, even if it cost much more than others."

No disks in dairy Tubulars. Easy to clean. Wear a lifetime. Guaranteed forever by America's oldest, world's biggest separator concern. Produce enough more every year over next best separator to pay a big part of the purchase price.



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Let me ship the gates you need for 60 days free inspection and trial. Save from \$50 to \$250 on your gate purchase. Iowa Gates are made of high carbon steel tubing and large stiff No. 9 wires. Rust proof—wear proof. Write for my special proposition today. Complete galvanized frame, also painted gates cheaper than ever before. Jos. B. Clay, Manager, IOWA GATE CO., 57 Clay Street, Cedar Falls, Iowa



THE DAIRYMAN'S PASTURE LANDS.

It is feared by many that the day of the large, neatly-grazed permanent pasture fields on the dairy farm is soon to be of the past. The reason for this lies in the fact that the dairyman realizes too little feed from the land devoted to this purpose; that is, he can by other methods grow so much more feed that it seems unwise to continue the old practice of devoting fields permanently to this use. Investigations made several years ago by the Michigan Experiment Station show that land which was clipped several times to correspond with the grazing of the cows and each clipping dried and weighed and the resulting weight compared with the hay taken from similar adjacent land, only produced from one-quarter to one-third the amount of feed grown by the area left as meadow. This is the reason permanent pastures are becoming a thing of the past, especially in the dairy regions where land is rapidly increasing in value.

Of course, there are certain conditions in which the permanent pasture is still looked upon as a fixed adjunct to the dairy farm, and that is where waste land that cannot be used otherwise is left for pasture. But this again is founded upon an economical basis since the land so remaining in pasture would not, if turned into corn fields or put to other purposes, produce paying crops.

It would be a matter that we could let stand as suggested in the paragraph above, i. e., that the permanent pasture land being less productive than land otherwise employed, except in certain special conditions, should give way to the more paying systems of dairying, were it not for the use of pasture lands in the more thickly inhabited sections of the world—we speak particularly of the pastures of England, Holland, Switzerland, Germany, and other old countries. Here pastures are economically profitable and in the midst of a far more intensive farming system than is found on this side of the Atlantic and where land is much higher in value than with us.

Inquiry shows a reason for the greater utility of the pastures of the farmer across the Atlantic. First, he is particular to fertilize his fields. He adds both manure and commercial fertilizers. There is given every opportunity for the grass on the permanent pasture fields to grow. They keep a larger number of animals per unit of land and the manure is carefully preserved for future use—not only the solid manure but the liquid manure is kept and sprinkled over the grass fields during the growing season by means of large tanks corresponding to the street sprinkling tanks used in our cities.

Then, besides giving the pasture land plenty of plant food the grass is given a far better chance than the American farmer allows it by reason of the method of offering it to the animals. There the cows are tethered out. They are only allowed to reach what they can consume in a single day. The following day they are moved to a new area, and so on through the season. This permits the plants to quickly recover for they are not constantly tramped on after being eaten down. They grow uninterruptedly till large enough for the second visit of the cows. Of course, with the small amount of labor available to the American farmer he could not give individual cows the attention that the dairyman across the water allows each animal, but it explains, in part at least, why the pasture question across the way is a successful way to secure feed, and why, on this side the method appears to be failing.

The American farmer can fertilize. He is doing it with other crops and should experiment to convince himself that the pasture lot will benefit from the addition of plant food. Stable manure can be used to splendid advantage. Often it is a difficult matter for the dairy farmer to dispose of his barn manure during certain seasons of the year, especially when he follows the admirable plan of taking the manure directly from the stable to the fields. During such seasons the pasture lot furnishes an excellent field in which to spread the litter. Besides barnyard manure commercial fertilizers may also be applied. The same discretion should be used in the selection and addition of fertilizers to pasture lots as to other fields.

While the practice of tethering out the cattle is too expensive for American farmers, that other method which is akin to tying the animals out one by one, can readily be employed; it is the dividing of the pasture lots. By this means the grass is allowed to grow in one lot while cows are grazing in the other. The plan

is increased in efficiency by dividing the field into still smaller plots thus keeping the tramping confined to a small area. This, of course, reduces the exercise afforded the animals, but is better so far as exercise is concerned than the soiling system at that. The different lots may be separated by temporary or permanent fences—the practice being generally to use temporary ones.

Still another method of increasing the capacity of the pasture field is to get more different kinds of grasses to grow. Mr. Spillman suggests the use of timothy, reedtop, orchard grass, tall fescue, blue grass, Canadian blue-grass, and the clovers including alfalfa for pastures in the northern states of the Union. It is certain that by the use of other grasses the season for good grazing could be extended and it would seem that if the above varieties or a portion of them, were used, that this end would be gained in part, at least. At our own Michigan station it has been impressively shown that the mixture of grasses affords a much more satisfactory yield of forage than does a single kind grown alone.

Wayne Co.

A. H.

BUILDING A REFRIGERATOR OR ICE-BOX.

I am building an ice box. I was going to build it of basswood lumber, but someone told me that it would not last over one or two years. I thought at that rate it would not pay to build one, then I thought to build it of concrete, but some say concrete would not be good for butter. How would zinc or corrugated galvanized steel roofing be for inside; and basswood ceiling outside? I want to build it inside of my milk house, which has a stone wall around about 16 inches thick and board sheeting outside. I would want it mostly for butter.

Cheboygan Co.

J. B.

It don't make so very much difference what kind of lumber you build the ice box out of. This lumber, both inside and out, will last for years. Don't be afraid of its rotting at once. It will be in too damp a condition most of the time to rot. Then it can be whitewashed or painted with a paint made on purpose for whitewashing the interior of a refrigerator, which will practically preserve it. Of course, in making a good refrigerator you want good lumber, matched lumber. It would be a good plan to double-board it with tar paper between the boards, and then make an air space and then double-board with tar paper between again. This air space can be filled with powdered charcoal or any good non-conductor.

It is entirely practicable to make a refrigerator in a milk room in this way, of cement. You couldn't get any better material. In fact, if you would build a frame, leaving a double wall, and lath it on the inside and lath it on the outside, and plaster it with cement both inside and out, you would have as good a refrigerator as could be made. You must, however, have the air space between the two plastered walls of cement, because air is a good non-conductor of heat. If you would make a solid cement wall it would not be a good refrigerator wall, because the heat would readily pass through. Care should also be taken in making the door of the refrigerator. There should be an air space in this. You can make a regular framework of this and lath it on the inside and on the outside, and then plaster the door as well as the sides, and have a splendid refrigerator, and probably cheaper than you could make it in any other way, more durable, and just as good in every respect.

SIZE OF GASOLINE ENGINE TO BUY.

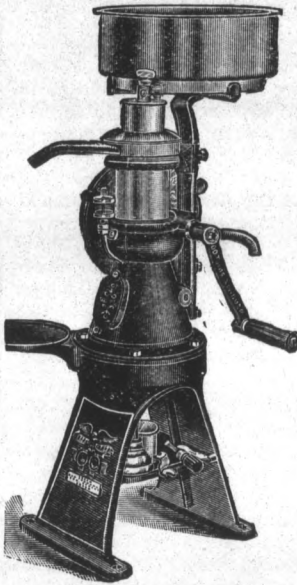
As I am about to put in a gasoline engine and feed grinder, I would like to know what horse-power engine would be most profitable for general farm work, such as grinding feed, sawing wood, running cream separator, etc.

Allegan Co.

SUBSCRIBER.

I would advise you to buy a gasoline engine larger than you think you need. If you want to grind feed you want to have an engine that is at least five horse-power, seven or eight would be better. Of course, we have more work to do with a gasoline engine than most farmers, but if I should buy another one I wouldn't buy one of less than 10 horsepower capacity. Then you could do what you want to, and do it right. If you have a little engine when you want to do a big job you are unable to do it. Some of our power is lost by additional shaft and pulleys but one of our engines is 7½ horse-power and it takes it to its utmost to run the feed grinder and grind feed as fast as we like to do it. We assist it sometimes by hitching on a smaller engine with it.

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Avoid further trouble by refusing to subscribe for any farm paper which does not print, in each issue, a definite guarantee to stop on expiration of subscription.

The Lawrence Publishing Co.,
Detroit, Mich.

DETROIT, MARCH 16, 1912.

CURRENT COMMENT.

As noted in the issue of last week, March 18 has been designated as parcels post letter day by the leaders who are working for the establishment of an adequate parcels post, with the view of getting as many farmers as possible throughout the country to write to their senators and representatives in congress, urging them to use their votes and influence toward the establishment of a parcels post which will be as adequate to the needs of this country as are the successful parcels post systems of other countries to the needs of their citizens. This will cost each interested reader but a slight effort and six cents in postage and, without question, if this suggestion is generally adopted, will help materially toward the desired result of the enactment of an adequate parcels post law.

In his letter, the reader should not only favor such a law, but should vigorously oppose the granting of penny postage, at least until such time as this much needed postal service is granted. Write these letters at once and mail them Monday next to your senators and representatives, addressing them at Washington, D. C. If you are not familiar with their names and initials your postmaster can inform you regarding same. Those who are interested in a general parcels post should act upon this suggestion or forever hold their peace should such a law not be enacted, or should their representatives in congress not be found working for the enactment of such a law. The interests opposing general parcels post are active and are constantly being heard from. Only a general demonstration from those who want such a measure can secure early action by congress toward the establishment of a general parcels post.

A Marvelous Development.

An example of the marvelous development of the age in which we live, particularly along new lines of production, was brought forcibly to public attention last week through the announcement of the death of the man who built the first single cylinder automobile manufactured by two of the pioneer Michigan producers in this line. Yet the man whose death was announced was still a young man, only thirty-five years of age. When one notes the marvelous progress in this line of

production during the active life of so young a man, he is indeed led to wonder what the future may hold for us in the way of further wonders along the line of mechanical and commercial development.

Yet this is but a single example of the development which has been taking place all along the line during the past half century, and we may readily believe is but the earnest of a still greater industrial development during coming generations. The knowledge of one generation is but the foundation for the achievements of the next, and the broader and firmer that foundation the greater will be the superstructure of their achievements. Truly this is an age when "life is worth living," notwithstanding the civic and industrial ills which the pessimists of the hour would lead us to believe to be the forerunners of a national decadence.

Requests have recently been received from a considerable number of Michigan Farmer subscribers asking for a review of the potato situation in the editorial columns of the Michigan Farmer. The potato situation is fairly reflected in the condition of the market. When potatoes are selling at country loading points for \$1.00 per bushel, as is almost universally the case throughout Michigan at the present time, the situation may be fairly said to be one of extreme scarcity, or of a universally mistaken idea as to the stock of potatoes in growers' and dealers' hands.

It seems very evident, however, that there is no such mistaken idea as to the available stock. Not only was the crop grown and harvested in 1911 much smaller than that of immediately preceding years, but the exceedingly cold weather has resulted in a damage by freezing, which in the aggregate must be considerable, although it is a natural supposition that with potatoes at the exceedingly high values which prevail this year, this loss would be obliterated as far as possible by both producer and shipper. However, with continued zero weather for weeks, some loss of this kind is inevitable.

The situation in foreign countries is not such as to have a direct influence upon our market this year. The crop in Germany is also very short, amounting to almost a crop failure, and as this country grows more potatoes than any other in the world, this fact cannot but have an indirect effect upon the market in other countries, to which any surplus would be exported under normal conditions. In Great Britain, the potato crop was nearly normal, but the crop of other roots was very much below normal, so that no surplus may be expected from that country.

This is perhaps a fortunate condition for consumers as well as producers in this country. That is, it will ultimately prove fortunate for consumers, as well as immediately to producers, owing to the fact that we have at present no protection against the introduction of potatoes affected with fungous diseases, of which the black scab, so-called, is a new development in Europe, and which the European shortage is likely to keep away from us until protective legislation can be enacted.

There is little to be said in the way of future prospects. With potatoes selling at \$1.00 per bushel, the grower who holds for a higher price is something of a speculator, although it is the opinion of many well informed people that the price will advance still further before the season for marketing old potatoes is past. It is possible, however, that consumption will be curtailed by the high price to such an extent as to reduce values on the extremely late market, a chance which is always taken by those who hold for the top figures of the late marketing season.

During the consideration of the agricultural appropriation bill in the house, an amendment was

adopted increasing the appropriation from \$196,020 to \$251,000 to enable the department to investigate and encourage the adoption of improved methods of farm management and practice. Congressman McLaughlin, who is Michigan's member of the committee on agriculture, and who has been greatly interested in the results accomplished through demonstrations in other sections of the country, offered the amendment, which was adopted by a large vote of the members of the house.

There is an increasing appreciation in congress, as elsewhere, of the importance of our agriculture and the necessity of

encouraging in every possible way the adoption of better methods in the conservation of soil fertility. During the debate the work done by Prof. Hopkins, of Illinois, along this line was mentioned, and those who heard Prof. Hopkins at our recent Round-Up Institute will appreciate that the work has added not a little to the sum of definite knowledge with regard to the requirements of the soils of Illinois. Unquestionably practical field experiments which will determine the same needed factors in soil conservation in the various agricultural sections of the country will be of great benefit, and the object lesson so afforded of great educational value. Whether this can best be done by the department direct or through additional aid to the various state experiment stations is a question upon which all will not agree, but so long as beneficial results are secured, the medium through which they are derived is of minor consequence.

HAPPENINGS OF THE WEEK.

National.

A confusion or orders resulted in a head-on collision in the tunnel yards at Port Huron, Monday. One man was killed and two others were injured.

The government has started criminal action against the council and officials of the "sugar trust" for conspiring to restrain trade.

A serious outbreak of typhoid fever is now raging at Two Harbors, Minn. One hundred and fifty cases are now being treated and the epidemic is believed to be spreading. Physicians are making public addresses on the streets to impress the seriousness of the situation upon the people.

The stores of the Union Paper & Twine Company, of Cleveland, Ohio, were destroyed by fire last Sunday evening. The damage is estimated at \$250,000. It is believed that a night watchman lost his life in the building.

The anthracite coal operators and representatives of the miners of the United States are in session in New York City considering the demands of workers for increased wages, recognition of the miners' union, a shorter working day, a one-year agreement and other minor changes in the present regulations.

The common council of Grand Rapids has refused to permit names written on blank spaces on primary ballots to be printed on the ballots in the spring election. The action of the council will be referred to the circuit court where a mandamus will be asked to compel the election board to place the written names upon the ballot. In case the April election should be held without these names written upon the ballots, the omission may invalidate the whole election.

It is estimated that 150,000 woolen mill workers will be directly affected by the action of the owners to increase their wages five per cent in the New Bedford and Fall River districts. Increases have also been made by the mill owners in Maine and New Hampshire affecting 35,000 hands, and it is further believed that the other manufacturing districts of the New England states will be compelled by this action to give an advanced wage to their workers, so that in the end perhaps 300,000 persons will be affected.

The real estate campaign that has been conducted in Michigan the past few years has encouraged men who formerly were farm laborers to buy farms of their own, and farmers are being compelled to make unusual efforts to secure help for the coming season, and they are now scouring the large cities seeking for what help they can find.

The campaign against the loan sharks in Detroit continues in a hard fight between these lenders of money and the prosecutor's office.

The Michigan Schoolmasters' Club is to be held at Ann Arbor, March 27 to 29. The Michigan Academy of Science will hold a two-day session at the same time and place.

Foreign.

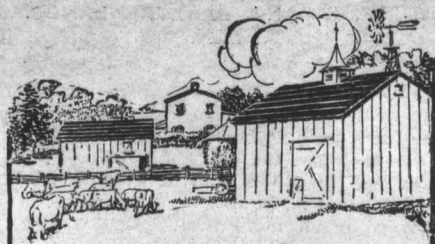
It is estimated that 2,000,000 workers are idle in Great Britain as a result of the great coal strike there.

The town of Owen Sound, Ont., has voted an annual subsidy of \$10,000 a year for 20 years to bring a drydock and shipbuilding concern to that place. The plant is to cost \$1,500,000.

Within the past week reports reached the civilized world of two parties having discovered the South Pole. Capt. Scott, an Englishman, traveling under the British flag, is reported to have reached the coveted point, and also Capt. Amundsen, a Norwegian, declares he succeeded in reaching the extreme southern point of the world. It is stated by the explorers that the South Pole is located at an elevation of 10,500 feet above sea level. The parties were compelled to travel over elevations exceeding 16,000 feet, which made their progress slow.

As yet, the coal strike in England is unsettled and suffering is becoming general all over that country. Thus far, all attempts to settle the trouble has been blocked. On Monday of this week the government called a conference of miners and operators. The navy is restricting the amount of coal it is using and notices have been sent to all manufacturing concerns cautioning them to be as conservative as possible in the consumption of fuel. Boat lines have discontinued service between many cities along the English shores and railway companies are eliminating many trains. Italy and other countries dependent upon England for their coal supply, are also anxious about the situation, as they feel that coal will

(Continued on page 333).



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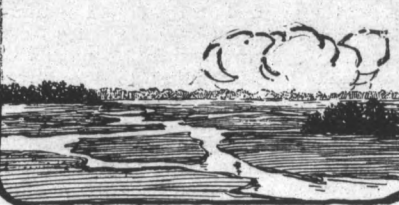
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POETRY
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JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

STRAY GLIMPSES OF CHINA.

BY E. M. HARCOURT.

THE eyes of the world are on the Orient. Like a huge giant, China is awakening from her sleep of the ages. Already Japan has made phenomenal strides in the arts, sciences and industries of the twentieth century. Travelers are turning their nomadic steps toward the Far East, eager to catch a glimpse of these ancient empires, now in the throes of their first transition.

The empire of China consists of more than five million square miles, which equals twice the area of the United States. There are wonderful mining possibilities throughout this vast domain; in fact, the natural wealth of China is incredible. Her authentic history dates

back some 2000 years before Christ. For twenty-three centuries the Confucian classics have been the daily guide and moral standard of the empire. They are published annually and distributed gratuitously among the people; they are committed to memory by millions of Chinese applicants who aspire to pass public service examination.

This great teacher was born during that period when Greece was invaded by the Persians, and the Jews returned from Babylon, which was 551 years before Christ. There have been erected some 2000 temples to the great "Kung-fu-tsee" (the holy master Kung). The largest of these temples occupies ten acres of ground. You can not but marvel at this ancient religion, when you realize that it has been handed down from century to century without the assistance of priest, liturgy or public worship, with the exception of two semi-annual festivals, when many thousands of animals are sacrificed and thousands of yards of silks are burned on the sacred altars.

The flowery kingdom has been under the Manchu Tartars' rule for over two hundred years, while the teeming millions of subjects are Chinese. The two races speak entirely different languages, and have radically different traditions and customs.

The moment the traveler sets foot on Chinese soil, he is conscious he is an alien in a strange land. He is met on all sides by the extreme incongruities of the Orient as compared with the Occident. He threads curiously the narrow streets which in many instances are no wider than our sidewalks. These miniature thoroughfares are lined on both sides with low shops and bazaars. At each door is a shrine, where incense is

burned night and morning to the various gods. Instead of the brilliant electrical display which the American merchant employs, here in China we behold a small lantern hung out at each shop door, on which is inscribed the name of the merchant. The streets, for the greater part, are lighted by small lamps hung overhead, in which nut oil is used, although in many instances kerosene from America and Russia has taken the place of the native oil. Electric lights are used to a limited extent, but as yet they are the exception and not the rule.

A feeling of home-sickness comes over one as he enters their different dwellings, which are barren of all the home comforts one has in America. The floors

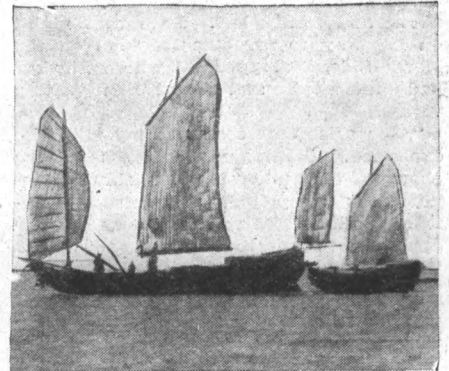
are of tile, or, oftentimes, only hard, beaten earth. Instead of our comfortable rockers and couches, you are invited to rest yourself on mats and cushions, where you are served with strong tea, and invited to participate in a friendly smoke of opium or join the ladies in a game of cards.

The rivers present quite as busy a scene as the streets, for the waterways of China are the principal means of intercommunication. Odd-looking boats of all descriptions, large and small, are seen. Here are merchandise ships with their valuable cargoes; farther down stream is a group of beautiful, picturesque flower boats; they are richly embellished with carvings, mirrors, and celestial finery, and look like gorgeous tinted butterflies resting on the bosom of the water. Here pleasure runs rife, and the gay orgies of the cities flourish. Curious house boats huddle close to the shore, where many families live all their lives. Life on terra firma would be as strange to them as residence on water would be to a landsman. Public passenger boats, with their huge sails, throng the wharves; these passenger boats are very uncomfortable and curious to the traveler. Instead of the comforts of our palatial steamers, passengers are crowded into a small compartment, so low that one can not stand erect; they spread their mats out on the floor, and must content themselves with a space three or four feet wide. The sampan boats swarm the river like dragon flies; they are small and built to accommodate only single passengers.

Although the Chinese mode of navigation appears rude to our so sophisticated western ideas, and a feeling of boastful pride wells up within us, we must bear in mind her wonderful artificial waterway—the great canal, which is a thousand miles long. It was constructed during the thirteenth century, and is recognized today as one of the greatest engineering feats of the world. Her vast domains were intersected by numerous canals at this very remote period. Artesian wells were also sunk to great depths, at a period when the western hemisphere was still enveloped in the forests primeval, and Europe was catching the first faint whisperings of science.

I have never seen more beautiful embroidery and drawnwork than that which is done by the Chinese women. On primitive looms of the rudest construction are wrought some of the most exquisite brocades and silks. The American sewing machine has probably met with more favor in China than any other invention, and strange to relate, more of the small hand-turning devices are bought than of the larger machines run by the pedal.

China is a panorama of inconsistent facts. When we speak of the degradation of woman in that country, let us not forget the innumerable throng of women and children laborers, starved in body, soul and mind, which is one of the stinging evils of our fair shores. In China, they are opposed to our labor-saving machinery; they argue that it deprives many



Odd Craft on Yang-tze-kiang River.

men of employment, and swells the number of the "dangerous classes." Thus, in China, we see none of the evils of monopoly nor of the seemingly sad problems which improved machinery and large combinations of business produce in America.

China and her customs are about as inscrutable to the casual glance of the traveler as is the sphinx of Egypt; but this much is apparent: China is waking from her long sleep, and the spirit of the twentieth century is permeating her domains from center to boundary. Today, she is struggling between two great forces; that of conservatism, which is tenaciously clinging to the custom of antiquity, and fighting the inflowing tide of civilization, and that of the aggressive, progressive spirit. The latter is gaining ground, stands for improvement, throwing down the bars, and opening the way for science and invention.

STARKEY'S PRIZE STORY.

BY JOHN A. SIMPSON.

STARKEY and I first met in a street car. We sat side by side for a couple of blocks before either spoke. He was reading the account of the Martindale forgery, and I, like every other cub reporter, was engaged in the amateur detective business. J. V. Martindale, capitalist and speculator, had been robbed of four thousand dollars through a forged check. The check had been presented by a dapper little gentleman with dark beard and mustache, at the Exchange National Bank, where it had been honored without question. The signature was absolutely genuine to the eyes of the paying teller, and the man in whose favor the check was drawn, Charles B. Robinson, had dealt at the bank for a month past in a small way, running a little account of his own. Besides, he explained on presenting the check for five thousand dollars that he desired to leave one thousand on deposit for three months. He had indeed outwitted the bank for, upon securing the four thousand dollars in cash, he had completely disappeared. Upon introducing himself to the bank a month previously he had explained that he was a real estate selling agent, and had given his place of residence, or lodgings. Inquiry at the latter place disclosed the fact that he had paid what was due up to the last day, and, without notice, quitted the premises, leaving his trunk, which was found filled with old newspapers. Robinson had fled.

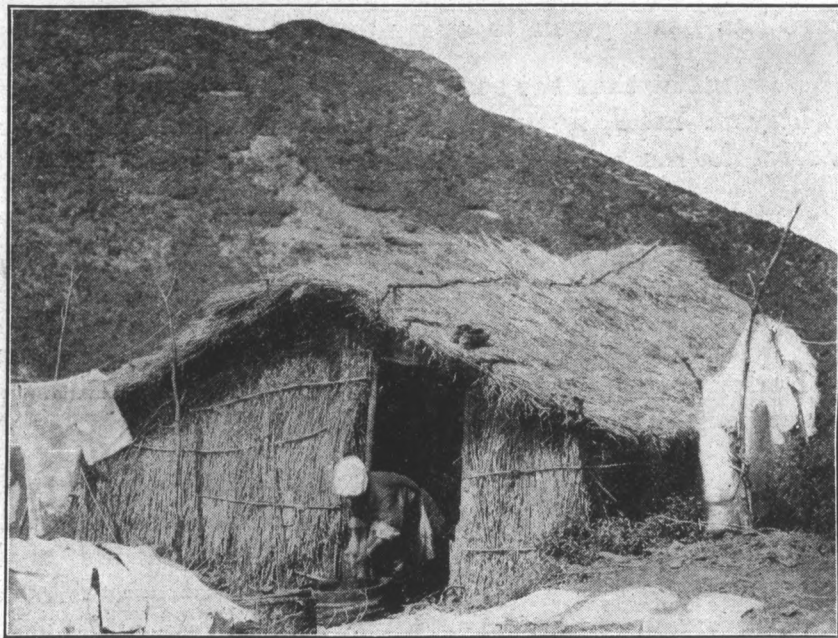
"Odd thing!" said Starkey, looking at me over the side of the paper.

"Rather!" said I.

"Guess you're a reporter," ventured Starkey.

"You've got me," I agreed.

"Well, I'm a trifle in your line," smiled Starkey. "I'm a struggling author. I sometimes write detective stories, and this forgery has given me an idea. I'll write the first part all right, covering the motive and the crime itself; now how about the unravelling of the mystery? What are the theories? Maybe you can give me a leading idea. I'm going to



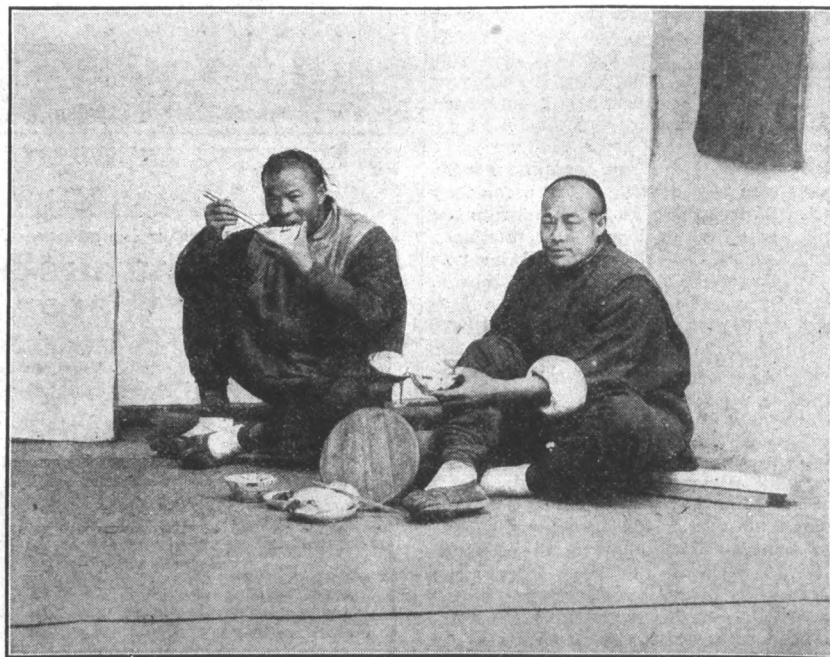
Wash-day Scene About a Straw-hut Home in China.

are tile, or, oftentimes, only hard, beaten earth. Instead of our comfortable rockers and couches, you are invited to rest yourself on mats and cushions, where you are served with strong tea, and invited to participate in a friendly smoke of opium or join the ladies in a game of cards.

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The moment the traveler sets foot on Chinese soil, he is conscious he is an alien in a strange land. He is met on all sides by the extreme incongruities of the Orient as compared with the Occident. He threads curiously the narrow streets which in many instances are no wider than our sidewalks. These miniature thoroughfares are lined on both sides with low shops and bazaars. At each door is a shrine, where incense is



Showing Position assumed by Chinese when Dining.

hand this in for a prize, too, one thousand dollars offered by '—s magazine.'

Since I had always wanted to be an author myself, and rather meant to be yet, I fell into conversation with Starkey. Thus we told each other our names and our places of lodging. Starkey was half through the plot he was endeavoring to evolve when my corner was reached.

Two days later Starkey shot into the — newspaper building and asked for me. I happened to be in at the time.

"Look here!" he exclaimed. "You're to busy to fool with a 'struggling author,' but I need some newspaper atmosphere. Let me sit around here a while and absorb some of the spirit. On your way home tonight drop in and see me."

Starkey sat for a little while, strolled about and finally left. Late that night, on my way to my own lodgings on the North Side, I dropped off where Starkey had indicated and found him writing verses.

"All's grist that comes to my mill," he explained. Noting my interest in the thought of authorship he showed me numerous completed, and partially finished, articles and verses. Many of them appeared to me to be pretty excellent. Then he showed me photographs of various descriptions. Most, he said, were for use as illustrations, but one, a farm scene, was of his father's farm in Indiana. "I came to the city six months ago," said Starkey, "thinking I could break into fame with one fell swoop, but it's a grind for me like it is for all the rest. Grub street before Hyde Park." He laughed. "We struggling authors and cub reporters must be patient," he concluded philosophically.

Then he explained the plot of the Prize Story. Sylvester Dillon, of an eastern state, is an artist, an author and a musician. Being all three he is none with any special success, yet he is fairly prosperous, and is well received for his personal attractiveness and his ability to entertain. He meets Esther Bliss, the daughter of a wealthy eastern manufacturer, and he falls in love with her. She regards him pretty favorably, and he is welcomed at her home occasionally. Dillon concludes that with sufficient funds to meet the necessities of this courtship he could win his suit.

Accordingly he turns to doubtful means. The upshot is that he comes here, five hundred miles from home, to commit a crime. He drops into the city after a month in another neighborhood where he is not known, with his beard and mustache well under way. He carries sufficient funds to provide for all necessities. He secures lodgings and pretends to be a real estate salesman. He follows the course of the real criminal, having made a study of handwriting and the art of forgery. After securing his haul he shaves off his beard and mustache and slips out without having the change in his appearance observed. He thereupon goes to a hotel, after buying a suitcase and a new suit of clothing. He pretends to be a visitor to the city, sightseeing chiefly. The suit worn to the bank he carries forth at night, and, weighting it with a few bricks, drops it into the river. He then establishes communication with friends in the east, representing that he has been away on a trip in search of literary and artistic material, and once more resumes his place in society. In a week or two he leaves the city for his eastern home. Eventually he uses the four thousand dollars to such good advantage that he marries the girl of his choice. With the aid of his new connections he becomes a renowned writer and a famous artist.

"Now the problem," declared Starkey, "is to meet the moral requirements of the sequel to the robbery and courtship. The fellow is the hero and the villain at the same time. See? Can I make his after life of honesty and goodness atone for the crime at the outset?"

"Why not shift the actual crime to some other character, and make the other fellow the innocent recipient of the proceeds?" I ventured.

"Wouldn't do," replied Starkey, "because it's not true to life. Men don't usually rob to give to other people. Has been done, but it's not the rule. Besides this is a problem of real life. In fiction the characters are divided into heroes and villains. In actual existence the man vacillates between good and bad. Did you ever read 'The Silence of Dean Maitland?'"

"No."

"Well, it's like that. A good man gone wrong; now how shall he get right? Shall he openly confess his crime, or ever af-

terwards live right and take the secret to the grave?"

"Wouldn't do to have him confess to the father, and beg him to keep it a secret from all else?"

"Hardly," hesitated Starkey. "That would be weak, wouldn't it?"

"Probably, but what about restitution?"

"Oh, naturally enough, he's to find some means of returning the whole amount later, when he has plenty to do it with, in a mysterious way, of course. You see, this plot opens up a good many avenues of activity."

I saw Starkey several times after that night, or morning rather. I gave him every suggestion that occurred to me and even secretly tried a story myself. But it was pretty poor. Starkey's story threatened to grow too long. The terms of the prize offered limited the length to six thousand words. That, he told me, was a common failing. He pruned, compressed and cut out. As it shortened it energized. It really became a great story. When it was completed he read it aloud to me. It sounded like a winner. But Starkey was depressed. "It won't stand the ghost of a show," he mourned disconsolately. "I always feel that way when my stories are completed. Do you really think this is good?"

"It's the 'best ever,' in my judgment."

"Is it true to life?"

"Can't lose, it seems to me."

The story was not named. "We'll name it," said Starkey. "I'll sign my name and address on a separate slip and enclose it (I know how much postage will be required for this number of sheets), and we'll wrap it up for mailing, and get it off the first thing tomorrow."

We debated twenty names. Finally Starkey proposed the final choice. "Better Lost" was the title. Starkey insisted that the title was to convey a moral significance. "After all," he argued, "it would probably have been better if Dillon had lost the heiress, though I do think the sequel is worked out pretty well. But I hope I don't lose the prize."

He laid the sheets between pieces of cardboard, and, having stamps, enclosed the proper amount for return. He wrapped the manuscript carefully, addressed it and affixed stamps. Then he leaned back content. "Survive or perish," smiled Starkey.

He then explained to me that he would probably leave the city for a while, perhaps two weeks or a month. "I ought to have gone sooner," he added gravely, "for my folks in Indiana need my help on the little old farm."

I proposed that we go out for a little bite at a nearby restaurant.

"I'm with you," agreed Starkey.

We had put on our coats and were reaching for our hats when forceful footsteps sounded in the hall. Glancing at Starkey I saw a sort of tremor pass over his face, which to my perplexity paled a trifle. But he answered the loud knock instantly. Before my astonished eyes stood two men whom I knew to be detectives from the police department.

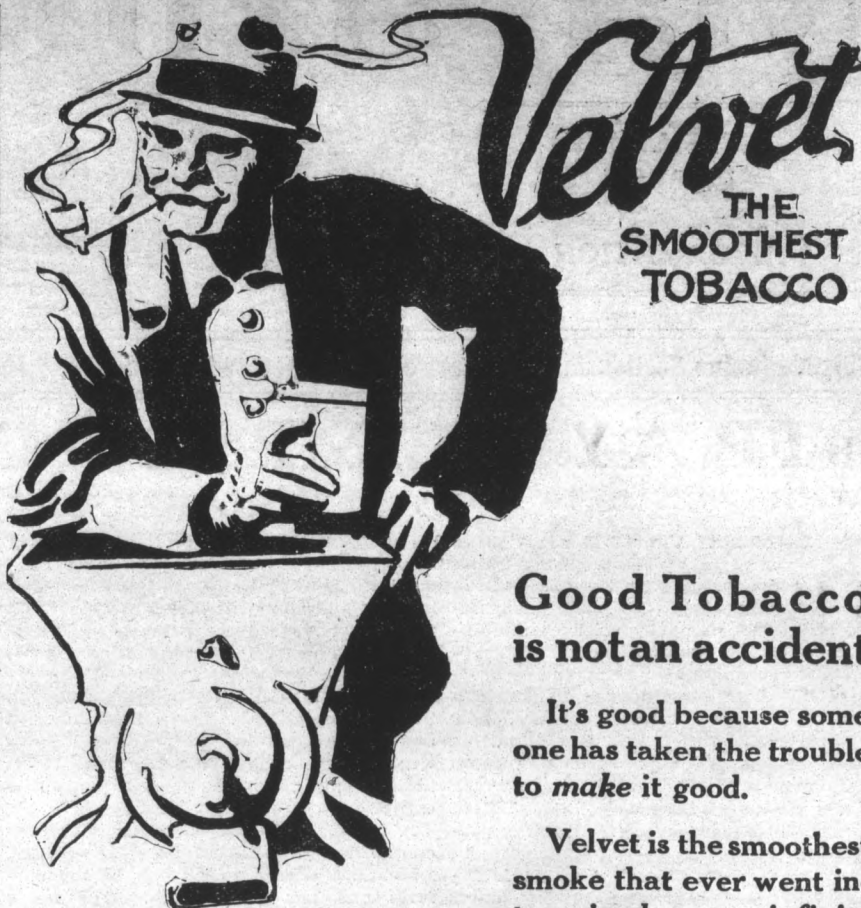
"Good evening, gentlemen," said one.

"Mr. Robinson," said the other, "I have a warrant for your arrest for forgery."

Starkey stiffened, and his face went as white as a sheet almost. He swallowed once. "I am ready," he said.

With my head in a whirl I followed them, picking up the manuscript. Then I hailed the quickest conveyance possible and rushed to the office, where I wrote a circumstantial account of the arrest of the Martindale forger. In the next edition we had a scoop. I didn't explain to the city editor how I happened to discover the matter so promptly, but intimated to him that it was my unerring nose for news. Then I mailed the story.

Poor "Starkey!" That was six months ago. He is now serving a term, for they hustled him through his trial and into the pen. They let his beard and mustache grow, against his protest, and he was easily identified as Charles B. Robinson. "Starkey" agreed to return all the proceeds of the check, and his term was shortened a little on that account. His story had a fatal ending—the one he lived, but the prize story was true to life. If things had gone as he planned he would doubtless have had a satisfactory explanation to me of his calling himself "Starkey" while in the city. One of his nom de plumes, perhaps. As it is, this was not his real name. It seems to have been signed on the separate slip of which he spoke to me. Yesterday it was announced by the publishers of "—s Magazine" that the thousand dollar prize had been awarded to Mr. Robert —, of —, Indiana. As "Starkey" said, the editors these days go in strong for realism.



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THE BACHELOR UNCLE

BY EVERITT McNEIL.

I can never forget the delight and wonder that shone in little Joey's face as he watched this, to him, marvelous procession wind its way through the crowded village streets, nor the sigh of happiness with which he turned to me, when the last wagon had passed, and said: "When I get to heaven I hope they will have a circus every day. Oh, I do wish Belle could see this!"

Poor little fellow! How barren and joyless and bitter the few short years of his life had been; and yet he could not have a joy without wishing to share it with one who had loved and been kind to him.

At two o'clock the canvas door opened; and with Ellen holding to one hand, Joey clinging tightly to the other, Teddy struggling bravely on in front, and Jake and Mary Jane bringing up the rear, we pushed our way through the crowd and entered the mammoth tent, where the animal-wagons were drawn up in a great circle. In a few minutes the tent was nearly filled with men, women and children. Farmers and their families were there who had driven fifteen miles to see the show; and I fancy everybody in town went, except the ministers and the deacons of the churches.

In one of the cages was a great African lion, pacing restlessly back and forth across his narrow quarters, and glaring savagely at the people crowding around. A large placard on top of the cage announced that "La Role, the world's most daring lion-tamer, would enter the cage of Sultan, the largest and most ferocious African lion ever in captivity," and would show his perfect mastery over the huge brute by "thrusting his unprotected head between the wide-extended jaws of the ferocious monarch of the African jungles," and advising all to witness this, "the most startling and blood-curdling exhibition of coolness and daring ever given by any show on earth."

La Role himself, a slim dark-haired and black-eyed man, dressed in gorgeous tights and wearing a short scarlet cloak flung gracefully over his shoulders, stood in front of the cage, a smile on his handsome face for every pretty girl in the crowd that pushed forward to get a closer view of the famous lion-tamer and the ferocious lion. In a moment we were caught in this jam of people about the cage, and held so tightly that it was vain to attempt to move. Little Joey and Ellen could see nothing of what was going on, and I lifted them both in my arms to show them the lion and his tamer.

"Oh, Uncle John," Ellen cried, the moment her head was above the crowd, "look over there! There's that big wicked man, and the beautiful woman who saved Teddy and me when we fell in the river. I want to go right over and thank her," and she began waving her hand and calling to attract the attention of Elsie Lamont, whom I now saw standing by the side of Harry Rodney a little to the left of us.

"Hush," I said sharply. "We can't get to her in this crowd. See, the man is getting ready to go into the cage. Now watch him. Hark!"

A low rumbling roar from the lion turned all eyes in the direction of the cage, and in the excitement of the moment Ellen forgot Elsie Lamont and the "big wicked man."

"Heavens an' earth! He ain't goin' right in there with that ugly brute, is he?" and Mary Jane clutched one of my arms protestingly. "He'll be chewed up right before our very eyes. He ought to be stopped. Land sakes, look how that lion's eyes shine! John Delvin, take me away. I don't want to see that man go—Heavens eternal! Take me away, John Delvin, take me away!"

With a horribly savage growl the lion, evidently in a bad temper, had sprung against the sides of the cage; and Mary Jane had not been the only one that had shrunk back with cries of terror; but, so closely were we packed and held by the crowd behind and in front, that we could not move.

Two attendants carrying a small portable stove, now approached the cage. They set the stove down, and thrust the ends of four long iron bars into the glowing coals. When the ends of the bars were heated to a white heat they withdrew two of them from the fire, and thrust their glowing ends between the bars of the cage, one on each side of the

door, evidently to keep the lion back while the door was opened. At this moment another attendant approached the door of the cage to unlock it for the man to enter.

La Role, the lion-tamer, smiler and bowed to his interested audience, and, holding in his right hand his only weapon, a strong heavy-stocked whip, whirled on his heels, and prepared to spring into the cage the moment the door was opened. The lion lay crouched in the farthest corner of the cage, his great, lithe body drawn away as far as possible from the glowing ends of the irons, and his lips drawn back in short snarling growls.

These dramatic initiatives had wrought the feelings of the crowd up into a condition of almost breathless excitement. Those in front, with paling faces, tried to push back from the cage, and those in the rear to crowd forward, while those in the middle were held, as in a vise, between the extremities of the crowd. I tried to force a way out through the mass of people, for I did not think the scene a fit one for children to witness; but the wall of human beings resisted as if made of stone, and we were compelled to remain where we were.

The attendant quickly turned the key in the lock, and La Role placed his hand on the door to swing it open and enter the cage. But just as his fingers touched the iron bars, the lion, for a moment his rage overcoming his fear of the threatening irons, leaped straight at him. His huge body struck the unlocked door with terrific force, hurling it open and knocking La Role violently to the ground, where he lay stunned and motionless, the beast tumbling through the opening and falling on top of the insensible man.

For one awful moment not a sound was heard; and then such a cry of horror and deadly fear went up from the mouths of those terror-stricken people that I pray God I may never hear its like again. Men forgot they were human beings and fought like brutes to get out of the tent. Women and children were knocked down and trampled on; and the cries of fear and horror and pain were heart-rending. The two men dropped their hot irons and ran. The lion-tamer lay unconscious on the ground. There was not the slightest barrier or defense between the enraged beast and the terrified mass of struggling men, women and children.

Fortunately the noise and the wild turmoil around him confused the lion, and for a few terrible seconds he hesitated, his ears drawn tightly back, his eyes glowing like balls of fire and glaring in brute frenzy from side to side, and every muscle tense, ready for the spring. Then he leaped straight toward the spot where Harry Rodney was vainly trying to force a passageway for Elsie through the crowd. At the leap of the lion Rodney turned, with a face as white as death, but he was too late. Before he could jump aside, the lion was upon him, and the two went to the ground, the lion on top.

Not until the lion sprang did I arouse myself from the trance of horror, with which this sudden and terrible scene had paralyzed every nerve and muscle; and, even to this day, I can not comprehend clearly what followed. I only know that with the spring of the lion, came a sudden realization of our fearful peril, and the desperate need of doing something to protect the helpless women and children from the fangs of the great brute. I know I thought of the helplessness of Ellen and little Joey in my arms, and I confess it with shame, of my own peril, and I glanced swiftly around seeking some way of escape; but we were completely hemmed in on all sides by the frantic mob, except where the lion lay crouched by the prostrate body of Rodney, his tail lashing the ground angrily and his eyes glaring wildly. Then, suddenly, I remembered the long heavy bars of iron still protruding from the glowing portable stove not ten feet from me. Here were weapons, something to defend myself, to protect my helpless charges!

I do not think it was my courage nor quickness of mind, as some have since called it, but rather, the instincts of self-preservation and protection inherited by all fighting animals, that prompted me at that moment to drop Ellen and Joey, leap to the stove, seize one of the heavy bars of iron, and, swinging the glowing end high above my head, spring toward the



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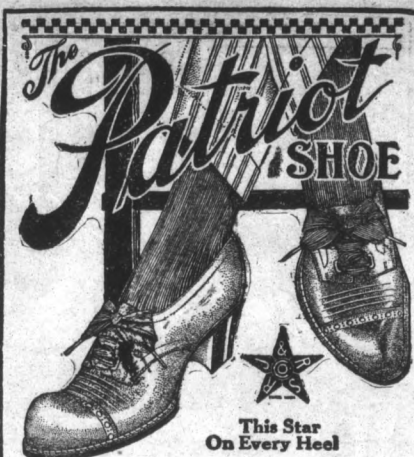
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lion, and bring it down with all the strength of every muscle in my body on the animal's back, just as he rose from the ground in another leap that would have launched him in the midst of that frenzied mass of struggling human beings.

Thank God for the strength of my arms and back! The heavy iron struck the lion behind the shoulders, and with such crushing force that the backbone was broken; and the huge beast fell writhing and roaring in agony and rage to the ground not five feet from the nearest of the fleeing men and women, but terrible even now, if he could but crawl to within reach of a victim. By this time white-faced attendants were hurrying to the scene from all directions, and with them came one of the proprietors, carrying a repeating rifle in his hands, who, as soon as he saw that the lion's back was broken, shot him; and the tragedy was over.

At the sound of the shot Harry Rodney rose unsteadily to his feet, he had only been stunned by a blow from the lion's paw, glanced hurriedly around, caught sight of Elsie in the edge of the crowd, and, without a word, hastened to her; and the two quickly vanished in the mob of frightened people still struggling to get out of the tent.

"Oh, Uncle John! Uncle John!" and Teddy rushed up and seized my hand in both of his and began shaking it with all his might. "Oh, Uncle John, I wish Teddy Roosevelt could have seen you kill that lion, kill him with one mighty blow! My, but you are brave and strong, Uncle John, and I am proud of you! Oh, let's go and look at the lion! I want to see how long his teeth are."

And then there was a cry of joy and Ellen flung herself at me. "I—I thought that big wicked lion would kill you, Uncle John!" she sobbed, "and—eat you all up; and I'm awful, awful glad you—you knocked him dead. I want to kiss you, Uncle John," and her arms went around my neck, and her warm kisses and tears were rained on my cheek. How sweet and pure are the kisses of a child! They drove all the mad passion out of my heart. Now Mary Jane, dragging little Joey by one hand and followed by Jake, bore down upon me. "It's God's mercy that you're alive, John Delvin, a-riskin' your life for that great brute of a man, who hain't got sense nor kindness enough to thank you for his life," she cried wrathfully. "Guess he knowed twan't worth thanking for. I seen it all, John Delvin. Now, I want to go right home. I've seen all the man-eatin' lions an' tigers, an' elephants I want to. 'Tain't a fit place for Esther's babes, nor anybody with human feelin' in their flesh an' bones. Heavens eternal, but I thought that lion was a-goin' to jump straight at me! Take me right home, John Delvin, before some of them other roarin' monsters break out. I hain't got much meat on me, but what I've got is too good for them brutes to chaw on. Come on," and seizing Teddy with one hand, and still dragging little Joey with the other, she started for the exit of the tent.

I followed Mary Jane very willingly; for now I was beginning to be made the center of a curious crowd, anxious to see the man who had broken the lion's back, and I had no desire for that kind of notoriety. I think Teddy was the only one who really thought of the circus performance, or regretted missing it. I know I was glad, when I felt the lines in my hands and was driving homeward.

I wondered if Elsie knew that, possibly, I had saved her life; for the lion was about to spring in her direction when the bar of iron struck him. Perhaps she did not see me. But there were plenty of tongues to tell her to whom she owed her safety.

There was a clatter of hoofs and a whirl of wheels from behind; and Rodney, driving his spirited team with the whip held over them, dashed past. His fact was white, with a set desperate look on it, and his lips were tightly-drawn. He stared straight ahead as he went by. Elsie sat by his side. Her face was turned away.

I afterward learned what it was that placed that desperate look on Rodney's face. A boy had handed him a note, as he was about to step into his buggy to drive home, which read:

"That devil Delvin is onto us. I've got to git out of the country or hell will be to pay. I must have that money before I go, or I'll not be the only one who'll have to git out. Meet me on the stone bridge tonight at 11 o'clock. I've done my part, now do yours or I'll let the world know what sort of a man you are. I mean every word of this. —Murdock."

(To be continued.)

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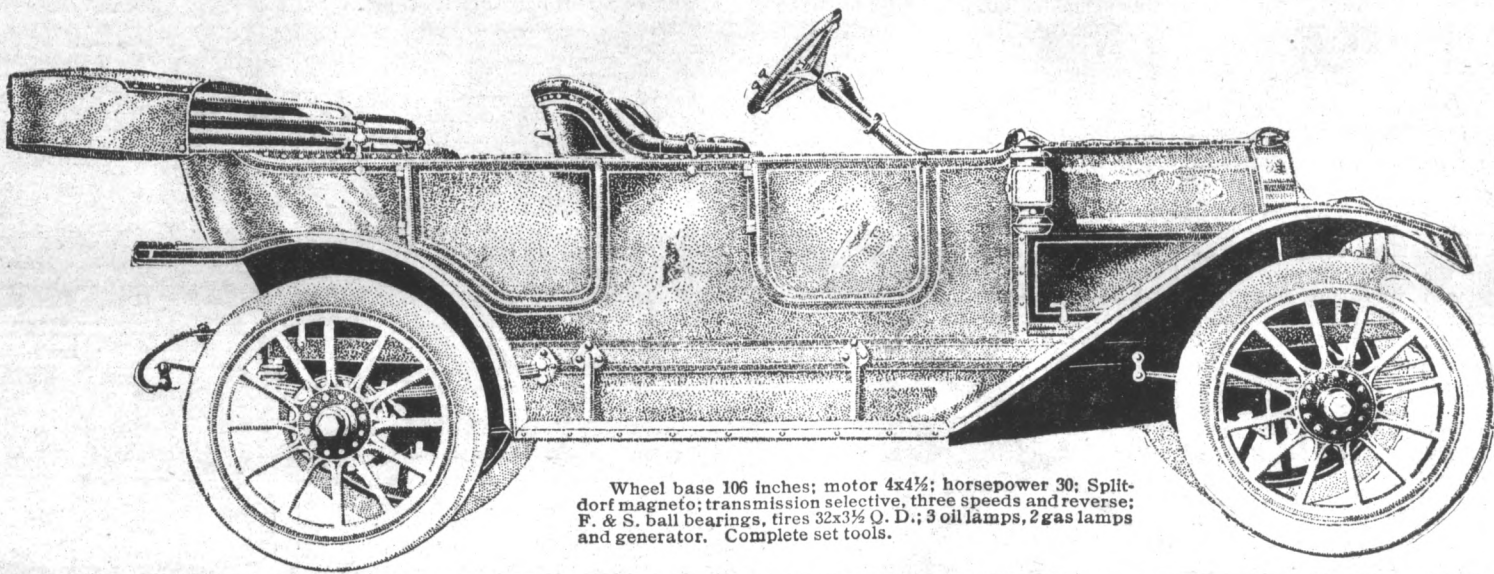
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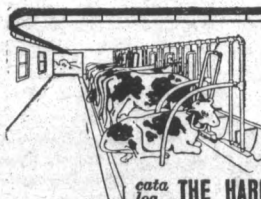
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WHO that recalls his childhood does not remember occasions when he was consumed with envy because of the rare good fortune of some mate? Many such spasms seized me during my youthful pilgrimage, but the one which stayed longest and caused deepest pangs was caused by the consideration of the unequalled bliss of a friend who had a weekly allowance of money.

She was the oldest girl in the family, and for that matter the only girl. There were three younger boys. Father and mother worked a 40-acre farm, money was scarce and hired help scarcer, and the children had to help. The same conditions existed on other farms, but this father and mother must have had keener memories of their own youth than their neighbors.

They knew that few real children like to work. It is lots more fun to play ball or with dolls or to go nutting or coasting or skating or to run to the neighbors than it is to wash dishes, make beds, learn to bake and iron, do chores, hoe potatoes, weed gardens or do the other work about the home that small boys and girls can do. So they decided that they would lighten labor by making it pay. They therefore gave each child a certain wage in return for services rendered. The daughter received 25 cents a week. The oldest son received a like amount for helping father, the second son got 15 cents, because he could not do so much, and the youngest got 10 cents for keeping the wood-box and reservoir always filled.

Not very much, we would think now, but in those days it was a small fortune. And it meant much more to those four children for in that school of 50 pupils they were the only ones who had money of their own. Imagine their rating in the juvenile Bradstreet! J. Pierpont Morgan had nothing on them. Occasional pennies were given to the rest of us by parents or grown-up brothers and sisters. One boy even got a dollar once for taking a dose of medicine without having to be bound hand and foot and having his nose held. But what was a dollar once in a lifetime to ten cents a week. And as to 25 cents, it was wealth unspeakable.

The parents went a step farther than merely paying the wages. They kept a judicial oversight of the expenditure until the children learned wisdom. One-third of the money the children could spend as they liked, but the rest was wisely expended. One-tenth was laid aside for others, presents for relatives and friends, gifts to the needy, church if that was the way the child decided to spend it, but it must be spent for someone else. One-fifth was laid aside for a rainy day, and the rest the children kept until enough was saved to get them some cherished toy or garment.

If the time for saving up enough to get what they wanted was short the parents advanced the money and the children paid them back out of their allowance. The older children paid interest, the younger ones, because their allowance was so small, were not charged interest.

Thus the children learned from the beginning the value of money. They learned business methods, addition and subtraction and simple interest, not to mention the lessons in thrift and economy. They always took care of their playthings, because they had earned the money which bought them, and they were careful of their clothes because their money paid for many of their "best" garments.

The plan worked so well that since I have grown older I have often wondered why more parents do not follow it. The rule seems to be either not to give the children money at all, or to give them money every time they ask for it without stopping to consider whether the request is right or reasonable. Children should have money as early in life as they begin to understand its use. But they should not be left to get it in a haphazard fashion and spend it in the same way.

One father I know gives his son five

cents for every perfect report card from school. Another gives his boy a nickel every time he asks it, and it is spent at once on candy or nickel theaters. It doesn't take a philosopher to see where those boys are tending.

An allowance is a fine thing, but an allowance which the child feels he earns is a finer thing.

DEBORAH.

ABOUT HAVING ONE'S OWN WAY.

BY HELEN MATHIE.

We very often hear someone say, defiantly, "I shall do just as I please. I shall have my own way about it." Did you ever stop to think that you could not possibly have your own way, in this world, probably not in the next, either? You cannot do just as you please, no matter how hard you try, so why all this aggressiveness and defiance? You can create a great disturbance, you can make all around you uncomfortable and unhappy, you can perhaps carry the particular point you are fighting for, but when you have carried your point, what then? You pride yourself on not being beaten, on having your own way, but you are beaten just the same. Just so surely as you have forced a passage for your will in one direction you have closed it in another. You have lost as much as you have gained, often more.

You have a difference of opinion with your friend. It isn't important, but you feel that you must have your say and way about it. You conquer, you "do as you please" instead of as she pleases, or compromising the matter. What then? You gain your point but you have lost your friend. Your heart aches, hers also. Does this please you? Is this just as you would best like to have it? A hundred times you will want something your friend could have given you. Help, sympathy, companionship, all that goes to make a friendship beautiful, and you cannot have it because when you first did as you pleased regardless of friendship, you set in motion a train of circumstances that will for all time prevent you from pleasing yourself. Did not the loss far outweigh the gain?

I once knew a man who quarreled with his wife. He said she "bossed" him around, and he, being a man, would "do as he pleased, regardless of any woman." Because he could not do all the "bossing" he went away and lived by himself. He has not yet found anyone whom he can boss. He says he does just as he has a mind to. He does not. If he had things as he pleased he would have a good warm dinner ready for him when he came in from work. Now he gets it himself and eats it alone. He is stubborn still, but far from pleased. He does not in reality do as he pleases one-half as much as he did when he lived with his wife. The wife fares better but she is not doing as she would like to. She is dependent on strangers for the help her husband should have given her gladly.

Circumstances are stronger than the will of most of us. Isn't it better to think twice, to give way if need be, rather than set the ball a rolling that may be forever in our path? We had better go around it at first than to stumble over it all the remainder of our lives. It requires far less giving up in the end. We punish the stubborn child that fights for his own way, and we thereby prove the point, for the child does not please to be punished but is overcome by a superior power. Just so are the children of a larger growth punished for willfulness, and it is usually harder and lasts longer. We are all a part of one great whole, interwoven inextricably. No one can separate himself and do just as he pleases. It is impossible and the attempt brings untold trouble to him who tries it. Only in grave questions of right and wrong is it wise to stand out from one's fellows, and one must expect trouble and hardship even then. Christ died on the cross, and the great reformers of all ages have suffered persecution and death at the hands

of their fellows. The separate road is always a hard road to travel. It is best to keep in harmony with one's fellows unless there is some greater need for withdrawal than simply the gaining of one's individual way.

STAIRS AND HOW TO ASCEND THEM.

BY ELLA E. ROCKWOOD.

Climbing stairs is generally supposed to be injurious to the health. To pass up and down many times each day undoubtedly will have an ill effect in the course of time. Modern architects are eliminating this method of passing from one floor to another by installing elevators wherever practicable.

Our high schools were once built in such a fashion that a serious charge was laid at their doors. Many such buildings remain, yet most of those built during the past few years are confined to one or at most two, stories above a basement. This will undoubtedly result favorably by eliminating or reducing to a minimum the amount of stair climbing to be done by the pupils.

In our homes the stairway still remains, unless, in the case of the increasingly popular bungalow, where everything is on one floor. But the stairway as we have it today, is a distinct improvement upon that of the early part of the last century where the ascent was frequently so steep as to make passage up or down positively painful, if not actually dangerous, to life and limb. It would seem that space for staircases in those days was at a premium. Today there is as much thought expended upon the staircase as on any other part of the house. Architects are striving to make them easy of ascent. To do this they must make them broad in the tread and low in the riser, exactly the opposite of the olden style, which made the riser high and the tread narrow. Indeed, so important is this matter of stairs now considered that certain engineers are devoting their entire time to studying the best style of steps so that persons may climb them with the least effort.

Yet, climbing a modern staircase is a good exercise if moderately indulged in and done under right conditions. Those last two words make all the difference imaginable. This difference all hinges upon the position in which the body is held while making the ascent. As ordinarily accomplished it is a good deal like pulling one's self up with a rope, and is undeniably hard work. By assuming an erect position, the same as if passing across a room, planting one foot firmly upon the stair, lifting the body naturally by straightening the leg, then placing the other foot upon the stair above, all strain will be eliminated, and one can pass from one floor to another without in the least increasing the heart action.

Of course, persons of maturer years must not expect to skip up stairs with the fleetness of foot which distinguishes the youthful period of life and which is so often envied by elderly people. But by following these suggestions, raising the body entirely by the muscles of the lower limbs and taking a moderate gait one can mount a flight of stairs with both ease and comfort.

HUMAN WELFARE QUERIES.

Editor Household Department:—Baby, six months old, is quite constipated. I have been giving her a medicine, but do not like to get her in the habit of taking medicine all the time. I nurse her, and am quite constipated myself. Can you suggest anything I can do?—Mrs. L.

In the first place, do everything you can to overcome your own constipation by eating laxative foods, oatmeal for breakfast, and plenty of vegetables which are easy of digestion, celery, spinach, parsnips, carrots, lettuce, if you can get it, asparagus, well-cooked corn, peas, etc. Baked apples and orange juice will help you, and plenty of exercise. Do not give baby a laxative. Use an enema of pure soapsuds and olive oil, instead, rub the bowels from the lower right hand side round and round for 15 minutes after the bath each morning, and give her a table-

FROM THE NORTH COUNTRY! Where the Winters are Cold and the Snows Deep

Writing from the vicinity David Harum made famous, a man says that he was an habitual coffee drinker, and, although he knew it was doing him harm, was too obstinate to give it up, till all at once he went to pieces with nervousness and insomnia, loss of appetite, weakness, and a generally used-up feeling, which practically unfitted him for his arduous occupation, and kept him on a couch at home when his duty did not call him out.

"While in this condition Grape-Nuts food was suggested to me and I began to use it. Although it was in the middle of winter and the thermometer was often below zero, almost my entire living for about six weeks of severe exposure was on Grape-Nuts food with a little bread and butter and a cup of hot water, till I was wise enough to make Postum my table beverage.

"After the first two weeks I began to feel better and during the whole winter I never lost a trip on my mail route, frequently being on the road 7 or 8 hours at a time.

"The constant marvel to me was how a person could do the amount of work and endure the fatigue and hardship as I did, on so small an amount of food. But I found my new rations so perfectly satisfactory that I have continued them—using both Postum and Grape-Nuts at every meal, and often they comprise my entire meal.

"All my nervousness, irritability and insomnia have disappeared and healthy, natural sleep has come back to me. But what has been perhaps the greatest surprise to me is the fact that with the benefit to my general health has come a remarkable improvement in my eye-sight.

"If a good appetite, good digestion, good eye-sight, strong nerves and an active brain are to be desired, I can say from my own experience, use Grape-Nuts and Postum." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.



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All "Star Brand" Shoes are honestly made of pure leather. No substitutes for leather are ever used. That's why

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Manufacturers Branch of International Shoe Co. ST. LOUIS

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Send me your name on a postal card and get this free book which tells all about Steel Shoes. It explains why one pair will outlast 3 to 6 pairs of best all-



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205A 7th St., Racine, Wis.

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spoonful of orange juice every day or a little scraped apple.

Editor Household Department:—Is there anything I can feed my family to help them through that "spring feeling?" It is so hard to know what to have to eat in the early spring.—Tired Cook.

Less meat and fats and more vegetables and fruits, of course, is the rule. If you have been having griddle cakes and sausage substitute farina, bacon, toast or gems for a change. Whole wheat gems are delicious and may be made with your graham gem recipe, using whole wheat for graham flour. Salads are fine this time of year, and nothing is better than lettuce. If you do not have a hothouse you can probably buy it in your nearest town, and by wrapping it in a cloth wrung out of cold water and laying it away in a cold place you can keep it two or three days. You can buy spinach and asparagus canned and these are fine spring vegetables. Parsnips will be in prime condition now and can be served fried, creamed or mashed. Scoop out carrots and fill the cavity with minced onion, crumbs and the scooped out carrot. Stand on end in a baking dish, fill half full of water and bake until tender. Feed all the succulent vegetables you can get hold of, baked apples, prunes and fruit desserts.

Editor Household Department:—Can you suggest a menu for a girls' club? There are a dozen of us and we have had sandwiches and coffee or chocolate and ice cream and cake until we are sick of them.—Miss Sixteen.

Can it be possible a girls' club exists where Welsh rarebit has not been served? I suppose you associate this dish with "rarebit dreams," but if it is made right you should not suffer from indigestion. Melt two tablespoonfuls of butter in an agate dish, if you haven't a chafing dish, and when it has run all over the bottom of the pan add one pound of grated cheese. Stir constantly until the cheese has melted and then add two eggs beaten with a cup of cream or rich milk, salt to taste, about one teaspoonful, and a pinch of soda. Stir constantly until smooth and creamy and then serve on salted wafers or small squares of buttered toast. For a drink serve black tea with a slice of lemon, a couple of cloves and loaf sugar.

A SPRING ICE BOX.

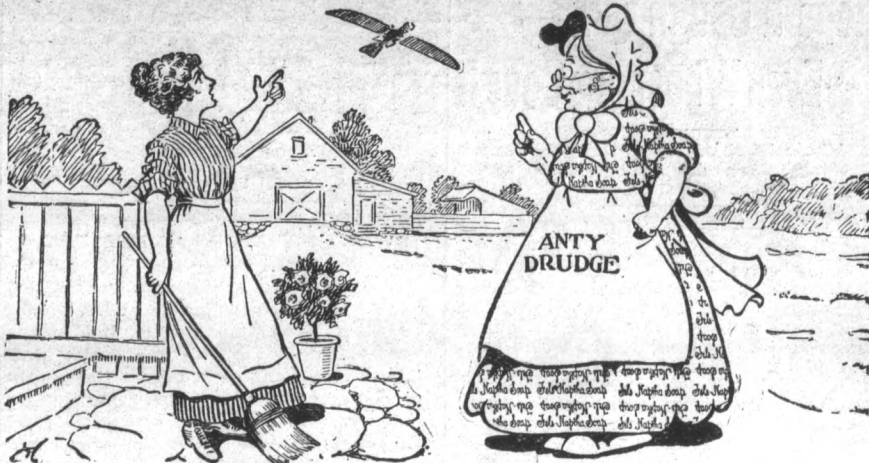
BY HILDA RICHMOND.

Before we had a regular refrigerator we used to take a substantial store box with no bottom and place it on the north side of the house. This we would fill with large solid cakes of ice in February, or even in January and cover the ice lightly with sawdust to the depth of two or three inches. The outside was banked with sawdust and often manure on the outside of that, or earth, to keep the air from the ice. We either made the ice by setting out old tubs filled with water, or got it with little trouble, at the brook.

Over the top of the sawdust in the box we laid a clean, old piece of carpet or burlap, and on it set the dishes and crocks of meat that we wanted to keep fresh a long time. Sometimes on a mild winter day six or eight chickens were dressed at once and frozen for future use. The freezing seemed to make them tender and good, and they certainly were handy in emergencies, or for any occasion. It is easy to dress a number of chickens while one is in the business. When other neighbors were frying down their sausage and fresh pork from the late killing, we had ours frozen solid and out of danger. In the summer one must use fried down or salted meats, so we like to prolong the season of fresh pork and beef just as long as we can.

On mild days a clean, thick horse blanket was carefully laid over the top, and often several thicknesses of carpet. In this way we were secure till the next "cold snap," and if the ice showed signs of sinking in the box we replenished it. In this box we have kept ice-cold meats for six and eight weeks, often until the middle of April, when the weather was quite mild.

The only secret about it is in fitting the ice as compactly together as possible and avoiding cracks. Square, thick blocks are best with the crevices securely filled with sawdust. On mild days open the box just as little as possible and get out the supplies very early in the morning. It is better to put up the meat in small packages as warm weather approaches, as taking a mass of meat into a warm kitchen to thaw enough for dinner is disastrous. With a quick, sharp blow of a clean hatchet or big knife cut off what you need and shut the box at once. Of course, if a bitterly cold night comes late



Anty Drudge describes wonders of the age

Farmer's wife—"Well, I do declare! There goes one of those machines flying like a bird. This is surely a wonderful age. What will they be doing next?"

Anty Drudge—"This certainly is a wonderful age. First, Fels-Naptha Soap banishes the drudgery of wash day, and now man has mastered the air."

On Monday the farmer's wife has a hearty midday meal to get, just as she does on other days. She has all her regular work to do, too. If she does her washing the way her mother and grandmother did it, she is going to be tired out, hot and cross long before her work is done.

But if she once does her washing in the new way—the work-saving, back-saving, temper-saving way—the Fels-Naptha way, then she will never again try any other way.

Instead of a hot fire to tend and a heavy boiler to lift, she puts the clothes to soak in cool or lukewarm water; in a little while she rubs them lightly, rinses and hangs them out. Half the time; half the trouble; better results. Get a cake at your grocer's and follow directions on the red and green wrapper.

For full particulars, write Fels-Naptha, Philadelphia

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The Lamp That Saves The Eyes

Children naturally never think of possible strain on their eyesight when poring over a fascinating book.

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The Rayo is a low-priced lamp, but it is constructed on the soundest scientific principles, and there is not a better lamp made at any price.

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Easily lighted without removing shade or chimney; easy to clean and rewick. Solid brass throughout, with handsome nickel finish; also in many other styles and finishes.

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**A Whole Pint of the Quickest, Surest
Cough Remedy Easily Made at
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If you have an obstinate, deep-seated cough, which refuses to be cured, get a 50-cent bottle of Pinex, mix it with home-made sugar syrup and start taking it. Inside of 24 hours your cough will be gone, or very nearly so. Even whooping-cough is quickly conquered in this way.

A 50-cent bottle of Pinex, when mixed in a pint bottle with home-made sugar syrup, gives you a pint—a family supply—of the finest cough remedy that money could buy, at a clear saving of \$2. The sugar syrup is easily made by mixing a pint of granulated sugar and 1/2 pint of warm water, and stirring for 2 minutes.

Pinex soothes and heals the inflamed membranes with remarkable rapidity. It stimulates the appetite, is slightly laxative, and has a pleasant taste—children take it willingly. Splendid for croup, asthma, bronchitis, throat tickle, chest pains, etc., and a thoroughly successful remedy for incipient lung troubles.

Pinex is a special and highly concentrated compound of Norway White Pine extract, rich in guaiacol and other healing pine elements. It has often been imitated, though never successfully, for nothing else will produce the same results. Simply mix with sugar syrup or strained honey, in a pint bottle, and it is ready for use.

The genuine Pinex is guaranteed to give absolute satisfaction, or money refunded. Your druggist has Pinex, or will get it for you. If not, send to The Pinex Co., 232 Main St., Ft. Wayne, Ind.

\$14.68 PER DAY



Dear Sirs:

I am pleased to say that through a friend of mine I secured the opportunity of becoming a traveling salesman for the Saginaw Medicine Co.

I find that it is a money-making proposition, as well as pleasant work, for it certainly gives a man a satisfied feeling when he knows that the

line of goods he is handling is securing a lot of good, warm friends for him all over his territory.

To a greater or less extent I believe that the line of goods I handle are responsible for the cordial reception I receive wherever I go. The goods give such good satisfaction that the people are glad to see me come again so that they can obtain another supply. All I had to do was to introduce the goods on the first trip and now they sell themselves.

The S. M. CO. PLAN, I find is the only successful plan to do business and I think it is complete. I also wish to add that the Saginaw Medicine Company has proved to be both honest and reliable.

Very truly yours, J. W. WRIGHT.

THE MICHIGAN LINE

Mr. Wright's sales amounted to \$954.10 in his first 65 days on the road, and he attributes some of his success to the fact that he was supplying the people of Michigan with a reliable line of Household Remedies, Stock and Poultry Remedies, Extracts, Spices and Toilet Articles manufactured right here in the State of Michigan. We want our line represented by a hustler in Eaton, Lenawee, Kalamazoo, Barry, Jackson and Branch Counties, Michigan.

If interested, write for terms. Don't miss this opportunity.

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the only kind made of best imported tin—cost less than others. Send for catalogue.

**CHAMPION
EVAPORATOR CO.**
Hudson, Ohio.



How Many
Trees Do You Tap?

In the season it is well to open the box and allow things to freeze solid. Sometimes even water may be poured into it to cement the cracks. It is a little trouble, of course, to watch the box and keep it just right, but the delicious fresh meats make up for all that. Besides the filling of the box comes at a time when the men are not busy, and they can make short work of it on a cold day.

SWEET POTATOES AS DESSERT.

Sweet potatoes are generally regarded in the north as a vegetable and a proper side dish for meats as such, but in the south many of the old-time cooks have evolved toothsome dishes from the potato for dessert purposes. On some lunch-room counters may now often be found sweet potato pie, while there are few more delicious dishes than that of baked sweet potato and apples, as described by the Tuskegee, Alabama, Experiment Station, as follows: Wash four medium-sized potatoes, peel, and cut the potatoes in slices about a quarter of an inch thick; pare and slice the same number of apples in the same way. Put the sweet potatoes and apples in a baking dish in alternate layers; sprinkle one and a half cups of sugar over the top, scatter half a cup of butter also over the top, and three-fourths of a pint of hot water; bake slowly for one hour; serve steaming hot. Personal trial vouches for the goodness of the dish.

LETTER BOX.

Why Not a Law to Shorten Hours of School Work?

Editor Household Department:—Studying school lessons at home is of much interest to me, as every home must have its own rule. What rules one is of no use in another. It is always the woman who says, "I will not have this," or "that." Who knows just what the other woman should do, never taking into consideration that all children differ, both in health and ability to cover the same amount of work.

I say this because every article written on this subject is discussed in rural districts, and I think I am not the only woman who gets a lecture on "You ought to just read what Mrs. A. W. S. had to say," or "Mrs. Cameron's talk on bringing up children to go to school right."

My own daughter of 17 does scarcely any work at home, but studies every evening, nearly all of Saturday and much of Sunday. Having two miles to walk, with the temperature anywhere from zero to 32 below, it requires more than an ordinary constitution to hold good for ten months in school. I hitch up a horse and take my daughter to and from school, making eight miles of cold drive for me. Besides, we have cattle, hogs and poultry to care for, with the housework, and I am only a small woman to do all this. But I would not say to my child, she must not or could not have her books home. Twenty minutes in the forenoon, eighty in the afternoon, is all the time she has to study at school, the rest is taken in recitation.

If Mrs. A. W. S. will work this exercise in physics: "Find the boiling point when the barometer reads 74.5 centimeter," and this in geometry, "If the sides of a spherical triangle are 77 degrees, 123 degrees and 95 degrees, how many degrees are there in each angle of its polar triangle?" When she has done 15 or 20 of such, with German, history, English, page after page, I think she would say school is hard try as much as a parent may to lighten the pupil's work.

And teachers, although they are paid to do the work, are helpless to shorten the work in any great degree. The board of education has in its power to crowd, and many mothers I have talked with complain that it is one continual crowd.

There is a law for the number of hours women and children shall work and there should be a limit to over-taxing either teacher or pupil. Just going through the eighth grade does not fit a pupil for any business, not even as a teacher. I have been sending to this same school 24 years, except one year. I believe, no matter what the trouble parents are put to, it is their duty to make going to school as pleasant as parties or any other gathering of pleasure. Children tire of school soon enough.—Mrs. L. M. C., Emmet Co.

If the pancake griddle should become sticky sprinkle a little salt upon it.—Mrs. D. W.

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Just as snow melts before the springtime sun, so do inferior paints give way to wear and weather. Acme Quality Paints do more than merely decorate. They protect. You can count for a certainty on any can of paint that bears the Acme Quality trade mark. It means that whatever surface you paint will neither crack, blister nor fade. Easily applied—looks the best—always the same.

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Acme Quality Floor Paint gives a hard, durable, lustrous surface that is easy to clean. Spreads evenly, dries quickly.

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Detroit,
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ACME
WHITE LEAD
AND
COLOR WORKS



Churns Kept Sweet and Clean



There's nothing that will keep the churn so thoroughly clean, sweet, and sanitary as Old Dutch Cleanser. The fine particles cut away the grease and "butter-rims" instantly. Saves half the time and work.

Many other uses and
full directions on
large Sifter-Can 10c.



Old Dutch Cleanser

When writing to advertisers mention The Michigan Farmer.

(Continued from page 324).

advance before a new supply is in sight. It is anticipated that much coal will be shipped from the United States unless a speedy settlement is brought about.

Warships of the United States, France, Germany and Great Britain are within reach of Mexican ports to respond to aid the interests of their respective countries and protect foreigners in case the threat of the rebels to capture Mexico City is attempted.

The rebels in Mexico are prosecuting a vigorous campaign in the immediate vicinity of the capital of the Republic. The federal forces are placing guns and building intrenchments for the protection of the city of Mexico, while the rebels are active in capturing nearby towns and fortifying advantageous positions. Fighting in the state of Morelos has resulted in a large number of men being killed, the estimate being 400.

The National Assembly, of Shanghai, China, approved the new constitution on Monday, the provision of which are that the Assembly will elect the president and vice-president; have full control over the cabinet, and that a majority vote of the Assembly will be sufficient to pass a law over the president's veto. In Peking the authorities have secured control of the situation and driven out the disorderly soldiers. The foreign quarters are now barricaded in such a manner as to make the residents feel secure.

MICHIGAN CROP REPORT.

Wheat.—In answer to the question, "Has wheat during February suffered injury from any cause?" 85 correspondents in the state answer "yes" and 553 "no;" in the southern counties 63 answer "yes" and 251 "no;" in the central counties 13 answer "yes" and 137 "no;" in the northern counties 9 answer "yes" and 137 "no;" and in the upper peninsula 23 answer "no."

Snow protected wheat in the state and southern counties 28 days; in the central counties 27 days and in the northern counties and upper peninsula 29 days.

The average depth of snow on February 15 in the state was 10.18 inches; in the southern counties 8.55; in the central counties 8.47; in the northern counties 13.48 and in the upper peninsula 17.97 inches. On the 29th the average depth of snow in the state was 10.87 inches; in the southern counties 8.84; in the central counties 10.09; in the northern counties 14.86 and in the upper peninsula 15.92 inches.

The total number of bushels of wheat marketed by farmers in February at 107 flouring mills is 260,019 and at 116 elevators and to grain dealers 293,672, or a total of 553,691. Of this amount 444,248 bushels were marketed in the southern four tiers of counties, 90,620 in the central counties and 18,823 in the northern counties and upper peninsula.

The amount of wheat yet remaining in possession of growers is estimated at 4,428,000 bushels. Sixty-seven 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 swine, 94; cattle, 92 and sheep 93.

NATIONAL CROP REPORT.

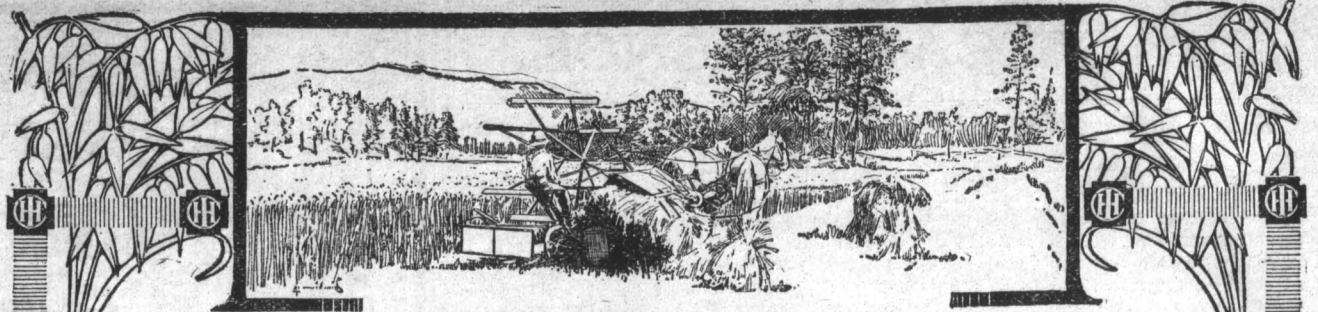
The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates, from reports of correspondents and agents, that the quantity of wheat on farms March 1, 1912, was about 122,025,000 bushels, or 19.6 per cent of the 1911 crop, against 162,705,000 bushels, or 25.6 per cent of the 1910 crop on farms March 1, 1911, and 160,214,000 bushels, or 23.4 per cent of the 1909 crop on farms March 1, 1910. About 56.1 per cent of the crop will be shipped out of the counties where grown, against 55.6 per cent of the 1910 crop and 61.1 per cent of the 1909 crop so shipped.

The quantity of corn on farms March 1, 1912, was about 884,069,000 bushels, or 34.9 per cent of the 1911 crop, against 1,165,378,000 bushels, or 40.4 per cent of the 1910 crop on farms March 1, 1911, and 977,561,000 bushels, or 38.3 per cent of the 1909 crop on farms March 1, 1910. About 20.5 per cent of the crop will be shipped out of the counties where grown, against 22.9 per cent of the 1910 crop and 24.9 per cent of the 1909 crop so shipped. The proportion of the total 1911 crop which is merchantable is about 80.1 per cent, against 86.4 per cent of the 1910 crop and 82.5 per cent of the 1909 crop.

The quantity of oats on farms March 1, 1912, was about 289,988,000 bushels, or 31.4 per cent of the 1911 crop, against 442,665,000 bushels, or 37.3 per cent of the 1910 crop on farms March 1, 1911, and 365,432,000 bushels, or 36.3 per cent of the 1909 crop on farms March 1, 1910. About 28.8 per cent of the crop will be shipped out of the counties where grown, against 30.6 per cent of the 1910 crop and 32.7 per cent of the 1909 crop so shipped.

The quantity of barley on farms March 1, 1912, was about 24,760,000 bushels, or 15.5 per cent of the 1911 crop, against 33,498,000 bushels, or 19.3 per cent of the 1910 crop on farms March 1, 1911, and 42,602,000 bushels, or 24.6 per cent of the 1909 crop on farms March 1, 1910. About 57.2 per cent will be shipped out of the counties where grown, against 50.0 per cent of the 1910 crop and 52.5 per cent of the 1909 crop so shipped.

Our Common Friends and Foes. By Edwin A. Turner, Director of the Practice School, Illinois State Normal University. This is a collection of original stories, relating to the toad, the quail, the bumblebee, the chickadee, the ant, the cabbage butterfly, the mosquito, and the fly. Cloth, 12mo, 143 pages, with illustrations. Price, 30 cents. American Book Company, Chicago.



OUR EXPERIENCE IS YOUR SAFEGUARD

IHC Harvesting and haying machines and tools, as sold today, are the result of over fifty years of careful work by trained experts. Through every harvest season these men have followed our machines in the field in every grain-growing country, correcting all difficulties as they appeared or developed. The binders which are the result of such thorough work are now offered to you with the fullest assurance that when you use these machines your harvesting will be well done. Whatever the conditions under which your crop must be harvested, whether the grain be short or tall, standing, down or tangled, there is an IHC machine which will reap and bind it all; easily, surely, and with no annoying and expensive delays.

IHC harvesting machines as sold today, are a finished product as much as any machine can ever be finished. All the difficulties that have developed up to date are overcome. Our experience is your safeguard. You have no experiments to make. You take no risk when you buy a machine bearing one of these famous names:

Champion Deering

McCormick Milwaukee

Osborne Plano

Take plenty of time to consider, compare all the points of all the machines you know of, before you buy a binder. If you do this thoroughly, you will become convinced that an IHC binder will do the best work for you, be the most dependable, efficient, and durable of all the machines you investigate.

There is quality in the material and construction of IHC harvesting machines that only a half century of experience can assure. There is a simplicity in the design which makes the working of the machines easy to understand and makes it safe to trust them in the hands of unskilled help. Last, and most important, IHC binders are backed by an organization that insures your getting interchangeable repair parts — parts that fit where

they belong — quickly in time of emergency. IHC harvesting machine owners know that if by accident any part of their machine should happen to break, an exact duplicate of that very part can be obtained quickly from the IHC local dealer. This point is of the utmost importance when the grain is ripening or the harvest begun. It does away with all delays, all risks, all possibility of losing part of the harvest profit.

Their many years of constant improvement place IHC harvesting machines in a class by themselves. Whether you choose a Champion, McCormick, Osborne, Milwaukee, Deering, or Plano binder, you are assured of getting a machine built right and tested under every condition that you will ever have to meet at harvest time.

The IHC local dealer handling these machines is the man for you to see. From him you can get information that will help you to make up your mind as to which binder will best insure the full profit of your season's work. Decide only after the most careful consideration and you will surely buy an IHC machine.

When you have decided upon your binder, you will need a supply of binder twine. To get through the season with the least waste and trouble, buy one of the seven perfectly dependable brands of twine — Champion, McCormick, Osborne, Deering, Milwaukee, Plano, or International — in Sisal, Standard, Manila, and Pure Manila grades.

Your most important work now is the selection of machines for this season's harvest. See the IHC local dealer handling these machines. He can help you decide. If it is not convenient for you to see him now, sit down and write for catalogues. A post card will bring you full information.

International Harvester Company of America

(Incorporated)

Chicago

U S A

IHC Service Bureau

The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to IHC Service Bureau, Harvester Building, Chicago, U. S. A.



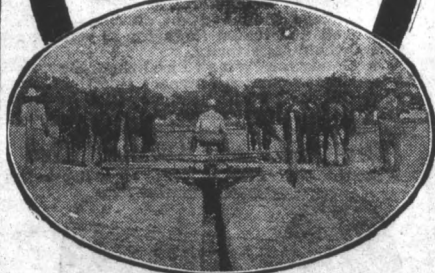
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We guarantee this horse power Cyclone Tile Ditching Machine cuts tile ditch, 10 inches wide, 24 inches deep, at rate of 300 rods a day. Finished ditch cut, tile laid and covered, for 3 or 4 cents a rod in average soil. Read our free book giving information, from U. S. Govt. authorities on Drainage.

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pays for itself in first 20 to 40 acres you drain, according to spacing of laterals. Increased crops all profit. Make hundreds of dollars on your own ditching, and cutting ditches for neighbors. Anyone who can plow can operate successfully. Write for free book showing, The Money Making Way of Draining Land.

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is what we are trying to furnish our customers. FREE samples will convince you that we come pretty near doing it. Red, Mammoth, Alsike, Alfalfa, Timothy, Vetch, Rape, etc. Write today. If you have seed to sell, send us sample.

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PREVENTS SORE SHOULDERS, GALLS AND SCALDS

Your horse cannot work with a sore shoulder caused by an ill-fitting collar, any more than you could with a sore foot caused by a badly fitted shoe.

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Ask your dealer for Ventiplex and insist on getting it. It is the best, but costs no more. If your dealer cannot supply you, send us his name and we will ship a sample immediately.

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Dept. 38 Burlington, Wis.

STOP HIGH HARD LIFTS

Electric Low Down Handy Wagons, Complete

Make hauling easy. Carry any loads and are best suited to all farm work. Broad tires make good roads, avoid rutting and greatly reduce draft for horses.

Ask for our Cutters and Rule to measure accurately your axles. Free on request.

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Electric Steel Wheels for Your Old Wagon

Best way to make your wagon over, good as new. We send wheels to fit any size axle and make an end of tire setting and repairs. Send for free catalog.

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Reports from the grain fields of Alberta, Western Canada, show splendid yields of wheat, oats and barley.

Many farmers have paid for their land out of the proceeds of the crop of 1911.

At exhibitions throughout the U. S. wherever the grain from this Province has been shown it has received the highest commendation.

Free Homesteads of 160 acres and adjoining pre-emptions of 160 acres (at \$3 per acre) are to be had in the choicest districts. Schools convenient, climate excellent, soil of the very best, railways close at hand, building lumber cheap, fuel easy to get and reasonable in price, water easily procured, mixed farming a great success.

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PRACTICAL SCIENCE.

WASTE OF FARM MANURES.

BY FLOYD W. ROBISON.

In discussing the question of the maintenance of fertility in the soil we may have observed that the virtues and shortcomings likewise of barnyard manures and commercial fertilizers have been discussed. There are certainly disadvantages in the employment of barnyard manures on certain occasions, and, as we have stated, the use of barnyard manure continuously without any supplement whatever in the way of commercial fertilizers, tends to promote what we have termed "Phosphorus Hunger" in the soil. On the other hand, we have also shown that there are disadvantages in the employment of commercial fertilizers, such disadvantages as the lowering of the productive capacity of the soil because of the exhaustion of the organic matter of that soil through the medium of the use of commercial fertilizers.

Successful Farming Depends Upon a Conservation of Fertility.

In explaining these points for and against the use of both barnyard manure and commercial fertilizers, we have brought points forward with the idea, not of discouraging the farmer with the use of either barnyard manure or commercial fertilizers, nor of advising him in any way against the use of either one, but rather of calling more forcibly to his attention the fact that the greatest success in the employment of manures of any description, either barnyard or commercial, consists in the movement for the conservation at the same time of both the fertilizing ingredients of the manure added and the productive capacity of the soil to which that manure is added. Thus we have stated that barnyard manure should be reinforced from time to time with a commercial fertilizer, such a commercial fertilizer, at least, as will contribute, in available form, phosphoric acid. To contribute this phosphoric acid we have advised the use of acid phosphate, or available phosphoric acid, as an absorbent in the stable. There, again, our advice has been tempered by the spirit of conservation for we have realized that by a judicious use of an acid phosphate in the stable, the fertilizing ingredients of the acid phosphate will be mixed with the natural manures and thus carried forth upon the farm. At the same time the nitrogen, or ammonia, of the manure will be fixed and held until demanded in subsequent use upon the field.

The Acid Phosphate Satisfies the "Phosphorus Hunger."

A liberal amount of this acid phosphate used in this way will thus be put upon the soil in a condition ideal insofar as its relation to the natural manures is concerned. Being intimately mixed with the organic matter of the manure it is in a condition to be made very readily available any moment the needs of the crop require it, and at the same time it becomes so fixed that it does not leech out of the soil in the ordinary drainage processes.

In a publication issued by the Middle West Soil Improvement Company, under the signature of Mr. Henry G. Bell, a table is given showing the following items which are of interest at this point. The amount of plant food removed per acre in five years, in crops, he estimates as:

Nitrogen	534 lbs.
Phosphoric acid	152 lbs.
Potash	437 lbs.

He figured that of the nitrogen, 213 pounds would be returned in manures; 107 pounds of the phosphoric acid and 190 pounds of potash, showing an actual loss of 63 pounds of nitrogen per acre per year, nine pounds of phosphoric acid and approximately 50 pounds of potash. Assuming these figures to be correct, and we have no doubt they are approximately so, it is observed that with the most approved methods of farming, involving careful methods of cultivating, together with the return of so much of the manure as is ordinarily feasible, that there is a constant drain from year to year upon the plant food nutrients of the soil. It may be that the factor of the return of the element nitrogen may be eliminated for the purpose of argument, because of the fact that careful methods of cultivation and the growing of certain leguminous crops will nicely provide for any deficiency of nitrogen in the soil without being concerned greatly about

any special loss from this point of view. Be that as it may, however, it is certain that the nitrogen in manures is of such a character that great care should be taken to conserve every pound of nitrogen that it is possible to conserve in the natural manures of the farm.

Loss of Nitrogen on Stable Floor.

One of the most important sources of loss, especially nitrogen and other factors that are contained in the liquid portion of the manure, is the unsanitary condition of many of the stables where horses and cows are kept. Frequently the floor is a board, unmatched floor and the liquid manure seeps through down under the floor of the barn and percolates away into the soil, and instead of becoming an asset and being conserved as fertilizer, as it should be, it becomes a constant menace, due to the pollution of the air and possibly the pollution of some of the nearby wells.

Sanitation and Waste Prevention go Hand in Hand.

We have always taken the position that the question of health and sanitation should take precedence over economic conditions. Fortunate it is, therefore, that the appeal to economy in the conservation of farm manures and the prevention of waste of farm manures is an appeal to the establishing of modern sanitary requirements about the farm. If the liquid manures of the stable are conserved and fixed, and added to the other manures which subsequently find their way out upon the field, they do not become a menace to health and do not disturb any of the sanitary surroundings upon the farm. If they are handled carelessly and no attempt made to prevent their waste, not only are they lost as far as their fertility is concerned, but they become, at the same time, a constant source of annoyance and danger to the health of the home.

Many Practical Examples of Useless Waste.

At this particular time of the year, one learns many lessons in the prevention of the waste of farm manures through a drive through the country. It is not as common as it once was to see the manure, the accumulation of the winter, stacked up on the outside of the barn and reaching nearly to the eaves of the stable, receiving the drippings of the melting snow and rain from the roof and running away on the surface to a large cesspool in the farmyard or, as is frequently the case, running down in tiny streams into the ditch or stream which runs through the farm. The question of proper drainage is one which is also in line and needs consideration at the same time with the prevention of the waste of farm manures. In Roberts' "Fertility of the Land," we were struck with the aptness of an illustration of the conception of a Japanese student on this question of the waste of farm manures. A farm located on the bank of a small stream, the manure piled to the eaves of the stable, and the imagination of the student depicted a number of small pygmies with buckets, one bucket containing nitrogen, another bucket containing phosphoric acid and another one containing potash, busy as they could be with their buckets, transporting the various fertilizing ingredients from the pile to the stream below.

What Conservation of Manure Means.

The prevention of the waste of farm manures means a careful prevention of the leeching of farm manures; it means the prevention of the percolation into the soil beneath the stable; it means a prevention of the fire-fanging of manure, and it means a judicious use of the manure when it is placed upon the field. To draw manure out upon the field when the ground is covered with a sheet of ice contributes as much to the waste of the manure as to leave it in the barnyard, and so the condition of the soil upon which the manure is to be put should be studied as well as the condition of the manure itself. It may be conceded that a permanent agriculture requires that the barnyard manure should be supplemented year after year, with the use of commercial fertilizers. We certainly think that it should be supplemented at least with the addition of phosphatic fertilizers, but we are firm in the belief that the first step to be taken in encouraging a good productive capacity of the soil is the use of, and the prevention of the waste of, the ordinary farm manure.



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You will find a genuine Surety Bond in the center of every roll of Congo Roofing. It goes into effect after you have laid Congo on your roof and returned the guarantee to us properly filled in ready for signature.

The guarantee on 2-ply and 3-ply Congo is for ten years.

Our primary motive in establishing the guarantee plan is to show people that we mean what we say. We want our statement to stand as a plain unvarnished fact. We don't want people to say "Ten years?—Probably they mean seven." We want people to realize that we mean ten years and hence *this positive guarantee!*

Congo is easy to lay. It comes in handy rolls of 216 square feet and is simply unrolled on the roof and nailed down. Nails, cement and galvanized rust-proof caps are supplied free of charge packed in the center of each roll.

Copy of the Guarantee Bond and a Sample of Congo and booklet will be sent free on request.

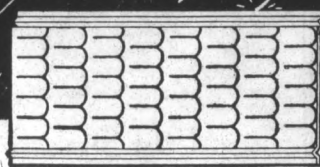


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The only way in which a definite and enforceable guarantee could be given was by the aid of a Surety Company, and accordingly we have arranged with the National Surety Company of New York, one of the great Surety Companies of the United States with assets of \$5,000,000 and over, to issue a Genuine Surety Bond with every roll of Congo Roofing.

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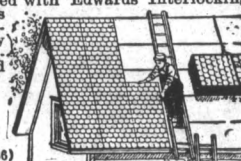
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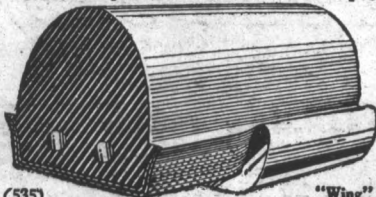
No more carriages were sold in 1910-11 than in the previous season. Yet the sales of Goodyear "Wing" Carriage Tires increased 24% in that same period. And for 1911-12 we estimate an increase of 81% over 1910-11.

Of the 200 carriage makers in the U. S., 148 now equip their carriages with Goodyear "Wing" Tires—almost 75%.

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Note this patented "Wing." How it presses



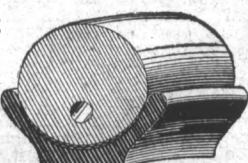
(535)

"Wing" Tire

against the channel, thus preventing mud, grit or water from getting in and quickly rusting the rim and destroying the tire base. This tire remains sound, won't creep or get loose. Gives utmost wear and will protect your carriage and greatly lengthen its life. Being of tough, springy rubber, it is exceptionally easy-riding.

Our "Eccentric" Cushion Tire

is especially designed for lighter vehicles—runabouts, etc. Note the wire hole is below the center. This increases wearing depth of the tire one-half. Saves you that much money. Stays firm in the channel. The high-grade, resilient rubber used makes this tire remarkably easy-riding. Always gives satisfaction.



"Eccentric" Cushion Tire

Write a Postal More carriage dealers sell Goodyear Carriage Tires than any other kind. Send us your name on a postal and we will give you the name of the dealer in your town who sells "Goodyears." Our Carriage Tire Book can be had for the asking.

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Twin Automobile Seat Top Buggy

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The
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It's a fact. Only \$33.65—full purchase price—for this beautiful, latest style **Twin Automobile Seat Top Buggy**, absolutely guaranteed for one year. Did you ever hear of such a tremendous bargain as this? We actually sell you a regular \$50.00 Twin Automobile Seat Top Buggy for only \$33.65. **And, remember**, this is simply *one* instance. This is *just a sample* of our amazing bargains on *every kind* of *vehicle* you can think of. Our 1912 Price Reduction Vehicle Book, the greatest vehicle publication of its kind in the world, *contains more than*

ONE HUNDRED SUCH AMAZING BARGAINS

Positively the greatest, most startling price making in the history of the vehicle business. We have always led the world in low prices on high grade buggies, road carts, surreys, farm wagons, etc., but never before have *even we* been able to offer you such unheard of bargains on high grade vehicles as are shown in our 1912 Price Reduction Vehicle Book.

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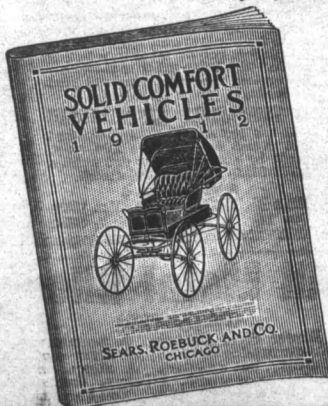
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MARKETS

DETROIT WHOLESALE MARKETS.

March 13, 1912.
Grains and Seeds.

Wheat.—The government reported an estimate of 122,000,000 bushels of wheat in farmers' hands, as compared with over 162,000,000 bushels a year ago, and about 160,000,000 for 1910. Liverpool has a small supply, with few cargoes coming forward. There is, however, a large amount of wheat at the market centers in this country, which has prevented any sudden upturn in prices. The average quotations for the week, however, have advanced. While it is early yet for determining the condition of the new crop, dealers are anxious, since reports from widely different sections indicate that wheat did not winter well. One year ago the price for No. 2 red wheat was 89¢ per bu. The visible supply decreased over one and one-third million bushels. Quotations are as follows:

	No. 2	No. 1	May	July
Thursday	1.00	.98	1.03½	.98½
Friday	1.01	.99	1.03½	.98½
Saturday	1.01½	.99½	1.04	1.00½
Monday	1.01½	.99½	1.04	1.00½
Tuesday	1.00½	.98½	1.03	1.00
Wednesday	.99½	.97½	1.01½	.98½

Corn.—New record prices for the season were made this last week. The chief factor in making these prices was the fact that spring planting is certain to be delayed. The demand for cash corn is lagging a little and the trade is considered easy. The amount of corn in farmers' hands is estimated by the government at 880,000,000 bushels, which is less than was reserved in 1911 and 1910. The price a year ago for No. 3 corn was 47¢ per bu. Quotations are:

	No. 3	No. 3
	Corn	Yellow
Thursday	68½	69½
Friday	68½	69½
Saturday	69½	70½
Monday	69½	71
Tuesday	69½	71
Wednesday	69	70½

Oats.—Oat prices have advanced. The grain is scarce and firm. One year ago the price for standard oats was 33¢ per bu. Quotations for the week are:

	Standard	No. 3
		White
Thursday	56	55½
Friday	56	55½
Saturday	56½	56
Monday	57	56½
Tuesday	57	56½
Wednesday	57	56½

Beans.—Cash beans improved in price last Friday. The May option is steady. The movement of the crop does not appear altogether satisfactory owing to the uncertainty of the demand. Quotations for the past week are:

	Cash	May
Thursday	2.32	2.40
Friday	2.35	2.40
Saturday	2.35	2.40
Monday	2.35	2.40
Tuesday	2.35	2.40
Wednesday	2.37	2.42

Clover Seed.—Prices have declined 10¢ from the reduced figures of last Wednesday. There is a fairly good demand for clover seed and the market is active. Alsike is down 10¢. Quotations are:

	Prime Spot	March	Alsike
Thursday	12.90	12.90	12.90
Friday	12.75	12.75	12.75
Saturday	12.85	12.85	12.90
Monday	12.90	12.90	12.90
Tuesday	12.90	12.90	12.90
Wednesday	12.90	12.90	12.90

Timothy Seed.—Values have moved up a little and prime spot seed was sold here Tuesday at \$6.90 per bu., which is 15¢ above the figures reported for the previous week.

Rye.—This cereal has suffered a decline of 1¢. No. 2 rye now selling at 94¢ per bu.

Flour, Feed, Potatoes, Etc.

Flour.—Market rules about steady with trading dull.

Straight	\$5.25
Patent Michigan	4.85
Ordinary Patent	4.80
Rye	5.20

Feed.—Prices are unchanged. Carlot prices on track are: Bran, \$30 per ton; coarse middlings, \$30; fine middlings, \$30; cracked corn, \$30; coarse corn meal, \$30; corn and oat chop, \$28 per ton.

Hay and Straw.—Steady except wheat and oat straw, which are higher. Quotations are: No. 1 timothy, \$22.50@23; No. 2 timothy, \$21.50@22; clover, mixed, \$20.50@22.50; rye straw, \$11.50@12; wheat and oat straw, \$11@11.50 per ton.

Potatoes.—Supplies are coming in more freely since weather moderated. Prices remain steady with a week ago. Car lots on track are quoted at \$1.05@1.10 per bu.

Provisions.—Family pork, \$17@18.50; mess pork, \$16; clear backs, \$16@17.50; picnic hams, 9¢; bacon, 12@13½¢; pure lard in tierces, 9½¢; kettle rendered lard, 10½¢ per lb.

Dairy and Poultry Products.

Butter.—The supply of butter is increased and the price was marked down 1¢ for creamery goods. The market is firm at the figure. Dairy butter is steady. Extra creamery is quoted at 29¢; first creamery, 28¢; dairy, 21¢; packing stock 20¢ per lb.

Eggs.—While there is very active trading in eggs, the large supply which is now coming in has reduced prices 3¢ below the declined figures of last week. Current receipts, cases included, are now quoted at 19¢.

Poultry.—There is a small amount of business being done in poultry. The supply is meagre and the demand fair. Quo-

tations are as follows. Live turkeys, 16¢@17¢; geese, 11¢@12¢; ducks, 14¢; young ducks, 15¢; spring chickens, 15¢; No. 2 chickens, 11¢@12¢; hens, 15¢; No. 2 hens, 11¢@12¢. Dressed—Chickens, 15½¢; ducks, 16¢@17¢; geese, 14¢@15¢; turkeys, 18¢@19¢ per lb.

Veal.—Fancy veal is lower. Fancy, 10¢@11¢; choice, 9¢@10¢ per lb.

Cheese.—All grades of cheese remain steady. Michigan, September, 18½¢@19¢; Michigan, late made, 17½¢@18¢; York state, 19¢@20¢; limburger, 17¢@19¢; domestic Swiss, 20¢@23¢; brick cream, 20¢@22¢ per lb.

Fruits and Vegetables.

Cabbage.—Steady; now selling at \$3½¢@4¢ per lb.

Onions.—Steady; \$2.25@2.50 per bu; Spanish, \$2 per crate.

Apples.—Baldwins are selling at \$3.25@3.50; Greenings, \$3.25@3.50; Spies, \$3.50@4; Ben Davis, \$2@2.50 per barrel.

OTHER MARKETS.

Chicago.

Wheat.—No. 2 red, \$1.03½@1.04½; May \$1.04; July, 99¢.

Corn.—No. 3, 67½¢@68½¢; May, 71¢; July, 71¢ per bu.

Oats.—No. 2 white, 54½¢@55¢; May, 53½¢; July, 49¢.

Barley.—Malting grades, \$1@1.30 per bu; feeding, 70¢@80¢.

Butter.—Market weak; prices have gone off 1¢ since Monday. Quotations: Creameries, 26¢@29¢; dairies, 23¢@27¢.

Eggs.—Market easier, with values gradually working lower. Quotations: Firsts, grading 70 per cent fresh, 19¢@20¢; ordinary firsts, 19¢ per dozen; at mark, cases included, 19¢@19½¢.

Potatoes.—A brisk demand and weather unfavorable to shipping have forced a sharp advance. Michigan stock is now quoted at \$1.23@1.25 per bu; Wisconsin, \$1.20@1.25; Minnesota, \$1.23@1.25.

Elgin.

Butter.—Market firm at 29¢ per lb., a decline of 1¢ from previous week. The output for the week was 750,000 lbs., compared with 700,000 lbs. a week ago.

THE LIVE STOCK MARKETS.

Buffalo.

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

Receipts of stock here today as follows: Cattle, 175 cars; hogs, 75 double decks; sheep and lambs, 100 double decks; calves 2,000.

With 175 cars of cattle on our market here today, and 28,000 reported in Chicago, and the market 10¢@25¢ lower there, we had a dull, draggy and unsatisfactory market all the way through; all grades of cattle selling from 15¢@25¢ lower, with the cattle weighing from 1,200 up selling in many instances from 25¢@40¢ per cwt. lower than last week, although the quality of the heavier grades of cattle today were not as good as last week by from 10¢@15¢ per cwt.

We quote: Best 1,400 to 1,600-lb. steers \$7.25@7.75; good prime 1,300 to 1,400-lb. steers, \$6.75@7.15; do. 1,200 to 1,300-lb. do., \$6.25@6.85; best 1,100 to 1,200-lb. shipping steers, \$6@6.40; medium butcher steers, 1,000 to 1,100, \$5.25@6; light butcher steers, \$4.50@5; best fat cows, \$4.75@5.25; fair to good do., \$3.75@4.25; common to medium do., \$3@3.50; trimmers, \$2.25@2.75; best fat heifers, \$5.75@6.25; good fat heifers, \$4.50@5.15; fair to good do., \$4@4.50; stock heifers, \$3.25@3.50; best feeding steers, dehorned, \$4.25@4.50; common feeding steers, \$3.25@4; stockers, all grades, \$3.25@4; prime export bulls, \$5.50@6; best butcher bulls, \$4.75@5.25; bologna bulls, \$4@4.50; stock bulls, \$3.25@4; best milkers and springers \$4.25@5.00; common to good do., \$2.50@3.50.

The milker and springer trade was from \$3@5 lower today, and the common kind almost impossible to sell.

With 75 double-decks of hogs on sale here today, and with a strong demand, trade was steady to 5¢ higher; bulk of the good hogs selling at 7¢, few late sales at \$7.05. Light hogs sold anywhere from \$6.25@6.50, with strictly pigs from \$6.15@6.25; roughs, \$6@6.25; stags, \$4.75@5.50. Market cleaned up well here today, and looks like we should have a good trade the balance of the week.

The lamb market was active today; most of the choice lambs selling from \$7.40@7.50; few fancy at \$7.60. Look for steady to strong prices the balance of the week with moderate receipts. The sheep market was active today; market 15¢ higher. Look for about steady prices the balance of the week on sheep.

We quote: Best lambs, \$7.40@7.50; cull to common do., \$6@6.75; wethers, \$5.65@5.85; bucks, \$3.25@3.75; yearlings, \$5.75@6.25; handy ewes, \$5.25@5.40; heavy ewes, \$5@5.25; cull sheep, \$3@4.25; veals, choice to extra, \$9@9.25; fair to good do. \$7@8.50; heavy calves, \$4.50@6.

Chicago.

March 11, 1912.

Cattle.—Hogs. Sheep. Received today 27,000 55,000 25,000 Same day last year, 25,778 58,465 17,196 Received last week, 53,777 174,093 105,316 Same week last year, 46,943 149,158 78,518

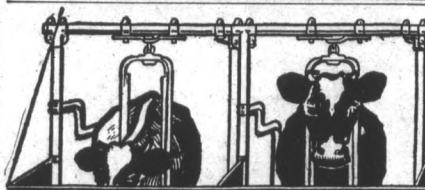
The week opens today with a fairly active local and shipping demand for fat steers and good butcher stock at unchanged prices, and a sale was made of 31 prime Kansas steers of heavy weights at \$8.85, but cattle that were not fat moved off very slowly, prices averaging a dime lower. Hogs sold surprisingly well after early depression, despite the large run, with the best hogs fetching \$6.75, while there were late rumors that \$6.80 had been paid. The best light hogs sold for \$6.65. The hogs marketed last week averaged 217 lbs., the same as a week earlier, and comparing with 238 lbs. a years ago and 215 lbs. two years ago.

Sheep and lambs were active at well maintained prices, and prime lots sold slightly better because of light offerings, fancy lambs going at \$7.50. Prime yearlings were scarce and quotable at \$6.50. Shorn consignments sold usually \$1 per cwt. below woolled flocks. There was a sale of 800 head of feeding lambs that averaged 65 lbs. at \$5.75.

Cattle supplies last week were on a moderate scale, although in excess of the extremely small run of the week before, and prices showed further moderate advances, with the usual slow trade after Wednesday and lower values. The week's sales of beef steers were largely at \$6 @8, and Monday's sales at \$8.10@8.85 made a very good showing, these cattle being heavy in weight and prime to fancy in quality. The commoner lots of light-weight steers were purchased at \$5.10@6.25, with a medium class of cattle going around \$6.50@7.50 and good steers salable around \$7.60@7.95, while choice yearlings were picked up at \$7.50@8. Butcherings lots of cows and heifers were active and firm on the basis of \$3.65@7, while cutters sold at \$3.20@3.60, canners at \$2.10@3.15 and bulls at \$3.40@6. Calves moved off at \$3.25@8.75, with a lively demand for choice light-weight vealers and milkers and springers had a fair demand at \$30 @65 per head, the high cost of hay and the unfavorable outlook for early pastures checking sales. The stocker and feeder traffic was not particularly large, as prices for the better class of weighty feeders were advanced further by competition from killers, who desired these cattle for their cheap beef trade. Stockers sold anywhere from \$3.50@5.50 and feeders at \$5@6.40, with not many sales higher than \$6. Usually Monday's market brings out the largest showing of prime beefs, and the last half of the week is usually characterized by dullness and weakness in the general market. The scarcity of strictly choice heavy cattle throughout the country is pronounced, and Kansas has been furnishing a good share of the best offerings. The cattle market of late has been the highest ever seen at this season of the year, and owners have been making money despite the dearth of corn and other feeds.

Hogs were marketed much more freely last week, with fewer interferences from drifting snows on the railroad tracks, and there was usually a strong local and eastern shipping demand, causing prices to rule the highest of any time for weeks past. Throughout the eastern part of the country most of the hogs have been marketed, and eastern packers are compelled to look to the west for further supplies. They are buying the best swine that are offered on the market, and prime light hogs are selling nearly as high as the best medium and heavy hogs, with pigs selling at the customary wide range of prices, depending on their weight. The proportion of heavy hogs marketed continues small, as most farmers are unwilling to run up big feed bills and make it a rule to send in their swine as soon as possible. Fresh pork is having an enormous consumption because of its relative cheapness as compared with all other meats, but cured meats and lard are in unusually large supply and are still accumulating rapidly, as retail prices are maintained at a high level. The last day of February the Chicago warehouses contained 160,158,919 lbs. of provisions, compared with 134,997,292 lbs. a month earlier and 95,981,156 lbs. a year ago. The week closed with sales of hogs at \$6.35@6.70, being 10¢@15¢ higher than a week earlier.

Sheep and lambs have been selling of late unusually well, with a much improved general demand, and prices ruling the highest seen for weeks. Choice lambs have led off in activity and advances, as usual, but yearlings, wethers and ewes of the better class have shared in the improvement, and sheepmen have had good reason for feeling much encouraged. Supplies have been falling off in volume, and it was impossible to fill all the buying orders for choice live muttons. There was scarcely any demand for feeders, and such stock usually fell into the possession of local killers at comparatively low prices, although even common flocks sold much higher. Supplies of stock in the feeding districts tributary to Chicago are becoming greatly reduced, and Colorado fed lambs are arriving much more freely. Wisconsin has been furnishing the greater share of the choicest lambs. Lambs sold at \$5@7.45; yearlings at \$5.75@6.50; wethers at \$5@5.65; ewes at \$3@3.50 and bucks at \$3@4. The best lambs sold 35¢ higher than a week earlier, and feeding lambs were salable at \$5.25@6.



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DETROIT LIVE STOCK MARKETS.

Thursday's Market.
March 14, 1912.

Cattle.
Receipts, 1,051. Market dull at last week's prices.
We quote: Extra dry-fed steers and heifers, \$6.75@7; steers and heifers, 1,000 to 1,200, \$5.50@6.50; steers and heifers, 800 to 1,000, \$5@5.50; do. that are fat, 500 to 700, \$4.50@5.50; choice fat cows, \$5; good do., \$4@4.50; common cows, \$3.25@3.50; canners, \$2.50@3; choice heavy bulls, \$5; fair to good bolognas, bulls, \$4@4.75; stock bulls, \$4@4.50; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Roe Com. Co. sold Nagle 21 steers and heifers av 1,000 at \$6.15; to Sullivan P. Co. 1 cow weighing 900 at \$3.75; to Mich. B. Co. 3 bulls av 1,077 at \$5; to Kamman B. Co. 18 butchers av 947 at \$5.60; to Goose 1 bull weighing 1,270 at \$4.85; to Bresnahan 1 cow weighing 800 at \$2.50, 6 do av 1,008 at \$3.50; to Hammond, S. & Co. 6 steers av 885 at \$5.50, 1 cow weighing 1,000 at \$4. Spicer & R. sold Mich. B. Co. 1 bull weighing 1,450 at \$4.75; to Scheur 16 butchers av 821 at \$3.50, 1 cow weighing 910 at \$3.50; to Nagle P. Co. 30 steers av 1,250 at \$6.90, 25 do av 812 at \$5.80; to Sullivan P. Co. 1 bull weighing 820 at \$5, 2 steers av 1,030 at \$6.25, 2 canners av 805 at \$2.70, 1 heifer weighing 690 at \$5; to Rattkowsky 3 butchers av 303 at \$3.75; to Nagle P. Co. 5 cows av 1,026 at \$4.50, 1 do weighing 900 at \$4.25; to Hammond, S. & Co. 1 do weighing 1,000 at \$3.25, 1 do weighing 860 at \$2.75; to Mich. B. Co. 7 steers av 990 at \$6, 1 do weighing 1,050 at \$5.60, 1 bull weighing 1,560 at \$5, 1 do weighing 1,100 at \$4.85, 1 do weighing 1,590 at \$4.75.

Haley & M. sold Newton B. Co. 1 bull weighing 1,400 at \$4.75, 1 heifer weighing 550 at \$4, 2 cows av 1,025 at \$4.25, 2 do av 890 at \$3.50, 8 butchers av 750 at \$5; to Nagle P. Co. 6 steers av 983 at \$6.40, 20 butchers av 790 at \$5.35, 22 do av 800 at \$5.55, 15 steers av 952 at \$6.30; to Kamman B. Co. 8 do av 895 at \$5.50; to Goose 8 butchers av 785 at \$4.65; to Applebaum 2 cows av 965 at \$3.35, 1 do weighing 880 at \$3.60, 2 do av 1,035 at \$3.75; to Gerisch 15 steers av 925 at \$6, 23 do av 1,011 at \$6.20.

Bishop, B. & H. sold Schruer 6 cows av 781 at \$3.25, 2 do av 1,075 at \$3.75, 1 do weighing 860 at \$3.50, 1 steer weighing 980 at \$5.50; to Newton B. Co. 1 cow weighing 1,100 at \$4.25, 5 butchers av 720 at \$4.25, 2 do av 850 at \$5.25, 1 cow weighing 1,210 at \$3.60, 2 heifers av 710 at \$4.75, 1 stag weighing 1,370 at \$5.50; to Bresnahan 1 heifer weighing 650 at \$3.75, 1 bull weighing 370 at \$3.75; to Parker, W. & Co. 14 steers av 1,060 at \$6.25, 20 do av 1,113 at \$6, 5 do av 1,008 at \$6, 10 butchers av 710 at \$4.75; to Mich. B. Co. 1 steer weighing 890 at \$5; to Sullivan P. Co. 1 cow weighing 860 at \$3.75, 1 bull weighing 1,120 at \$4.75, 1 heifer weighing 950 at \$5.50, 2 do av 640 at \$5; to Parker, W. & Co. 11 butchers av 790 at \$5.25; to Rattkowsky 1 bull weighing 1,270 at \$5; to Kamman 5 butchers av 896 at \$4.75, 14 do av 810 at \$5.50; to Bresnahan 21 do av 920 at \$3.75, to Parker, W. & Co. 2 bulls av 1,435 at \$4.75, 2 do av 1,050 at \$4.75; to Newton B. Co. 3 cows av 1,100 at \$4.50, 5 butchers av 894 at \$5.50, 1 cow weighing 910 at \$3.25, 2 steers av 835 at \$5.25, 10 do av 960 at \$6, 3 canners av 783 at \$3, 3 steers av 1,023 at \$6.10, 9 butchers av 813 at \$4.75, 12 do av 927 at \$5.50, 6 do av 996 at \$4.75, 23 do av 817 at \$5.25, 4 do av 720 at \$4.

Bennett & S. sold Sullivan P. Co. 8 butchers av 870 at \$4.55.
Haddrell & C. sold same 3 steers av 1,163 at \$7.

Veal Calves.

Receipts, 427. Market dull at last week's decline. Best, \$7.50@8; others, \$3.75@7; milch cows and springers steady.

Sheep and Lambs.

Receipts, 3,410. Best lambs 25c higher with sheep and common lambs steady. Best lambs, \$7@7.25; fair to good lambs, \$5.50@6; light to common lambs, \$4.50@5.25; fair to good sheep, \$4@4.50; culs and common, \$2.50@3.50.

Bishop, B. & H. sold Hayes 40 sheep av 78 at \$4, 25 lambs av 53 at \$5.50, 14 do av 85 at \$7; to Parker, W. & Co. 191 sheep av 90 at \$3.75, 62 lambs av 73 at \$6.75, 6 do av 55 at \$6, 28 do av 65 at \$6, 18 sheep av 70 at \$3.50; to Barlage 50 lambs av 55 at \$5.75; to Thompson Bros 20 do av 65 at \$6; to Fitzpatrick Bros 12 sheep av 100 at \$4.50, 1 do weighing 200 at \$3, 19 do av 105 at \$4.50, 18 do av 103 at \$4.50, 8 do av 105 at \$4.50; to Hammond, S. & Co. 31 lambs av 70 at \$6.75, 11 do av 55 at \$5.25, 13 do av 65 at \$5.25, 39 do av 55 at \$5.25, 37 do av 52 at \$5; to Fitzpatrick Bros 44 do av 60 at \$5.75, 2 sheep av 80 at \$4.50, 14 do av 120 at \$4.25; to Hammond, S. & Co. 9 lambs av 60 at \$5.25; to Fitzpatrick Bros 54 do av 90 at \$7.25, 4 sheep av 80 at \$2.50; to Mich. B. Co. 42 lambs av 78 at \$6.65, 13 do av 55 at \$4.75.

Haley & M. sold Nagle P. Co. 34 lambs av 75 at \$6.50, 35 do av 85 at \$7, 1 sheep weighing 130 at \$4.50, 2 do av 90 at \$4.50, 6 lambs av 60 at \$5, 84 do av 85 at \$6.90. Weeks sold Fitzpatrick 64 lambs av 75 at \$6.25, 39 do av 125 at \$4.25.

Hogs.

Receipts, 2,561. None sold at noon; looks 10c lower than on Wednesday but 25@50c higher than last week.

Range of prices: Light to good butchers, \$6.75@6.90; pigs, \$6.15@6.25; light Yorkers, \$6.60@6.75; stags one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 1,030 av 180 at \$6.85, 615 av 160 at \$6.80, 345 av 150 at \$6.75.

Spicer & R. sold Parker, W. & Co. 75 av 229 at \$6.90, 115 av 180 at \$6.85, 210 av 160 at \$6.80.

Haley & M. sold same 95 av 185 at \$6.85, 70 av 170 at \$6.80, 45 av 160 at \$6.75. Sundry shippers sold same 200 av 204 at \$6.90.

Roe Com. Co. sold Sullivan P. Co. 320 av 190 at \$6.85, 135 av 170 at \$6.75, 87 av 180 at \$6.80, 85 av 150 at \$6.50.

Bishop, B. & H. sold same 53 pigs av 95 at \$6.10, 79 do av 110 at \$6.25.

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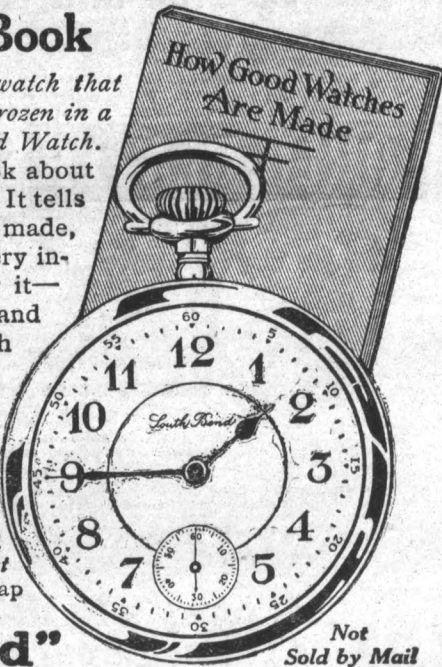
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POULTRY AND BEES

MY WAY OF SETTING HENS.

Although incubators and brooders are coming into use more and more each year, there are still some poultry fanciers, as well as many farmers, who depend upon the hen to hatch and raise their chicks. Now that would be all right if there was as much care given to setting a hen as is given to running an incubator. To set a hen properly and get a good hatch is not a small matter, and this is borne out by the fact that the percentage of poor hatches from hens, especially early in the season, is large—probably quite as large as that from incubators. Too many of these poor hatches trace back to the setting of the hen.

Up to a few years ago I always set my hens in the house occupied by the other fowls which frequently resulted in broken eggs, poor hatches and lousy hens and chicks. More recently I have practiced keeping the sitting hens in a separate building or compartment, preferably one having an earth floor which is both high and dry. With such a floor I make the nests on the ground by scooping out a little of the earth to make a slight hollow. Into this I place some nice clean straw, sprinkling it well with a good insect powder. If the hens are not accustomed to the building and their new surroundings, place them upon the nests after dark, giving them a few artificial eggs for a day or two. Dust them thoroughly with lice powder before placing them on the nests and, when they have settled down to business and seem at home in their new quarters, give each a sitting of eggs. I generally give from 12 to 15 eggs when the weather has become reasonably mild, depending of course upon the size of the hen. If the weather is cold and there is considerable danger of the eggs about the edges of the nest becoming chilled, I do not give so many. Use fresh eggs of good shape. Avoid unusually small, extra large and round eggs, likewise those showing thick, rough or corrugated shells.

I find it a good plan to construct a small run about each nest by staking a piece of wire netting in such a way as to give each hen a space in which to feed and exercise. In my experience, medium-sized hens have seemed to give the best satisfaction as they do not break so many eggs as do the larger hens. I set as many hens at a time as I can. Then if the weather is mild when the chicks arrive I give 25 to 30 chicks to a hen. This leaves about half the hens without chicks, and I sometimes prepare fresh nests and re-set these hens almost immediately.

Wayne Co. MRS. A. D. PITCHER.

POULTRY DESTROYERS AND HOW TO CATCH THEM.—IV.

The raccoon is a member of the bear family, found only in the western hemisphere. The coon prefers woods and water near its home.

For raccoon always use the best of traps. Sizes No. 2 and No. 2½ will hold the animal. Be sure to fasten the traps securely with a stake, as this fur bearer is quite strong. Move the trap after catching one of these animals, since others will not frequent the spot.

Procure some tin foil and cut in squares large enough to cover the pan or treadle of the trap. A raccoon is full of curiosity, and if he sees anything bright in the water he is sure to investigate. Fasten the tin foil so that it will not wash off. Set trap lightly so he can easily throw it. The trap should be set in three or four inches of water.

A fish, or an ear of corn, fastened to a stick and stuck in the mud will attract the animal. The trap should be directly under the bait. The raccoon jumps, and if your set is made securely, he lands in the trap. Cover trap with some light material so it will spring easily.

Trails are frequently found where coons enter corn fields. In one of these dig a small excavation so trap will rest snugly in it. Cover the trap with something natural to the place, placing a small wad of cotton or wool under the pan of the trap.

There are many other methods of trapping the raccoon. Ingenuity on the part of the trapper will suggest many. Hollow logs, swampy places, and points where the animal takes to the water are good places to set traps.

Minnesota. V. P. GOKEY. Mecosta Co. L. C. WHEELER.

IN ANSWER TO INQUIRIES.

White Wyandotte Markings.

Mrs. E. A. M., Sanilac county, asks for the markings of a pure-bred White Wyandotte cockerel. The markings of Wyandottes in general were given briefly in answer to a similar query last week. In the white variety the plumage should be white throughout. The shanks and toes, likewise the beak, should be yellow; the color of eyes in all Wyandottes is bright bay, while the face, wattles, ear-lobes and comb should be bright red. All Wyandottes have rose combs and any other form of comb is a disqualification.

The Depluming Mite.

E. R., Harbor Beach, Mich., reports his fowls losing feathers from rear part of body. This is undoubtedly the work of the depluming mite, information concerning which was given in The Farmer of February 24, under the subject of feather pulling. The treatment there recommended will undoubtedly bring relief. This correspondent feeds corn, clover chaff and boiled roots. A small allowance of beef scrap several times a week, or the meat scraps from the table, is the only suggestion we would make in the way of improving this ration.

CLOVERS AND THEIR VALUE AS HONEY PRODUCERS.—IV.

Sweet Clover.

This is a plant which is rapidly coming to the front as a honey plant, although many ignorant farmers have classed it among noxious weeds and have exterminated it so far as possible in many places. Far from being a noxious weed, however, it is really a very valuable forage plant, and as it is very easily killed there is no danger of it ever becoming a pest. It grows best in waste places and, seemingly, grows as well in hard baked clay as any other soil. For this reason it is found most often along roadsides where the wheels of wagons have carried the seed as they passed, or along railroad tracks where it has been carried by the swiftly moving trains.

Cattle eat it readily and do well on it, although I should not advise turning milch cows on it as it affects the flavor of the milk. Like other clovers it is liable to cause bloat if turned on too much at first. This plant seems destined to become one of the important honey plants of the country, as it is rapidly filling in the waste places almost everywhere, and it is a very good producer, the flow of nectar being almost continuous from spring to fall.

The honey made from it is generally considered very fair as to flavor, although in some places a very disagreeable flavor has been reported, owing, in all probability, to the bees gathering pollen from weeds or other plants at the same time.

There are two varieties of sweet clover—the white and the yellow. The yellow is very much like the white, in fact, they seem identical except in the matter of color of bloom and the fact that the yellow is smaller than the white as a rule. This clover can be grown under cultivation but is not very easily started. It requires a moist soil to get it started but, once rooted, it will stand a very severe drouth. Sown on land that would hardly produce another crop, it will often attain a height of four to six feet, growing very rank and luxuriant. This is because like alfalfa, it roots very deeply. Cattle will eat the coarse stalks clear to the ground and, as it will immediately spring up again, it furnishes good pasture all summer. It makes a very good hay when cut for this purpose, but requires lots of curing to get it in condition for the mow. Cattle will not always eat it at first sight, but must be taught to like it. When they acquire a taste for it, however, they eat it in preference to anything else.

Alfalfa.

This species of clover is so well known, and so much has been said of its habits and the manner of growing it, that there is no excuse for describing it here. As a honey plant it does not seem especially promising here in Michigan. In the west, especially in the irrigated districts it is an abundant producer of the choicest honey. It is said by some that people who have once tasted alfalfa honey never want any other kind, and it is not uncommon in the alfalfa districts of the west to find apiaries having as many as 500 colonies in one yard, many of these locations being well able to support that many colonies.

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

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Write for Stahl Spray Catalog and Treatise on "Orchard Enemies." Select any Stahl Barrel Sprayer, 20, 30 and 40 gallon, ship outfit. Examine it. If O.K. pay balance. Try it 10 days—if not satisfactory, send it back and we will refund your money. All Sprayers at bargain prices. Write today.

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Use the sprayer that does the most work most thoroughly at the lowest cost.

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A WHITE package which insures highest prices for your fruit. Write for 1912 catalog showing our complete line, and secure your BASKETS, CRATES, etc. at our WINTER DISCOUNTS.

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Cheapest and Best Seeding Known.

Alsike, Clover and Timothy mixed. Fully one-third Alsike, a great bargain. Most wonderful hay and pasture combination that grows. Write for FREE SAMPLE and our large 76-page catalog describing this wonderful grass mixture and be convinced. Far ahead of anything you can sow and ridiculously cheap. Write before advance.

A. A. BERRY SEED CO., Box 569, CLARINDA, IOWA.

OATS—Reg. Swedish Select and Sensation. Two best varieties. Samples free. SEED CORN—Imp. Leam'g. Reid's and White Cap. Get catalog. Theo Burt & Son, Melrose, O.

FOR SALE—Regenerated Swedish Select Oats. LOUIS NORTON, R. No. 1, Quimby, Mich.

HORTICULTURE

HANDLING THE OLD APPLE TREES.

There is much interest centering of late in the proper handling of the old apple orchards. Men are coming to understand that pruning is one of the essentials, and that this should be done in the tops, cutting away the upper limbs instead of the lower ones, thus keeping the tops down where they can be sprayed and the fruit harvested more cheaply; but one of the things of greatest importance is that the work cannot safely be undertaken at one fell swoop. These old apple trees will not endure too radical treatment in the way of pruning.

A man recently asked me how to manage the water sprouts that come up after pruning—cutting back—these old trees. The fact is, he will be fortunate if any of these sprouts come up. Our practice with all of the larger trees is to cut back and thin out the outer limbs instead of doing the pruning in the center of the trees. It is the general rule that after any severe pruning these trees stand still and make no growth at all for

some of the trees of which required a 40-foot ladder to reach the tops, and we are cutting these back in this way. We cut off about what we think the trees will stand and then let them go without further pruning until they recover sufficiently to make some growth before lowering them further.

Allegan Co.

EDWARD HUTCHINS.

GRAFTING APPLE TREES—MAKING A GRAFTING WAX.

Will you tell the proper time to graft apples, and how to make the wax for the purpose?

Indiana.

A. H. L.

The best time to graft apple trees is just before the sap begins to move freely. It, of course, can be done after the buds are started, but usually best results follow when the grafts are set early and given the longest possible season in which to become established.

Grafting wax is made by combining beeswax, resin and tallow or linseed oil, the most common formula being as follows: Four parts resin, two parts beeswax and one part tallow. Melt these elements together over a fire, after which pour them into a pail of cold water. The hands should then be well greased, the wax taken from the water and pulled



An Old Apple Tree Pruned too Severely. Failed to Recover from Shock in Two Years. Better Prune Oftener, Removing But Little Wood Each Time.

two or three years thereafter. A few years ago one of my neighbors whose trees had been neglected, started in to do something with his orchard, and the first thing he did was to give a severe pruning in the old-fashioned way—cutting away the large lower branches. An old fruit grower noticing what was being done, remarked that he would get no fruit for several years, and I think it was the fourth year before the orchard recovered sufficiently to bear anything. I once rented an orchard which was in fairly good condition, and as it was the bearing year I thought that a thorough pruning would serve to thin the fruit, so we gave it what most people would consider a moderate pruning. The orchard was sprayed and cultivated like our other orchards and it blossomed full, but when the little apples started to grow they largely fell off, so that there was an extremely short crop. The other orchards that had not received such a heavy pruning bore a good crop, and I have always thought that the failure of those trees to carry the fruit was due to the heavy pruning.

I am sending a photo of an apple tree in an orchard in which I have been greatly interested. This tree was cut back to its present dimensions a few years ago, I do not know just how long, but I have known it to be over two years, and it has made no growth at all, simply lived. I seriously question if it ever amounts to anything.

There is no question but what the proper way is to cut these large trees back—the same severe pruning from below would have the same results so far as the vitality of the tree is concerned—but the job should be done gradually. The humane way in removing a dog's tail is to cut it off at once rather than on the installment plan, but if the excision is to be made immediately back of his ears, the slower the process proceeds the longer the animal will live. It is something the same with the old apple trees. I now have an old orchard about 50 years old,

until it is nearly white. If one desires a wax for cold weather a satisfactory one is made by using one pound of beeswax, six pounds resin and one pint of linseed oil. These components should be added together and applied hot, the application being made with a brush. Use the material quite liberally, so that the wax covers the cut surfaces about one-eighth of an inch in thickness. Still a third formula which is recommended for use when the weather is extremely warm, is the combination of four pounds of resin, one pound of beeswax and nearly a pint of raw linseed oil. These are all melted together over a slow fire, poured into cold water and pulled similar to the one first mentioned above. The linseed oil used in these mixtures should be pure.

SPRAYING APPLES.

Would you please advise me as to the kind of material to use for controlling San Jose scale, also state the proportion of each material to be used and the proper time for spraying for the scale. Also advise as to the proper time to spray for the benefit of the fruit, stating the material to be used and the proper method of mixing.

Monroe Co.

C. B. S.

The San Jose scale is controlled by spraying the affected trees with a strong solution of lime-sulphur as late as possible before the buds begin to swell. The spraying may be done earlier but it is usually most effective when done just previous to the swelling of the buds. Where one has a few trees to spray he would probably find it most economical to purchase some one of the commercial brands of lime-sulphur now on the market. Directions for using are printed up on the container. The mixture purchased is put in your spray barrel, or tank, and water is added as directed.

Spraying at Blossoming Time.

Where one has sprayed for the San Jose scale this spraying is not required unless canker-worm is present. If the other spray has not been made then use either Bordeaux mixture or dilute lime-

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70 TONS OF CORN FROM ONE ACRE

M. A. H. Will Harris, of Adrian, Mich., planted Eureka Corn last season and produced over 70 tons per acre. She won our \$50 gold prize for heaviest yield. Another prize competitor scored 47 tons to the acre; another, 42 tons; another, 40 tons.

Eureka Ensilage Corn

grows tallest, has most leaves and biggest number of ears. \$1000 gold prize for heaviest yield this year. Winner announced at New England Corn Show, Boston, Nov. 30-24, 1912. Plant Eureka this time and fill your silo to the brim. Prices are low this year—write now.

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by failing to supply your soil with Phosphoric Acid.

It Isn't Too Late To Use Ground Phosphate

for this year's crops if you get it finely ground, 95% through 100 mesh screen, 80% through 200 mesh screen.

If you have our quotation, wire your order.

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Strawberries, Raspberries, Currants Seed Potatoes. Vigorous and hardy stock. Valuable Illustrated Catalog free.

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SEED CORN—Reid's Yellow Dent, Imp. Early Leam-ing and White Cap. Tested Seed. Also Seed Oats. Catalogue free. Theo. Burt & Sons, Melrose, Ohio.

Splendid Strawberry Plants \$1 per 1000 and Queen \$2 per 100. A. J. EASTON, R. 3, Charlotte, Mich.

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SEED CORN—Write today for our free catalog telling how we select and dry the seed, and showing actual photographs of our high yielding varieties.

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OATS—Reg. Swedish Select. Sensation and Big Four. Samples free. Also Seed Corn. Send for catalogue. Theo. Burt & Sons, Melrose, Ohio.

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sulphur, to which is added a poison for killing the canker-worm or bud-moth, should they be present. Either Paris green or arsenate of lead may be used as the poison. The poison is added to the Bordeaux or lime-sulphur solution. They are counted as their volume of water when determining the amount of the poison to put in.

After Blossoming Spray.

When the blossoms have fallen and the little stamens withered the third spray can be applied. Use Bordeaux mixture, or dilute lime-sulphur solution with the poison added as in the second spray.

The Fourth Spray.

The spray used in the last is repeated about two weeks later. The poison should be added to kill codling-moth, bud-moth and other eating insects.

August Spray.

While Bordeaux mixture may be used for this spray, the lime-sulphur solution gives better results as it does not russet the fruit like Bordeaux. Apply during first week in August. Use poison for controlling the second generation of the codling moth except on the summer varieties of apples which are nearly ripe at the time the spray should be put on.

Compounding the Sprays.

Bordeaux Mixture.—For apples use four pounds copper sulphate and about four pounds of lime to 50 gallons of water. Dissolve the copper sulphate into a few gallons of hot water after which add enough water to make 25 gallons. Slake the lime into a thin paste and add water to make 25 gallons. Pour the copper sulphate solution and the lime solutions together into a third vessel. This can be done by two men dipping simultaneously from the solutions, and allowing the streams to flow together as they fall from their buckets into the third barrel, or tank. Or, it can be done by having the two barrels elevated above the third when taps can be opened permitting the liquids to flow into it. Do not use iron or tin vessels in preparing this mixture; barrels and wooden pails are best.

Lime-Sulphur Wash.

To make a concentrated solution of lime-sulphur use 12 lbs. of lump lime, 25 lbs. of sulphur and 10 gals. of water. (The lime should not contain more than five per cent of magnesium oxide nor less than 90 per cent of calcium oxide). Slake lime to a thin paste when the sulphur is sifted in. Boil for an hour, stirring frequently. Add water enough to make ten gallons. Secure a hydrometer, which is an instrument for determining the weight and density of liquids, and test the solution. If the reading is 22 degs. by the hydrometer dilute 10 gals. of the solution to 50 gals. to spray for the scale before growth begins, or as indicated in the first spray mentioned above. If it reads 23 degs. dilute 9½ gals. to 50 gals.; if 24 degs. dilute 9¼ gals. to 50 gals.; if 25 degs. dilute 9 gals. to 50 gals.; if 26 degs. dilute 8¾ gals. to 50 gals.; if 27 degs. dilute 8½ gals. to 50 gals.; if 28 degs. dilute 8¼ gals. to 50 gals.; if 29 degs. dilute 8½ gals. to 50 gals.; if 30 degs. dilute 7 gals. to 50 gals. As stated above one not acquainted with spraying will usually find it best to rely upon the commercial products.

Poisons.

Paris green, or arsenate of lead may be used as a poison in the spray.

Lime should always be used with the Paris green. Slake one-half pound of quicklime in hot water, and while hot add a quarter pound of Paris green, stir while the lime remains hot then allow to stand for some time. Put 44 gals. of water or Bordeaux mixture or lime-sulphur solution, in tank or barrel and add the Paris green and lime. Stir vigorously and spray immediately.

Arsenate of lead should be used at the rate of from one to five pounds to 50 gals. of water, or Bordeaux or lime-sulphur solution. For the August spray mentioned above use the 5 lbs. to the 50 gals. of liquid. Three or four lbs. may be used for the other sprays.

As indicated above, either of these poisons can be combined with the Bordeaux mixture, or the lime-sulphur wash and applied at a single spray.

Spray your trees thoroughly. To succeed best one should visit a man who has a reputation for spraying well and study how the work is done.

Class in apple culture. "What makes a perfect apple?" "Pyrox makes a perfect apple. It fills the barrel with the kind that they used to put on top." Wise growers are ordering early. Ask Bowker Insecticide Co., Boston for book on spraying.

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These shoes combine style, refinement, comfort, service and high quality. Mayer Honorbilt Shoes are not only stylish looking, but dependable for wear. They are "built on honor."

The choicest leather is selected for the uppers, the soles are of special tannage, the materials and workmanship throughout high-grade. Cannot be equalled anywhere at the price. If you want the dressiest and best wearing shoes obtainable, demand Mayer Honorbilt Shoes.

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Our Free booklet of 68 pages, "Spraying Simplified," tells how and when to make these sprays. Tells how to know what is ruining your fruit trees and the best way to protect them.

Send for it today and put those old apple trees of yours on a paying basis.

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The Best Way to Cook Both Lime and Sulphur Solution and Stock Feed.

For spraying fruit trees, shrubs, etc. cook your lime and sulphur solution in a Heesen Kettle; it cooks quick—uses less fuel and costs least.

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Burn any fuel—set on the ground anywhere—no foundation required. Sizes 15, 20, 30, 40, 55, 65 and 75 gallon. Write at once for full information and low price, or send order for size wanted.

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WING SEED CO., Box 348 Mechanicsburg, O.

SUGGESTIONS FOR STARTING THE FAMILY GARDEN.

If a woman goes ahead and plans the family garden, selects the seeds, and sows some in the house for transplanting, that she may have earlier vegetables and flowers, she will be the means of having a better family garden, and will be the better for doing some of the lighter work herself. After the ground is prepared, she can sow the seed and help about the weeding after the wheel cultivator has been run through it. Her presence will encourage the men who should do the harder work.

If you have not already planned the family garden and ordered your seed, it should be done at once. Where practicable the garden should be rectangular in form, with the long rows running north and south. It should be near the house where it will be convenient to run out and work for a few moments when there is time, or to get fresh vegetables and flowers for the table.

If you have not looked over your garden seed and found what seed you have and what you wish to buy, do it now. If you want to be sure that the seed will grow and that you will not be throwing away your money, buy seed from some reputable seedsman. Seed should be ordered early then you will have them on hand so you can sow the hardy vegetables as soon as the ground is in condition for plowing, or spading to provide a few extra early vegetables, which the snow or frost will not harm. Sweet peas also want to be sown as early as the ground can be graded. If you haven't a strawberry bed, do not fail to plan for one in your garden.

Unless one has an extra good place to care for plants if started in the house, it is best not to start them very early, for a stocky, thrifty plant will live and grow much better when transplanted in the ground than a large spindling one. When sowing seed in boxes in the house, do not sow the seed too thickly or cover them too deeply. A good rule is to cover them to a depth of two or three times the thickness of the seed. After sowing, sprinkle carefully with warm water and cover with glass or a cloth to keep the surface soil moist. Never allow it to become dry and hard while the seeds are germinating, nor keep it so wet that the seeds will rot. If it is desired to sow more than one kind in the same box, be careful about placing those together that germinate in about the same time. Keep in a warm place until the seed germinate, then place near a window where they will get as much sunshine as possible. When the third or fourth leaf appears, transplant. What I like the best for transplanting tomatoes in, is a flat box about four inches high. It is more convenient for moving around than small cans, etc. After filling it with soil I take strips of heavy pasteboard and press down in the soil $3\frac{1}{2}$ or 4 inches apart, then with small pieces make squares for the plants, so when they are ready to transplant in the ground, I have good strong stocky plants which can be transplanted without disturbing the roots, so they can go on growing without a check to set them back.

Before making the garden, to start rightly draw a diagram of it and write in it where you think will be the best place for the different vegetables and flowers which you wish to grow. For ease of cultivation, and the beauty of the garden while it is growing, it is better to plant in long straight rows, instead of the old-fashioned way of having everything in beds. In planning the garden I believe we should not only think in what part of the garden the vegetables and flowers will grow the best, but also arrange them so they will look the most beautiful, then it will be more of a pleasure to work in the garden, for beautiful things rest and inspire us.

New York.

M. W. J.

THE CABBAGE CROP.

Last season's crop of cabbage was short, which has resulted in the extremely high prices for good heads. Those who harvested a fair tonnage are realizing a neat profit from their land and labor. However, under ordinary conditions the crop is a very satisfactory one to raise since the plants are hardy, will thrive under ordinary care and command a price that leaves a net profit of substantial size to the grower. Cabbage requires a cool soil that is capable of holding a large quantity of moisture. The plant must have a steady growth from seeding to harvest time to give the best quality.

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Blackwell's Durham Tobacco Co.

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A book of "papers" free with each 5c. muslin sack.

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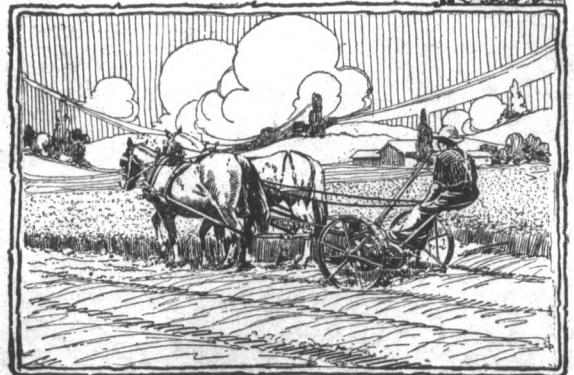
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