

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXXXVI. No. 11.
Whole Number 3539.

DETROIT, MICH., SATURDAY, MARCH 18, 1911.

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

Essential Factors in Soil Management.

THE question of soil management is a very broad one, including, as it does, such topics as the rotation of crops, soil protection, cultivation as related to soil moisture and soil fertility, fertilizing, humus content, and soil exhaustion, besides other problems which have an indirect bearing upon some phase of the soil management question.

Rotation of Crops.

I will not attempt to say what rotation of crops should be followed, for this will vary so much with the soil and its condition and the kind of farming carried on, also the markets and tastes of the farmer, that to lay down a hard and fast rule would be folly. As I see the problem, about the only rule that could be laid down concerning a rotation of crops for all farmers is that clover or some other legume should comprise one crop in the rotation.

I will give below a table of the rotation which we follow in the main on our farm, and explain some of the reasons for doing so. It will at once be seen that some of these reasons are not applicable to all farms, and it is probable that the majority of farmers would not be in a position to follow this rotation to the best advantage.

1. Wheat, seeding to
2. Clover, with sprinkling of timothy. Cut hay and clover seed. Manure in fall, winter, and early spring or pasture if no seed. In early spring plow for
3. Corn, (or potatoes or beans on part). After cutting corn, (first part of September), or removing potatoes or beans, work up with cutaway and harrow and seed to
4. Wheat, (or part oats or strawberries). Plow as soon as wheat is hauled, top-dress with barnyard manure, and seed to wheat again, thus beginning again the above rotation.

Several things should be noted in the above rotation. In the first place, there are two wheat crops in the rotation, a feature which many would consider undesirable. In our case we are near a village where we can exchange straw for manure and we also need considerable straw for mulching strawberries and young trees, hence we make wheat the chief crop in the rotation. We hear considerable said against the grain farmer and wheat growing, but we find that during the past seven years wheat has paid us better, acre for acre, than any other farm crop, and we have the figures on all of them to submit as proof. I believe hay and clover seed are second. Corn is down near the end of the list unless we can figure some profit above market price in feeding, for the heavy cost of growing and harvesting the crop cuts down the profits.

Two wheat crops in succession are compensated by two manurings in the rotation. More manure is hauled from town than is produced on the farm, so that we are generally able to carry out this program. The clover sod is covered during the winter and spring before plowing for corn, and as a rule we top-dress after the first wheat crop, though if the manure is coarse we plow

some of it under. Where possible we cut the second growth of June clover for seed, and always have seed for our own use, keeping over enough for a year ahead in case of failure of the clover seed crop.

One good feature of the above rotation is that the ground is never left bare over winter unless oats follow corn, in which case it is well to sow rye or some catch crop in the corn at the last cultivation,

especially in a dry season like the last. Humus and Cultivation as Related to Soil Moisture and Soil Fertility.

Two things essential to proper soil management are humus and cultivation, and yet they are, in a way, opposed to each other. By humus we mean vegetable matter in the soil which has not decomposed sufficiently to all be resolved to forms in which the plant can take it up. Humus is necessary to produce a

weed growth may begin and take up the plant food liberated. Under certain limitations this is a desirable condition. It is better for the weeds to cover the ground when there is no growing crop on it and thus take up and store the plant food than for the soil to lie bare and plant food be lost. If weeds are not desired on account of infesting the soil with their seed, or if they do not come in naturally, a catch crop can be sown for this purpose after the growing season. Weeds are not considered such a bugbear as formerly for they have their place and function, but their place is not in the growing corn field.

Cultivation has still another function, namely the conservation of soil moisture by forming a dust mulch. This function is closely related to the proper management of the soil, for without a water supply the richest soils must fail, as water is needed to dissolve the plant foods and carry them to the leaves of the plant. The best management of the soil will include the proper cultivation of it from early spring until there is no danger of the crop suffering for lack of moisture, that is, when the growing crops will admit of such cultivation. Where they will not it should include a thorough preparation of the soil with cultivation at frequent intervals as long as possible before the crop is sown. In general, the best results will be obtained if the cultivation is done long enough after each hard rain so that the soil will dry enough to crumble when pressed in the hand, but before it becomes hard or lumpy. This stirring will interfere with the capillary rise of water to the surface and require more of it to remain in the soil or be evaporated through the leaves of the growing plant after it has served its purpose of bringing food to the plant.

Soil Exhaustion.

Poor soil management means in the end complete or partial soil exhaustion, which is a condition of the soil in which it is deficient in humus content, or food content, or moisture content, or all three, and they usually go together. A soil that has little or no humus has little food content unless it is supplied by concentrated foods like commercial fertilizers, and even these will not produce good results in such a soil. Then again, its moisture content will be at fault in a dry season. It is tight and hard, bakes easily, and does not have a dark, rich color. It is too close to become aerated well, so some of the food it contains does not become available, and the hard, crusty condition is favorable to a rapid loss of soil moisture by evaporation. In short, the soil becomes very disagreeable to work and does not respond to the labor put upon it.

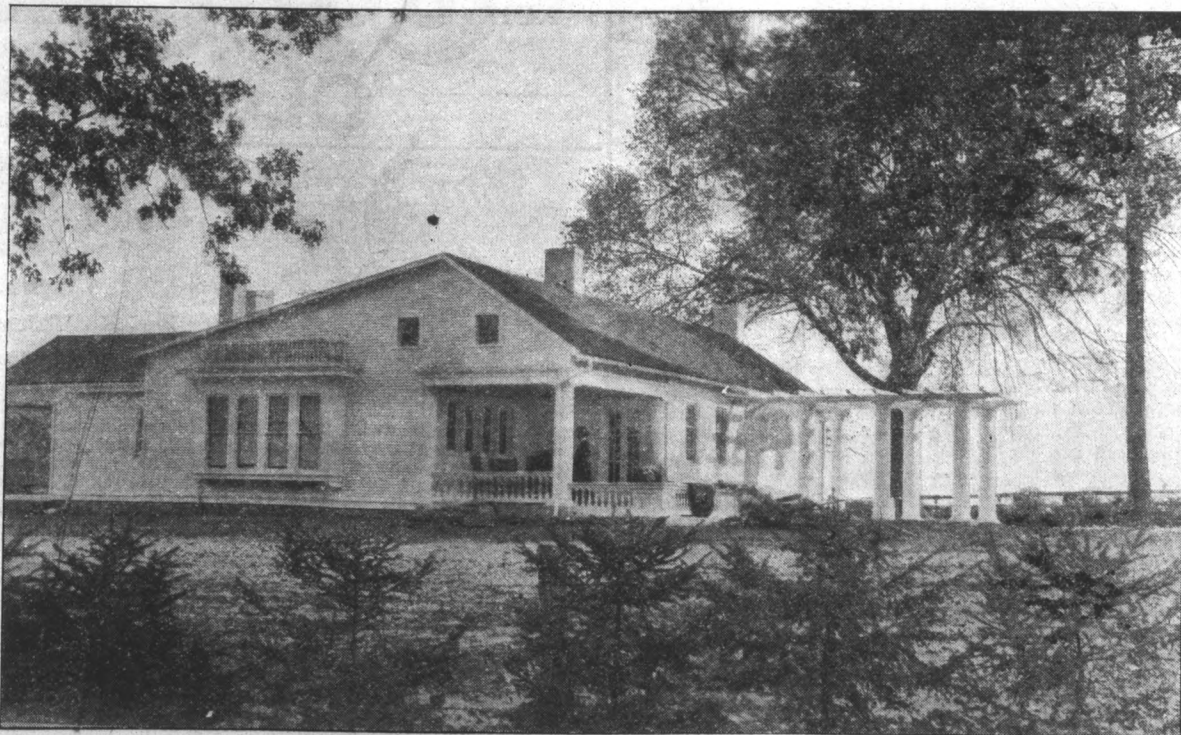
We are having some experience with such a soil. While not completely exhausted it is somewhat "run down," to use a common expression, does not work easily, and does not respond to culture as it should. This is a prairie soil, lying just across the road from our old farm and identical in soil nature, yet as a rule, the same amount of labor



A Country Road Graded for Graveling According to Specifications for State Reward.

as a winter protection and to supply humus. The soil is kept covered and busy at all times, and to compensate it is well fed. I believe there is more virtue in soil protection over winter than many think. If the ground is kept covered with a growing crop the nitrates which are produced in fall and spring, and possibly somewhat in winter, are absorbed and saved, more of the snow is held in the fields, which means freezing to a less depth and more moisture for the succeeding crop, this being an important item,

looseness of the soil and supply a steady amount of plant food. Cultivation hastens the decomposition of humus and causes a rapid unlocking of the plant food, hence cultivation is necessary and desirable during the growing season, although it draws somewhat on the store of humus. But during the period when growth is not taking place or is not desired it is better for the humus to remain undecomposed, hence at such times cultivation is not desired. After the growing period when cultivation ceases



A Remodeled Farm House that is "Different," Showing the Possibilities of Modernizing Old Homes.

will not produce more than half the yield as on the better managed soil on the old farm.

This land I speak of up to the last few years had been leased to tenants for perhaps thirty years, and as there were no buildings on it and it was near the village the straw was sold or used on other farms and little manure was returned, with the above results. To bring this soil back to a proper condition is necessarily a slow and expensive process. We are hauling all the coarse manure we can get on it and plowing under and letting all the secondary growths go back on the land, not pasturing at all. We expect to continue this, and to shorten the rotation on this land, making clover the main crop, and to plow under one or two clover crops during the next few years. In this way we hope to get this soil back to its proper condition after a few rotations, but it is much easier and less expensive to keep soil in good tilth by a proper system of soil management than it is to bring it back after it has been depleted by improper management. This problem of soil management is the deepest and most important one we have to solve on the farm, and we should all put much study upon it.

Calhoun Co.

S. B. HARTMAN.

ALFALFA CULTURE.

We must look to the intrinsic value of a feed in determining its real worth as a factor in our cropping system. "Alfalfa hay," said Willis O. Wing, of Ohio, who addressed the farmers at the late Round-Up meeting at Lansing, "is at the present time selling in our community at around \$15 per ton and we average, one year with another, four tons of hay per acre. This would give a gross profit of \$60 per acre. If we were to calculate the amount of corn it would be necessary to grow to give this same profit with the farm price for corn at 40 cents per bushel, we would find it necessary to produce 150 bushels per acre; or, if we calculated in the terms of oats at 30 cents per bushel, our figures would tell us that it would be necessary to grow 200 bushels of this cereal to give as large feeding value as an ordinary crop of alfalfa. To a large extent the alfalfa plant takes the place of grain and in some regards it furnishes qualities in feed that cannot be gotten by the use of grains." In the light of these considerations it impresses the farmer with the wisdom of giving extra care to secure a good stand of alfalfa. He can afford to give the land better culture, better fertilization and better drainage, because he is going to get much larger returns for his efforts than he would from the same field put out to corn, oats, wheat or any other of the ordinary cereal crops."

Mr. Wing took up separately the different requisites for growing this crop in the east, as he had found that the experience of the western man could be used as a guide in a general way only. We must work out our own salvation. Drainage is more important with this crop than with red clover. The "heaving" of the soil should be reduced as much as possible by putting the water level down, for the alfalfa plant is deep rooted and naturally goes down long distances to secure moisture. A shallow soil, limited by the presence of water near the surface, is not at all to its liking and it does poorly when compelled to grow under such conditions. So give the land artificial drainage if it is not naturally drained. Use large tile and the drains will not be so readily clogged by the roots of the plant.

Lime should be in the soil in sufficient quantities to keep it sweet. Many soils are well provided; but a large amount of land needs this element added. Mr. Wing calculated that the smallest application of lime that would do benefit to the crop would be two tons per acre. Double this quantity would, in many instances, be found advisable.

Weeds and grasses are enemies of the alfalfa plant. As a rule, the man who keeps his fields well cleaned of weeds has the best chance with this plant. Mr. Wing suggested that in plowing land for this crop it would be well to go down from three to six inches deeper than the land has been plowed, providing it can be done without raising too much subsoil, and thus bring to the surface earth that is not filled with weed seeds, thus allowing the alfalfa plant to get started and occupy the soil before foreign plants can get a hold. On account of weeds, growing the alfalfa crop with a nurse crop is often as successful as starting it without one. The nurse crop keeps the weeds down until the alfalfa has a start and when the nurse crop is removed the alfalfa

fa at once pushes forward during a season specially fitted for its growth while weeds do poorly during the dry weather usually prevailing the latter part of July and August. Barley was recommended as an excellent nurse crop. He experimented by sowing winter rye in the spring and seeding with alfalfa and the test proved very satisfactory. Grasses well established in an alfalfa field makes it almost necessary to break up the land since alfalfa plants do not multiply as do the grasses and when a plant of the former dies out a space is left for the grasses to occupy and crowd against neighboring alfalfa plants.

Soils to select: He has found that the second level from a river which passes through his farm, with a soil of black clay such as is used in the manufacture of tile, produces his best crops; the soils with a white clay subsoil are next best; a loam over gravel follows; his best corn land comes fourth and the poorest land for this crop is a peaty soil.

When sowing with a nurse crop it is best to get the seed in the ground as soon as the soil can be gotten in condition in the spring. They sow in March or April. He applies about 18 pounds of seed per acre. It can be either broadcasted or drilled. They usually drill.

Men often make the mistake of cutting this plant too early. Mr. Wing has noted that where they cut small patches for feeding before new hay was made, that the alfalfa was afterwards less luxuriant over those patches. He makes it a rule to cut when the buds are well started. He would rather leave the plant a little too long than to cut it before this time.

While horses and hogs are not particularly detrimental to this crop when allowed to pasture on it, cattle and sheep should be kept out, and especially is this true of all stock in the fall after a frost. The tops of the plants are killed by the freezing, then after a warm day or so fermentation sets in, making them poisonous to stock. Cattle have been known to die off "like flies" from eating this frozen material under the conditions mentioned.

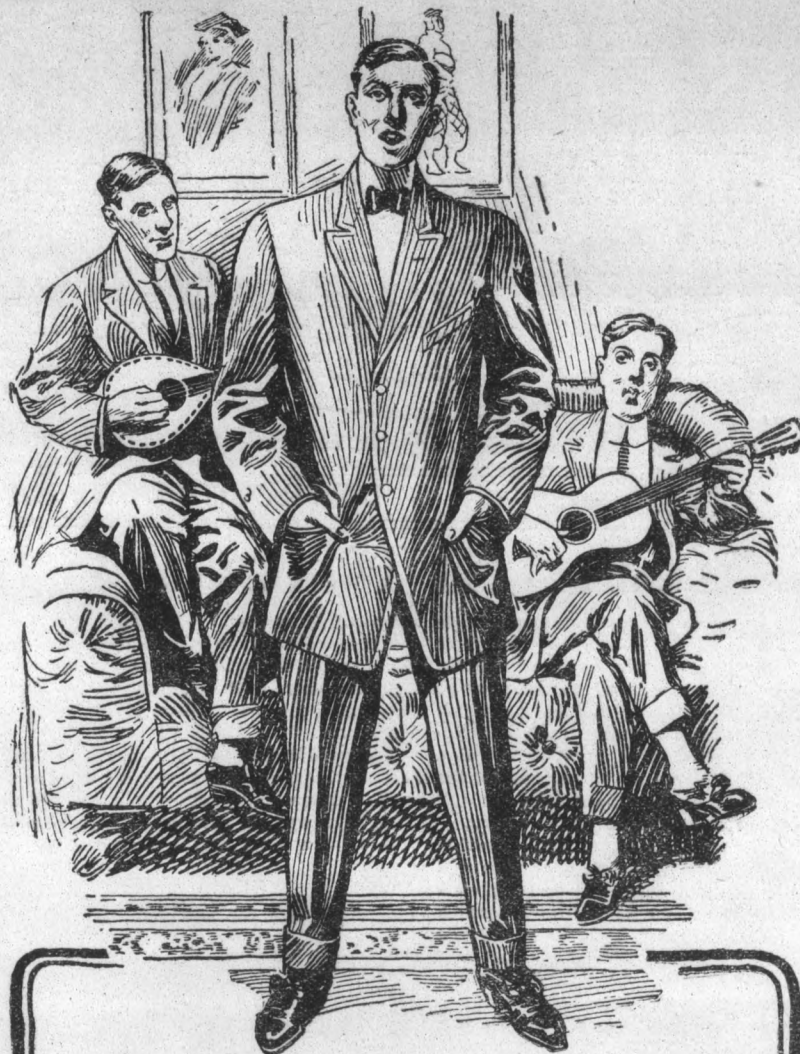
Mr. Wing believes that in many instances inoculation is necessary. It is a wise plan to sow some alfalfa seed with the clovers. The few plants will generally inoculate the land for later cropping with alfalfa. Soil from another field where the nodules are present on the plants, will affect a good inoculation.

THE TOXIC QUALITY OF PLANTS

Would like to know through your paper if buckwheat leaves anything in soil detrimental to other crops. Have heard that it poisoned land, and corn, etc., would not do well after it.

A. W. O.

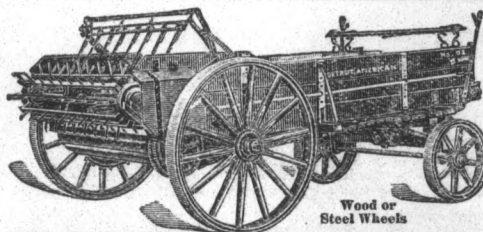
There is a theory among scientists that some plants leave an excreta or toxic poison in the soil which is injurious to certain other plants when permitted to follow in the crop rotation. It is conceded, for instance, that corn does not do well after sugar beets, and those who have tried it have not had good success with corn after potatoes. On the other hand, the small grains do well after these crops, and clover seeding is generally more successful in grain following a root crop than on land handled in some other way. So far as buckwheat is concerned we have never heard of its being charged with leaving toxic poisons in the soil which were deleterious to other crops. Buckwheat is a rather good gleaner. It will often do well on a thin soil, partly for this reason and partly because it does not draw as heavily upon the available fertility in the soil as most other grain crops. But a fairly good crop of buckwheat may be grown upon a soil that is too thin in available plant food to grow a good crop of corn, and will, of course, leave the soil still more destitute of available fertility for a corn crop which succeeded it. Corn has a longer growing season than any other spring grain crop which we grow in this climate, and for this reason it does well on sod ground, in which the fertility becomes available rather slowly throughout the season, as the plant requires it, by this means providing the crop with a supply of plant food to be drawn upon during the season when it is maturing grain. It is always best to give corn the first place in the crop rotation for this reason, and for the reasons given above corn should never follow a crop like buckwheat in the rotation. The latter crop should be used as a catch crop with which to seed to clover or as a crop to clean a foul field or to plow down for green manure on a thin soil that is comparatively destitute of humus. A proper rotation of crops is an important factor in judicious soil management, and requires a maximum of good sense and judgment in planning.



Adler's Collegian Clothes have gained, and will always retain, a splendid reputation for style, fit and real intrinsic value. In the production of such garments as we are offering, it is necessary to exert the most critical care in relation to every detail which enters into their making. You will find them vastly superior to any garments you have ever worn. Compare them, if you please, with clothes you can buy from mail order houses. You will find that same difference existing between our production as exists between the product of high class merchant tailors and "cheap" ready-to-wear apparel. Our strongest argument is to urge you to test our clothes by giving them a season of good, hard wear. You will find that the tailoring and the materials place them high above the production of any other clothes maker in this entire country. Adler's Collegian Clothes are sold by the most reputable clothing stores. Ask to see the new spring fashions. If you'll write to us we will send you, free of cost, a book on the subject of men's clothes. It will thoroughly post you regarding style and quality. Prices range from \$15 to \$30 for suits and overcoats.

David Adler & Sons Clothing Co.
Makers — Milwaukee

ADLER'S Collegian CLOTHES



1911 Spreader
Bargains—

Unrivalled Values \$42⁵⁰
Starting at

—Delivered in Michigan. Slightly more in other states owing to increased freight charges. Just as big values throughout our full line of complete machines. Whether you want an Endless or Return Apron machine, wood or steel wheels, 50 to 100 bushels capacity, or our Wagon Box Spreader, you can't beat the Detroit-American quality, no matter what you pay.

Detroit-American on 30 Days' Real Free Trial—No Money Down—Cash or Credit—Freight Paid—

You take no risk before you buy and our limited-time guarantee protects you for life after you pay. No other spreader in the world could make good on our proposition. Read about the gearless construction; read how much more steel we use. See the remarkable simplicity and strength. Six changes of feed mean efficiency. It's the mistake-proof spreader—you can't misuse it. Get our **Big Free Book** and freight-paid price at once. We're offering every advantage others offer and more. Send your name now. Our big book is the best ever written about spreaders. Also shows big values in famous Detroit-American Tongueless Disc Harrows and Cultivators. It's the mistake-proof spreader—you can't misuse it. Write postal now. Address **AMERICAN HARROW CO., 1015 Hastings Street, Detroit, Mich.**

When writing to advertisers mention The Michigan Farmer.

TEN YEARS OF SUCCESS WITH ALFALFA.

I thought the readers of The Farmer might be interested in reading my experience in growing alfalfa. I commenced growing alfalfa ten years ago and have now 120 acres growing and it is doing fine. I shall seed 30 acres more in the spring. When I commenced growing alfalfa I inoculated the seed with chemical bacteria obtained from the U. S. Department of Agriculture, but my alfalfa did not grow much the first year and looked yellow and sickly, and the second year it did not do anything up to the 20th of June, and I could see that some of it was dying out, so I sent down to southern Indiana and purchased two tons of alfalfa soil from a farmer, which he claimed he took from a ditch he dug through his seven-year-old field. This cost me \$20 per ton, including freight. I sowed the soil broadcast by hand over my alfalfa, and to my great surprise in less than four weeks the alfalfa commenced growing rapidly and all turned green and has been dark green all over the field ever since. I have cut from this field for the last five or six years about four tons per acre of the nicest hay ever made.

The question has been asked many times, "when is the best time to sow alfalfa seed?" and I will here give some of my experience. Nine years ago I had a 10-acre field of peas, and after I harvested the peas I plowed the ground and fitted it in nice shape and sowed it to alfalfa, (this being about the 20th of August). I got a nice catch, but the freezing in the fall and spring killed it, so I had to reseed it that spring, and since that time I sow no more alfalfa in the fall. It is a very tender plant, and needs all the root it can get in one season's growth to pull it through the first winter. Since then I sow my alfalfa in June, which, I believe, is the best time to seed to alfalfa in this climate, and without a nurse crop at that.

I have the best success with corn ground for alfalfa. I keep the corn as free from weeds as I possibly can, cut the corn with a hoe, so there will be no stubble, and as soon as it is dry enough the following spring I put on a good sharp spring-tooth drag, and harrow the ground every two weeks up to about the 15th of June, and at the same time I have inoculated the ground with soil from my oldest alfalfa field, by putting on at least a ton of soil to the acre, then sow about 15 pounds of seed to the acre. My experience is that where I inoculated my ground with a ton or more of soil to the acre, I can cut a good crop of hay the first season, and where I inoculate light, I can not cut any hay the first season, and the hay will be light the second and third seasons, so I know it pays me to inoculate heavy.

I have been asked many times, "what will you do when you want to break up your alfalfa?" My answer is, "I hope that I never will be so foolish as to want to break up my alfalfa," for I consider land worth \$100 per acre where there is a good stand of alfalfa. A good stand of alfalfa will cut, at a low estimate, three tons of hay per acre annually, and again at a low estimate, the hay will bring on an average \$12 per ton, (I am selling for \$20 per ton). At \$12 per ton it will amount to \$36 per acre annually, and no plowing or seeding at all, and your alfalfa getting heavier each year for years to come. I would ask where can you get better returns for your \$11 than that. In Germany they call alfalfa live-forever clover, on account of its long life.

Some claim that you can inoculate your ground by mixing a small portion of alfalfa seed with your red clover seed and sow together, and the alfalfa will inoculate itself so that it impregnates the ground sufficiently with the bacteria peculiar to alfalfa to grow alfalfa thereafter without inoculation. I say that theory is absurd; there is nothing in it. If the seed has no bacteria in it and none in the ground, I beg to ask where does it come from. There must be a little nucleus of bacteria from which the plant can borrow in order to get a start. Seven years ago I seeded 16 acres in the spring to red clover, with no nurse crop, and for an experiment I mixed some alfalfa seed with the red clover seed and sowed it together. The alfalfa came up nice and did fairly well for a while, until it needed the aid of bacteria and could not find any, therefore it naturally starved to death, but not until the third season. I advise my farmer friends not to try that scheme.

Wexford Co.

SANFORD, GASSER.

SURFACE MANURING.

Leaving manure on top of the ground is nature's way. The leaves of the forest and the grass on the prairies rot on top of the ground, and all animals (except the cat), leave their droppings on the surface. We find the prairies full of fertility, and the wood-lands very fertile when first cultivated. Nature's way appears the best, when properly assisted by art. When stable manure is spread on top of the ground the richest portion is leached into the soil by the rains, and melting snows, and is diffused, and distributed through the porous earth, every particle of the soil receiving its due proportion of plant food, in due time to be imparted to the hungry plant roots pushing through it. The coarser portions of the manure remaining on the surface until the ground is plowed act as a mulch to prevent evaporation and baking of the soil. When manure is hauled out, and immediately plowed under, the furrow slice rolls it into streaks and lumps, which do not for a long time get well distributed through the ground.

The testimony of some of our best farmers and writers is in favor of surface manuring, especially in the winter on land to be plowed for spring crops.

The writer has practiced drawing fresh manure from the stable in winter and spreading it on the field intended for corn, with excellent results. He has also spread it in the winter on part of a meadow which had been mown for several years, and was not yielding well. In May following, the straw portion of the manure was raked up and drawn back to the barn lest it would be raked up into the hay. The part of the meadow manured, produced twice as much hay per acre, as the unmanured.

Pa.

J. W. INGHAM.

FERTILIZER FOR MUCK LAND.

I purchased a piece of low, swampy land last summer which had been cleared a good many years and as part of it was high land had been used for pasture. A part of it was covered with wide blade wild grass, where the muck is from 12 to 30 inches deep. This last fall I thoroughly underdrained it and plowed it. What kind of fertilizer shall I apply to the muck to make it do its best? I intend to put it into corn, potatoes, onions and garden stuff.

Ohio.

S. K. G.

Muck soils differ very materially, in fact, quite as much as other soils, consequently it is hard for a man to tell what is the best kind of fertilizer to use. F. K. G. can only determine this definitely by performing experiments. Put wood ashes on one strip of land, put potash on another, acid phosphate on another, and nitrate of soda on another. Note the results. Then put a complete fertilizer on a strip of land. One experiment performed and carefully kept track of in this way would give you more information than any one can tell you.

Usually, however, muck lands are deficient in potash, and potash nearly always gives results on this kind of soil. Again, many of these soils are sour, acid in their nature, consequently a good application of lime in nearly all instances gives good results on this kind of muck land.

Muck land is supposed to be rich in nitrogen, and it is rich in nitrogen, but this nitrogen is apt to be in quite an inert condition. Very often muck land responds to an application of soluble nitrogen quite as much as any soil. Then again, muck soil is apt to be deficient in phosphoric acid. Now, without experimenting with the different essential elements of plant food and with lime, and, of course, it would take one whole year to make this experiment, I say, without knowing these things, the safe way is to use a good, general purpose, complete fertilizer, having it especially rich in phosphoric acid and potash. I would say that a fertilizer that contains two per cent of ammonia, nine per cent of phosphoric acid, and five per cent of potash would be a splendid one for muck land. If I had experimented a little I might advise a fertilizer that contained as high as 10 per cent of potash, but my idea is that it needs the nitrogen and phosphoric acid perhaps quite as much as it does potash, and I am of the opinion that there will be more profit in a good heavy application of fertilizer the first year than there will be in a light application. This soil which has been water-soaked for ages has had no chance to go through a weathering process and what plant food it contained is liable to be quite inert, and the first year you will get the poorest crop. After it has been plowed and exposed to the



Amatite Roofing
on houses of D. M. Cook,
Chicopee Falls, Mass.

Amatite ROOFING

When the Shingles Fail

Here are two houses which were originally covered with shingle roofs. Modern shingles are not made like old style shingles, but are of inferior wood on account of the increasing scarcity of lumber. Accordingly, shingle roofs gave trouble, and the owner investigated the whole subject of the roofing with the result that he found it cheaper to cover the whole roof with Amatite Roofing than to try to keep the old shingles in repair.

Amatite Roofing is so low in price, so easy to lay and so durable that it is by far the cheapest and most satisfactory answer to the problem of the leaky roof. With other roofings of the kind that require painting, this is not the case. To lay ordinary roofing over shingles and keep it painted would be just as expensive and troublesome as to keep on repairing the shingles. But Amatite Roofing requires no painting. It has a

mineral surface to take the wear and tear of the weather.

Amatite Roofing costs nothing to maintain; that is why the owner of these houses used Amatite. On these houses, the Amatite is laid right over the old shingles so there was no expense or trouble in ripping off the old roof.

Amatite, despite its mineral surface, comes in handy rolls like any other roofing and can be laid by any workman without previous experience.

Large headed nails and cement for the laps are supplied free of charge. Remember that Amatite costs less than ordinary roofing of equal wear and costs nothing whatever to maintain. It is rapidly displacing shingle roofs and painted roofings.

Booklet and sample free on request. Address our nearest office.

BARRETT MANUFACTURING COMPANY
New York Chicago Philadelphia Boston St. Louis Cleveland
Pittsburg Cincinnati Kansas City Minneapolis
New Orleans Seattle London, England



Spreader Value Means What You Get—Not What You Pay

The Great Western is a quality spreader—made for the men who can see past the price to the years of service and the kind of service. It is built with the finest materials—the correct principle and right construction. Then the price is fixed on the basis of our matchless facilities and enormous output which insures the most for your money. 100,000 farmers and most U. S. Government and State Experiment Stations—use and endorse the

Great Western Endless Apron Spreader

Let us send you proof. Know what the wonderful Great Western Endless Apron means. Read how much more oak, hickory, steel, malleable and wrought iron is used in the construction of the Great Western Spreader than in any other. Read all the facts. Then you'll know why we guarantee every Great Western to give 50% more service with 50% less repairs—whether it's a wooden or steel-wheeled machine, anywhere from 35 bushels to 100 bushels capacity.

Write For Free Book

Don't buy any spreader till you get our big art Spreader Catalog. It's full of proof of Great Western Superiority. Tells of all the advantages and what they mean to you. Ask for Spreader Book No. S131

SMITH MFG. COMPANY
158 E. Harrison Street Chicago, Illinois

Make \$4 to \$8
More Per Acre



A Remarkable Fuel Saving Farm Engine 15 Days FREE

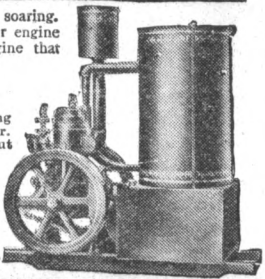
GASOLINE is way up now, from 6 to 16 cents more than kerosene, and is still soaring. The big automobile demand is responsible for it. What will you do if your engine won't run on kerosene? Better be on the safe side. Better own an engine that will operate on either kerosene or gasoline.

Record Breaking PERFECTION Kerosene Engine

The PERFECTION does what no other engine can do. It vaporizes kerosene, drawing slight mist through the carburetor so that it has the same force as gasoline in the cylinder. The perfection is light, portable, has only three moving parts, runs everything about the place, operates on any engine fuel, is priced lower than others of the same size.

15 Days' Free Trial You can have one of these engines for 15 days' free trial. Call on your dealer, ask him to show you the "Perfection." He'll let you use one on your farm for 15 days and if you find that it is not as represented, we will refund cheerfully every dollar paid for it by you. Ask for our Free Engine Book or if your dealer does not carry the "Perfection" write to us direct.

Caille Perfection Motor Co., 210 Second Ave., Detroit, Mich.



MAKE YOUR OWN TILE

One Man Can Make 300 to 600 Perfect Tile a Day WITH OUR FARMERS' CEMENT TILE MACHINE

at a cost of \$3 to \$5 per 1000. The only farm tile machine that does not require hand tamping; the only farmers' machine operated by either hand or power. Machine makes 3, 4, 5, 6 and 8 inch tile, 12 1/4 inches long. Our Patented Water-Proof FLEXIBLE CASING holds tile in perfect shape till set. No Pallets. If after 10 days' trial it does not meet 10 DAYS FREE TRIAL with entire satisfaction, return at our expense. The price of the machine will be saved in making your first 2000 tile. Can You Afford to Be Without It? Write today for illustrated catalogue.

FARMERS' CEMENT TILE MACHINE CO.,
Box 307 St. Johns, Michigan.



elements for two or three years it will increase the available fertility, not in total amount of fertility, but in available fertility, consequently, a good liberal application, say of 400 or 500 pounds of good rich fertilizer per acre for corn, and a larger amount even than that for onions would probably bring you profitable crops the first year and then after that you would not need as heavy applications, just because the inert plant food, by weathering, will become available for use in future years.

COLON C. LILLIE.

FARM NOTES.

Seeding Alfalfa.

Would you advise seeding alfalfa with peas? Would you advise mixing alfalfa with clover and timothy and seeding in peas? Soil is sandy loam. Would you advise inoculating seed with pure culture before sowing peas and alfalfa? How many peas per acre would you sow where seeding to the mixture mentioned above, which I would like to use if it is practicable.

Missaukee Co.

J. F.

In the writer's opinion it would not be practicable in most cases to seed alfalfa with peas. In exceptionally favorable circumstances this method of seeding alfalfa might be successful, but alfalfa is as yet an uncertain proposition on most soils in our state, and under these conditions it is better to seed it without a nurse crop, or with a thin nurse crop of spring grain that will not shade the ground to any extent before it is cut for hay in order to give the alfalfa the best possible chance. So far as inoculation for alfalfa is concerned, it is generally conceded that the best method of inoculating is to sow soil from a successful alfalfa field. Where this cannot be conveniently done, the pure culture may be used to inoculate the seed with reasonable prospect of getting a successful inoculation, but it is not so certain and the effects are not as quickly noticeable as where a considerable amount of soil is used for the purpose of inoculating the soil with the bacteria peculiar to alfalfa. In another column of this issue will be found the experience of a very successful alfalfa grower with this matter of successful inoculation. He has found it to pay well to sow as much as a ton per acre of inoculated soil on account of the earlier and more complete inoculation secured, as by this method he has succeeded in getting a profitable crop of hay the season the seed is sown, while with lighter inoculation he has not found this possible. This same man reports having tried the plan of inoculating the soil by natural means through the mixing of alfalfa seed with other grass seeds in seeding the land, but with poor success. Some farmers have reported good success by this method, but it is probable that in such cases the bacteria has been present in the soil in quantities that would have insured the success of the alfalfa had it been seeded alone, which has been found to be the case in some favored sections of our state. Several experiments are in progress at the present time in our state to determine the advantage, if any, in seeding alfalfa with other grasses. It may be well enough to experiment in this way on a small scale, and also to experiment in the same way with seeding alfalfa with peas, seeding the latter rather lightly and cutting them for hay, but for the most of the area intended for alfalfa we believe it to be the better plan to seed without a nurse crop or with a light seeding of beardless barley to be cut before maturity as hay, in order to give the alfalfa the best possible chance to get established.

So far as the inoculation of the peas with pure culture to insure the presence of the bacteria peculiar to this plant is concerned, there is little experimental data to guide us. In many localities of Michigan, if not in all localities, there is little need of such inoculation. This is probably true in all localities and on all farms where peas have been grown to any considerable extent in past years. Still there are cases in which it has been tried on just such farms with apparently beneficial results. But it is quite as important that the soil be placed in the best possible condition as a habitation for the nitrogen-fixing bacteria peculiar to the several leguminous plants, as that the colonies of bacteria be provided by inoculation, and where peas have not been successful, it is probable that an application of lime is quite as essential as inoculation for the success of the crop. In fact, the two should go together where either are necessary for best results in the ensuing crop, since there is little use or inoculating with the bacteria where there is an acid condition of the soil which is unfavorable for the development of these

minute plants, and where this condition obtains, a thorough inoculation would be secured much more quickly after liming if nature is aided by artificial inoculation. The expense of the latter will be small, and it should be tried in an experimental way at least, until it has been demonstrated whether it will produce better results on any farm where this crop has not given the best results. Liming should be tried in a small way at least at the same time and for the same purpose.

Seeding Alfalfa in Corn.

I have four acres of rolling land. Soil, gravel, clay and sand. This was a clover and timothy sod, mowed two years, planted to beans last season. I wish to cover all light spots with manure and plant to corn rowed each way, and before I cultivate the last time, (last of July), sow alfalfa and cultivate it in. Can some one of your readers give me information regarding this method? Has it ever been tested out?

Eaton Co.

L. D. F.

In some cases where the plan of seeding alfalfa in corn at the last cultivation has been tried, a successful stand has been secured. But this was doubtless due to especially favorable conditions, as it always is where clover is seeded in standing corn. We have seen excellent stands of clover secured in this way, when the weather conditions at and after seeding were favorable to the rapid development of the young clover plants. But, on the other hand, we all know that this is not a dependable method of getting a clover seeding. In a season like the last, for instance, there was not sufficient moisture in the average corn field at the time of the last cultivation to have germinated the seed, to say nothing of insuring the rapid growth of the young plants and enabling them to get into a condition to endure the winter well. It is a more difficult proposition to get a good stand of alfalfa than it is to get a good stand of clover upon the average farm, because most Michigan land is already inoculated with the bacteria peculiar to the clover plant, and the plant itself is better acclimated to our climatic conditions, since we ordinarily sow seed coming from about the same latitude as the ground on which it is to be sown. On the other hand, artificial inoculation is necessary upon many, if not most, of our Michigan soils to insure the success of an alfalfa seeding, and then we are uncertain as to the source of our seed in most cases, so that the alfalfa plant should be given a better chance than clover if we expect to get a successful stand. In the course of a few years we will, from present indications, be producing a liberal amount of alfalfa seed in Michigan and our soils will be more generally inoculated with the alfalfa bacteria, so that we can expect to succeed with alfalfa under much the same conditions that we now get success with clover, but at the present time it would seem to be a proposition of doubtful wisdom to sow alfalfa under conditions which could not be expected to give the best results with clover. If all the conditions are favorable when the time comes to seed in the corn at the last cultivation, it might pay to try alfalfa in this way, but if the conditions are not unusually favorable it would not, in the writer's opinion, be good practice, and in any event not as likely to succeed as where the alfalfa is sown alone on a well-prepared seed bed.

Bromus Inermis vs. Alfalfa.

Will you please advise me what you think of Bromus Inermis? Can you inform me if it will pay better on sandy loam than alfalfa for hay? I never saw it grown and would like information.

Ottawa Co.

G. S.

Bromus inermis is a valuable forage grass, especially for the binding of loose soils. It is tenacious of life and a drought resister, but is not at all in the same class with alfalfa where the latter can be grown. Its drought resisting qualities make it well suited to the semi-arid regions of the west, where it gives great promise as a pasture grass. It is not, however, so well suited to use in our more humid regions, especially in fields devoted to the regular crop rotation, since when once established it spreads by means of strong root stocks, something after the manner of quack grass, and like it is inclined to become a weed on good soils where it becomes well established. For this reason it is best used only in the permanent pasture, where its quality of permanence will be valuable instead of objectionable. It should be experimented with by Michigan farmers on a small scale if at all, until we get well acquainted with it and its habits.

Michigan Farmer Sold His Sheep and Stallion.

Thomas B. Buell, Union City, Mich., writes that through his advertisement in the Michigan Farmer he sold all of his sheep and a stallion.



Why Don't You Put Concrete Piers Under Your Corn Crib?

They require no extra support, are absolutely solid, simple to make and everlasting. The continuous bracing and replacing of wood or stone pillars is done away with and in the long run the cost is less.

Plans for Concrete Construction FREE

Write us today for simple, definite plans for building:

No. 1—Sidewalks, No. 2—Troughs, No. 3—Porches and Steps

If you want instructions how to build concrete floors, foundations, well curbs, posts, silos, tanks, dipping vats, cisterns or concrete blocks or anything else, write us at once, describing fully just what you want to build.

This service is Free. The only expense to you will be the postage used in writing us. Address the nearest office of the Company.

UNIVERSAL PORTLAND CEMENT COMPANY

CHICAGO—PITTSBURG

Northwestern Office: Minneapolis

Both Tree and Fruit Need Potash

Apple trees take more Potash from the soil than they do Nitrogen and Phosphorus.

Especially does the development of the fruit depend on the available

POTASH

Increased yields of larger, firmer apples, well flavored and rich in color follow applications of Soluble Potash Salts.

Orchardists everywhere are proving that Potash pays.

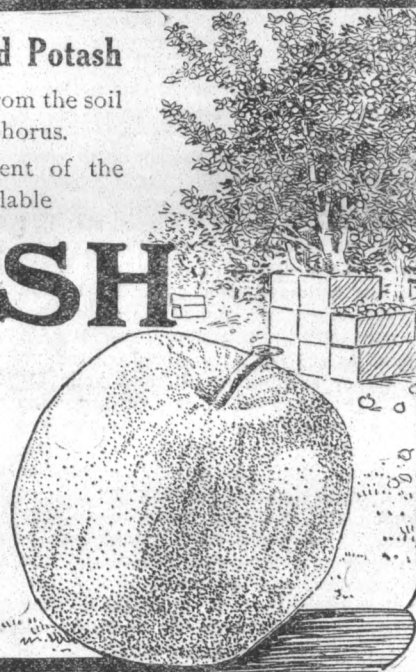
See that your fruit tree fertilizer contains at least 10% Actual Potash, that is, 400 lbs. Sulfate of Potash in each ton of fertilizer.

Get our latest free booklet on "Home Mixing." Sent free upon request.

We will sell you Potash in any amount from 200 pounds up.

GERMAN KALI WORKS, Inc.

Continental Building, Baltimore
Monadnock Block, Chicago
Whitney Central Bank Building, New Orleans



Year 'Round Portable Power

NO TANK
NO FAN
NO FREEZING

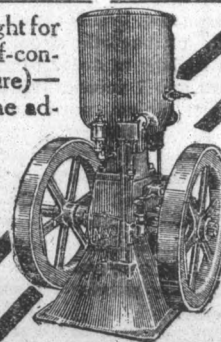
Built for hard work—light in weight for power delivered—absolutely self-contained—(you see it all in the picture)—has water-cooled jacket with all the advantages of both air and water-cooled engines and the disadvantages of neither.

NOVO Engines

4 sizes—Novo Jr. (used largely for pumping water); 2½, 3½ and 5 H. P. for every kind of farm power work.

Free Novo Book upon request

Hildreth Mfg. Co., 120 Willow St., Lansing, Mich.
C. E. BEMENT, Secretary and General Manager



LIVE STOCK

THE SOWS AT FARROWING TIME.

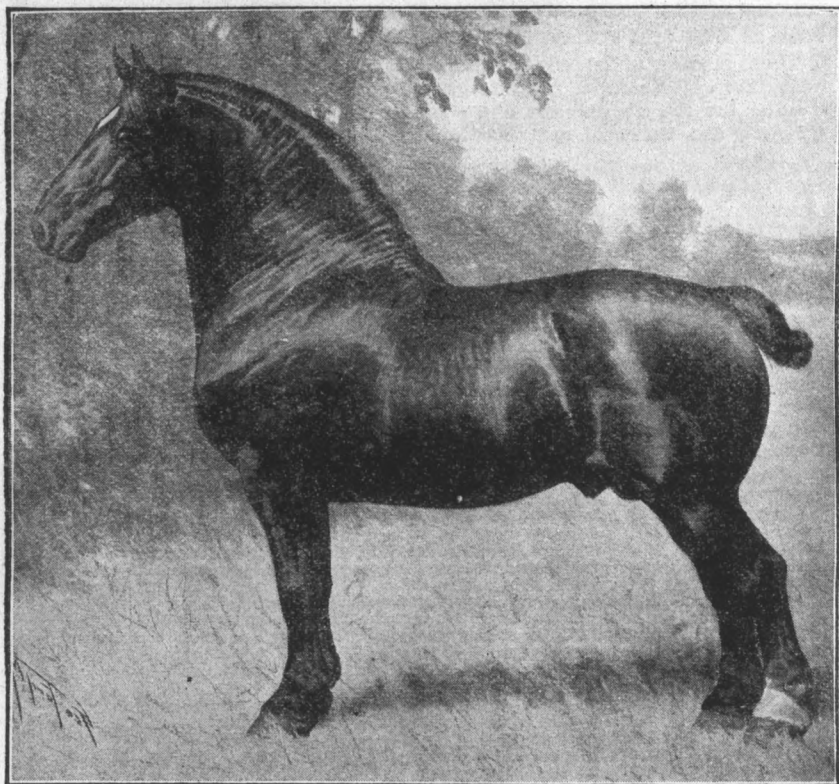
Upon the sow's care and management during the latter part of pregnancy, largely depends the probable success or failure in farrowing. Men in different lines of investigation in different states who have studied the farrowing problem, say that the average size of litters is less than four. On many farms the number raised is considerably less. On others it is somewhat larger. A litter of four is entirely too small. We have found in our experience that any sow can raise seven or eight if properly cared for.

Probably the first essential thing is to get the sow into such condition that farrowing will be easily and safely accomplished. In order to get into this condition the sow needs a rather active out-door life. The exercise is needed to give her general system tone and vigor and to harden up her muscles. Our own sows have the run of a big open yard that slopes to the south. Here, whenever the sun is shining, they will be out stirring about and getting needful exercise. Sometimes they are turned out into

the whole feed. The reason for this is so well known that it scarcely need be stated here. It tends to fatten, rather than to produce growth. Another objection to an all corn diet is that the pigs, when they are farrowed, are fatter and far more subject to thumps and other pig ailments. This fact that the pigs are just a little larger by being fatter is another reason why farrowing is more difficult in the case of the corn-fed sow.

We have fed alfalfa hay in racks with very satisfactory results. We use the finer hay from the last crop. The sows are allowed to run to this at will. We never learned just how much they will eat in this way but at any rate they take considerable amounts of it and we are sure that it is beneficial. The alfalfa satisfies a natural craving for something bulky which the hog possesses. This craving may be observed in the holes which they will gnaw into any kind of hay or straw to which they have access. Whenever given the opportunity to choose for themselves, the sows prefer alfalfa to all other kinds of dry roughage. The alfalfa is valuable as a feed for the sows in that it is comparatively high in protein, which corn lacks.

Outside the corn belt quite a number of other feeds may be used with satisfactory results, as Canada field peas when



Imported Percheron Stallion Marathon 55330 (68658).
Winner of First Prize and Reserve Championship at the International, Chicago, 1910. Property of and at head of stud of W. S., J. B. and B. Dunham, of Illinois.

their summer pasture. Of course, they don't secure much feed in the pasture but they receive a great deal of benefit from the exercise which they get in roaming about.

The feed is an important factor in getting the sow into that desirable condition. At this time the sow needs feed to build up her own body and to nourish the pigs that she is carrying. Furthermore, in the case of a young sow, part of the feed must go to nourish and build up her own body. From that point of view the feed should be abundant and nutritious. Some do not believe that a sow should be heavily fed. They say that she is apt to become too fat. That, as a consequence, she will not farrow easily and safely and that she will not be a good suckler after farrowing. Our experience has not borne out this theory, except where the ration was exceedingly fattening and the sow to which it was fed did not receive sufficient exercise. On the other hand, when the sow was well fed with feeds containing plenty of protein and where she had sufficient exercise, no such trouble ever occurred. Furthermore, when fed as we have just advised the sows seemed to farrow more easily and the pigs were stronger and more lusty than where the sows had not been well fed.

To furnish the nourishment which the sow needs corn will, in most cases, furnish the basis of the ration. This is all right and may well be so where corn is the principal crop. It is very appetizing and contains large amounts of digestible nutrients. It is also one of the cheapest feeds when everything is taken into consideration. However, it will not do as

mixed with about an equal amount of corn, ground barley, ground oats, or shorts. The peas contain a high percentage of protein and, from that standpoint, are very good. However, when fed alone they do not put on the gains as fast as some other feeds do and produce an inferior quality of pork. Beans have been used with results very similar to those produced with peas, excepting that they must be cooked. Perhaps the best single feed, aside from corn, is barley. Those who feed it regularly grind it to produce the best results.

There are quite a number of supplemental feeds that may be fed to good advantage. Chief among them is skim-milk. We have never had as much of this as we would like to have had. On farms where this product can be secured it proves to be a very valuable adjunct. When neither clover nor alfalfa are fed, some protein supplemental must be provided. We have found shorts, bran, oil meal and tankage to be very good. The tankage is exceedingly high in protein and one-tenth or even one-twentieth with corn will furnish sufficient protein. Oil meal contains about half as much protein and must be fed in correspondingly larger amounts. Shorts and bran contain still less and must be increased still more. Bran is a little too coarse and bulky and should in no case furnish the entire protein supplement.

These supplemental feeds must supply another quality than merely furnishing protein. They must be slightly laxative upon the digestive system. For this purpose we are just a little partial to oil meal and bran. We are now feeding one lot of gilts on a ration consisting of three

The Great Spring Tonic

For Horses and Cattle

Pratts Animal Regulator makes horses look better, work better and worth more money, improves their appetite, causes perfect digestion, and puts every ounce of food into strong muscle and pure blood.

Pratts.

Animal Regulator

is the greatest Spring tonic for Horses, Cows and Hogs. After a Winter of confinement and idleness, they are especially subject to disease. Pratts Animal Regulator has saved thousands of dollars for stockmen by protecting horses and cattle from serious illness.

Now is the time to get your stock in shape for the hot weather. Pratts Animal Regulator will do it. It is

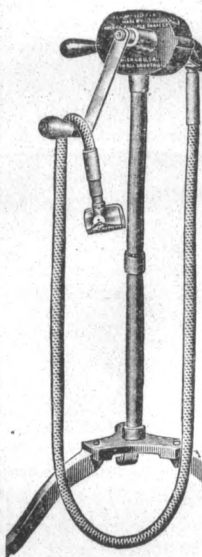
Guaranteed or Money Back

We know that you will at once see great improvements from its use and we want you to try it at our risk. Give it to every animal—every day. If not satisfied your dealer will refund, without question, all you spend.

Get some today. Wasted time is wasted money. All dealers have Pratts Animal Regulator in 25 lb. pails for \$3.50. Also in smaller sizes and in 100 lb. bags.

Pratts Colic Cure will save your horse

Our latest book about Horses, Cows and Hogs is Free for a Postal.
PRATT FOOD CO., Dept. 28 Philadelphia, Pa.



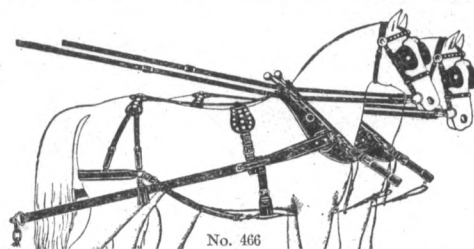
Clip Your Horses and Cows with this Machine

Horses should be clipped in the spring. Clipped horses thrive on less feed, are healthier, look better and do better work. They dry off quickly, rest well and are not prone to have colds, etc., like unclipped animals. Clip the flanks and about the udders of your cows every three or four weeks. This makes it easy to clean the parts before milking and insures clean, uncontaminated milk. The easiest and quickest way ever devised for clipping horses and cows is with this

Stewart Ball Bearing Clipping Machine

Anyone can operate it. It turns easier and clips faster than any other. The gears are all of cut steel made file hard. They are enclosed, protected and run in oil. It has six feet of high grade flexible shaft, and the celebrated Stewart single nut tension clipping head, highest grade. The price all complete, as shown, is only **\$7.50**. Get one from your dealer or send \$2 and we will ship C.O.D. for the balance. Write today for new 1911 catalogue.

Chicago Flexible Shaft Company
115 La Salle Ave. CHICAGO



HARNESS HORSE COLLARS

Ask your dealer for the Label.

Made and Warranted by

ARMSTRONG & GRAHAM

WHOLESALE ONLY. DETROIT. ESTABLISHED 1880.

Prairie Stock Farm

OUR LAST IMPORTATION OF
Percheron Stallions and Mares

We cordially invite everybody to come and visit our stables and learn our method of doing business. We can sell you a first-class stallion or mare for less money than any importer in America. Terms to suit purchasers.

Niles is ninety miles from Chicago on the Michigan Central.
E. METZ HORSE IMPORTING CO., Niles, Mich.



When writing to advertisers mention The Michigan Farmer.

parts corn and one part of a mixture of oats, shorts, bran, and oil meal. This seems to be just about the best ration that we have ever fed to sows.

This matter of laxative feed is too often overlooked. We had our eyes first opened in regard to the matter by observing that those sows which farrowed late in the spring, after pasture had opened up, rarely had trouble in farrowing. Sows that farrowed safely and raised larger litters than those that farrowed early. We are not going to claim that the laxative effects of the green feed is entirely responsible for this difference. Yet to exercise and to the laxative feed do we give nearly the full credit. The weather, of course, has much to do with saving or losing the pigs after they are farrowed, but it cannot have anything to do with the act of farrowing and that is where one of the greatest losses occurs.

A few days before the sow is due to farrow, and especially when she has begun to show signs of approaching parturition, she is put into one of the pens in the hog house. She is not confined in this small pen and deprived of all exercise, as that would be injurious, in that it would tend to make the sow's system cloy with feed and reduce her vitality. If the weather is fit the sows are usually turned out into the big adjoining lot during the day. At all times they have access to the outside pens attached to the hog house.

After the sows are brought in for farrowing their feed is reduced slightly in quantity and bran is substituted for some of the corn. Plenty of good fresh water is supplied twice per day. The pen is kept clean and thinly bedded with fine litter. A fender to protect the little pigs is made by spiking 2x8's horizontally eight inches above the floor and entirely around the pen. On the day of farrowing the sow is fed little or no feed. The second she is given about half the usual amount if she appears to be doing well. About the fourth or fifth day, if the weather is such that she can get outside with her pigs, she will be getting a full feed again. In regard to feeding at farrowing time we can learn a good lesson from nature. Take the sow that steals away and farrows under the edge of some old hay stack. If observed closely it will be found that she eats but very little for two or three days before farrowing. For a couple of days after she may not leave her nest at all. Then she begins by going out for a drink and a little feed. Her pigs are usually strong, lusty fellows and it is very seldom that she loses one. Nor is the sow suffering with garget or any other disorder.

Whenever we find it necessary to help a sow in farrowing we feel that it is due to our poor methods of feeding and management. However, one must always be prepared for the worst. We have just gotten a pair of highly recommended pig forceps which we hope it will not be necessary to use. We doubt very much if they will be superior to our old wire hook. This hook is made from a piece of number sixteen wire about a foot in length. At one end is bent a ring large enough for a finger or two. At the other is made a hook. To make this hook about three-quarters of an inch at the end of the wire is sharpened. Then the sharpened part is bent back to an angle of 45 degrees with the main wire. Great care must be exercised always. The individual peculiarities of the different sows must be studied. It sometimes seems that a man is successful with hogs to just the extent to which he puts his brain into their care.

Iowa. H. E. MCCARTNEY.

FEEDS AND FEEDING AND THEIR RELATION TO HEALTH.

In a talk on the above topic at the recent Round-Up, Dr. R. P. Lyman, of M. A. C., described the horse as an animal with a small stomach, which makes the feeding problem not nearly so easy as in the case of man. Whatever goes into the stomach of the horse has to pass on, as it is impossible for the horse to vomit, as the dog or pig. Another peculiarity of the horse is that it has no gall bladder, hence idleness is more of a disturbing factor to the horse than to other animals. The horse has a total length of intestines of 90 feet and here is employed the important functions of digestion and nutrition.

Moldy, dusty and dirty foods are the cause of heaves, which cause an enlargement of the lungs to nearly fill the space operated upon by the breast muscles. When the breast muscles cease to expand and contract sufficiently for respiratory

purposes the abdominal muscles are called into play, which explains the movements of the horse's sides near the flanks, so easily recognized among horses with heaves. Idle horses should have their grain rations reduced as the work ceases to prevent azoturia. When the latter disease occurs, stop at once. Many a horse might have been saved if this precaution had been obeyed. The effect of over-feeding, causing founder, is the spreading of the laminae or layers above the hoof, and the "sweeney" of the chest. Lymphangitis is more prevalent among drafters and is the inability of the system to carry off the waste matter.

The horse should do most of its roughage eating at night, and should only have a light feed of hay and grain at noon. The practice of watering horses when warm or at noon before eating is to be condemned. The blood is mainly out of the veins of the stomach and in the surface veins when the stomach is empty and the horse has been exerting itself. When the stomach is cooled with water and filled with feed, trouble is likely to ensue. At any time there is no real merit in watering before feeding. The horse does not lie down and rest all night, but is up and down, takes some hay while up and then lies down again. For this reason the hay feed should be mainly at night and not at noon. Ensilage is not a fit food for horses. Corn is more likely to set up fermentation in the stomach than oats.

FORAGE CROPS FOR HOGS.

Animal foods will produce good results only when fed in rations that are properly proportioned, so that all parts of the animal will be well-nourished. Corn is not a complete animal food. Only foods that contain the required amounts of ash and protein can furnish the nutriment necessary for the formation of bone and muscle. To secure the best growth and development the growing animal must have a ration containing a high percentage of protein and ash. The high cost of concentrated grain and by-product feed stuffs makes their general use almost prohibitive to the grower of market hogs. This brings us down to the question of securing the necessary ash and protein in the cheapest and most palatable form.

In addition to securing suitable food nutriment which affect all growing and breeding animals there are other factors affecting the food of growing pigs and breeding swine, two of which are bulk and succulence. Fortunately, the best and cheapest sources of protein and ash supply the necessary bulk and succulence in the most healthful and palatable form. In various sections we find successful breeders and feeders of hogs who derive an increased value from their corn by feeding it along with alfalfa, clover, cow peas, field peas, soy beans, blue grass, rape, rye, and other bulky and succulent feeds that will furnish the necessary ash and protein to make up a suitable ration for the hogs.

Carefully conducted experiments in hog feeding prove that it is possible to reduce the amount of grain foods about 40 per cent by the judicious use of pasture and forage crops. As soon as the hogs have consumed one crop another should be ready for pasture. Land that is used for hog pasture gains in fertility very rapidly, especially if the legumes (nitrogen gathering plants), are grown for pasture crops and the land fitted and re-sown as soon as the hogs are turned into a new pasture.

Many farmers advocate growing pigs on forage and pasture alone, but my experience with alfalfa, the queen of forage plants, convinces me that it pays to supplement it with some kind of grain foods. While living in the Arkansas Valley where alfalfa and blue grass thrive I found that better results could be attained by feeding considerable grain to my pigs and breeding swine when they were being pastured. A pig that is grown on forage crops with just enough grain foods to maintain an even and vigorous growth is capable of eating, digesting and assimilating more grain food when placed in the fattening yards than one that has been developed on a less bulky ration. The forage ration enlarges the digestive system and prepares it for the heavy feeding period to follow. I have made a careful study of this phase of hog feeding and it will be my purpose to discuss the kinds of forage and methods employed in utilizing these crops by successful breeders and feeders in the states of Kansas, Maryland and New York, as well as the methods practiced in growing crops and planning a rotation that will

What Does It Cost To Operate An Automobile?

THAT depends almost entirely on the make of car you buy. The first cost of some cars is little and the operating, or second cost, is big.

¶ The logical and safe thing is to consider the second cost first, and the first cost last.

¶ In designing, in selecting material, in manufacturing. Overland cars, we have spared no effort or expense to produce cars that will give utmost service at the least possible expense.

¶ That our policy is correct is amply proven by the unparalleled success of the Overland—the most economical car in the world both in first cost and second cost.

¶ There are now about one thousand Overland dealers. One of them wants the opportunity to prove to you by actual comparison and demonstration the full significance of the strong statement just made.

¶ Twenty-five thousand enthusiastic

Overland

owners will vouch for that statement in no uncertain terms. Below we reproduce one typical, unsolicited expression. We have purposely selected from the mass the letter of a physician, because, of all men, he is the one who must have an absolutely dependable, economical car for continuous service—summer and winter, day and night.

OVERLAND AUTO CO., TOLEDO, OHIO.

GENTLEMEN—When I talked of buying an automobile more than a year ago there was so many very important questions that no one was prepared to answer. They were concerning the upkeep of the machine. I have kept a careful tabulated account of my year's expense, and am glad to furnish you with this information.

With the exception of ten days' sickness last winter, my machine has been run as a physician runs a machine in his practice scattered all over the city, besides taking many pleasure rides of evenings and some Sunday rides to adjoining country towns.

My gasoline cost me for the year	\$59.67
Lubricating oil	8.65
Transmission grease	2.63
Anti-freeze fluid	3.25
Battery cells	4.25

This makes for the year an average of 21½c. per day for actual running expenses.

Other expenses, including all supplies and mending tubes, tires, patches, etc., as well as licenses and all expenses connected with owning a machine, cost an additional 23¼c. per day, making a total of 45c. per day. I have not heard of any car that compares with the Overland in economy for upkeep.

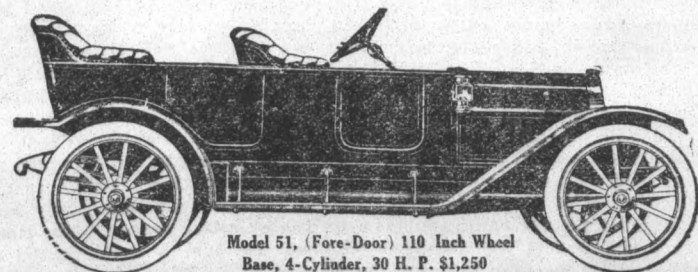
Yours for the Overland.

W. R. STEWART, M. D.

¶ It is, of course, impossible for any manufacturer to say how much it will cost an owner to operate his car. There is a wide range of difference in conditions and in drivers. The very nature of Overland manufacturing methods insures a car that must perform be efficient, reliable and economical. We know from our own experiments and from the actual experience of Overland owners that it offers the greatest automobile value when purchase price is considered and that it can be operated and maintained at less cost than any car of similar rating. We make five models, all with high duty, quiet, four cylinder motors, from 20 to 40 horse-power. There are twenty-two body styles, priced from \$775 to \$1675. This car shown below is Model 51, with fore-doors and center control, that is to say, the shifting lever and emergency brake lever are inside the car in the center at the left of the driver. Notice on other fore-doors makes the levers are outside, proving that the body is patched up with the fore-doors to meet the latest ideas. Model 51 has a thirty horse-power, four cylinder motor that is a marvel of efficiency, quietness and reliability. Dual ignition, magneto and battery, 110 in. wheel base, seats five people, tires 34x3½ in., three speeds reverse and selective. Brakes internal expanding, external contracting.

Get in touch with the OVERLAND dealer nearest you and compare this car with others about this price. WRITE FOR CATALOG.

The Willys-Overland Company
160 Central Avenue TOLEDO, OHIO



Model 51, (Fore-Door) 110 Inch Wheel
Base, 4-Cylinder, 30 H. P. \$1,250

furnish bulky and succulent foods during the whole of the growing season.

Alfalfa.

As a forage crop for hogs alfalfa is unexcelled by any forage or pasture grass. Not only is it wonderfully productive under a wide range of conditions and circumstances, but it is one of the most nutritious of plants and is relished by hogs of all ages when green or when cut and cured for hay. It is rich in ash and protein, thus providing the elements required to balance the corn ration in the most economical manner. All feeders who are interested in producing pork at the lowest cost, should investigate the value of this highly nitrogenous forage crop for it can be grown with great benefit to their land and at a low cost. It requires study and judgment to successfully grow alfalfa, but when once well seeded, it is easy to raise and will improve the soil rapidly. When cut for hay and well-cured it makes good winter feed. The best way to use alfalfa in the winter is to cut or grind it fine and mix it with the hog's slop. This keeps the bowels and digestive systems in the best condition. Constipation is one of the worst dangers that feeders have to contend with in the winter when the animals do not exercise freely, but when alfalfa is cut and fed as a part ration, there is no difficulty from this source as the droppings will look as green and fresh as when the animals are running in a pasture. When pasturing alfalfa we find it best to allow the hogs the run of a large field and cut what is not eaten for hay the same as if it were not used for pasture. This does not seriously injure the hay and the danger of too close cropping is eliminated. Pigs that have a wide range root less. I prefer to feed about two bushels of corn each day to 50 mature breeding hogs that are running on the alfalfa fields and about the same amount to 100 four or five months' old pigs. The hogs should be removed from the pasture while being finished for market, to promote the firmness of their flesh and improve its flavor. About six weeks' grain rations will put a pig in shape for market after they are removed from alfalfa pasture. Where alfalfa thrives is heaven for the hogs and such a combination as corn and alfalfa will bring in the greatest possible returns in hog growing and feeding. Where alfalfa thrives it will furnish grazing from the fore part of May until frost comes in the fall.

Common Red Clover.

There is no plant more valuable in a northern climate than our common red clover and when it is in full bloom it will carry more hogs to the acre than any other forage crop, with the exception of alfalfa. After it has been closely pastured, a few wet days will bring it on again and the hogs may again be turned on the field. This crop has two growing seasons. It makes its most vigorous growth from the middle of April to the middle of June, and its second growth from the first of August until cold weather comes. Pasture close to the first of July and withdraw the hogs until the middle of August, or later if the season is extremely dry.

Blue Grass.

Blue grass is an excellent flesh producer, but should not be pastured until it forms a close turf. The best blue grass pastures are those that have been seeded for a number of years. Like other grasses it should not be pastured too close, but it will stand closer grazing than many kinds of forage and grass. When it is desired to seed down a small yard or pasture to blue grass, sow the seed and throw some shelled corn around where the seed drops and the pigs will do the rest. This is a slovenly method, but is practiced by many good farmers when it is difficult to plow small yards and pastures. One great advantage of blue grass pasture is the fact that it can be utilized during the winter, providing a good fall growth is left for winter grazing. The cold weather does not injure the forage to any serious extent, and it is available at a time when other kinds of forage are frozen or dried up. Great care should be exercised to get the best cleaned seed for many times a failure to get a catch is due to buying adulterated seed.

Cow Peas.

Cow peas, like clover and alfalfa, are soil improvers and afford large crops of excellent forage for hog pasture. They are to the south what clover and alfalfa are to the north and west— forage crops well adapted to the needs of the region. In their habits of growth they resemble beans more than peas. I have found this crop excellent for hogs and obtained remarkable gains in weight on our Kansas

farm. The tenth of August the vines measured eight and nine feet long and the peas were fully grown and matured by the middle of September. In growing cow peas we should keep in mind that it is a southern crop and when grown in a higher latitude it makes its best growth during the warmest weather. Planting should be delayed until warm weather.

When pasturing cow peas turn the hogs on the field when the pods are beginning to ripen. An acre of cow peas will provide forage for 15 or 20 hogs for a number of weeks and the gain in fertility from the nitrogen of the plants and the droppings of the hogs will more than offset the value of the forage eaten. The gain in weight will represent so much clear profit and the feeder will be better off by a ton of choice pork for every two acres of thrifty cow peas pastured with good hogs. The hogs should be allowed on the field only when eating, so as to prevent the vines from being trodden under foot and wasted.

Common Field Peas.

This crop is usually pastured before the peas are ripe, the common practice being to turn the hogs into the field about the time the peas are fit for table use, and allow them the run of the lot until they have consumed the whole crop. They eat most all of the vines and the waste is small. Sow small fields and sow often. Never turn the pigs into a field until they have become accustomed to the change of food, as there is more or less danger of their becoming deranged and unthrifty. When the pasture grows faster than the pigs can consume the feed they may be cut and cured for hay or plowed down. The field should be well-fitted and the peas drilled or broadcasted at various times during the spring, so that the pigs may have green peas at all times during the season.

Soy Beans.

Soy beans are an excellent nitrogenous food, and when the pigs have a field of this crop for pasture they will consume the beans, leaves and stalks, leaving nothing but the stubble. Little grain is required when soy beans are available. Soy beans are soil improvers and better adapted as a forage crop for swine than many other crops that seem to find popular favor.

Rape.

This member of the turnip family is pre-eminently a forage plant for sheep pasture, but many hog growers are utilizing it with success. When pastured with hogs it should be pastured in small lots at a time to avoid having the whole field trampled down. This crop does not possess as high feeding value as many other crops, but it is very conducive to good gains while the animals are being fed grain, and on this account is well thought of by many feeders. It is especially adapted to late summer and fall feeding. It may be sown in drills or broadcast. When buying seed select nothing but the Dwarf Essex seed, for this variety has given better results wherever it has been grown than the other varieties.

Winter Pasture.

Every swine grower should plan to have some late fall and winter pasture for his hogs, especially if in a climate where the winters are rather open. Wheat or rye makes good winter hog pasture, and the saving in the amount of grain required is large. In many sections of the western states the hogs are wintered largely on the wheat fields and very little grain is required to keep them until spring when the other forage crops are available. In this way it is profitable to carry over fall pigs and make heavyweights of them the next fall and early winter.

No matter what kind of forage crops are used, one crop should be ready for pasture as soon as the other is consumed. The soil may be improved rapidly by growing a succession of forage crops and feeding grain foods with them. As ordinarily managed hogs are great wasters of fertility, but when it is planned to utilize the fertility that is brought to the soil through their feeding they can be made a highly important factor in improving and renovating old fields.

New York.

W. MILTON KELLY.

Tests show that a cement floor is colder than a board floor where other conditions are the same. But while this fault exists and can be demonstrated by the use of thermometers, practical stockmen have gotten around the difficulty, and that by no extra expense. With a good supply of straw on the cement it is found that no evil results came from the animals lying thereon and the influence of the cement on the feet of the stock when standing is better in some regards, than boards.

Attention, Horse Owners!

Send for Handsome Book Absolutely FREE

You Can Train Your Colt in 8 Hours or Break Your Horses of Any Bad Habits by Prof. Beery's Simple Methods

Prof. Jesse Beery, king of horse tamers and trainers, has retired from his marvelous career in the arena and is now teaching his wonderful system by mail to thousands of interested horse owners.

Prof. Beery is acknowledged to be the world's master horseman. His wonderful exhibition of taming fierce, man-killing horses and conquering horses of all dispositions have thrilled vast audiences all over the world. He can teach you the same simple, yet marvelous, principles which have brought him such remarkable success, so that you can take the most vicious horse and subdue him in a few minutes. He can teach you to train a green colt, break any horse of bad habits, teach a horse to drive without reins, tell the disposition of any horse at a single glance, train him to do difficult tricks and, in fact, gain complete mastery over any horse, young or old.

You can take a useless and dangerous animal and double his value in a short time by these easy, simple methods. And these horses will be cured of shying, kicking, balking, biting, fear of automobiles and all other bad traits forever.

Prof. Beery's lessons are simple, thorough and practical.

\$1,200 to \$3,000 a Year At Home or Traveling!

Competent Horse Trainers are in demand everywhere. People gladly pay \$15 to \$25 a head to have horses tamed, trained, cured of bad habits, to have colts broken to harness. A good trainer can always keep his stable full of horses.

What Prof. Beery's Students Are Doing

Breaking horses of every conceivable habit, no matter how long standing it is. Training colts to be absolutely trustworthy and useful in 8 hours. Riding with perfect ease and control. Training horses to go all the saddle gaits and do fancy steps. Training horses to do the most difficult and interesting tricks. Telling any horse's disposition at sight—judging a horse right the first time. There is no limit to what a horse can be taught when you know how.

We receive hundreds of letters like the following: J. O. Brown, Cameron, Mo., R. R. 4, writes, "Last month I made \$30.00 training colts, besides my regular farm work."

A. W. Bower, Tipton, Ind., writes, "You have made me a practical colt trainer, have all the work I can do and make more money than ever before."

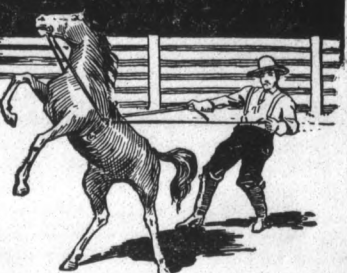
S. M. Ryder, Mercersburg, Pa., writes, "I am making money buying 3-year-old kickers cheap, handling them a few days and selling them, perfectly broken, at a large profit."

Levi Smith, Admire, Kans., R. R. 2, writes, "I have used your methods on some very mean and vicious horses and had good success. I broke a five-year-old from kicking in two hours. The owner offered to sell it for \$75.00, but after I trained her he refused \$175.00."



PROF. JESSE BEERY

42 Academy St. Pleasant Hill, Ohio



The Only Instruction of Its Kind in the World

Never before in the history of the world has there been offered such a wonderful opportunity as this—a chance to learn a money-making, fascinating profession right at home, under the instruction of the acknowledged master-horseman of the world.

If you love to travel, to give exhibitions, to train your own and neighbors' horses, write at once for handsome, free prospectus, also big FREE CIRCULAR of the Beery Exhibition.

7,000 Satisfied Graduates

There are now more than 7,000 satisfied and successful Beery graduates in all parts of the world. They are reaping the benefits of their foresight in taking Prof. Beery's wonderful course. They comprise Farmers, Professional Horse Trainers, Horse Breeders, Riding Masters, Teamsters, etc. They are able to pick up plenty of money on the side practicing what Prof. Beery taught them. Why not become one of them?

FREE BOOK!



PROF. JESSE BEERY,
42 Academy St.,
Pleasant Hill, Ohio

Name _____

Postoffice _____

State _____

R. F. D. _____

Cut Out This Coupon and Mail It Today!

(15)

Your Money Back if it Fails

CRAFT'S

Guaranteed

Distemper Remedy—Cures Quick

Don't neglect your horses when they show signs of distemper, epizootic or pink eye. Stop the disease at the start. It is so often fatal and generally leaves its victims blind or with some defect. Distemper is a germ disease. Get after the germ and cure your horses, sheep and dogs with Craft's Distemper Cure.

For 19 Years Acknowledged the Best
The Safest, Quickest and Most Certain Cure

For Distemper, Influenza, Coughs, Colds, Catarrhal Fever

We want to prove to you that Craft's Distemper Cure is the one remedy for Distemper, Coughs, Colds, Pink Eye, Sore Throat, Etc. Buy a bottle under our "money-back" guarantee. Sold by nearly every druggist. Price 50c a bottle; \$1.00 size, three times larger. If your druggist hasn't it we will send it prepaid on receipt of price.

Craft's cures because it is a germ destroyer which drives out poisons and disease. Puts every organ in a healthy condition. A quick and efficient, yet harmless antiseptic and dependable tonic with no bad after effects. But be sure to get the genuine. Imitations are never so good. Read this: "I have used every distemper cure for horses and have obtained better results from Craft's than from any other. I would not be without it." HARRIE JONES, Rushville, Ind.

Three Horse Books FREE

Three practical veterinary books. Tell how to cure all common diseases of horses, sheep and dogs. Cut out and send the coupon before the supply is gone. We have a limited edition. Do it now.

Wells Medicine Company, 11 Third Street La Fayette, Ind.

Wells Medicine Co., 11 Third St., La Fayette, Ind.
Please send me your valuable Veterinary Library free of all cost to me.
Name _____
R.R. _____
Town _____
State _____

When you are Writing to Advertisers please Mention the Michigan Farmer

THE NATIVE LAMB AS A FEEDER FACTOR IN MICHIGAN.

The above subject was ably discussed at the recent Round-up Institute, by Jas. N. McBride, of Shiawassee county, in which section of Michigan lamb feeding has attained its greatest development. A synopsis of his talk follows:

The feeding of lambs has not settled down to a final and finished line of operations. Competition for the range lamb is strong and the Michigan feeder pays more than he can really afford to because of this competition among feeders. The San Luis Valley calls for at least 100,000 to be fed on peas. Northern Colorado, when the alfalfa crop is good, doubles this number. The Arkansas Valley has great capacity for feeders. Then comes the cornfield demand from the great corn belt. All these competitors for feeding lambs, while largely a compulsory outlet for feed, must be supplied, and Michigan feeders to get lambs must play the game to the limit.

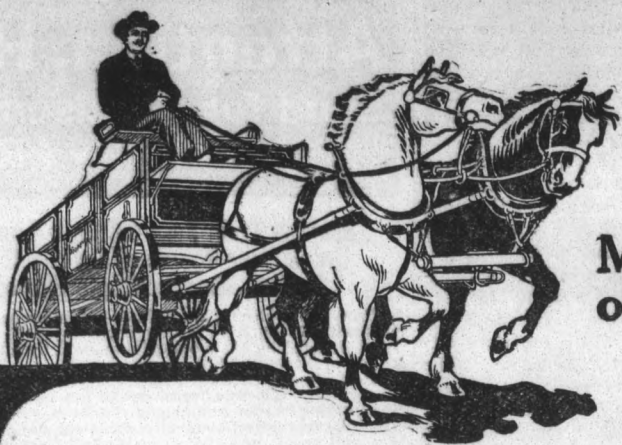
When it comes to the market for the finished product, Michigan feeders have little, if any, advantage, as Chicago is often quite as good a market as Buffalo. At this point and under these conditions, arises the question: is there any possible chance to utilize native feeders to compete with the western lamb? The early lambs from coarse and middle wool flocks in Michigan go best to market in mid-summer, when they are taken off the ewe with their milk fat still on and when the southern lambs have been marketed. The lighter end of this grade of feeders can best be shorn in September, ridding them of external parasites and making them a pasture and light grain proposition until some time in December. A carload of 2-4 native lambs shorn in September reduced the buying price one cent per pound of live weight and in December, when top woolled lambs were selling at \$6.50 in Chicago, these clippers brought \$6.25.

The sheep owner in Michigan loses in the usual fall clean-up in having no feeder outlet, and his whole bunch of lambs go at a lower price because of this. The light lambs are a loss to grower and killer, and should have been finished up by feeding. Here is where the shearing proposition pays.

On rough or hilly lands, or the northern range country, I would recommend a strong infusion of Merino blood, where flocks exceed 50 ewes. The point is that as a pasture proposition the Merino stock flock together and will stand more neglect than the English breeds. If we are willing to give English care to their breeds, and finish on turnips and rape in small flocks, they are profitable. Where this is not possible, use Merino grades. An additional reason is seen in their lighter weight and excellent feeding qualities. The Merino also is not so subject to the ravages of the stomach worm. Many Michigan farmers have been driven out of the sheep industry by failure to fortify the English breeds with an adequate supply of bone-making feeds. The Merino bloods would have succeeded where the English type failed. The infusion of Merino blood means not a permanent breed, but the opportune mingling of these bloods, for perhaps not to exceed two generations. No other state has the conditions of good flocks to get stock from, i. e., a continual replenishment of foundation stock from the small farm flocks of coarse wools.

Michigan can grow alfalfa which, as a feeding roughage contains about 150 lbs. of ash to the ton, and with it we can put up a fight as mutton finishers that promises more profit than at present. A division of the expense incidental to getting the western lambs would in itself be a fair profit. I am not certain but that the necessities of the case demand some concerted action on the part of sheep owners, and possibly from the state authorities, similar to that of improving breeds of cattle as is now carried out by their live stock field man. We must be clothed as well as fed, and more people each year demand good woolen clothing.

It is estimated that about 15,000 cars of cattle will be shipped from the Panhandle of Texas to the Kansas and northern pastures this spring, or 5,000 cars more than were forwarded last spring. Shipments began a few weeks ago, and it is stated authoritatively by those who know that reduced numbers will be sent to northern pastures in Montana and Colorado, the shrinkage being placed at about 25 per cent. Many of the cattle are going to Kansas pastures.



Studebaker

Millions Know the Value of That Name on a Wagon

For the past sixty years the STUDEBAKER has set the standard in Farm Wagons. Confidence in Studebaker value, and in Studebaker service, has been handed down from father to son.

Today that confidence is even stronger, because STUDEBAKER wagons are better than ever. Year by year improvements have been made wherever constant watchfulness has shown a practical improvement possible.

The one word—Quality—explains Studebaker supremacy. Quality of material and Quality of workmanship has sent STUDEBAKER wagons to every civilized land.

The best proof of how Studebaker service is appreciated is shown by the fact that the Studebaker plant covers over 101 acres of ground—the largest vehicle factories in the world.

If you want the wagon of perfect design, correct proportion, matchless strength, finest appearance, longest life and lightest draft, call on the Studebaker dealer and choose from his display.

STUDEBAKER BROS. MFG. CO.
SOUTH BEND, IND.

"The Farmer's Friend"—Free

We have a book called "The Farmer's Friend" which illustrates and describes the Studebaker wagons in detail and explains why they are the most economical to buy. Send your name and address and we will mail you the book free and give you the name of the Studebaker dealer nearest you.

Adv. No. 1431

THE OLD

THE NEW

Which Way is Best?

The hard, irksome, sweaty labor with a hand shear; the tired, aching, swollen wrist of the shearer; the maimed and mangled sheep from it; the uneven shearing, cutting the animal in some places and leaving an inch of wool in others; the fleece in shreds and tatters and spoiled with second cuts, OR the easy turning, fast, even shearing of a

Stewart No. 9 Ball Bearing Machine

that anyone can do; the fleece taken off smoothly and quickly in one unbroken blanket, with every fiber at its longest; with not a scratch of any kind to the sheep and with all the wool secured, enough more, at the present price of wool to bring you from 15c to 40c more from each sheep! That's what you can do with this Stewart No. 9 Machine. It requires no expert labor to use a Stewart Shearing Machine. Any of the help can do it. The machine, all complete, with ball bearings in every joint and having a ball bearing shearing head, and including four combs and four cutters, costs only \$11.50. This machine turns easier and shears faster than any other shearing machine we have ever produced. It is a big advance over anything else on the market. Get one from your dealer or send \$2 and we will ship C. O. D. for the balance. Write today for new 1911 catalogue and our free copyrighted book, "Instructions on Shearing Sheep" by the leading American expert.

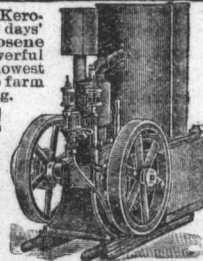
CHICAGO FLEXIBLE SHAFT COMPANY, 115 La Salle Ave., CHICAGO

Use KEROSENE Engine FREE!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing.

Gasoline Going Up!

Automobile owners are burning up so much gasoline that the world's supply is running short. Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline. No waste, no evaporation, no explosion from coal oil.



Amazing "DETROIT"

The "DETROIT" is the only engine that handles coal oil successfully; uses alcohol, gasoline and benzine, too. Starts without cranking. Basic patent—only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h.p., in stock ready to ship. Complete engine tested just before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric-lighting plant. Prices (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate amazing, money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, we will allow you Special Extra-Low Introductory price. Write! Detroit Engine Works, 149 Bellevue Ave., Detroit, Mich.

Murray Wants His 1911 Catalog In Every Farm Home

Wonderful Bargains In Vehicles and Harness

Before you buy any kind of vehicle or harness, send for the 1911 Free Murray Style Book and compare Murray Prices with others. This Big 178 Page Book costs you nothing and is exactly what you need. Every Farmer in America should have it in the home handy for use. 251 illustrations, many in color; 138 styles of Carriages, 74 styles of Harness. See our Wagon Leader of special construction, page 101, and Big Special Harness Bargain, page 143.

"Highest Award" Buggies Direct From Murray's Factory—Four Weeks' Road Trial—Insures Safe Delivery—Two Years' Guarantee

Why should you even think of buying Buggies, Harness or Saddlery from any Dealer, Agent or Mail Order House, when you can save 30 to 50 per cent by dealing direct with the old, reliable Wilber H. Murray Mfg. Co., Factory in Cincinnati? Isn't it just good "horse sense" to keep all these middlemen's profits in your own pocket? Even if you are prosperous, there is no real reason why you should throw away your hard earned money.

"Murray" 30 Day Free Road Test

We don't ask you to buy a "pig in a poke". We want you to act with your eyes open—everything in plain sight—know exactly what you are doing. That's why we say to you, "Test any Murray Pleasure Vehicle 30 Days Free before you buy". Just hitch up and use it every day for a whole month, if you like, then make up your mind. And, remember, when you do decide to buy we stand squarely behind you with the famous Murray Guarantee of Quality.

The Wilber H. Murray Mfg. Co., 354 E. 5th St., Cincinnati, Ohio

Mail Coupon Now!

Save \$30 to \$50

We Want our 1911 Catalog in the Home of Every Farmer in America. Mail Free Coupon Right Now!

To The Wilber H. Murray Mfg. Company,

354 E. 5th St. Cincinnati, O.

Please send me my copy of the Big FREE Murray Style Book, without obligation on my part.

Name _____

Address _____



FOR FARM SHOP HOME USE **ELLIS ENGINE** WE PAY THE FREIGHT.

KEROSENE

gasoline, distillate, any fuel oil, perfectly—without change
Cheapest, Safest, Simplest POWER

for barn work, house work, mill work, dairy work, well work, spraying, sawing, irrigation, electric lights, pumping. Astonishing success. More power gallon for gallon. Hundred dollar parts. Patent throttle gives three engines for the price of one. Catalog free—tells how.

Double duty tank revolutionizes cooling systems. Force feed lubricator—perfect oiling. Automobile muffler. Ball bearing governor. Starts instantly. No pre-heating. No crank. Experience unnecessary. Women can operate. Vibration eliminated. Quality high—price low. Comes complete.

Always hungry for work—and thrives on it.

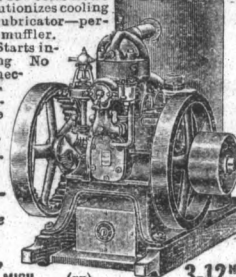
FREE TRIAL

No obligation till satisfied. 10-year guarantee.

"Engine Facts" free write for it NOW.

Ellis Engine Co.,

49 Mullett St., DETROIT, MICH. (EX) 3-12



Anyway, Try this DIGGER



Saves you at least 15 cents a bushel on the cost of digging. Gets the potatoes out of the ground clean and whole. All sizes. Elevator diggers for large fields. Success Jr. for small patches. Write for new catalogue of Diggers and Farm Machinery and let us tell you how you can try a Farquhar.

A. R. FARQUHAR CO., Ltd.
Box 210 York, Pa.

THRIFTY STOCK

PAYS
MORE MONEY
GIVES
MORE SATISFACTION.

NO STOCK CAN THRIVE IF PESTERED
WITH LICE, TICKS, MITES, FLEAS,
SCAB, MANGE, AND OTHER SKIN
DISEASES.
TO CLEAN OUT THESE
PARASITES, GUARD AGAINST
CONTAGIOUS DISEASES,
CLEANSE, PURIFY, AND
DEODORIZE. USE

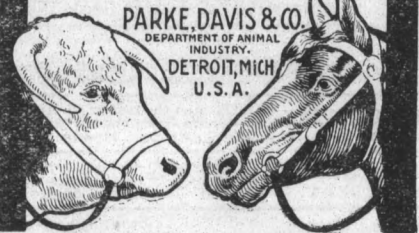
**Kreso
Dip No. 1**

BETTER THAN OTHERS, BECAUSE, IT IS
STANDARDIZED,
UNIFORM, DEPENDABLE, EFFICIENT. ONE
GALLON OF KRESO DIP NO. 1 MAKES 60
TO 100 GALLONS OF SOLUTION (DEPEND-
ING UPON WHAT USE IS TO BE MADE OF IT).

A REAL NECESSITY ABOUT
HORSES, CATTLE, SHEEP, SWINE,
DOGS, GOATS AND POULTRY.

FOR SALE BY ALL DRUGGISTS.
WRITE FOR FREE CIRCULARS. ASK FOR LEAFLET
DESCRIBING A NEW CEMENT HOG WALLOW, IF YOU
ARE INTERESTED.

PARKE, DAVIS & CO.
DEPARTMENT OF ANIMAL
INDUSTRY.
DETROIT, MICH.
U. S. A.



EFFECTUAL

The most effectual remedy in use for
the cure of ailments of horses and cattle is

**GOMBAULT'S
CAUSTIC BALSAM**



Used as a Blister
or Lotion.

This preferred remedy is prepared ex-
clusively by J. E. Gombault, ex-Veterinary
Surgeon to the French Government Stud.

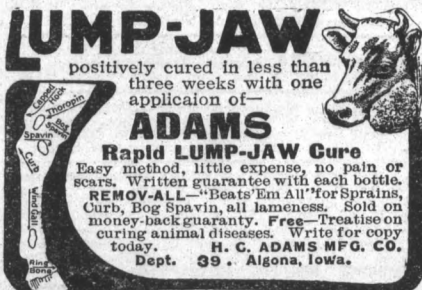
As a HUMAN REMEDY for Rheu-
matism, Sprains, Sore Throat, etc., it
is invaluable.
Every bottle of Caustic Balsam sold is
warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for its
use. Send for descriptive circulars, testimo-
nials, etc. Address
THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

LUMP-JAW

positively cured in less than
three weeks with one
application of—

ADAMS

Rapid LUMP-JAW Cure
Easy method, little expense, no pain or
scars. Written guarantee with each bottle.
REMOVES ALL "Beats" and "Bumps" for Sprains,
Curb, Bog Spavin, all lamenesses. Sold on
money-back guaranty. Free—Treatise on
curing animal diseases. Write for copy
today.
H. C. ADAMS MFG. CO.
Dept. 99, Algona, Iowa.



DUNHAMS' PERCHERONS

Fourth importation for 1910 arrived August
4th. Our present lot, we believe, equals
or surpasses any we have heretofore
collected. More horses of bone, size and
first-class quality than ever. Numerous im-
portant prize winners. Write for catalogue.

W. S., J. B. & B. DUNHAM
Wayne, Illinois

ALWAYS mention the MICHIGAN FARMER
when you are writing to advertisers.

LIVE STOCK NOTES.

This has been a phenomenal winter for
egg production. It appears that farmers
are paying more attention to poultry than
in the past, and more hens are held than
formerly. Then the mild, bright, sun-
shiny days have been favorable to the
production of eggs, and there was never
before a winter period when hens laid so
freely. The markets of the country have
been receiving unprecedentedly large
supplies of eggs, the southwest sending
especially liberal consignments to Chicago
and other western markets, and prices
have undergone such a great fall that ev-
erybody has been eating eggs in place of
beef, mutton, pork, and other meats, eggs
being so much cheaper. The cold stor-
age eggs go a begging, and the consump-
tion of meats is lowered to a degree that
injures the live stock trade.

The United States Department of Agri-
culture has issued the regular report on
the numbers of live stock of different
classes held by farmers on Jan. 1, and
the report is not received with much fa-
vor, as it presents as facts statements
that are known to be far from true. For
instance, it gives the farm value of hogs
Jan. 1 at \$9.35 per head, or 20 cents more
than a year earlier, whereas the market
price was actually much lower than a
year earlier.

It is reported that cold storage ware-
houses in this country are carrying fully
sixty million pounds of creamy butter,
and holders are wondering how they are
going to dispose of it all, the unusually
large winter production of butter having
made a bad market for storage butter,
which was put in at prices that will not
let owners out even, after paying storage
charges.

Too many stock feeders are holding
their hogs until they attain extremely
heavy weights, the incentives to following
this course being the great abundance of
cheap feed and the open winter, which
has rendered fattening stock much
cheaper than in past winters. The de-
mand calls for lighter hogs, and these
big ones must be sold on the market at
a great discount. Reports come from all
around that farmers are realizing the
necessity for increasing their pig "crops,"
and are holding back their brood sows for
this purpose. It is going to require some
time to restore the hog supply of the
country to normal proportions, for the
population of the United States is grow-
ing rapidly all the time, while hog pro-
duction has been retrograding for years.

Country shippers of cattle and hogs in
Iowa are complaining that they have been
suffering serious losses in money in mak-
ing shipments to the Chicago market on
the strength of misleading reports sent
out by the Western Union Telegraph
Company early in the morning, before
prices were established. Quotations sent
out before markets are well established
for the day are worthless and have
caused great losses in the past. They
should be abandoned. A shipping firm in
Dallas county, Iowa, purchased two car
loads of hogs on the strength of such a
report sent out recently and suffered
quite a loss, and would have met with an
even greater loss had they bought four
cars of cattle, as they had at first in-
tended to do. Country shippers should
first "be sure they are right; then go
ahead."

An Iowa firm of breeders and feeders of
Hereford cattle marketed 71 head of
steers of this breed of their own breeding
and raising in Chicago on Monday, Feb.
13, at \$6.90, topping the market, and
demonstrating that 13 was a lucky num-
ber for them. One of the owners said
that, although the cattle were bred and
matured on land worth \$150 an acre, the
four car loads showed net profits of
\$2,500. He added that the firm had dem-
onstrated many times during thirteen
years of cattle raising and feeding that
they can raise and mature cattle much
cheaper than they can buy feeders. To-
day their land is richer than it was thir-
teen years ago and is producing better
crops. Mr. Westover, one of the owners
of the cattle, who came to market with
them, said they were grown at a cost of
not more than \$40 per head up to when
their finishing process began, making
them cost as feeders around \$4 per 100
lbs. Their feed bill was less than \$25 per
head, making their cost, when ready for
slaughter, less than \$65 each. "The cat-
tle were fed 33 to 35c corn and made an
average gain of nearly four pounds per
day from the time they went on full feed
—Nov. 15. They gained steadily. In the
finishing process, corn consumption was
about 60 bushels per head, a further dem-
onstration that the operation was profit-
able. It will be asked why they were not
beefed in the yearling stage. That plan
would be more profitable if we handled
only a load or so each season, but as we
use 1,100 acres, mostly in grass, and are
compelled to depend on hired help, ex-
perience has taught us that marketing
the matured cattle is best under our con-
ditions. Producers of individual loads an-
nually could achieve maximum results
with yearlings."

Maurice Laughlin, of Illinois, feeds 100
head of prime calves or more yearly,
buying them from neighboring farmers
and marketing them when seven to eight
months old at Chicago, by which time
they usually weigh from 700 to 750 lbs.
He feeds plenty of shelled corn, as well
as some oats and oil meal, or else alfalfa
meal. The oil meal costs around \$34 per
ton and the alfalfa meal about \$22, and,
despite these high prices, he finds that
the moderate quantities fed for finishing
bring in good profits in the end. Land
in that region sells at \$175 to \$250 an
acre, and farmer-stockmen have to do
some careful thinking to make it pay fair
living profits. Mr. Laughlin has paid
about \$5 per 100 lbs. for his calves, and
he has always purchased good ones.

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.

Enlarged Thyroid Glands.—My cow has
a hard movable bunch in throat which I
believe causes her to breathe heavy and
cough. Mrs. E. C., Beaverton, Mich.—
Apply one part red iodine mercury, one
part iodine (resublimed), and eight parts
lard to bunch twice a week. Also give
2 drs. iodine potassium at a dose three
times a day.

Acidity of Stomach.—I have a cow that
has an unnatural appetite for wood and
rubbish. What can be done for an ail-
ment of this kind? J. W. C., Wilmont,
Mich.—Give your cow three tablespoon-
fuls of cooking soda, two tablespoonfuls
of ground gentian and four tablespoonfuls
of powdered wood charcoal at a dose in
feed three times a day. She should be
fed some roots.

Dehorning Cattle.—What had I better
apply to the head of cattle immediately
after they are dehorned that will stop the
bleeding and heal the sores. C. M. G.,
Moline, Mich.—Apply Monsell's solution
of iron and it will assist in stopping
bleeding, or apply tar and oakum with
bandage over it, or sear the ends of
blood vessels with a red hot iron and it
will stop hemorrhage. There are many
useful home remedies that will heal the
wounds; however, a dusting powder com-
posed of equal parts boric acid, powdered
alum and iodoform will do the work and
it should be applied daily.

Blind Staggers.—Partial Loss of Power.
—About a week ago my horse became
dizzy in the head and seems to have poor
control of his legs—he staggers from one
side to the other and our local Vet. is
unable to effect a cure. J. H., Breeds-
ville, Mich.—First of all give him 1 dr.
calomel, 8 drs. aloes and 2 drs. ginger
made into a bolus and given at one dose.
This will act as a cathartic. If his bow-
els are active enough it will not be nec-
essary to give him aloes. Give 3 drs.
bromide potassium and 1 dr. ground nux
vomica at a dose in feed three times a
day.

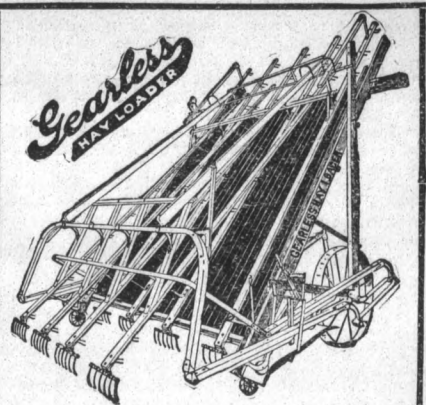
Bruised Udder.—I would like to know
what to give a cow that passes bloody
milk; this cow appears to be perfectly
healthy and was all right up to a week
ago. A. C., Kimoss, Mich.—One of your
other cows may have hooked her, a colt
may have kicked her or she may have
injured udder for want of bedding. Apply
1 part tincture arnica and 6 parts water
to udder twice a day. She needs no
drugs.

Artificial Opening in Teat.—My best
cow wounded one teat on barbed wire
last summer and our local Vet. stitched
wound, which healed fairly well, but milk
has leaked out of this opening ever since
and as she is about to go dry I thought
perhaps you could tell me how to heal it.
A. S., Sparta, Mich.—Make the edges of
wound raw, stitch wound and apply equal
parts boric acid, powdered alum and ox-
ide of zinc every day or two. Sometimes
by burning a sore of this kind lightly with
a red hot iron it will stimulate a healthy
action and cause a union of the skin;
however, I prefer the first method.

Weakness—Paralysis.—Last week one
of my best ewes was sick, grew weak, got
down, was unable to get up, and died
after being sick only a few days. I
opened her, found several bunches in
abdomen, her liver was pale and bowels
almost completely empty. W. B., Clarks-
ville, Mich.—It is possible that your sheep
died of nodular disease, liver disease or
paralysis. It is quite difficult to make a
correct diagnosis in such cases. Your
giving her nux vomica, ginger and milk
was perhaps as good as any treatment
you could have given her. If you have
another sick one give 3 ozs. of a one per
cent solution of coal tar creosote—one
dose only. Giving some whiskey and
quinine to stimulate and tone her up is
good practice.

Knuckling.—Have a mare 17 year old
that walks on toes of both hind feet; one
foot has been this way for three years
and now she is walking on toe of other
foot. The joint does not seem to be stiff,
but I think the cords draw. L. L. W.,
Hopkins, Mich.—A chronic ailment of this
kind is generally incurable; you may be
able to prevent her growing any worse in
one hind leg. Apply one part turpentine
one part aqua ammonia and three parts
olive oil to back tendons and fetlock joint
once a day.

Partial Loss of Power.—I bought an
eight-weeks-old pup; he had a very
greedy appetite and I fed him all the
food he would eat. Now he drags his
hind quarters and is lame in one leg and
I wish you would tell me what to do for
him. J. H. H., Zealand, Mich.—You
should have continued giving him some
milk with lime water added and a mix-
ture of perhaps one-sixth part meat and
the other cereal and vegetables. His
ailment may be the result of feeding an
unbalanced ration. Lime water is made
by dissolving a handful of lime in a buck-
et of water, pouring off the first water,
then refill and use. A tablespoonful or
two, mixed with milk, at a dose three
times a day will be enough. By giving
him very small doses of nux vomica it
will help him.



**Free
Write Today.**

We have issued an attractive book
on hay loaders, fully illustrated, in-
cluding several illustrations in colors.
We will send a copy of it free to
every farmer who will write for it.

It is full of Hay Loader information
that will interest every farmer.

It shows why the "GEARLESS" is
the cheapest loader to own, the cheap-
est to operate, (but one man required).
It shows why the "GEARLESS" has
the lightest draft, simplest construc-
tion, will outlast three of other makes.

We want every farmer to have this
free book. Write for it today. A
postal will bring it.

LACROSSE HAY TOOL CO.,
32nd Street. Chicago Heights, Illinois.

A TREATISE on the Horse— FREE!

We offer you free
this book that tells you
all about horse dis-
eases and how to cure
them. Call for it at
your local druggist or write us.

**KENDALL'S
SPAVIN CURE**

is invaluable. It cures Spavin, Curb, Splint,
Ringbone or any other lameness, quickly and
safely at small expense. Read what W. T.
Sadler, Atlanta, Ga., care of Allen's pharmacy,
writes:

"Your Treatise on the horse received and contains many
good formulas for treating stock. I have sold many
bottles of your Spavin Cure and have never had
a complaint from a customer."

And Mr. Wm. Booth, of Gravette,
Ark., writes:
"Your book is worth \$5.00 if only used
as an aid in locating lameness. Shoulder
lameness is the most difficult for an
inexperienced man to locate. It
is easy, however, with the help
of your book."

Kendall's Spavin
Cure is sold at the
uniform price of
\$1.00 a bottle, or
6 bottles for \$5.00.

If you cannot get
it or our free book
at your local druggist,
write us.

DR. B. J. KENDALL COMPANY
Enosburg Falls, Vermont, U. S. A.

Harness at Wholesale Prices!

Direct from our shops to you.
FREIGHT PAID.
We Can Save You Money.
Write to-day for a copy of our
HARNESS BARGAIN Catalog
JOE'S HONEST HARNESS CO., CARD, MICHIGAN.

Belgian, Percheron and Shire

Stallions and Brood Mares
40 head of prize-winners
to arrive March 25. Plenty
of mares in foal. A guar-
antee with each animal.
Prices reasonable.
LOESER BROS., Importers,
Dept. M, Ligonier, Ind.

Percheron, Belgian, Shire and Hackney Stallions and Mares

As fine lot as there is in America, 3 to 4 years old,
with lots of quality and good individuals, weighing
or maturing 1900 to 2200 lbs.
Prices on Imported Stallions, \$1,000 to \$1,200.
American Bred Stallions, \$600 to \$900. Im-
portations to arrive Feb. 18 and March 1st.
LEW W. COCHRAN, Crawfordville, Ind.
Office 109 1/2 South Washington St.

JACKS and MULES

Raise Mules and get rich.
For the next 20 days, 400
head of fine large Jacks,
Jennys and Mules, 14 to 17
hands high at 1/4 off. Come
soon for a bargain. Stock
guaranteed. Write for prices
to-day. Address.

Kreklers Jack Farm,
WEST ELKTON, OHIO.
Branch Barns, Clinton, Ind.

BELGIAN HORSES. If you are want-
ing to buy Draft
Horses write H. H. JUMP, Munith, Michigan.



Obstructed Teats and Udder.—One quarter of my cow's udder is somewhat blocked and the teat seems to be filled with two small hard bunches. M. W. B. Apply iodine ointment to bunches once daily. Her diseased quarter will perhaps close and remain blind.

Cracked Heels.—My 12-year-old mare has scratches and a sort of cramping of the leg takes place. I also find the back tendons of leg thickened and are growing worse. J. O. G., Silverwood, Mich.—Apply one part oxide of zinc and six parts vaseline to sores and tendons daily.

Diarrhoea.—I have a cow that is troubled with loose bowels and the medicine I have given her fails to help her. G. L. D., Lawrence, Mich.—Give 1 oz. ground ginger and ½ oz. powdered sulphate of iron at a dose in feed three times a day.

Bronchocoele.—I have a dog that has a bunch in throat which should be reduced. C. F. C., Levering, O.—Give him 5 grs. iodide of potassium at a dose in feed two or three times a day. It will do good to apply tincture of iodine to bunch twice a week.

Rheumatism.—When my brood mare is allowed to stand in the stable a few days without exercise she seems to start quite stiff and sore and the whole trouble seems to be in the hind legs. O. N., Clare, Mich.—Give her 1 dr. salicylic acid and 2 drs. nitrate potash at a dose in feed two or three times a day for a week or 10 days and apply spirits of camphor to sore joints twice a day.

Corns.—My eight-year-old horse has done no work this winter, but seems to be troubled with corns, and I would like to know of a remedy for them. R. J. R., Harbor Beach, Mich.—When you get him shod keep the pressure off corns and the feet moist is perhaps all that is necessary.

Soreness in Joints.—My four-year-old mare seems to be stiff in her joints, but most of this stiffness leaves as soon as she is exercised. E. A. F., Hemlock, Mich.—Give her a dessertspoonful of powdered nitrate of potash and a teaspoonful of colchicum seed at a dose in feed two or three times a day. She should be kept in a dry, comfortable stable and exercised some every day.

Nasal Gleet.—For the past two years my horse has been troubled with a discharge from nose, but has no cough and is in good condition. D. O. L., Petoskey, Mich.—If the discharge is from one nostril it is the result of a diseased upper tooth, but if from both nostrils and the discharge does not have an offensive odor it is not the result of unsound teeth. Give 2 drs. powdered sulphate iron, ½ oz. ground gentian and 2 drs. of ground fenugreek at a dose in feed two or three times a day.

Wounded Hind Leg.—I have a pair of horses that stand in stable with pole between them and one of the horses must have kicked over this pole or the other horse must have kicked him, wounding the fore part of hind leg. He is quite lame and I am afraid he may have produced a spavin. L. L., Petoskey, Mich.—Mix equal parts boric acid, powdered alum, oxide of zinc and iodoform and apply to wounds twice a day. As soon as you succeed in healing the wounds I am inclined to believe that his lameness will disappear.

Chronic Stocking.—Two years ago my horse had scratches; some time later he was kicked on fetlock joint, causing considerable inflammation of leg which left it thickened. Last September he had another attack, the leg swelled very large and broke open, discharging pus for some 30 days, then it healed, but is badly stock-ed yet. What can be done, if anything, to reduce it? O. E. L., Lake Odessa, Mich.—Give him 1 dr. iodine potassium at a dose in feed three times a day for 20 days and bandage leg in cotton. Irritating liniments and blisters will make him worse.

Indigestion—Melanotic Tumors.—I wish you would tell me what to give a horse to sharpen his appetite, and also tell me if a grey horse is more likely to have tumors than a dark-colored one. S. S. W., Schoharie Co., N. Y.—Give him a tablespoonful of the following compound powder at a dose three times a day: Equal parts by weight of powdered sulphate of iron, gentian, nuxvomica, bicarbonate of soda and fenugreek. White horses are much more likely to suffer from black melanotic tumors than dark-colored horses.

Six-year-old Mare Fails to Come in Heat—Puffy Hock.—I have a six-year-old mare that I am anxious to use for breeding purposes but have always failed to find her in heat. She has been repeatedly teased with a stallion in order to test her, but without results. I have an opportunity to purchase a four-year-old 1,200-lb. mare that has a bunch on fore part of hock which does not hurt her, but am afraid to buy her without your advice. L. K., Park Lake, Mich.—Give your mare 15 grs. powdered cantharides and 1 dr. ground nuxvomica at a dose in feed three times a day and she will perhaps come in heat as soon as warm weather sets in. The mare you refer to is worth three-fourths as much as if she were sound. If you like her other ways and can buy her right, do so.

Irritation of Necks.—I have a pair of mares that are bothered every summer with a sort of irritation of their necks. The skin is not raw, but it must itch for the mares are very uneasy during hot weather. L. S., Jenison, Mich.—Their necks should be kept clean, so should the collar and sweat pads; furthermore, the skin should be treated with antiseptics or cooling astringents. Apply one part peroxide of hydrogen and five parts water; ten minutes later rub on some powdered sulphur, or apply one part bichloride of mercury and 500 or 1,000 parts water to both shoulder and collars. Another very good application is made by dissolving ¼ lb. acetate of lead and 1 oz. of tannic

acid in a gallon of water and apply this lotion three times a day. Take the collars off at noon and hang them up in the sunlight. There are many other excellent applications and I know of no better plan than to keep on trying different remedies until you hit upon the right one.

Solidified Bursal Bunches.—My seven-year-old mare has hard bunches on both fore legs just above the fetlock joints and I would like to know what to apply. J. H. T., Addison, Mich.—Apply one part iodine, one part red iodide mercury and eight parts lard lightly to bunches once or twice a week. You will find it very difficult to reduce bunches of this kind.

Thoroughpin—Barrenness.—I have a mare that has a badly inflamed hock and bunches appeared on both sides of hock joint and I have failed to reduce the swelling. This same mare fails to get with foal. S. McC., Breedsville, Mich.—If the bunches are situated in knee instead of hock the treatment will be the same. Apply equal parts spirits camphor and tincture of iodine to bunches once daily. Dissolve 3 ozs. cooking soda in ½ gallon of clean water and wash out vagina daily for ten days and be sure to treat her a few hours before service.

Influenza.—My cow breathes heavy, seems to be feverish and both eyes are covered with a film which affects vision; she also calves three weeks too soon and coughs some. K. W., Sherwood, Mich.—Blow some calomel into eyes daily and give her ½ oz. Donovan's solution at a dose three times a day. Dissolve 1 dr. permanganate of potash in one gallon of clean water and wash out vagina daily for ten days, using a small rubber tube and funnel.

Anaemic.—I was called to see one of my neighbor's cows and was unable to tell what ailed her. She died and our local Vet. examined her after death and found her blood vessels contained very little blood, therefore I should like to know what ailed her. H. W. J., Breedsville, Mich.—This cow did not digest and assimilate food properly, consequently she failed to make good blood. Her liver may not have acted well or she may have suffered from indigestion.

Warts on Udder and Teats.—I have a cow that has a great many warts on udder which should be taken off. I notice you prescribe acetic acid to be applied to flat warts every two or three days and my cow has many small sort of blisters on bag and teats which dry and harden, that I would like to take off. C. S. C., Sears, Mich.—Your cow may have cow pox; if so apply one part oxide of zinc and four parts vaseline daily and she will soon get well. Acetic acid or vinegar will take off warts.

Obstructed Teats.—My five-year-old cow has a small bunch as large as a pea in each of her four teats. W. B., Metamora, Mich.—If these obstructions can be gotten at easily they had better be removed with a knife; if not, apply iodine ointment once a day.

Indigestion.—I have a four-year-old cow which I bought when fresh about a week. I began feeding silage with bran, ground corn, oats and cottonseed meal. She was all right for awhile, then gradually lost her appetite. Her udder cakes, she acts lifeless and shows no indication of coming in heat. A. V. A., Kalamazoo, Mich.—You have perhaps overfed her. Give 1 lb. epsom salts at a dose and one-half the quantity the following day if the first dose fails to purge her. Also give 1 oz. bicarbonate of soda, 1 oz. ground gentian and 2 ozs. of powdered wood charcoal at a dose in feed three times a day. Feed her some roots and exercise her more.

Congestion of Lungs.—I have recently lost two sheep that were taken suddenly sick; they acted dumpy, breathe quick and appear distressed until they die. They have a slight discharge from both nostrils, but I do not believe that this causes their death, as one of them had very little discharge. R. A. S., Columbiaville, Mich.—Your sheep died of congestion of the lungs and may have had some nasal catarrh. Apply 1 part turpentine, 1 part aqua ammonia and 4 parts sweet oil to sides once a day. Give 3 drops tincture of aconite every three hours if you believe the sheep has fever. Give a teaspoonful of whiskey and a teaspoonful of aromatic spirits of ammonia at a dose in 4 ozs. cold water four times a day. There are many other remedies equally as good.

Barrenness—Difficulty in Churning.—I have a two-year-old heifer that came fresh last June; since then she has been bred four times and fails to get with calf. She is fed mixed hay and roots, but keeps thin. It is almost impossible to make butter from her milk. When churning the cream foams and appears to remain thin. R. H., Barryton, Mich.—Increase your heifer's grain ration and try to get her in better condition before you breed her again. Before breeding her wash out vagina several times with a solution made by dissolving 3 ozs. of bicarbonate of soda in two quarts of tepid water, the last application should be made within a few hours of service. I imagine that your heifer is unprofitable for dairy purposes and if so she might as well be dried. You keep the cream in too cool a place.

Barren Cow.—I have a cow that has been bred to three different bulls, but fails to get with calf. This is an extra good cow, and I am anxious to keep her for breeding and dairy purposes. G. M., Flanders, Mich.—There are many reasons why cows fail to get with calf. The opening into womb may be closed; if so, it should be dilated gently with fore finger or a tapering sound. Also dissolve 1 dr. permanganate potash in a gallon of clean tepid water and wash out vagina once a day for a few days, then dissolve three ounces of bicarbonate soda in one-half gallon tepid water and wash out vagina daily and be sure to do so a few hours before she is bred. If your cow is fleshy she should be reduced and if very thin and weak she should be built up.

BOWSHER

(Sold with or without elevator)
CRUSH ear corn (with or without shucks) and GRIND all kinds of small grain. Use Centric Shape Grinders. Different from all others.

LIGHTEST RUNNING.
(Our Circular Tells Why.)
Handy to Operate. 10 Sizes.
2 to 25 h. p. One size for wind-wheel use.

Also Make Sweep Grinders; both Geared and Plain.
D. N. P. Bowsher Co.
South Bend, Ind.

FEED MILLS

NEWTON'S HEAVE CURE
COUGH, DISTEMPER AND INDIGESTION

The Standard Veterinary Remedy.
21 years sale. Send for booklet.

DEATH TO HEAVES
The first or second \$1.00 can cures. The third can is guaranteed to cure or money refunded.
\$1.00 per can at dealers, or express prepaid.
THE NEWTON REMEDY CO., Toledo, Ohio

There are many superior features in the

NAPPANEE SILO

Let us tell you about them.

RELIABLE AGENTS WANTED.
THE NAPPANEE LBR. & MFG. CO.
Nappanee, - Indiana.

BREEDERS' DIRECTORY. **CATTLE.**

ABERDEEN-ANGUS.
Herd, consisting of Trojan Ericas, Blackbirds and Prides, only, is headed by Egorion W. a Trojan Erica, by Black Woodlawn, sire of the Grand Champion steer and bull at the International in Chicago, Dec., 1910. He is assisted by Undulata Blackbird It.

AYRSHIRES.—High type of Dairy animal. Young bulls and bull calves for sale. Prices low. Inquiries solicited.

BERKSHIRE SWINE.
FINE POULTRY.—White and Barred Rocks, White & Buff Orpingtons, White Wyandottes and Leghorns. Eggs in season 10c each.

TOP NOTCH HOLSTEINS
Top Notch registered young Holstein Bulls combining in themselves the blood of cows which now hold and have in the past held World's Records for milk and butter fat at fair prices.

HOLSTEIN-FRIESIAN Cattle and Duroc Jersey swine. One gilt, bred by a son of Defender for sale. Price \$45. E. R. CORNELL, Howell, Mich.

Holstein Cows Wanted. 2 young cows must be good milkers and have good A. R. O. Records, address. Chas. E. Winters, Cressy, Mich.

HOLSTEINS.—4 heifers, 2 bred, two-year-olds, and 2 yearlings. Fashionably bred and some world's records close up. Hobart W. Fay, Eden, Ingham Co., Mich.

FOR SALE.—Holstein Bull 2 years old \$125. Bull calves 6 months to 1 year \$50 to \$100. Bred heifers \$150 to \$200. Oldest herd in Ind. Send for Photos and Pedigrees. W. C. Jackson, 715 Rex St. South Bend, Ind.

FOR SALE.—Reg. St. Lambert Jerseys, Cows and Bulls from high producing stock. O. A. BRISTOL, Fenton, Michigan.

Registered Jersey Bull. 20 months old. Sound, sure, 425 lbs. of butter per year \$55, also six bull calves cheap. J. C. BUTLER, PORTLAND, MICHIGAN.

HEREFORDS.—Both sexes and all ages for sale. Also Poland-China hogs. ALLEN BROS, Paw Paw, Mich.

Register of Merit Jerseys. Official yearly record. A fine lot of young bulls from dams with official records of 483 pounds and upwards of butter.

LILLIE FARMSTEAD JERSEYS.
HERD BULLS. (Vidas Signal St. L. No. 58197. Jubilee's Foxhall, No. 82298. Bull calves sired by these great bulls, and out of splendid dairy cows, many of them in test for register of merit. Also a few heifers and heifer calves for sale. Write for description and prices. Satisfaction guaranteed, or money refunded.

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

REGISTERED JERSEYS For Sale.—Some combining the blood of St. Louis and Chicago World's Fair Champions by HERMAN HARMS, Reese, Mich.

Jersey Bull Calf born April 10, 1910. Dam will go in Registry of Merit this year, gave 824 lbs. milk as 2-yr.-old. Sires Dam's record 10060 lbs. milk in 10 1/2 months. THE MURRAY-WATERMAN CO., R. 6, Ann Arbor, Mich. Bell Phone.

Dairy Bred Shorthorns.—A few good bulls good as cash. J. B. HUMMEL, Mason, Mich.

SHORTHORNS and POLLED DURHAMS. Both sexes for sale. A. D. DeGARMO, Highland, Michigan.

SHEEP.
Hampshire Ewes bred for March & April; registered stock; Choice individuals. C. D. WOODBURY, Lansing, Michigan.

Oxford-Down Sheep and Polled Durham cattle for sale. J. A. De GARMO, Muir, Mich.

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

Reg. Rambouillets.—I have 100 ewes, among them all of my youngest and best, also 85 ewe and ram lambs. Live 2 1/2 miles east of Morrice on G. T. Road. Address J. Q. A. COOK.

INGLESIDE SHROPSHIRE.—Rams of all ages. Bred ewes, singly or in lots. H. E. Powell, Robt. Groves, Shepherd, Ionia, Mich.

SHROPSHIRE HALL STOCK FARM
Has for sale, twenty-five choice bred yearling ewes, at a low price, also a few good three and four year-old, bred ewes.

HOGS.
Durocs & Victorias.—Growthy Spring Boars & Gilts. Winners. M. T. STORY, R. 28, Lowell, Michigan.

BERKSHIRE Yearling sow bred for July farrow, also two fall Gilts and choice lot of March farrowed. (Pigs eith. sex.) A. A. Pattullo, Deckerville, Mich.

BERKSHIRES Unexcelled in breeding. Selected boars, sows and gilts. Choice fall pigs. T. V. HICKS, R. No. 11, Battle Creek, Mich.

DAMS BROS., Litchfield, Mich., breeders of Imp. Chester White and Tamworth swine, service boars, sows bred or open, of either breed. Shorthorn Cattle, Buff Rock, Buff Wyandotte, W. Orpington, Chks. all breeding stock leading winners.

Duroc Jersey Gilts, due to farrow in April. Also service boars and spring pigs either sex. M. A. BRAY, Okemos, Michigan.

DUROC-JERSEYS.—Nothing but fall gilts for sale. CAREY U. EDMONDS, Hastings, Michigan.

Capitol Herd DUROC JERSEY Swine established 1888. One last Spring Boar and Sept. 1910 Gilts for sale. J. H. Banghart, R. 5, Lansing, Mich.

DUROCS.—25 Bred Sows, of high quality. 10 Excellent Boars ready for service. 75 Fall Pigs both sex. Write or come and see. J. C. BARNEY, COLDWATER, MICHIGAN.

IMPROVED CHESTERS.—Young boars ready for service, orders taken for sows bred for spring farrow. Also Holstein Bull Calves of the best of breeding. W. O. WILSON, Okemos, Mich. Both Phones.

O. I. C. Hogs all ages. Sows bred. Males weighing 150 lbs. and more. H. H. JUMP, Munith, Michigan.

O. I. C. Swine.—Spring, summer & fall farrowed, both sexes, breeding and type right. Geo. P. Andrews, Dansville, Ingham Co., Mich.

O. I. C.—15 Choice Sows bred for April farrow. From World's Fair and Sept. 1910. Glenwood Stock Farm, Zeeland, Mich.

O. I. C. Early Fall Pigs Low prices. Only 4 bred gilts for sale. C. J. THOMPSON, Rockford, Michigan.

FOR SALE.—Fall Pigs and Bred Gilts. B. M. WING & SON, Sheridan, Michigan.

GREAT POLAND-CHINA HOG SALE.
JANUARY 20th.
60 sows bred for spring farrow. If you want the best, attend my sale as I have the best in the state.

WM. WAFFLE, Coldwater, Michigan.
Butler's Famous Wonders.—the Big Poland-Chinas grow big, because they have been bred big for 20 years. Some great Aug., Sept., Oct., pigs, good enough for any breeder, cheap enough for any farmer.

O. I. C. SWINE.—Boars all sold. 20 young sows bred for spring farrow, for sale. E. E. BEACH & SON, R. No. 3, Brighton, Michigan.

O. I. C.—Bred sows all sold, 1 June boar left. A few fall pigs either sex. Satisfaction guaranteed. A. NEWMAN, R. 1, Marlette, Michigan.

POLAND-CHINAS.—Fall pigs either sex. Young sows, spring farrow. Write L. W. Barnes & Son, Byron, Shiawassee Co., Mich.

Poland-Chinas.—My herd boar Black Knight is for sale, also special sale on fall pigs. E. D. BISHOP, Route 38, Lake Odessa, Mich.

O. I. C's For Sale.—Best quality, large growthy pigs, either sex, type, either sex, pairs not akin, some fine bred gilts, choice lot of fall pigs all ages. OTTO B. SCHULZE, Nashville, Michigan.

O. I. C.—Fall pigs either sex and one June Boar left. I am also booking orders for spring farrow. Shipped on approval. HARRY T. CRANDELL, CASS CITY, MICHIGAN.

SPECIAL SALE of heavy boned Poland-China Sows, bred. Boars ready for use. Prices low. Photos if required. ROBERT NEVE, Pierson, Michigan.

POLAND-CHINAS.—Booking orders for spring pigs. WOOD & SONS, Saline, Michigan.

LARGE TYPE P. C.—Largest in Michigan. Sept. pigs weigh from 175 to 185 lbs., the herd without an equal combining size and quality. W. E. LIVINGSTON, Parma, Mich.

LILLIE FARMSTEAD YORKSHIRES.
The great medium bacon type. The hog that wins on sheer merit. Large, vigorous, prolific. Gilts bred for March or April farrow. Fall pigs, either sex. Pairs not akin. I guarantee satisfaction, or money refunded. COLON C. LILLIE, Coopersville, Mich.

For Sale.—Thoroughbred Yorkshire Boar 16 mos. old. Very reasonable. Must change sire, address. A. Rypma, R. No. 11, Grand Rapids, Mich.

JUST SAY "Saw your Ad. in the Michigan Farmer"
when writing to our Advertisers.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

POWDERED MILK.

A powdered milk factory is locating at Standish. They contract for whole milk, then separate and powder it. None of the farmers about here know anything about this new industry and would appreciate any help The Farmer may offer. We understand that more is paid by these people for milk during the winter months than in the summer season.

Arenac Co. INTERESTED FARMERS.

The product known as powdered milk is new to the farmers of Michigan. As I understand it, some of the milk is dried into powder whole before skimming and some is skimmed and then the skim-milk made into powder. Practically all of the milk is first skimmed by running it through the separator, because it is not uniform with regard to butter-fat. Then afterwards, a portion of the milk at least, has the cream put back into it to supply a certain per cent of butter-fat for the powdered product. For instance, if a company guarantees two per cent butter-fat in the powdered product, they would skim the milk and then add two per cent of butter-fat. They could not make the product in any other way so as to guarantee the amount of butter-fat.

I do not understand the process very well, having never had the pleasure of visiting a powdered milk plant, but I understand that the milk is thrown in a fine spray through superheated air so that the spray is reduced to powder. The moisture is reduced to such an extent that the product after being dried will keep indefinitely, just like flour or meal. Now this product can be made suitable for table use by simply mixing water with it and getting it back to the same composition as the milk was in the first place. I do not think this product is used extensively for table use, but it is largely used by cooks, bakers and that class of people.

I do not think a farmer generally, need feel any concern about the responsibility of people going into a business of this kind. It requires considerable capital to put up a plant suitable for this work, a good business organization and a good amount of capital to place the product on the market; consequently, no set of business men go into a deal like this unless they have considerable financial responsibilities. Therefore, I feel that it would be reasonably safe on general principles, for farmers to patronize the plant, providing, of course, that they can get as much for their milk as they could at a cheese factory or a creamery or as they could to sell their milk for direct consumption for the city trade.

It usually makes but little difference in what way you dispose of milk. If a man sells milk to the wholesaler in the city to be sold as table milk, the price of that milk is largely based on the price of butter. If a man delivers milk at a cheese factory, the cheesemaker fixes the price he pays for milk largely upon the value of that milk when made into butter, and so the people at a powdered milk factory would base the price of their milk largely upon the butter market. The butter market is taken as a standard. Usually butter is higher priced in the winter than in the summer time, consequently, it makes no difference what the milk is used for, you will usually get better prices in the winter than in the summer time. People usually pay no more for a product than they are compelled to.

THE CONSERVATION OF GOOD DAIRY BLOOD.

The sentiment expressed in that interesting novel, "To Have and to Hold," was paralleled by the idea carried through the illustrated address of Prof. George Humphrey, of Wisconsin, before the last State Round-Up at Lansing, when he declared it was one thing to secure good cows and another to maintain the standard over a term of years. There is no definite way to determine the value of a well-bred prepotent sire from a dam and granddam of milking qualities, but Prof. Humphrey deduced in a logical and thoroughly interesting manner the probable increase of profits coming from a herd of 30 cows headed by a sire of superior breeding and of individual merit over a herd headed by a scrub bull to be around \$2,000 at the end of a few years, or until the heifers of the bull were producing. No one could take exception to the conservative figures forming the basis of his

sylogism, yet when the aggregate amount of the improvement brought to the herd by the better bull was presented it seemed almost beyond belief. The point made went far to prove that should competition in the production of dairy products become keen, the first dairymen to go bankrupt will be those who cling to the scrub sire. Good care need also be tendered the head of the herd, for his environment, his feed and his health all go to produce superior results. Prof. Humphrey then proceeded to show, by giving the records of two animals and their progeny for several generations, that it was the well-pointed dairy animal that gives the largest results. One of the animals, while a well-bred individual, had a deficient udder, which defect showed even to the third and fourth generation, and the profits from this family was below that of another family of similar breeding but where the dam had a well-developed udder, as did also her female progeny. These records were from cows kept at the Wisconsin experiment station, and showed in a convincing manner what men who are close observers have believed in a general way to be true. In conserving good dairy blood it is essential that we know the good cows; these we determine by the use of the Babcock tester and scales as well as by pedigrees.

ANNUAL MEETING OF MICHIGAN DAIRYMEN.

(Continued from last week).

The best attended session of the entire meeting was that of Wednesday afternoon, which convened in Odd Fellows' hall with Mr. Wm. Bechtel in the chair. The program opened with a short paper on "The Future of Gathered Cream Plants," by F. L. Eldridge, who held that their future hinged upon their ability to improve the quality of their product. Admitting that the present quality is not what might be desired, he declared that the workmanship in the factory is not at fault and therefore the remedy must lie in bettering the quality of the raw material. He advocated grading cream where this is practical but did not believe it practical for the small factory, since cream grading calls for separate churning of the various grades. If grading is undertaken he favored the making of not more than two grades. In reply to a question by Mr. Shilling he said his factory is not grading cream at present but plans to begin doing so about April 1. One member stated that his factory tried grading for a period of two months, during which time they lost 40 per cent of their customers. They paid $\frac{1}{2}$ ¢ above New York extras for good sweet cream and 3¢ below New York extras for the remainder. Their competitors offered 2¢ above Elgin for any and all kinds of cream, which compelled his factory to return to the old system. He stated, however, that he is still in favor of a system of grading. Mr. Eldridge, in reply, argued that it is not good business for any factory to convert low-grade cream into butter, this being evident from the fact that the difference between butter scoring 87 and butter scoring 93 points, as measured by Chicago quotations, is at present 9½ cents. In view of this difference it would seem better to refuse all low-grade cream, as the losing of such product to a competitor may be depended upon to finally drive the latter out of business, since the time has come when the butter-maker must turn out a top-price product or produce at a loss. A producer offered, as a solution, the proposition that the creamery gather the milk or cream, declaring that the farmer cannot afford to deliver often enough. Mr. Bechtel stated that this is his practice and that he finds it very effective in holding his customers. His factory collects three times a week during the hot months, twice a week in spring and fall and once a week in winter.

In a well-written paper on "Market Conditions," Mr. H. Soudergaard, of Philadelphia, offered some valuable suggestions to butter-makers and creamery managers touching the churning, salting, coloring and packing of their product, all of which must receive careful attention if it is to meet with favor at the hands of the consumer. After all, it is the consumer who makes the price, and Mr. Soudergaard injected a gentle reminder that the present spread of 8 to 10 cents in prices is the result of an over-production of low-grade product. He, too, voiced the opinion that butter-makers must demand a better quality of raw material and favored a system of grading that would make a discrimination of

98% of the World's Creameries Use DE LAVAL CREAM SEPARATORS

Ten years ago there were a dozen different makes of creamery or factory separators in use. Today over 98 per cent of the world's creameries use DE LAVAL separators exclusively.

It means a difference of several thousand dollars a year whether a DE LAVAL or some other make of separator is used in a creamery.

Exactly the same differences exist, on a smaller scale, in the use of farm separators. Owing to the fact, however, that most farm users do not keep as accurate records as the creameryman, they do not appreciate just what the difference between a good and a poor separator means to them in dollars and cents. Nine times out of ten the farmer can't tell whether or not he is wasting \$50 to \$100 a year in quantity and quality of product through the use of an inferior cream separator.

If you were in need of legal advice, you would go to a lawyer. If you were sick you would consult a doctor. If you had the toothache you would

see a dentist. Why? Because these men are all specialists in their line, and you rely upon their judgement and skill. When it comes to buying a separator why not profit by the experience of the creameryman? His experience qualifies him to advise you correctly. He *knows* which separator will give you the best service and be the most economical for you to buy. That's why 98 per cent of the world's creameries use the DE LAVAL exclusively.

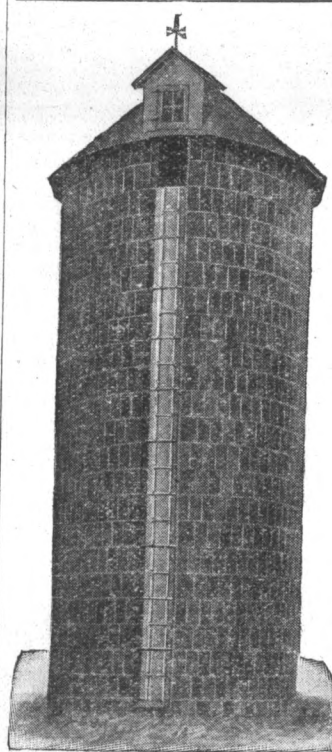
There can be no better recommendation for the DE LAVAL cream separator than the fact that the men who make the separation of milk a *business* use the DE LAVAL to the practical exclusion of all other makes.

THE DE LAVAL SEPARATOR CO.

165-167 BROADWAY
NEW YORK
173-177 WILLIAM STREET
MONTREAL

29 E. MADISON STREET
CHICAGO
14 & 16 PRINCESS STREET
WINNIPEG

DRUM & SACRAMENTO STS.
SAN FRANCISCO
1016 WESTERN AVENUE
SEATTLE



Put a stop to depreciation and decay by building an

Imperishable Silo

Made of Patented Hollow Vitrified Clay Blocks.

They do not Crumble, Crack, Bulge, Shrink or Swell. No Hoops, no wire or steel re-inforcement. Read Samuel De Boer's testimonial, he is Manager of the Van Camp Co's farms. Mr. De Boer is one of the most successful breeders of Holstein cattle and an authority on all that pertains to the dairy. Last year for the Van Camp Co., he bought and sold more than 2,000 cattle. He knows every type of silo made.

The Van Camp Packing Co.

Frysian Farm, Samuel De Boer, Farm Manager, Martinsville, Ind., Jan. 30, 1911.

Imperishable Silo Co., Huntington Ind.

Gentlemen:—We have one of your Imperishable Silos on our farm at La Grange, Ohio. I fully believe that the Imperishable Silo is the silo for the farmer to erect in any kind of a climate, as the hollow wall with the air space makes it as near frost proof as any silo. There is no material to rot, no hoops to tighten, no painting to do and no care whatever, which adds to the desirability of the silo.

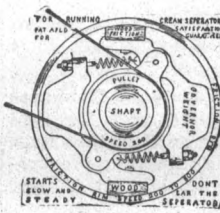
Yours truly,

(Signed) SAMUEL DE BOER.

The Van Camp Packing Co., Frysian Farm.

Send for Free Booklet.

IMPERISHABLE SILO CO.
HUNTINGTON, INDIANA.



Dairymen Take a Look at the Strite Governor Pulley. It's the original and "only thing" for driving cream separators with gasoline engines. Once tried, always used. TRY ONE. Ask your dealer for a "STRITE" or write us direct. Don't take an imitation. Strite Governor Pulley Co. 303 So. Third St., Minneapolis, Minn.

THE LARGEST AND BEST LINE OF WELL DRILLING MACHINERY in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 14. Send for it now. It's FREE. Austin Manufacturing Co., Chicago

You Only Open Your Door. A SHARPLES Tubular Cream Separator

will be delivered right at your home and set up ready for use. You pay nothing in advance—pay no freight—do not haul it—do not even unbox it. You simply open your door when the Tubular comes. You are shown how to use it. It is left with you for thorough, **Free Trial**.

90 out of 100 farmers who try Tubulars buy Tubulars. That is because Dairy Tubulars are later than and different from all others—produce twice the skimming force—contain neither disks nor other contraptions—wear a lifetime—are guaranteed forever by America's oldest and world's biggest cream separator concern.

You can prove for yourself, without trouble or expense, that you can own and use The World's Best for less than any other. How can you afford to risk anything on any "mail order" or other (so called) cheap machine that lasts, on an average, only one year?

Write for catalogue No. 152, and free trial.

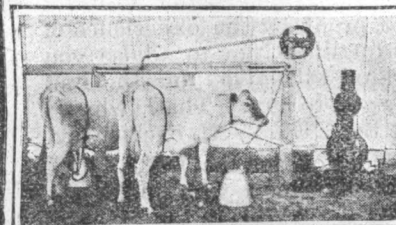


30 yrs

THE SHARPLES SEPARATOR CO.
WEST CHESTER, PA.
Chicago, Ill., San Francisco, Cal., Portland, Ore.
Toronto, Can., Winnipeg, Can.

If You Milk Six Cows or More, Send Us Your Name and Address.

for interesting information about increasing dairy products and reducing labor.



The Hinman Milking Machine

stands every test that can be made—No springs or weights—A simple machine that cannot reduce milk or injure cows. Users' opinions prove every claim we make. Write today. Let us send you full free particulars about the HINMAN.

HINMAN MILKING MACHINE CO.
39 Seneca Street, Oneida, N. Y.

Dairymen DRIED BEET PULP

you better try this year. You can not lose but you will profit by doing so. Used by many of the best feeders of the state who find it a valuable feed, selling below its true feeding value as compared to the other feeds and grain.

Cheaper, and gives better results than bran for which it is substituted by the best dairymen.

Forms a valuable addition to any ration, being vegetable the mechanical effect is good which causes a better assimilation of the other feeds.

Especially good with cotton seed meal as it counteracts the objectionable features of this feed.

Dried Beet Pulp will cheapen any ration. Substitute it for a portion of the ration you use and you will secure better results in both production and improvement in the health of your animals.

Call on your dealer, if he cannot supply you write

T. F. MARSTON,
Center St., Bay City, Mich.
Michigan Broker for the Manufacturers.

Only \$29.75 AND UP Galloway



"BATH IN OIL"

High Grade Separator—Direct

Save \$25 to \$50 direct at my factory price—freight prepaid. Get the only Separator that runs in "Bath of Oil," like a \$5,000 automobile. This alone is worth \$50 extra, but costs you nothing extra.

90 Days'

Farm Test—Freight Prepaid

Why pay \$85 to \$110 to dealers or agents who cannot sell you a separator equal to the Galloway—closest skimmer—easiest run—easiest cleaned—10-yr. guarantee. Send for **BOOK FREE** **WM. GALLOWAY CO.**
643 Galloway St., Waterloo, Ia.

CALVES RAISE THEM WITHOUT MILK.
BOOKLET FREE
J. E. BARTLETT, Co., Jackson, Mich.

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.

at least 4 cents in favor of A No. 1 sweet cream.

"Creamery Accounting" was the subject of a lengthy and carefully prepared paper presented by Mr. Martin Seidel, of Bay City, in which he emphasized the importance of accurate and systematic accounting and the need of familiarity, on the part of the accountant, with every phase of creamery work. This paper left no doubt in the minds of butter-makers present as to the value of a complete system of bookkeeping as a means of tracing out leaks which affect the profits. It also demonstrated how valuable may be the assistance of a fully informed accountant in adjusting differences between manager and patron.

At the banquet held on Wednesday evening the usual amount of enthusiasm and good cheer prevailed, many of the leading creamerymen and dairymen responding to appropriate toasts.

Thursday forenoon was given over to the exhibitors of machinery and supplies. In the afternoon two meetings were to be held, one by the cheesemakers, the other by the new organization known as the Creamery Managers' and Owners Association. There was such an interest in this newly formed organization that the cheesemakers' meeting was not called.

The principle subject discussed by the creamery managers and owners was whether the creameries of this state should begin now, this spring, to grade cream and pay for it according to quality. All admitted that this is the crying need of the dairy business in this state and means better quality in our butter. The idea prevailed that if all the butter in cold storage at the present time, which is such a menace to the butter market, had been good butter, the present condition would not exist as this butter would have been consumed before this time had it been A. No. 1 butter. But, being of a low grade, made from excessively sour cream, the consumption on this line of goods has been low and consequently we have an excess.

The association had discussed the question of grading cream before, and had appointed a committee to investigate. This committee reported the following standard:

No. 1 cream shall consist of sweet cream of clean flavor, containing over 20 per cent of butter-fat; the test for the acidity shall be the government test of 1½ per cent acidity.

Second grade cream shall consist of sour cream of clean flavor containing over 30 per cent butter-fat, and sweet cream containing not less than 15 per cent butter-fat nor over 29 per cent.

Third grade cream shall consist of either sweet or sour cream of off flavor or below 15 per cent of butter-fat.

The committee recommended that cream grading No. 2 should be paid for at 1c per lb. of butter-fat less than No. 1, and cream grading No. 3 should be paid for at 5c per lb. less than No. 1.

The report provoked very much discussion, which at times was earnest. Mr. Lillie, of Coopersville Creamery Co., was called upon to give results obtained from grading cream. He stated that they began grading cream two years ago. They received contracts for butter which stipulated that it be made from pasteurized sweet cream. They found, when they began to fill the contract, that they were not getting enough sweet cream, therefore, they were compelled to grade their cream. They did so and paid 1c per lb. more for sweet cream. The result was that there was a marked increase in the amount of sweet cream delivered, and they were enabled to fill their contract on time. Mr. Lillie stated that he believed the grading of cream is entirely practicable. The only way to get better cream is to pay a better price for good cream. As long as creameries are willing to pay the same price for all kinds of cream there is no inducement for the farmer to take better care of his cream than he does at the present time. In fact, it is not fair. It is not a square deal for the farmer. The man who knows how to take care of his cream and does take care of it, and who delivers a good article, is entitled to more than the man who does not, and if creameries are willing to pay for good cream the experience at Coopersville would lead one to believe that there isn't any question but what the farmers will respond.

There were several doubting Thomases in the audience. While they believed that cream ought to be graded, that it is, in fact, the only way to improve the product, yet they were afraid that if they

Why Pay \$105.50 More Than My Price For a 5-h.p. Gasoline Engine?

MY factory experts have gathered together a great mass of Gasoline Engine facts. I am going to put these facts up to you and let you see if there isn't a pretty good reason why you should get my proposition on just the Engine you want before you decide to buy anywhere else.

When we decided to manufacture 55,000 Gasoline Engines, for 1911, we first got many of the well known



engines of a similar character and my experts went all the way through them, testing every part, every piece of material, every practical working feature so we would be sure our engines would come up to every merit these other engines might have.

Then another set of my experts figured the cost of materials and of selling on my direct-from-factory small profit plan and then they fixed the price based on 55,000 output.

The 5-H.P. Engine that our experts consider next to ours in quality sells to the consumer for \$225.00. We do know, however, and do guarantee that our engine is easier to handle, easier to put on different kinds of work, easier to start, and smoother running. My account experts found that we could sell this engine at a fair profit direct to the user on 30 to 365 days free trial with a liberal guarantee for \$119.50.

This means a saving of \$105.50 in cash to every customer over the price they would pay for the other engine. And I give you a better engine to boot.



Let Uncle Sam Hand You This Big Gasoline Engine Book at My Expense.

Galloway Engines \$39.50 UP

Now just remember that the Wm. Galloway Co. is the largest manufacturer of engines in the world, selling direct to consumers, with a capital stock of three and a half million dollars back of our proposition. And there is nothing verbal about any of our guarantees or claims—all down in black and white. We must make good on every statement.

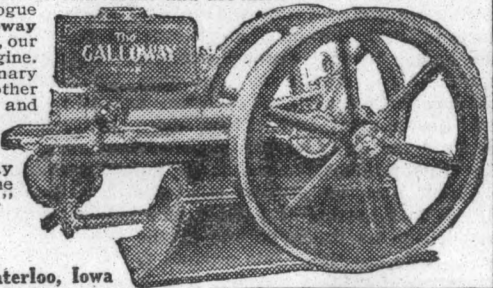
Now if you have gone so far in this advertisement and are interested we want to send you our printed salesman. Our catalogue illustrates our complete line of Galloway Engines. The sizes run from 1-3-4 H.P., our Boss of the Farm, up to our 15-H.P. Engine. We manufacture them for stationary engines, for truck engines, and for all other purposes. They are all guaranteed and I promise to save you money in proportion on all of them according to the saving I make you on the 5-H.P. size.

Just send a postal card now and say—"Galloway, send along your engine book and personal price proposition." I'll do it by return mail.

Wm. Galloway Company

645 Galloway Station

Waterloo, Iowa



\$15.95 AND UPWARD SENT ON TRIAL FULLY GUARANTEED. —AMERICAN— SEPARATOR

A brand new, well made, easy running, easily cleaned, perfect skimming separator for \$15.95. Skims warm or cold milk. Makes thick or thin cream. Thousands in use giving splendid satisfaction. Different from this picture which illustrates our large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements. Our richly illustrated catalog tells all about it. Our wonderfully low prices on all sizes and generous terms of trial will astonish you. We sell direct to user. No agents. Our guarantee protects you on every American Separator. Western orders filled from Western points. Whether your dairy is large or small, get our great offer and handsome free catalog. ADDRESS,

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



"Saves Half the Feed Cost!"



This is quoted from a letter by an Illinois farmer about his Saginaw Silo. Hundreds are writing us about the money saved and the money made by using the good old reliable Saginaw Silo. You make sure of Silo Service for a lifetime when you have the Saginaw. Inform yourself about this Silo question. There are right Silos and wrong Silos. Write us today and we will give you the facts so you can judge for yourself. The

FARMERS HANDY WAGON COMPANY, Saginaw—Des Moines—Minneapolis makes and sells the famous Saginaw Silo direct from the factory only. This is the Silo with the Saginaw All-Steel Door Frame, that positively prevents collapsing or bulging when the Silo is filled. We own the patent. No others are allowed to use it. Described and illustrated in the free book, "The Modern Way of Saving Money on the Farm." This book shows by actual figures, compiled from tests on farms in your state, how much the Saginaw Silo saves by the day or the month. Write for it! The Whirlwind Silo—easiest running—most durable—only Filler fit to go with the Saginaw Silo—is sold direct from the factory, too. Ask for Special Price. (10)

FARMERS HANDY WAGON CO., Station 95, SAGINAW, MICH.
Western Factory, Station 95, Des Moines, Iowa. Northwestern Factory, Station 95, Minneapolis, Minn.

FREE TO FARMERS

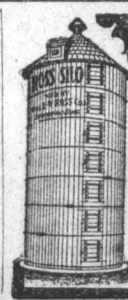
A Valuable 160-page book entitled

"SILO PROFITS"

Written by 200 of the most successful Feeders, Farmers and Dairymen in the World. Every farmer in America should read this book, and as long as our supply of these books lasts we will mail one copy free to each person asking for it. It gives the actual experience of these farmers and in their own words. Our Factories are located at Anderson, Ind., Des Moines, Iowa, and Kansas City, Mo. Write NOW "Silo Profits" for this book.



INDIANA SILO COMPANY
382 Union Building, Anderson, Indiana



THE ROSS SILO

The only thoroughly manufactured Silo on the market. Full length stave. Continuous door frame complete with ladder. Triple beveled silo door with hinges. Equipped with extra heavy hoops at bottom.

AIR TIGHT Makes winter feed equal to June grass. THE ROSS will more than pay for itself in one season. Write today for catalog which gives facts that will save you money. Agents wanted. **The E. W. Ross Co. (Est. 1850)**
Box 14 SPRINGFIELD, OHIO



A Good Healthy Cow

Is worth more—you know it—than any other kind of cow. The cow that Kow-Kure will not help had better be sold to the butcher. That is a strong statement, but it is backed by the endorsements of tens of thousands of Kow-Kure customers—men who have been buying it for years and who know that it makes money for them by keeping their cows in top-notch condition every month in the year.

Send for FREE "Cow Money" Booklet

We never issued a more complete Booklet. It indicates wherein profit from cows can be increased by curing every cow in the herd of cow diseases. If you cannot buy Kow-Kure from your dealer, send direct. Kow-Kure is endorsed by America's best cow owners—men you know. Write for the Booklet now.

DAIRY ASSOCIATION CO., MFRS., LYNDONVILLE, VERMONT, U. S. A.



it costs
us
10 cents

When we receive your cream separator order it costs us 10 cents to handle it. You pay the 10 cents in addition to factory cost and factory profit. If an agent takes your order it costs \$25.00 to \$35.00 on top of all the other costs, profits and expenses. Take your choice—buy where you please, but first send for the Economy Chief Dairy Guide for 1911. It costs you nothing.

Sears, Roebuck and Co.
Chicago, Illinois



Steel Wheels

will make your old farm wagon as good as new. Save money because they never need repairs. Write for our big free book telling all about them and how they pay. Empire Mfg. Co., Box 592, Quincy, Ill.

BOOK FREE

began to grade cream the other fellow would get their customers. Mr. Lillie explained that this had not been the condition at Coopersville. They did not lose customers; in fact, they gained customers.

Others thought that if you paid 1c per lb. more for sweet cream than for sour it would bring the price of sour cream down, in this state, so that outside parties would come in and purchase it. Others thought that if they paid more for the sweet cream they could not sell the butter for enough more to make it profitable. These and other objections were offered. Some even went so far as to say that good sour cream would make just as good butter as sweet cream. Mr. Lillie explained that the theory of butter-making is that the buttermaker must have control of the ripening process where ripened cream butter is made. If you allow the farmer to ripen the cream you have just as many different grades of butter as you used to have under the old system of dairy butter, for every farmer ripens the cream according to his own notion and intelligence. After much discussion the standard was adopted unanimously and a majority of the creamerymen present agreed to go home and begin grading cream.

As is always the case at the meetings of the Dairywomen's Association, the last day found everybody anxious to get home. Buttermakers and dairy farmers cannot be away from their business many days at a time. In consequence of so many going home, the cheesemakers session planned for Friday forenoon was not held, Thursday's program practically closing what all agreed had been a most pleasant and profitable meeting.

HOW TO MAKE NEUFCHATEL AND CREAM CHEESE.

Two varieties of cheese that are much relished by most people and that are much sought on the market, are American Neufchatel and cream cheese. Both are perishable cheese, like cottage cheese, and should be made upon forms situated near markets. They can also be handled to advantage by those operating milk routes in cities. But whether the intention is to market the cheese or not, they should in any event be made in sufficient quantity to supply the needs of the home where they will constitute a cheap and most wholesome food.

There are two methods by which American Neufchatel cheese may be made, namely, with and without the use of starter. The method of making the cheese without starter is as follows: Place the night's milk preferably in shotgun cans and cool to a temperature as near 70 degrees F. as possible. Next add at the rate of about one teaspoonful of rennet extract for each hundred pounds of whole milk. The rennet should first be diluted in a cup of water and then thoroughly mixed with the milk. If the temperature of the milk is kept at 70 degrees F. it will be thoroughly curdled in from 15 to 20 hours, when it should be perceptibly sour to the taste. The actual amount of acidity at this stage should be about 0.3 per cent. The curd is now poured onto a strainer rack covered with a cotton strainer cloth, or it may be poured or dipped into cotton bags, to drain. After the curd has drained an hour, light pressure should be applied to it which may be gradually increased to hasten the draining. As a rule, it is desirable to have the draining completed in about three hours, the temperature during this process being maintained at about 70 degrees F. As soon as the curd has sufficiently drained, salt is added at the rate of one ounce to every five or six pounds of cheese. The cheese should be thoroughly kneaded with the hands to distribute the salt evenly and to give it a smooth consistency. It is now molded into cylindrical packages, 1½x2½ inches, weighing one-fourth of a pound. These cylindrical masses of cheese are first wrapped in thin parchment or oiled paper and then wrapped in tin foil. These packages usually retail at five cents each.

When starter is used a better flavored and more uniform cheese is possible. The starter may consist of well thickened whole milk, allowed to sour in a natural way, but whole milk soured with pure culture of lactic acid bacteria is preferable. Where pure cultures are used the whole milk intended for starter should be pasteurized before inoculating it with the culture.

When starter is used the cheese is made as follows: Add at the rate of one pound of starter to three pounds of fresh

whole milk. The mixture should have a temperature of 77 degrees F. Next add at the rate of one-half tablespoonful of rennet extract per hundred pounds of milk, mixing the rennet with the milk as previously explained. When thoroughly curdled, which usually requires about one hour, the curd is ready to drain. The rest of the process is carried out the same as when no starter is used.

Cream cheese is made from milk containing about ten per cent butter-fat; that is, milk reinforced with cream. Like Neufchatel cheese, this cheese may be made with and without starter, and the processes are the same as with Neufchatel cheese, except that it will be found advantageous to have the temperature from three to five degrees higher. Much butter-fat is saved when making cream cheese by the starter method. Cream cheese are molded in rectangular forms, 1½x2½x2½ inches, holding about one-quarter of a pound. These packages usually retail at ten cents each.

Another kind of cheese that is very much relished and that can be made by anyone, is known as "club" or "potted" cheese. The method of making this cheese is as follows: Grind up with an ordinary meat grinder five pounds of old, well-ripened cheddar cheese of good flavor, and mix this with one pound of good butter. The mixing is easily accomplished with a bread mixer. The mixing should be continued until the cheese has a uniform consistency, free from lumps. Running the mixture through the grinder and working it with the hands will assist in reducing the lumps. This cheese can be packed in small tin-top jelly tumblers, covering the top of the cheese with parchment paper. This makes an exceedingly palatable cheese which retails, as a rule, at forty cents a pound.

Wisconsin.

JOHN MICHELS.

THE CREAM SEPARATOR.

An agent for a standard make of cream separator asked permission to leave a machine in our home for us to give a trial. We had very little intention of buying, although we did not in any way doubt the merits of the machine.

In consideration of the price of the machine we felt that it was rather beyond people in our circumstances, but after giving it a thorough trial we came to the conclusion that it would pay for itself as quickly as any machinery to be used on a farm.

Heretofore we had used a water separator. I suppose our readers are mostly familiar with them, used by adding cold water to the milk as soon as possible after milking and allowing time for the cream to raise. Desiring to know if we could get more butter, with the centrifugal separator than with the water separator, we divided the milk at each milking until we had separated 100 lbs. of milk in each way, and one churning found we had just one pound more butter from the milk run through the centrifugal separator than by the water process. There might not be that much difference at all times of the year, but that was the actual difference in warm weather, and as all butter-makers know that is the worst time to get all the butter-fat from the milk it was no small factor in favor of the machine.

This fact, in connection with that of having the warm milk, containing all the substances, except the butter-fat, to feed to calves and pigs, quite decided us in favor of buying the separator.

We sent our cream to a creamery for one year instead of making our own butter, receiving for it \$236.59, after all creamery expenses, such as butter-making, hauling, etc., were taken out. The hauling of the cream amounting to only \$3.04 for the year, much less than it would have been had we sent the whole milk, while the fresh, warm milk is no small item in feeding calves or growing pigs, far superior to that which comes home at evening from the creamery.

This fact can hardly be expressed in words. Only by actual experience can one realize the value of fresh, warm skim-milk, which contains all the growing qualities of the whole milk minus the fat, which is more economically obtained by feeding corn, or other grains.

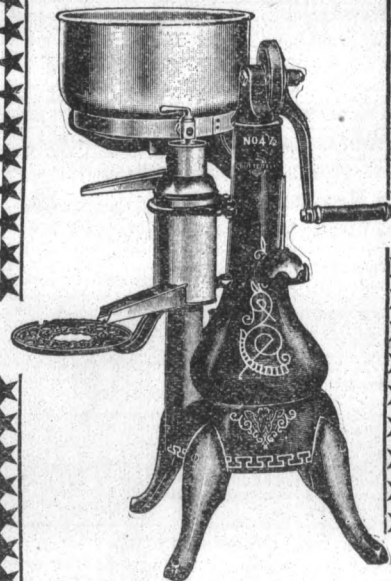
One more fact let me add: A separator removes every particle of dirt from milk and cream, such as could not be detected without the use of a separator. I had heard this mentioned but I could not realize to what extent until actual operation of the machine showed what was taken out.

Branch Co.

J. H. CORRELL.

YOUR CHANCE

To Save Money and
Make Money Has Come
to You at Last



The Cream Separator You've Waited For

When you buy a Cream Separator you want a machine that guarantees skimming to a trace; which cleans easily; which may be operated with so little effort that a child may run it; which is so carefully built that it will last practically a life-time, and a machine which is sold to you at a price which you can easily afford to pay.

The Macy Cream Separator will fill every requirement. Thousands of dairy farmers throughout the United States are now using this splendid machine. It has been manufactured and sold for the past five years, and it is rapidly displacing the widely advertised Cream Separators sold at two and three times its price.

We want you to get our story. We want you to know the Macy Cream Separator. It will add from \$15.00 to \$20.00 per cow per annum to your profits. It will pay for itself in just a few months, and give you better service and more lasting service than any other Cream Separator manufactured.

Do not be misled by the claims made on behalf of other Cream Separators. Do not be influenced by the sneers and insinuations of the manufacturers of the old style Cream Separators who are constantly attacking those manufacturers and dealers who are selling more up-to-date machines.

Learn the Truth

Investigate for yourself, American Farm Folk are the most intelligent citizenship we have. The farmer thinks for himself; he reaches his own conclusions, and then he acts. All that we want you to do is to get our proposition. We will leave all the rest of it to you. We will send the Macy Cream Separator to your farm to be tested by you—to try out in competition with any other Cream Separator manufactured; none of them are barred. We want you to run the Macy beside the other Cream Separators. Try it on hot or cold milk; test it for butter fat; test it for easy turning, for easy cleaning; submit it to any test that you may think of or the agent of any other Cream Separator may suggest. Submit it to these tests for 30 days, and if at the end of that time the Macy has not demonstrated that it is the best Cream Separator from the standpoint of skimming efficiency, easy running, easy cleaning, simplicity and durability return it to us, at our expense of transportation charges both ways.

We Want to Send You

our Cream Separator offer. We want to tell you how you can save one-half or two-thirds on your Cream Separator. We want to tell you how to add from \$15.00 to \$20.00 per cow to your income. We want to tell you how to get more cream and better cream from your herd than you have been getting in the past.

Just write us a letter or a postal card to-day saying, "Please send me your Cream Separator proposition," and we will send it free and postpaid.

Ask for Separator Offer No. 7800

R. H. Macy's Attractions are their Low Prices

Macy's

34th St. and Broadway, New York

Owl Brand Cotton Seed Meal

41 Percent Protein Guaranteed
Standard for 35 Years.
Corn can't replace cottonseed meal.
Animals need Protein. Feed a balanced ration.
Write for our booklet "Science of Feeding."
F. W. BRODE & CO., Memphis, Tennessee—Established 1875

The Michigan Farmer

ESTABLISHED 1843.

THE LAWRENCE PUBLISHING CO.,

EDITORS AND PROPRIETORS.

39 to 45 Congress Street West, Detroit, Michigan.

TELEPHONE MAIN 4235.

NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—600 First Nat'l Bank Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
GRAND RAPIDS OFFICE—5 & 6 New Hawkins Building.

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

I. R. WATERBURY.....Associate Editors.
O. E. YOUNG.....
BURT WERMUTH.....
ALTA LAWSON LITTLE.....

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

TERMS OF SUBSCRIPTION:

Five Years 260 Copies Postpaid \$2.75

Three Years, 156 Copies, Postpaid.....\$2.00

One Year, 52 copies, postpaid.....\$1.00

Six Months, 26 copies, postpaid.....60 cts.

Canadian subscriptions 50 cents a year extra for postage.

Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts, checks and postoffice orders payable to, the Lawrence Publishing Co.

RATES OF ADVERTISING:

40 cents per line agate measurement, or \$5.60 per inch, each insertion, with reasonable discount on orders amounting to \$21 or over. No adv't inserted for less than \$1.25 per insertion.
No lottery, quack doctor or swindling advertisements inserted at any price.
Entered as second class matter at the Detroit, Michigan postoffice.

COPYRIGHT 1911

by the Lawrence Pub. Co. All persons are warned against reprinting any portion of the contents of this issue without our written permission.

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

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 Pub. Co.,
Detroit, Mich.

DETROIT, MARCH 18, 1911.

CURRENT COMMENT.

Pursuant to a proclamation issued by the President, the 62nd congress of the United States will convene in special session on April 4 for the consideration of the agreement entered into with Canada by the administration. The convening of the new congress in special session for this purpose, due to the failure of the senate to reach a vote on the McCall bill at the session which closed on March 4, is in line with the previously declared intention of the President. As forecasted in our recent comment on this contingency, it now becomes imperative that the farmers of the country act in unison to meet this emergency if they would avert the impending danger to their industrial welfare which threatens in the ratification of this agreement, which is probable if not certain unless the opposition of the farmers of the middle west and border states is voiced in a most vigorous manner.

It appears certain that there is no need to comment further upon the details of this agreement at this time. From the evidence at hand it would seem that our readers are practically unanimous in their opposition to it. But opposition voiced only at home will have little or no effect. True, Granges, Farmers' Clubs and Farmers' Institute societies have passed resolutions by the score opposing this agreement. Also, petitions by the hundred have been freely signed and forwarded to Washington by interested farmers. All these are calculated to reveal the sentiment of the farmers of our state on this important question, but they are weak and impotent as compared with a more direct and personal appeal by letter to the men who will represent Michigan in the 62nd congress. Every man who is interested in the fate of this agreement, as every Michigan farmer certainly is, should make that interest known by writing personal letters to the men who will represent him in the congress which will convene on April 4, and particularly to the two men who will represent Michigan in the senate. In our last issue we commented on the position of Senator-elect Townsend as voiced by his public expressions on this proposition. Senator Smith has not, so far as we have been able to learn, given out any public statement with regard to his position on the ques-

tion, but some of his close personal and political friends who would seem to be in a position to know something of his attitude believe that he will favor the agreement.

With the impending probability that both U. S. senators from Michigan may favor this agreement, the thousands of our interested readers who are so earnestly opposed to it certainly owe it to themselves to write Senator William Alden Smith, at Grand Rapids, and Senator Charles E. Townsend, at Jackson, Mich., as well as to the congressman from their district, prior to the convening of congress on April 4, and preferably at once, courteously but vigorously expressing their views upon this question. Such a direct personal appeal will at once command the attention and respectful consideration of these gentlemen.

While the suggested action is indeed a little thing for one to do in his own interest, a concerted movement of this kind by Michigan Farmer readers would do more than could be accomplished in any other way toward helping to avert this impending calamity, or at least the impending danger that it may be favored by Michigan's representatives and senators in the 62nd congress.

A prominent institute speaker in a recent discussion of the efficiency of the farmers' institute and the changes, if any, which should be made in the present plan of holding farmers' institutes in Michigan, stated that in practically every case where a display of any kind of agricultural products was made in connection with an institute the interest in and attendance of the meeting was far above normal. This is a fact worthy of special note if it should be found that it obtained with few exceptions throughout the state during the institute season which has just closed. There is no question that a local exhibition of choice agricultural products, which can be compared by the farmers in attendance at a meeting where they can talk over in a friendly way the methods used in producing them, is most beneficial as well as interesting. The Grange and Farmers' Club fairs held in Michigan during recent years have been almost uniformly successful from the standpoint of interest taken in them by the membership of these organizations, as have the local corn shows held by the local and county corn improvement associations. If the same should prove generally true of the local exhibit in connection with farmers' institutes, it is a feature of institute work that should be commended and encouraged.

With the approach of spring the plans for the summer campaign on the farm should be well developed to the end that the actual work may be started in season. The special discussion of the subject of "Farm Management," which was given space in our columns during January, and the like discussion of "Soil Management," which is being similarly treated in the issues of the current month were designed to direct the reader's attention to some of the fundamental principles which should be made the foundation of our agricultural practice, and with which our plans for the season's campaign should be made to conform. First among these essentials comes a judicious system of crop rotation so planned as to maintain the soil in a good mechanical condition and conserve its available plant food in a manner which will increase its crop producing power, and thus augment the profit which may accrue to us from its cultivation. The problem of increasing, as well as conserving the fertility of the soil should also be well considered in this connection when we are shaping up our plans for the season's campaign. All of these are basic considerations and should be given mature consideration. We can not plan most successfully for a single season, but must take into consideration the promise of the future as well as the mistakes of the past if we are to so outline the year's campaign on the farm that it may count most toward our permanent success in agriculture.

But these are what we are prone to consider the larger and more important factors of success. In a sense they are, and yet without just as thoughtful consideration of the smaller things which enter into good farm and soil management we cannot attain the highest degree of success. Among these little things is the careful selection of the seeds we sowed and every detail of our practice made

to conform to our knowledge of advanced methods, rather than to our convenience or habit.

Clover and grass seeds are high in price, and there is a proportionately strong incentive to market poor, foul and adulterated seeds. There has been a rapid increase in the number of weed pests on Michigan farms in recent years through the use of foul grass seed. Among the more recent and dangerous of these pests is dodder, which has been described and illustrated in the Michigan Farmer several times during the past two years. The government has sent out a word of warning to the effect that large importations of dodder-infested seed have come in from South America, and that there is grave danger of a further spread of this pest in the clover growing section of this country. This makes it more than ordinarily important that every farmer carefully examine the clover seed and grass seed which he purchases. The treating of the seed oats for smut and the testing of the seed corn for germinating quality are other little things which make for success and should not be neglected. In fact, there are many such things of which these are but examples, and the season's plans will not be well made, if every phase of the season's work is not consid-

HAPPENINGS OF THE WEEK.

National.

It is expected that the grand jury investigating the vote selling traffic of Danville, Illinois, will publish its report this week.

The citizens of Richmond, Mich., are moving to force the Grand Trunk railway company to change the name of the station from Lenox to Richmond, owing to the confusion which arises from the two names.

Williams and Amherst colleges have planned for an innovation in college contests in the form of a balloon race to take place in June.

The supreme court of the United States unanimously held the provision of the Payne-Aldrich tariff law which provides for the federal taxation of corporations to be valid. The basis for the opinion rests upon the peculiar privilege of corporate or joint stock businesses, i. e., it is a tax on doing business under the advantages of corporate existence. The tax collected from this source by the federal government for 1910 was over \$27,000,000.

The sudden mobilization of troops along the Mexican border has taken the American people by surprise. It is announced that the administration is but fulfilling a general policy adopted to put an end to the filibustering parties organized in this country for the purpose of starting revolutions in the central American republics with promises from the interests that if they succeed and establish a government instead of the one attacked and grant liberal concessions to the interests sending them, that large bonuses will be awarded. These parties have gone out to disturb the peace of the little republics more frequently than the general public knows, and the complaints coming to the department of foreign affairs at Washington have so impressed the administration that it was thought wise to establish a precedent discouraging further organization of like parties. Another reason ascribed for the collecting of troops along the border and for the patrolling of the Mexican coast is that European countries being unable to come here and protect their interests because of the attitude of this country as established by the Monroe doctrine, depend upon this country to protect those interests in their behalf. England has much money invested in railroads and mines and other properties in Mexico which are being harassed by the present revolutionary disturbance.

The explosion of three car-loads of dynamite at the powder works near Pleasant Prairie, Wisconsin, shook the earth for one hundred miles distant from the accident. Only one life was lost. Houses in the vicinity of the works were thrown to the ground. Windows were broken a score of miles away and the shock was felt in Chicago and across Lake Michigan in the border counties of this state. The inhabitants are now appealing to the legislature of that state to prevent the rebuilding of the mills at the former site, and the courts will be appealed to to charge the powder company for the damage resulting from the explosion. No cause for the accident has been assigned.

Express companies in New York are again having trouble, drivers are on strike for more wages. It is stated that chauffeurs have voted to go out in case demands for more pay are not heeded.

A cave-in at the Virginia mine near Duluth crushed 26 men into almost an unrecognizable mass. Ten of the bodies have been removed, the others have not been reached.

The Farmers' National Bank at Union City was closed by direction of the federal bank examiner, the bank having deposits to the amount of \$169,000 and assets aggregating \$100,000. The stockholders are able to pay the deficit and probably will do so, turning the entire business over to one of the other banks of that place.

Foreign.

A severe earthquake, accompanied by strong detonations from Mount Vesuvius, occurred Monday and a large section of the crater fell away, it being estimated

that the portion would measure 1,000 by 250 feet. The funicular railway was badly damaged.

France has adopted standard time. Last Friday night her clocks were stopped, to start again when it was twelve o'clock at Greenwich, England. It has taken the country a quarter of a century to overcome the prejudice against accepting English time. Since it has been done the French now believe that it would be proper for the English to adopt exclusively the metric system.

Russia is mobilizing troops along the frontier of China, especially at Kulja, in anticipation of China's refusal to accept an ultimatum forwarded from St. Petersburg to the effect that China should immediately re-open consulates specified in the treaty of 1881, and establish free trade in tea and certain other products.

The Canadian parliament is debating the trade pact proposal with the United States at Ottawa. On Monday of this week a proposition was introduced looking toward the construction of a Georgian Bay canal and delaying reciprocity arrangements with the United States until an established line of trade was opened through this new channel, but the proposal was ruled out.

Nineteen sealing vessels carrying about 4,000 men sailed Monday from St. Johns, Newfoundland, for the seal fishing fields of the north.

MICHIGAN CROP REPORT.

Wheat.—In answer to the question "Has wheat during February suffered injury from any cause?" 222 correspondents in the southern counties answer "yes," and 133 "no;" in the central counties 124 answer "yes," and 31 "no;" in the northern counties 44 answer "yes," and 111 "no;" in the upper peninsula 29 answer "no," and in the state 390 "yes" and 304 "no."

Snow protected wheat in the southern counties 0.88 of a week; in the central counties 0.87; in the northern counties 3.29; in the upper peninsula 4.00 and in the state 1.56 weeks.

The average depth of snow on February 15th in the southern counties was 0.78; in the central counties 0.49 of an inch; in the northern counties 9.87; in the upper peninsula 24.00, and in the state 4.09 inches. On the 28th the average depth of snow in the southern counties was 0.03; in the central counties 0.04 of an inch; in the northern counties 5.66; in the upper peninsula 20.66 and in the state 2.45 inches.

The total number of bushels of wheat marketed by farmers in February at 108 flouring mills is 141,713 and at 93 elevators and to grain dealers 124,872, or a total of 266,585. Of this amount 181,527 bushels were marketed in the southern four tiers of counties, 67,869 in the central counties and 17,189 in the northern counties and upper peninsula.

The amount of wheat yet remaining in possession of growers is estimated at 7,700,000 bushels. Sixty-six 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, sheep and swine 96; cattle 94.

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, 1911, was about 179,690,000 bushels, or 25.8 per cent of the 1910 crop, against 173,344,000 bushels, or 23.5 per cent, of the 1909 crop on farms March 1, 1910, and 154,031,000 bushels, or 23.3 per cent, the average for the past ten years. About 54.5 per cent of the crop will be shipped out of the counties where grown, against 59.3 per cent of the 1909 crop, and 57.0 per cent, the average of the past ten years so shipped.

The quantity of corn on farms March 1, 1911, was about 1,265,634,000 bushels, or 40.5 per cent of the 1910 crop, against 1,050,800,000 bushels, or 37.9 per cent of the 1909 crop on farms March 1, 1910, and 953,100,000 bushels, or 38.3 per cent the average for the past ten years. About 22.2 per cent of the crop will be shipped out of the counties where grown, against 23.1 per cent of the 1909 crop and 20.7 per cent, the ten-year average so shipped. The proportion of the total 1910 crop which is merchantable is about 86.4 per cent, against 82.6 per cent of the 1909 crop and 83.6 per cent, the ten-year average.

The quantity of oats on farms March 1, 1911, was about 421,535,000 bushels, or 37.4 per cent of the 1910 crop, against 363,159,000 bushels, or 36.1 per cent, of the 1909 crop on farms March 1, 1910, and 317,985,000 bushels, or 36.4 per cent, the average for the past ten years. About 31.2 per cent of the crop will be shipped out of the counties where grown, against 32.7 per cent of the 1909 crop, and 28.1 per cent, the ten-year average.

The quantity of barley on farms March 1, 1911, was about 31,062,000 bushels, or 19.1 per cent of the 1910 crop, against 41,220,000 bushels, or 24.2 per cent, of the 1909 crop, on farms March 1, 1910. About 50.4 per cent will be shipped out of the counties where grown, against 51.7 per cent of the 1909 crop.

CROP AND MARKET NOTES.

Gratiot Co., March 11.—Exceptionally fair weather has prevailed here since early February. The ground freezes a little nearly every night. Sugar-making is well under way. There is some frost yet in the ground as there have been no rains. Farmers are improving the opportunity of getting the manure out early. Auction sales are rife, one county paper advertising twelve this week. Horses are (Continued on page 335).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

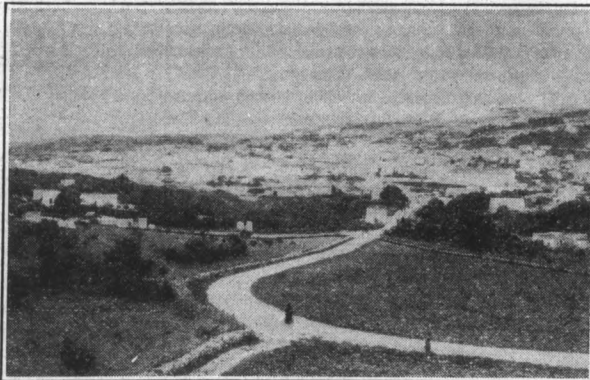
THE FRUIT INDUSTRY OF SYRIA—BY WARREN EDWIN BRISTOL.

SYRIA is not recognized by the Turkish geographers as a separate division of their great empire; yet to all western nations, it comprises the territory extending from the Bay of Alexandretta and the Taurus Mountains on the north to the Red Sea on the south, and from the Arabian desert to the Mediterranean.

From a horticultural point of view, this narrow strip of land, containing only 103,000 square miles and about three million persons, bears much the same relationship to the rest of the Sultan's domains and to the neighboring countries, as California and Florida do to the rest of the United States. Here are grown all the fruits of a semi-tropical climate, and also most of those of the temperate and north-temperate zones. The country naturally divides itself into four regions, each having a more or less distinctive flora, due to the difference in levels. The lowest is that of the Jordan Valley and the Dead Sea (1,292 ft. below the level of the sea); next coming the coast plains varying from nothing to several miles in width, the great inland plateaus, and the snow-capped mountains.

These extremities in altitude, found in no other country in the world, give a most varied and interesting flora. The Jordan valley was once green with date and banana palms, and sugar cane, but today these are cultivated to a far less extent. The littoral regions are now the scenes of many actively-operated orchards particularly of orange, lemon and olive. On the tablelands and low foothills flourish grapes, melons, mulberry trees, figs, and numerous cereals, while apricots, apples, pomegranates, almonds, acacias, carub and walnuts are not uncommon. All of the mountain peaks are now practically barren of vegetation, excepting for a few species. On the slopes are still found forests of oak, pine and cedar trees though these do not reach the magnificence of past ages. The seed of the pine is extensively used in confections and pastry.

The principal fruits deserve detailed description, though it is not the purpose of this article to more than briefly survey these. Syria is the home of the olive. In Scriptural history we learn that the olive tree, its fruit and its oil played an important part in the lives of the people. To the present inhabitants they are no less important. The olive is a household necessity. It appears in the menu of every meal. A constant companion of the native bread, it is as essential to the meal of the Syrian as butter is to that of the American. Every one who has traveled in the Holy Land recalls the familiar sight of a workman sitting in the shade of a fig or a mulberry tree eating his scanty lunch of bread and olives. The cheapness of this fruit is partly responsible for its popularity. The Syrian product does not command a high price in the local market, if compared to that of American growth. During an average season a bottle (5½ lb.) may be purchased for four and a half piastres (14c). Were it not for this extremely low price they would not be such an important factor in the diet of the common people. Hence,



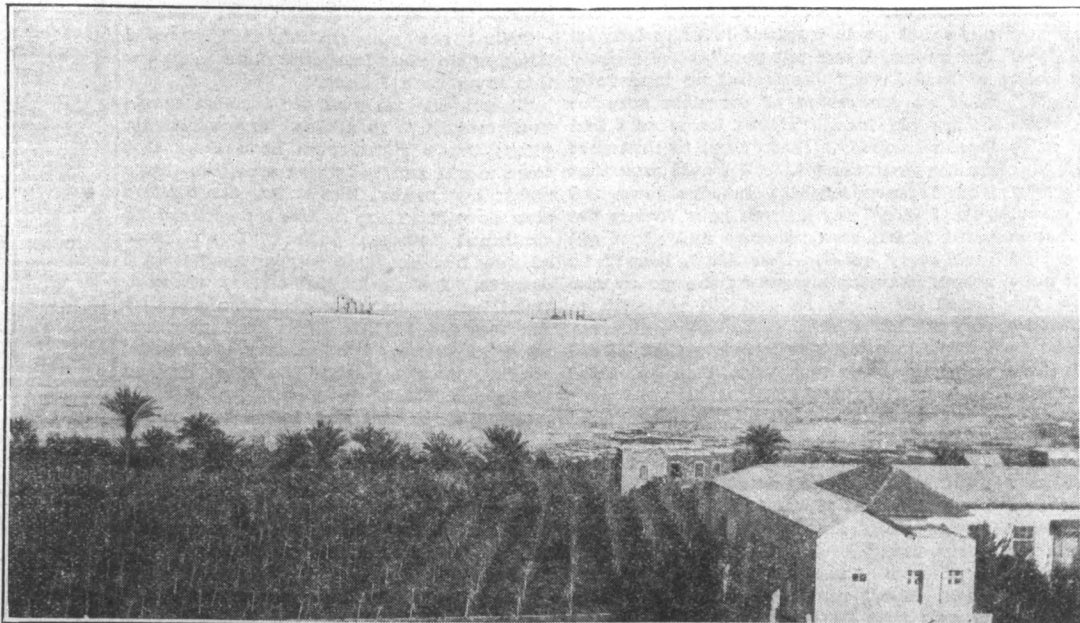
Nazareth and Her Orange Groves.



Bird's-Eye View of Damascus.



Fruit and Vegetable Sellers at Tripoli.



One of the Mulberry Orchards at Beirut, with a Silk Mill Adjoining.

when an off season sends prices soaring, the hardship is severe; for no home, however poor, can be without its jar of salted olives. The price of olives, as of all other commodities, is governed by the universal law of supply and demand. In this case, inasmuch as the demand is constant, it all depends upon the supply. Olive trees bear every other year, so if a majority of the trees yield their small crop the same year, the available supply is necessarily curtailed.

A large amount of work is necessary to start a good orchard; but, when once started, it is sure to prove a good investment. The value of a grove depends upon its situation, the nature of the soil, and the distance from a market. An average orchard in proper condition will pay for itself in the course of three years. The fact that the returning emigrants invest their small savings in the fruit business helps to keep up the prices. One of the principal reasons for the low selling prices of olives is the wage paid workmen. A day laborer does not ask more than thirty-five cents a day, and olive pickers may be hired for twenty. All of the best fruit is hand picked. The inferior varieties are knocked or shaken from the trees and picked up from the ground.

The largest olive groves are along the Mediterranean coast but on every hillside, from north to south, one finds these purplish green leaved trees, alone or in groups. The fruit of the higher altitudes is preferred by many to that of the coast. Damascus is famous for its large varieties. Some of these attain a length of two and a half inches and nearly twice that in circumference. It goes without saying that the average person does not need many of these to make up the fruit course of a meal.

Comparatively a small amount of the year's yield is exported, notwithstanding the fact that the orchards of Damascus alone grow more than 350 tons annually. A large portion of each crop finds its way into the oil presses. Some of the very best fruit is used for oil. The oil is used in a multitude of ways, from the greasing of machinery and the making of soap to the packing of fruit, and as a sauce for numerous dishes. By far the greatest portion of the entire output is used in the manufacture of the native soap. This product effectively competes with the soaps of foreign make; and, as a general cleanser, if not exactly as useful, it fills the demands of the most over-fastidious Syrian housekeeper. It fits the hand and the pocketbook as well. At the same time, this article finds a ready welcome in foreign markets.

Second in importance stands the orange crop. This fruit is extensively cultivated along the coast from the northern boundaries as far south as Jaffa. The principal crops come from Tripoli, Alexandretta, Sidon and Jaffa. All of these regions are situated within easy access of the Mediterranean boats, with the exception of Sidon, which has to send its fruit over land by camel and donkey to Beirut. Beirut being the natural seaport of Sidon, many tons are sent from her wharfs each

season, but only a small number of these oranges are raised in the vicinity. The Syrian oranges are shipped to Austria, Germany, France, Russia, Roumania, England, Egypt and other parts of the Turkish Empire, to the amount of a million dollars' worth a year.

The methods of handling the crop do not differ materially from those of other land. The picking commences in early winter and continues until after Easter. Orange pickers and packers, mostly boys, get about eleven cents a day. In some places the wages are slightly higher.

Grape raising forms one of the most important phases of husbandry. The terraced slopes of the Lebanon mountains produce a grape of excellent quality. In Palestine, the German and Jewish colonies are doing much to improve and enlarge this industry. The wines that are made are principally sweet, and consumed in the country. They do not compete very successfully with the wines of France and Italy. Less than \$100,000 worth a year leave the country. A far greater business is carried on in the drying of raisins.

Bananas are raised along the southern part of the coast commencing at Beirut, but they do not compare favorably with the fruit found in the American fruit store. They are small in size and much less delicious. Apples and apricots are raised in the Antilebanon. Nearly all of the trees are ungrafted, and therefore

bear "common fruit." Very little has been done to develop the apple in this country. Fig trees abound through the land. The usual crop is of excellent quality and finds a ready sale in the local markets. Dried figs sell at the opening of the season for three to five cents a pound. The Syrian fruit is not equal to the famous Smyrna line in size and does not enjoy so good a name abroad. The time of harvest depends largely upon the location of the orchard. In the mountains, this season is the latter part of August, while on the coast it is a few weeks earlier. This is one of the few fruits which the children do not eat green.

While not strictly included under the caption, "fruit industry," a word about the cultivation of the mulberry may not be out of place here. The mulberry is not raised in Syria for its fruit. Growers find it more profitable to feed the leaves to silk-worms, and to this end the trees are pruned so as to put out more branches and hence more leaves. It would make an expert forester or gardener gaze awestricken at the method adopted. With an ordinary sickle and a strong arm, the operation is short. No attempt is made to cover the wound, or to make it neat with a sharp instrument. It is no wonder that the fungi lose no time in getting in their work, and that in a few years the trees hollow from the branches to the ground. The period of luxuriant growth is thereby seriously shortened.

THE GATES OF BAKAPPLEIN

By ELIZABETH JEWETT BROWN
and SUSAN JEWETT HOWE.

Chapter XVIII.—Old Joe Rises to the Occasion.

For over a year Old Joe Green had bided his time awaiting Ned's return when he could say a few things publicly that he had desired to say for a long time. His first thought, after the excitement had died down, was that the time had come when he could vindicate Ned in the eyes of the town's people; for Ned had returned in the very nick of time, covering himself with glory at the outset. None of them at the barn could possibly have reached the engine in time to prevent the terrible consequences of young Joe's act of drunken interference, for the young fellow, not having sense enough to know that there would be no wood sawing that day, and finding the engine alone had thought to anticipate Ben Baker in starting it for once, as the man would never allow anyone to touch it but himself. So accordingly he had filled it to overflowing and then started it, chuckling to himself over his chance to outwit Ben.

Awed and silent at the thought of what might have happened if the boys had not arrived at that moment, the men stood staring at Ned and Roy, while Merle and Mary wept for joy and Searls could not find words to express his delight. But the boys took their honors modestly, Ned finally declaring he was so hungry that he would not explain anything until he had had some of Mary's coffee. Then, submitting to a hearty kiss from that autocrat, though he dodged when he saw her coming, expecting his customary cuffing, he finally recovered enough to introduce Roy, who at once applied to Searls for a job, saying that he would come in handy no matter what happened.

"If he don't I will," said Mary, giving him as hearty a kiss as she did Ned. "I know you are all right by the way you have been hustling. Now both of you wash off some of that dirt and I'll cook you the best breakfast the place affords."

Searls held out his hand. "You have earned a life-long welcome," he said, "you and Ned both."

Old Joe's heart was full. Sorrowfully he led his son away to sleep off his spree. He knew well that he had lost his chance for working on that place. Twice Ned Jackson had saved him from death; once Merle had saved his life, and now the time had come when old Joe felt that he could pay back his debt of gratitude to both of them by making folks believe that, as he said, "he had allers knowed that Ned was a therrerbred and now other folks had got to know it tew."

He quit work early that night and drove to King's store, where he knew that three-fourths of all the men and boys of the town congregated when there were no counter attractions elsewhere. He lugged a bushel basket in with him and, finding a convenient seat on top of a cracker barrel, he set the basket down between his legs and began to smoke contentedly.

For awhile he made no special conversation, as both King and his clerk Jimmy were busy waiting on customers, while Sarepta, perched on her stool in her little railed off inclosure, worked industriously at her books, apparently paying no attention to the group of loungers who smoked, chewed and gossiped there night after night to their hearts content.

Naturally, the return of Ned Jackson, the tragedy he had averted, and the Jackson baby were the topics of the hour and Joe was appealed to as an authority. "Jackson needs a hoop on, so he won't bust, eh—now that he's got a boy," said Cal Chase to him.

"Guess he ain't no more pleased than the rest uv us air," said Joe, philosophically. "I ain't seen the young man yet, but from all accounts he's a hummer; I heard him, though," he added.

"They won't be adoptin' no more girls now, I guess," said another. "Is is true, Joe, that Searls had papers made out 'doptin' his cousin, Merle? I know that Yvonne Benoit and Martha Malley are 'dopted hard and fast, but how about the 'tother'?"

"Wall, Searls don't tell me all his bizness, and as I never ast, I can't possibly say fer sartin, but I think he did; and as fer their 'doptin' more children, I don't see nothin' ter hinder their doin' it if they see fit," he drawled.

"I hear Ned's got back," snapped King. "And from what I hear he is pretty near a tramp. Had to come back on a cattle car to git here at all. Thought he was goin' to paint the country red when he left here."

"He may yit," answered Joe, slowly. "Lot's uv things happenin' erlong, John King, that we don't think is goin' to."

"Meanin' what?" demanded King, wrathfully. "Yew can't come in this store and go to insultin' folks as long as I'm owner, I can tell you."

"Good Lord!" Joe looked up innocently with an expression of complete surprise on his big face. "Didn't know as I had insulted nobody. Hadn't got to that part uv the program yit. All I said wuz that Ned Jackson might paint the town red yet. I didn't say he wuz goin' to buy the paint in his own measure and git a gill over every quart. Now did I, boys?" he asked, beaming around at the group who hoped for a quarrel and did not wish to lose one word of it.

King growled inarticulately that he did not buy paint that way, then retreated behind the counter.

"Course you don't," Joe continued sweetly, "but it is jest coz you can't. Don't see what you've got agin that remark. Ef the shoe don't fit ye ain't erbleeged to put it on, fer all that I know. I wuz talkin' about Ned Jackson and not about yew."

"There's some pretty tough stories about Ned," remarked Chase, pointedly. "Guess that Searls ain't any too glad to have him come back. I heard pretty straight that he don't hesitate to turn a

dollar his way if he gets the chance. Mighty rough on Searls when he pretends to be such a straightforward Christian to have such a relation; but I have alwys held that Searls would bear watchin'," he said knowingly.

"So'll a settin' hen, and a sunset, and a sick man," agreed Joe. "It's the folks that won't bear watchin' that I'm afraid of; but we will leave Searls out of the talk. Man and boy, I've knowed him all his life and if I can't say nothin' agin him the rest uv you had better shet up and stay shet while you're about it," he added pointedly. "Now about Ned. I ain't denyin' that Ned wuz brung up to hev a mighty good 'pinyun of hisself. He never learned how to work, and he wuz brung up ter feel above it; but I'm also sayin' that he has learnt a pile sence he went away. He's come back fair and square with the world, and the fust man in this town, or in the next, that sez one word agin Ned Jackson's honesty will hev to answer to me; and after they git through with me, I reckon, after what Ned done today, and considerin' that Searls knows more'n he did about some things, they'll hev to answer to Searls Jackson. Has enyboby anythin' ter say?" he demanded, "coz ef thar hain't I want ter tell a little story. Any objections?" he asked of King who had again entered the group.

"If you don't stop your insinuations I'll make you go perty darned quick," King yelled, forcing himself through the crowd and shaking his fist under Joe's nose.

"A hit bird allers flutters," said Joe, quietly taking his pipe from between his lips and waving it casually around but managing to have the hot bowl strike King's hand. "Can't see what you 'air so uneasy about, friend King," he continued, "but if my presence here annoys you, why I'll jest go acrost to the hotel, an' if this crowd will foller me I'll tell 'em suthin' mighty interestin' about—well, about this basket," he said, shambling down from the barrel and picking up the basket, while the men started to go with him.

King darted to the door ahead of Joe and locked it. "If you have got anything to say against me you say it here," he panted. "I won't hev no talkin' goin' on behind my back."

"All right," said Joe, serenely settling back on the barrel. "What makes yew so sure I was goin' to talk about yew? I can't remember that I have mentioned your name, have I? Wall, ef you want to hear the little story I hev in mind, all right. I'll accommodate all uv ye. I've be'n achin' to tell it fer a long time but I promised to keep still till Ned Jackson got back. It is suthin' he told me."

The crowd was silent. King had returned to his place behind the counter. Sarepta had stopped her writing and was leaning forward on the stool, with her ears strained to listen. Joe smoked a few moments unconcernedly, then he said irrelevantly: "Ned brought a mighty smart young feller home with him ter day and I reckon he'll stay around here as long as he wants to. Don't know when I've seen a boy that I tuk to as I did to him; his name is Roy Nelson."

"What's that got to do with your story?" asked one, impatiently.

"Nothin' much; only I thort I'd jest speak about him. He's a feller that's be'n crushed all his life, but now he's bound ter git to the top. Lots uv other folks, like towns, when wunst crushed stay so, but this chap ain't that kind."

"What are you gettin' at?" growled King. "No man has ever done more fer this town than I have."

"Seems ter me yew air turrible sensitive tonight," said Joe, aggravatingly. "Yep; that's right, yew have done this town mor'n enyboby else ever did, that's right; but towns, like folks, don't allers stay down!" Then as the men roared he continued between puffs: "Don't know as yew hev used me any wussesh than I deserve. I ain't kickin' on my account. But I hev got in my pocket here a list uv the families in this town that yew hev tried to crush; it's mighty interestin' readin'. Saw a pitcher the other day 'at made me think uv yew. An elerfunt stepped on a bird and killed her. Then when he saw she had a lot uv young un's he said, 'Too bad! the poor things will starve to death, so I'll put 'em outen their misery,' so he stepped on them tew. See the pint?" then the men laughed again. "That's the way yew hev used the Malleys—"

"You leave my folks out of the question," snarled Jimmy, who had not ventured a remark before.

(Continued on page 330).

GUARANTEED ALL WOOL



WHEN you select Clothcraft Clothes you get a guaranteed all-wool suit that saves you from \$5 to \$10. Moreover, you get a reliable suit as dependable for style and fit as it is for the service that only all-wool, thoroughly shrunk, can give.

The fitting-quality of Clothcraft Clothes is really remarkable. Clothcraft dealers frequently demonstrate this by trying on coats several sizes too large, and pointing out that notwithstanding that fact the collar fits close, the lapels lie flat, and the coat-front hangs unbroken. You'll see Clothcraft fit, too, in the shapely shoulders, and in the way the trousers hug close at the heel.

Unseen quality is assured by the Clothcraft guaranty of all-wool fabric, first-class trimmings and workmanship, lasting shape, service and satisfaction. This guaranty is backed by dealer and maker. You get it only at Clothcraft Stores.

This protection is made possible only by Clothcraft Scientific Tailoring, that has improved the quality as often as it has lowered the cost. It's the outgrowth of sixty-one years' study of just one thing—the making of good clothes at medium prices.

Go to the nearest Clothcraft Store, or write us direct. We'll gladly send you the Clothcraft Style-Chart, showing fashions for spring, and a booklet picturing the clean, light shop where Clothcraft Clothes are made. If your dealer doesn't sell Clothcraft Clothes, let us direct you to the nearest Clothcraft Store, where you can be sure of honest clothes, honest methods and an honest guaranty. That's why it's a Clothcraft Store.

THE JOSEPH & FEISS CO.

Founded 1850—Oldest American Manufacturers of Men's Clothes
623 St. Clair Ave., N.W. Cleveland

The Century BOOT

(Beacon Falls Brand)

If you had rubber boots made to order, you couldn't have them made better than the CENTURY BOOT. It is made of the best rubber produced. The vamp is made extra strong. To prevent cracking at ankle an extra pure gum, no-crack ankle reinforcement is used.

IT IS THE CHEAPEST

because best—best in material, best in workmanship, and best for wear. Those facts are also true of the entire Beacon Falls line. When you want a high grade satisfactory rubber boot or shoe, insist that you be shown goods bearing the Cross. It insures you quality and service. If you can't secure Century Boots from your dealer, write us. Send his name. We will see that you are supplied. Send for illustrated booklet.

BEACON FALLS RUBBER SHOE CO.
New York Chicago Boston

WANTED FOR U. S. ARMY—Able-bodied, unmarried men, between ages of 18 and 35; citizens of United States, of good character and temperate habits, who can speak, read and write the English language. For information apply to Recruiting Officer, 212 Griswold Street, Detroit, Michigan; Heavenrich Block, Saginaw, Michigan; Corner 1st & Saginaw Streets, Flint, Michigan; Dwight Building, Jackson, Michigan; corner Huron Avenue & Quay Street, Port Huron, Mich.

Let Me Start You in Business!
I will furnish the advertising, matter and the plans. I want one sincere, earnest man in every town and township. Farmers, Mechanics, Builders, Small business men, anyone anxious to improve his condition. Address Commercial Democracy, Dept. D-50, Elyria, Ohio.

YOUNG MEN WANTED TO LEARN VETERINARY profession. Catalogue free. GRAND RAPIDS VETERINARY COLLEGE, Dep. 11, Grand Rapids, Mich.

PATENTS: For facts about Prize and Reward offers and Inventions that will bring from \$5000 to Ten Million Dollars, and for books of Intense Interest to Inventors, send 8c. postage to Pubs. Patent Sense, Dept. 89, Barrister Bldg., Washington, D.C.

IN SAP-TIME.

BY FLOY S. ARMSTRONG.

'Long 'bout this time ev'ry spring,
Dad jes' makes the old camp ring;
Gits out augers, sp'fles an' pans,
Pots an' pails, an' old tin cans;
Taps the trees, an' splits the wood,
An' us boys help—we're awful good
In sap-time.

When the sap begins t' run,
Then we have dead loads o' fun
Wadin' snow-banks t' our knees,
Chasin' chipmunks in the trees;
We tend the fires, an' raise the deuce.
Dad says: "Gosh! kids, you're let loose
In sap-time.

Best of all is after night,
Settin' round the kitchen light,
An' over by the boilin' pot
Ma spoons up sugar pipin' hot.
Then we stir an' stir—aw, say!
Wish all kids lived up our way
In sap-time.

MARIAN'S WHEREWITH.

BY GLADYS HYATT SINCLAIR.

"What is it, Marian?" asked the half-invalid mother cheerily; "another puzzle?"

"O, dear, yes, mammy mine! I have read and re-read every thing in the house and the neighborhood; I do so want some more tea roses to fill up by bed this spring; and my heart just aches to help Jess Carmody to the school books she needs—and my pocketbook is flat. I believe I feel the worst about Jess. I can easily believe that the 'Lord loveth a cheerful giver,' I love them so myself. I would be one, too, if I had the wherewith."

"But a cheerful giver isn't always a giver of money, Marian. Who was a cheerful giver when she gave up her art school scholarship for the year to stay at home with her no-good mammy? Who cheerfully gives her artistic talents to rugs and curtains and cushions and flowers and daintily arranged tables and the beauty of cleanliness in the old home, instead of to the pictures she had dreamed of so long?"

Marian's lips quivered. "Thank you, mammy," she said softly; "but I think I ought to earn my own extra expenses, don't you? When papa works so hard and gives me money for clothes I cannot bear to ask him for money to buy less needful things, too. I can't bear to take even my Grange dues and church collection money."

"You are right; but perhaps we can manage for ourselves. I think I hear part of your wherewith this minute."

"Trill?" cried Marian in astonishment as the melting notes of the Hartz mountain canary, her mother's Christmas gift, flooded the room with melody.

"No, sell Trill's children. Aunt Grace and Mrs. Seymour would lend you their female birds; you could raise four broods this summer and would surely get five or six singers. When they were trained by Trill they would sell readily. Mrs. Stamfner said, only yesterday, how much she

to bespeak her lady birds and returned with the promise of them and with a basket of pale green eggs. "Mammy, see! Aunt Grace gave me these and she said that wet corner of the new meadow is just the place for ducks. What do you think about it?"

"So it is; and if you wish to add the care of baby ducks to the care of baby birds, Thanksgiving time will bring you a handful of wherewith for the poor and destitute."

"How quickly you think—and what splendid thinks! Care? I'll learn to quack if necessary. And I'll buy school books for Jess and a warm coat and mittens for Jack Bates next winter, and who knows what besides?"

At corn planting time the ducks' eggs were being mothered by the most faithful biddy of the flock. Four gaping youngsters in the canary's cage required conscientious care every day. It was disagreeable work; Marian did not pretend to like it. "But I suppose the cheerful part comes in here as well as later," she thought. "Cheerfully doing the work that earns the money must mean as much as cheerfully giving the money itself."

"Father," she said one evening, "may I have three rows of corn clear across the field if I plant, and weed, and hoe, and cut, and husk it?"

"Of course, daughter; but aren't you taking a big contract? That is a long field."

"The longer the better, for this is to be book-and-flower corn. I will pay you for the seed when I sell the corn and the rest of the price goes into my book and posy box. I shall have to plant hybrid perpetual roses in the fall instead of teas now, and wait for my books; but the hybrid perpetuals are more hardy and sure to live anyhow, and I need new books worse in winter. I'll save some of the money for next summer's reading."

"I see," answered the father, much amused. "Well, I will donate the seed on condition that you don't take part of the price for some gimcrack to pay for your backaches."

"O my, O me!" sighed a weary girl, casting herself on the steps at her mother's feet late in the afternoon, three days later. "That corn is buried, my hand is blistered, eleven of the 'destitute ducks' are hatched and I've worked my alleged brain till it cracks, without a single idea as to gift money."

"I have spun a plan for gift money but I am afraid you won't like it, dear," and the mother hesitated.

"More blisters?"

"No, a sacrifice; but it is only an idea. Father is anxious to get some of Mr. Stamfner's blooded pigs but hasn't the money to spare just now. If you bought two he would gladly raise one for you, keeping the other one. A fat porker would mean quite a lot of gift money before Christmas."

"But how can I buy pigs? Oh—did you mean with the money father gave me for

ing material for the burned work and embroidery she loved and which formed most of her gifts. At supper time the mother could not guess which way the battle went until Marian said, "Father, that corn is under ground and I am ready for another deal. Do you want some of those piglets on shares?" Father was so pleased with the proposition that they went after their little gruntings that very evening and Marian set to work with merry, skilful fingers to remodel the old hat. "It isn't a new one, mammy, but it might look worse," she said, as she pinned it on at the most bewitching angle the day of the Lakeside picnic.

"It looks very pretty, dear; indeed it does."

"You good old comforter! I feel a lot prettier inside, anyway. I saw such



Miss Florine Folks, the Jackson Co., Mich., Girl whose last Season's "Patch of Corn" Yielded the Ten Ears that won the Automobile Prize at the State Corn Show.

tantalizing stamped cushions in town yesterday that I felt like borrowing enough of father to buy a couple, but I didn't. Something might happen to my gift-money maker, yet, you know."

Something certainly happened to him. He grew. Whether because Marian talked to him confidentially and scratched his back I don't know, but certainly he distanced his penmates by long odds and disappeared in the fall in return for twelve round dollars of gift-money. Marian had her Christmas list all ready, early though it was; and she sped joyfully to town to invest in inexpensive materials that her busy fingers, with plenty of time, fashioned into beautiful gifts, leaving her a surplus in the gift-bank to buy another pig when the time should come.

The "destitute ducks" took kindly to their pasturepond and Marian saw them carefully housed every night, gloating over their growth. Ten fat birds graced ten Thanksgiving tables and not only did Jess get her books and Jack his coat, but Marian gleefully filled several empty stockings at Christmas and had money left to begin with again in spring.

The four broods of "collection canaries" made less work as they grew older. Seven of the birds proved to be singers. They were easily sold and six of the dollars were exchanged for sixty dimes to go jingling into the church bank. "The comfort of having a dime all ready to slip into my glove each Sunday is worth all the bother," declared Marian.

The book-and-flower corn proved, as her father had prophesied, a big contract. The sun shone hot, the rows seemed never-ending, and the weeds seemed to spring over night, but so faithfully did she work that her rows often shamed their neighbors. Her father said nothing but when Marian sallied forth, corn knife valiantly aloft, what was her surprise to find her three rows cut and shocked with the rest. She gave an old-fashioned husking bee, one moonlight night in October, and what was not done then she insisted on husking herself. She thoroughly enjoyed it, too, "playing squaw" in the bright October weather, with her dog, constantly on the lookout for mice, beside her.

"What a busy, happy, interesting year it has been!" exclaimed Marian when all her business ventures were safely concluded and she was thriftily counting out a part of her proceeds to re-invest, and making plans for the next year. "If money is wealth according to the amount of satisfaction it brings, I am a Carnegie—and all because I earned it myself."

A New Stomach

Stuart's Dyspepsia Tablets Restore Lifeless Organs to Normal Condition.

A TRIAL PACKAGE FREE.

Many a sufferer from Dyspepsia, Indigestion and kindred ailments of the digestive organs carries around an absolutely useless stomach—a dead load, and a cesspool for ever-increasing disorders. The muscles are seemingly worn out, the mucous lining has lost its secretory power, and food taken into the stomach lies there and ferments, causing sour eructations, belchings, heartburn, dizziness and other distressing conditions. Many sufferers have given up in despair until they have been induced by some interested friend to try a box of Stuart's Dyspepsia Tablets.

Stuart's Dyspepsia Tablets are the dyspeptic's sure and only hope. They are a natural restorative of healthy action to the stomach and small intestines, because they supply just the elements that the weak stomach lacks—pepsin, golden seal and other digestives.

If you are afflicted with any of the symptoms above described, be assured that your digestive organs are losing power;—they need help and there is no more sensible help to be given them than to supply elements which will do the work of digestion for them.

Stuart's Dyspepsia Tablets have been found by the test of reputable physicians in the United States and Great Britain to have remarkable digestive powers, one grain of the active principle of these tablets being sufficient to digest 3,000 grains of ordinary food. It is plain that no matter what the condition of your stomach, or how far your disease has progressed, one only of Stuart's Dyspepsia Tablets taken at meal time will do the work—give your stomach an opportunity to regain its lost powers, the muscles will be strengthened, the glands invigorated, and you will be a new man.

It costs nothing to prove the effectiveness of this cure. Send for a free sample package today. F. A. Stuart Co., 272 Stuart Bldg., Marshall, Mich.

All druggists sell Stuart's Dyspepsia Tablets at 50 cents a box.

This Free Book Will Save You \$20.00 a Year



I want to tell you all about my Celebrated Steel Shoes—why one pair will outwear six pairs of leather shoes—how a pair will give you more foot-comfort than you ever had in your life. How they will keep your feet powder-dry all the time. How light and comfortable they are the year around. I have told half a million others these facts. They have bought steel shoes of me and saved millions of dollars among them. More than that—they can be on their feet all day—at any work, without foot fatigue. And they have gained health protection.



Steel Shoes

N. M. RUTHSTEIN, The Steel Shoe Man, prevent rheumatism, sciatica, lumbago, lame back and other troubles caused by wet feet. I want to show you the way to avoid these dangers and all such troubles as tender feet, corns, bunions, chilblains, and at the same time show you a saving of \$20 a year in actual money on account of the extra wear you get from my shoes. Will you write me a postal to-day and get full particulars? Let me send you this free book of mine by return mail.

Ruthstein
The Steel Shoe Man
105 Seventh St.
Racine, Wis.



NEW COMPOSITION HONE!

Nothing like it for Sharpening a Razor Only 55c

For the purpose of introducing these goods to actual users, if you will help us sell six of these hones to your neighbors, we will send you FREE, postpaid, a first-class guaranteed razor and one of these hones for your trouble. Write for full instructions to NATIONAL BARBER SUPPLY CO., 307 Broadway, Grand Rapids, Mich.

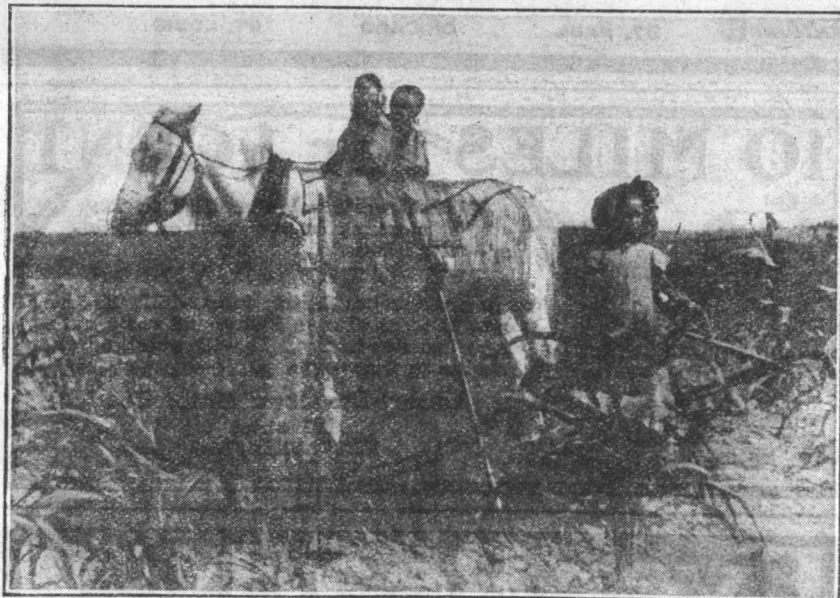


THE "BEST" LIGHT

Absolutely safe. Makes and burns its own gas. Brilliant 500 candle power light. Casts no shadow. Costs 2 cents per week. No smoke, grease, nor odor. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog.

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

Wanted Agents—to sell farmers account book. Quick seller. Big inducements. Latest addition. Address, L. L. Syphers, Fort Wayne, Ind.



A Group of Farm Girls, ranging in Age from 5 to 12 Years, who Earned their Holiday "Wherewith" by Growing a Patch of Corn.

longed for such a singer but could not pay three dollars for one. If your birds brought only a dollar each you would have your collection dimes for nearly a year."

"What a scheme!" cried Marian. "And I will mark a box 'Grange and Church' and put every cent of that money into it. Then I shall be sure of those expenses anyway."

Next morning she tripped down the hill

my hat?" The sweet face fell. "But I've planned for it so long and decided on just what I want! How can I give it up?"

"Don't, unless you are sure you would get more pleasure out of the gift-giving. You are the one to be satisfied. Sit here and think it over; I will get supper."

Marian sat still and tried to decide but her thoughts ran to a perfect tangle of chiffo, and giftless Christmases, and fat pigs, and plumes, against the joy of hav-

THE GATES OF BAKAPPLEIN.

(Continued from page 328).

"All right, I will, Jimmy. Ever sence your father died, and your baby wuz borned, you've acted half-way decent; yew've got a good wife an' I hope bimeby she'll get some uv your natchal cussedness outen yew. But to go on with my story. I ain't kickin' coz King sold me a cow wunst that would never let no man milk her. 'Course he didn't tell me that, and fust time I tried she kicked me and the pail and the milkin' stool clean outen the barn. But that ain't the most interestin' part uv what I've got to tell," he continued, mysteriously. "Hadt'n we better go over tew the hotel, John King?"

"You say what you've got to say and say it here; but if you dare accuse me of lying and cheating, or taking more'n what belongs to me, I'll tell some things about that Ned Jackson you are standing up for. If he ever dares step foot in this store again I will—"

"You will, will you," almost roared Joe in sudden wrath. "See here, boys, we've got down to brass tacks at last. That man is so pesky low-down with his lyin' and cheatin' that he can't rest. Natchelly so fully of mean, stinkin', low-down tricks as he is, he thinks everybody is jest like him. Why, I don't wonder but what ef that prowlin' varmint that we all know about could talk it would say that all critters smelt jest as bad as he does. If King wants to hear what I've got tew say he shall hev the pleasure, and have it right off the bat. Do yew see this basket?" He held it up to plain view. "My boy, Tom, has got another." Here Tom stepped forward with another bushel basket, while King, darting through the group of men, tried to grab the one Joe had but was not quick enough. He was a little man, while Joe was tall, and, standing on the barrel, he held it high above the heads of the men. "This is one that King had made special. Yew all know that when he buys ennything uv yew fellers he measures it in his basket—" a groan went up from the group of farmers and King edged away, shaking with wrath.

"He told me to tell it, so I'm goin' tew. Never mind how I got hold of this 'ere basket. Ned Jackson put me wise to the fact that it held five pounds more'n the regular baskets dew, so fer every twelve bushel of taters yew've sold him yew've gin him one. Yes, sir, that's what yew hev ben doin' all this time and not one on ye, not even myself, wuz smart enough to find it out; so, friends, yew kin jest figger tew yer own satisfaction how many bushels uv taters and other stuff yew've ben givin' this man—this man in the middle—who has robbed both yew, the perducers, and the consumers—robbed with both hands all these years, and while he has ben gittin' richer, we've ben a gittin' poorer. Now that's what I've ben achin' tew tell fer a hull year. Ned Jackson wuz smart enough to find it out, so when he tuk that car load uv taters away he kep' every twelfth bushel fer himself thinkin' he had as much right tew them as King had, whitch, uv course, wuz no right at all. That's what the row wuz about. That mean, low-down, yellerskinned skinkint over thar wuz so afeered Ned would tell about his big basket that he agreed tew not say nothin' agin' Ned, pervidin' Ned would leave him peaceable and keep his mouth shet. But he didn't keep still, and now that Ned has got back, I shan't. And boys," he continued, impressively, "that pore Ned Jackson almost starved himself to send that money back to King—to King that stole it frum yew in the fust place—an' that's why I say ef I ever hear a man sayin' a word agin' Ned Jackson not bein' honest I'll wallup him till he can't set down. An' another thing. These tew baskets look alike; at fust glance yew would think they wuz the same, but all uv yew air free tew come to my house and measure taters or ennything in 'em and see if I ain't tellin' the truth. Ask him ef it is a lie?" He pointed at King who, white-faced and gasping with rage, had fled to the enclosure with Sarepta and was shaking his fist at him through the wire netting, threatening him with the law if he didn't keep still. "He knows it ain't no lie; I know it ain't no lie, and so dew all on you, an' ef you want ter keep on tradin' with him, payin' all the profits to the man in the middle, why yew kin ef yer wants tew, I don't care. Yew hev all heerd how a jammed-in milk can don't hold quite so much as one that ain't jammed, and so it is with these baskets; the big one ain't jammed in; it's jammed out—and I'm thinkin' it will jam King outen bizness yit, fer he made the mistake uv his life wunst in slanderin' Ned

Jackson. I don't stand fer that agin sech a young feller as he is, 'specially after the tew brave things he has did."

He slowly clambered down to the floor. "Now that I've told my leetle story I'll go home," he said, sociably. "Thar ain't mutch more, only I could tell as how Ned says his hay scales air doctored, tew—one way fer buyin' an' one way fer sellin'; but as I can't prove it I'll say nothin' about 'em. And as King natchelly don't want ter see me no longer I'll hike erlong hum tew the old woman, who'll be wondrin' as tew what has become on me, basket an' all."

Chapter XIX.—The Gates of Bakapplein.

No twinges of conscience were felt by Joe Green the next morning when he heard that John King was seriously ill and that his physician advised him to leave the country for a change of climate. "If he don't," observed Joe in the blacksmith shop, where he had gone to do his share of talking, "he will be perty shure to land in a hotter one sooner than he is lookin' fer. I wuz in hopes he'd stay here so we could see what a dry funeral he'd get. I don't believe there'd be tears ernuff shed to damp a hank-chiff a ha'f inch square. I've ben hopin' he'd arrest me fer what I said, as I'm achin' tew tell all I know again in court." But that pleasure was denied him, for King and wife soon left West Winthrop for a few months, and the store passed into other hands.

Towns, like individuals, are fickle. The people who had been ready enough to condemn Ned, now, when King's double dealings were fully exposed, turned loyally to the young man and refused to believe that there had ever been anything wrong with him. Such hero worship did not disturb him, however. He was so glad to be at home once more, glad of the chance to prove to his cousin that he could make something of himself, that he took his honors very modestly. He was thoroughly ashamed of his follies, and all he asked was a chance to do honest work.

Roy had been welcomed into the home at once. Both Searls and Nell were anxious to help him make a man of himself and assist him in obtaining the education he was determined to have, so he at once began work on the farm, taking young Joe's place. The latter, sobered by the knowledge of what he had done, had gone to Manning Beverly and humbly asked if he could come there, as at last he had fully determined to reform. And Manning, who was soon to be married to Merle Jackson, gladly gave him employment and old Joe's heart was full of gratitude.

Ned redeemed his watch with Old Malley's money, and then, until a chance should open for him with Mr. Amidon, began working on the farm, doing whatever there was to do, and, what was better yet, going with Searls on his business trips, for his cousin had at last realized that the young fellow's natural bent was that way.

One bright afternoon in March Ned came back from the woodlot with his axe on his shoulder. He was whistling blithely, for he had cut enough wood that day to win Ben Baker's approval. As he neared the Gates of Bakapplein he saw the flutter of a blue dress and he quickened his steps, thinking Merle, who was to be married within a few days, had come to meet him with little Yvonne, but as he drew nearer, the girl who had stepped from behind the white post was none other than Grace Amidon.

He felt the blood surge to his face as he met her frank gaze. "Are you going to try to dodge me this time?" she laughed. "You know the two other times I have seen you lately you have wanted to run away." She held out her gloved hand which he took in his heavy-mittened one.

"No," he said lightly, though his voice trembled, "I won't run, though I'd have been more presentable if I had known you were coming. When did you arrive, and how? From the clouds?"

She laughed again. "We came on the express this noon. Just a flying trip before the wedding. Merle wrote us you were here and papa wants to see you—so we came."

"Your father wants to see me!" a great light breaking over his face. "Then—"

"Then you will accept his offer," she cried happily. "Oh, we have been hearing a lot about you. Your champion, Joe Green, was at the station and he offered to bring us along, so we accepted and, of course, we heard about the gasoline engine fire—and how you paid King and—everything. You are actually a hero, Ned."

"Not much of one," he said, flushing.

Mayer WORK SHOES

BUILT ON HONOR

Mayer Work Shoes are made to meet the demand of all classes of working men. They are made solid and are absolutely dependable under all conditions. They fit good and look good and will outwear other work shoes at the same price because they are made of specially selected tough, seasoned stock, choice uppers, heavy soles, solid counters, double leather toes and double rows of stitching.

The Genuine have the Mayer Trade Mark stamped on the sole. If your dealer will not supply you, write to us.

We also make Honorbilt Shoes for Men, Leading Lady Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes and Special Merit School Shoes.

F. Mayer Boot & Shoe Co., MILWAUKEE, WISCONSIN

LOOK FOR THIS TRADE MARK



GAL-VA-NITE

TRIPLE ASPHALT-COATED, MICA-PLATED

ROOFING

Makes good in any climate. It is used successfully on all kinds of buildings in every state in the Union and under the most trying conditions. Snow, ice, and sleet or the hot summer's sun have no effect on it. It is just the thing for farm buildings. Cannot rust, rot, or blow off. Makes a neat, fine appearing roof.

GAL-VA-NITE is made up of heavy wool felt—triple-coated on both sides with pure mineral asphalt, and finally finished with a heavy "armor plating" of flaked mica. It needs no painting—there's no after expense.

Water-proofed with mineral asphalt, and weather-proofed with a perfect insulation of flaked mica, it is little wonder that GAL-VA-NITE gives such satisfaction in all climates.

GAL-VA-NITE comes in rolls, ready to put on. No hard work or skilled labor required. Each roll contains nails, lap cement, and full directions for laying.

Get GAL-VA-NITE from your lumber dealer. If he hasn't a stock of it, he can get you some mighty quick, if you will write us. Look for the sign "Ford's Galva Knight."

Ask your nearest office for "The Inside Of An Outside Proposition."

FORD MFG. COMPANY
ST. PAUL CHICAGO ST. LOUIS



10 MILES for 1 CENT

WHY waste valuable time in the more expensive way of traveling—with horses.

THE HARLEY-DAVIDSON motorcycle makes the trip in one-fifth the time, never tires, is always ready and costs nothing when not in use. It will save you its cost many times over. Send for Catalog No. 91.

Harley-Davidson Motor Co.,
111 L Street,
MILWAUKEE, WIS.



Ever-Ready

Safety Razor \$1

With 12 Blades

The best shave of your life.
ENTIRE OUTFIT \$1.
3,000,000 in use. Sold and guaranteed by dealers everywhere.
American Safety Razor Co., New York.



"I have never done anything but make a greater fool of myself than nature intended, which was unnecessary. But if your father wants to see me I surely wish to see him."

She looked at him critically. "I think you will pass," she remarked, approvingly.

"In these clothes," he joked. "You are a pretty swell looking girl to stand here talking with a wood chopper. These things are great for warmth but not much for style. These mittens are Mary's patent. She has actually adopted me since I returned."

"So I heard. Never mind your clothes. It is yourself. I don't see quite so much ego about you as there used to be. You are more—more manly than formerly," she continued, still searching his face with her earnest eyes. "There is something so different about you than there was even last fall. I really believe you have become a man instead of a conceited boy."

"Thank you," he said gravely. "I value your criticisms, Grace. I have been through fire, and if there was any good in me it would have to come to the surface. Searls approves of me. So does Ben Baker, consequently I think I have taken a long step ahead and—but there is something more I desire, Grace."

She flushed under the earnestness of his tones and edged away. "Listen," he said, impressively, taking one of her hands in his. "Two years ago I entered these gates a crack-brained, good-for-nothing boy who thought the world was his, and who was determined to get what he wanted without work. A little over a year ago I went out from here so full of egomania that it was a wonder I didn't blow up. As it was, I had to have a good many hard knocks before I learned my lesson. I think I received all that was coming to me, so I'm not complaining. Now I am at the Gates again, but about to leave them for the same chance my father had. But there is one more thing I want, dear," he whispered, "I want your approval, and—and if I make good I shall want not only your approval in the future, but you."

She raised her face and smiled. "You will make good," she said, "and some day we will enter the Gates of Bakapplein together." (Then End).

THE SOURCE OF RUBBER FOR THE MANUFACTURE OF AUTO TIRES.

Rubber has many peculiarities in its crude state, according to P. W. Litchfield, general superintendent of one of the large automobile tire manufacturing plants of the country.

"The crude rubber we get from Ceylon comes in entirely different form from what we get from Brazil," stated Superintendent Litchfield during an interview at the factory. "Yet it is the same kind of rubber—Para rubber—and of practically the same quality. Seeds of the Hevea tree, which produces the Brazilian Para rubber, were taken to Ceylon some years ago and planted in soil very similar to that to which it is indigenous in the valley of the Amazon."

"Some day these young trees are going to be just as good as those in the Amazonian forests, and in the trade it is believed to be only a matter of time when what is called the cultivated rubber crop will be sufficient to supply the needs of the world; and probably at a much lower cost than manufacturers have been paying."

"In 1908 this cultivated crop of rubber from Ceylon did not exceed 2,000 tons; the next year it was 4,000 tons; last year it had grown beyond 8,000 tons, and this year's crop is estimated as likely to reach 14,000 tons. A few years hence the cultivated crop will equal the wild or natural crop of South America."

ANSWERS TO FEB. 18 KINKS.

Kink I.—Three Word Squares.

CANE	HAIR	MEAT
AGED	ACRE	ERIE
NEED	IRON	AIDS
EDDY	REND	TEST

Kink II.—Letter Conundrums.—1. L(ark, lark). 2. P(ink, pink).

Puzzle Winners.

For correct solutions to Kinks of Feb. 18 prizes are awarded to the following: Pearl Primeau, Wm. Leatham, Mrs. Lee Fishbeck, Earl Fleming, Wm. Campbell, L. E. Borst, Mrs. H. C. North, Mrs. V. G. Wilbur, Harry J. Moore and Lillie L. Chapin.

Ask for Our Tire Book Cut Tire Bills in Two

Probably 100,000 motor car owners now use these tires this year. They now outsell our Goodyear No-Rim-Cut tires—10% oversize. clincher tires almost six to one.

The control of this tire jumped our tire sales last year to \$8,500,000. And 64 leading motor car makers have contracted for these tires. If you are a tire user you should know these tires. They cut tire bills in two. Ask us to mail our Tire Book.



Goodyear No-Rim-Cut Tire

The No-Rim-Cut tire—like the clincher tire—fits any standard rim for quick-detachable tires. Also demountable rims.

In changing from clinchers, you simply slip each removable rim flange to the other side. Then the tire comes against a rounded edge, as shown in the picture above.

We have run these tires flat in a hundred tests—as far as 20 miles—without a single instance of rim cutting.



Ordinary Clincher Tire

With the ordinary tire—the clincher tire—these removable rim flanges must be set to curve inward—to grasp hold of the hooked tire base. That is how the tire is held on.

The picture shows how the thin edge of the flange then digs into the tire. That is the cause of rim cutting. That

is what ruins a tire beyond repair if you run it not fully inflated.

More damage is done by rim cutting than by any other single cause. To avoid it means an average saving of 25 per cent on tires. We do avoid it utterly in Goodyear No-Rim-Cut tires.

The Secret

The reason lies in 126 braided piano wires which we vulcanize into our tire base. That makes the tire base unstretchable. Nothing can force it off of the rim until you unlock and remove the rim flange.

When the tire is inflated these braided wires contract. The tire is then held to the rim by a pressure of 134 pounds to the inch.

That's why No-Rim-Cut tires are not hooked to the rim. That's why the rim flanges can be turned outward. Not even tire bolts are needed.

We control this feature by patent. All other methods for making an unstretchable tire base have been found deficient. Single wires or twisted wires won't do. The braided wires

which contract under air pressure are essential to a safe hookless tire.

Tires 10% Oversize

When the rim flanges curve outward, the extra flare lets us make these tires 10 per cent oversize. And we do it without any extra charge.

This adds 10 per cent to the carrying capacity—10 per cent to the air cushion. It takes care of the extras—the top, glass front, gas tank, extra tire, etc. It avoids the overloading which is almost universal without the oversize tire.

This 10 per cent oversize, with the average car, adds 25 per cent to the tire mileage. These two features together—No-Rim-Cut and oversize—are saving thousands of motorists about half on their tire bills. Nothing else invented in late years saves so much on upkeep.

Yet these patented tires—which used to cost one-fifth extra—now cost the same as other standard tires.

Our Tire Book explains things fully. It tells all we have learned about making tires in 12 years spent in tire making. It tells how you can reduce your tire bills to a trifling sum.

It is time that every motorist knew these facts. Please write us to mail the book.

GOODYEAR
No-Rim-Cut Tires

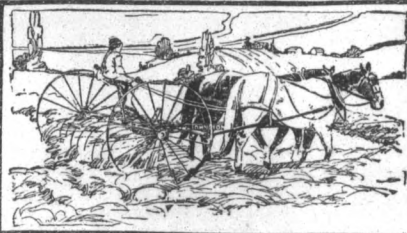
THE GOODYEAR TIRE & RUBBER COMPANY

Forty-Seventh St., AKRON, OHIO

Branches and Agencies in All the Principal Cities

(253)

We Make All Sorts of Rubber Tires



JOHNSTON
FARM MACHINES
FIRST IN QUALITY



A good name is more to be prized than money and riches.

The name JOHNSTON is recognized by farmers of two continents as indicative of QUALITY.

Every JOHNSTON user knows that he has a better machine than his neighbor—and even his neighbor has to admit the superiority of JOHNSTON machines when he observes how they surpass ordinary machines in actual performance, overcoming all obstacles of soil and grain conditions, doing better work, and doing it easier.

JOHNSTON machines cost less to maintain than less carefully constructed

tools and give many more years of perfect service. They represent the most advanced development along truly practical lines. There is nothing experimental, impractical or "freakish" about them. The matters of simplicity, strength and durability are given especial attention. They are made by the original independent company to give perfect satisfaction.



We suggest you write to-day for the JOHNSTON 1911 catalog—it is full of valuable information concerning JOHNSTON Grain Binders, Reapers, Manure Spreaders, Rakes, Spring and Spike Tooth Harrows, Side-Delivery Rakes, Corn Binders, Mowers, Tedders, Hay Loaders, Disc and Orchard Harrows, and Land Rollers—all with a recognized reputation for being the most perfectly constructed machines made, yet they cost the farmer no more than cheaply-built tools.

Send postal for catalog to-day, or state what tool you are interested in and we will also send booklet.



JOHNSTON HARVESTER CO., BOX 105-H BATAVIA, N. Y.

When writing to advertisers please mention the Michigan Farmer.

Woman and Her Needs

At Home and Elsewhere

Wind Bells, March Hares and Shamrocks for the March Party.—By Marjorie March.

In the early springtime the hostess who wishes to entertain has many inspirations to guide her choice. St. Patrick's Day comes at the end of March and may prove the occasion for a pretty little party where "the wearin' of the green" may furnish symbolism for amusement. Other quaint fancies such as a wind party or a

the entertainment the desired character. For place cards St. Patrick's Day post cards would be suitable and are easily obtained. At a March hare party if the guests are asked to come dressed as characters in "Alice in Wonderland" the party will be even more delightful, but even with simply reading selections from

of crumbled cheese, (any preferred kind). Blend this well and season with salt and pepper and spread over the inner hearts of lettuce. Serve with mayonnaise.

Spring Delight.

Spread some lady fingers or squares of sponge cake with apricot jam which has been warmed a little. Put one or two layers of these in a baking dish and over them pour a hot custard made with the yolks of eggs, milk, a little sugar and vanilla flavoring. Leave the sponge cake in the custard two hours, then put the baking dish in the oven and when it is thoroughly heated through beat the whites of the egg stiffly into a meringue, spread over the pudding and brown delicately in the oven.

Asparagus Pudding.

Take the chopped tips of asparagus, about one cupful, and blend with a cream sauce, seasoned and rather thick. Beat the yolks of three eggs, stir into the mixture and lastly fold in the beaten whites and bake quickly. This makes a good dish when a little asparagus is left over and may be made with fewer eggs although it is not then so rich.

March Daisies.

This is a simple little dish with a fanciful name. Boil four eggs hard. Into a rich cream sauce chop the whites of the eggs and pour over squares of toast or crisped crackers. Then grate the yolks of eggs over this in round dots and in the center of each round press a bit of olive. Garnish the dish with parsley or celery green.

Date Pudding.

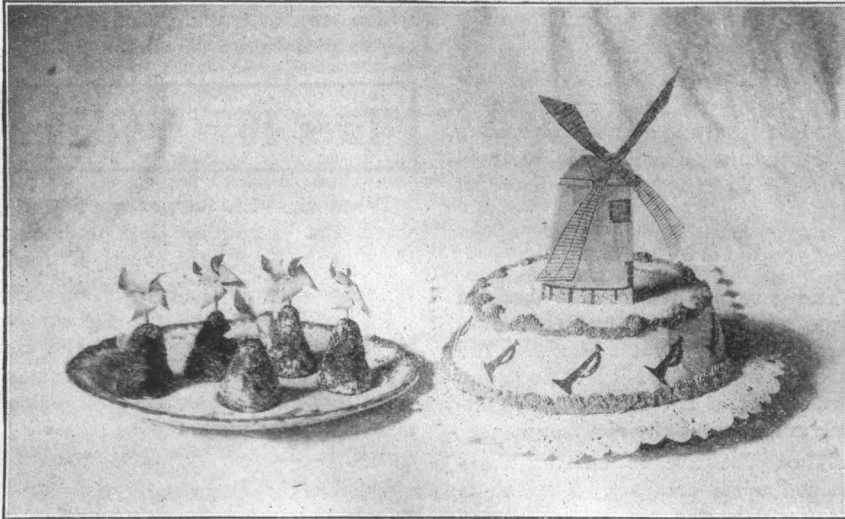
This is a variation of plum pudding that is delicious steamed. One cup of bread crumbs, one cup of chopped suet, three chopped apples, one cup of sugar and one of raisins and one of chopped dates. Quarter of a cup of molasses, half a cup of shredded citron, a little nutmeg, cloves and cinnamon and a teaspoonful of soda, three eggs well beaten. Steam for three hours and a half and serve with stuffed dates and whipped cream.

Chicken Loaf.

Add to chopped chicken some rolled cracker crumbs until the mixture measures a quart. Add two eggs, well beaten, a tablespoonful of melted butter, a little celery salt, a cupful of chicken stock, or white sauce if the stock is not at hand. Mix well. Pack in buttered moulds and bake in a moderate oven.

St. Patrick Cakes.

Any good recipe for cake can be baked in little patty tins and frosted white or green and decorated with wee candles which can be put on to represent little shamrocks. Shamrock leaves can also be cut from majolica and embedded in the frosting, while little gilt paper harps can



The Centerpiec Wind-Mill Cake for St. Patrick's Day Wind Party. Croquettes with Pin Wheels at Left.

March hare party are also innovations which will assure an entertainer success if she uses their decorative motifs for a little evening of enjoyment.

A March Hare Party.

The center table decoration can be a procession of most fanciful papier mache "March hares" reaching down a long luncheon runner, stretched lengthwise of the table through its center, the covers being arranged on doilies cut in bunny shape also. Those cut from stiff white paper are most effective. The March hare in the center of the table can be the largest one with a realistic "carrot" in his mouth, while before him and behind him "march" other mad hares each as bewitching as a favor rabbit can be! Teapots at the four corners of the table can hold imitation "hare-bells" while a cup and saucer at each place can hold some escalloped oysters or some equally "mad" arrangement consistent with a March hare tea party. A table of this sort would be dainty for an evening chafing dish affair where a "rabbit" can be served with the usual accompaniments.

A Wind Party.

Invitations for a wind party can be sent on cunning little fans, or on cards decorated with umbrellas blown inside out. If desired to make this party coincident with St. Patrick's Day the umbrellas may be green. Decorate the rooms with fans and paper umbrellas and hang tinkling wind-bells over the doorways.

Our illustrations show two pretty fancies for the table for such a party. One is a centerpiec cake iced in green and white, green "P's" to stand for "Patrick" upon the sides of the cake while a quaint little windmill makes a decorative top. At the left are shown some croquettes which can form one of the courses, each with a wee pin wheel ornamenting its top. The second picture shows ice cream in tall glasses with little fans on top, cakes at the left on a tray. It is possible to decorate the dishes with different kinds of fans, some with wee Jap umbrellas blown inside out. Wind-bells hanging from the chandelier will keep up a pretty tinkling if candles are used for lighting the table and enough heat is thrown upward from them.

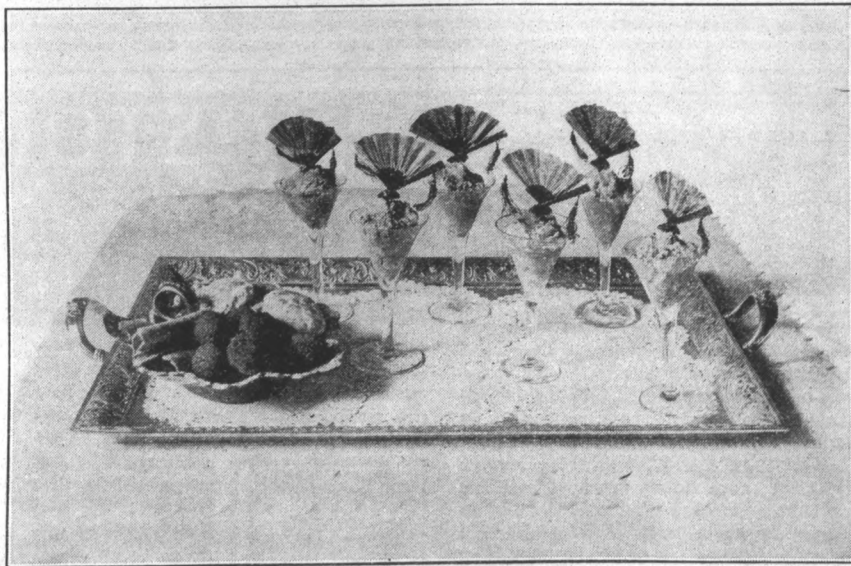
For amusement a "feather match," having two lines stretched on the floor using fans to blow the feather into the adversary's territory, will prove fun and a game of old-time battledore and shuttlecock ever delights old and young.

Afterwards music and recitations may entertain the company and it is possible to find enough selections with reference to the "Wild winds of March" to give

this delightful child classic a "Mad March Hare Party" can be made a success.

Favors for March can be almost anything the hostess desires. It is possible to get many little woody treasures by pushing away the dead brown leaves and bringing the roots into the house to come to life early by reason of the warmth of the rooms, and such bits of mother earth always delight the city visitor who cannot live as near to nature as those upon the farms. Cunning clay pipes, suggestive of St. Patrick's Day can also hold a bit of the "auld sod" in which can be a little fern or other green growing thing, and these make pretty trifles to put at each plate. The realistic silk-covered "potatoes," which can be bought in the city shops for pin cushions, would also be suitable for St. Patrick Day gifts, as would, indeed, any article made of green material, whatever that material may be.

It is not necessary to go to a great deal of expense in planning such a party. The simplest thing at hand will often serve as well as the most expensive favor. The clay pipe suggestion, for instance, would



Ices for a Wind Party in March.

cost only the trifle expended for the "pipes," for the wee ferns can be found on the place.

I give below a number of suggestions for recipes that are delicious for the season of the year when appetites, with all nature, are waking up.

Lettuce Salad.

Chop fine a tablespoonful each of onion and parsley and add two tablespoonfuls

also decorate such cakes attractively.

Favors can be any little fancy in green and white, as crepe paper boxes holding green mints and white peppermints, or any pistachio bonbons. Tiny candy rabbits will decorate the March cakes prettily or rabbits may merely be traced on in white frosting over chocolate or pistachio frosting. Gingerbread iced brown with "patches of snow" in white frosting

This will Stop Your Cough in a Hurry

Save \$2 by Making This Cough Syrup at Home.

This recipe makes a pint of better cough syrup than you could buy ready-made for \$2.50. A few doses usually conquer the most obstinate cough—stops even whooping cough quickly. Simple as it is, no better remedy can be had at any price.

Mix one pint of granulated sugar with ½ pint of warm water, and stir for 2 minutes. Put 2½ ounces of Pinex (fifty cents' worth) in a pint bottle; then add the Sugar Syrup. It has a pleasant taste and lasts a family a long time. Take a teaspoonful every one, two or three hours. You can feel this take hold of a cough in a way that means business. Has a good tonic effect, braces up the appetite and is slightly laxative, too, which is helpful. A handy remedy for hoarseness, bronchitis, asthma and all throat and lung troubles.

The effect of pine on the membranes is well known. Pinex is the most valuable concentrated compound of Norwegian white pine extract, and is rich in guaicol and all the natural healing pine elements. Other preparations will not work in this formula.

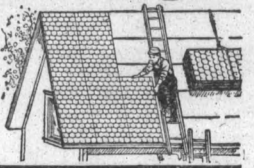
This Pinex and Sugar Syrup recipe has attained great popularity throughout the United States and Canada. It has often been imitated, though never successfully.

A guarantee of absolute satisfaction, or money promptly refunded, goes with this recipe. Your druggist has Pinex or will get it for you. If not, send to The Pinex Co., 232 Main St., Ft. Wayne, Ind.

Edwards Interlocking "Reo" Steel Shingles

Last a Lifetime

They are stamped in best Bessemer Steel and come in sheets 5 to 12 feet long and 24 inches wide, either painted or galvanized. Will not rust or corrode. The



nails are covered by our patent interlocking feature which prevents leaking, etc.

Reo Steel Shingles are easily put on any roof. Hammer and nails only tools needed.

\$10,000 Guarantee Bond

Perfect protection against fire, and are absolutely guaranteed by us in a \$10,000 bond as proof against lightning.

Will outwear wood or composition roofs and cannot be distinguished from best cut wood or slate shingles.

Get Manufacturer's Bargain Prices

We are largest manufacturers of all kinds of iron and steel roofing and can quote you lowest prices.

Send for Our Free Catalog No. 367

It contains valuable information you should have before you put on that roof. Send dimensions of your building and we will quote cost of a Reo Steel Shingle roof delivered to your railroad station.

We want one representative in every community to demonstrate and take orders for Edwards Interlocking Reo Steel Shingles. Write us today—now! (40)

THE EDWARDS MANUFACTURING COMPANY
317-367 Lock Street, CINCINNATI, OHIO



HARTSHORN SHADE ROLLERS

Bear the script name of Stewart Hartshorn on label. Get "Improved," no tacks required.

Wood Rollers

Tin Rollers

Perfection

Burner.

HERE IT IS!

and only

50 Cts!

Complete with Burner and

Indestructible, Concealed

STEEL MANTLE

Giving a brilliant light

Electricity from an ordinary No. 2 oil

burner. No Soot! No Odor! No Subse-

quent Expense! 3 for \$1, for a limited period.

PERFECTION LAMP LIGHTING COMPANY,

Dept. C, 58 West Congress St., Detroit, Mich.

Headache Gone!

"For years I have suffered with Backache, Head-

ache, Neuralgia, Nervousness and Extreme Fatigue.

I tried many remedies without relief. Four months

ago a grateful friend induced me to write to the

Pope Medicine Co., Washington, D. C., for a box of

Pope's Herb Compound Tablets. The very first dose

of two tablets gave me relief. I used not quite a box

and am now entirely cured of the pain in my back,

and have no more headaches."

Mrs. J. C. Meade, Hyattsville, Md.

Pleasant, Palatable, Dependable, Household

Remedy. Guaranteed to cure or your money

back. \$1.00 a box of 200 by Mail Postpaid.

Send us your name and address today and we will at

once send you by mail a sample package free.

Fine opportunity and terms in unoccupied territory

to agents.

POPE MEDICINE CO., INC.,

670 Pope Building,

WASHINGTON, D. C.

NEW UPRIGHT PIANO FOR SALE.

A strictly high grade PIANO which sold for \$350 retail, will be sold for \$139 cash. Piano is a strictly high-grade instrument and may be tested and tried in your own home for 10 days. If you want a real bona-fide bargain, write

Box 62 care Michigan Farmer, Detroit, Mich.

WHEN writing to advertisers just say "Saw your ad. in the Michigan Farmer."

and candied violets embedded here and there amid green majolica leaves will make a most decorative cake which will surely suggest the early springtime.

Tiny cup cakes, iced all white can be offered on a plate with gilded straws stuck in their sides to suggest little clay pipes. If made the right shape and size these are very realistic and may be served with pistachio ice cream cut with a three-leaved cookie cutter into neat and inviting "shamrocks."

The hostess may think of other trifles and fancies which well lend a pretty meaning to a March party. Next month spring April and Easter speak their message in one and we shall speak of some table decorations that are simple and inexpensive, and easily arranged by the country entertainer.

SUPPOSE YOU CHANGE PLACES.

THERE is an old fable of two soldiers who fought over the question of whether a certain shield were gold or silver. One looked at one side and declared for silver, the other, who looked at the reverse side, held it was gold. Of course, both men were right as one side of the shield showed silver and the other gold. Then there is the fable of the blind men and the elephant, the story of the little robins who declared that the whole wide world was made of twigs, grass, mud and threads, because their nest was of that composition, and countless others which point the same moral.

Great students of human nature were the writers who penned those tales. We are all very apt to look at our own surroundings and to declare that everything is like what we see close at hand. Have not the letters which the discussion of the "College Girl as a Farmer's Wife" aroused brought out that idea beautifully? Mrs. W. V. A., writing from farm life as she sees it, draws a faithful picture of the farm home in the newer, unsettled sections of the state, where farms are heavily mortgaged, the soil poor, crops light, money scarce and modern conveniences of light, water in the house and telephones almost unknown. Social life is a dead letter; there is no church or Sunday School, no clubs, no clothes, no books, no "life," nothing to attract anyone, least of all a college girl. Can you wonder that she warns girls to think twice before they marry a farmer?

Down in the southern part of the state where the country is only a suburb of some city, the farmers' wives see things differently, for their life is entirely different. Here is money, which, though the root of all evil, is the only thing after all which makes life comfortable if not the only thing which makes life worth living. These women have comforts the other women only read about. They have furnaces, acetylene lights, automobiles, cream separators, gasoline engines or windmills to pump water into the house, perhaps a car line by the door, certainly a telephone, and easy access "to church and to mill." Of course, they are happy and contented and they wonder what woman in her sane mind could be dissatisfied with such a life. Consequently when Mrs. W. V. A. repines against farm life, these worthy ladies arise in their might and smite her on both cheeks. From their own point of view they are right. But they either do not know or they forget that there are two sides to the picture.

We must all remember that Michigan is a very large state and that conditions in the newer settled sections are now what they were in the south a couple of generations ago. There are none of the comforts which the farmers of the south take for granted. An overseer in one of the influential churches went insane over the miseries he saw in riding over a few hundred miles of new country in the northern part of our own state. Poverty, hardships, sufferings such as we can not realize down here so worked upon him that for a time he was completely unbalanced. Perhaps it is some such scenes as these that Mrs. W. V. A. witnesses; perhaps it is not so bad. Anyway, we of the more prosperous section must remember the other side.

Just suppose that some of you happy ladies could be placed where your less fortunate sisters are struggling along. What would be your thoughts if some one would glibly tell you to look out on God's sunshine and green fields and be happy? Do you think a purring brook or a budding flower would send you into ecstasies when your children were hungry and barefoot, or if not hungry for bodily food were starving for social and mental

nourishment. Methinks that all the beauties of nature would not make up for lack of companionship, warm clothes and good food.

Or, granted you have all these, can you not imagine a temperament that would be miserable on a farm with comforts, but happy in a city with only bare necessities? There are some natures that demand the life of the multitude. It matters not if they know no one in the throng, the rushing, teeming life with all its suggestions, the sense of thousands of others near you all living your life, all enjoying your pleasures, all striving for the things you want, the noise, the bustle, the excitement, are all that some people want in life. Fresh air children, it is said, must often be taught to see the beauties of the country. To them there is more beauty in a mob chasing a fire engine, than in the most glorious rural scene. There are many grown people the same. They must have motion, vividness, life, or they are miserable. It is barely possible that Mrs. W. V. A. is of this type. If so, she has my sympathy. I should die of loneliness on a farm, no matter if I had two telephones, a dozen mail deliveries, and three clubs to attend. I want the feeling of people near me all the time, the stimulus of others to keep me going. I'm glad that others do not, for the pictures of happy home life shown in these letters has been most inspiring to us all. However, don't be too hard on Mrs. W. V. A. She has a right to her opinion.

DEBORAH.

THE LETTER BOX.

College Girls Unfitted for Farm Life.

Editor Household Department:—Here, too, Mrs. W. V. A., about the college girl marrying the farmer. After the honeymoon she will find but little time for her accomplishments. As time goes on, she is going to discover that she has not stepped into the life she has fitted herself for. She will see that she might have filled a bigger place; she will not be on common ground with the man who is her inferior educationally; she will not find many "hours to hang heavy," in which "to turn to her truest friends, books." Anyway, college women are not the only ones who can enjoy good reading. Nor are they the only one who know enough to dress quietly. Her "capability of utilizing every scrap" and "thinking waste is crime," usually comes after years of experience on the farm and not in her college course. The few college women of my acquaintance, capable housekeepers though they were, were simply resigned to their farm life, with constant thoughts of things missed. No, girls, if you have a college education, you are fitted for things which will never come your way if you marry a young farmer who has to begin at the beginning, and you will not be happy, nor help to make your husband so. To me, Katherine Grimes's article seems like a lot of theory.—Mrs. M. R., Big Rapids.

Nothing "Cheap" About this Farm Home.

Editor Household Department:—I have been a reader of the Michigan Farmer for years and we would feel lost without it. Today, in reading the comments by Mrs. W. V. A., on the college girl as a farmer's wife, I am indignant, and in a few words would say, she, if a college girl herself, and on a farm, has lost much by not being a lover of nature. Here, in looking out either way she can see the handiwork of God, instead of brick and stone built by man.

I have been a farmer's wife for many years and have a beautiful home, built up by our own hands and brains, and am never so crowded with work but I can get an afternoon off. I have always kept my girl help and keep them years at a time, always treated them as one of the family and felt them good enough to ride in my surrey to church with me. And as for wearing nothing but a calico dress to hear, I have never been without a silk dress and other beautiful clothes since I was a married woman. In my family I can count 12 school teachers, all graduates from graded schools, one from the U. of M. Some are now in stores of their own, some in law offices and some happy in their farm home. Talk about being lonesome on a farm, in these days of mail at your door, phone in the house, delivery wagon with your groceries and meats, vegetables fresh from your garden!

And as for having one cheap magazine to read, perhaps, but ours is the Review of Reviews, Cosmopolitan, and Woman's Home Companion. Such books as Richard

Quickest to Heat Easiest to Clean

And best of all, it is most economical because it cuts down fuel bills one-third and will give as good service after a lifetime of use as on the day you buy it.

Only a range built of malleable iron and charcoal iron plates like the Arcadian can give this service. So-called steel and cast iron ranges cannot be riveted. They can only be bolted and the seams stuffed with stove putty to make them air-tight. Stove putty "dope" soon crumbles and lets false drafts through the seams, wasting fuel—making it impossible to control the fire, do good baking, or keep a fire over night.



ARCADIAN MALLEABLE NON-BREAKABLE RANGE

is made of tough malleable iron and charcoal iron plates and is riveted together, metal to metal, like a locomotive boiler, and is made lastingly air-tight without the use of stove putty. The Arcadian will never have false drafts. It's easy to control the fire—to get a hot fire quickly—keep it at the right heat, or let it cool quickly. No need to burn up kitchenware by setting it directly over the fire, because the malleable iron top is such a good conductor of heat—no need to use stove polish—easy to keep clean, just rub with oil rag—no ashes sitting out of cracks—oven thermometer and every modern improvement—the Arcadian saves money and saves work.

Free booklet—full of money-saving information about ranges, telling the inside facts about range making and showing up secrets—teaches you to detect weak points in ranges. Free. Write to-day.

Dealers Sell the Arcadian

Arcadian Malleable Range Co., Dept. 56 Milwaukee, Wis.

15% You Save all Retailers' and Jobbers' Profits **\$9.85**

Direct from Factory to You. We Pay the Freight. Send for FREE Tick Samples and Illustrated Folder.

When you pay more for a Mattress you are doing one of two things: you are paying BIG PROFITS TO RETAILERS AND JOBBERS or you are paying for FANCY HIGH-PRICED MAGAZINE ADVERTISING. We sell direct to you at one narrow profit over actual cost of material at factory. You get far greater value and save \$5 to \$10.00 a Mattress. Being used in thousands of homes and GIVING PERFECT SATISFACTION. Your Mattress comes direct to you, all transportation charges prepaid, in our originally sealed bale of dust-proof paper and burlap. It reaches you as fresh and clean as the day it left the Finisher's table in our factory. Safe delivery guaranteed.

MATTRESS WEIGHS FULL

55 POUNDS

10 Pounds More Than the Ordinary Kind
EXTRA THICK—EXTRA SOFT
SPRINGY

Built For Comfort and Service

Built up of extra quality Soft, Light, Airy Cotton sheets giving the Worthmore Mattress that Extra Thickness, Extra Softness And Springiness—not found in any other Mattress, regardless of make or price weighing only 40 to 45 lbs. We Use Best Quality Mattress Ticking At No Extra Cost. Tufted and stitched all by hand. Worthmore Mattresses will not lump up, get hard or wear into hollows. Never requires "making over." An occasional sun bath keeps them fresh and clean. Two Months Free Trial Right in Your Own Home. If not entirely satisfactory we will promptly return every cent you paid us. So send us the measurements of your bed, attach check, postal or money order and we'll send your Mattress the same day. Full size Mattress (4-6-6-4) cost \$9.85. Smaller sizes proportionately low prices. SEND FOR FREE TICK SAMPLES AND ILLUSTRATED FOLDER.

Reference: German National Bank. THE WORTHMORE BEDDING COMPANY STATION D, DEPT. F, CINCINNATI, O.

COMPO-BOARD LASTS A LIFETIME

Write for our good sized sample and free book fully describing Compo-Board and you will want to put it on the walls and ceilings of the next building you put up. From the photographic illustrations in the book you can see how easily Compo-Board can be put on. You can get it in strips 4 feet wide and from 8 to 18 feet long, exactly the height of your walls or the length of your ceilings. You can put on a strip of Compo-Board in less time than it would take to lath and plaster the same surface.

And you will have absolutely moisture proof walls that are sanitary and will always be perfectly dry; walls that will outlast plaster several times over; walls that will never have ugly cracks; walls that you can paint, paper or kalsomine; walls that can't be ruined or chipped by the banging of furniture.

Sample and Booklet Free

Don't forget to write for sample and booklet, and let us tell you which dealer in your town can supply you.

Northwestern Compo-Board Co.,

4205 Lyndale Ave., No.

MINNEAPOLIS, MINN.

Choice Virginia Farms Along the C. & O. R'y

as low as \$15.00 PER ACRE. Abundant rainfall, rich soil, mild winters, nearby Eastern markets. Write for illustrated booklet, "COUNTRY LIFE IN VIRGINIA" (100 pages) and low excursion rates. Address K. T. CRAWLEY, Indus. Agt. Chesapeake & Ohio R'y, Box NX, Richmond, Va.

Just Try It Once

That's all we ask you to do with Tile-Like. You have some old chair that looks too shabby to use. Tile-Like will make it good as new.

Perhaps your floor is scratched and the finish is wearing off. Tile-Like will give you a new floor, with a finish hard enough to stand any use.



Wears LIKE TILE

Tile-Like is used for linoleum and oilcloth, worn furniture and woodwork of every kind.

Tile-Like is sold in sealed cans, ready to use. Anyone can apply it, for full directions are given with each package. It comes in eight colors besides flat and gloss white. Among the colors are Walnut, Dark Oak, Light Oak, Cherry, Mahogany and others.

If your dealer does not sell Tile-Like, write to us.

BENJAMIN MOORE & CO.

Paints and Varnishes for every Purpose.

Brooklyn, N. Y.
Carteret, N. J.
Chicago, Ill.
Cleveland, O.
Toronto, Can.



The Farmer's Son's Great Opportunity

Why wait for the old farm to become your inheritance? Begin now to prepare for your future prosperity and independence. A great opportunity awaits you in Manitoba, Saskatchewan or Alberta, where you can secure a Free Homestead or buy land at reasonable prices.

Now's the Time

—not a year from now, when land will be higher. The profits secured from the abundant crops of Wheat, Oats and Barley, as well as cattle raising, are causing a steady advance in price. Government returns show that the number of settlers in Western Canada from the U. S. was 60 per cent larger in 1910 than the previous year.

Many farmers have paid for their land out of the proceeds of one crop. Free Homesteads of 160 acres and pre-emption of 160 acres at \$3.00 an acre. Splendid climate, good schools, excellent railway facilities, low freight rates; wood, water and lumber easily obtained.

For pamphlet "East Best West," particulars as to locations and low settlers' rate, apply to Sup't Immig., Ottawa, Can., or to Can. Gov. Agt.

M. V. McInnes
176 Jefferson Ave., Detroit, Mich.
C. A. Laurier, Marquette, Mich.

Carvel, Ben Hur, Eben Holden, the Crisis, yes, I could name enough to fill three secretaries, and first among them I would place my Bible for my guide.

Now, my dear college girl, if your heart goes out in love to an honest, intelligent farmer don't be frightened of the farm. From one who knows.—A Subscriber and Reader.

This College Girl is Happy as a Farmer's Wife.

Editor Household Department:—Commenting on Mrs. W. V. A.'s article on the college girl's sacrificing herself in marrying a farmer, I hardly think the young farmer will feel flattered after reading that article. Now, I am a college graduate, I married a farmer, I do my own housework, most of my sewing, and take care of the chickens, except when the snow is too deep, and I assure you I do not feel that I am "sacrificing" myself in the least. On the other hand, I feel that life is well worth the living, especially on the farm. I lived in the city for a few years, so I know just a little of that side of the question, and I find I have more "freedom" and more real "pleasure" as a farmer's wife than I ever had in the city, and I had a good position and a good salary. Now as to the isolated life, with the telephone to have a friendly chat with my neighbors, letters from home, and friends delivered at the door, a horse and buggy at my disposal, except, of course, when the horse is needed in the field, I must plead "not guilty" to any feelings of isolation. I get up quite early, do my work as quickly as I can without hurry, and I find I have an hour or two in the afternoon to read, and not a cheap magazine, either. The Ladies' Home Journal, Youth's Companion, The Mother's Magazine, and the Michigan Farmer, none of these can be called "cheap" I am sure. And I get more good and helpful hints in the Magazine Section of the Michigan Farmer, than any of the other papers. To be sure, the magazines were Christmas presents, but I gave a chicken and a "print" of butter, and a dozen lovely fresh eggs to the senders, and my! how they were appreciated.

As to that "calico dress, or gingham gown." I am guilty of wearing a calico dress to work in, but I get a new suit whenever I need it, and by watching the sales, I get a good one "cheap," and I am just as happy and just as content, as though I didn't have to watch the sales, so what is the difference?

We had a young man working for us last year who had to leave school before finishing the third grade. I do not think a "college girl" could be happy with that man, there would be so little in common between them, but his case is the exception rather than the general rule. My husband was not a college boy, simply graduated from the high school, but I never made him feel that he was specially blessed for having "raised his eyes" to a college girl—on the other hand, my two little girls, as well as their mother, are so proud of our big, honest, good-natured six-foot "Daddy" that we feel specially blessed, especially when he playfully asks the baby, "who can cook better than 'our mother,'" and her prompt reply is "no one." I certainly feel that this college girl made no sacrifice.

It is just 18 years since I left college, and my old chum, now living in Denver, Colo., and who inherited a snug little fortune last fall, writes me that if "Dad" were only younger, and not so ignorant along agricultural lines, she would certainly invest in a farm, where she could be sure of ending her days in peace and comfort.

I would like to hear more on this subject. Won't some nice young farmer boy give us his ideas regarding the college girl as a wife? Is there any reason why a farmer shouldn't demand the same kind of a wife as the merchant? I think not.—Mrs. J. W., Monroe.

SHORT CUTS TO HOUSEKEEPING.

When doing fancy work where padding is used try san silk. Put it in in outline stitch, using a single thread near the edge and a double in the center where the padding wants to be heaviest. San silk can be bought in nearly all the shades of silk so there will be no danger of the different color showing through.—Mrs. S. (Will Mrs. S. please send name and address).

When cutting ham or other cured meats try rubbing the exposed surface with a little lard. Will keep nice and moist any length of time if not being used soon.—A. L. C.

Phelps Wants You to Answer this Advertisement—and Get This Buggy Book Free



Phelps wants to pay the postage on his Big New Show Room Buggy Book for 1911—fresh from the printer.

He wants you to have this Book to look over the 125 different styles of Auto Seat Buggies—Surreys—Carriages—Phaetons—Driving Carts—Spring Wagons, etc.—and a full line of Harness—whether you buy anything from him or not.

This Big Book shows you more Vehicles and Harness than you could see in 10 big towns—or in 25 Dealers' Stores.

Phelps writes the Book himself—and he has a new plan this year of showing you—with big life size actual photographs—all the points about a Buggy—how it should be made—and what it should be made of—and Phelps knows.

Save
\$25⁰⁰ to \$75⁰⁰
OR NO SALE

30 Days' Free Road Test
—2 Years' Guarantee

Phelps will save you \$25.00 to \$75.00 on the purchase price of a Vehicle—according to the style you select—because he sells direct from factory.

Phelps has the confidence of over 140,000 farmers throughout the United States who have already bought Split Hickory Vehicles from him this way. These customers send Phelps thousands of other customers every year—and have written him thousands of testimonial letters because they've been so well pleased with their bargains.

Every Vehicle Phelps sells he makes to order—giving his customers many choices as to style, finish, upholstery, trimmings, etc.—gives them exactly the Vehicle they want—when they want it—and at the price they want to pay.

Trade-Mark Split Hickory Vehicles

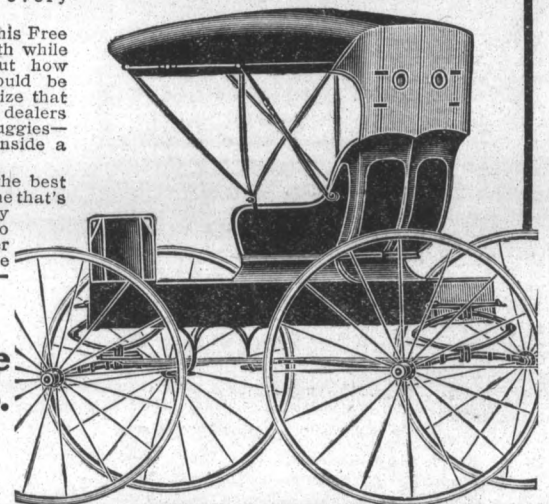
Highest Grade That's Made

Woodwork in running gears and shafts, of straight grained second growth Shellbark Split Hickory—wheels celebrated triple A grade found on no other Vehicle and guaranteed to be up to quality of sample spoke which is shipped (unpainted) with every vehicle sold.

Don't you want this Free Book? Isn't it worth while to know all about how a good buggy should be made? Do you realize that 95 out of every 100 dealers know little about Buggies—never have been inside a Buggy Factory?

Don't you want the best Buggy made—not one that's made in big lots by ordinary buggy manufacturers to be sold to dealers to compete with the cheap mail order catalogue houses? Just say on the postal "Phelps—I want the book"—he'll do the rest. Address,

H. C. PHELPS, President
The Ohio Carriage
Manufacturing Co.
Station 32, COLUMBUS, O.
The Largest Factory in the
World Selling Direct to Consumer



Neuralgia

Nerve Pains. They torture you, destroy your sleep, wreck your physical health. Stop it. Rub with

ST. JACOBS OIL

Rub it in vigorously, it will stop the biting pain immediately. It will cure you.

BEST LINIMENT for NERVE PAINS

ALL DRUGGISTS, 25c. and 50c.

The 50c Bottle Contains 3 Times as Much as the 25c Size



WE SHIP ON APPROVAL
without a cent deposit, prepay the freight and allow 10 DAYS FREE TRIAL.
IF ONLY COSTS one cent to learn our unheard of prices and marvelous offers on highest grade 1911 model bicycles.
Do not buy a bicycle or a pair of tires from anyone at any price until you write for our large Art Catalog and learn our wonderful proposition on first sample bicycle going to your town.
RIDER AGENTS everywhere are making big money exhibiting and selling our bicycles. We sell cheaper than any other factory.
TIRES, Coaster-Brake rear wheels, lamps, repairs and all sundries at half usual prices. Do Not Wait; write today for our special offer.
MEAD CYCLE CO., Dept. 5-77 CHICAGO

SHORES-MUELLER CO.
Wanted
Farmer or Farmer's Son
with rig in every County to introduce and sell Family and Veterinary Remedies, Extracts and Spices. Fine pay. One man made \$90 one week. We mean business and want a man in your County. Write us.
SHORES-MUELLER CO., Dep't C, Tripoli, Iowa

Let Us Send You This Honest Proof Book FREE

Save 1/2 to 2/3 Your Fuel Cost

Unless you have money to burn, let us quote you a price and send you our Home Heating Book and Literature Free—save you on first cost and lasting economy and reduce your fuel bills 1/2 to 2/3. Find out about the experience of thousands of satisfied owners of Holland's Double Grate Surface—Patented Cored Air-Admitting Double Firepot, burning fuel from sides and top, nature's way, for greatest even heat. Consumes gas, soot and clinkers with least smoke. No explosions or gas. Book tells all improved tested points, convenience and satisfaction of

HOLLAND Gas and Soot Consuming FURNACE

Easiest furnace to run—cleanest—handy perfect principle patented dampers—fire lasts longest and heats up quickest. Patented heat radiator in Holland saves heat—smoke travels twice as far, so no waste. Equal heat all over house in all pipes.

Burns Any Kind of Fuel "Makes Warm Friends"

Can use soft coal—slack screens—hard coal, lignite or wood with least waste. Special Double Guarantee. Books tell many other points.

Send Postal or Coupon today. Who is your Dealer?



Holland Furnace Co., Dept. 6 Holland, Mich.

Send me your Holland Furnace Books Free and prices.

Name.....

Address.....

Dealer's Name.....

Send for 75th Anniversary Catalog FREE

MODERN GARDENING

Our No. 1 Wheel Hoe provides a way to plow, harrow, cultivate and weed your garden without taking valuable time from other work. With this tool a boy can take care of a big garden, providing fresh vegetables all summer. A wonderful time and labor saver for only \$7.00. Other tools \$2.50 up.

IRON AGE Farm and Garden Tools

Why try to get along the old way when you can buy these light, durable, handy tools? Write for Anniversary Catalog showing entire line, including potato machinery, etc. BATEMAN MFG CO. Box 1011 Greenville, N. J.

75 YEARS IN BUSINESS

No. 1 Double or Single Wheel Hoe

Miller Manure Spreader and Pulverizer

Makes fine and spreads evenly. Everything controlled from seat; start beater or feed, or both, change to thick or thin spreading, without stopping. The

Only Low Down Spreader.

Just right for use in cow barns and for driving under low sheds—easy to load. Right width to straddle corn rows. No waste or scattering in yard or on road, no freezing manure on box. Solid bottom, scraped clean every load. Automatic drag return. Double wheel drive, safety end-gate, strength to stand the rough driving and the operating of machine.

Send for Free Catalog. It describes the modern spreader that has proven itself right. The Newark Machine Co., Newark, O.

Dr. Isaac Thompson's

EYE WATER

gives relief for granulated lids or any form of inflammation of the eyes and as a daily toilet requisite is indispensable. It freshens and strengthens the delicate tissues and helps to keep them free from dust and dirt.

For Sale by all Druggists. Price 25c.

Write for set of Allegorical Art Pictures FREE.

JOHN L. THOMPSON, SONS & CO. 161-5 RIVER ST., TROY, N. Y.

For Free Illustrated Booklet describing ALUMINUM SHOES, for Farmers, and outside Workers. Address Metal Shoe Company, Station 128, Minneapolis, Minn.

FOR SALE—A limited quantity of the celebrated Oderbrucker Barley at \$1.10 per bushel, bags free. Yielded 55 bushels per acre for me last season. O. L. EMENS, Holton, Michigan.

(Continued from page 326). in good demand at high prices. Produce is falling off somewhat in price. Wheat, 82¢@83c; oats, 28c; beans, \$1.60; corn, 25c; hogs, \$6.25@7; potatoes, 35c; eggs, 15c; butter, 14¢@20c.

Branch Co., March 8.—Weather for some time has been unfavorable for wheat. Ground bare and continued freezing and thawing, combined with dry winds, has been hard for the plant. Early sown wheat that has a good top to help protect the root is not believed to have been seriously injured as yet, however, but late sown crop looks bad. Western lambs about all shipped out and probably lost their feeders an average of at least \$1.00 per head. Feed getting scarce. Many farms changing hands. Less stock on hand than usual, except possibly brood sows. New seeding in bad shape.

Sanilac Co., March 10.—Weather very fine and roads good but not very much produce moving. Prices are not generally satisfactory, excepting clover and timothy seed. The oldest settler cannot remember when timothy seed sold as high as \$6 per bu. Clover is worth from \$8@9. People that have sugar bushes are preparing for their season's work. Wheat is suffering from exposure and meadows as well. Rural carriers are looking happy, caused by raise of \$100 per year. Butter, creamery, 22c; dairy, 16c; eggs, 15c.

Ohio.

Hardin Co., Feb. 27.—The weather has been fine for sugar making and cutting wood. Most farmers busy at this work at present. Wheat looks good yet, owing to the freezing weather, but the clover looks badly, some fields nearly destroyed. It is a hard matter to procure good seed corn on account of our drouth last summer. Hogs selling at 7½c; hay, clover, \$8; wheat, 85c; oats, 30c. Public sales very numerous and lots of changes this spring.

Williams Co., March 7.—The weather during the month of February was very windy and changeable and very muddy most of the time. The weather so far in March has been very much the same but we have been having excellent roads. Both wheat and grass has been very much damaged by the weather during the past six weeks. All live stock doing well. Horses are bringing large prices, ranging from \$150 to \$250 and \$300 each. Cows are not quite as good price as in the fall. Hogs from \$7.25@7.50 per cwt.; eggs, 14c; hay, \$12.50; butter scarce in the market but only 20¢@25c. A good many have opened their sugar camps. It seems to be a very good outlook for maple syrup this spring. Syrup is bringing from \$1@1.50 per gallon. Most of the farmers have their summer's wood cut and manure hauled, ready to begin the spring plowing. A good many public sales are being held this winter and spring. Feed is becoming scarce and very high. Not very much plowing has been done yet. Nearly all the farmers are glad the reciprocity bill was defeated.

Wisconsin.

Ashland Co., March 11.—February passed out very pleasantly, although weather mild and pleasant, good sleighing continues. Some parties have their contracts filled and have tied up for the season. Others will finish in a few days, while for others the season is never long enough and they would have logs left in the woods if sleighing lasted until July 4th. Ground is still well covered with snow and wheat and clover should come through all right. Stock is looking well as weather has been milder than usual. Hay prices are holding up very high, \$23, and grade very poor. Potatoes, 40c; butter has taken a tumble and now sells for 24c; eggs also lower, selling at 25c. Cows will be high this spring as many sold last fall on account of high prices of feed and there will be few who will want to sell, consequently will have to ship in to supply demand.

BETTER FARMING INSTITUTE TRAIN.

The Agricultural College, with the co-operation of the Grand Trunk Railway, will run an institute train through central Michigan during the last week in March, which will stop at various points at the hours named below. The train will consist of several coaches, in which short addresses upon topics related to farming and fruit growing will be given by experts. There will also be four baggage cars filled with exhibits, samples of dairy and spraying machinery and supplies, types of breeds of poultry, alfalfa, corn, grain and forage crops, and samples of hog cholera and tuberculosis, with cultures of various kinds. Opportunity will be given to hear the addresses and examine the exhibits. The public is requested to bring in samples of milk for testing, and of insects and plant diseases for examination. Any one who suspects the presence of the San Jose scale in his orchard should by all means bring a sample of bark. Stops of one hour will be made as follows:

Monday, March 20.

Shaftsbury, 8:00 a. m.; Morrice, 9:30 a. m.; Bancroft, 11:00 a. m.; Swartz Creek, 1:00 p. m.; Davison, 2:30 p. m.; Elba, 4:00 p. m.

Tuesday, March 21.

Lapeer, 8:00 a. m.; Attica, 9:30 a. m.; Imlay City, 11:00 a. m.; Capac, 1:00 p. m.; Emmett, 2:30 p. m.; Goodells, 4:00 p. m.

Wednesday, March 22.

Vernon, 8:00 a. m.; Burton, 9:30 a. m.; Ovid, 11:00 a. m.; St. Johns, 1:00 p. m.; Fowler, 2:30 p. m.; Muir, 4:00 p. m.

Thursday, March 23.

Saranac, 8:00 a. m.; Lowell, 9:30 a. m.; Ada, 11:00 a. m.; Berlin, 1:00 p. m.; Coopersville, 2:30 p. m.; Nunica, 4:00 p. m.

L. R. TAFT, Supt. of Institute.

A Watch of Efficiency

7 and 15 Jewel Models

\$5 to \$15

THE Ingersoll-Trenton watch stands right up among those few leaders which vary only by seconds.

Jewelers pronounce it a remarkable time-keeper, regardless of cost. Those who carry it consider it the equal of any watch. It has built a sound reputation for close timing. Its movement is the bridge model construction like the finest of the highest priced makes. You can buy this watch at such moderate prices for three main reasons:

Our entire Trenton factory is concentrated on manufacturing one size and type of watch in immense quantities at low cost.

Efficient marketing excludes the middleman and allows the legitimate jeweler to buy direct from the factory.

Moderate profits to manufacturer and jeweler secures large sales for both.

There is no handsomer watch than the Ingersoll-Trenton. It will give a generation of service.

For the sake of making your money buy its utmost ask to examine the Ingersoll-Trenton before buying. Responsible jewelers everywhere sell it at our advertised prices.

ROBT. H. INGERSOLL & BRO.
175 Frankel Building, New York

The \$5 "I-T" is in a solid nickel case. The \$15 "I-T" is in the best quality gold-filled "I-T" case, guaranteed for 25 years. Write for copy of our interesting booklet, "How to Judge a Watch."

YOUR BOY CAN DO AS MUCH WORK AS A MAN if he has a KRAUS PIVOTAXLE SULKY CULTIVATOR

He simply steers it—the machine does ALL the work. A slight pressure of the foot moves the wheels and shovels simultaneously to the right or left at the will of the driver, while the width between gangs and depth of shovels are instantly and easily adjusted while machine is in motion.

Hillsides, Uneven Land and Crooked Rows as Easily Cultivated as Level Ground.

Simple in construction—nothing to get out of order. Made entirely of steel and malleable iron—every part interchangeable. Built for wear and work. Light draft. High or low wheels or Pivot-gang. Also Clipper Hammock Seat. There is just one Kraus—if your dealer does not have it accept no other—but write us. Send today for free catalog.

AKRON CULTIVATOR CO., Dept. 312, Akron, Ohio.

TRADE MARK

No. 2 MULTIPLE CONDUITS

Special prices for shipments during the months of March and April.

Best material for bank barns, foundations of houses, outbuildings complete and retaining walls.

Vermin Proof, Damp Proof, Fire Proof.

Warmer in winter, cooler in summer, owing to air space. Being salt glazed smooth surface, no odors can accumulate; walls easy to clean.

In strength will carry as much weight as brick, stone or cement. First cost is less and labor in building about one-half the cost of any other material; made in all sizes. Write for catalogue. Give dimensions of buildings contemplated and we will give you prices delivered at your nearest R. R. station.

THE H. B. CAMP CO., Fulton Bldg., Pittsburg, Pa.

FREE PLOW POINTS

We will give free one of Moore's Patent Self-Sharpening Plow Points to the farmer who has never used one of them, and will cut this out, take it to his implement dealer, and ask him to order from our factory Moore's Patent Self-Sharpening Plow Point, to fit his plow. Say to the dealer, "the point is to be free." Have him enclose this offer, and if your plow is of standard make, you will receive, through your dealer, Free, a Moore's Patent Self-Sharpening Plow Point that is guaranteed to wear twice as long as a common plow point.

If your dealer does not handle this point or care to order it, write us and we will give you the name of the nearest dealer that carries them. Our object in giving you one of these points free is to have your recommendation and also to prove what we say is true. Do not delay, but take advantage of this FREE offer, before your spring work commences. We make MOORE PLOWS, also repairs to fit all standard plows. Made only by MOORE PLOW & IMPLEMENT COMPANY, Greenville, Michigan.

A Point That Saves Money.

MARKETS

DETROIT WHOLESALE MARKETS.

March 15, 1911.
Grains and Seeds.

Wheat.—With the visible supply of wheat for the country running about 14,000,000 bushels ahead of the amount in sight at this time a year ago and the condition of the growing crop improving where there was danger of drought and unharmed in those sections supplied with all the advantages that could be asked, the wheat trade found itself swinging into the territory of the bears and prices showing further tendency downward, although the change for the week is but fractional. The opponents of this slide to lower levels have clung to the argument that farmers are delivering small amounts of grain, making it certain that the surplus which now shows in the visible supply will be used before the new crop is here, and the further argument that Hessian flies are troubling the new crop in sections; the truth regarding the insects' work is questioned in some places but the reports had an influence in preventing larger declines. Liverpool has followed quite closely the trend of values on this side, except that on Tuesday heavier shipments from Argentine created an easier feeling in the English market. One year ago the price for No. 2 red wheat was \$1.19½ per bu. The quotations for the week are:

	No. 2	No. 1	Red.	White.	May.	July.
Thursday	89	86½	.92	.89		
Friday	90	87½	.93	.90½		
Saturday	90½	88	.93½	.91		
Monday	89½	86	.92	.89½		
Tuesday	89½	86½	.92½	.90½		
Wednesday	89½	86½	.92½	.89½		

Corn.—The visible supply of corn is below the amount that was in sight a year ago, but the movement for the past week, although about a quarter less than for the previous week, is about a third greater than for the corresponding week of 1910. Because of this bullish situation prices have advanced for corn in spite of the decline in wheat values. One year ago the price for No. 3 corn was 62½¢ per bu. Quotations for the week are:

	No. 3	No. 3	Corn.	Yellow.
Thursday	47	48		
Friday	47½	48½		
Saturday	47½	48½		
Monday	47½	48½		
Tuesday	47½	48½		
Wednesday	47½	48½		

Oats.—There is no material change in this deal and prices are ruling on the basis of a week ago. There is only a small volume of business at present, which is expected to be augmented soon by an increased demand from farming sections. One year ago the price for standard oats was 47½¢ per bu. Quotations for the week are:

	Standard	No. 3	White.
Thursday	32½	32½	
Friday	33	32½	
Saturday	33	32½	
Monday	33	32½	
Tuesday	33	32½	
Wednesday	33	32½	

Beans.—There has been some trading in the bean department of the market this past week and prices have gone down a few cents as the result, this being true of both cash and May goods. Prices rule about 25¢ below those of last year. Quotations are:

	Cash.	May.
Thursday	\$1.88	\$1.90
Friday	1.88	1.90
Saturday	1.88	1.90
Monday	1.88	1.90
Tuesday	1.88	1.90
Wednesday	1.88	1.90

Clover Seed.—This trade was active the past week. Prices are about 25¢ below the figures given out a week ago and about \$1.75 higher than those of 1910. Quotations are:

	Prime Spot.	Mar.	Alsike.
Thursday	\$9.00	\$9.00	\$9.25
Friday	8.75	8.75	9.00
Saturday	8.75	8.75	9.00
Monday	8.75	8.75	9.00
Tuesday	8.75	8.75	9.00
Wednesday	8.75	8.75	9.00

Rye.—Market continues to go up. Grain scarce with a fair demand for spring seedling. The price for No. 1 rye is now 88¢, which is 1¢ above last week's figures.

Timothy Seed.—There is a fair demand for this seed and sales are being made at slightly lower prices than ruled last week, the selling price for prime spot Tuesday was \$5.30, which is 5¢ below the price for the previous Tuesday.

Visible Supply of Grain.

	This week.	Last week.
Wheat	38,222,000	39,868,000
Corn	12,614,000	11,804,000
Oats	15,166,000	15,420,000
Rye	237,000	251,000
Barley	1,300,000	1,341,000

Flour, Feed, Provisions, Etc.

Flour.—Market continues slow with prices unchanged. Quotations are:

Clear	\$4.25
Straight	4.65
Patent Michigan	5.30
Ordinary Patent	4.90

Hay and Straw.—Values are unchanged. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$16.50@17; No. 2 timothy, \$15.50@16; clover, mixed, \$15; rye straw, \$7@7.50; wheat and oat straw, \$6@6.50 per ton.

Feed.—Prices are steady with a week ago. Carlot prices on track are: Bran, \$27 per ton; coarse middlings, \$26; fine middlings, \$28; cracked corn, \$22; coarse corn meal, \$22; corn and oat chop, \$20 per ton.

Potatoes.—No excitement has yet oc-

curred to awaken hope in the potato deal. The market is dull and easy with values ruling on last week's basis except the lower limit is down 2¢. There are many inferior consignments getting into the trade. In car lots Michigan potatoes are selling at 35@40¢ per bu.

Provisions.—Family pork, \$20@22; mess pork, \$19@20; medium clear, \$18@20; smoked hams, 13@14¢; briskets, 11½¢; shoulders, 10½¢; picnic hams, 10½¢; bacon, 14½@15½¢; pure lard in tierces, 9½¢; kettle rendered lard, 10½¢.

Hides.—No. 1 cured, 9½¢; No. 1 green, 9¢; No. 1 cured bulls, 8½¢; No. 1 green bulls, 7¢; No. 1 cured veal kip, 10½¢; No. 1 green veal kip, 9¢; No. 1 cured murrain, 9¢; No. 1 green murrain, 7½¢; No. 1 cured calf, 15¢; No. 1 green calf, 13½¢; No. 2 kip and calf, 1½¢ off; No. 2 hides 1¢ off; No. 1 horsehides, \$3.50; No. 2 horsehides, \$2.50; sheepskins, depending on wool, 50¢@1.50.

Dairy and Poultry Products.

Butter.—A brisk demand for butter and a shrinkage in receipts from creameries has crowded prices for manufactured goods a cent higher than last week. Dairies are steady. Extra creameries are quoted at 26¢ per lb; firsts, 23¢; dairy butter, 16¢; and packing stock, 13½¢.

Eggs.—The consumption of eggs is reaching large proportions and, while the receipts are unusually large, the reduction in prices for the week amounted to only a half cent, making the quotation for fresh receipts, case count, cases included, 16½¢ per dozen.

Poultry.—Chickens and fowls are advanced a fraction while dressed turkeys, ducks and geese are lower. The tone of the trade is easy. Quotations are: Dressed—Turkeys, 20¢; chickens, 15@16¢; fowls, 15¢; ducks, 17@18¢; geese, 13@14¢ per lb. Live—Spring chickens, 14½@15¢; fowls, 15¢; old roosters, 10@11¢; turkeys, 17@18¢; geese, 12@13¢; ducks, 15@16¢ per lb.

Cheese.—Michigan, 17¢; Michigan late, 15@16¢. York state, September, 17@18¢; do. late made, 15@16¢; limburger, old, 16@17¢; Swiss domestic block, 18@22¢; cream brick, 16@18¢.

Veal.—Market steady. Choice, 10@11¢; ordinary, 9¢ per lb.

Rabbits.—Steady. Per dozen, \$1.

Fruits and Vegetables.

Cranberries.—Steady. Quoted at \$3.50 per bu.

Cabbage.—Steady. Selling at \$1.75 per bbl. for new.

Onions.—Steady. Quoted at 75@80¢ per bushel.

Honey.—Choice to fancy comb, 15@17¢ per lb.

Apples.—The trade is firm and the market is active. Fancy Greenings are quoted at \$5.50@6; Baldwins, \$4.50@6; Steel reds, \$6; ordinary grades, \$3@3.50 per bbl. Western apples, \$2.25@2.75 per box.

OTHER MARKETS.

Grand Rapids.

Local dealers were paying 15¢ for eggs Tuesday, 21¢ for dairy butter and 26¢ for creamery. Wheat is 1¢ lower, the mills paying 85¢ for No. 2 red and 84¢ for No. 1 white. Dressed hogs are in good supply this week and many are being bought for 8¢. The poultry market is reported weak outside but strong here, dealers paying 13½¢ for spring chickens and 12½¢ for fowls. Hay is worth \$16@17. The potato market continues weak, 25¢ being the ruling price at most places.

Chicago.

Wheat.—No. 2 red, 89¼@90½¢; May, 91¢; July, 89½¢ per bu.

Corn.—No. 2, 47@47½¢; May, 49½¢; July, 50½¢ per bu.

Oats.—No. 2 white, 31¼@32¢; May, 31½¢; July, 31¢.

Barley.—Malting grades, 80@99¢ per bu; feeding, 60@70¢.

Butter.—Top grades firm and moving freely; others steady and only moderately active, with last week's values ruling all along the line. Quotations now are: Creameries, 16@26¢; dairies, 15@21¢.

Eggs.—The margin between miscellaneous offerings and prime stock has narrowed materially, due undoubtedly to the fact that the quality of current receipts is high at this season. Miscellaneous receipts are quoted ¼@1¢ higher than a week ago, while prime firsts are 1¢ lower. Quotations are: Prime firsts, 16½¢; firsts, 16¢; at mark, cases included, 14½¢@15¢ per dozen.

Potatoes.—Prices are again slightly lower, notwithstanding the fact that receipts continue light. There is a better feeling among holders, however, due to a little more active demand. Choice to fancy are quoted at 40@42¢ per bu; fair to good, 36@38¢.

Beans.—Market very quiet and values lower, pea beans showing a decline of 10@12¢ since this time last week. Choice hand-picked pea beans quoted at \$1.86@1.93 per bu; prime, \$1.76@1.85; red kidneys, \$2.75@3.

Hay and Straw.—Market firm with last week's advanced figures ruling. Quotations are: Choice timothy, \$18.50@19.50; No. 1 timothy, \$17@18; No. 2 do. and No. 1 mixed, \$15@16; No. 3 do. and No. 2 mixed, \$9@14; rye straw, \$8@8.50; oat straw, \$7@7.50; wheat straw, \$6@6.50 per ton.

New York.

Butter.—Market steady at slightly higher values. Creamery specials are quoted at 27½¢; extras, 25½@26¢; seconds to firsts, 17@23¢ per lb.

Eggs.—Irregular and fluctuating under heavy receipts. Fresh gathered extras, 19@20¢; firsts, 17½@18¢; do. seconds, 17¢; western gathered, white, 19@21¢.

Poultry.—Live, steady. Western chickens, 14@15¢; fowls, 15@15½¢; turkeys, 15@18¢ per lb. Dressed, easy. Western chickens, 14¢; fowls, 13½@14¢; turkeys, 15@22¢.

Boston.

Wool.—The demand by manufacturers for raw material is not wide and is of small volume. The orders are mostly for

territory wools and a few near-by fleeces. Following are the leading domestic quotations for offerings of the fleece states: Ohio and Pennsylvania fleeces—Delaine, washed, 33½@34¢; XX, 31½@32¢; fine unmerchantable, 25@26½¢; ½-blood combing, 29@30¢; ¾-blood combing, 29¢; ¼-blood combing, 26½@27¢; delaine unwashed, 26½@27¢; fine unwashed, 22¢. Michigan, Wisconsin and New York fleeces—Fine unwashed, 20@21¢; delaine, unwashed, 26@26½¢; ½-blood, unwashed, 28¢. Kentucky, Indiana and Missouri—¾-blood, 27@27½¢; ¼-blood, 25@25½¢.

Eggs.

Butter.—Market firm at 26¢ per lb., which is the quotation of last week. Output for the week, 439,200 lbs., as compared with 440,600 lbs. for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

March 13, 1911.
(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of stock here today as follows: Cattle, 145 cars; hogs, 13,600; sheep and lambs, 21,000; calves, 1,500.

With 27,000 cattle reported in Chicago today, and 145 cars here, our market, as a rule, was about 10@15¢ per cwt. lower, although in quite a number of instances, early in the morning, cattle sold about steady with last Monday. There were a few better cattle shown here today than any time in the last three weeks; ten head in a load averaged 1,583 lbs. and sold at \$6.75.

We quote: Best 1,300 to 1,400-lb. steers, \$6.50@6.65; good prime 1,200 to 1,300-lb. steers, \$5.75@6.30; best 1,100 to 1,200 lb. shipping steers, \$5.50@6.20; medium butcher steers, 1,000 to 1,100 lbs., \$5.35@5.75; light butcher steers, \$4.75@5.25; best fat cows, \$4.75@5.25; fair to good do., \$4@4.50; common to medium do., \$3.25@3.75; trimmers, \$2.75@3.15; best fat heifers, \$5.50@5.75; good fat heifers, \$5.10@5.50; fair to good do., \$4.25@4.75; stock heifers, \$4.25@4.50; best feeding steers, dehorned, \$5@5.25; medium to good feeding steers, \$4.40@4.60; stockers, all grades \$4.25@4.50; best bulls, \$5@5.40; bologna bulls, \$4.25@4.75; stock bulls, fair to good \$3.75@4.25; best milkers and springers, \$5@6; good to best do., \$4@5; common to good do., \$2.50@3.50.

The hog market was generally about 20¢ lower than the close of last week. Liberal receipts and lower prices at western points made against the trade here, and all buyers slow in taking hold. The bulk of the good quality yorkers, mixed and medium weights, sold at \$7.40; with pigs \$7.45@7.50. Heavy weights on down to \$7.25; roughs, \$6.40@6.45; stags, \$5@5.25. Trade ruled fairly active at the prices after the opening, and the hogs were fairly well cleaned up. Market closing steady.

Lamb market opened active today; most of the choice handy lambs selling at \$6.75@6.85; heavy lambs, that is, weighing 100 lbs. and over, selling mostly at \$6@6.10. Look for steady prices the balance of the week unless the runs should be moderate, may be able to raise them a little the last of the week. Sheep market was active today; most of the choice ewes selling at \$4.50@4.65; wethers, \$5@5.25. Look for about steady prices on sheep the balance of the week.

We quote: Best handy lambs, \$6.75@6.85; heavy lambs, \$6@6.10; bucks, \$3.25@3.75; heavy ewes, \$4.25@4.50; yearlings, \$5.75@5.90; wethers, \$5@5.25; cull sheep, \$3.25@4; handy ewes, \$4.50@4.65; veals, choice to extra, \$9.75@10.25; fair to good do., \$8@9.25; heavy calves, \$4.50@6.

Chicago.

March 13, 1911.
Cattle. Hogs. Sheep.
Received today 25,500 60,000 18,000
Same day last year 20,821 32,485 10,472
Received last week 46,943 149,158 78,518
Same week last year 54,482 86,101 53,214

This week starts off with an ample cattle supply, and on the whole there is no startling change in values, although early in the day part of the steers below the \$6 line were 5@10¢ lower. The best steers of good weights brought \$7, but generally speaking, heavy beefs were slower than handy weights and hardly as firm. Only moderate receipts of cattle will be needed for some time in all probability, and country shippers should bear this in mind. Warm-up cattle of the kind selling under \$6 may be expected to sell none too well. Hogs were in unusually heavy supply today, and prices broke early 15¢, but trade was lively at firmer values for good lots. Hogs sold at \$6.60@7.20, with shippers good buyers of the choicer lots. Hogs received last week showed a surprising increase in weight, the average jumping to 238 lbs., compared with 229 lbs. a week earlier, 215 lbs. a year ago and 207 lbs. two years ago. Provisions declined sharply this morning, in sympathy with hogs. Sheep and lambs were in small supply today, and the best lots advanced 10¢ or more, lambs selling at \$5.25@6.60, following a rise last week of 25@40¢. Sheep and yearlings advanced 35@50¢ last week, and they were tending upward today, a sale of prime two-year-old heavy wethers being made at \$5.50, with other sales at \$4@5.25 for inferior to choice. Ewes were salable at \$3.50@4.90, bucks at \$2.25@3.50 and yearlings at \$5.25@5.75. Shorn lambs were salable at \$5@5.85, and breeding ewes were scarce and wanted at \$4.50@5. Feeder lambs were firm at \$5.25@6, being scarce.

Cattle were in no more than moderate general demand last week, the Lenten season tending to diminish the consumption of beef, but the receipts continued within moderate proportions, and this made a firm market most of the time, small advances taking place Monday and Thursday, while the Wednesday market was a little lower. Beef steers averaged a little higher on the whole, with sales

largely at \$5.80@6.75, the common to fair lots selling at \$5@6 and the better class at \$6.50@7, while a sale was made Monday of 27 extra fine low-fed Angus yearlings that averaged 1,155 lbs. at \$7.35, the only carlot transaction of the week higher than \$7.25. A good class of cattle sold at \$6.30@6.55, and yearlings were especially good sellers at \$6.25 and upward, going as high as heavy steers and frequently higher. Cows and heifers had a fairly active movement at \$3.50@6, while cutters sold at \$3@3.45, canners at \$2.25@2.95 and bulls at \$3.70@5.50. The stocker and feeder trade has fallen off considerably in volume recently, and packers have purchased many good cattle of the weighty feeder class, and some sales were made at reduced figures, although values were still very high compared with prices realized for matured beef cattle. Stockers have been finding buyers at \$4.15@5.60, feeders at \$5@5.90 and stock and feeder heifers at \$3.75@4.65. Calves were traded in at \$3.50@9 per 100 lbs., the only reliable demand being for choice light vealers. Milkers and springers were in fairly large demand at \$30@60 per head, the eastern shippers wanting only choice cows, especially Holsteins, while good backward springers were in demand for shipment to Ohio dairy sections. A year ago choice beef cattle were unusually high owing to their scarcity, but the commoner cattle were scarcely any higher than they are now. Steers sold two years ago at \$4.70@7.35 and three years ago at \$4.20@6.50. Good beef cattle are expected to sell better as the summer season approaches. The best heavy beefs sold last week at \$6.90.

Hogs sold lower last week than at any previous time in two years, and the packers succeeded during the last half of the week in securing their droves at a lower cost than at any previous date since March, 1909. Packers were extremely bearish in their views and lost no opportunity in depressing values, the only support to the market coming from shippers and speculators. The hogs averaged choice in quality, while still heavier than most buyers wanted them, although there has been a growing tendency of late to market hogs before they attain extreme size. The ruling price of cured hog meats are still so high as to seriously lessen their consumption, and during February the combined stocks of provisions held at the five principal western points of storage underwent an increase of 41,500,000 lbs., compared with an increase of 9,930,000 lbs. two years ago and 63,462,000 lbs. three years ago. The increase in stocks in February last year was 12,350,000 lbs. Light weight bacon hogs have sold the highest, as usual, and strong weight pigs also sold high. Hogs are maturing rapidly everywhere, and the time for large shipments to market having arrived, prospects appear to favor further reductions in values, unless marketings fall off in volume considerably.

Sheep and lambs have been bringing much better prices of late on account of the moderate supplies offered, the general demand being no larger than is usually witnessed during the Lenten period. There has been a steady demand for both breeders and feeders, but offerings were so limited that not much business was possible. Receipts of lambs from Michigan and Colorado comprised a good share of the receipts, and lots that were not too heavy in weight sold well. Shorn flocks arrived much more freely, and they had a good sale, the dullness in the wool trade being largely responsible for this, although it must be admitted that their good dressing out was greatly in their favor. Under prevailing conditions sheepmen are profiting by shearing their flocks before marketing them. A good many flocks are still to be marketed, shearing delaying shipments.

Horses have been arriving liberally and met with a large sale when their quality was good, out-of-town buyers having been in large attendance. Wagon horses had a better outlet at \$140@175 per head, and sales were made of small chunks at \$75@125, while drivers were in moderate demand on a basis of \$140@300, few going as high as \$250. Drafters were in excellent demand at \$200@300, with the strongest call for heavy animals of superior quality. Farm horses were extremely active at \$75@265, mares being largely wanted and selling much the highest. Well-matched pairs of work horses that weighed 1,400 to 1,600 lbs. were in good city demand at \$400@550.

LIVE STOCK NOTES.

W. H. Weeks, traffic manager of the Kansas City Stock Yards, returned recently from a visit to Oklahoma and Texas and found fully as many cattle, if not more, on feed in Oklahoma as last year, while he found, so far as his observation went, that fewer cattle were feeding in Texas. A large share of the cattle fed in Texas have been marketed, and comparatively few remain at the various oil mills. Fully 15,000 and perhaps 20,000 cattle are on full feed in Oklahoma, and there are probably 8,000 to 10,000 in Texas. These figures do not include cattle that are being caked on grass and which will not be marketed before May or June. There are caking between 40,000 and 50,000 cattle in the San Antonio territory, and nearly the usual number around Fort Worth.

To re-stock the depleted game of the United States, with the purpose of increasing the food supply, is the object of the expedition to South Africa that left several days ago, led by Major Burnham.

Complaint has been made by the Chicago Live Stock Exchange to the various lines of railroads leading into that city that delay in getting empty stock cars weighed and obtaining freight returns is a serious handicap to business. The railroads promise prompt consideration of the subject.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

March 16, 1911.

Cattle.

Receipts, 1,180. Market dull and 10@15c lower than last week.

We quote: Best steers and heifers, \$6; steers and heifers, 1,000 to 1,200, \$5.50@5.75; steers and heifers, 800 to 1,000, \$5@5.50; steers and heifers that are fat, 500 to 700, \$4.50@4.75; choice fat cows, \$4.50@4.75; good fat cows, \$3.75@4; common cows, \$3.25@3.50; canners, \$2.50@2.25; choice heavy bulls, \$4.75; fair to good bolognas, bulls, \$4.50@4.65; stock bulls, \$4@4.50; choice feeding steers, 800 to 1,000, \$4.50@5; fair feeding steers, 800 to 1,000, \$4@4.50; milkers, large, young medium age, \$4@5; common milkers, \$25@35.

Roe Com. Co. sold Kamman 2 heifers av 755 at \$5.25, 3 heifers av 726 at \$4.25; to Regan 10 butchers av 587 at \$4.50; to Newton B. Co. 10 do av 762 at \$4.90; to Mich. B. Co. 3 bulls av 1,173 at \$4.65, 18 steers av 863 at \$5.25; to Smith 8 stockers av 535 at \$4.50; to Bresnahan 14 steers av 1,034 at \$5.40; to Mich. B. Co. 4 bulls av 1,142 at \$4.65.

Bishop, B. & H. sold Thompson Bros. 11 steers av 884 at \$5.25, 2 bulls av 885 at \$4.25, 2 cows av 1,010 at \$4.50, 1 do weighing 830 at \$3; to Hammond, S. & Co. 15 steers av 1,068 at \$5.65, 3 do av 880 at \$5.25, 1 cow weighing 920 at \$4.50, 3 do av 1,047 at \$3.75, 1 bull weighing 1,450 at \$4.75; to Rattkowsky 5 cows av 1,036 at \$4.15, 1 do weighing 880 at \$4; to Mich. B. Co. 9 steers av 922 at \$5.15; to Fromm 3 cows av 957 at \$3.85; to Sullivan P. Co. 14 steers av 1,076 at \$5.50, 3 cows av 1,033 at \$4.50; to Parker, W. & Co. 20 butchers av 858 at \$5.10, 23 do av 900 at \$5.10, 4 cows av 900 at \$4, 1 steer weighing 1,100 at \$5.50; to Bresnahan 2 cows av 1,090 at \$4.75; to Hammond, S. & Co. 2 steers av 1,225 at \$6, 7 do av 986 at \$5.25, 4 cows av 932 at \$3.40, 3 do av 913 at \$3.40, 1 bull weighing 1,720 at \$4.75, 1 do weighing 1,170 at \$4.50, 16 butchers av 856 at \$5.10, 2 do av 625 at \$4.25; to Newton B. Co. 20 do av 965 at \$4.25, 2 cows av 950 at \$3.25, 21 steers av 873 at \$5.25, 2 cows av 925 at \$4.25, 1 bull weighing 1,180 at \$4.50, 1 cow weighing 770 at \$3, 1 do weighing 910 at \$4, 6 heifers av 701 at \$4.85; to Thompson Bros. 6 cows av 1,028 at \$4.25, 4 do av 917 at \$3.35, 2 heifers av 590 at \$4.25, 1 bull weighing 1,160 at \$4.50, 2 steers av 865 at \$4.85, 2 do av 1,060 at \$5.40; to Laboe 6 butchers av 840 at \$5; to Hammond, S. & Co. 1 cow weighing 1,110 at \$4.50, 8 do av 900 at \$3.40, 3 steers av 800 at \$5; to Bresnahan 5 do av 1,106 at \$5.60; to Mason 6 butchers av 908 at \$4.50; to Schuman 5 steers av 954 at \$5.60; to Sullivan P. Co. 3 cows av 1,087 at \$3.75, 6 steers av 1,061 at \$5.50, 3 do av 823 at \$5, 18 do av 838 at \$5.30, 5 do av 986 at \$5.50, 12 butchers av 778 at \$4.75, 3 cows av 1,033 at \$4.25, 2 do av 1,015 at \$3.50.

Spicer & R. sold Rattkowsky 3 cows av 920 at \$3.90, 2 do av 1,025 at \$3.90, 1 bull weighing 890 at \$4.50, 2 do av 1,300 at \$4.60; to Newton B. Co. 3 cows av 1,093 at \$4, 2 do av 1,125 at \$3.75, 2 steers av 975 at \$5.50, 1 heifer weighing 790 at \$5, 5 cows av 1,000 at \$3.75, 2 do av 765 at \$3, 1 do weighing 710 at \$2.50, 1 do weighing 810 at \$3, 5 do av 934 at \$3.50, 2 do av 800 at \$3.25, 4 do av 925 at \$3.75, 1 steer weighing 920 at \$5.25, 1 do weighing 820 at \$5, 9 do av 1,120 at \$5.85; to Kamman B. Co. 5 butchers av 870 at \$5.25, 5 do av 1,032 at \$4.25, 3 do av 900 at \$5.25, 2 cows av 1,190 at \$4.50, 11 steers av 882 at \$5.25, 1 cow weighing 1,200 at \$4.50; to Bresnahan 2 heifers av 865 at \$4.75, 1 do weighing 620 at \$4; to Goose 3 cows av 783 at \$3; to Newton B. Co. 9 steers av 861 at \$5.85, 2 cow and bull av 1,260 at \$5, 2 steers av 935 at \$5.40, 1 cow weighing 910 at \$3, 1 do weighing 870 at \$3, 2 do av 1,110 at \$3.75, 1 do weighing 1,130 at \$3.25; to Thompson Bros. 3 steers av 583 at \$4.90; to Sullivan P. Co. 1 bull weighing 950 at \$4.50, 2 do av 1,425 at \$4.75; to Bresnahan 7 do av 550 at \$4.25.

Haley & M. sold Kamman 3 cows av 1,133 at \$4.15, 1 steer weighing 800 at \$5.25, 6 butchers av 670 at \$4.60; to Newton B. Co. 1 cow weighing 1,370 at \$4.50, 4 do av 820 at \$3; to Schuman 6 steers av 911 at \$5.30, 2 do av 965 at \$5.60, 1 cow weighing 900 at \$3.25; to Marx 7 stockers av 554 at \$4.85; to Mich. B. Co. 2 heifers av 680 at \$3.70; to Goose 1 cow weighing 1,300 at \$3.85.

Adams sold Bresnahan 4 steers av 812 at \$5.25.

Lowenstein sold Mich. B. Co. 10 cows av 982 at \$3.60.

Prucha sold Lingeman 5 cows av 1,086 at \$3.25, 9 steers av 931 at \$5.10.

Groff sold same 4 steers av 1,000 at \$5.

Miller sold Sullivan P. Co. 5 cows av 1,200 at \$4.75, 13 steers av 1,010 at \$5.85.

Wilson sold Kamman 1 cow weighing 1,090 at \$3.50, 1 bull weighing 1,200 at \$4.25, 6 butchers av 708 at \$5, 7 do av 981 at \$5.

Prucha sold same 1 bull weighing 1,250 at \$4.60.

Woodmansee sold Newton B. Co. 19 butchers av 772 at \$5, 3 cows av 960 at \$4.25.

Receipts, 854. Good grades 25c, others 50@75c lower than last week. Best, \$8.50@9; others, \$4@8; milch cows and springers steady.

Spicer & R. sold Mich. B. Co. 1 weighing 140 at \$6, 9 av 140 at \$8.50, 10 av 125 at \$8.50; to Goose 1 weighing 280 at \$5; to Newton B. Co. 10 av 138 at \$8.50, 2 av 130 at \$6.50; to Goose 7 av 135 at \$5.50; to Golden 7 av 120 at \$5.25; to McGuire 5 av 125 at \$8.50; to Golden 3 av 130 at \$7.50; to Brown 5 av 150 at \$8.75, 17 av 120 at \$7, 18 av 125 at \$8, 9 av 150 at \$8.50, 4 av 150 at \$6, 4 av 125 at \$8.75, 7 av 120 at \$6.50, 5 av 150 at \$8.75, 4 av 125 at \$7, 6 av 115 at \$6.

Roe Com. Co. sold Hammond, S. & Co. 1 weighing 280 at \$5, 3 av 140 at \$6.50, 8 av 130 at \$8.50; to Goose 17 av 175 at \$7, 8 av 150 at \$5.50; to Rattkowsky 11 av 150 at \$8.

Haley & M. sold Thompson Bros. 6 av 140 at \$8, 11 av 125 at \$8, 3 av 250 at \$4; to Barlage 8 av 105 at \$6.50, 2 av 100 at \$6.50; to Mich. B. Co. 8 av 150 at \$9, 11 av 160 at \$8.75.

Bishop, B. & H. sold Parker, W. & Co. 2 av 115 at \$9, 5 av 180 at \$8.75, 1 weighing 160 at \$9, 4 av 145 at \$8.50, 10 av 133 at \$9, 14 av 130 at \$9, 4 av 130 at \$9, 28 av 135 at \$9.25, 2 av 145 at \$9.25; to Goose 12 av 120 at \$5.50, 11 av 100 at \$6.50, 1 weighing 110 at \$5; to Rattkowsky 8 av 125 at \$8; to Swift & Co. 10 av 150 at \$9, 2 av 125 at \$5, 3 av 140 at \$9; to Rattkowsky 4 av 100 at \$3.

Kendall sold Sullivan P. Co. 17 av 135 at \$6.

Torrey sold same 4 av 130 at \$8.50.

Kendall sold McGuire 5 av 125 at \$8.60.

Belheimer sold Hammond, S. & Co. 22 av 150 at \$8.50.

Long sold Burnstine 5 av 165 at \$8.50.

Sheep and Lambs.

Receipts, 3,425. Market 25@35c higher than last week. Best, \$6.65@6.70; fair to good lambs, \$6.25@6.60; light to common lambs, \$5.50@6; heavy, \$5.75; fair to good sheep, \$4.50@4.75; culls and common, \$3.50@3.75.

Bishop, B. & H. sold Parker, W. & Co. 123 lambs av 65 at \$6.40; to Swift & Co. 56 do av 100 at \$5.75, 36 sheep av 120 at \$4.75, 122 lambs av 88 at \$6.40, 19 sheep av 125 at \$4.50, 3 do av 140 at \$3; to Nagle P. Co. 6 lambs av 60 at \$5.50, 73 do av 85 at \$6.60; to Sullivan P. Co. 44 do av 85 at \$6.50, 56 do av 78 at \$6.35, 53 do av 85 at \$6.35, 17 do av 75 at \$6.25, 15 do av 70 at \$5.60, 28 clip sheep av 70 at \$4.50; to Hammond, S. & Co. 49 lambs av 63 at \$5.35, 15 do av 60 at \$6.

Haley & M. sold Newton B. Co. 11 lambs av 60 at \$5.50; to Hammond, S. & Co. 56 do av 75 at \$6.50.

Roe Com. Co. sold Hammond, S. & Co. 1 sheep av 130 at \$3.50, 10 lambs av 67 at \$5, 36 do av 88 at \$6.50; to Thompson Bros. 50 do av 80 at \$6, 6 sheep av 135 at \$3.50.

Spicer & R. sold Hammond, S. & Co. 31 lambs av 80 at \$6.65; to Nagle P. Co. 63 spring lambs av 57 at \$10; to Newton B. Co. 76 lambs av 80 at \$6.65, 23 do av 70 at \$6.40, 16 do av 83 at \$6.50, 6 sheep av 88 at \$3.50; to Mich. B. Co. 90 lambs av 75 at \$6.70, 50 do av 80 at \$5.50, 9 do av 85 at \$6.40; to Thompson Bros. 30 do av 90 at \$5.60.

Hogs.

Receipts, 3,597. Market 10@15c higher than on Wednesday and last Thursday.

Range of prices: Light to good butchers, \$7.15@7.25; pigs, \$7.25; light yorkers, \$7.10@7.20; heavy, \$7.10.

Spicer & R. sold Parker, W. & Co. 420 av 170 at \$7.25, 75 av 200 at \$7.20.

Haley & M. sold same 230 av 170 at \$7.25, 56 av 200 at \$7.20.

Sundry shippers sold same 310 av 209 at \$7.20.

Bishop, B. & H. sold Hammond, S. & Co. 850 av 150 at \$7.25, 725 av 180 at \$7.20, 180 av 230 at \$7.15.

Roe Com. Co. sold Sullivan P. Co. 340 av 190 at \$7.20, 36 av 221 at \$7.10.

Friday's Market.

March 10, 1911.

Cattle.

Receipts this week, 1,363; last week, 1,489. Market steady at Thursday's prices.

We quote: Best steers and heifers, \$6; steers and heifers, 1,000 to 1,200, \$5.25@5.75; do. 800 to 1,000, \$5@5.50; steers and heifers that are fat, 500 to 700, \$4@4.65; choice fat cows, \$4.50@4.75; good fat cows, \$4@4.25; common cows, \$3.50@3.75; canners, \$2.50@3.25; choice heavy bulls, \$5; fair to good bolognas, \$4@4.50; stock bulls, \$4@4.25; choice feeding steers, 800 to 1,000, \$4.75@5; fair feeding steers, 800 to 1,000, \$4@4.50; milkers, large, young medium age, \$4@5; common milkers, \$25@35.

Veal Calves.

Receipts this week, 948; last week, 938. Market steady at Thursday's prices. Best \$9@9.25; others, \$4@8.50. Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 7,702; last week, 6,383. Market strong at Thursday's prices. Best lambs, \$6.35; fair to good lambs, \$5.75@6; light to common lambs, \$5@5.50; fair to good sheep, \$4@4.50; culls and common, \$3@3.50.

Hogs.

Receipts this week, 5,355; last week, 5,059. Market 5@10c higher than on Thursday. Range of prices: Light to good butchers, \$7.15@7.25; pigs, \$7.25@7.30; light yorkers, \$7.15@7.25; heavy and mixed, \$7@7.15.

President L. F. Swift, of Swift & Co., in his recent report to the stockholders, stated that the profits made during the past year were derived from by-products, which were wasted before the packers learned how to utilize them by the aid of modern machinery and scientific handling. The annual statement showed net profits of \$7,050,000, equal to 11.75 per cent on the capital stock. The company pays dividends of 7 per cent annually.

Struck by LIGHTNING

Not Your Home—but

Is Yours Protected?

Why don't you do something to protect your home? Thousands and thousands of homes are made safe by

THE DODD SYSTEM

of Lightning Protection



W. E. Dodd, Originator of the Dodd System

Not one ever destroyed or injured. And yet lightning causes three-fourths of all the country fires. The Dodd System comes nearest to absolute safety of any in the world. Insurance companies say so. Over 100 Mutual Companies have passed resolutions endorsing it. Old Line Companies are giving 50 per cent reduction in rates on buildings protected with D. S. Lightning Rods.

Be sure you get THE DODD SYSTEM, the real system—includes scientific installation as well as the standard rod at the standard price.

Look for the D. S. Trade Mark. Write for great lightning book, FREE, to

Dodd & Struthers

429 6th Ave., Des Moines, Iowa



Have you read

John & Jane

In the San Joaquin Valley, California?

A new story by Eleanor Gates. It is an interesting account of how a young couple made their way to a competency and the ownership of an irrigated farm in the San Joaquin Valley.

The author of "Cupid the Cow-punch" and the owner of "Los Ranchos de la Rosas" knows California. Her story pictures actual conditions as they exist in this wonderful valley.

The "land hungry," whether struggling in town or trying to pay rent, should read of the success of John and Jane in the San Joaquin.

For a copy, free, drop a postal to
C. L. Sengraives,
General Colonization Agent, Santa Fe,
Box 1, Railway Exchange, Chicago

SCIENTIFIC SWEEP MILL

Double Action. Triple Geared

This No. 5 is one of our leading Feed Mills. Particularly adapted for grinding ear corn and small grain for stock feed. A medium priced mill that

Gives Satisfaction

Strong, durable and easy running. Mounted on a heavy hard-wood box. Fully guaranteed. Write for free catalog. Over 20 styles and sizes.

THE FOOS MFG. CO., Box 217 Springfield, Ohio



LAWN FENCE

Many designs. Cheap as wood. 32 page Catalogue free. Special Prices to Churches and Cemeteries. Coiled Spring Fence Co. Box 1 Winchester, Ind.

Please mention the Michigan Farmer when you are writing to advertisers.

Farms Wanted—Don't pay commissions. We had you direct buyers. Write, describing property, naming lowest price. We help buyers locate desirable properties FREE. American Investment Association, 3 Palace, Minneapolis, Minn.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

Choice Mich. Farms—Have a big list including some of the very best in Michigan. Write or visit. D. P. WHITMORE, Mason, Mich.

The Best Farms for the money in Michigan. Write stating what you want to. E. N. PASSAGE, Plymouth, Michigan.

FOR SALE—120 acres, 40 improved, 30 timber, partly fenced. Fair buildings, good soil, water & location. Inquire owner, A. D. Clark, R. No. 4, Hesperia, Mich.

Jersey Meadow Farm—165-a. This is best farm on the market today for the money. Everything up-to-date. 1 mile from town. Can have R. R. Switch. \$12,000. \$2,000 cash, balance mort. D. R. REES, 724 Dollar Bank Bldg., Youngstown, Ohio.

FOR SALE—23 acres of best Michigan farm land located 1 mile east of Ann Arbor. Large modern house and barns, fine water supply and 20 acres wood lot. Inquire at 424 S. Main St., Ann Arbor, Michigan.

OWN YOUR OWN HOME.

Come to Oscoda County, Michigan, where clover is king and all other crops do well. We can sell you a good farm very reasonable. Address OSCODA COUNTY REALTY CO., Mio, Mich.

To Sell or Exchange—40 acres first class irrigated lands, near Price, Utah. Permanent water rights. Near railroad and county seat. Will sell for cash at \$100.00 an acre or exchange for Michigan farm land. Arthur H. Ryall, First National Bank Building, Escanaba, Michigan.

FOR SALE—A fine 130 acres in Eaton Co. Good buildings, barn 40x74, hip roof and basement. Good frame house, 8 rooms, steel mill and tanks fine clay loam soil, over 100 under plow. Price \$7,800. Must be sold at once. E. C. HANES & CO., Charlotte, Michigan.

FOR SALE CHEAP, on account illness requiring removal from state, fully equipped dairy farm, one-half mile from creamery in Wayne Co., Mich. With or without herd, 40 registered Holsteins. Illustrated booklet mailed to interested farm purchasers. William B. Hatch, Seabreeze, Florida.

For Sale—Choice Farm, Stock and Fruit Lands in Gladwin and Clare Counties. We have 20,000 acres of fine unimproved lands, also some improved farms. Write us for maps and folders. A. J. STEVENS & CO., Gladwin, Michigan.

Mich. Farms Write for list of STOCK, GRAIN DAIRY and FRUIT FARMS in Barry and Eaton Counties. GOOD SCHOOLS, GOOD ROADS, LOW TAXES and GOOD LOCATIONS. BUCKLES & MATTHEWS, Hastings, Michigan.

SOUTHERN MICHIGAN FARMS 103 acres, fine buildings, gravel loam soil, 40 rods to school, 1 1/2 miles to Bellevue. A snap at \$70 per acre. 50 other bargains from 30 to 240 acres. Ask for prices and descriptions. Harpster & Legge, Bellevue, Mich.

FARMING PAYS IN COLORADO

A good living in a good place to live. Wealth in Colorado soil; health in Colorado sunshine. Splendid opportunities to make money in general farming, dairying, fruit growing, gardening, poultry and hog raising. Amazing crops, finest quality, high prices, big profits. For reliable information gathered and published by the state, address, STATE BOARD OF IMMIGRATION, 38 State House, Denver, Colorado.

170 Acres \$3,500.

20 Cows and Tools Included.

This is your opportunity to become the owner of an equipped profit-paying stock and dairy farm, smooth level machine worked fields, rich loam soil, cuts 35 tons hay, splendid crops, oats, buckwheat, corn, potatoes. Spring watered pasture for 30 cows, 60 acres woodland cutting 2000 cords wood and 100,000 feet of timber, variety of fruit, 9-room cottage house, 40x75 barn and other out-buildings; owners business calls him elsewhere and it taken immediately will include 20 cows, all machinery and tools for the low price of \$3,500 part cash, easy terms. For details of this and another farm of 60 acres for \$1,500, see page 12 Strout's Farm Catalog No. 34, just out. Copy free. Station 101, E. A. STROUT, Union Bank Building, Pittsburgh, Pa.

FARMS THREE CROPS A YEAR.

20 acres, good soil and climate. Mobile Co., Alabama. Yearly production. Mr. Jackson off 52 acres \$8000. Mr. Bolton 40 acres \$10000. Grow oranges, pecans, vegetables for northern markets. \$12 to \$25 per acre. Easy terms. Bank references. Descriptive booklet. THE OHIO-ALABAMA LAND CO., Hamilton, Ohio.

CAROLINA COAST COUNTRY AN IDEAL FARM AND HOME IN THE SOUTH

THOUSANDS OF ACRES—Rich, Black Sandy Loam Soil; Virgin Lands, fronting on the ocean. A new country opened up by the completion of a large railroad system. Finest climate in the world; Summer all Winter and Winter all Summer. Low priced lands. Low freight rates, and quick transportation to the great Eastern cities. Only twelve hours from New York. It only costs twenty-five cents to take a barrel of potatoes to twenty million people. Write us for Free Illustrated Booklet, Maps, etc. Address W. W. CROXTON, G.P.A., Norfolk Southern R. R., Dept. B, Norfolk, Va.

FOR INFORMATION AS TO LANDS IN

The Nation's Garden Spot—

THAT GREAT FRUIT AND TRUCK GROWING SECTION—

along the

Atlantic Coast Line RAILROAD

in Virginia, North and South Carolina, Georgia, Alabama and Florida, write to
WILBUR MCCOY, E. N. CLARK,
A. & I. Agt. for Florida, A. & I. Agt. for Virginia,
Alabama, Georgia, and the Carolinas,
Jacksonville, Fla. Wilmington, N. C.

POULTRY AND BEES

MAKING AND USING THE FIRELESS BROODER.

Several requests for information regarding the so-called cold-air or fireless brooder have been received, one correspondent asking whether it is really possible to raise chicks out of doors in March without artificial heat. The brooding of chicks without the aid of artificial heat is a comparatively new method and during the past year or two has been receiving the careful attention of the country's best poultrymen. The method completely reverses the long accepted teaching that in raising brooder chicks great care must be exercised to prevent crowding and huddling, for the cold brooder system has been built up on the theory that if the chicks are allowed to congregate under favorable conditions they will be kept warm by the heat from their own bodies. Experience seems to show that there is something in this, as those who have adopted this method of brooding declare that while the chicks huddle closely there are no losses from smothering.

In brooding chicks that are hatched in March by this method it would seem advisable to locate the brooders in some outbuilding, preferably one to which air and a reasonable amount of sunlight can be admitted freely. A section of an open-front poultry house, or an open-front colony house, would be most satisfactory. If not feasible to place them in a building it is necessary that they be located where they will receive the full benefit of the sun and yet be amply protected from cold winds.

It is apparent that these brooders must be small since it would not be practical to brood a large number of chicks in one body by this method. Several authorities advise making the brooder about 2 ft. square, which will accommodate 50 chicks until they have reached the age of two weeks. Others favor making it a little smaller and placing but 25 or 30 in each brooder. The brooder may be a simple box of the dimensions given and about 8 in. deep. Where wanted for use as early as March the sides are generally lined by tacking pieces of burlap at the bottom, stuffing soft straw or hay behind them and tacking at the top. A still better way would be to make the sides or walls of the box double, leaving a small air space between it and the real bottom, would also make the brooder warmer. A door in one side, about 6 in. square, is necessary to allow the chicks to leave the brooder on warm days. In fact, where the brooder is located in a building the chicks should be able to spend a portion of each day outside the brooder almost from the first.

The hover is the next thing, and the dimensions of this are practically the same as the interior measurements of the box. A lath frame of the same width as the box and about half an inch shorter is constructed, this frame to rest upon cleats nailed to the sides of the box a few inches below the upper edge. Curtains made from a good quality of cotton blanket are hung from the edges of this frame, reaching to the floor, and the under side of the frame is covered with a piece of the same material so tacked on as to sag about 2½ in. from the frame, thus bringing the top of the hover down to the chicks' backs. The curtains are slit into 3-in. strips so that the chicks can get through easily. The hover being half an inch shorter than the box gives a little space at each end for ventilation. To facilitate ventilation several half-inch holes are bored in each of the side walls and several in the rear wall. The cover is closely fitted and put on with hinges so that it may be propped up on warm days. In severe weather a cushion of chaff or cotton batting which just fits the space between the hover and the cover of the box has been used with good results. Several thicknesses of newspaper are spread on the floor, which is then well covered with litter. This should be renewed daily. Experience has shown that the chicks huddle under the sagging cloth which forms the top of the hover, and when they get too warm they spread out as chicks do under a hen. It is said, however, that they require close attention until they have learned to go into the brooder when they begin to feel the need of protection from cold, but they soon learn if not allowed to huddle outside in the sun. Some users advocate having windows in the sides, covered with isin-



Big News For INCUBATOR BUYERS

The famous Belle City Incubator wins the "Tycos" Cup Contest over machines costing 2 to 5 times as much—making it the Double World's Champion. And the winner raised over 97% of the chicks. ORDER NOW—Get in the champion class of chicken raisers.

Order Direct From This Advertisement

to get early start. W. S. Reynolds, Avon, Miss., says: "My first Belle City hatch was 76% BETTER THAN the highest priced machine made which stood alongside. I lost nothing by ordering direct from your ad. Count on me for 4 to 8 machines. If others did business as you do there would not be much trouble in the business world." That's my policy. You take no risk. Read remarkable offer below. Then order or send for "HATCHING FACTS"—FREE. J. V. ROHAN, President Belle City Incubator Company.



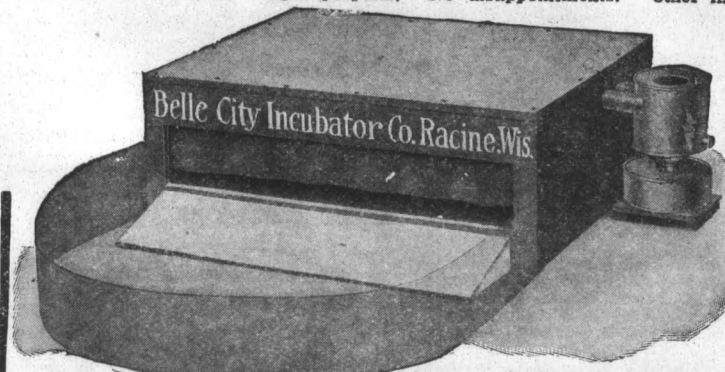
\$7.55 Buys the Best 140-Egg Incubator Ever Made

\$4.50 Buys the Best Brooder Both Incubator and Brooder, Ordered Together—Cost You Only \$11.50—Freight Prepaid

WHY PAY MORE? Investigate—send your name and address today, the easiest way, by postal or letter. I tell you the prices right here—and how my machines are made. You can have 30 or 60 days' trial on both incubator and brooder—and I'll send all money back if you return the machines to us as unsatisfactory. Be sure to send for my illustrated, free booklet, "Hatching Facts." But, if in a hurry, you are perfectly safe in ordering right now from this ad. Thousands do this way every year. I guarantee to ship all orders sent from this ad on day received—(from warehouse nearest you, freight prepaid.) No disappointments.

Order a Complete 140-Chick Belle City Hatching Outfit. Send only \$11.50

BELLE CITY Incubators and Brooders



140-Chick Belle City Brooder Only \$4.50

We Ship Quick from Buffalo, Kansas City, St. Paul or Racine

140-Egg Belle City Incubator Only \$7.55

I've always given my customers more for their money than any other incubator manufacturer in the world—that's why we do so much business.

Belle City Incubators will hatch more chickens—under the same conditions—than any other incubator made, or your money will be refunded. This I guarantee. Double walls—dead air space all over—copper tank and boiler—hot-water heater—best regulator—deep, roomy nursery—strong egg tray—high legs—double door—and everything that's any good on an incubator—all in the Belle City. High-grade thermometer—egg tester—burner and safety lamp included. The Belle City Brooder is the only one having double walls and dead air spaces. I guarantee it to raise more healthy chicks than any other Brooder made. Hot-water top heat—large, roomy, wire runway yard, with platform—metal safety lamp and burner.

Complete Hatching Outfit Only \$11.50

Over 50,000 machines in use—all doing perfect work. The Belle City should be your choice. Send your order now or send postal for "Hatching Facts" booklet and full particulars. Don't pay more than my price. No machines, at any price, are better hatchers or brooders.

J. V. ROHAN, President
BELLE CITY INCUBATOR COMPANY
Box 14, Racine, Wis.

FLAX WILT POSITIVELY PREVENTED BY THE USE OF FORMALDEHYDE

Every farmer should acquaint himself with the up-to-date method of disinfection which prevents this pest from destroying crops—it is simple, sure and inexpensive. Formaldehyde is equally successful for the elimination of all smuts, and fungus growths that attack the various grains as well as scab and black-leg on potatoes. Endorsed by U. S. Dept. of Agriculture. Write for free booklet with full instructions.

PERTH AMBOY CHEMICAL COMPANY
100 WILLIAM STREET, NEW YORK

Now Ready—Free To You Cyphers Big Poultry Book

"Profitable Poultry Raising" tells all about America's billion dollar industry. Written by practical men for practical people, 212 pages illustrated, helpful facts—money-making suggestions. Tells how to get hatches of 90% or more. Interesting, profitable reading. Sent to you free by the makers of

CYPHERS INCUBATORS and BROODERS the non-moisture, self-regulating, fireproof, insurable, guaranteed hatchers. Address our place of business nearest you.

Cyphers Incubator Company, Dept. 35, Buffalo, N. Y.
New York City, Chicago, Ill., Boston, Mass., Kansas City, Mo., Oakland, Cal. 2000 Selling Agents.

\$10 BUYS NATIONAL INCUBATOR AND BROODER

Just think! \$8.00 incubator and \$4.00 brooder for \$10. Don't pay more for equal or poorer quality. We pay freight to your station. 125-Egg National Incubator has Strong, fireproof, metal case, High, roomy nursery, Spacious egg chamber, Automatic heat regulator, Cold-rolled copper hot water tank, Very sensitive thermometer, Hot water heating system, Reliable non-breakable lamp, Wide dead air space. Brooder has safety lamp—can't explode or break. It's roomy, cozy, free from drafts, easy to clean, every part quickly reachable. Order both incubator and brooder direct from this advertisement. We guarantee satisfaction or you get all your money back quick. Brand new poultry book free. Act now on this bargain.

THE NATIONAL INCUBATOR CO., 140 18th Street, Racine, Wisconsin

125 Egg Incubator and Brooder Both For \$10

Why pay more than our price? If ordered together we send both machines for \$10.00, and pay all the freight charges. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery underneath the egg-tray. Both Incubator and Brooder shipped complete, with thermometers, lamps, egg testers—all ready to use when you receive them. All machines guaranteed. Incubators are finished in natural colors showing the high grade lumber used—no paint to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate the "Wisconsin" before you buy. Send for the free catalog today, or send in your order and save time.

WISCONSIN INCUBATOR CO., Box 126, Racine, Wis.

When Writing to advertisers mention the Michigan Farmer

\$10.00 120-Egg Incubator 120-Chick Brooder

Biggest Value Ever Offered Safest, surest hatcher made. Metal covered all around. Self-regulating. Big Free Book tells IDEALS about the famous California Red-Egg River and North of Tenn. Send for Free Catalogue and bargain offer. J. W. MILLER CO., Box 300, Freeport, Ill.



Poultry the Best Paying Branch of Farming

The 1911 catalog by Robert H. Essex, poultry and incubator expert, will start you right. Improved incubators and brooders. Read "Why Some Succeed Where Others Fail." ROBERT ESSEX INCUBATOR CO. 92 HENRY ST., BUFFALO, N. Y.



112 PAGE POULTRY BOOK FREE

Tells how to succeed with poultry on the ordinary farm. How to make a first-class brooder out of an old piano box. What breeds lay best. Plans for poultry houses, how to feed, breed, etc. Describes PRAIRIE STATE Incubators and Brooders. You will be surprised at the valuable information it contains. It's free. Write a postal for a copy today. Prairie State Incubator Co., 413 Main St., Homer City, Pa.

140 EGG INCUBATOR and 140 CHICK BROODER

The incubator is Both \$10 California Red-Egg wood, covered with asbestos and galvanized iron; has triple walls, copper tank; nursery; egg tester, thermometer, ready to use. 30 Days' Trial—money back if not O. K. Write for Free Catalog today. Ironclad Incubator Co., Dept. 65 Racine, Wis.

SHOEMAKER'S BOOK on POULTRY

and Almanac for 1911 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 911, Freeport, Ill.

BEES HOW TO MAKE THEM PAY. The pleasures, the work and the profits of bee keeping are fully covered in "Gleanings in Bee Culture." 6 months trial subscription 25 cents. Write for book on Bees and free catalogue—both free. THE A. I. ROOT COMPANY, Box 54, Medina, Ohio.

PATENT your invention. Free preliminary search. Booklet free. MILO B. STEVENS & CO., Estab. 1864. 601 F. St., Washington; 348 Monadnock Bldg. Chicago

Don't Wear A Truss

After Thirty Years Experience I Have
Produced An Appliance for Men,
Women or Children That
Cures Rupture.

I Send It On Trial.

If you have tried most everything else, come to me. Where others fail is where I have my greatest success. Send attached coupon today and I will



The above is C. E. BROOKS of Marshall, Mich. who has been curing Rupture for over 30 years. If Ruptured write him to-day.

send you free my illustrated book on Rupture and its cure, showing my Appliance and giving you prices and names of many people who have tried it and were cured. It is instant relief when all others fail. Remember I use no salves, no harness, no lies. I send on trial to prove what I say is true. You are the judge and once having seen my illustrated book and read it you will be as enthusiastic as my hundreds of patients whose letters you can also read. Fill out free coupon below and mail today. It's well worth your time whether you try my Appliance or not.

FREE INFORMATION COUPON

C. E. Brooks, 4749 Brooks Bldg., Marshall, Mich.
Please send me by mail in plain wrapper
your illustrated book and full information
about your Appliance for the cure of rupture.

Name.....
Address.....
City..... State.....

All Fired

That was the condition of the cornfields in our last great drought season in the central states, excepting in those fields where the farmers used

BASHUMUS FERTILIZERS

The reason is simple. Filler is the main bulk and weight of all fertilizers. In other brands this filler is practically worthless. In Bashumus Fertilizers the filler is all Humus, which furnishes plant food, loosens the soil, and retains the moisture, thus neutralizing drought conditions. Don't buy waste—buy Humus. Ask your dealer for Bashumus Fertilizers. If he doesn't carry them, write us. We will send you free a valuable booklet, "Richer Soil for Richer Profits," and will see that you are supplied with Bashumus Fertilizers. Write us a card now.

BASH FERTILIZER CO.
Dept. B. Ft. Wayne, Ind.

The Kind That Brings Results

THE CHAMPION ENGINES

Are built to do work, light weight, easy to handle, yet amply strong and durable, two sizes, Four Cycle, run anything on the farm, from Washing Machine to Corn Husker. Simple, Reliable, Easy to Start without cranking, lowest running expenses. Get our catalog and 30 days' free trial offer. Address

"ECONOMIZER," Box 95, Marcellus, Mich.

PIT AND PITLESS SCALES

Chicago Scale Co.
ORGANIZED 1863
1021 JACKSON BLVD.
CHICAGO, ILL.

Write for prices.

Family, Portable and Dormant Scales. Saws, Sewing Machines, Engines and Trucks.

STUMP PULLER

Warranted the most practical machine made. One man can lift 20 tons. 3 styles. 10 sizes. \$25 and up. Screw, Cable or Hand Power. We make cheapest **THE DITCHER** and the best ever sold. One horse cuts 2 rows.

Corn Harvester One man. No twine. On trial. Agents wanted. Our new 64-page Catalog FREE. Write today.

M. L. BENNETT & COMPANY, WESTERVILLE, OHIO.

glass of mica, to admit light, their argument being that the chicks take to the brooder more readily if they find it reasonably light inside.

Being small, a brooder of this kind is conveniently handled, and it is possible for the owner of a large flock, who desires to use this system of brooding, to have a number of them, as they are quite inexpensive. It is recommended that the chicks be placed in the brooder at the age of 24 hours, being given sufficient litter or bedding to enable them to make a nest in the center of the hover.

THE "LOSS-OFF" SYSTEM OF BUYING EGGS.

A few years ago the Bureau of Animal Industry of the U. S. Department of Agriculture conducted a general survey of the conditions under which the country's egg supply is produced and marketed, the results proving conclusively that an enormous loss is being sustained annually through spoiled or deteriorated stock. As nearly as could be determined this loss is due to carelessness, indifference or ignorance on the part of the producer and to dilatory and unsatisfactory methods of marketing. The actual money loss is suffered mainly by the producer, while the loss in quality is borne by the consumer.

As a result of this investigation the Bureau began a campaign for the improvement of conditions surrounding the handling and marketing of eggs, which during the summer of 1910 was pushed with considerable energy. Kansas was the state chosen in which to begin the work. In addition to sending field men among the producers to impress upon them the necessity of keeping eggs intended for market in a cool dry place and of marketing them frequently, the Bureau obtained the co-operation of the egg buyers of the state and succeeded in having the "loss off" or quality system of buying adopted. This system is somewhat similar to the system of grading proposed by buyers of cream in this state, except that in the case of eggs the very inferior product is rejected outright, which of course enables the buyer to pay a better price for the good stock. This measure proved to have a definite and far-reaching influence, and brought about such a material improvement in the quality of the state's egg supply that the movement spread to adjacent states, in some of which efforts are now being made to secure legislation establishing this system of buying, at least during the hot months.

WARNING TO BEE-KEEPERS.

We have been urged by Prof. Pettit, of the Michigan Experiment Station to direct a warning to bee-keepers in their own interest, by advising them to take extra precautions about closing the entrance to every hive in which the bees may have died during the past winter. Especially is this advisable where there is any possible chance of foul brood existing in the combs contained in the hive. Bees from other hives will visit the one containing the dead colony to secure the honey, and in so doing the germ developing the foul brood will be communicated to all hives in the apiary.

American foul brood has been discovered in thirty-five counties of Michigan and the European type in eight counties, this exceeding the number of counties known to be infected in any other state, by five. In the light of this knowledge it seems urgent that every bee-keeper should be particular himself, and should take pains that his neighbor who has bees is informed of the danger from foul brood. In other words, every bee-keeper who has had colonies die during the winter should endeavor to determine the cause of death before allowing his bees to come in contact with the combs.

In this connection it may be said that the present foul brood law does not provide for adequate inspection of apiaries, a fact which is no doubt responsible for the steady spread of this disease in recent years. Under the present law but one inspector of apiaries is provided for, and as the season during which inspection for foul brood may be effectively carried on is comparatively short the result has been inadequate inspection and inability to use all of the appropriation made for this purpose. A bill proposing such changes in the law as will remedy this defect is before the present legislature and should have the support of every bee-keeper in Michigan, since the prompt suppression of foul brood in this state is of the utmost importance to every one of its 20,000 bee-keeping farmers.

An Engine catalogue worth reading OLDS ENGINES are as safe to buy as government bonds.

It is not surprising that you are tempted to listen to the alluring offers of some engine concerns. What they offer and promise and say would be all right if the quality of the engine didn't have to be considered.

After all, it's the quality of the thing that you buy; not the looks when you buy it.

There's as much difference in gasoline engines as there is in automobiles.

They all go at the start; their value to you depends upon their reliability to keep going in good order for years and years of hard service. It takes a good engine to do that. It is impossible to build that kind out of anything but the best materials and on the simplest lines.

You owe it to yourself to investigate the Olds Engine which has been the standard of the world for 30 years. Send for free catalogue and interesting booklets.

Know about the Seager Mixer (without a moving part or a gasoline pump), free repairs for one year, removable water jacket. Don't buy an engine until these important things are investigated.

Seager Engine Works
915 Seager Street,
LANSING, MICHIGAN.



**\$350 WORTH OF
BEST-OF-ALL
ROOFING \$180
FOR 1**
GUARANTEED FOR 12 YEARS

**We Can Save You \$50.00
on the Average Size Roof**

**A Few Quotations From the Bargains
in Our Latest Roofing Catalog:**

Tarred Felt Roofing. Best quality. 108squarefeet. 85-cent value. **50c**
Per roll.....

Rubber Asphalt Roofing. The ordinary kind. 108 square feet. \$1.25 value. Wt., 34 lbs. Per roll. **79c**

Flint Coated Rubber Roofing. 108 square feet. \$1.65 value. Weight, 50 lbs. Per roll.... **95c**

Corrugated Steel Roofing. 28-gauge. Heavy, painted red. 100 square feet. \$2.50 value.. **\$1.85**

Best-of-all Roofing. 3½-ply. 108 square feet. \$3.50 value. **\$1.80**
Weight, 60 lbs. Per roll..

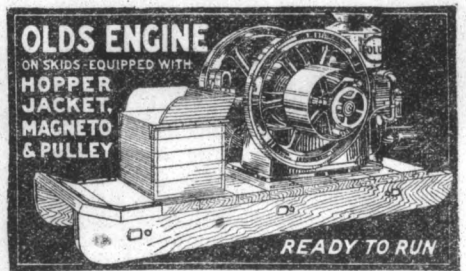
**Every Price in This Catalog is 25 to 50
Per Cent Below Regular Retail Prices.**



If you want any kind of roofing, it is to your interests to write for a copy of this free Roofing Catalog and our complete layout of samples before placing your order. We quote 1911 reduced prices which in many lines are even lower than our prices for 1910. Simply write and say: "Send me your free Roofing Catalog No. 65051 and complete set of samples" and they will be mailed at once free and postpaid.

**SEARS, ROEBUCK AND CO
CHICAGO**

STUMPS
—Farmers having stumps and stones to blast should write for prices on dynamite, caps and fuse. **MEREDITH POWER CO.,** Richmond, Ind.



WHITE LEGHORNS, WHITE BLANCHARD-WYCKOFF
Strains separate. Greatest layers on earth. Eggs for hatching. No. One, \$1; No. Two, \$2; No. Three, \$3 per 15; \$5, \$7.50, \$10 per hundred. Book orders now. Circular free. The first 25 orders from this advertisement will receive 25 numbered leg bands FREE with every setting. Reference First State Bank. **FRANK W. FLOYD, Proprietor, Spring Garden Farm, Box 491, Birmingham, Michigan.**

BUFF PLYMOUTH ROCKS—Only perfect standard cockerels. April and May hatch at \$2 and \$3 each. Excellent laying strain. **Fred Nickel, Monroe, Mich.**

26 R. C. R. I. Red. Eggs \$1. Head of Pen scoring 92%. Mail your order stating when you wish eggs shipped. **Silas Loew, Burnips Corners, Mich.**

THOROUGHbred S. C. BROWN LEGHORN Eggs at \$1.00 per 15 or \$5.00 per 100. Stock all sold. **LEWIS T. OPPENLANDER, R. No. 4, Lansing, Mich.**

WHITE HOLLAND TURKEYS & Barred Rock Chickens. The best stock only. All sold out except 10 White Holland Toms. Eggs in season. **T. B. & E. H. McDonagh, Burt, Mich.**

R. I. REDS of Quality. Early hatched Cockerels, both combs. \$2.00 and \$3.00 each. **ELMER MATTHEWSON, St. Jos. Co., Nottawa, Mich.**

BUFF PLY. ROCK COCKERELS—Farm raised healthy, good size, shape and color. At farmers prices. Eggs in season. **Albert Wells, Saranac, Mich.**

EGGS: EGGS: EGGS—White & Buff Orpington, White & Barred Rocks, Black & White Minorcas, White & Buff Leghorns, Rose & Single Comb Reds, Houdans & White Crested Blk Polish. **H. H. King, Willis, Mich.**

EGGMAKERS Strain S. C. Brown Leghorns. Eggs 98c per 15; \$1.48 per 30; \$3.98 per 100. **WM. J. COOPER, Mt. Pleasant, Michigan.**

FOR SALE—8 cockerels, 2 B. P. Rocks, 2 Buffs and 4 White Orpingtons. All pure bred at \$3 or 2 for \$5. Eggs from any one of these at \$2.50 per 15. **W. J. ROWLEY & SONS, Leonard, Michigan.**

R. C. Brown Leghorns—Kulps 242 egg strain, prize winners, farm raised, select eggs \$1.00 15; \$3.00 50. **S. W. HENSEL, Basil, Ohio.**

Buff Rock Cockerels—Farm raised. Healthy, good size, shape and color. From \$1.50 up. **WILLIS S. MEADE, R. No. 3, Holly, Mich.**

COCKERELS FOR SALE—Light Brahma White Wyandotte & B. P. Rocks, good ones, also pullets. **E. D. BISHOP, Route 38, Lake Odessa, Michigan.**

R. C. B. Leghorn Cockerels—Kulp strain, the best there is, \$1 to \$3. Eggs in season. **C. W. WAITE, Gobleville, Michigan.**

SINGLE COMB BLACK MINORCAS—A few more fine large cockerels. Satisfaction guaranteed. Eggs \$3 per 15. **R. W. MILLS, Saline, Michigan.**

Standard Bred R. I. Reds, rose and single combs. Eggs either variety, \$1.50 & \$1 per 15. R. C.'s at \$6 per 100. Good size, color and great winter layers. Bourbon Red turkeys, show quality, eggs 50c each. World's best Gray African geese, eggs during April at 75c & \$1 each. Address **W. T. FRENCH, Ludington, Mich.**

SINGLE Comb Brown Leghorns—One of Michigan's largest breeders of the Brown Beauty's winning at the leading shows. Send for catalog with prices and photos of my birds. Box 324 D. **Charles Ruff, St. Clair, Mich.**

FOR SALE—S. C. and R. C. Rhode Island Red Eggs. 15 for \$1.00; 50 for \$2.75; 100 for \$5. **BUELL BROS., Ann Arbor, Mich.**

SILVER, GOLDEN and WHITE WYANDOTTES 100 White cockerels at \$2 and \$3 each. New circular. After January 15th. **C. W. BROWNING, Portland, Mich.**

Wyckoff and Blanchard Strain S. C. W. raised. Trap nested, heavy winter layers. Eggs 100 \$5. 50 \$3. 15 \$1. **F. E. BOSTEDOR, Eaton Rapids, Mich.**

White Wyandotte and S. C. White Leghorns. Wyckoff, Moore strains. \$1.50 per 15 or \$5 per 100. **WATERBURY, Clarkston, Mich.**

White Wyandottes—Noted for their size, vigor and egg production. Send for circular. **A. FRANKLIN SMITH, Ann Arbor, Mich.**

DOGS.

TRAINED foxhounds and hound pups for hunting fox and coons. Also collies, English 2-cent stamp. **W. E. LECKY, Holmesville, Ohio.**

YOU WRITE W. J. ROSS, Rochester, Michigan, for those beautiful sable and white Collie Puppies, of the finest breeding, and from stock workers.

MENTION the Michigan Farmer when writing to our advertisers.

NEW SEED OATS

Big Money in Oats

New Seed Oats. Big money in oats if you raise the right kind. Here's your chance to get them. Imported Canadian Seed Oats for sale, extra fine. Send for free sample. It speaks for itself. This same oats we sold last year in the United States and proved their merit and our statement that the farmers need a change of seed in this country. We make a specialty of growing extra fine seed oats on our big Canadian farm; new, clean land; no weeds. Have best known varieties. Regenerated Swedish. Select went 116 bushels to acre this year; Early New Market, Canada's favorite, 110 bushels to acre. Both of these are big, early yielders. We absolutely know from experience it will pay you to get a change of seed. Try some of these oats. The average oats are inbred and run out. Canadian Government Grain Inspector graded this grain No. 1 White. Harvested straw, white berry, thin husk, enormous yield. It is as easy to put in and harvest a big crop as a small one. The reason your oat crop is not bigger is because your seed is run out. This has been proven. Look at this cut. Taken from photograph of two stalks from Galloway Brothers' field, over 200 kernels to the stalk. Write early for free sample, or send ten cents each for packet of one or both kinds. Will also send you free booklet entitled "Big Money in Oats and How to Grow Them," by Galloway Bros. and Prof. M. L. Bowman, former professor of farm crops Iowa Agricultural College. Information in this book is priceless. Get it free. Resolve to start a seed patch on your high-priced land this year. The book tells you how.

GALLOWAY BROS.-BOWMAN CO.,
642 Galloway Station, Waterloo, Iowa.

GOOD SEEDS

BEST IN THE WORLD

PRICES BELOW ALL OTHERS

I give a lot of new sorts for trial with every order I fill. A Grand Big Catalog FREE illustrated with over 700 engravings of vegetables and flowers. Send yours and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Illinois

GREGORY'S SEEDS

Fresh, pure, reliable, and hand selected—such are Gregory's Honest Seeds. Try these extremely profitable varieties:—Symmes Blue Hubbard Squash, Vickery's Forcing Cucumber, Gregory's Imp. Original Crosby Corn, Imp. Yellow Globe Onion. Will double previous profits.

Free—Gregory's New Catalogue

One of the finest seed books published and much the most helpful. Write to-day for 1911 copy—sent only when asked for.

J. J. H. GREGORY & SON,
19 Elm St. Marblehead, Mass.

COFFEE

ONE CENT PER POUND

Salzer's French Bean Coffee

(SOJA HISPIDA)

A wholesome drink! The healthiest ever; you can grow it in your own garden on a small patch 10 feet by 10, producing 50 lbs. or more. Ripens in Wisconsin in 90 days. Used in great quantities in France, Germany and all over Europe.

Send 15 cents in stamps and we will mail you a package giving full culture directions, as also our Mammoth seed catalog free or send \$1.00 and get in addition to above, 10,000 kernels unsurpassable vegetable and flower seeds—enough for bushels of luscious, different vegetables and brilliant flowers.

JOHN A. SALZER SEED COMPANY
135 South 8th St. La Crosse Wis.

FRUIT TREES

Pears, Bartlett, Seckel and others. Fine, healthy trees. Cherries, very low in price. Plums, all best varieties. Peaches, grown from buds from bearing trees. Guaranteed true to label. Also extra fine Currants and Grapes, any quantity. Special 40c, \$1 and \$2.50 Lot Offers, for garden planting for home use. Our prices have not been advanced to meet the recent general raise. Get wholesale prices direct from us and save 1 to 1. Free catalog. Write.

W. P. RUPERT & SON, Box 60, Seneca, N. Y.
Also Breeders of Prize Hampshire Sheep.

10,000 SEEDS 10c.

We want you to try our Prize Seeds this year and have selected 50 best varieties and put up 10,000 seeds especially to reward Prize Vegetables and Flowers. They will produce more than \$25. worth of Vegetables and 10 bushels of Flowers.

800 Seeds Cabbage	3 Best Varieties	3 pkts.
2,600 " Lettuce	4 " " "	4 " "
800 " Onion	2 " " "	2 " "
1,400 " Radish	2 " " "	2 " "
300 " Tomato	3 " " "	3 " "
2,000 " Turnip	4 " " "	4 " "
2,500 " Flowers	30 Grand Flowering Varieties	

In all 10,000 Seeds, and our new Seed Book with a 10c Credit Check good for 10c selection, postpaid, 10c. FAIRVIEW SEED FARMS, Box 122, Syracuse, N. Y.

Plant Trees Crown at Monroe, Michigan

Procure stock that will stand the coldest winters. Our trees have a reputation for reliability. We sell direct to the planter at the very lowest prices. We guarantee our trees to reach you in good condition at the proper season for transplanting. Catalogue free. Write for our prices.

The Michigan Nursery Company, Mich.

HORTICULTURE

MAKING CONCENTRATED LIME-SULPHUR WASH AT HOME.

METHODS used in making the concentrated lime-sulphur wash at home have been a matter of much interest to fruit growers during the past two seasons.

There are several formulas now in use and in all of them the proportion of the lime to the sulphur is about the same, one of lime to two of sulphur. It has been found by careful chemical investigations that from this combination the largest proportion of the sulphur can be rendered soluble, and this is just what is wanted. The more sulphur in the liquid form in the concentrated lime-sulphur wash, the more valuable it is, for the more it will have to be diluted for spraying.

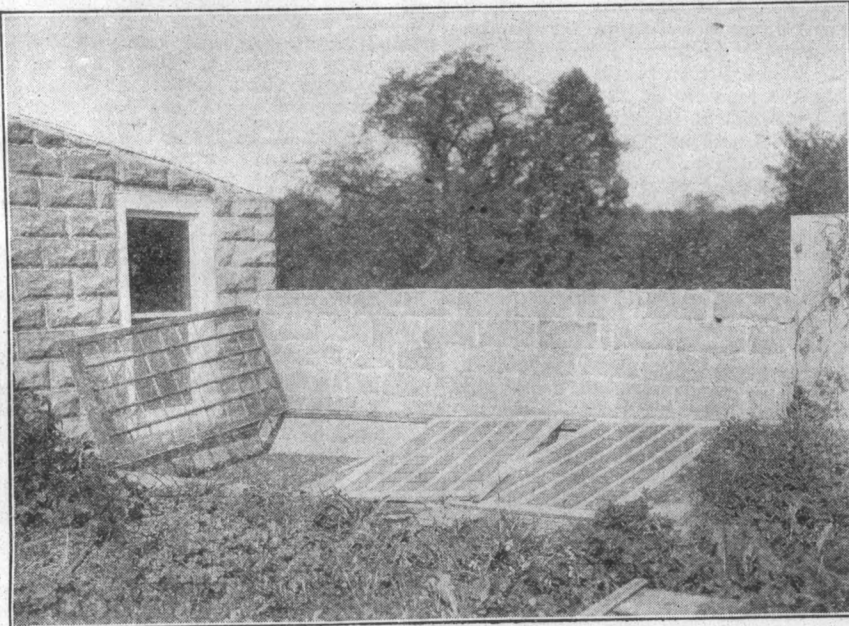
Ordinarily the skill and apparatus of a chemist would be necessary to tell how much sulphur there is in solution in any sample of the concentrated lime-sulphur wash but by the use of the Baume Hydrometer, this can be approximately determined by any one, as the degrees in-

this formula, and it is apt to have less sediment.

A formula known as the Geneva formula is now proposed by the New York Experiment Station, and is 36 pounds of lime, if pure, or 38 pounds of lime if 95 per cent pure, or 40 pounds of lime if 90 per cent pure, and 80 pounds of sulphur and 50 gallons of water. When well made this wash will test about 23 to 25 degs. Baume, meaning about 15 per cent sulphur in solution.

Probably the greatest annoyance in making the concentrated wash at home is the large amount of sediment that develops in the wash and the difficulty of getting rid of it. When this wash is made by commercial chemical manufacturers the sediment is separated from the liquid by powerful filters operated under pressure, in a way that is impossible to do at home. The most that a grower can do to lessen the bother from the sediment is to use a grade of lime that contains but a very small amount of impurities, magnesium oxide being very objectionable.

The sediment is not an injurious substance, and there is no objection to storing the clear liquid, sediment and all, in barrels or tanks until wanted. After several days or weeks the clear liquid can then be drawn off from the sediment.



The Cement Wall Makes a Cosy Corner for the Hot-Bed.

dicated by the hydrometer have a definite relation to the amount of sulphur in solution, and from this reading and with the use of the "Diluting Table" it is a simple matter to dilute any concentrated lime-sulphur wash to the proper strength for spraying. As an example for spraying dormant trees:

When the Baume test reading is 20 degs. dilute 10% gals. of concentrated lime-sulphur with water to 50 gals of solution; when reading is 21 degs. dilute 10 1/2 gals. to 50 gals. of solution; when reading is 22 degs. dilute 10 gals. to 50 gals of solution; when reading is 23 degs. dilute 9 3/4 gals. to 50 gals. of solution; when reading is 24 degs. dilute 9 1/2 gals. to 50 gals. of solution; when reading is 25 degs. dilute 9 gals. to 50 gals. of solution; when reading is 26 degs. dilute 8 3/4 gals. to 50 gals. of solution; when reading is 27 degs. dilute 8 1/2 gals. to 50 gals. of solution; when reading is 28 degs. dilute 8 gals. to 50 gals. of solution; when reading is 29 degs. dilute 7 1/2 gals. to 50 gals. of solution; when reading is 30 degs. dilute 7 gals. to 50 gals. of solution; when reading is 31 degs. dilute 6 3/4 gals. to 50 gals. of solution; when reading is 32 degs. dilute 6 1/2 gals. to 50 gals. of solution; when reading is 33 degs. dilute 6 1/4 gals. to 50 gals. of solution.

This table for making the dilutions can also be found in the Experiment Station Bulletin on spraying, and should be given in "Directions for Using" that come with the hydrometer.

The formula used last year by many Michigan fruit growers, and with success was 60 pounds of lime, 125 pounds of sulphur and 50 gallons of water. With good lime and sulphur and proper boiling a concentrated wash testing about 29 degrees Baume which means 22 per cent sulphur in solution should be obtained.

The Pennsylvania formula is 50 pounds of lime, 100 pounds of sulphur and 50 gallons of water. With good materials and proper preparation the concentrated wash should test about 26 degrees Baume. Not as much sulphur being used there will be less in solution in the wash made from

Chemical tests have shown that wash stored for several months with the sediment does not lose any of its original strength.

In buying lime to be used in making the concentrated lime-sulphur wash, specify a grade that has a very high percentage of calcium oxide, (which is the chemical name for pure lime), and not more than 5 per cent magnesium oxide. Manufacturers know the grade of lime they are selling and can give a guarantee of its purity.

We are frequently asked if there is a way that lime can be easily tested at home to determine its value for making lime-sulphur in the concentrated form. It is a careful piece of work for a chemist to do this, but it has been suggested that it can be done in a rough way at home by making a small batch of the wash, and if there is a large amount of sediment to conclude that the lime is not suited for this purpose, and if there was not much sediment it would do. The trouble with this way of testing the lime is that such a small amount of it is used, (about 2 ozs. of lime, 4 ozs. of sulphur and 1 qt. of water), that it cannot be relied upon with great certainty.

Nearly every grower has his own way of making the wash, one good way is as follows: Into the barrel, if cooking is to be done with steam, or kettle if by fire, pour about 10 gallons of water and bring to a boil, add the lime and while this is slaking add the sulphur and stir vigorously and then add enough water to make the full amount, add more water from time to time as it evaporates, to keep this volume about the same. Boil for one hour.

After boiling strain into barrels, and when cooled cork tightly, test a sample of the clear liquid with the hydrometer and mark the strength on the barrel. It will not pay to attempt to separate the clear liquid from the sediment, but draw off the liquid as it is needed.

(The above article was prepared by Profs. H. J. Eustace and A. J. Patten, of the Michigan Experiment Station.—Eds.)

THE GREATEST

results in cases of weak digestion are obtained from **SCOTT'S EMULSION** because when ordinary foods do not digest, it provides the needed nourishment in highly concentrated form.

Scott's Emulsion

is so easily digested that its strength is rapidly absorbed by the youngest babe or most delicate adult.

SCOTT'S EMULSION is the food that strengthens the race. ALL DRUGGISTS

HURST SPRAYERS

On Free Trial NO MONEY IN ADVANCE. No bank deposit. Shipped to you at dealers' wholesale prices. We pay freight and guarantee Sprayers five years.



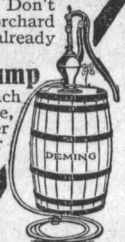
The Hurst Potato and Orchard Sprayer doubles your crop. IT SPRAYS ANYTHING—trees, potatoes, vineyards, truck, etc. High pressure. Easy to operate. Cheap in price, light, strong, and durable. BRASS valves, plunger, strainer, etc. **HURST HORSE-POWER SPRAYER** for orchards, vineyards, potatoes, etc. "No tree too high, no field too big for this kind of sprayer." All HURST sprayers sold on same liberal No-money-in-advance plan. Write to-day for our FREE Spraying Guide, Catalogue and SPECIAL FREE OFFER TO FIRST BUYER in each locality.

H. L. Hurst Mfg. Co.
242 North St., Canton, O.

Spraying Enables You to Grow Fruit You Can Sell

Well-sprayed trees produce more fruit and better fruit and bear longer. Don't wait until you have a new orchard—spray the trees you already have, with a

Deming Spray Pump More than 20 styles, each built right, durable, satisfactory. Order from your dealer or write us. The DEMING CO. 885 Depot St. Salem Ohio



Spraying Made Easy

By Using **STAHL'S** Excelsior Spraying Outfits and Prepared Mixtures

Save your trees, vines and plants from the ravages of scale, fungi and worms by spraying, and thus insure an increased yield. Every farmer, gardener, fruit or flower grower should write at once for our free catalog, describing Excelsior Spraying Outfits, and containing much information on how to spray fruit and vegetable crops.

WM. STAHL SPRAYER CO., Box 108W, Quincy, Ill.

SPRAY FRUITS AND FIELD CROPS

and do whitewashing in most efficient, economical, rapid way. Satisfaction guaranteed. BROWN'S **HAND OR Auto-Sprays** No. 1, shown here, is fitted with Auto-Pop Nozzle—does work of 3 ordinary sprayers. Endorsed by Experiment Stations and 800,000 others. 40 styles and sizes of hand and power sprayers—also prices and valuable spraying guide in our Free Book. Write postal now.

THE E. C. BROWN COMPANY
32 Jay St., Rochester, N. Y.

"KANT-KLOG" SPRAYERS

Something New Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet Free. Rochester Spray Pump Co. 189 Broadway Rochester, N. Y.

WHOLESALE PRICES

Our Strawberry, Raspberry, Blackberry, Gooseberry, Currant, Asparagus and Grape Plants, Heavy Rooted, High Grade Stock. 19th Annual Catalogue Free. A. R. WESTON & CO., R. I. Bridgman, Mich

Please mention the Michigan Farmer when writing to advertisers.

TAKE NO CHANCES.

What is the use in taking chances on buying farm implements? They should have the unqualified endorsement not only of users who know a good tool when they use it, but they should be so warranted by the makers that the purchaser runs no risks. Buckeye Cultivators have been on the market for more than half a century; the line is the most complete on the market; they are used by the most successful farmers in every land; they are gaining in popularity every year. Isn't this a sure indication that they are built right, that they do the best possible work with the least expenditure of time and labor, that they require very little for repairs and that they are made by men who know how? Not only is that true, but they are made by the American Seeding-Machine Co., Incorporated, Springfield, Ohio, who place such a strong warranty on them that no risk whatever is taken by the purchaser. Write to them for Buckeye Cultivator pamphlets and then go to your local dealer and insist on seeing Buckeye Cultivators. Should he be unwilling to supply you with a Buckeye, tell the makers about it and they will see that you get what you want.

GUARANTEED TREES at Wholesale Prices

Direct From The Growers.
Free From Scale and Disease
12 APPLE TREES \$1
Your choice of any one variety:—Baldwin, N. Spy, Wealthy, Jonathan, York Imperial, Ben Davis, Duchess, McIntosh Red, Tallman Sweet, M. B. Twig, Winter Banana, Red Astrachan, Sutton Beauty, Wolf River.
Write for our Free Complete Catalog.
Reilly Bros. Nurseries, 1041 Reilly Road, Danville, N. Y.

THE CLIPPER
There are three things that destroy your lawns. Dandelions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out.
CLIPPER LAWN MOWER CO. DIXON, ILLINOIS.

"More Potatoes"
From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.
A. J. PLATT, MFR. BOX J STELLING, ILL.

STRAWBERRY PLANTS THAT GROW
All Standard Varieties. Also RASPBERRY, BLACKBERRY, CURRANT and GRAPE Plants and ASPARAGUS Roots in ASSORTMENT. WARRANTED TRUE-TO-NAME, and of GRADE represented. Catalog with Cultural Instructions FREE. C. E. WHITTEN, BOX 14, BRIDGMAN, MICHIGAN.

FRUIT TREES—Small Fruit Plants, Shrubs and Bulbs at Wholesale Prices.
No Agents. Catalog free. **WOODBINE NURSERY, W. A. ALLEN & SONS, Geneva, Ohio.**

FINE CATALPA SPEC. AND BL. LOCUST.
\$3 per 1,000, \$25 10,000. All forest trees and evergreens cheap. Cata. T. G. BROSIUS, Tiffin, Ohio.

Buy Direct—Save Money Peach Trees, fine at \$1.00 per hundred. Apple, 10c; Cherry \$c. All kinds of Trees and Berry Plants. Cheap. Catalog free. **ERNST NURSERY, Box 1, Moscow, O.**

Regenerated Swedish Select Oats.
The only pure bred, pedigreed oats. This variety is in a class by itself. The best yielder, the stiffest straw, the freest from rust, of any oat today. I have some choice seed, all cured under hay caps, not a drop of moisture ever touched these oats after they were out. Every kernel has vitality.
COLON C. LILLIE, Coopersville, Michigan.

Seed Corn and Oats For Sale—Early Yellow Dent Swedish Select. Golden Fleece and National Oats. The best varieties. Write for samples, prices and circular. **F. A. BYWATER, Memphis, Michigan.**

OAT SEED grown from seed selected by the head for four generations that yielded 100 bushels per acre. Only a limited quantity. \$2 per bu., including sacks. E. M. Moore, Wisom, Mich.

Seed Oats—Sensation—Yielded 96 1/2 bu. per acre on 25 acres. Best oats in cultivation. Largest grain, stiffest straw and almost as heavy as wheat. Try them this season and double your yield. It will be the best investment you ever made. Sample and catalogue free.
THEO. BURT & SONS, MELROSE, OHIO.

Regenerated Swedish Select Oats for seedling. Known as the best oats. Big yielder. Stiff straw. Price 5 bu. lots, 75c. a bu. Bags and sample free. **H. RYZENGA, R. No. 5, Holland, Mich.**

Seed Corn—Reid's Yellow Dent, Imp. Leaning, Golden Surprise, American Pride, White Cap and Seed Oats. Catalog free. **THEO. BURT & SONS, MELROSE, O.**

SEED OATS

The early white plymouth, a large berry with good stiff straw and heavy yielder. Yielded last year, machine measure, 56 1/2 bushels or by actual weight 65 bushels to the acre. Recleaned, graded and guaranteed free from smut for 60c. per bu. sacked f. o. b. Coopersville, Mich. **J. M. PARK & SONS.**

Regenerated Swedish Select Oats and Oederbrucker Barley.

Large, meaty oats, free from rust or smut, not a drop of rain touched these oats after they were cut. Pure, recleaned seed in lots of 3 to 6 bushels, 90 cents; over 6 bushels 80 cents. Oederbrucker Barley is a pedigreed, hardy, heavy yielding variety, 4 1/2 bushels per bu.; all sacks free.
T. V. HICKS, Battle Creek, Mich.

A SERVICEABLE AND SUBSTANTIAL HOT-BED.

A farmer living in Warrenville, Illinois after experimenting awhile with concrete built for himself a hot-bed of concrete blocks, which is one of the best we have ever seen. In his mixture he used one part cement, two parts sand, three parts gravel, with enough water to sufficiently moisten it. This he shoveled over until it was thoroughly mixed and formed it into blocks with moulds, constructed mostly by himself.

When the blocks were sufficiently hardened he dug the pit and built up the walls about it, as shown in illustration on opposite page, with a high wall on the north side as a protection from the winds that come from that direction. When completed, the results were very satisfactory. Adjoining it he constructed a farm tool house of the same material.

Any farmer having a little ingenuity can make concrete blocks for various purposes on the farm in hours that would otherwise be unoccupied and it is a satisfaction and a pleasure as well as a source of profit, to have a prolific garden with early vegetables for the table and this can best be accomplished by having a good and substantial hot-bed, the management of which is far less difficult than most men believe.

Illinois.

E. J. HALL.

INTENSIVE METHODS OF FRUIT GROWING.

Paul Rose, of Benzie county, addressed the Annual Round-Up Institute upon the above topic, in an informal but interesting way. By transforming the elements contained in the soil and air into fruit, the horticulturist becomes a public benefactor, in that he makes into food for mankind that which is unavailable as such before his skill is used, and being such a man, Mr. Rose suggested no more fitting bequest could be given the orchardist's children than a thrifty, growing apple plantation, which leading them to exercise their own genius and skill in its care will be of far truer value to them than a liberal insurance policy.

Coming directly to his subject, Mr. Rose first mentioned location. While our great western shores of Michigan, as well as many other parts of the state, are noted throughout the country as fruit producing territory, there are thousands of locations within this great fruit belt that are not adapted to fruit-growing. The man who plants must therefore have his eyes open wherever he may locate. The fruit man should specialize, according to Mr. Rose. His specialty should be either the fruit he loves to grow best, when he should move to a locality most fitted for its production, or he should grow that fruit or fruits, variety or varieties for which the locality he has chosen seems most fitted to produce.

Secure trees in the fall and heel them in. This is done by selecting a place that is only moderately exposed, and where the snows during the winter will not bank, and where the winds will not sweep it bare. Dig a trench, throwing the earth to the east. Take each tree and prune the roots as you wish them to go into the ground the following spring. Lay them in the trench with the tops on the bank thrown out. Then pile the earth upon the trees in this reclining position even as high as the first limbs. By pruning the roots in this manner they have a chance to heal over during the winter and are ready to send out little fibrous rootlets as quickly as planted in the spring.

We plant our trees too close together. The orchard operations are easier and better done, and consequently trees give better results when more room is available for each of them. Mr. Rose plants peaches 25 feet each way, cherries 25 to 30 feet, and apples 40 to 50 feet apart. It is a mistake to plant peaches as fillers between apple trees, peaches requiring different treatment as to culture and spraying than apple trees. Care must be taken where young trees are planted in rows, to protect them against cutworms, the worms climbing the trees and eating off the buds. A band of cotton may be wrapped about the trunk of each tree and tied near the bottom, the top of the cotton is then pulled over the string so as to form an obstacle through or over which the cutworms cannot go. He also uses poison bait to kill off the worms. He heads his peach trees low, so low that children can pick a large amount of the fruit while sitting upon the ground.

As to spraying materials, Mr. Rose has not yet been converted to the utility of the

Spray Just After the Blossom Falls— with Swift's Arsenate of Lead

THE arsenate of lead goes into the cup-shaped calyx where the worm of the codling-moth feeds before it attacks the apple. Spray this Summer with Swift's, and next Fall wormy apples will be scarce.

Swift's is fatal to leaf-eating worms and insects, mixes with water readily, remains long in suspension, and will not clog any pump.

Outlasts two to four applications of old-style sprays, because of the way it sticks to the foliage.

Write for our new book on Apple Culture

This book is backed by results. It's practice, not theory. Special chapter on fighting insect pests. This valuable book is free. Please give your dealer's name.

MERRIMAC CHEMICAL CO. 23 Broad Street, Boston, Mass.

SWIFT'S ARSENATE OF LEAD
MANUFACTURED ONLY BY THE MERRIMAC CHEMICAL CO., BOSTON, U.S.A.
REG. TRADE MARK

Hardy "Blizzard Belt" FREE
Giant Strawberry Plants

Everybody likes fine strawberries, and to prove that our new GIANT variety is the largest and strongest grower, as well as the heaviest fruiter, we offer to send you TWO PLANTS (worth 50 cents) absolutely FREE. We have picked 12 quarts of fine berries from a test bed grown from but two GIANT plants set the year before. You can do as well, and at the same time raise young plants for a new bed. If you care to send 10 cents for mailing expense, we will add 6 BABY EVERGREENS 2 years old, and send all to you at proper planting time in the spring. It will pay you to get acquainted with our "HARDY BLIZZARD BELT" Trees and Plants. Write to-day and we will reserve the plants for you and send you our catalog by next mail. Address

THE GARDNER NURSERY CO., Box 354, Osage, Iowa

The "New Way" "SUCCESS"
Twin Cylinder Power Sprayer

Light Weight High Pressure Detachable Engine

Save Your Fruit—It Pays
Write Now for "Success" Catalog No. "C"
The "New Way" MOTOR COMPANY LANSING, MICHIGAN, U.S.A.

SEED CORN 153 BU. ACRE

Diamond Joe's Big White—A strictly new variety. None like it. It is the Earliest and Best Big White Corn in the World—Because it was bred for most Big Bushels, not fancy show points; because grown from thoroughbred inherited stock; every stalk bears one or more good ears, because scientifically handled, thoroughly dried and properly cured and had the most rigid examination. Big Seed Catalog FREE. It tells about all best farm, grass, garden and flower seeds grown. Write for it today.

Address, **RATEKIN'S SEED HOUSE, Shenandoah, Iowa**

Peach Trees

300,000 Peaches 5 to 7 feet 9c; 4 to 5 ft. 8c; 3 to 4 ft. 6c; 2 to 3 ft. 4c; 2 to 3 ft. light 3c; 200,000 Apples, 50,000 Pears, 50,000 Plums, 100,000 Cherries, 50,000 Carolina Poplar, and millions of Grape and Small Fruits. Secure varieties now, pay in Spring. Buy from the man who has the goods and save disappointment. Cat. free to everybody. **Sheerin's Wholesale Nurseries, Danville, N. Y.**

ALFALFA

All northern grown, guaranteed to be 99 per cent pure and free from dodder. Write for free sample on which we invite you to get Government tests. This seed should produce hay at \$80 per acre annually. Free instructions on growing.

GRAIN AND GRASS SEED

Northern grown and of strongest vitality. We handle export grades only and can furnish grass mixture suitable for any soils.

SOY BEANS

Wing's Mikado, Sable and Mongol are the heaviest known yielders. Are all our own new varieties obtainable from us only. Mikado has record of 37 bu. per acre. Will grow on poor soil and greatly improve it. Write today for catalogue.

WING SEED CO., Box 342, Mechanicsburg, O.

DON'T BUY FERTILIZERS

and pay fancy prices. With the simple directions we give you, and with no other tools than a shovel and the barn floor, you can

MIX YOUR OWN

at half the cost. For full information see advertisement German Kali Works, on page 316.

THE BARTLETT COMPANY, STATE AGENTS. JACKSON, MICH.

Limestone Insures Alfalfa

It Destroys SORREL and MOSS
And insures a heavy yield of Alfalfa and Clover.

LIMESTONE makes sour land sweet. It increases the yield of all crops. It supplies the necessary carbonate to light sandy soils. To make heavy clay land more porous and easily worked use the great loosener

LIMESTONE. Write for information and prices.

NORTHERN LIME CO., Grand Rapids, Mich.

FERRY'S SEEDS

You can't sow thistles and reap figs. If you plant Ferry's Seeds you grow exactly what you expect and in a profusion and perfection never excelled.

Fifty years of study and experience make them reliable. For sale everywhere. Ferry's 1911 Seed Annual free on request.

D. M. FERRY & CO., Detroit, Mich.

Plant This Year's Garden With

Really tested and reliable seed; seed that you don't have to experiment with; you get that kind, in

HARRIS' TESTED SEEDS

because we grow most of it ourselves. We clean and test it, to see how much will grow, and mark the result on the envelope. Write for free Catalogue of Garden, Farm and Flower Seeds. **Joseph Harris Co., Moreton Farm, Box 30, Coldwater, N. Y.**

The Berlin Quart Our Specialty

A WHITE package which insures highest prices for your fruit. Write for 1910 catalog showing our complete line, and secure your BASKETS, CRATES, ETC., at WINTER DISCOUNTS.

The BERLIN FRUIT BOX CO. Berlin Heights, Ohio.

PLANT HARDY TREES

Healthy, acclimated, high grade, true to label fruit trees and plants for Northern States at wholesale prices, direct from nursery to planter. Send for catalogue.

CELERY CITY NURSERIES, Desk E, Kalamazoo, Mich.

lime-sulphur spray for summer spraying, especially for peach trees. He intends to continue the use of Bordeaux until he can be better convinced of the need of a change.

During the early part of the season orchards should be cultivated thoroughly and kept clean. Mr. Rose uses a three-horse gang spike-tooth harrow for most of his cultural work. A man with three horses and such an implement can cover 40 acres a day. He believes it better to thus cultivate and go over the ground oftener, than to use an implement that tears the soil up more and go over it less frequently. He supplements this culture by work with a spring-tooth harrow, passing up and down the rows, zig-zagging between the trees as he passes down, doing the same coming back, thus completely working the soil on all sides of each tree of the row, leaving but a small area about the trunk untouched. The turning of the team about the tree causes the harrow to pull in close to the body thereof. Any surface left untouched is afterward stirred with a hoe. He throws manure about the roots of the trees. For this purpose he is having large amounts shipped in from Chicago, which costs him \$2.00 per ton. He also draws clay and throws it about the trees to secure a better soil texture. In the summer time he mounds earth about each trunk, which prevents the borer moths from laying eggs where they will remain undisturbed by depositing them in the surface of this mound. Disturbance by the elements exposes the eggs and borers to the birds, which devour them as food.

The only crop which Mr. Rose has attempted to grow among his trees is the canteloupes. Where he grows canteloupes he feeds the soil to an extent that will enable the trees to make normal growth, besides furnishing sufficient food for the melon crop. Commercial fertilizers are used liberally. He does not always supply the same brand of fertilizer, changing it to suit the needs of the tree. For example, one year ago he used a fertilizer containing 4 per cent nitrogen, 8 per cent phosphoric acid and 6 per cent potash. While this coming season he will use 10 per cent phosphoric acid and 10 per cent potash, believing that there is sufficient nitrogen in the soil to supply the plants. A year ago he applied 1,000 bushels of the first mentioned fertilizer per acre in the spring, then in July applied a similar amount again. The fruit was superior where the two applications were made. The yield was larger and the fruit sold for a higher price on the market. He received for this particular crop \$3.00 per bushel, the commission men writing that they wanted more of it. As to old apple trees he stated that they can be brought into bearing in three years, at least, providing plant food is given them in liberal amounts. For cover crops he prefers peas, barley and oats mixed, the leguminous plants furnishing nitrogen and all of the supplying humus.

Mr. Rose has from 125 to 180 people employed during cherry picking time. He furnishes these persons with tents and manages boarding houses for their benefit. He is careful that the employees are well paid and given every convenience and benefit that he can secure, and thus he finds that the same people return to him year after year to assist him in the work. He pays them by the day, and not by the piece, as he gets better results by this method. His cherries are packed in boxes 9x18x1 inches, inside dimensions. They are divided in the centre of the long way, making two receptacles nine inches square. Three layers of cherries are placed in the receptacle, and the cover pressed down and fastened. The cherries shipped in these packages are very choice and he has out-sold the products shipped in from California the past two seasons. He states that one must carefully instruct the packers how to put up the fruit. They will not become skilled in a few days or even in a season. The fruit is crated from the basket in which it is picked. He makes Nos. 1, 2 and 3, and his name goes on all the crates, which he says assists him in advertising his fruit, since the party who buys No. 2 and finds that better than most fruit crated No. 1, wonders what his No. 1 must be like. It is along this very line that Michigan has suffered very greatly. An improvement in our packing would benefit the fruit industry of the state. He ventured to state that if every man in the state was compelled to put his name on the packages of fruit which he placed upon the market there would result a great benefit to Michigan horticulture.

The Chinese

were the first to manure their land, centuries ago. Eventually fertilization of the soil spread all over the world. All kinds of manures and fertilizer materials in crude state were being applied. Farmers knew that these things helped them to raise crops, but did not understand why until Prof. Liebig, the founder of agricultural chemistry, discovered that all plants take out of the soil certain elements of food which, in the nature of things, have to be replaced in order to maintain the productiveness of the soil. Further, he discovered and gave to the world a scientific process by which various kinds of fertilizer materials are combined and manufactured into concentrated plant food in quickly available form and contain the right parts of the chief elements required for growing crops, namely, Nitrogen, Phosphoric Acid and Potash. On this discovery is based the fertilizer industry, which in seventy years has grown to enormous proportions.

For applying fertilizer, improved methods have been worked out. Formerly a spoonful would be dropped in the hills on corn and potatoes, or a small quantity of fertilizer drilled in with the sowing. The modern method of farming calls for a much heavier application of fertilizer. On some crops it is nothing unusual to apply two thousand pounds to the acre scattered all over the field and worked into the soil with a harrow. Machines are now in big demand that can be set to broadcast from 400 to 3,000 pounds of fertilizer to the acre.

our fertilizers

are made to enrich the soil for growing all crops. The commercial value of a fertilizer can be figured from the analysis, but the agricultural value or crop productiveness of a fertilizer is determined by increased crops where used.

THE AVERAGE FARMER knows all about cultivation of his land, but when it comes to fertilizers, he is not so sure about it. Very often he is led to believe that one brand of fertilizer is as good as another, and will probably buy the lowest priced, while in reality it is the most expensive. That is where he makes a mistake. The best fertilizer is not any too good for him to use.

Write us and we will tell you more. **We want agents** for unoccupied territory.

The American Agricultural Chemical Co.,

Largest Manufacturers of high grade Fertilizers in the World.
Detroit Sales Department, DETROIT, MICH.

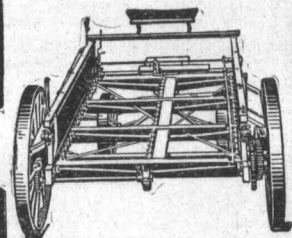
Buy an Appleton Manure Spreader

WITH ITS SOLID OAK FRAME.

The frame is the foundation of a manure spreader—it must stay square and level or the machinery parts will soon stop working right. Our frame is made of solid oak—every piece is carefully selected, every piece well seasoned. It is braced and trussed by steel rods, so that it is always square and always level, all the time and under all conditions. There is no other wood as good as oak for this purpose, and there is absolutely no other frame equal to the Appleton. See the picture—that will convince any practical man.

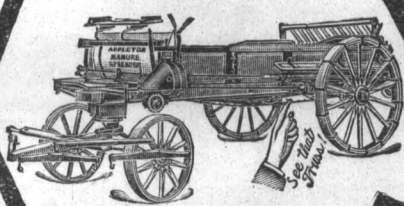
The Frame That's Always on the Square.

Here's a combination of the toughest wood, the strongest metal and common sense.



The all oak frame. Steel braced and Steel trussed.

Eight Styles To Choose From



Made with RETURN OR ENDLESS APRON

A BOY CAN RUN IT

easy to haul; spreads thinly or thickly and always evenly, from start to finish; has positive force feed; pulverizes thoroughly; doesn't bunch; has a changeable feed, operated without stopping the team; automatically balances the load; is so simple of construction and so easily operated that any boy, who can drive a team, can run it.

Send for **FREE** Catalog.

So confident are we that our machine will stand on its merits, that we guarantee the Appleton Manure Spreader to be, and to do, all that we claim for it in our spreader book. This book of facts is free to you. Send for it today.

APPLETON MFG. CO. 220 Fargo St., Batavia, Ill.

Branches:
Minneapolis, Minn.
Kansas City, Mo.
Council Bluffs, Ia.

Elkhart Vehicles and Harness

Save \$25



3 x 9 Skein—\$52.00
3 1/2 x 10 Skein—54.70

have a world wide reputation for high quality and our prices have made them famous.

THIRTY-EIGHT YEARS'

experience selling to the consumer means success. We ship for examination, guaranteeing safe delivery, satisfaction and to save you money.

Catalog shows all styles of pleasure vehicles and harness, pony vehicles and harness, spring wagons, delivery wagons, farm wagons, and harness.

May we send you large catalog?
Elkhart Carriage & Harness Mfg. Co.,
Elkhart, Indiana



Save \$25.00

GRANGE

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

MAY EVERY GRANGE RESPOND.

With only two weeks remaining before the date on which congress will convene in extra session for the express purpose of taking action on the Canadian reciprocity agreement, it is proper that a matter of so much consequence to agriculture be included among the subjects considered at the March Grange meetings. Many Granges have already expressed themselves and have advised their representatives as to their position, but it is desirable that the wishes of the full strength of this great organization be recorded, either for or against this measure. The Grange has always stood for free and fair discussion of all public questions, and the opportunity for such discussion came with the failure of the last senate to act upon the reciprocity proposition. Indeed, the Grange leaders who fought the measure so strenuously in the last congress were most concerned in securing, for the great agricultural class, an opportunity to duly consider the measure and to present its conclusions. They not only succeeded in this but filed a formal protest with each branch of congress. Some of the salient points in the argument made before a senate committee by National Master Bachelder are presented below, and it remains for organized agriculture to say whether they are sound or otherwise. Let no Grange in Michigan fail to clearly state its position upon this question:

The two principal arguments put forward on behalf of this so-called reciprocity proposition, are, first, that it will reduce the cost of food stuffs to the consumer; and, second, that it will not decrease the prices received by our farmers for their products. Both of these statements can not be true, and it is our opinion that neither of them are. The newspapers of the cities have been filled with glowing promises of cheap food, which they claim will be the result of the free admission of Canadian farm products. We believe this to be wholly a delusion, and that the removal of the duties on these products will not reduce in any material degree the prices paid for them by the consumers of the cities. Take for example milk. The duty on Canadian milk is now two cents per gallon. It has been shown by investigations conducted by the U. S. Department of Agriculture, that on the average the farmer in this country gets for his milk 50 per cent of the price paid by the city consumer, the difference being absorbed by the middleman, railway company, and retailer. Suppose the duty of two cents per gallon on Canadian milk is abolished? Does anyone believe that the people of the cities will get their milk two cents per gallon less than the present price? What is true of milk is true of practically all other farm products.

After having proved to their own satisfaction that reciprocity will reduce the cost of living, the advocates of this proposition turn around and assert that it will not in any way decrease the profits of our farmers. Unfortunately the facts are against them. The mere introduction of this bill has already forced down the price of wheat six or seven cents per bushel, owing to the existence in Canada of immense stocks of wheat, which, if this bill is enacted, can be rushed into this country.

And here let me point out that the price of wheat has fallen 30 cents per bushel since a year ago. Has the price of bread to the consumers of our cities fallen 25 per cent? You know that it has not, and if as the result of reciprocity the price of wheat is forced still lower, it will not benefit the consumer, for flour is still taxed 50 cents per barrel.

It is impossible in the brief time allotted me to go into details showing how the farmers will be injured by the provisions of this bill, but I will take as an illustration the manufacture of cheese. In the state of New York this is a most important branch of agriculture, the total production being about 125,000,000 pounds. With the tariff of six cents per pound our dairymen are just able to make a living profit, and most of them have only existed because they have been taking more and more each year from the fertility of their soil. The Canadian cheese producer has cheaper land, cheaper labor, cheaper supplies, cheaper machinery, cheaper feed for cows, and a richer soil.

The Province of Ontario, just across from New York, exported in 1909, 164,000,000 pounds of cheese. How could our cheese makers compete with those of Ontario, when the latter have so clear an advantage in the cost of production?

But we are told that while it is true that this bill deprives the farmer of the very moderate protection, averaging less than 25 per cent, now given him by our tariff laws, he receives compensation in the form of reductions of duties on manufactured articles. This is not true. The reductions made by this bill will not in the least decrease the cost of the manufactures the farmer buys, since Canada is not to any extent a manufacturing country. Thus we have the Hon. Secretary of Agriculture stating that "free barbed wire fencing will be a boon to our farmers." As a matter of fact this provision will not benefit one farmer to the amount of one per cent. We exported to Canada last year 100,000,000 pounds of wire, and imported practically none.

New Subordinate in Muskegon.—Permanent organization of Sullivan Grange, with 21 charter members, was effected at that village by a small party of Patrons, early in March. At the head of the deputation which did the work was John S. Walker, master of Muskegon Pomona, and with him were Wilbur F. Taylor, deputy district master, and W. C. Nistle, lecturer of Muskegon Pomona. The Sullivan farmers chose for the name of the new organization that of the village. They were very enthusiastic over the new Grange and prospects are bright for excellent results in the near future. Officers were elected as follows: Master, Chas. Gustafson; overseer, John Morehouse; lecturer, Grover C. Baker; secretary, Fred Sheringer; treasurer, Theodore Christian; steward, George Spoon; assistant steward, John Vanderjagt; gatekeeper, S. C. Tortillett; chaplain, Mrs. May Christian; Ceres, Mrs. D. G. Shevaller; Flora, Mrs. John Morehouse; lady assistant steward, Mrs. George Spoon.

COMING EVENTS.

Pomona Meetings.

Ingham Co., with Mason Grange, Wednesday, March 22. Lecturers' conference and conferring of fifth degree.

Genesee Co., with Davison Grange, Friday, March 24.

Manistee Co., (Pomona and Institute), at Bear Lake, Tuesday and Wednesday, March 21 and 22. D. E. McClure, conductor.

Wayne Co., with Willow Grange, Friday, March 31.

FARMERS' CLUBS

Associational Motto.

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

Associational Sentiment.

The farmer, he garners from the soil the primal wealth of nations.

THE FARMER OF THE FUTURE.

Paper read by J. C. McDowell, of the U. S. Department of Agriculture, before the State Association of Farmers' Clubs. (Continued from last week.)

The farmer of the future will re-claim the so-called abandoned farms of the country, and cause them to produce large crops of all kinds adapted to that section; he will re-forest the steep hillsides from which we have cut the timber, and he will drain the swampland everywhere. He will irrigate the land in the arid sections of the west to the full capacity of the water supply of that region, and he will double the yield of all our farm crops, because he will make as good use of his muscles as we are doing and he will use his brains a great deal more. He will clear the cut-over lands of Northern Michigan, Northern Wisconsin and Northern Minnesota, and on this vast area he will produce enough to feed an empire. He will also find out what crops can best be produced on our jack pine lands, and doubtless he will bring them nearly all under cultivation. He will know how deep to plow for wheat and other crops, how much humus each kind of soil should have, and his soil will always be maintained in a high state of fertility. He will practice hill selection of seed potatoes, sow only the large plump kernels of wheat, select his seed corn on the stalk, treat his seed potatoes for scab, his seed wheat for smut, his seed flax for wilt, and apply the best knowledge at his command, to all phases of plant production. In that day Southern Michigan will rival North Yakima and the Hood River Valley in the production of apples, our sandy lands will produce clover and vetch in abundance, our swamp lands will produce cabbage and celery, and almost all Michigan farmers will produce large

crops of alfalfa. The farmer of the future will so rotate his crops as to bring grain, legumes, and cultivated crops in logical order. He will also be able to practice successfully the single cropping system. In the past the single cropping system has been the cause of much unsuccessful farming, and at the present time it takes a great deal of courage to say a word in its favor; but I believe the time is at hand when we are about to use even this system of farming in such a way as to fatten our pocketbooks without depleting our soils.

To the farmer of the future generations, the cow that produces only 150 pounds of butter a year will be unknown, 20 bushels of wheat per acre will be a small yield, and because of greater production farming will be lifted to a higher plane. We will then feed our animals so as to get the most out of the feed, our live stock will all be of superior breeding, and our barns as well as our houses will be up-to-date and sanitary. We will then welcome the inspection of our dairies, and be pleased to have our cattle tested for tuberculosis.

The rural schools of the future are destined to change for the better with other improved conditions. Either we will have the consolidated rural school, or else some better way of solving the present rural school problem will be found. I firmly believe that the time is rapidly approaching, if it is not already at our door, when our children are to have most of the advantages of the city schools without their many defects. Nature study, agriculture, and domestic economy should be taught to our children at some period before they begin life for themselves. This work should be supplementary, and should not displace anything that is now in the course of study. The art of agriculture must be kept in the background, and the semi-scientific phases of agriculture must be pushed to the front in our common and secondary schools. The children should know the story of how the plant grows. They should have the names and characteristics of the wild flowers, the cultivated plants, and the weeds. They should be taught the principles of soil fertility, crop production, and something of the care and management of farm animals. This work must of necessity be elementary in its scope, but it should be interesting and accurate. Corn growing and corn judging contests may well be a part of the course. This work will not be a burden to the teacher, but will be a pleasure to teacher and pupil alike. In the schools of the future the three R's will be as prominent as they are today; but as someone has said, the three H's, too, will have a prominent place; that is, we will educate not only the head, but also the heart and the hand. I have little sympathy with the old style education that taught us to appreciate all that is best in music, literature and art, but neglected to teach us how to earn the dollars with which to purchase these things.

(Continued next week.)

CLUB DISCUSSIONS.

Pass Resolutions Opposing Reciprocity.

—The Hadley and Elba Farmers' Club was very pleasantly entertained at Sunnyside, by Mr. and Mrs. F. De Clercq, Feb. 16. The roll call, responded to by a story, song or recitation, was a very amusing number of the program. The topic of the day, "Which is the most profitable, \$75 invested in cows, Charles Reley; swine, R. J. Pierson; sheep, C. P. Johnson and H. P. Kelley; hens, Carrie Snook was much appreciated. The next the most interesting of the year, each speaker relating his or her experience and giving the financial report of the same. Resolutions opposing the pending reciprocity bill were adopted and copies forwarded to our congressmen and Michigan U. S. senators. Music by Master Ward Mott, Mrs. and Miss De Clercq and Carrie Snook was much appreciated. The next meeting will be at Lone Elm with Mr. and Mrs. C. P. Johnson, March 16. A cordial invitation is extended to all.—Mrs. C. P. Johnson, Cor. Sec.

Hold Local Option Meeting.—The Rives and East Tompkins Farmers' Club, of Jackson county, met March 4 with an attendance of 90. The election of officers and other business occupied the forenoon. After dinner a local option program was rendered. Three gentlemen from Jackson gave us interesting talks on local option and they brought many new ideas, from personal experience, from the merchant's point of view, and from the pulpit. Many remarks followed but all were unanimous in agreeing that nothing could be better than state-wide local option and that our own town had never been so prosperous as within the last two years despite the wets' argument to the contrary and if we wish to save the boys and girls, all the voters must be ready to do their duty and to fight, for local option in Jackson means that right must fight against might and only time will tell whose the victory. —Ina Strinkham, Cor. Sec.

EDITOR BROWNE

Of the Rockford Morning Star.

"About seven years ago I ceased drinking coffee to give your Postum a trial.

"I had suffered acutely from various forms of indigestion and my stomach had become so disordered as to repel almost every sort of substantial food. My general health was bad. At close intervals I would suffer severe attacks which confined me in bed for a week or more. Soon after changing from coffee to Postum the indigestion abated, and in a short time ceased entirely. I have continued the daily use of your excellent Food Drink and assure you most cordially that I am indebted to you for the relief it has brought me.

"Wishing you a continued success, I am

Yours very truly,

J. Stanley Browne,

Managing Editor."

Of course, when a man's health shows he can stand coffee without trouble, let him drink it, but most highly organized brain-workers simply cannot.

The drugs natural to the coffee berry affect the stomach and other organs and thence to the complex nervous system, throwing it out of balance and producing disorders in various parts of the body. Keep up this daily poisoning and serious disease generally supervenes. So when man or woman finds that coffee is a smooth but deadly enemy and health is of any value at all, there is but one road—quit.

It is easy to find out if coffee be the cause of the troubles, for if left off 10 days and Postum be used in its place and the sick and diseased conditions begin to disappear, the proof is unanswerable.

Postum is not good if made by short boiling. It must be boiled full 15 minutes after boiling begins, when the crisp flavor and the food elements are brought out of the grains and the beverage is ready to fulfill its mission of palatable comfort and renewing the cells and nerve centres broken down by coffee.

"There's a Reason."

Get the little book, "The Road to Wellville," in pkgs.

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

RHEUMATISM

DR. WHITEHALL'S

Rheumatic Remedy

For 15 years a Standard Remedy for all forms of Rheumatism, lumbago, gout, sore muscles, stiff or swollen joints. It quickly relieves the severe pains; reduces the fever, and eliminates the poison from the system.

50c. a box at druggists. Write for a Free Trial Box.

DR. WHITEHALL MCGRIMME CO., 206 N. Main Street. South Bend, Indiana.

Price \$10 and Up

Earn \$10 a day and more, easily, sawing firewood, lumber, lath, posts, etc., for yourself and neighbors with a

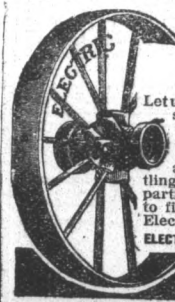
Hertzler & Zook

Portable Wood Saw

Fully Guaranteed for One Year

The Hertzler & Zook is the cheapest and best saw you can buy. Direct factory prices—finest tested materials. Easier than other saws to operate because the stick sits low and the saw draws it on as soon as you start work. It is the only saw made, selling at \$10, to which a ripping table can be added. Write for circular and save money.

HERTZLER & ZOOK CO. Box 23, Belleville, Pa.



New Wheels

for the Old Wagon

Let us fit your old wagon with "Electric" steel wheels and make it strong and good as new. Another wagon life and a real handy wagon just by buying wheels. Broad tires, never any resetting, no drying apart, rattling or coming loose. Free book gives particulars and shows how it pays big to fit up old wagons with the long-life Electric Steel Wheels. Write for copy.

ELECTRIC WHEEL CO., BOX 25, QUINCY, ILL.

A LEGAL BINDING WILL

You can write for yourself at home with absolute secrecy, if you use our Legal Will Form. Full instructions given. Mailed to you for \$2.00. National Will Co., 504 Meisel Building, Port Huron, Michigan.

WHEN writing to advertisers just say "Saw your ad. in the Michigan Farmer."

Steel Fence Post

**Cheaper Than Wood
and More Durable**

Many years of experimenting with metal fence posts have developed this post. It is now thoroughly practical, filling every requirement on the farm, in the town, for railroads and wherever fence posts are used.

Made of tough steel, heavily zinc coated. Durability proven by us—ten years' actual use showing good as new. Means a big reduction in fence cost and maintenance.

40-page catalog sent free, fully illustrating and describing. Send for it.

Sold by dealers everywhere. Ask dealer to show samples and quote prices, or write us direct.

American Steel & Wire Co.

Chicago: New York:
115 Adams Street 30 Church Street
Denver: San Francisco:
First Nat. Bank Bldg. 16th and Folsom Sts.

\$50 in Gold for a Photo

We are so proud of our fence that we have offered prizes for the best photograph. If there is a camera owned on your farm or by a neighbor, write and ask us how you can get one of these valuable prizes.

Jackson Fence Tool Free.

We will send you the handiest tool on the farm if you will tell us how many rods of fence you expect to use this season and what height and where you trade.

Jackson Fence

Guaranteed Full Gauge Hard Steel Wire

is the cheapest fence in the long run. Ask your dealer for it.

JACKSON FENCE CO., Box 14, Jackson, Mich.

BROWN

WE PAY THE FREIGHT

Heaviest Fence Made

Heaviest Galvanizing

We make 160 styles. Horse

cattle, sheep, hog, and bull

proof fences made of No. 9

double galvanized wire

and absolutely rust proof

Bargain Price:

14 cent a rod up

Poultry and Rabbit Proof

Fences, Lawn Fences and

Gates. Send for Catalog

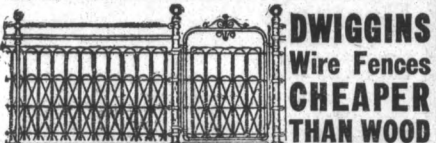
and Free sample for test.

The Brown Fence & Wire Co.

Dept. 49 Cleveland, Ohio

SAMPLE FREE

FENCE



DWIGGINS
Wire Fences
CHEAPER
THAN WOOD

Superior Galvanizing, Farm Fences, Gates and Arches of all kinds. Superior workmanship. Catalogs sent free. Dwiggins Wire Fence Co., 212 Dwiggins Ave., Anderson, Ind.

FENCE Strongest Made

Made of High Carbon Double Strength

Coiled Wire. Heavily Galvanized to

prevent rust. Have no agents. Sell at

factory prices on 30 days' free trial.

We pay all freight. 37 heights of farm

and poultry fence. Catalog Free.

COILED SPRING FENCE CO.

Box 21 Winchester, Indiana.

134 Cents a Rod

For 18-in. 14 3/4 for 22-in. Hog

Fence; 15c for 26-inch; 18 3/4c

for 32-inch; 25c for a 47-inch

Farm Fence. 48-inch Poultry

fence 28 1/2c. Sold on 30 days

trial. 80 rod spool Ideal Barb

Wire \$1.45 Catalogue free.

KITSELMAN BROS.,

Box 278 MUNCIE, IND.



48 IN. FENCE 25c

Best high carbon coiled steel

wire. Easy to stretch over

hills and hollows. **FREE**

Catalog—fences, tools. Buy

from factory at wholesale

prices. Write today to Box 68

MASON FENCE CO., LEESBURG, O.

For 60 Days

March & April
Save Nearly

1/3

Read This Boiled Down List

It will give you a faint idea
of the values this sale offers

Bleached Muslin

15,000 bolts (the 11c quality). Per yard, 7c

Percale

at manufacturer's prices. 12 1/2-cent value

for, per yard, 7c

Black Taffeta Silk

Full yard wide, only, 85c

Gingham

Solid weave, fine quality. 10 yds. for 49c

Poplin

The kind retail stores sell for 25 cents.

Our sale price, per yard, 12 1/2c

Dotted Swiss

Fine quality—price for 60 days only. Per

yard, 10c

Panama Cloth

36-inch all worsted Panama cloth, only

per yard, 38c

Famous Behrens' Pongee Silk

10 colors, only per yard, 38c

Venetian Spot Silk

Exactly the same quality that regularly

retails at 45 cents a yard. Our sale price

only, 23c

Sheeting

Unbleached, 68 in. wide, only per yd. 19c

Bleached, 70 in. wide. Sale price, per

yard, 21c

Japonica Silk

In 14 colors at half the regular price.

Only, per yard, 25c

Striped Poplin

Eleven colors. Regular 25-cent value.

Our sale price only, 12 1/2c

Ladies' Handkerchiefs

Hemstitched extra fine cambric. This is

a handkerchief that sells everywhere for

10 cents apiece. Our sale price only, per

dozen, 37c

Ladies' colored border hemstitched hand-

kerchiefs, per dozen only, 28c

Table Linen

Heavy German Diced Damask, per yd. 39c

Heavy Cream All-Linen Damask, per

yard, 48c

Bleached All-Linen Satin Damask, per

yard, 15c

Table Cloths

Hemmed German Table Cloths. Size,

58x75 inches. Each, 19c

Silver Bleached Table Cloths. Size, 58x

62 inches. Each, 15c

Bleached Pure Linen. Size, 70x70 inches.

Each, 16c

Complete Hemstitched Damask Set

Table Cloth and six Napkins. Cloth size

62x80 inches. Napkins 17x17 inches.

Price per set, 29c

Pillow Shams

Hemstitched and open work. Size 30x30

inches. Only, per pair, 60c

Piano Scarf

Beautiful white renaissance lace. Size

27x84 inches, only, 29c

Towels

70,000 pieces of good Bleached Linen

Crash Toweling. Worth double our price.

For this sale only, per yard, 8c

Fringed Damask Towels. Unmatchable

value. 17x38 inches, only, 15c

White Hemstitched Huckaback, 20x28 in.

only, 22c

Hemmed Pure Linen Huckaback, 20x40

inches, only, 24c

Fine Satin Damask Towel, hemstitched.

Handsome flowered designs, 21x41 inches,

only, 43c

Bed Spreads

Our sale prices range from \$1.15 for our

big leader up to \$2.39.

Comforters

12 carloads of big values bought especially

for this sale. Prices run from \$1.18 to

\$2.75.

Sheets and Pillow Cases

Annual offering of Hemmed Sheets and

Pillow Cases. Big bargain. Best quality

Bleached Sheets, 72x96 inches, 69c

Pillow Cases, 20x32 inches, only, 17c

Embroideries

Imported and domestic. Six pages of big

bargain values in our March and April

Sale Book. Get your copy today.

Ladies' Neckwear

Very latest novelties. Direct from the

maker at little more than the maker's

cost.

Auto Scarfs

Splendid bargains. One cannot be pur-

chased at retail for less than \$1.00.

Size 26x68 inches. 10 colors. Our sale

price, only, 44c

Furniture

21 bargain filled pages from which you

can furnish your home complete from

kitchen to attic at a saving of from one-

fourth to one-half.

Here are a few of the items, that you

may better appreciate their values.

High grade Reed Chairs and rockers, only

each, \$3.59

High Grade Box Seat

Dining room chairs. Leather seat and

back, only each, \$3.48

Furniture for entire room, four pieces in

Mission. 1 rocker, 2 chairs, 1 table, only

\$9.99

Three piece parlor suite upholstered in

genuine leather. Only, \$22.95

Library Rocker, only, \$4.96

Mission Hall Clock. Height 5 ft. 8 in.

only, \$3.96

Quartered Oak Sewing Table

only, \$6.93

Mission Rocker

only, \$1.99

Brass Bed

2 inch posts, only, \$15.97

Turkish Couch

imitation leather covered, only, \$8.66

Kitchen Cabinet

with large cupboard, only, \$7.33

Large Porch Swing

weathered oak, with chains and hooks

complete, only, \$2.98

Large Refrigerator

only, \$6.80

Curtains and Rugs

Curtains and curtain material suited to

every room in the house at prices that are

just about half what you would ordinarily

expect to pay.

Rugs are shown in their actual colors.

Prices range from \$1.65 upward.

3 Big Sewing Machine Bargains

Clocks

Handsome, big values, suited for dining

rooms, hall, living room or library.

Silverware, China, Kitchen-

ware

You have a wide range of choice in all

these. Prices are extraordinarily low for

this sale.

Stoves and Ranges

for coal, wood, gas and kerosene. Every

one a bargain offer.

Washing Machines

and laundry supplies. A full and complete

line.

For Your Wardrobe

Here you will find 29 pages containing

every article of wearing apparel that you

can possibly want or need. Knit under-

wear. Muslin underwear. Stockings. Shoes.

Wrappers. Dressing Sackies. Kimonos.

A wide range of dry goods and dress ma-

terials, suits, gowns and millinery.

Big House Furnishing and Women's Wearing Apparel Sale NOW ON

Send for 112 Page Bargain

List You can't come to our big city stores so we

have prepared for you a book that describes

this big sale in detail. Every article is care-

fully illustrated, fully described and priced so low

that you will reckon your saving in dollars. This

book has been so painstakingly prepared, every

illustration has been so carefully drawn, every

statement so closely edited that you could not learn

more about the goods were you to actually visit our

stock rooms. Send for this book today. Your copy

has just come from the press and is here waiting

your request. Even though you plan to purchase

only a few articles for your home or wardrobe this

spring, don't let this prevent your securing the book.

You will without a doubt find listed the very articles

you want and in every case you will make a worth

while saving.

To sum it all up in a single sentence. This is per-

haps the most complete and the largest House

Furnishing and Women's wearing apparel sale ever

attempted. You cannot gain the slightest idea of its