

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXLII, No. 3.
Whole Number 3766.

DETROIT, MICH., SATURDAY, JAN. 17, 1914.

50 CENTS A YEAR
\$2 FOR 5 YEARS.

Forage Crops as a Factor in Pork Production.

THE profit derived from the production of any commodity for sale is represented by the margin of difference between the cost and the selling price of that commodity. Unfortunately, producers of agricultural commodities have little if anything to say with regard to the selling price of the commodities which they produce. That price is largely regulated by the law of supply and demand and in commodities like pork is influenced to some degree at least by the operations of the large handlers and large distributors of the product. This influence, however, is largely if not entirely a temporary factor in the fixing of the price on the farmer's finished product, which is the packers' raw material. Hence, a study of market conditions backed up by as accurate a knowledge as is obtainable with regard to the supply, will be profitable for every farmer who makes pork production a factor in his business, as every farmer certainly should to some extent.

But it is in the matter of the cost of the product that the greatest profit will result from a close study of different methods of production in relation to the cost of the finished product. One weakness of the average farmer as a business man is that he has little idea of the cost of the products which he grows upon his farm for sale upon the open market. Very few farmers keep any kind of a cost system and, in the case of many products, costs are difficult to fix owing to the fact that so many factors enter into the production of any commodity, some of which are an uncertain quantity as to cost. In the matter of pork production, however, the problem is more simple than is the case with many other products produced upon our farms; at least it is so considered by the average farmer, since hogs are mostly grown upon concentrated feeds, the value of which is stable and easily estimated. Notwithstanding this fact, however, comparatively few farmers know what it costs them to produce a hundred pounds of pork on foot. On the ordinary farm this is rather of a by-product produced on a small scale and in about such a quantity regardless of, and without any great effort to determine, the profit derived from this branch of the business. A few farmers are certain that pork production is profitable on their farms, and it is made a considerable fac-

tor in the scheme of farming followed. These are generally men who have studied methods of production in relation to the cost of the product. On the other hand, there are not a few farmers who have noted the amount of grain consumed by the fattening hogs and have concluded that "hogs don't pay," so have reduced the business of pork production to the minimum and in some cases have gone out of the hog business entirely. It is quite probable that both of these last mentioned classes of farmers are right in their conclusions, and that the difference in their

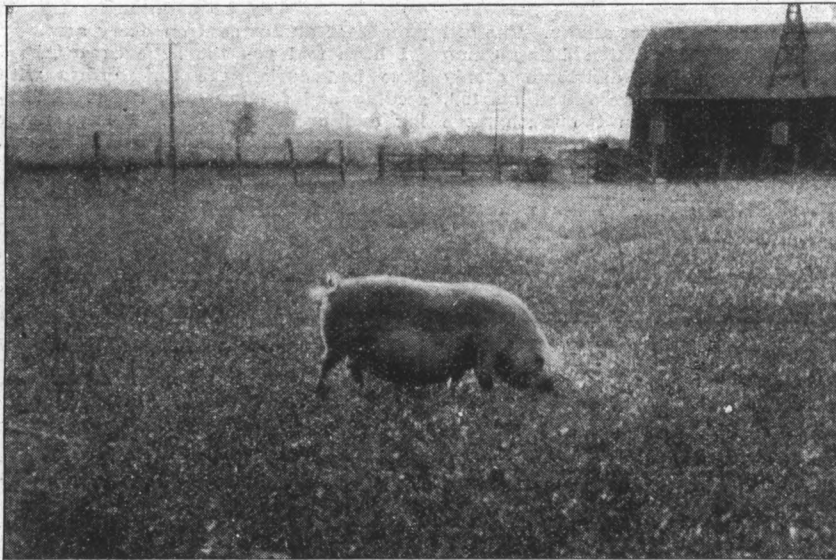
runs from 375 pounds for pigs under 75 pounds in weight, to 625 pounds for hogs up to 275 pounds in weight. It has been estimated that under the most favorable conditions, pork may be produced to marketable weights at a cost of a little over four pounds of grain to one pound of gain, but under average conditions, nearly or quite five pounds of grain will be consumed for one pound of gain, particularly where hogs are fed as under average farm conditions. Where unfavorable conditions are present, as they are upon many farms, the cost is undoubtedly

erage cost of 100 pounds of gain with 792 pigs fed various amounts of corn and other grains on alfalfa pasture during a period of five years was \$3.30 per 100 pounds of pork, including the cost of pasture as well as grain, while in some cases the cost was as low as \$2.10 per hundred pounds, in which cases the profit exceeded the cost of the pork. With present values of corn, the cost of gains would be somewhat higher, but the value of the finished product is also proportionately higher, so that these figures may be taken to indicate something of the possibilities in the making of a profit from this branch of farm production.

While alfalfa is undoubtedly the very best green forage for hogs, there is a wide range of crops which may be profitably used as green forage for swine. Among these, Dwarf Essex rape ranks next to alfalfa and clover, while cowpeas, soy beans, vetches, etc., may be profitably employed in connection with grain for pork production. But there is undoubtedly a great opportunity for the making of a profit in this branch of live stock production through the use of alfalfa pasture and corn, which makes a well-balanced ration for the production of pork at a minimum cost. The writer this year had an opportunity to test the value of forage crops in the maintenance of brood sows during the summer season. Two brood sows were kept in a rape pasture of about one-half acre in area from the time their spring litters were weaned until late in August, with no grain or other supplementary feed except kitchen slops. At the last mentioned date, they were turned into a new seeding of alfalfa on the back part of the farm where supplementary feeding was not convenient but where they had access to fresh water at all times. Here they ran without any other feed until their fall litters had been farrowed and were three or four weeks old, when they were brought up to a clover pasture near the barns, and supplementary feeding was begun.

In the first of the cuts accompanying this article, one of these brood sows is shown in the rape pasture, and on page 76 a cut of the two sows with their 16 pigs appears, illustrating the fact that they had been maintained in good condition on alfalfa pasture alone. These pigs had access to the alfalfa until it was cov-

(Continued on page 76).



Brood Sow Summered in Rape Pasture Supplemented only by Kitchen Slops.

conclusions is but the natural result of the difference in the methods practiced in the production of pork on their farms.

Fortunately, it is not necessary for each individual farmer to determine by experiment the cost of producing pork by different methods. This problem has been quite accurately worked out by the experiment stations and the results are most interesting and instructive. The cost of gains with hogs as with other farm animals increases with the age and weight of the animals. The average amount of grain required for 100 pounds of gain, as determined from the data resulting from many experimental trials,

is still higher, in which case there is little chance of substantial profit in production under average market conditions.

Where both forage and grain are used in producing pork, however, the results are very different. In some extensive trials at the Nebraska experiment station in which nearly 800 pigs were used, the much lower percentage of grain required for 100 pounds of gain where pigs were fed on alfalfa, etc., illustrates the point above emphasized. In one experiment in which six different lots of pigs were used, the number of pounds of grain required to produce 100 pounds of gain was in one case only 121 pounds, and the av-



Plenty of Succulent Forage from Birth to Maturity will Materially Reduce Cost of Finished Hogs and Increase the Profits from Pork Production on the Farm.

Experience in Alfalfa Seeding.

MY experience with alfalfa dates back to the summer of 1904, when I seeded three acres of sandy loam with clay subsoil. I sowed about 20 pounds of seed to the acre, using no inoculation; the result was only a fair stand of sickly plants. This I clipped the first year, getting not enough alfalfa to learn whether or not there was any value in it as a feed, but this I did learn, that all stock would eat it readily and seemed to relish it. The next year it apparently blighted and I afterwards learned it was due to the lack of inoculation, so my first experience was not very satisfactory. Since then, the same piece of ground has grown the regular routine of crops. In 1912 it was reseeded, together with inoculation, and today the nicest stand of alfalfa that I have is on this piece. In the spring of 1911 I prepared another five-acre piece, which, by the way, is, I think, as poor a five acres as I could have selected on my farm. This piece had been into beans the previous year. There was not a weed of any description in the field so the only preparation it had was a thorough spring-tooth. I then sowed broadcast about one and one-half yards of soil taken from the roadside where sweet clover had grown. This was sown from the wagon, allowing the team to walk slowly using much care to get it distributed as evenly as possible. This ground was then again gone over with the spring-tooth, thoroughly mixing the inoculation with the soil.

Right here let me suggest, that the more of the inoculated soil used, the better will be the growth of alfalfa. The soil containing this inoculation being damp would sometimes not distribute evenly and after the plants were well started, one could easily discern the much more thrifty plants where the inoculation was thickest. I prefer a cloudy day for sowing the inoculated soil as the sun is apt to destroy the germs. After preparing the ground in this manner, I seeded to oats, at the rate of one and one-half bushels to the acre, afterwards sowing the alfalfa seed with a broadcast seeder at the rate of 15 pounds to the acre. I did not roll the ground after sowing the alfalfa but would advise doing so as, with any other seeding; it leaves the ground in better shape for the mower. I harvested only a fair crop of oats, say only about 30 bushels to the acre, but that did not matter. It was the alfalfa I wanted and the alfalfa I got this time. After the oats were harvested, I clipped the alfalfa, allowing it to remain on the ground—there not being enough to bother with. The next season I cut about 10 tons from this five acres—the second cutting amounted to very little on account of the drought.

In the spring of 1912, I seeded 50 acres in the same manner, using only 10 pounds of alfalfa to the acre. With this I mixed both June and alsike, which gave me the nicest quality of hay I ever cut. This hay I am now feeding my horses, fattening lambs and brood sows. Again last spring I seeded another 50 acres, together with oats, inoculating in the same manner but leaving out the June and alsike—seeding heavier than the second year (I think 15 pounds to the acre about right). This seeding went into the winter looking fine, although not making as thrifty a growth as that of the preceding year owing to the dry weather. A 22-acre piece of June and alsike was entirely destroyed by the drought and a 17-acre field of the same kind of seeding, I am trying to save by top-dressing. So, considering the condition of these pieces, I am pleased to have so good a stand of alfalfa if it is small. This proves to me that alfalfa will stand the drought much better than other clover—owing, I think, to its quick growth and length of root.

One mistake I made with a 15-acre stubble field last spring was, instead of plowing I used a spring-tooth, thus getting a great many weeds which I might have avoided by plowing. Remember, I am experimenting with this crop as many others are, only perhaps on a larger scale. I have 100 acres to mow this year and will seed 50 acres with oats the coming spring. I have tried the pure culture but found that it swelled the seed and caused them to stick together, thus making it impossible to seed evenly and determine the amount of seed I was sowing to the acre.

Now, another thing that remains for me to learn is this: does it injure alfalfa to pasture it? After mine got a good start last summer after I had cut it the

second time, I turned 325 lambs into 30 acres of it. This I did when it was about 18 inches high and in blossom, leaving them in until they had eaten it to the ground. I then took them out that it might get a good start before winter set in. I am now anxiously waiting for spring to see if any bad effects come from this fall pasturing. I never had lambs gain faster than while on this pasture with no bad effects whatever. I kept close watch of them for I had heard all kinds of stories about bloat, etc., but nothing of the kind presented itself.

As I before stated, I am now feeding this hay to 16 brood sows and it does one good to see how they relish it. I feed in racks and they line up like a lot of sheep and it is surprising how little they waste. They are doing nicely and without any grain whatever. If any reader has had any experience in feeding this to brood sows and knows of any bad effects at farrowing time, I will be glad to hear from them, as it is an experiment with me.

These things I have learned; spare no pains in preparing your seed bed for alfalfa. Seed as early in the spring as possible. If it is alfalfa you want, and you seed with oats, don't try to get 50 bushels of oats to the acre and alfalfa, too. Sow not over one and one-half bushels of oats (one and one-fourth is better) per acre, and be satisfied with no oats, if you have to, if you only get the alfalfa. Be sure and get your seed on evenly—no less than 15 pounds to the acre. If you wish to sow other clover with it, let this be additional. Get 15 pounds of alfalfa seed on every acre.

I have told you the little experience I have had during the three years with seeding and feeding—now about fertilizing and curing the hay. I have never used any fertilizer but barnyard manure. Do not put this on until your alfalfa has at least four months' growth. Never put it on before you seed or the weeds which will surely come from the manure will tend to retard the growth of the alfalfa. Don't get the idea that alfalfa cannot be handled with side-delivery rakes and loaders as other clovers. They are the proper tools to use. Cure it in the wind-row; make small windrows, turning them often, thus curing the hay evenly. You will be surprised how few leaves a single cylinder loader will knock off. Even if it does waste some, "Time is Money." One ton of alfalfa is worth two of any other hay.

I would like to hear from someone who has had experience with disking alfalfa in the spring; also with regard to "seeding in," where perhaps there is a clay knoll where the seeding is thin.

Washtenaw Co. R. B. WALTROUS.

FARM HELP.

It is universally admitted that there is a scarcity of farm help at the present time, yet some men seem to get all the help they need, and get it when they need it. A great army of young men are coming onto the labor market every year. Many of them come from thrifty and prosperous homes, and they know very well what ought to be required of a hired man. They are quick to resent a slight or oversight, and the man who secures their services and retains them, must be very civil to them. They know very well that when they leave one employer there are a dozen others who are ready to receive them.

I heard a remark a few years ago which drew my attention, and I am not sure but what it is the key to the whole situation. Several of us were talking about the help problem. The man who made the remark had started out as a hired man, but had worked himself into the possession of a fine farm, and he employed several men. He had the reputation of being rather lenient, and some of his neighbors thought that he allowed his men to soldier too much, but somehow he always came out on top and always had laborers when he needed them. The conversation turned to a neighbor who was forever bothered for help. His crops often suffered from a lack of laborers. As the conversation progressed he remarked in a low undertone, as though he hesitated to criticize a neighbor, little thinking that his remark would ever get into print, but it illustrates a point too well to be omitted here. He said of his neighbor, "He is too afraid of giving away a meal of victuals." Now, here is an idea which seems to me to be well worth considering. It is humiliating to a spirited young

man after he has served well and faithfully, to be hurtled away by his employer when his time is out, as though he was afraid of giving him another meal of victuals. When the opportunity offers he will resent it.

I sometimes relate my first experience at hunting a job. I was stopping in a Michigan village and, as my funds were not plentiful, I resolved to look around among the farmers to get employment. I took an angling road which led out past the cemetery and as I came out into the open country I saw a very fine looking farm house, standing off to the right, well back from the highway, and I concluded to try my fortune there. As I approached the house, I met a middle-aged man, probably a son, but I was directed to the old gentleman who was in the sitting-room. I found him very uncommunicative and I soon made my business known. He cast a side glance at me and then turned his eyes in another direction, saying that he did not care to hire. He went on to say that I never had done any work and that I would be worth nothing on a farm. He said he could tell a working man by the looks of him. I thought that was a queer way to talk to a young man who was six feet tall and weighed 160 pounds. I assured him that I had worked all my life on my father's farm, and knew nothing about any other kind of work. I told him that I considered myself a full hand and that my soft hands and faded complexion were due to the fact that I had been attending school for some time. I was rather insistent. I asked him to hire me for a few days. I thought I could just surprise him if he would only give me a chance. But all of my requests were met by short refusals and I took up my grip and passed along. I have always remembered this event as a rich experience—an experience which comes only once in a lifetime.

Branch Co. O. A. VANDERBILT.

THE USE OF MARL IN THE EIGHTEENTH CENTURY.

The quotations given below are from an essay written about 1760 by J. Jeanneret, of Chatellon, France. The gentleman's observations, in the light of our present knowledge, may cause a smile; but we must remember always that the experiments carried on by those old-country farmers, at about the time the colonists were preparing to throw off the English yoke, were just the crude beginnings of our so-called modern scientific farming. They surely deserve some credit even for the mistakes they may have made as pioneers in a great movement which is as yet, after nearly two centuries, only in its infancy.

"What is the intention," he asks, "of laying marl on land that is light and wants substance? It is surely to give it a certain consistence, render it capable of retaining the nitre of the atmosphere, and of preserving a proper degree of moisture, and to make it, from being barren, become fruitful."

"In the first place, the sooner marl is laid on the land, the better it dissolves and attracts to itself the nitrous particles of the air."

"—Farmers may reap great advantage from it (marl) by simply laying it on the land, because it will infallibly produce good clover, or rather it will revive the clover, which is generally a good growing plant. This very year, clover came up as thick as possible, in a spot where a load of marl was overturned and where there was not before the least appearance of it, but where, I presume, there was, either seed, or very minute plants."

It is interesting to note that today farmers use marl only as a corrective for sour soils, the lime in the marl neutralizing the acids produced by the decomposition of vegetable matter, or humus. This is a value entirely overlooked, or not understood, by M. Jeanneret. Marl cannot attract nitrogen from the air; but because of its sweetening effect, the soil becomes a better medium for the growth of nitrogen-fixing bacteria, such as are often found forming galls, or nodules, on the roots of clover and other legumes. Marl is also just as effective as a corrective, and much more easily applied, if left in piles for several weeks to dry and crumble to an ash-like powder.

Ingham Co. H. L. BARNUM.

Whether from a standpoint of a market or home grower, it will pay to protect the berries in some way. Mulching is cheap and well worth the time taken to get it on. The mulch should be raked off with a fork or rake as early in the spring as the first leaves are coming.



**Make your corn
bring you twice
as many dollars**

Instead of 40 bushels of
corn per acre, get 80 to
100 bushels, by using

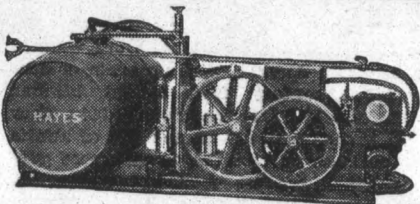
**Packer's Brand
Fertilizers**

The ears will be fuller,
the grain better developed,
too.

Write for this Free Memorandum Book. A valuable pocket note book. Contains the latest information on scientific fertilization. Get your copy today.

PACKER'S FERTILIZER CO.
Station P, Cincinnati, O.

Agents wanted,
There's money selling our Fertilizers. Write us.



HIGH pressure spraying is 100% efficient. The more thorough the spraying operation the greater is the profit from the crop.

Hayes Sprayers are guaranteed to maintain 300 lbs. pressure. 300 lbs. pressure completely atomizes the solution into a penetrating fog-like mist that seeks out and adheres to every particle of foliage. The atomization is so perfect that drops will not form on the leaf and fall off.

**Hand & Power
Hayes SPRAYERS**

We manufacture 25 styles of large and small Hand and Power Sprayers for orchards, field crops, shade trees, hops, poultry, painting, home and garden use. Complete outfits or separate pumps, hose, nozzles, fittings, bamboo rod, etc.

Write! Send postal for FREE book No. 45, on High Pressure Spraying and complete catalog of HAYES Sprayers.

Hayes Pump & Planter Co.
Galva, Illinois

**A Postal Brings
ISBELL'S SEED FREE
CATALOG**

Northern Grown Seeds
At Moderate Prices—Satisfaction Guaranteed
Get ISBELL'S OFFERS in beautiful new color-illustrated catalog before you buy seeds. Tells all about seeds, planting, etc.

120 Pages Packed With Bargains
Isbell's Seeds are NORTHERN GROWN—alive with vitality. Everything for your farm, vegetable or flower garden at bargain prices.
Send 10c for 5 Packets Choice Seeds
This "Sample Collection" includes packets of fine new Melon and Cucumber. All for 10c, which we return as a Due Bill. Let's get acquainted!
S. M. ISBELL & CO.
804 Pearl St., Jackson, Mich.

Seed Beans

I HAVE already discussed the bean question somewhat, but again feel constrained to visit with the Michigan farmers through the Michigan Farmer. Three bean growers in a little group on adjoining farms in Shiawassee county bought northern grown seed last year and harvested, respectively, 18, 20 and 21 bushels of beans per acre. Outside of this group, and equally as good farmers and under as nearly similar conditions as non-experimental work allows, the average yield was less than 14 bushels per acre. The difference in the price of seed was infinitesimal as compared to the return. In fact, considering the small size of the northern grown pea bean and the greater number of seed beans to the bushel, I doubt if the cost per acre is at all increased. Sixteen quarts per acre in 28-inch rows is ample quantity of this seed.

In Sanilac county, Mr. A. L. Chamberlain is authority for the statement that in certain sections where northern grown seed was used there was practically no anthracnose. Mr. Chamberlain tells where a progressive son of a very conservative father tried out the proposition of northern grown seed as compared to the older man's staying by the home-grown seed. The son had a splendid field of pure beans, while the father's field was badly affected with anthracnose.

As a financial factor in Michigan agriculture, the anthracnose is as great a menace as is hog cholera or tuberculosis in cattle, and deserves the attention of the United States government as well as our state experiment station which is now working on the problem. I am under the impression that a determined appeal

up the matter, or rather take the initiative in some movement which should include all bean growers and not be confined to any one order.

Secretary Houston says that the day of collective bargaining in the sale of farm produce is at hand, and no crop offers the opportunity for action like beans in Michigan. Menaced on one hand by a combatible disease, it becomes a duty to work for a clean crop, and with the offer of the buying association the other opportunity to make it a more paying crop.

Shiawassee Co. JAS. N. McBRIDE.

MORE ABOUT MUCK.

I have been very much interested in the discussion of the muck problem that has been going on in your paper lately. I have a farm that has muck on it to quite an extent, balance of farm being a sand and gravelly loam which has been manured heavily for the last few years. I wish to know if any of the readers of The Farmer has had any experience with muck that was drained 20 years ago and then allowed to grow up to willows and marsh grass again.

I have owned this farm for four years and in that length of time have made some experiments. We have now a dredge coming across the muck which will lower the water level to between three and five feet of the surface and the bottom of the ditch will be a clay composition. As last year was dry enough I plowed up about four acres of this muck which had not been plowed for 12 years and put it into corn. I had as good a piece of corn as anyone needed to look at, and it yielded well. I noticed when I came to husk it that the corn on the up land weighed from five to seven pounds per crate more than that grown on the muck; also, that the corn that grew on the land next to

If a man has a marl deposit under his muck and is ditching it there is quite an amount thrown out, and that marl contains a large per cent of lime, as is the case in this locality, it would pay him to haul the marl on the muck to the extent of 30 to 50 loads to the acre, to sweeten the sour muck and loosen it up so that the nitrogen will be more available.

As land becomes higher in price every year, it is up to the farmer, if he has low ground or muck on his farm, to have it drained, get the brush off from it, and have it earning him something besides pasture, and that not very good either. Also how much better it looks when a man is riding through the country to see all the land on a farm under cultivation than to see a patch here and one there of from one to 25 acres, all grown up to brush and weeds, all for the want of a few tile or a large open drain, when the man cannot only benefit his muck, but also increase the crops on his up land at the same time.

I would like to hear more through your columns in the future in regard to experiments other farmers have made with muck, as different one's experience, if they will only make it known through the columns of your valuable paper, will help others to improve it at some future time.

Genesee Co.

W. S. BURNETT.

ALFALFA ON ROLLING LAND.

Two years ago I plowed up an old pasture that was very rolling and had started to break and wash in places. In spring of 1912 I planted this to corn. The crop was a good one. Now the problem that confronted me was what to put in after corn and stop the washing and in truth I wanted to get rid of working such a rolling piece. Last spring I commenced to harrow the corn stubble and every week, or as near as possible, I gave it a good dragging. Everyone knows how dry the season was without my mentioning the fact; but soon I brought the moisture up where I could see it. Just over the fence my neighbor was cultivating corn and you could not see the team or man at times on account of the dust.

I tested the soil with litmus paper, but with the exception of one spot that was high and very light poor soil, it did not indicate an acid condition. I kept right on dragging (notwithstanding a great many criticisms) and the first of July I sent to Lansing and got two bottles of inoculating material. Every day it seemed as if the very air would explode, it was so dry. On July 19 I got out of bed a trifle earlier than usual and called up two of my neighbors, and got one to sow the seed and another came with team and we both followed as close as possible and kept the seed covered with spike-tooth drag. We dragged both ways. I only intended to sow 12 lbs. per acre, but sowed nearly 14 lbs. with hand seeder. In a week you could see it was coming fine. Last fall it averaged from eight to 18 inches in height and was almost black, it was so green.

I have a fine stand with roots from a foot to 18 inches in length. It is considerably thicker than I wish it was, but I suppose the weak plants will be crowded out in time and will be a case of the "Survival of the fittest."

Now in writing this my principal object is to help some one else get started and to avoid the mistake of sowing too early as by this method all weeds are thoroughly killed out and you will have the moisture, no matter how dry it may be. Now, I want to ask some brother that can tell by experience will I derive any benefit from this the second or following year? I am told I need not expect anything from this until the third year.

Gratiot Co.

L. L. GIBSON.

A stand of alfalfa such as is described in this article will undoubtedly yield well next year, far better, in fact, than would a good stand of clover. The impression that it will not be productive the first year after seeding is doubtless due to unfavorable experience in undertaking to grow alfalfa an acid or uninoculated soil. But where favorable conditions are present and good inoculation is obtained alfalfa will yield better the first year after seeding than will clover.—Eds.

SALT SAVES SEEDING.

A Genesee county farmer reports that by sowing salt on clover and alfalfa seeding covered with ice last winter, the ice was honeycombed, air admitted and the seeding saved. One and one-half bushels per acre was sown. Clover heaved out less where salt was sown.



This is the Proper Season to Secure the Summer Supply of Firewood.

made at Washington would result in the action of the United States government, of detailing one or more men to work on these lines. The pathologist at Washington, Mr. Orton, has suggested western state seed, as from Idaho, Wyoming or Colorado. Do not let anyone in the anthracnose belt deceive himself by thinking that he can safely continue to use his home-grown seed, for the disease is widespread and apparently devitalizes the crop and makes it more susceptible to failure from any cause. Nor is it safe to assume your crop from northern grown seed this year is necessarily good for seed the coming year. The bean thresher is an active agent in the spreading of the disease and some small infections are noted in the crop grown from northern seed this year.

The good seed corn propaganda and alfalfa campaigns need a repetition with good bean seed as the subject. At the State Grange, Fred Welch, of Shiawassee county, president of the State Bean Jobbers' Association, asked that body to take under consideration the proposition of a state bean growers' association, with county organizations, to accomplish two things: namely, to study the question of bean culture, including good seed, and to work with the bean jobbers to fix a reasonable and compensatory market price for the crop after it has been grown. It is generally agreed that 80 per cent of the crop of 1913 is already out of the growers' hands. Careful and conservative marketing of 40 per cent instead of 80 per cent would have meant a price near \$2.00 per bushel. It is doubtful today if there is one million bushels of beans out of the six million bushel crop still in growers' hands. A committee of members of the Grange expect to take

the muck, where it was a mixture of the sand and muck, was the best yielding and also weighed more per crate than that on either sand or muck. As I have noticed this every year I have had corn on muck and sand in the same field, I believe with P. D. Q., in your issue of December 20, that when it is available it would be profitable to place a layer of muck on sandy ground to the depth of two or three inches, if a man has time to haul it on. The winter is a good time to haul it as work is more slack then than any other time and the freezing no doubt will do it good, but by a little experiment I tried last summer I am satisfied that it will do good at any time it is hauled.

I hauled four loads of muck last June and placed it at least one inch thick on my poorest sand on a spot not over two rods square with no manure. On the rest of the piece I put on manure at the rate of 30 loads to the acre at the same time and planted it to potatoes. I could see from the time the potatoes got up large enough to cultivate that they were more thrifty and the vines a darker color where I placed the muck than where the manure was put, and when I came to dig them the potatoes where I put the muck were larger, more even in size and yielded at least one-third more than where the manure was applied.

While all muck land is not alike I believe that it would pay any man who has hard heavy clay or sand that is exhausted of humus to haul the muck from the banks of ditches on to the up land, where it does not have to be hauled too far. While the muck has not a very large per cent of potash and lime in it (which was shown by the corn not weighing more) when it is mixed with sand it helps to hold moisture and create humus.

JOHN DEERE



The Spreader with the Beater on the Axle.

Easy to load. Only hip high to the top and still has big drive wheels.

Here's the reason for the great strength, wonderful simplicity and good, everyday working qualities of the John Deere Spreader—

Beater and all driving parts mounted on the rear axle (patented). No strain on frame. No shafts to get out of line. No chains, no clutches, no adjustments. Only half the parts heretofore used on the simplest spreader.

Light draft because of few parts, the roller bearings and the beater and apron being driven directly from the rear axle.

BOOKS FREE Every farmer who asks about the John Deere Spreader will also receive "Farm Manures and Fertilizers". This book tells all about manure, how to apply it and how to double the value of each load by a proper system of top dressing. To get it ask for our Package No. Y5.

JOHN DEERE, MOLINE, ILL.



JAMES 2-in-1 Carrier

A great labor-saving, time-saving barn improvement. JAMES Carriers can now be operated on the celebrated JAMES I-beam track inside the barn—and then outside on rod track. We make both rigid and rod track carriers, separately, and are now ready to meet all conditions with this new combination carrier, in which both principles are successfully used.

Get Information Now

about this latest perfection in carriers. JAMES I-beam track is rigid—easily erected with "button-on" hangers—quickly curved in any direction without heat. JAMES rod track is easily put up—strong—simple. Carrier runs smoothly from one track to the other. Give it a shove at barn door and it runs out, dumps at proper place and returns automatically. Tell us how many cows you own and we'll send complete information about this real money saver.

JAMES MANUFACTURING CO.
Stalls, Pens, Stanchions, Carriers, Ventilators, etc.
AW 31 Cane Street, Ft. Atkinson, Wis.
"Originators of Sanitary Barn Equipment Ideas."

Special Prices on Edwards STEEL Shingles!

Send NOW for Edwards' 1914 Direct-from-Factory Offer. Amazing prices. Freight paid. Edwards STEEL Shingles never rot or burn. Made forever rustproof by famous Edwards "Tightcote" Process. Easier put on than common shingles. No extras. No tools. No expert workmen. No paint required. Far outlast wood shingles. Over 125,000 satisfied users. Write. Get prices and Free Book No. 167. Send dimensions of roof if possible. (139)

This Brings Big Offer
THE EDWARDS MFG. CO.
117-167 Lock Street, Cincinnati, Ohio
Please send Book on your Steel Shingles, together with latest Freight-Paid prices.

Name _____
Address _____

FARM NOTES.

Broom Corn Culture in Michigan.

Would you kindly answer through the Michigan Farmer if the land of southern Michigan, soil a sandy loam, would be adapted to broom corn culture, or would it take a better soil in order to get the length of straw. If it could be raised here would like a brief description of planting, cultivation and harvesting.

Van Buren Co.

L. G.

Any good corn land is equally well adapted to the growing of broom corn, which resists drouth rather better than corn. The best soil for this crop is a well drained, rich loam. The soil should be prepared as for corn, and an application of stable manure would be beneficial. The seed should be sown at about the same time or a little later than corn is planted. It is generally sown in drills three to three and a half feet apart with the seed drilled so that the plants will stand from six to eight inches apart in the row. About two quarts of seed are required per acre, and as the plants start very slowly, prompt and frequent shallow cultivation is necessary to keep the weeds from smothering out the young plants. At harvest time the stalks of two rows are bent down diagonally toward each other about three feet from the ground, forming a sort of platform on which the heads with about six inches of stalk attached are laid after being cut. When partially cured, the curing is finished in a shed and the seed is removed by a special device manufactured for the purpose.

Late Matured Beans for Seed.

I had two pieces of beans this year, one early and one late. The early piece was badly affected with anthracnose, the late piece was not, but was frosted before the crop was well matured. The frost killed the vines but a great many of the beans matured in the pods. I want to know if it is advisable to use the late beans for seed. They were raised on sand and what there is of them are an excellent quality, not a yellow bean in them. Would they make an early maturing crop or not?

Ingham Co.

A. H. J.

A good way to determine whether these beans were matured sufficiently to make it advisable to plant them for seed would be to make a germination test the same as you would with corn. If all the beans germinate and produce strong, vigorous sprouts, it would be a safe proposition to use them for seed, otherwise not. It is probable that either the condition of the soil or the date of planting may have made the difference in the time of maturing, and that this would make little difference with the earliness of the succeeding crop. It is most inadvisable to plant beans affected with anthracnose, as that is but to invite certain loss from this disease.

Grass in the Woodlot.

I have 80 acres of river flats, covered with second growth timber, but no pasture in the summer. Am underbrushing this winter. Will you kindly advise if there is any grass seed that will grow in the woods, if sown broadcast, and what quantity to sow?

Midland Co.

J. H.

With the removal of the underbrush and the pasturing of this land the grasses indigenous to the section will gradually come in. Of these June grass will doubtless dominate if the land is not too wet. Without knowing this condition it is impossible to advise intelligently regarding supplementary sowing. In the writer's opinion, however, it would have been better to have cleared a portion of the land for pasture and let the underbrush grow on the balance, especially if it is desired to perpetuate a timber lot, as both timber and grass will produce better when given undisputed occupancy of the land.

Seeding Alfalfa After Wheat.

Do you think it advisable to sow alfalfa on land that is now sown to wheat? I would plow and work this land down after cutting off the wheat and sow late in July or in August. When would be the proper time to apply lime to this field and how would you manage this field for best results? I now have a field of alfalfa that I wish to plow up in the spring. What style of plow is best to break up this old sod?

Calhoun Co.

E. O. P.

The success of this plan of seeding alfalfa would depend not a little upon the weather conditions which prevailed at and after harvest time. If plowed as soon as possible after removing the wheat and worked thoroughly to get a firm seed bed, there would be every prospect of success, provided sufficient moisture was present so that the seed could be sown by August 1. The writer has had as good success with midsummer seeding as any plan used, but ordinarily the seed should be gotten in the ground by August 1 to insure a good growth before winter. Lime would be best applied just after the land was plowed so that it could be worked into the soil. Probably if applied at this time, caustic lime would be better, as it

acts more quickly than the carbonate or ground limestone. Experience in the use of lime seems to show that better results are secured if it is sown some time previous to seeding. However, by sowing and working into the soil just before seeding, and inoculating the soil or seed, reasonably good results may be expected.

Plowing Alfalfa Sod.

An old alfalfa sod requires a sharp plowshare. Where an ordinary cast iron plow point is used, it is advisable to sharpen the share frequently with an emery wheel in order to insure a good job of plowing. One Gratiot county farmer recently told the writer that he found it necessary to sharpen the plowshares each half-day in order to do a good job of plowing on old alfalfa sod.

Seeding Alfalfa in Oats After Corn.

I have a corn field that I would like to seed to alfalfa, but there are a few spots that were poor corn producers and I am at a loss to know what is the matter with it. Most of the field produced very thrifty corn. I have given these spots a coat of rotted barnyard manure, but I fear perhaps there is something lacking. Would you kindly advise me what means to use to give me the desired information. The soil is sandy, but not light. I intend seeding with oats.

Tuscola Co.

J. McK.

If the corn on the poor spots made a small growth of stalk, it would indicate that the soil of these spots was deficient in nitrogen, perhaps due to the failure of clover seeding on those spots in former years. If this is the difficulty, the application of manure should overcome it. If the alfalfa is to be sown in oats, only a light seeding of oats should be used, and if there has been any difficulty in securing a stand of clover on this field in former years, it would be well to apply lime when preparing the soil for oats. If the soil is deficient in mineral elements of plant food, a liberal application of fertilizer to the oats would help the alfalfa seeding.

Canadian Grown Oats and Barley for Seed.

The past summer was so very dry and oats and barley of so poor a quality for seed, I would like to inquire as to the advisability, now that the duty is removed from grain from Canada, of shipping oats and barley from the Canadian northwest for seed in Calhoun county. Their grain is comparatively cheap and with a moderate price for freight. Do you think it a good proposition to change to our soil, climate, etc., with a reasonable prospect of success.

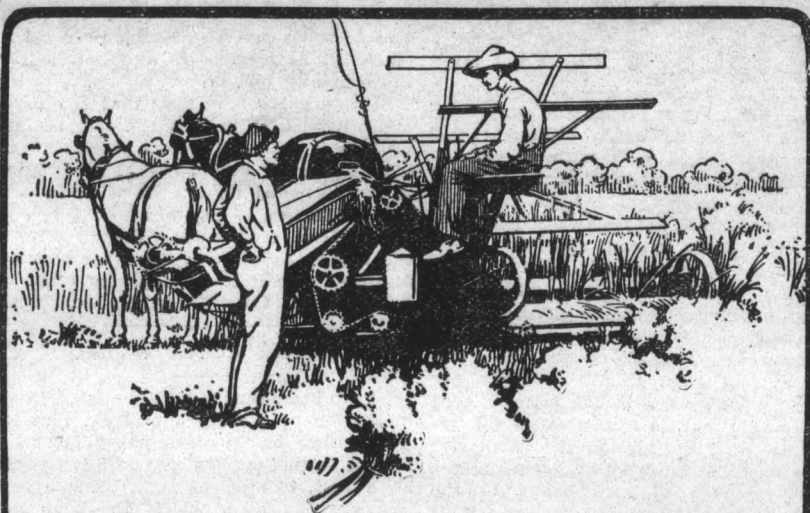
Calhoun Co.

C.

While excellent results might be secured from the sowing of Canadian grown oats and barley in southern Michigan, as a general proposition it would be advisable to try it out on a small scale, and use Michigan seed of known quality for the bulk of these crops. Many excellent varieties of grain have been introduced from other countries with as great variation of latitude as proposed in this case, but only a few out of many varieties tried have so developed. Generally, too, in these cases the variety has been a new one in which the factor of yield has been largely increased by careful and painstaking selection of individual plants in the beginning. Ordinarily, violent changes in latitude affect the yield of all crops adversely until same have been grown in the new locality for a time. This would probably be less true of small grains than it is of corn, although the principle undoubtedly applies in a general way to all plants.

COST OF KEEPING FARM MACHINERY.

"The depreciation in the value of farm machinery should always be figured in the cost of harvesting a crop," says Prof. H. C. Ramsower, of the College of Agriculture, Ohio State University. "Since the average life of farm machinery is about ten years, this depreciation should be figured at 10 per cent of the value of the machine each year." Prof. Ramsower points to the corn harvester as an example of the cost of depreciation. It is figured that the man who purchases a corn binder will cut at least 40 acres of corn each year. The binder will cost about \$120 and, lasting ten years, will make the cost of the machine \$12 each year. Dividing \$12 by the 40 acres harvested, the cost per acre for the use of the corn binder will be 30 cents. While these figures are only averages, they are nearly correct and show the method of estimating the cost of the use of farm machinery, exclusive of the labor required to operate them. This cost made known, emphasizes the importance of getting the farm machinery under cover, for each year its life is shortened increases the cost of its use.



ABOUT a thousand tons of surface soil is cultivated to the acre, and it is hard to understand why an application of a few hundred pounds of good fertilizer will make such a wonderful increase in the crop. Our fertilizers are quickly soluble and are so compounded that they thoroughly enrich the acre of soil just as a few drops of bluing will color a large amount of water.

Take no chances

Use A·A·C Fertilizers

We make special compositions to fill the requirements of different crops, grown on all kinds of soils. We furnish a fertilizer with 34% available phosphoric acid; special grain fertilizer 2-12-3 and 20-4 analysis; also half potash fertilizer for growing onions, celery, corn, and other crops on muck land.

Farmers cannot learn too much about fertilizers and how to use them. Write us for further information. We will gladly send a booklet on fertilizers; also a large handsome calendar.

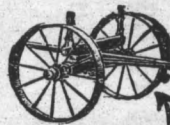
We want agents under our Consignment Contract to handle our fertilizers where we have none. Don't delay. Write at once.

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

Also Cleveland and Cincinnati. Address nearest office.



ELECTRIC
Steel Wheels
Save YOUR Back

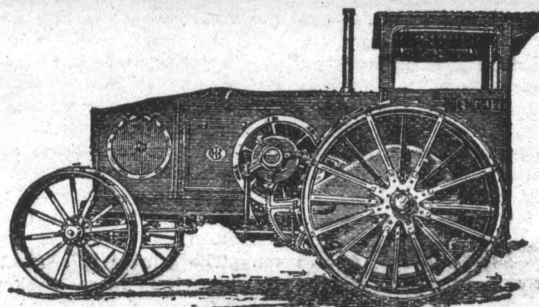


Save draft—save repairs.
Don't rut roads or fields. Send today for free illustrated catalog of wheels and wagons.
Electric Wheel Co., 35 Elm St., Quincy, Ill.

CLOVER \$5.00
Per Bu.

AND TIMOTHY
INVESTIGATE—Best and Cheapest Seeding Known. Alsike Clover and Timothy mixed, Fully 1-3 Alsike, a big bargain. Greatest hay and pasture combination grown. Write for Free Sample and 76-page catalog and circulars describing this wonderful grass mixture. Beats anything you can sow and ridiculously cheap. We handle only best tested cleaned seed guaranteed. Write before advance.
A. A. BERRY SEED CO., Box 651, Clarinda, Iowa

International Harvester Oil Tractors



THE I H C LINE
GRAIN AND HAY
MACHINES
Binders, Reapers
Headers, Mowers
Rakes, Stacks
Hay Loaders
Hay Presses
CORN MACHINES
Planters, Pickers
Binders, Cultivators
Ensilage Cutters
Shellers, Shredders
TILLAGE
Combination,
Peg and Spring-Tooth,
and Disk Harrows
Cultivators
GENERAL LINE
Oil and Gas Engines
Oil Tractors
Manure Spreaders
Cream Separators
Farm Wagons
Motor Trucks
Threshers
Grain Drills
Feed Grinders
Knife Grinders
Binder Twine

AN International Harvester tractor, Mogul or Titan, reduces the expense of heavy farm work—plowing, disking, harrowing, grubbing, harvesting, and hauling. To know the remarkable capacity and year-round efficiency of International tractors send for our tractor catalogues. They explain all the features to you—the compressed air starting system, the throttling governor, the dust and grit proof engine, the simple construction, the ease of operating, etc. They tell you how the modern tractor has revolutionized field and barnyard belt and drawbar work—saving time, labor, and money.

I H C tractors are simple and strong. They are built in several styles and all sizes, from 6-12 to 30-60-H. P. operating on kerosene and gasoline. The I H C line also includes all styles of general purpose engines from 1 to 60-H. P.

Write us today for instructive illustrated catalogues of I H C tractors and engines. We will tell you where you may most conveniently see the machines.

International Harvester Company of America

(Incorporated)

CHICAGO

Champion Deering McCormick Milwaukee Osborne Plano

USA

TENTH ANNUAL MICHIGAN CORN SHOW.

The tenth annual meeting and corn show of the Michigan Corn Improvement Association will be held the first week in March at the Agricultural College.

This is to be known as "Farmers' Week" at the College and is a combined meeting of the M. C. I. A., the Michigan Experiment Association, and the Annual Round-up Institute, and a large attendance is desired and expected as a highly interesting, and instructive program is being prepared which no one can afford to miss.

It will be the best opportunity ever yet afforded the farmers of all parts of the state to get together and discuss matters of interest among themselves and receive scientific information on farming problems too intricate to be otherwise solved.

The object of the Corn Improvement Association is to arouse interest among the farmers of this state and to stimulate them to pay more attention to the selection and care of their seed corn, because if this is not done the other states to the south and west of us will in a short time, outstrip us and there is no reason why this condition should exist unless we, as farmers, permit it to be so.

The Corn Improvement Association is demonstrating its value to the farmers of Michigan by the great strides which have been made in the improvement of the quality and appearance of the corn crop of the state in the last few years, the discarding of worthless strains of corn and the improvement and development of other strains until the old stock is should be and we must not relax our efforts scarcely recognizable. This is as it for to raise our standard.

Poor corn will not permit good soil to give you the best results any more than poor soil will allow good corn to give you the best results. It should be a combination of both and while it is often a more arduous task to get the good soil in which to plant good seed there is much less excuse for not having the good seed to plant there, because if you think it too tedious a task to build up your own seed corn to the standard you desire, you can buy it and that may be the cheaper way.

We hope to make the tenth annual corn show the best ever from an educational standpoint and, if we attain this result, we must have your presence and your corn at this meeting and we would like to more than double our present membership.

This is the beginning of the age of boys' and girls' corn clubs everywhere in the United States that corn is grown, and as the boys and girls are the foundation of future farming we should give them all the encouragement possible toward taking up some phase of farming and give them every opportunity to learn all they possibly can in regard to it.

One Michigan boy has had the benefit of a trip to Washington and we read of a number of boys going from other states. Why not more Michigan boys and girls?

I would like to see the boys and girls take this trip to the M. A. C. and enter some corn in the corn show and hear the speakers on the different farm topics, hear the discussions and see the corn judged and see numerous other things of interest in connection with the M. A. C.

This has been a hard year for the boys just starting in corn club work but many things are to be learned through adversity as well as success, so I say, stick to it, boys, and you'll win in the end. I would like to see the boys of the various county and other corn clubs graduated into the M. C. I. A.

This year we will have premiums in all the classes in the corn show.

J. R. DUNCAN, Sec.

CATALOG NOTICES.

"Paint and Painting," is the title of an interesting and instructive illustrated booklet published by the Lowe Bros. Co., Paint Manufacturers, of Dayton, Ohio. This booklet tells how to secure best results and avoid unnecessary failures in painting all kinds of surfaces, both exterior and interior. Other literature is also prepared by this company giving information on special phases of painting and special materials for the work, including color cards of both exterior and interior paints. Write this company telling them your painting needs, and they will forward such of this literature as will furnish you the information desired free of charge if you will mention the Michigan Farmer.

Gregory Farm 1914 seed products are fully illustrated and described in a 64-page catalog published by the Gregory Farm Seed Co., Third and Adams Sts., Bay City, Mich. A full line of farm, garden and flower seeds which are made a specialty at Gregory Farm, Bay county, Mich., are illustrated and described in this complete catalog, which will be sent upon request to Michigan Farmer readers.



THE CHATHAM Grain Grader and Cleaner

Handles 70 Kinds of Seed Grain and Grass Seed. From Wheat, it takes Wild Oats, Tame Oats, Cockle, Rye and Smut. Cleans the dirtiest Flax. Has special knocker and skimmer which prevents clogging. (Other machines choke up.) Takes Dodder, Barn Yard Grass and Foxtail out of Alfalfa and Millet "sick as a whistle." Takes Buckhorn from Clover. Sorts Corn for Drop Planter. Famous BEAN MILL. Handles all varieties, takes out the SPLIT, Clay, Straw, etc. Handles Peas as well as any Grain or Grass Seed. Removes foul weed seed and all shrunken, cracked and sickly grains. Takes out all dirt, dust and chaff. It is also a bully chaffer. Handles 60 bushels per hour. Gas power or hand power. Easiest running mill.



Manson Campbell

For \$100, I Clean and Grade Your Seed Grain

You can't afford to plant common Seed and take chances on a poor crop, when I am offering to scientifically clean and grade every bushel of your Seed Grain for this spring's planting for one paltry dollar.

Here's my proposition, and if you are a smart man you will write me before sunrise tomorrow:

Send me one dollar and I will ship you, FREIGHT PAID BY MYSELF, this improved 1914 Chatham Grain Grader and Cleaner, with all equipment. Clean your Seed Wheat, Oats, Flax, Barley, Peas, Beans, Corn, Grass Seed, etc. Then PLANT those fine seed. AFTER you have harvested a bumper crop, pay me the balance of my low price. Not one penny need you pay, except the \$1. until next October. And by October YOUR CHATHAM WILL HAVE MORE THAN PAID ITS ENTIRE COST IN INCREASED CROPS. Then you'll have it to work FREE for you the rest of your life.

Your Dollar Returned

I only want the dollar as evidence of good faith—to protect myself from mischievous boys. If after 30 days' hard test, you don't want my "Chatham," send it back at my expense and I will return the dollar.

A "Made-to-Order" Machine

Every "Chatham" is practically a made-to-order machine, for I send you the exact and proper Screens, Riddles, Hurdles and Sieves to grade and clean every Grain and Grass Seed grown in your locality. That's the secret of my success. I would not be the leading maker of Graders and Cleaners if I had tried to make my equipment fit ten million farms. What would you think of a clothing maker whose suits were all one size? Wouldn't it be a miracle if he gave you a fit. Yet

all makers of Graders and Cleaners, except me, send the same equipment, whether you live in Maine, Ohio or Oregon. They wouldn't do that, if they had my 41 years' experience.

Extra Screens Free

I use, all together, 81 Screens and Sieves. It usually requires 15 to 17 for the average farm. These I select from the 81. After 41 years in the business, I am pretty sure to pick the exact equipment needed on your farm. If I shouldn't, just drop me a line and I'll send your additional requirements. There will be no charge for this.

Samples Graded Free

Maybe you have some Seed Grain that you can't clean or grade or separate. Send me a sample. I will purify it and tell you how you can do it cheaply. No charge for this.

Seed Corn Sorted

My big Corn Sorting Attachment, invented 2 years ago, is a great success. Twelve thousand farmers and many leading Agricultural Colleges are using it. It is the only machine I know of which scientifically sorts seed corn for drop planters.

New Book Ready

Send me no money now—just a Postal, for the finest, most complete Book on Seed Selection I've ever written. After the Book comes, write me what size machine you want and I'll ship it, freight prepaid, on receipt of \$1.00. Then clean and grade all your Seed Grain. If you write today, you get my Book by return mail. Address nearest office.

Manson Campbell Company
Dept. 60
Detroit Kansas City Minneapolis



The newest and most accurate Planet Jr. seeder. Sows all garden seeds in hills or drills, opens the furrow, covers, rolls down, and marks next row all at once. Has steel frame and handles, and complete set of attachments. Light enough for woman's use.



An invaluable tool in the market-garden, truck and strawberry patches. Has new steel wheel which prevents clogging. Its 12 chisel-shaped teeth cut out all weeds, stir and mellow the soil and leave the ground in the finest condition without throwing dirt on plants.

Scientific Cultivation

Get away from useless drudgery and old-time wasteful cultivating methods in your family garden and on your farm. Use the Planet Jr. and do the work of 3 to 6 men better, quicker, cheaper. Planet Jrs are light, strong, lasting. \$2 to \$100. Fully guaranteed.

FREE Our new 72-page illustrated catalogue of 60 implements for all farm and garden uses. Write postal today.

S. L. ALLEN & CO
Box 1107M Philadelphia

Planet Jr.



A new Planet Jr. Single Wheel Hoe that is light, strong and practically indestructible—the frame and handles are steel. It is completely equipped for plowing, hoeing, cultivating, and raking. The marking attachment insures rapid, economical wheel hoeing.



A capital implement for large-scale gardening especially. It has a steel frame, and complete seeding and cultivating attachments. The hoes run close to row without danger to leaves or roots. Two acres a day can be worked with this tool.



Does more and better work than any other horse-hoe ever invented. It is light and easily handled, yet unusually strong. Has new steel wheel which prevents clogging with trash. Quickly adjusted to rows up to 3 1/2 feet apart. Vine-turner attachment is great for many crops at last workings.

-LOOK-

\$65 Delivered

This Big Book Free

Complete Spreader in Michigan, Ohio, Indiana, Illinois, Iowa, Minnesota, Missouri, Wisconsin, West Virginia, Kentucky, and all Eastern States. Yes—I mean just what I say, and other states at a slight advance on account of higher freight.

Reliable Detroit American

It's the best you can buy at any price—lightest draft—fewer parts—true capacity—unlimited guarantee—30 days' Free Trial.

Tongueless Disc Harrows and Cultivators
At bargain prices and easy terms—same ironclad guarantee and 30 days' trial.

Write Me Now—My catalog is free
FRED C. ANDREWS, General Manager
American Harrow Co.,
14105 Hastings St., Detroit, Mich.

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., Dept. 21, Cedar Rapids, Iowa

YOUR MONEY WILL NET 5%

if invested with this Society. Interest paid semi-annually. Let us have your name and address and we will tell you of the advantages offered by this Society which has been doing business for over twenty years.

The Industrial Savings Society,
219 Hammond Bldg., Detroit, Mich.
I. ROY WATERBURY, Pres. AUSTIN N. KIMMIS, Secy.

Pulverized Lime Rock

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

LAKE SHORE STONE CO., Milwaukee, Wis.

POSTS WHITE CEDAR POSTS in car lots.

Write for prices on sizes wanted.
FULLER & HARRIS, Farwell, Michigan.

Mention Mich. Farmer when writing to advertisers.

Use NATCO Tile—They Last Forever

DRAIN TILE

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

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

Spray and Spray Right IT PAYS

You can do it with **The "New-Way"** High Pressure Power Sprayer Guaranteed to carry 200 lbs. Pressure Continuously

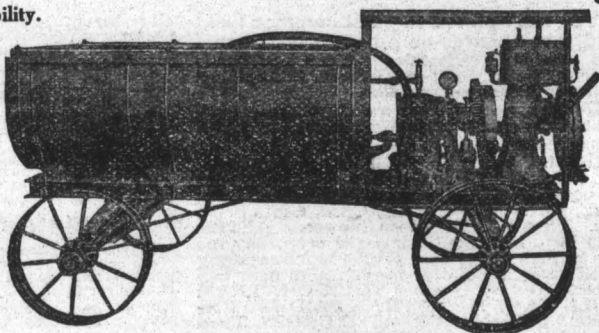
"NEW-WAY" means reliability.

Keyser, W. Va.

We have found our "NEW-WAY" High Pressure Power Sprayer to be just as recommended. It is very efficient for hillside work. It performs just as well there as it does on level ground. It is light in weight, simply constructed and easy to operate.

We use two leads and four nozzles and have no trouble in keeping the pressure at 200 lbs or more if necessary.

The "NEW-WAY" is reliable and efficient and it operates economically.



Write for Catalog SC 1. **The "New-Way" Motor Company** LANSING, MICHIGAN, U.S.A. 7 Ann Street.

GOOD SEEDS

BEST IN THE WORLD. CHEAPER THAN OTHERS. In addition we throw in a lot of new varieties extra with every order. OUR BIG FARM GARDEN SEED AND NURSERY CATALOGUE IS NOW READY FOR YOU. It is FREE. Write for it today; also send address of your friends and neighbors who buy seeds. Address

RATEKIN'S SEED HOUSE BOX 7 SHENANDOAH, IOWA

(LARGEST SEED CORN GROWERS IN THE WORLD)

Green's Trees

At Wholesale Prices

Big Supply of Apple and Peach Trees. Plum, pear, quince, cherry, grape vines, ornamental trees, roses, plants, etc. Highest grade and true to name. Best New Fruits. Free catalogue gives valuable advice. "Thirty Years with Fruits and Flowers" or C. A. Green's Book on Canning Fruit—Free. Write today. **GREEN'S NURSERY CO., Inc.** 30 Wall St. Rochester, N. Y.

GOOD SEEDS

BEST IN THE WORLD Prices Below All Others

I will give you a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.

Big Catalog FREE

Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Illinois

Hill's Evergreens Grow

Best for windbreaks. Protect crops and stock. Keep house and barn warm—save fuel—save feed. Hill's evergreens are hardy, nursery grown—low priced. Get Hill's free illustrated evergreen book and list of Great Bargain Offers—from \$4.50 up per Thousand. 56 years experience. World's largest growers. Write. **D. HILL NURSERY CO., Inc.** 230 Cedar St., Dundee, Ill. Specialists.

Virginia Apple Orchards

frequently net as much as \$500 an acre from one crop. Peaches, pears, plums and small fruit do equally well. Ideal climate for fruit-growing. Good, well located fruit lands, on railroad, can be bought as low as \$15 an acre on easy payments. Write today for particulars. **F. H. LABAUME, Agricultural Agent** Norfolk & Western Ry. Room 221 N. & W. Bldg., Roanoke, Va.

MALONEY TREES

1,000,000 Fruit and Ornamental Trees, berries, currants, vines, shrubs, at wholesale prices, fresh dug. Guaranteed True to Name and Free from Disease. Tested 20 Years. Personal attention and prompt delivery assured. A great advantage and saving in dealing with an old established firm. Write today for Free, 1914, Wholesale Illustrated Catalog. Visit our 350 acres. **Maloney Bros. & Wells Co., Box 17, Dansville, N. Y.** Dansville's Pioneer Wholesale Nursery.

SHEERINS' APPLES

900,000, four grades—12% c. 10c. 7c. 6c. 500,000 peaches—8c. 6c. 4% c. 3% c. 75,000 Cherry, 50,000 Pear, 25,000 Plums, 25,000 Quince, and thousands of Roses, Ornamentals, Grapes and small fruits. Secure varieties now. Pay in spring. Place your order with the men who grow their own trees and save disappointment later. Catalog free to everybody. Write for yours today. The only persons by the name of Sheerins in the nursery business in Dansville.

Few Other Trees Equal HARRISON BERLIN - GROWN

Peach, Pear, Apple

Harrison trees are bigger at same age than most other trees. They have larger and finer root systems, more "life" or growing power. They are trimmed in the nursery to nearly perfect shape (something seldom found). They are absolutely hardy anywhere that fruit succeeds. They bear earlier and bear more fruit when matured.

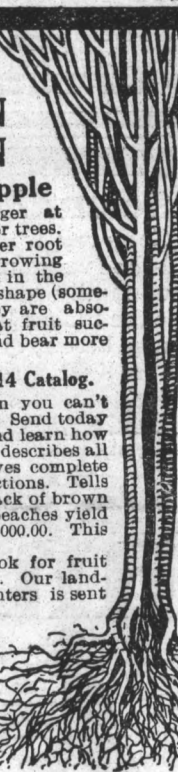
The Evidence is in our 1914 Catalog.

If you plant in Michigan you can't afford to ignore these trees. Send today for our new 1914 Catalog and learn how we grow them. This book describes all our valuable varieties; gives complete planting plans and directions. Tells how, in the face of an attack of brown rot, we made 100 acres of peaches yield us fruit that sold for \$35,000.00. This book is free on request.

Our complete guide book for fruit growers is sent for 50 cents. Our landscape book for home planters is sent free. Send today for the books you want, and tell us about your land and plans.

HARRISON'S NURSERIES, Box 484, Berlin, Md.

All Harrison trees are Berlin-grown and budded from bearing orchards.



My 1914 Tree-Book FREE To Fruit-Growers

This book contains 120 pages, is beautifully illustrated, describes the cream of the most profitable varieties for home and orchard planting. It tells why William P. Stark trees thrive to such remarkable perfection and produce such profitable crops; why they are preferred by the most successful fruit-growers.

The Great "J. H. Hale" Peach

The marvel of horticulture— $\frac{1}{2}$ to $\frac{3}{4}$ larger than Elberta, perfect freestone, solid yet tender flesh, smooth skin, a peach practically without fuzz, stands shipment like apples, round and large for preserving, hardiest in the bud, longest fruiting season. Eager buyers more than cleaned out entire stock last spring. Order early for fall planting.

Buy Direct—Save Half

No agents, no middlemen—we share profits with you, and sell you better trees, doubly guaranteed true to name. Sturdy, Ozark Mountain-grown, apple, pear, peach, plum, berries and ornamentals. Small orders get special attention. Write today.

William P. Stark Nurseries Station F 7 Stark City, Mo.

WHOLESALE PRICES

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

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

Horticulture.

The Orchard Inspection Law.

When the inspection law is mentioned at meetings of fruit growers it is always the subject of considerable discussion. Invariably at such discussions comes the question of what can be done with the neighbor who does not spray? Some suggest that we tend to our own spraying and by his lack of spraying he will put himself out of business. Others, however, think that there ought to be some action taken and that the neighbor be compelled to spray or cut the trees down. They class the unsprayed orchard a public nuisance, which it rightly is. Although a man can keep his trees and fruit clean even if the neighbor is negligent, his fight against the pests is made harder on account of this negligence. There are seasons, such as the one just past, in which the neighbor's orchard will affect the fruit of the well cared for orchard. In quite a few cases where the orchards were adjoining, bad results from scale were noticed late in the season.

Local Inspectors.

The inspection law requires that people take care of their trees or destroy them, but under present circumstances the law is rather hard to enforce. Each township, town or city should appoint three yellows commissioners who are to inspect trees and plants infested with injurious insects or dangerous diseases, and see that the law is carried out in their particular district. Where fruit is not grown very extensively the town boards often fail to appoint the commissioners, and in other cases they often appoint men who are not familiar with the troubles they are to look for. The law requires that the commissioners be freeholders and states that they should receive two dollars a day for the time of their services. On account of this low wage it is hard to get men to leave their farms at times when their time would be more valuable there. It is also hard to get men even though they are efficient in diagnosing the various troubles and are willing to do the work for two dollars a day who will do it at any price and make enemies of his neighbors in the endeavor to carry out the law. If a commissioner starts to enforce the law with one grower it would almost be necessary for him to do so with all who required law enforcement in the entire township. This would take considerable time, which few men would care to spend at the stated salary. Outside the original inspection the cost to the township would be little, as the law states that the cost of enforcing the law should be paid by the owner of the place. If he does not pay it it will be charged up as a special tax on the place.

Horticultural Society Resolutions.

At the recent annual meeting of the State Horticultural Society, this law was thoroughly discussed, and the general opinion seemed to be that if the local inspectors would be other than freeholders, much of the trouble of the enforcement of the law would be avoided. It was thought that if someone not living in the township could be appointed he would not have the matter of friendship preventing him from doing his duty. In view of the above statement the following resolutions were adopted:

Whereas, the yellows law that is in force at present requires that the local inspectors shall be freeholders, and whereas, the limitation of freeholder in the qualification of an inspector interferes materially in the practical enforcement of the law, therefore be it resolved that the Michigan State Horticultural Society recommend to the legislature that this law be so amended that one or more of the township commissioners be other than a freeholder.

Be it further resolved, that the secretary of this association be instructed and authorized to present this matter to the legislature for their consideration.

As a former deputy state inspector, the writer has given this law considerable attention. He has tried to view it from all standpoints and he certainly appreciates the position the conscientious local inspector is in. He would not be specially delighted with a local inspector's job at any price. Making enemies of your neighbors at two dollars a day hasn't enough fun in it to make the job worth while. He has also given the matter of making

the law more effective considerable attention, and it seems to him that the above resolutions did not hit the vital spot to make it effective.

To Make Enforcement Easy.

Under the present law the local commissioners each take their share of the township for inspection. If the owner is not satisfied with the decision of the inspector the other two are called and if he thinks their judgment poor the state inspector is appealed to. His word or that of one of his deputies is final on the matter. If the state inspector decides in favor of the local inspectors the owner has to pay the expenses of the trip of the state man. Therefore the state inspector's only interest in the matter is when he is appealed to. He is not in the deal until then.

What is everybody's business is nobody's business, and according to the present law there are too many sub-authorities who do not care to show their full authority on two dollars a day. The writer suggests that an effort be made to have the law changed so that the state inspector be made directly responsible for all of the orchard and nursery inspection, that he be allowed enough funds to appoint and pay a sufficient number of efficient deputies to carry out this work. Under this plan the local commissioners would be dispensed with and the township be involved in no expense except through indirect taxation. Under this plan friendships and low salary would not interfere with the carrying out of the law. The deputy could work out the letter of the law in a place and then leave it and forget the disagreeable part which the carrying out of the law sometimes involves.

The local inspector meets frequently the man on whom he has enforced the law and therefore he has almost a daily reminder of hard feelings.

The State Dairy and Food Commission carries on its work along the lines suggested above and is doing it with success. There is no need of the deputies who should be hired by the year, being idle part of the year as, when it is not possible to inspect orchards and nurseries there is plenty of other work they could do. It might be possible to have them assist in enforcing the state fruit package law. This law is an excellent one but it needs enforcement to make it effective.

The fruit interests of the state do not need new laws, but the present laws amended so that they can be properly and efficiently enforced. It needs the enforcement badly and it is hoped that sentiment can be created to get needed changes to make enforcement more easy.

DO IT NOW.

Now is the time to send for nursery and spray machinery catalogs if you are in the market for nursery stock or equipment. Prices and literature of spray material should also be requested of those who advertise it. Do not confine yourself to writing for just a few catalogs of the lines you are interested in, but send for all you see advertised. You cannot use the best of judgment in selection if you do not find out first what each manufacturer has to offer. A study of a large number of catalogs is interesting and instructive. Through them you can learn the latest improvements offered on the market. To keep up to date it is necessary to read what the advertisers have to offer as well as the reading matter in your trade journal.

It is better to make your plans in advance and during the winter months when you have time, therefore take the hint, "Do it now."

The Western New York Horticultural Society holds its annual meeting January 28-29-30. A practical program is assured. Large exhibits of spray machinery and competitive fruit exhibits will be interesting features. Apply to John Hall, secretary, 204 Granite Bldg., Rochester, N. Y., for program.

Attention to the little things often makes the difference between success and failure.

THE BALDWIN APPLE.

There is probably no variety of apple more grown and better known than the Baldwin. It has been the most popular standard variety for quite a few years just because it is a good all-around apple. It has no special feature in which it excels, but it is fairly good in all of the qualities which go to make a good variety.

The tree is a large vigorous grower which bears biennially. It is a little slow in coming into bearing but it bears abundantly after that. It is generally long lived but when grown in the northern part of the state it sometimes winter-kills.

There is probably no variety which does well on so many different soils as the Baldwin. However, soil conditions affect the fruit and we will very often find apples grown on the lighter soils with better color and generally better quality, while those grown on the heavier soil will often lack in color. On account of this difference we will have great variation between fruits of the same variety. This is especially true of the Baldwin and therefore we have what some people call White Baldwins, Black Baldwins, etc. There are no differences between these except through the influence of environment.

This variety is generally of good quality, color and size. Under unfavorable conditions it sometimes becomes rather small in size. It is a variety easily handled because it does not bruise easily. It is a good keeper in storage, which is a favorable feature for a commercial apple to have. These two factors also make it probably the best for export trade. When the apples are not good for general marketing purposes this variety makes an ideal one for evaporation and canning purposes.

The fruit and foliage are quite resistant to diseases and are quite easily kept

placed over piles of fresh horse manure that are about two feet deep and the roots are packed closely right on the manure. They are then covered with just enough soil to cover the roots. In America we force asparagus in a similar manner except that we place more or less soil over the manure on which the roots are set. The French method is the best in so far as the roots force quicker.

When it is desirable to force asparagus in early spring, the plants are not removed from the field but trenches are dug between the rows of roots in the field and filled with hot fermented manure. Manure is also spread over the tops of the plants. The heat generated causes an early growth of the roots. Sometimes barrels are placed over individual plants or clumps of plants and manure is piled up all around the barrel. This also forces the plant into early growth. In the United States asparagus is usually forced in the greenhouse but today, with the increased production of early vegetables crops in the southern states and California, this line of vegetable forcing has not proven as profitable.

Mich. Agri. Col. C. P. HALLIGAN.

FALL-BEARING STRAWBERRIES.

I noticed that the man in Emmet county made a failure of his fall-bearing strawberries this year, for he says that he got only four quarts from his patch. There must be something wrong somewhere, for I have one-fourth of an acre of the very same variety that I set out about the middle of last May and since the first of August I picked over 160 quarts of fine berries. I got 25 cents a quart or \$4.00 a crate for them, which looked good to me. In fact it looked so good that I shall set an acre more next spring. If they could they would be worthless as far as their market value is concerned as it would not take many to flood the market at that time of the



Old French Pear Trees at Monroe. Still Productive.

clean by thorough spraying. The Baldwin spot, a trouble which can not be controlled, is the cause of serious loss in the market value of the fruit in some seasons. This trouble is not caused by a fungous trouble or an insect, but is a physiological defect more often found in over-grown specimens.

This popular variety came up as a seedling on the farm of John Ball, near Lowell, Mass., about the year 1740. At different times it was called Woodpecker and Butters and it was not until it was brought to the attention of Colonel Baldwin, of Woburn, Mass., who propagated it freely that it received its present name.

Many think that the Baldwin will pass from prominence in favor of other varieties. At present there is no variety which has all of the good features which this one has. Many varieties are particular as to soil and location and they also need special care in spraying. So if a grower does not know their peculiarities in this respect and wishes to just go into ordinary apple growing, the Baldwin should be one of his favorite varieties.

FRENCH METHOD OF FORCING ASPARAGUS.

Can you give me any information as to the French method of producing asparagus in four or five weeks? W. T. D.

The French practice two methods of "producing asparagus in four or five weeks," in other words, of forcing asparagus. When the asparagus is produced during the early winter season or during mid-winter, it is customary to dig up the roots early in the fall and store large three-year-old roots. Frames are then

year. But there is money in it for the few and for home use the family can have berries any time during the summer or fall, that they want them. We had shortcake to eat as late as the middle of November. If there had been plenty of rain I would have had a great many more berries. It was so dry that it was a long time before the plants made any growth.

Van Buren Co. E. C. ANSON.

QUESTIONS ANSWERED.

Under the head of Trouble Department we will answer questions pertaining to any phase of horticulture. Often there is some particular question which the regular articles do not cover or there may be something in an article which is not clearly understood. If so, do not hesitate to make use of this department.

FOR NEXT WEEK.

Unusual Methods of Fruit Growing, an article on the methods of a successful New York grower, will appear in the horticultural columns of next week's issue.

BOOK NOTICE.

The Suburban Garden Guide, one of the county side manuals published by the MacMillan Co., New York, is a compact guide for gardening. It gives a list of the best vegetables and fruits for the home garden, short instructions on controlling the garden insects and diseases, and planting tables for flowers, vegetables and bulbs. Spraying and pruning tables are also included. It is a convenient pocket hand-book for any interested in gardening. 150 pages. Price 50c net.

Know Before You Plant That Your Trees and Shrubs Will Bloom as You Expect

Shrewd people buy merchandise from established houses—houses that will be in business when they need service. Why should not a planter buy his Trees, Shrubs, Vines, Roses, Bulbs and Seeds with the same precaution? How disappointing it is, when your trees or shrubs have leaved out, to find something you did not order—something you do not want. Have you ever had this experience? Don't take any risk when ordering. Buy direct of the producer and at first cost. We have a reputation at stake. Have been in business 60 years and expect to continue indefinitely. You always know where to find us. 46 greenhouses.



1,200 192-page Catalog FREE Write for it today. It's interesting and valuable.

THE STORRS & HARRISON CO., Box 268, PAINESVILLE, OHIO

Forkner Orchard Cultivator



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

It Works Right Up To Your Trees

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

LIGHT DRAFT HARROW CO., 606 Nevada Street, Marshalltown, Iowa

POWER SPRAYER for Moderate Size Orchard

A 100 gallon business outfit. 200 pounds pressure with 6 to 8 nozzles. 2 H. four cycle air or water cooled engine, double acting pump, sediment chamber, Hemp packing, ball valves, easy to get at. One of 70

IRON AGE

Bucket, Knapsack, Barrel, Power and Traction Sprayers. Ask your dealer about them and write us now for new Spray book, 21 spray information and Iron Age Farm and Garden News.

BATEMAN MFG CO. Box 1046 Grenloch, N. J.



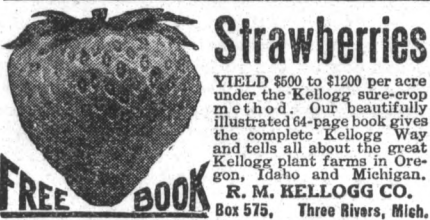
SMALL FRUITS Bring Quick Money

There's big and quick money in Strawberries and in all Small Fruits. You don't have to wait long years to reap your harvest. We are headquarters for Summer and Fall Bearing Strawberry Plants, Raspberries, Blackberries, Gooseberries, Currants, Grapes, Fruit Trees, Roses, Ornamental Shrubs, Eggs for Hatching, Crates, Baskets, Seed Potatoes, etc. Best varieties at the lowest prices. 30 years' experience. Our free catalogue contains valuable information. Write today.

L. J. FARMER, Box 460, Pulaski, New York

MILLIONS of TREES PLANTS, VINES, ROSES, ETC.

The oldest, largest and most complete nursery in Michigan. Send for catalog. Prices reasonable. I. E. ILGENFRITZ' SONS CO. The Monroe Nursery 962 Front St., East MONROE, MICH.



FREE BOOK

Strawberries

YIELD \$500 to \$1200 per acre under the Kellogg sure-crop method. Our beautifully illustrated 64-page book gives the complete Kellogg Way and tells all about the great Kellogg plant farms in Oregon, Idaho and Michigan. R. M. KELLOGG CO. Box 575, Three Rivers, Mich.

Apple, Peach,

Cherry and other Fruit Trees, Small Fruit Plants, Shrubs, Ornamental Trees and Roses. Hardy, vigorous trees from the famous Lake Shore regions of Northern Ohio. Send for Catalog. Address T. B. WEST, Maple Bend Nursery. Lock Box 137, Perry, Ohio

MAPLE SYRUP MAKERS!

The Grimm Evaporator used by principal maple syrup makers everywhere. Saving of time and fuel alone will pay for the outfit. Write for catalogue and state number of trees you tap.

GRIMM MANUFACTURING CO. 619-621 Champlain Ave., N. W., Cleveland, Ohio.

SEEDS & TREES THAT GROW IN YOUR STATE

My 1914 Garden Book is now ready. It is full of instructions and information you need. It will help you in planning your Vegetable Garden and Orchard for next season. Full assortment of Vegetable and Flower Seeds, Seed Corn, Oats, Barley, Millet and Sorghum, Alfalfa, Clovers of all kinds, Grass Seeds, and Minnesota grown Seed Potatoes. Can supply anything you need on your farm or in garden. All my seeds comply strictly with the laws of our state in regard to purity and germination. We also grow a general assortment of Fruit and Forest trees, Grape Vines, Berries, Shrubs, and Roses. Low prices. Best quality only. Write today for my Garden Book. GERMAN NURSERIES & SEED HOUSE (Carl Sonderegger) 17 German Bldg. BEATRICE, NEB.

We Make SPRAY Sprayers For Everybody

Bucket, Barrel, 4-Row Potato Sprayers, Power Orchard Rigs, etc. World's best line. All latest devices. Mechanical liquid agitation and strainer cleaning. Tell us your needs—let us advise you. Catalogue with spray formulas and directions free. Address Field Force Pump Co., 18 11th St., Elmira, N. Y.



SWEET CLOVER

BIGGEST MONEY-MAKER KNOWN—INVESTIGATE. The greatest forage plant that grows. Nothing equal for fertilizing. Excels Alfalfa as a producer. Crop worth \$50 to \$125 per A. Easy to start. Grows everywhere. Can save you money on best tested, guaranteed seed. Write today for Free Sample, circular and 76-page catalogue. A. A. BERRY SEED CO., Box 931, CLARINDA, IOWA

SEEDS

Wing's Quality Seeds produce the choicest vegetables and flowers. Grown with great care for those who appreciate quality. No matter what you need, Garden, Field or Flower Seeds, we have them and offer only the best varieties grown. Fully described in our free catalogue. Write for it to-day. WING SEED CO., BOX 142 MECHANICSBURG, O.

Strawberry Plants

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

ROKLEY'S FRUIT PLANTS

Michigan's best, hardy, well rooted stock from old established growers. All varieties of Strawberries, Raspberries, Blackberries, Currants, etc. Also the great Everbearing Strawberry. Moderate prices. WRITE FOR CATALOGUE. J. N. ROKLEY'S NURSERIES, R. 6, Bridgman, Mich.

FRUIT Healthy, Hardy TREES

are necessary to start a paying orchard. We furnish them true-to-name, direct from nursery to planter, at wholesale prices. Ask for Free Catalog. Celery City Nurseries, Box 12 Kalamazoo, Mich.

SCARFF'S TESTED SEED CORN

5000 bushel 1912 crop. Tested and sure to grow. Finest quality. 20 Varieties. Also Seed Oats, Barley, Grass Seed, Potatoes, etc. 1100 acres. Catalog and samples on request. Write today. W. N. SCARFF, Box 67, New Carlisle, Ohio.

Look! Read and Save Money

We have a big stock of Apple, Peach, Pear, Cherry, Plum trees, at 3c & up. Shade trees, Berry plants, Roses, Shrubs, Etc. Seed Corn, Potatoes & Oats. We were formerly at Moscow, but have better facilities now to serve our Patrons, send for Catalogue. ERNST NURSERIES, Box 1, Eaton, Ohio.

PURE FIELD SEEDS.

Clover, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer. Free from noxious weeds. Ask for samples. A. C. HOYT & CO., FOSTORIA, OHIO.

STRAWBERRY PLANTS—\$1 for 1000.

Guaranteed as good as any one's plants. All kinds and everbearers. Catalog free. Allegan Nursery, Allegan, Mich.

SWEET SEED, pure white and biennial yellow. Prices and circular how to grow it sent on request. Everett Barton, Box 129, Falmouth, Ky.

PEACH TREES, Orchard Size, 4 & 5c each

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

Write for Free Katalog of the World's Best 5 & 10¢ Bargains

Katalog will be ready to mail about Jan. 10th.



It's Easy to order from Kresge's New Parcel Post 5 and 10 cent Store.

Kresge's Free Katalog

contains thousands of 5 & 10 cent bargains—over a dozen styles in women's aprons at 10 cents each; extra special bargains in dainty faces, beautiful embroideries, dependable dry goods, stylish millinery goods, ribbons, jewelry, notions, pictures and frames, table cutlery, kitchen utensils, tinware, enamelware, glassware, crockery, hardware, and hundreds of other useful and dependable articles for men, women and children. Nothing over 10 cents.

We ship all orders promptly and guarantee satisfaction or will promptly return your money. Write today for free copy of Kresge's Katalog of Wonderful 5 & 10¢ Bargains. It will be ready to mail about Jan. 10th.

Address: Office Box 35B

S. S. KRESGE CO., Detroit, Mich.
The Original Parcel Post 5 and 10 Cent Store
With over 100 Branches

264 Page Book On Silos and Silage 10c

1913 copyrighted edition now ready. Most complete work on this subject published. Used as textbook by many Agricultural Colleges. Gives the facts about Modern Silage Methods—tells just what you want to know. 264 pages—indexed—over 45 illustrations, a vast amount of useful information boiled down for the practical farmer. Tells "How to Make Silage"—"How to Feed Silage"—"How to Build Silos"—"Silage System and Soil Fertility"—"Silage Crops in Semi-Arid Regions." All about "Summer Silos" and the Use of Silage in Beef Production. Ninth Edition now ready. Send for your copy at once. Enclose 10c in coin or postage stamps and mention this paper.

Silver Manufacturing Co., Salem, Ohio

KELLY DUPLEX GRINDING MILLS

Grind ear corn, shelled corn, oats, rye, wheat, barley, Kaffir corn, cotton seed, corn in shucks, sheaf oats, or any kind of grain coarse, medium or fine. The only mill in the world made with a double set of grinders or burrs.

SIX SIZES
Easily operated. Never choke. Fully guaranteed. Especially adapted for gasoline engines.

Write for catalog and any information desired.
DUPLEX MILL & MFG. CO.
Box 308 Springfield, Ohio

Free Catalogue

I X L THEM ALL.

QUALITY TELLS
BEST STEEL MILL. I X L
STRONGEST STEEL TOWER. No long story here. Send for Catalogue and prices of our

POWER AND PUMPING MILLS
PHELPS & BIGELOW WIND MILL CO.,
Kalamazoo, Mich.

PUMP GRIND SAW

Made for Hard Use.
Wood Mills are Best. Engines are Simple.
Feed Grinders, Saw Frames, Steel Tanks
CATALOGUES FREE
AGENTS WANTED
Perkins Wind Mill & Engine Co. Est. 1860
130 MAIN ST.
Mishawaka, Ind.

1½ H.P. GASOLINE \$24.75

Simple, durable, powerful. Carefully made to give satisfaction. 34 sizes and kinds. Shipped anywhere on trial. Fully guaranteed. Send for Big 48 page Catalog. It will help you to buy a better engine for less money.

OTTAWA MANUFACTURING CO., 518 King St., Ottawa, Kansas.

Star Feed Grinders

are guaranteed to do thorough and quick work. Strongly built and easy running. Sweep and power mills in many sizes and styles. Illustrated Booklet about feeding and grinding Free. Write today.

The Star Manufacturing Company
11 Depot St., New Lexington, Ohio

Dairy.

CONDUCTED BY COLON C. LILLIE.

SELL THE CORN AND BUY COTTON-SEED MEAL.

Please balance ration for Holstein cows. For roughage I have corn silage, timothy hay, mixed with a little clover, and oat straw. For feed have corn worth 78c a bu. Other feeds I have to buy. Oil meal at \$35 a ton; cottonseed at \$35; bran at \$26. Would it be better to sell the corn and buy other feeds?

A. W.

I think in this case where you have good corn silage and if you don't need the corn to feed to other stock, like hogs, horses, or poultry, then I would sell it any buy either cottonseed meal or wheat bran, gluten feed, or oil meal, because your dry roughage is very deficient in protein. Timothy hay and oat straw are both deficient in protein and your corn meal will not assist you in balancing this ration. Of course, you could feed some corn meal if you choose. For instance, you can mix corn meal with wheat bran half and half by weight. That makes a very good ration to feed providing you will feed in addition to it about two pounds of cottonseed meal a day or two pounds of oil meal, or about three pounds of gluten feed. Then feed enough of the corn meal and the wheat bran to make a pound of grain for every four pounds of milk, or three-fourths of a pound of grain per day for every pound of butter-fat that the cows produce in a week.

SCALDING THE GRAIN RATION.

I am a reader of the Michigan Farmer and would like to know the best grain ration for my dairy cows. They are all grade Durhams. I am now feeding oats and barley ground together. I give about three quarts to each cow after it has been scalded, to which is added about two pounds of oil meal. Is that a good grain ration? I feed silage morning and night and mixed hay and cornstalks and wheat straw for roughage. Is it better to feed chop stuff dry or scald it; also is whole oats good for young calves?

J. McT.

I don't think you will get any better results by scalding the grain ration than you will by feeding it dry. Years ago very many people had an idea that the cows should be slopped; that is, the bran or other grain should be mixed with water and fed in a wet condition, but that idea has been tried out at experiment stations where careful records were kept and it was proven that it never paid to wet the grain for cows. If cows have access to water and can drink when they wish they can get all the water they want. As a matter of fact, it is better for cows to eat their grain rather slowly so as to give proper mastication, just the same as it is for a person, and if you feed sloppy grain they may swallow it without properly masticating it.

Your grain ration of oats and barley, together with oil meal, is a good ration to balance up the roughage. I should say three pounds of oil meal a day would be sufficient, and then feed enough of your ground oats and barley to make a pound of grain for every three or four pounds of milk, or a pound of grain per day for every pound of butter-fat which each cow produces in a week. This, of course, is quite liberal feeding of grain, but if you have good dairy cows it will be profitable. If you haven't got good dairy cows you must feed accordingly. I would keep track of the yield of the cow and the cost of the ration and if the cows wouldn't pay for as liberal feeding as this I would cut this down to a point where the net profits are largest.

ENSILAGE AND SHREDDED CORN STOVER FOR ROUGHAGE.

I have ensilage but only shredded corn fodder for roughage. Have corn and oats for grain. I have been feeding about one-third cottonseed meal with this, but do not think I am getting the results I should. How could this be improved?

V. E. G.

Corn stover alone as a roughage does not furnish sufficient variety for a cow to do her best. If you haven't anything else and have corn silage as a succulent food you can do pretty well if you feed liberally of grain, but your grain ration will cost you more to get your cows to do well than it would if you had clover or alfalfa hay to furnish a variety in the roughage and also more protein. Corn and oats and cottonseed meal will make a very good ration indeed with corn

silage and the shredded stover. But your roughage is so deficient in protein that I would want to feed oil meal as well as cottonseed meal, because I would not like to feed enough cottonseed meal to furnish a sufficient amount of protein for this ration. As I have said many times, I think two pounds of cottonseed meal a day is all one ought to feed. If I needed more concentrated feed rich in protein I would procure it in some other source. There is nothing better than oil meal. For instance you can feed two pounds a day of cottonseed meal on the ensilage in the morning and two pounds of oil meal at night. Then feed a sufficient amount of corn and oats so that you would allow each cow giving a full flow of milk a pound of grain for every four pounds of milk produced in a day, or three-fourths of a pound of grain for every pound of butter-fat which the cow produced in a week.

IS THE GRAIN RATION O. K.?

I am feeding for roughage cornstalks, clover hay and oat straw—cornstalks making up the larger portion of the bulky feed. For grain I use corn-and-cob meal, oats and wheat bran. Is this grain ration all right? If so in what proportions should the grains be mixed and how much should I feed each cow per day? If the grain ration can be improved tell me how? Are potatoes good for cows?

Newaygo Co.

O. M. F.

With mostly cornstalks for roughage I am of the opinion that you are not feeding a grain ration rich enough in protein and as the corn-and-cob meal makes the grain ration plenty bulky I would cut out the bran and substitute in its place gluten feed, or oil meal, or cottonseed meal. If you buy gluten feed you can mix your corn-and-cob meal and ground oats and gluten feed, equal parts, say 100 lbs. of each, together. Then feed a pound of this grain for every four pounds of milk which the cows produce in a day, or three-fourths of a pound of grain to every pound of butter-fat which the cows produce in a week. Bran, understand, is a good feed for cows, but it is not rich enough in protein so that you could balance up a roughage of mostly cornstalks without feeding large quantities of it.

Potatoes are a very good feed indeed, for dairy cows, and especially where they have no other succulent food in the ration. When potatoes get down to 25 cents a bushel, don't sell them, but feed them to the cows. The small unsalable potatoes should always be used, and not thrown away. Cook them for the hogs or hens or feed them to the cows. Potatoes are worth just about as much as other roots for a succulency in the ration. You could begin and feed only a small amount at first and gradually increase the amount so that you would feed a peck a day to each cow, and with good results. You would get more value out of the dry food in the ration on account of the succulency in the potatoes. Usually, however, potatoes are too valuable to feed to cows and one can get the succulency in the food much cheaper in corn silage than he can in potatoes.

CORN FODDER AND LINSEED MEAL FOR COWS.

I would like your advice on my ration for milch cows. Have drill corn with some corn in, cornstalks and oat straw for roughage. Am feeding cob meal and ground oats, equal parts, also linseed meal. What else do I need for a balanced ration? Have no clover hay.

Saginaw Co.

R. H. B.

The feeds mentioned will make a balanced ration. As long as you have no clover hay and all of your roughage is dry and somewhat deficient in protein it will be necessary to feed them pretty liberally of the linseed meal and less of the corn cob meal and ground oats in order to balance up the ration and make it more economical. I suggest that you feed the corn fodder and cornstalks liberally, do not compel the cows to eat them all up clean, and then start in by feeding about three pounds of the oil meal per day and a sufficient amount of the corn-and-cob meal and ground oats to make a pound of grain to every four pounds of milk, or three-fourths of a pound of grain to every pound of butter-fat produced in a week. Linseed meal is a splendid grain ration to feed with the roughage ration which you have. In this particular ration I think it is much better than cottonseed meal. If you had corn silage and clover hay, both of which are a little bit laxative then cottonseed meal would work all right, but with all of these dry feeds that are rather rich in carbohydrates the linseed meal is a splendid food, because it is slightly laxative in its action, and keeps the cows in good healthy condition.



The Old Way Was a Good Way

All the grain came out when the straw was beaten with a pitchfork. We have built the same principle into the Red River Special Thresher. The Red River Special beats it out.

Hire a Red River Special And Save Your Thresh Bill

William Marsh, and six other farmers of Langdon, North Dakota, say: "It beats all the grain out of the straw and saves time and thresh bills for the farmer." Insist upon having a Red River Special. Your thresherman will be glad to get this machine if you tell him you want it to do your work. You have the privilege of specifying the machine. It's your grain. Look for a man who owns or will buy a Red River Special—the only thresher that beats out the grain. Write us for "Thresher Facts."

Nichols & Shepard Company
(In continuous business since 1848)
Builders of Threshers, Wind Stackers, Feeders, Steam Engines and Oil-Gas Tractors
Battle Creek, Michigan

ZYRO

TRADE MARK
GALVANIZED ANTI-CORROSION
No-Co-Ro METAL
SILOS
Stand the Test

Their practical construction stands for lasting service. Made of NO-CO-RO Metal—an exceptionally pure galvanized iron. Perfectly fitting doors make the "ZYRO" Silo Absolutely Air-Tight. It cannot crack, shrink or collapse—is practically trouble-proof. Many unique and exclusive features put the "ZYRO" Silo in a class of its own. Write today for FREE Book of Facts of Metal Silo. Tells all about "ZYRO" Silos and shows them "on duty" with many prominent farmers and dairymen. If you think of building a silo, study the "ZYRO" advantages. Write for helpful catalog today.

The Canton Culvert Co., Box 120 Canton, Ohio

A Cheap Roof

Exceptional quality makes "Dex" galvanized Metal the cheapest roofing made. The man who puts up Dickelman Extra Galvanized Roofing never takes it down. Its easy handling, high standard of quality and extremely long life makes it the cheapest roof known.

BEATS WOOD OR SLATE
lasts longer and looks better. Fire and Lightning Proof. You buy a life-time's satisfaction with "Dex" Roofing. Our 15 year guarantee stands for complete roof insurance.

FREE "The Roof of Quality." Tells all about our Metal Shingles, Corrugated, V Grip and Roll Roofing, Silo Roofs and other specialties. Write for it today.

Dickelman Roofing Co., Dept. 130, Forest, O.

BOWSHER

Saves 15% to 20% of Feed
Keep Stock Healthier. Crush ear corn (with or without shucks) and grind all kinds of small grain. 10 sizes 2 to 25 H. P. Conical shaped grinders—different from all others.

Lightest Running Feed Mills
Handy to operate. Ask why; and state size of your engine. We also make Sweep Grinders.

FREE A folder on Values of Feeds and Manures.

D. N. P. BOWSHER CO.
South Bend, Ind.

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

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

DIFFERENT BRANDS OF COTTON-SEED MEAL.

Will you please make us a balanced ration from the following feeds for grade Holsteins and grade Jersey cows? We can get one brand at \$33 per ton and another brand at \$28; middlings \$28; gluten feed at \$28.45; bran at \$26. We have ensilage, millet, mixed hay and bean pods to feed for roughage. Our cows are from three to eight years old and weigh from 1,000 to 1,400 lbs. We are getting \$4.80 per cwt. at Jackson for our milk. Washtenaw Co. I. B.

I think it would pay best to buy the highest grade of cottonseed meal. The highest grade is probably worth more than the difference in price between the extreme grades. The lower grade has probably been allowed to get wet, or it may have been musty before it was ground, or perhaps it was piled up outdoors and had heated. Low grade cottonseed meal is usually used as a source of nitrogen in fertilizer, but sometimes they try to work in some of the low grade meal for feed. However, nothing but prime cottonseed meal should be purchased for feeding.

I would suggest that you feed hay once a day, giving the cows all they will eat without unnecessary waste. Then feed the millet and bean pods on alternate days—one day you feed millet for one feed and the next day you feed bean pods once. If the millet was cut at the proper time and was nicely cured it is just about as good as hay and cattle ought to eat it up quite closely, but with the bean pods we would not expect the cows to eat all of the stems. Yet if the beans were pulled before they got dead ripe, grown on sandy land where dirt does not stick to them, and put into the barn or under cover before they got wet, if they have been harvested under these conditions they are very nearly as good as hay, and cows will relish them.

The roughage part of the ration as well as the grain should be fed with as little loss as possible. But if we have poor roughage we must not expect the cows will eat it up as clean as they would good roughage. And, too, a grain ration consisting of feeds that are all rich in protein would provide more protein than is necessary which would be wasteful. For instance, if I fed cottonseed meal, then, instead of feeding gluten or oil meal, or any other high-priced nitrogenous food, I would purchase corn meal or ground oats and mix them with wheat bran. One can mix the wheat bran and corn meal equal parts by weight, or if he prefers, mix ground oats and bran equal parts by weight. Then feed each cow two pounds of the cottonseed meal per day and a sufficient amount of the other grains to make a pound of grain for every three or four pounds of milk the cow gives a day; or three-fourths of a pound of grain per day for every pound of butter-fat the cow produces in a week. Cottonseed meal is such a concentrated food that I prefer to feed it alone so that I know just how much each cow gets, rather than to mix it with the bran and corn meal. If the mixing is not thoroughly done one might feed too much or too little of the concentrated ration. It would give more variety to the ration if one purchased oil meal and mix that half-and-half with cottonseed meal; or, he could feed cottonseed meal in the morning and oil meal at night; or feed cottonseed meal for two or three days and then change to oil meal. Without any succulent food in the ration oil meal probably will give a little better results than cottonseed meal, that is, it will benefit the general health of the cows more because cottonseed meal is somewhat constipating while oil meal is a little laxative.

BUCKWHEAT FLOUR FOR COWS.

I have a quantity of buckwheat flour that is gritty. Will it make good feed for milch cows, and if so in what proportion should it be fed? I expect to mix it with ground corn and oats, equal parts by measure. My roughage is corn ensilage, corn fodder and clover hay. Will it make a balanced ration? How much does the whole berry contain? What is the flour worth per cwt. as a feed for milch cows? Michigan. C. N. S.

Buckwheat grain, or buckwheat meal, that is, the whole buckwheat ground, contains 8.1 per cent protein; buckwheat flour contains 5.9 per cent; buckwheat middlings 22.7 per cent; buckwheat bran 5.9 per cent; buckwheat feed, which is all of the buckwheat with the exception of the flour—that is, the middlings, the bran and the hull together—15.6 per cent; buckwheat hulls, 1.2 per cent protein. The biggest share of the hulls is indigestible, being crude fiber. From this analysis you

can readily see that a grain ration consisting of corn and oats and buckwheat flour equal parts would not balance a ration of silage, clover hay, and corn fodder. Buckwheat flour isn't as rich in protein as either the corn or the oats, and you would have to feed a liberal quantity of oil meal or cottonseed meal or gluten feed to make this grain ration sufficiently rich in protein to balance up your roughage.

WHEAT MIDDINGS FOR COWS.

I am milking four cows and have corn stalks and bran straw for rough feed. For grain I have ground corn and cob meal. What other grain should I feed? Do you recommend wheat middlings to produce milk or would gluten be better? Otsego Co. F. A. A.

Wheat middlings are just about as rich in protein as wheat bran. They have a nutritive ratio of about 1 to 4, that is, one part digestible protein to four parts digestible carbohydrates. They therefore would be a very good feed to use in connection with your roughage ration. The only trouble is that there is such a demand for wheat middlings for feeding various animals that they are usually pretty high in price. You could mix the wheat middlings with your corn-and-cob meal equal parts by weight and then feed some gluten feed besides, because your grain ration would not be rich enough in protein to balance up your roughage. Or you could purchase cottonseed meal which probably will give you a pound of digestible protein cheaper than any other food on the market. Say, feed two pounds of cottonseed meal per day per cow and then feed a sufficient amount of the corn-and-cob meal and wheat middlings to give you one pound of grain to every three or four pounds of milk, or three-fourths of a pound of grain per day for every pound of butter-fat which your cows produce in a week. You could leave out the wheat middlings entirely if you wanted to and feed the corn-and-cob meal and then feed gluten feed, or oil meal, or cottonseed meal or something of that sort in sufficient quantities to give your cows enough protein to produce maximum yields.

Of course, it must be understood in feeding dairy cows that all cows are not of the same capacity, that you can feed some cows more than you can others and get your pay for the feed. The feeder must always use his own judgment as to whether he feeds all cows alike or whether he feeds one cow more than another, that is, whether he feeds all cows according to the rule, or whether he varies.

DAIRY VS. BEEF COWS AND POTATOES.

I attended a meeting of the Potato Growers' Association that was recently organized in Grand Rapids, where there were government experts and state experts talking about potatoes. It is a good crop to talk about. It is one of the great crops of Michigan and always will be. Any information, any enthusiasm, that we can get upon the potato crop is worth while. These expert potato growers, everyone of them, put stress upon the fact that they need plant food, that old soils that had been farmed for a long time did not grow big crops of potatoes. One of the principal speakers raises beef cattle so that he can have the manure to grow potatoes with. He raises beef cattle and frankly admits that the reason he does it is because he does not like to milk. He has some cheap pasture lands and he allows the calves to suckle the cows. All he gets for feeding the cow a year is simply the value of the calf. Now he can probably make enough out of the potato crop so that he can afford to do this.

But he is not getting as much out of his cow as he might if he had a beef cow and would milk her, because she will bring in an actual profit and raise a calf besides. It might pay him to even buy dairy cows and breed them to beef bulls. The calves would probably be better type of beef animals. He could then sell all the calves, both heifers and bulls, for beef. Should anything go wrong with a cow, instead of trying to replace that cow on his own farm he could go outside and buy another dairy cow and breed her to a beef sire. But I am of the opinion that if he would plan to milk, that he could take dairy-bred animals and use the surplus steers and the heifers to fatten and sell, that he make more out of them than he could out of a beef breed under circumstances. He could also furnish employment for more help in the winter time and, in all, make a larger business.



The Watch Tower of Prosperity

INDIANA SILO

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

INDIANA SILO

is the easiest silo to erect and keep in order. The mechanical features found only on the INDIANA SILO make it the best silo to be had. Dollar for dollar it gives the greatest services of all silos and if used according to our instructions it will last a lifetime. It increases production; it lessens labor and doubles profits. It is not an experiment. It

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

is not sold on promises but on the strength of its own past performances. More INDIANA SILOS are in use on American stock farms than of any other make.

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

The INDIANA SILO is not affected by the settling or cracking of foundation; there is no danger of cracked or bursted walls. Wood is a non-conductor and no loss results through improper curing through lack of heat or absorption of the juices.

The present high price of feed stuff and of live stock makes it imperative that the farmers of America conserve the wealth which their acres produce.

THE INDIANA SILO CO.

582 Union Bldg., Anderson, Ind. 582 Silo Bldg., Kansas City, Mo.
582 Indiana Bldg., Des Moines, Iowa
INDIANA SILO CO. of Texas, 582 Live Stock Exchange Bldg., Fort Worth, Texas

\$15⁹⁵ AND UPWARD

SENT ON TRIAL

AMERICAN CREAM SEPARATOR

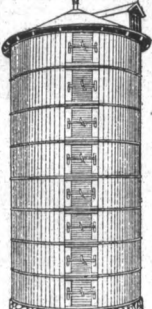
Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture,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



Our Twenty-Year Guarantee Protects You

Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from Western points. Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address,

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



Get More Money

for your crop, by installing a

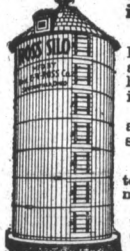
NAPPANEE SILO

Let us tell you about its many superior features.

Work and material fully GUARANTEED.

AGENTS WANTED.

Address the manufacturers
NAPPANEE LBR. & MFG. CO.
315 Madison Street,
NAPPANEE, INDIANA



REASONS why the ROSS SILO is the BEST

We use Guaranteed Long Leaf Yellow Pine that will last longer than any other wood, except cypress. The highest possible grade of Oregon Fir is used.

The Ross Silo has features that are exclusive, and absolutely necessary to make a good silo.

FULLY GUARANTEED to be as represented. Our 63 years of manufacturing experience is valuable to you. FREE catalog explains all. Write for it today. Agents Wanted.

The E. W. Ross Co., Box 14 Springfield, O.

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



GLAZED TILE SILO

From Kiln To Farm

RED CEDAR doors with galv'd frame, galv'd peaked hoops, continuous opening, safe ladder. Money saved in early-in-the-year purchase, and right through including installation. Catalog and facts from Cement and Tile Dept. J

KALAMAZOO TANK & SILO CO., Kalamazoo, Mich.

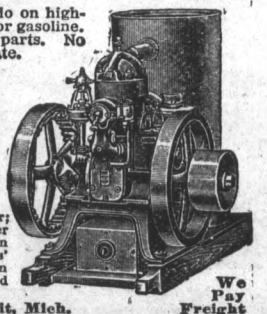
Run on Kerosene — 6c for 10 Hours

Ellis Engines develop more power on cheap lamp oil than other engines do on high-priced gasoline. Will also operate successfully on distillate, petrol, alcohol or gasoline. Strongest, simplest, most powerful engines made; only three working parts. No cranking, no excessive weight, no carbonizing, less vibration, easy to operate.

ELLIS ENGINES

Have patent throttle, giving three engines in one; force-feed oiler; automobile type muffler; ball-bearing governor adjustable while running and other exclusive features. Run either way—reversible while running. Best engines for farm work, electric lighting, irrigation and light tractors. MAKE US PROVE IT—Every engine sent on 30 days approval with freight paid. 10-year Guarantee. Special factory prices now quoted on all sizes, single and double cylinder, mean a big saving to you. Thousands of satisfied users. Write for big new 1914 catalog and special discount prices.

ELLIS ENGINE CO., 110 Mullett Street, Detroit, Mich.



We Pay Freight

THE CLIPPER EXCELS

THE MOST PROFITABLE WORK THAT CAN BE DONE ON THE FARM

Is to select and clean all seeds and grains for sowing. This will improve the quality of the seed and bring it up to the highest standard. It will improve the quality, increase the yield and free your land from foul weeds. For this reason you should reclean all clover and other seeds that you buy before sowing. This is just as important as it is to clean your seed, grain and corn from your granary before sowing.

Every farmer knows that Large, Plump, Heavy kernels of seed, grain or corn will produce more and stronger plants, which will increase the yield and improve the quality. Admitting that this will benefit your crop only 10%, what would be your gain for one year? To say nothing of ridding your land of foul weeds, etc.

The U. S. Agricultural Dept., State Experimental Stations and all Prominent Seed Houses use the "CLIPPER" Cleaners for doing just this kind of work and recommend them.

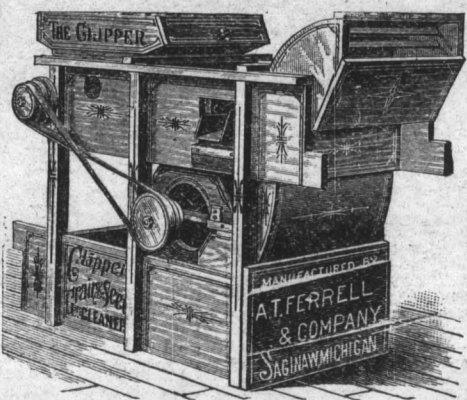
BECAUSE their experience has proven The "CLIPPER" to be the Most Successful Machine for Grading and Cleaning All Seeds and Grains.

This machine will do the same high-grade work as our large \$100 machines.

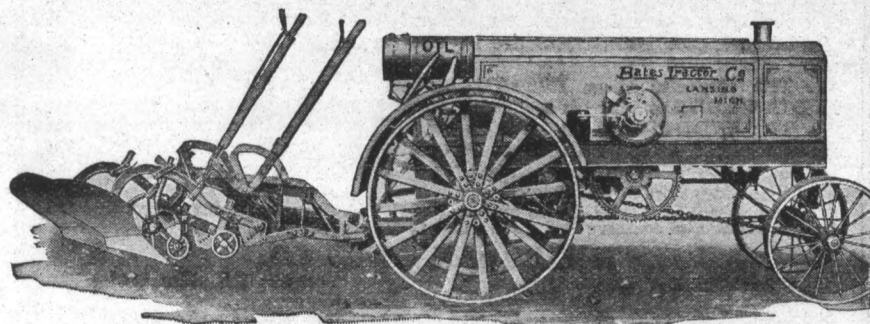
We Guarantee Satisfaction. Prepay the Freight. Give thirty Days' Free Trial. You To Be The Sole Judge.

Three factors stand out prominently in farm progress—the soil, the working of same and the seed; none of which can be neglected, if bigger and better crops are aimed at. Distributing points in every grain growing state. Shall we send you our catalog and terms?

A. T. FERRELL & COMPANY, Saginaw, Mich.



The Bates All Steel Oil Tractor and Plows

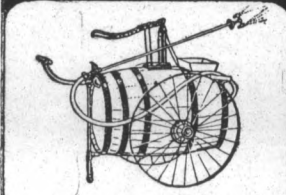


Will put your farm on a paying basis. It will help you make a profit rather than sustain a loss. It operates on the *cheapest grade KEROSENE*. One man will do the work of four. You will get your plowing, harrowing and discing done quicker and better. **TWO SIZES**—16 H. P.—pulls two plows. 25 H. P.—pulls four plows. Plows are connected directly to the draw bar of the engine. You can back them into the very corners of the field and plow every foot of land. Look at the cut. *Outfit turns square corners.* Man stands in cab and handles plows easily. Send us only a postal and tell us size of farm and which size you are interested in.

BATES TRACTOR COMPANY,

105 Bates Street, Lansing, Mich.

YOU MR. FARMER



need the Spramotor to realize from your farm or orchard, all that it can make for you—doing without it is costly—THOUSANDS OF DOLLARS are lost yearly through ravages of bugs—pests—germs and blight upon plant life.

The increased yield in field, garden and orchard crops at a cost of a few cents an Acre for spraying will return DOLLARS in extra profits. You can pay for your equipment and BANK MONEY in one season from the increased yield you will get by using the Spramotor. After caring for your own crops

MAKE BIG MONEY

spraying those of your neighbors and friends. The hand power Spramotor sprays an acre of potatoes effectively in 30 minutes—if done three times in growing season often more than doubles the yield.

The President of the Michigan State Horticultural Society says, "I have never seen so perfect an equipment for spraying."

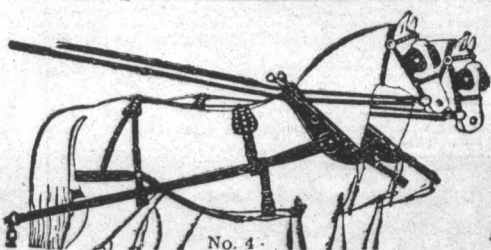
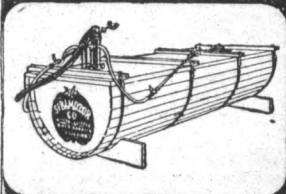
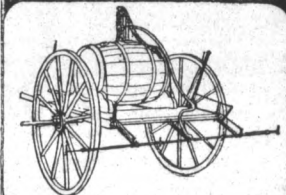
G. M. Maurer, New York, writes, "The Spramotor I bought of you last season was put in test with others and PROVEN TO BE THE BEST in every way. In 2½ hours the Spramotor did better and as much work as could be done in 11 hours with the next best."

FARMING

without this dividend paying farm efficiency machine is like a carpenter trying to build a good house without the necessary tools. There is a Spramotor built expressly for your needs. Write for free catalog and proofs of what it can do for you.

SPRAMOTOR CO.

102 Erie St., Buffalo, N. Y. 152 King St., London, Ont.



HARNESS HORSE COLLARS

Ask Your dealer for the Label.

Made and Warranted by

ARMSTRONG & GRAHAM

WHOLESALE ONLY.

DETROIT.

ESTABLISHED 1880.

HOW MUCH SILAGE AND GRAIN TO FEED—SILAGE FOR YOUNG HEIFERS.

My cows are nearly all Holsteins. I have good corn silage, timothy hay with a little clover mixed in with it, shredded corn fodder and good oat straw in the barn. For grain I feed corn and oats and cottonseed meal. I buy the last mentioned feed. Give quantities of silage, cottonseed meal, corn and oats I should feed to each cow. I feed cottonseed meal separately on silage. Is that proper? Also have 20 head of spring heifer calves. How should these be fed? Would silage be all right for them?

Lenawee Co.

O. L. O.

The best rule you can go by in feeding silage to dairy cows, growing cattle, or sheep, is to feed them twice a day all they will eat up clean. It is the cheapest feed and the best feed you can get. The more silage you can get them to eat the less you have got to feed them of something else in the form of roughage, and the more money you will get out of your animals, at least that is my experience. So I would not limit them to any particular amount, but I would simply feed them what they will eat up clean with no wasting. Cows or animals of any kind can't do their best in the production of milk or the making of growth on a purely bulky ration and consequently it is economical to feed some grain in connection with silage, or any roughage for that matter. I don't think anybody can improve very much upon your system of feeding—feed all the silage they will eat twice a day, all the hay they will eat up clean once a day, and the other roughage once a day. But the poorest part of the roughage, like corn fodder and straw, should be fed rather liberally so as to give them a chance to pick out the best of it.

Then corn and oats for the basis of the grain ration is a splendid food. You can get nothing better. These two grains are not rich enough in protein to balance up a ration of corn silage and mixed hay, and your cottonseed meal fills the bill the best, probably, of any grain that you could purchase. Now, as to the amount of cottonseed meal, I am not prepared to say how much you should feed. Your cows are undoubtedly large cows and heavy producers and they certainly want more roughage and more grain than small cows. In fact, we should feed a ration in proportion to the size of the cow. If your cows will weigh 1400 or 1500 pounds live weight then they should be allowed more feed than cows weighing 1000 lbs.

I would begin the grain ration by feeding two pounds of cottonseed meal to each cow per day and enough of the corn and oats to make a pound of grain for every four pounds of milk. After the cows are used to this ration, to the best of them I would slowly increase the ration, until I found their capacity. You can increase the cottonseed meal and the other grain ration as well. Gradually increase as long as you think the cows will pay for the additional feed. If you will weigh and test your milk you can easily ascertain when that limit is reached. If you want to make records of course you pay no attention to the cost, but if you are in the business for the dollars and cents there is in it, then there is no use in producing anything unless it is produced economically, that is, unless it is produced at a profit, and so the amount of grain fed ought to be governed by the profit which the cow makes.

There is no better feed for growing heifers than silage. You can feed it with the assurance that you can get nothing better. These young heifers, however, like cows, will do better and you can feed more economically, if you will give them a little grain in connection with the roughage. Of course, they ought to have one feed of hay a day also, but I would give these growing heifers very little cottonseed meal, a handful would do them good, however.

FORTY POUNDS OF SILAGE PER DAY.

Would you give me the best and cheapest grain ration to buy for milch cows. I have silage with plenty of corn in it, some cornstalks and alsike hay which got a little ripe. This is my first year with the silo. I have been feeding some oil meal and bran. Is 40 lbs. of silage per day plenty for the average cow?

Newaygo Co.

P. C.

Forty pounds of silage per day is a good liberal feed for ordinary cows. Perhaps it is better to state it this way, that 40 pounds of silage for a 1000-lb. cow is very liberal feed. Very few cows weighing 1000 lbs. will eat 40 lbs. of silage if they have good clover hay as a part of the roughage and if they are fed fairly liberally with grain. Where they have a good variety in the ration with the

proper amount of concentrates in the ration you will find that 30 lbs. per day per 1000-lb. cow will be about all they will eat. On the other hand, if you have large cows that weigh 1200 and 1500 lbs., then 40 lbs. of corn silage would not be so liberal a ration. This must be taken into consideration. Really the only rule to follow is to give the cow all the corn silage she will eat up clean twice a day, no matter whether it is 25 lbs. or 40 or 50 lbs. It is the cheapest food you can get.

Bran and oil meal are splendid feeds to feed in connection with corn silage and corn stover and alsike hay for roughage. I think in this case you could use corn meal or ground oats and not feed quite so much bran and oil meal and get just as good results, and it will make the ration a little bit cheaper. If you feed a pound of this grain to every four pounds of milk you will have plenty if not more than is necessary of protein in the ration. If you mix in another food not quite so rich in protein it will cost you less money and give you just as good results.

WILL IT PAY TO FEED BEET PULP?

As I wish some information from good authority, am writing to The Farmer. I would like to know if it will pay to feed beet pulp at \$21 a ton? The beet supply is limited and have no silage. Would it pay to feed the beet pulp as a succulent food? If so, how many pounds should each cow receive daily?

Sanilac Co.

W. J. W.

I am of the opinion where one has no corn silage or roots of any kind like beets or rutabagas or turnips to furnish a succulent food in the ration, that it would pay to feed dried beet pulp, and I would recommend wetting it five or six hours before feeding. It will absorb a lot of water and swell up so that it is a good substitute for a succulent food. Where beet pulp is used in this way to furnish part of the grain ration as well as a succulent part of the ration it is a difficult matter to say how much one can afford to feed. I would say that probably you could afford to feed five pounds of the dried pulp to each cow. That is, if you had 20 cows feed them 100 lbs. of the dried beet pulp twice a day. Take the 100 lbs. of pulp and wet it five or six hours before feeding, and then divide it up equally, or nearly so among the 20 cows. Besides this you should feed a dry roughage, hay and straw, feeding as much as the animals will eat without wasting. Then feed a grain ration containing a sufficient amount of protein to balance up the beet pulp and the other roughage so as to give a nutritive ratio of about one to seven or one to six. You can figure beet pulp as containing just about the same per cent of protein as corn meal. If you will do this I think you will obtain good results from the beet pulp. But where one has corn silage and plenty of it, or has plenty of roots, there is not the necessity for buying beet pulp.

SOY BEAN STRAW FOR COWS.

Have read in Michigan Farmer at different times the balanced ration for cows but it seems they do not feed in them the roughage that I feed. I have corn fodder, white bean and soy bean straw, also ensilage. Would you kindly tell me what grain would you feed for best results? I have quite a lot of ground rye. Would you advise feeding any to cows?

Kalkaska Co.

L. C.

Soy bean straw is as rich in protein as clover hay. Ordinary bean straw is also about as rich in protein as clover hay. Therefore you can figure, so far as balancing a ration is concerned, that you are feeding corn stover, or cornstalks, clover hay and corn silage. In other words, you could suit the grain ration to a roughage containing clover hay and the other coarse feeds. Now corn and cats ground together with two pounds of cottonseed meal or oil meal, would make a splendid ration. Ground rye, or rye meal, is not considered a very good ration for dairy cows, because cows don't like it very well. That is the principal reason. If you have hogs and can use the ground rye for hogs I would prefer to do it rather than to feed it to the cows, but on the other hand, if you have the rye meal and want to convert it into money it will do no harm to feed it to the cows. For instance, if you would feed rye meal and the ground oats mixed together half and half, it would make a good ration. Or you could feed corn, oats and rye in equal parts, and then feed about two pounds a day of cottonseed meal or oil meal. This will balance up your ration and make a splendid grain feed.

Practical Science.

THE CITY MILK SUPPLY.

BY FLOYD W. ROBISON.
The Town and the City.

As we have shown, the problem of supplying pure milk to the city of Detroit is considerably different than supplying milk to smaller towns, chiefly because of the complications of the transportation factor. To offset these complications in a measure the city distributing agents generally have better facilities for distributing the milk than does the milkman in the small town. But he does not have as good a product, everything else being equal, to start with as does the man in the small community.

The City Milk Inspectors.

As the country has become more thickly populated the cities have become larger, and more attention has been paid to the problem of dairying. Larger units have been building and with the building of the larger units much greater attention is being paid to the factors of sanitation. A considerable amount of bad feeling has been engendered between city health officers, city milk inspectors and the producers of milk in the country. As an incident to the marketing of milk in the city the city ordinances have invested with boards of health the power to inspect the premises of the dairyman who is furnishing milk to the city. Of course, it must be apparent to any citizen that the legislative body of the city of Detroit, for instance, the common council, has no authority whatever to prescribe rules or regulations which will be binding on the dairyman living outside of the jurisdiction of the city of Detroit, but without question, the city council has the authority to say what grade and quality of milk may be marketed in the city and if as an incident to the acceptance of a certain milk the council requests that the dairyman furnishing that milk must permit the city milk inspector to examine his premises where this commodity is produced, it seems perfectly reasonable to us that this condition is not only legal but is a just and wise provision of law. This has caused at times a great deal of enmity, particularly between the city health officers and the producer in the country. In our judgment a good deal of this ill feeling is uncalled for, if not practically all of it.

Farmers Don't Like to be Ordered.

We know full well that inspectors are all too prone to look at the authoritative position which they hold and wield their power in an arbitrary manner when approaching the farmer. It seems to us to be an inborn trait of the American people to resent the statement of, or even the inference of, any man that he shall be compelled to do, or prevented from doing any one thing which is not a crime. Naturally enough, therefore, when a milk inspector goes to a dairyman and tells him that he must put in so many windrows in his barn; that he must provide, perhaps, certain styles of floor in his stable; or that he should do one of many things which the farmer has heretofore considered unnecessary, we say, it is not to be wondered at that the dairyman resents such interference with his personal privileges. We think, we have been as severe in the requirements which we have imposed on dairymen and the restrictions which we have placed around the sale of this commodity, as any official; and yet it has been our distinct pleasure to know that we have not met any serious difficulty throughout the state in enforcing the provisions of the state and city dairy laws and ordinances. This clearly indicates to us, therefore, that most of the difficulty entailed may be avoided by the exercise of good common sense on the part of the milk inspectors.

Tell Him the Truth but Tell It Courteously.

There is no need of mincing matters with the dairyman that certain definite requirements must be lived up to if he is to be permitted to market his milk in the city, and with a certain low percentage of exceptions we feel there will be no difficulty in convincing the dairyman that this is a just and wise provision, nor if the way is pointed out to him will there be great difficulty in securing his co-operation. But, as we stated at the beginning of this series of articles, the most of the difficulties arise through a lack of understanding between the con-

sumer and the official in the city on the one hand, and the producer in the country, on the other. The consumer does not understand at all, or appreciate, we may say, in the least degree the problem which the supplying of milk to a city involves. At the same time the official invested with the enforcement of the city ordinance is the hub of quite an important machine through which he must work to secure results, and his inspectors, naturally enough, perhaps, do not feel that they have time to consider sympathetically the dairyman's phase of the proposition. They must make many inspections to get over their territory. It is, however, decidedly better for an inspector to make one-half the number of inspections that may be made and go from these farmers with a feeling that the co-operation of the farmer has been secured than to leave him unsettled, without any definite understanding of what he is going to do to accomplish the results which the inspector tells him must be accomplished before his product may be admitted to the city market.

Better Milk Inspectors Needed.

Manifestly the best solution of this matter is for the city health authorities to use greater discrimination in the selection of milk inspectors. We doubt if thoroughly competent milk inspectors will be selected by the prevailing methods of civil service examination. So much depends upon the individual factor that unless we are willing to permit an injury to be done to the producer we must secure milk inspectors who have ability enough to know what they are doing and secure the respect of the producer, and at the same time who have sufficient judgment and common sense not to antagonize him but to promote in his mind the spirit of fellowship and co-operation which is absolutely necessary to the working out of this great problem.

Between the Two Horns.

The distributor of milk in the city, it may be seen, in a way must bear the brunt of the dissatisfaction of both factions. The product which he sells which has been produced in the country cannot be marketed by him unless it conforms directly to the city ordinance. At the same time he, of all the factors concerned, knows most clearly how much this commodity, milk, is needed, and to secure the quality which is demanded by law and at the same time to secure the quantity which is demanded by the consumers of the city, is no small task. For he has the consumer demanding more milk of him, a demand which would tend to make him exert every energy he has to secure milk in any territory contiguous to the city; on the other hand, he has the city milk inspectors who are continually, by their methods of inspection, cutting down his supply of milk. This condition is going to produce a better quality of milk but the city naturally is going to pay a higher cost to get this milk.

The Distributor's Share of the Blame.

By no means does all of the blame for poor milk rest with the producer of milk. If he is delivering to the distributing agent at the railroad station, he is probably taking his cans home which have been cleaned and perhaps sterilized for him by the distributing agent. Very few dairymen have proper facilities for conveniently cleaning and sterilizing their cans and milk utensils. It is only in the larger dairy units that this matter is more properly taken care of.

Milk may be reasonably clean and free from large numbers of bacteria when poured from the milk pail into the can in which it is to be carried to the factory, but if that can has not been thoroughly cleaned at the station it may be the means of the gross contamination of the patron's milk. At certain seasons of the year, likewise, milk must be quite well surrounded by ice in order to prevent the rapid growth of bacteria. It may even reach the station at the desired temperature but if proper refrigerating facilities are not there provided; if it is allowed to remain on the station platform for an hour or so before the departure of the train; or if the train when it does arrive does not contain proper refrigerating facilities, the milk which may have been produced by the dairyman comparatively free from gross contamination, it may be seen, is in an entirely different condition when it reaches the city milk distributor.



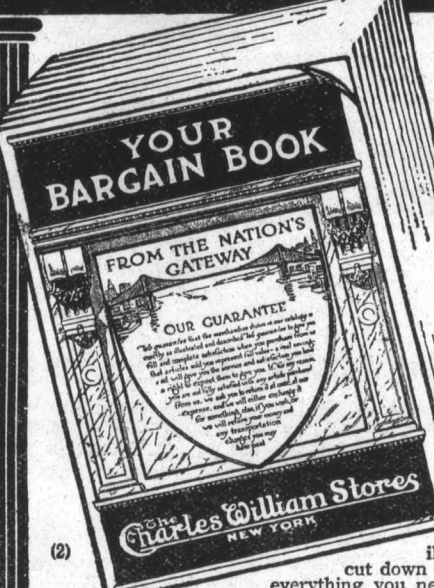
Charles William Stores

of NEW YORK

Will Save You Money

Every Store a Specialty Shop

A Place to Buy Everything



(2)

Big Catalog Now Ready

"YOUR BARGAIN BOOK" is the name of our great new catalog showing more than 125,000 different items of high quality merchandise. The Charles William Stores will be glad to send you this big money-saving book FREE, postage paid. It cannot fail to interest and please you. Think of SAVING 15c to 50c on every dollar you spend for wearing apparel—and everything else you need for the farm, workshop or home. Think of a book containing

1108 Pages of Bargains

all new goods—new styles in everything to wear—beautiful models. No soiled or shopworn item in any department—not a back number listed or offered.

SENT FREE We will send you this great book, finely illustrated, free of all cost. It will help you cut down your living expenses—enable you to buy everything you need at first hands—at just a trifle above the bare cost of manufacture. In addition to offering you an immense new stock to select from at money-saving prices—The Charles William Stores

Prepay Delivery Charges on Thousands of Items

We give our customers the benefit of many stores instead of one. Write for "YOUR BARGAIN BOOK" today and see just what you can save—take a look at the latest New York fashions—read about the great, new trading place—The Charles William Stores—and have the satisfaction of doing your own buying direct from New York without paying a middleman's profit.

Charles William Stores

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

Sow Your Clover Any Time

WIND OR NO WIND



A Better "Stand"

Save Half the Seed.

Cultivate Your Winter

Wheat and Increase the Yield

From Three to Eight Bushels per Acre

Many farmers report increased yields of Winter Wheat from 4 to 8 bushels per acre by the use of the Superior Alfalfa and Grass Seed Drill.

Not only did these farmers increase their yields of wheat AT NO COST WHATSOEVER, but THEY SAVED HALF THE CLOVER SEED and got better stands of clover than when broadcasting.

The Superior Alfalfa and Grass Seed Drill puts all the seed in the ground at an even depth. Discs cultivate the wheat at the same time. The angle of the discs is so slight that the wheat is not injured.

The Superior Force Feed Accurately Sows Crimson and Red Clover, White Clover, Alsike, Alfalfa, Clover and Timothy mixed, Red Top Fensy, Blue Grass, Millet, Flax and all other Grasses in widest range of quantities.

If you are going to sow Clover in your Winter Wheat, the Superior Alfalfa and Grass Seed Drill will show you a gain of about FOUR DOLLARS PER ACRE.

This Drill is invaluable in rejuvenating old Alfalfa Fields, Pastures and Meadows.

SEND FOR THE SUPERIOR ALFALFA DRILL FOLDER

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

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

The Michigan Farmer

Established 1843.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan.
TELEPHONE MAIN 4525.

NEW YORK OFFICE—41 Park Row.

CHICAGO OFFICE—604 Advertising Building.

CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.

M. J. LAWRENCE.....President
M. L. LAWRENCE.....Vice-President
E. H. HOUGHTON.....Sec. Treas.I. R. WATERBURY.....Associate
O. E. YOUNG.....Editors
BURT WERMUTH.....
F. A. WILKEN.....
ALTA LAWSON LITTELL.....

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

TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues.....\$1.00
Three years, 156 issues.....\$1.50
Five years, 260 issues.....\$2.50
All sent postpaid.Canadian subscriptions 50c a year extra for postage.
Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts checks and post office orders payable to, the Lawrence Publishing Co.

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

RATES OF ADVERTISING.

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) each insertion. No advt inserted for less than \$1.20 per insertion. No objectionable advertisements inserted at any price. Entered as second class matter at the Detroit, Michigan, postoffice. Copyright 1914.

DETROIT, JAN. 17, 1914.

CURRENT COMMENT.

The United States Department of Agriculture has made an estimate based upon reports of 35,000 correspondents that only 27 per cent of the tillable land of the United States is actually under cultivation. The entire United States, excluding foreign possessions, contains about 1,900,000,000 acres, of which area about 60 per cent, or 1,140,000,000 acres is estimated to be tillable. This estimate includes lands already under cultivation and such as may in the future be brought under cultivation by clearing, drainage and irrigation. An additional 361,000,000 acres, or 19 per cent of the total are estimated to be available for pasture and fruits, while 399,000,000 acres, or 21 per cent, is estimated to be of no use for agricultural purposes. The land in crops, according to the census of 1909 was 311,000,000 acres, which is about 16 per cent of the total land area, or 27 per cent of the estimated tillable area of the United States.

In the detailed estimates for the states, it is interesting to note that the percentages for Michigan are about even with the above estimates for the entire country. The total land area in Michigan is given at 37,000,000 acres, of which 84 per cent is estimated to be tillable, nine per cent non-tillable, but available for pasture and seven per cent of no value for agricultural purposes. The percentage of land area in crops according to the 1909 census was 22 per cent, while the figures for the percentage of the estimated total of tillable land which was in crops in 1909 are given as 27 per cent, or the same percentage as for the country as a whole. The estimated total of land which may in the future become tillable, as compared to that now under cultivation, is given as 3.8 acres for every acre now devoted to crops as compared to an estimate of 3.7 acres for each acre now devoted to crops in the country at large.

These figures should be reassuring to those who have prophesied that we were nearing the limit of agricultural production in this country. They are, of course, simply estimates, yet the average of estimates made by a large number of correspondents is likely to be somewhere near the truth as to actual conditions. It must be remembered, however, that in Michigan, as in the country at large, the lands which have been improved for agricultural purposes are either among the better of our agricultural lands, or those which were most easily and cheaply improved. Unquestionably, there are large areas of undeveloped agricultural lands in the state which will compare favorably with those already under cultivation, but the bulk of these will be developed at a somewhat higher cost, particularly where their improvement involves large drainage schemes, as compared with the cost of the development of our older agricultural lands. Also labor cost is now higher than was the case when the bulk of our older lands were developed.

That the future development of our agriculture will be sufficiently rapid to take care of the demands for home consumption, would appear to be well assured if the prices for agricultural products are maintained at a level which will make such development work profitable. Whether open competition in the production of foodstuffs with foreign countries where cheaper labor prevails will retard the development of these lands, remains to be seen. In any event, however, the making of a farm home upon the better class of undeveloped lands in Michigan would seem bound to be a profitable proposition, since the home-owning farmer is at least sure of a living, and the ultimate advance in land values will be such as to afford the pioneer in home development on the undeveloped lands a substantial profit, even though the apparent profit from his farming operations may seem to be small in the intervening years.

Our Washington correspondent is authority for the statement that the bill drafted by the United States Commission on Agricultural Credits, providing for a new system of farm credits, has been completed and submitted to President Wilson and the Senate and House banking and currency committees. It is stated that this bill is designed to supplement the new currency law, its salient features being as follows: Farm land banks to be created in the various states to supplement federal reserve system of the currency law; a commissioner of farm land banks to have general control as a federal official and federal fiscal agent to supervise the operations of each of these land mortgage banks, said banks to have federal charters like present national banks. These banks would issue debentures as their direct obligations, the proceeds of such debentures to be loaned to farmers on first mortgages, farmers' mortgages to bear a higher interest rate than the debentures, and the difference to constitute the profit of the new banks. These banks might be formed by private capitalists or on the non-profit seeking, co-operative basis, their securities to be exempt from taxation. Farmers would repay their loans through "amortization"—that is, in small fixed annual installments.

It is reported that considerable opposition to the measure will develop, particularly among certain senators and representatives who believe that the operation of the system should be left to the Department of Agriculture rather than to the Treasury Department. Further details of this proposed law will be presented as their discussion in Congress progresses.

As usual at this season of the year numerous complaints are heard regarding the depredations of hunters, especially in the vicinity of the larger cities and towns, from which many irresponsible and unsportsmanlike hunters swarm over the surrounding country each week end. At last country sentiment on this subject seems to be crystallizing into organized action in a few localities, which lends encouragement to the thought that better protection from this nuisance may be afforded to the farmers of the state in the not distant future.

A recent press report states that a committee appointed by the president of the Kalamazoo County Farm Bureau has reported in favor of asking for an amendment to the general game law of the state by the striking out of the provision which requires the posting of notices forbidding hunting on enclosed private premises in order to prevent such trespass, thus making the law itself sufficient notice, the investigations of the committee having brought information from many farmers that such notices were destroyed as fast as they were placed. It was decided to circulate a petition throughout the state embodying this idea, the same to be presented to the Legislature next year. The report also favored the enactment of a general gun and rod license law. The report was presented to a local Grange meeting, a majority of the members expressing themselves in favor of such legislation.

In one township of Tuscola county a society was recently organized known as the Farmers' Game Protective Association, and a vigilance committee has been appointed to suppress the depredations of irresponsible hunters. Farmers in this section of the state have been aroused to this action as a result of the destruction of fences, gates and other property by

this class of hunters. The organization will seek to punish offenders, protect game and make legitimate hunting more of a pleasure to themselves and to those hunters who have some regard for the rights of property owners.

This object embodies the general sentiment of the farmers of the state on the hunting proposition. Complaint against irresponsible hunters has been general and well-founded for many years, and the situation grows worse instead of better with the growing scarcity of wild game in the agricultural sections of the state. Organized effort will do more to mitigate the evil in a short time than general complaint and individual effort would in a generation. The farmers of other sections of the state should follow the lead in this direction, as by so doing they will have taken the first necessary step in the securing of adequate protection from the generally recognized hunting nuisance.

An interesting record of a year's operation of a Farm Profit vs. Land Values. Illinois farm is presented in the "Farm Management Monthly," published by the Department of Agriculture for circulation among the Farm Management field men, or County Agricultural Agents, as they are often designated in the north. This farm contained 213 acres of land valued at \$175 per acre, the total investment amounting to \$47,142.09 at the beginning of 1912, as shown by inventory record. The receipts for the year plus the increase in the inventory were \$16,181.93, while the disbursements for the year were \$11,730.44, leaving a net income for the farm of \$4,451.49. As stock feeding was followed on this farm, the investment at certain seasons of the year was much heavier than at the time of inventory, it being estimated that the total investment was above \$80,000 at certain periods of the year. Figuring interest on the average investment at \$4,188.28 left the labor income for the management of the farm only \$263.21. Thus it will be seen that on very high-priced land a large and apparently profitable business can be done without a high remuneration for the actual management and direction of the farm business by the owner, and such labor as he does himself on the farm which in this case was probably considerable because this represented a labor income of a father and son, and while there was an apparent profit in this year's business of nearly \$4,500, most of it was represented by interest on capital invested.

These records do not take into account the benefits received by the family from a home and living on the farm. When this fact is considered, the owner of this farm has little cause for complaint, and may be considered at least as successful as the average man, but this case serves to illustrate the relation of the farm land values to actual net profit in farming. Had the value of this land been \$75 per acre, instead of \$175, it would have reduced the interest on the investment figured at five per cent by \$1,065, leaving a very respectable labor income for the operation of the farm. This illustrates the advantage of making farm investments in a state like Michigan, where farm values are still comparatively low as compared with some of the adjacent states to the south. There is a far better opportunity to make an actual profit in farming above the interest on the capital invested and a reasonable labor income for the farmer and his family, while there is every prospect of making an ultimate profit on the increased value of the land, for there is no question but that land values in Michigan will increase so as to be more nearly on a par with land values in the states mentioned. This item of unearned increment has been a prominent factor in the accumulations of present day Michigan farmers and their pioneer forefathers, and there is every reason to believe that it will be a like factor in the accumulation of a competence by those who now invest in Michigan farm lands.

THE MAN WHO GETS AHEAD.

Modern farming, like modern manufacturing is on a highly competitive basis. We must keep up with the times to make a profit, and the man who makes the greatest profit is the man ahead of the times.

In this day no farmer could go back to hand labor, for his cost of production would be greater than his crop is worth. Many a good farmer keeps ahead of his neighbor by carefully reading the advertising in his farm paper.

HAPPENINGS OF THE WEEK.

National.

The strike situation in the copper country of Michigan remains unchanged. The visit of Governor Ferris last week resulted in an announcement that both parties were partly to blame for the existing conditions, and that it lay within the power of the leaders of the miners and the operators to settle the matter. Governor Ferris has submitted propositions for the settlement of the strike to the operators but has not yet received their reply. He also anticipates a report of the state labor commission about the middle of the week on the number of men now employed in the strike district. It appears that the federal department of labor is largely in sympathy with the attitude of the miners. The conditions of the striking miners has been made much less tolerable by the cold wave which swept over the district early in the week. Many calls for assistance were made, but it appears that there have been thus far ample supplies at hand to meet the demands.

The commission appointed by Federal Judge Aldrich to inquire into the sanity of Harry K. Thaw has reported to the court that they find Thaw free from mental ills claimed to have been present when he slew Stanford White, and the commission stated that they believed that society would be protected if the slayer were set free on bail.

The Michigan sanitary live stock commission has inaugurated an animal depuration plan looking toward the protection of breeders of this state and the public health. The Michigan law requires that every importation of live stock for breeding purposes be guaranteed, inspected and accompanied by a bona fide health certificate.

The twenty-fourth international convention of the United Mine Workers of America will convene in Indianapolis on January 20. It is announced that the leaders of the miners are working on a new scale of wages which they hope to have adopted by the operators. The present contract of the miners expires on March 31.

The board of officers selected by Secretary of War Daniels have reported their recommendations that every war ship should be equipped with one aeroplane; the use of dirigible balloons be instituted and the concentration of all naval aeronautical training work at Pensacola, Fla., effected.

An attempt will be made to have Congress investigate the charges that United States prisoners have been used by a medical college at Atlanta, Georgia, for clinical purposes, the prisoners being kept under anaesthetics many hours while demonstrations were made.

The Michigan State Grange through its legislative committee is seeking signatures of 55,000 voters for the purpose of getting laws passed providing for a half-cent tonnage tax on copper and the introduction of the Torrens system of land transfer and an amendment to the constitution providing for the recall of judges.

Two men were hurt by an explosion while testing boilers at Cadillac, Jan. 11. Unknown to the men the boilers had run dry while there was a considerable head of steam, which caused the accident.

George W. Peckham, nationally known as an educator, author and entomologist died in his home in Milwaukee, Wis., last Sunday at the age of 68 years.

Bandits looted a mail car on the Southern Pacific Railroad near Los Angeles, Cal., last Saturday night.

Foreign.

The Mexican rebels have succeeded in gaining control of northern Mexico. This was accomplished last week when the rebels under General Villa captured Ojinaga, a stronghold occupied by federal troops for several weeks past and located opposite Presidio, Texas. The federals and their generals escaped to the American side and were taken in charge by the border patrol of American troops. There were 2,800 men and six generals in the remnant of Huerta's army which endeavored to hold the northern states for their chief. Now that General Villa has been successful in the north he is reported as having decided upon a campaign in the eastern part of the country and will take his troops by boat to a point where he can make an attack upon Vera Cruz after the capture of which he will begin a march upon Mexico City, the stronghold of Huerta. The taking of Ojinaga in the north is generally considered to have greatly increased the power of General Villa.

Reports of the rebellion in Hayti state that the rebels are getting the better of the federals whose control, it is asserted, cannot last but a few weeks longer.

While a general railway strike seemed imminent in South Africa last week, general meetings held since have shown the workmen somewhat divided in the matter of walking out, and this has temporarily quieted the situation.

The Chinese parliament which has been virtually non-existent for the past several months has been formally dissolved by proclamation. It is now intended that the administration will draft a constitution. The extremists are expected to persist in their efforts to inaugurate another rebellion.

Albania is reported in a most pitiful condition on account of the wars that have devastated the country, brought business to a standstill, discouraged imports of foodstuffs and made it impossible to raise enough food for home consumption. Flour and meats are selling at exorbitant prices. Private advisers state that in many districts the inhabitants face starvation.

Excessive rains have caused considerable damage in Belgium, where floods have become general. The cold wave which swept the country early this week brought temporary relief, although the damage already done has been large.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

Indians Who Are Expert Farmers.

By E. I. FARRINGTON.

THE Pueblo Indians of New Mexico were good farmers long before the Pilgrim fathers ever stuck a spade into the soil of the new world. They are good farmers today, with great flocks of sheep, which bring their owners much money and graze peacefully, without a thought of tariff tinkering.

When the Spanish adventurers invaded the west they found the Pueblos living in much the same fashion that they live now. They were about the same in numbers, too—between nine and ten thousand. Compared with the Navahos, the Apaches and other tribes, they were highly civilized even then. They lived in walled cities, had a well organized form of government, were keen traders and intelligent tillers of the soil.

The Spanish priests nominally converted them to Catholicism, but while the church marries, confesses and buries them, they cling steadfastly to the exceedingly complex rites and superstitions which they have treasured for centuries untold. They are in the curious position of having a dual religion, one-half of which is Christian and the other half pagan. Strangely enough, they seem equally sincere in both halves.

The question of woman's suffrage holds no interest for the wives and the daughters of the Pueblos. Among them woman already occupies a position which is far ahead of that held by the women of England. Descent with them is always in the female line, and the children take the name of the mother's clan. The women are accounted the owners of all the household goods except the husband's personal belongings, and if a man is so thoughtless as to beat his wife, she can evict him with but slight difficulty. The crops and the flocks are the husband's but when they are sold the wife must share in the proceeds. Pueblo Indians never make pack horses of their wives but treat them with kindness and as equals. They dress well, too, these women, their native house dresses often being worth as much as twenty-five dollars. Of late, though, there has been a tendency to invest in the cheap apparel made for the women of the cities, and the result has not been to increase their charm.

Nobody can safely guess as to the com-

los were located on high table lands known as mesas, often very difficult of access. The outside walls of the buildings were built of adobe or stone and were punctured neither by windows nor doors. The only way to get in was to climb a ladder to the roof and descend through an opening there. In this manner the Pueblos were able to protect themselves with but little difficulty from the raids of their hereditary enemies, the Navahos, and other war-like tribes.

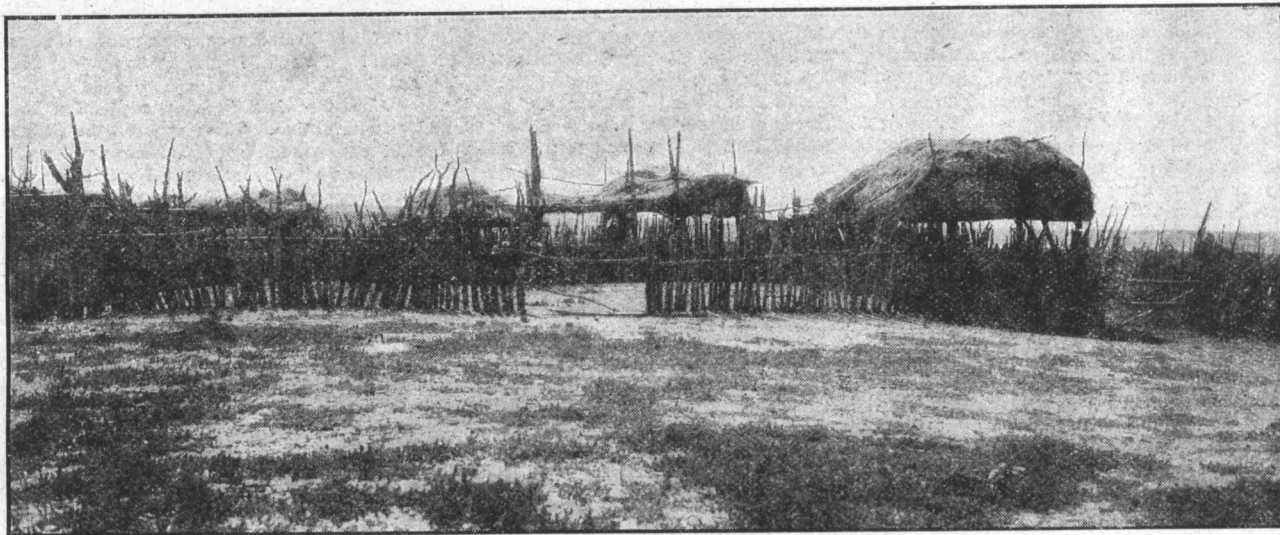
Most interesting of all their towns is Acoma, with a present population of 600 people. How old it is no one can know. Certainly it was ancient when the Span-

First and last the Pueblos are farmers. Many of them have come down to the plains to live, now that danger from the sudden attacks of wandering Navaho bands no longer exists, but some, like the residents of Acoma, still dwell in their cliff homes, although they often spend much of the summer on the lower level, where their fields and flocks are. While dwelling in their elevated homes, the people of Acoma drive their herds of horses and burros up a trail of recent date, by means of which the animals are able to reach the top of the mesa, where there are forty or fifty corrals.

Life with all the Pueblos is a strange

Wool helps to increase the profits of the Pueblo farmers and to make them independent of Uncle Sam and his agents. They own nearly 96,000 acres of land, most of which is good only for grazing, but certain sections near the streams have been made ready for the plow by means of irrigating ditches. Irrigation is no new thing to the Pueblos. They were practicing it long before a national department of agriculture had been dreamed of.

What with the products of their fields, with their own mutton and with the venison which the hunters bring in, their larders are always full. Feasting one day and starving the next is no part of the Pueblo scheme of life. For winter use



One of the rudely constructed Corrals in which the Pueblos "Stable" their Live Stock.

yards discovered it. How few Americans realize that there is anything of this sort in their own country! The wonderful rock on which the town stands is 7,000 feet above the level of the sea. On top, the solid walls of the houses rise three stories high. And among them is the great church, built with marvelous toil and patience—a church covering more ground probably than any other in the United States. Every timber and stone in that church had to be carried by hand

admixture of the old and the new. For the most part, the family customs of centuries are held as jealously sacred as ever, but the value of modern inventions has not been ignored and we find them using steel plows, comfortable buggies, good wagons and even threshing machines. Horses and burros are in common use. The burros are wonderful little animals and almost indispensable. Though diminutive in size, they are marvelously tough and rugged. They find a footing where

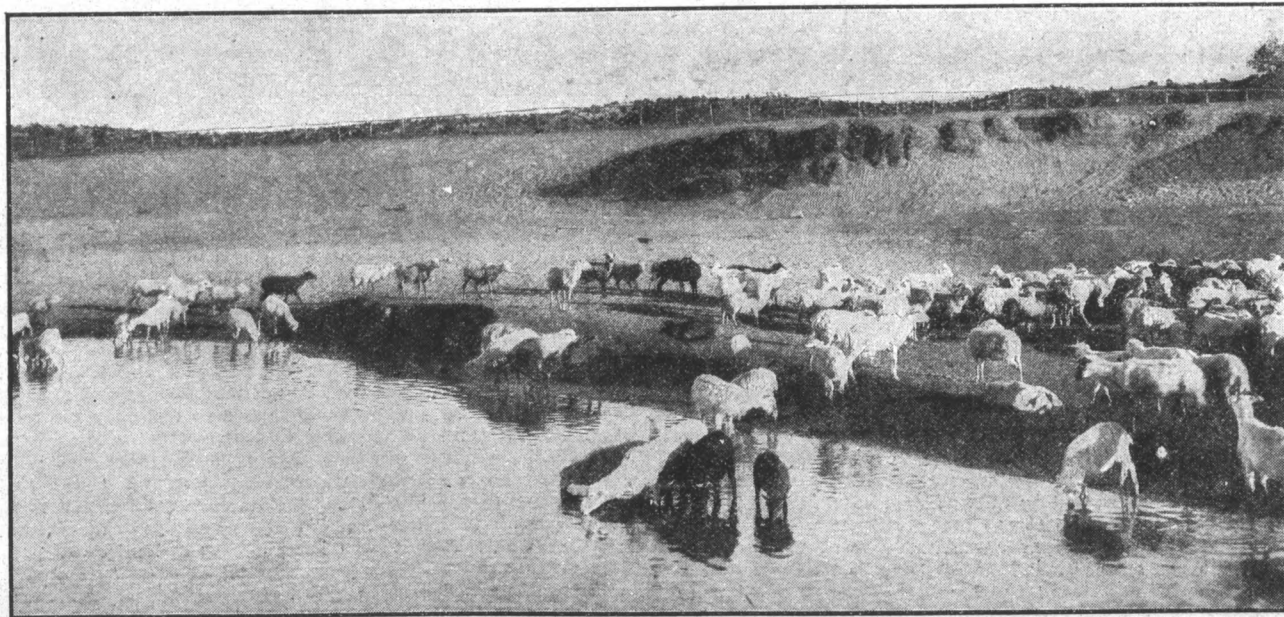
the peaches and melons are dried, the chile is parched and in the living-room the jerked mutton and venison are seen hanging from the rafters.

The grain is ground into meal on flat stones or slabs, which are also to be found in their proper places in the living-room. The bread is baked on heated slabs, but wood is used economically, for it has to be brought from points long distant on the backs of burros.

Formerly the men did a great amount of weaving, but with the growth of their agricultural operations this form of labor has been largely given over to the women or abandoned. The Pueblos taught the Navahos how to weave and now are among the latter's best customers.

The women do the cooking and prepare the meal by grinding the grain. For the most part, the household duties are not very different from those of our own homes. One daily task, however, would not be relished by white women, although it might serve to give them the fine figures which they crave and to teach them to walk more gracefully than most of them walk; this task is carrying the water from the springs or reservoirs. This work is not distasteful to the Pueblo housewives, nor do they find it hard; they simply fill the large jars which they use, raise them to their heads and walk away briskly and easily with them balanced there. They think nothing of walking up or down a steep ladder with a water jar on the head. At Acoma the water is stored in a great stone reservoir which catches enough rain so that there seldom is any lack, and in the rocky basin the water is kept cool and palatable at all times. Small basins in the rock serve as tubs when the women do their laundry work.

Simple though their lives may seem at first, the Pueblos are a mysterious people. The inner meaning of their pagan ceremonies has never been learned. The snake dance of the Hopis, a division of the Pueblos, has often been described, but other dances and forms are never



Sheep belonging to Pueblo Indians. Good grazing and Natural Water make this a favored Branch of their Farming.

ing of the Pueblos to the great Southwest. There are scores of ruins which must have been occupied ages ago, ruins as picturesque as any found abroad. In fact, if the Pueblos and their natural surroundings could be transplanted to Europe, Americans would rush to see them by the thousands.

In former days the towns of the Pueb-

up the steep and winding paths to the top of the mesa and up ladders where there were no paths. In front of the church is a cemetery made literally by hand, for high stone walls were first constructed and then filled with earth brought from the plain below. People who talk about lazy Indians are not acquainted with the Pueblo.

almost no other animal could, and will cheerfully carry burdens under which they are nearly eclipsed.

The Pueblos grow grapes, corn, beans, melons, squashes, tobacco, chile, wheat and peaches, the latter having been introduced by the early Spanish missionaries. Thousands of dollars' worth of grapes are sold and much wine is made.

witnessed by outsiders. Certain offerings or incantations are necessary, the farmers believe, to make sure of good crops, and others to ward off evil. Yet they are intelligent and supposed to be good Christians. They are queer contradictions.

As animal husbandmen the Pueblos are, rather fortunate, for the climate is so warm that little protection is needed by the animals. The corrals are often rudely made of stakes stuck upright into the ground close together. Appearance counts for little, so they are allowed to remain at whatever length they happen to come. In one section of the corral a rough shel-

ter is constructed and the hay piled on top. The animals are thus given protection, while the fodder is kept out of their reach. The poultry wander around at large and often include turkeys, which birds have been raised by the Pueblos for a great many years.

Out on the grazing grounds the sheep have little competition. At one time a considerable effort was made by white cattle breeders to raise their animals on the broad ranges of New Mexico, but the plan was not very successful and ultimately most of the cattle were shipped away, leaving the sheep supreme.

The Calculating Barber.

By WILL H. GREENFIELD

TUNIS SHELDON dropped down in Warrington at the close of a summer's day as if, to use the common expression in which the Warringtonians were wont to formulate the fact of his sudden appearance, "he had fallen out of the skies." In order that there shall be no mistake as to the meaning of these good people, it is only fair to explain that while they located heavenly apparitions in the skies, they had no thought of attributing angelic qualities or celestial attributes to the newcomer. They merely meant to convey the idea that he came suddenly, unheralded, and nobody knew where from.

Sheldon himself was a man of small stature and rounded shoulders, with a massive head and desolate face. The forehead was broad and the nose aquiline, but these signs of intellectual strength were offset by the dull and lack-lustre eyes, as though a fool looked upon the world from behind a wise man's mask.

And yet the manners of a gentleman seemed to lurk beneath an exaggerated servility. When he opened his barber shop in Warrington his first patrons were given large returns for their money and became themselves great advertising factors for his place. Myer Vatman, the only other barber in town, began to lose customers rapidly. He was old-fashioned, slow, and not particularly obliging. Being one of the last to desert him I was given a hearty welcome at Sheldon's shop. With my first shave I learned why the latter had been dubbed "The Calculating Barber."

"On an average," said Tunis Sheldon, deftly removing my beard with long, graceful strokes, "a customer has forty square inches of shaving surface on his face. A barber scrapes this surface at least three times in giving a smooth shave. I am averaging forty persons a week, which represents 4,800 square inches. Following this calculation to the end, you will see that in the course of a year I shall have scraped nearly 14,000 square feet of skin."

"You are fond of figures?" I remarked. "Very. Was the razor all right? Did it pull?"

"Not at all. How do you like the town?"

"Very well. Are you next, sir?"

Nathan Ginsburg, Myer Vatman's brother-in-law, climbed into the chair. "You are doing well?" I ventured, watching Ginsburg, who affected not to see me.

"Quite good, thank you." Then, to Ginsburg: "I have been figuring on hair-cutting, sir, and the result is surprising. I cut about fifteen heads of hair a week on an average. From each head I take approximately three handfuls of hair. That makes forty-five handfuls a week. If the thirty-two hundred barbers in this county do as well as I do, then—"

I waited to hear no more, for this sort of conversation left me with a sense of physical fatigue. I resolved to let Sheldon know of my ingrained dislike for arithmetic, and when I next dropped into his place for a shave I struck straight from the shoulder.

"If you are thinking of counting the hairs in my head," said I, "please do it mentally. I can't say I'm interested in your calculations."

"I cannot count the hairs in your head," he rejoined affably, "but I have just been figuring on the amount of soap I use on my customers. If every barber in this county uses the same amount as I do, it would take a bar of soap weighing 124,000 pounds to make lather for one year. In ten years—"

And so on to the bitter end.

On the way home I met Myer Vatman. "You have come from der cackalatin' barber?" There was deep reproach in his voice. I pleaded guilty.

"Well, vat you dink by dot feller?"

"He's tiresome as a talker, but a fine barber."

Vatman's manner became very solemn. He laid one fat hand on my arm and winked portentously.

"Nathan Ginsburg—you know him—he is being a detective by der case," He drew a deep breath and continued: "Der newspapers say dot der police of New York vant Phillip Potter, der murderer of his wife. He is a disappearance since der crime. Look."

He handed me a newspaper clipping and I read: The murderer is small of stature, preoccupied of manner, and has an unusually large head. He has the soft, flexible hands of a piano player and started in life as a barber. For five years he has been first assistant to State Statistician Barnes.

"That's a pretty good description of Sheldon," said I.

"Aind't it?" cried Vatman delightedly. "Mind dot statis—dot statis—dot—"

"Statistician," I helped out. "Yes, I noticed that. Sheldon's a bug on figures, too. Say, Vatman, you're not raising suspicion against Sheldon for business reasons, are you?"

"Am I?" he snorted. "Do you know dot he told Ginsburg dot he been from Pittsburg from a hotel where he been der head barber? And ven we got it a vire from dose hotel people it said dot he vas a liar. Do you know dot van week after der murder Sheldon appears by dis town? Do you know dot he told Ginsburg dot he vas a great planner player. I know sich dings, Mr. Burton, from der detective vork done by Nathan, which is my brother-in-law. And dot is not all. I could told you more yet."

"Let's have it," I suggested. "If Sheldon is Potter, and the latter is a murderer, I don't want any more shaves in that shop."

Vatman chuckled.

"A New Yorick detective is in de town now," he vouchsafed. "He told Nathan dot he been hunting der country ofer for dis mans Sheldon. He said: 'I will return to New Yorick mit dot barber. He is der man vot I vant.' Besides dot, two detectives come in from Norristown just now, and dey ask der hotel clerk vare is it a cackalatin' barber by dis town. Come along to my shop and see Nathan and der New Yorick detective."

We came upon Ginsburg and the Gotham sleuth a short distance from the main street. They were on their way to see Sheldon.

The detective, a near-sighted little man in gray tweed, looked as if he trained on rum omelettes minus the eggs.

"Sheldon won't be hard to handle," he declared. "Ginsburg is toting a gun, Mr. Burton, but that is unnecessary—quite unnecessary."

"A man who can murder his wife is always dangerous," said Nathan Ginsburg. "Courage is a glorious quality, Mr. Burton," said the little detective. "It has been lauded for centuries by poets and prophets and leaders of all kinds. But there is one kind of courage little spoken of in these eulogies. It is the kind that goes cheerfully on, day after day, smoothing over opposition, reconciling antagonisms and refusing to see little things that jar. When you row up stream against the current, do not splash."

Tunis Sheldon, stretched full length in his barber chair, was pulling hard at a long black cheroot and exhibiting a large unconcern in things temporal when we tramped in.

Ginsburg dragged a huge revolver from his hip pocket and waved it before the calculating barber's face.

"Hands up, Mr. Potter!" he cried. "You're arrested for the murder of your wife!"

Tunis Sheldon seemed to view the situation as one of more than customary importance and brilliancy. Carefully depositing his cheroot in a cuspidor, he rose languidly to his feet and glanced at us with a sage's pity.

"You say you want me for murder, but I know who you are. You are in the employ of the big business interests that wish the death of anarchists like myself." There was something wonderfully quelling in the look he flashed upon us. "I am an anarchist, and I admit to you now that I have made efforts to release myself and my fellows from this brutal industrial bondage, this chronic pauperism. I have consecrated my life to the holy cause of human liberty; I would rather die like a dog than live like a slave. Anarchy? Is anarchy worse than starvation? When conditions become such that a working man is half the time an ill-bred serf, and the other half a wretched vagabond, he's ready for—"

"Shut up!" yelled Ginsburg. "You are arrested for a murder!"

"Just a moment," put in the New York man, stepping forward. "Mr. Ginsburg has made a little mistake. I said I wanted this man, and I do, but not for murder!"

"Not for murder!" echoed Ginsburg. "Not for murder!" parroted Vatman.

As for myself, I assumed a demeanor of deep comprehension. Sheldon's face was a study, but to me it seemed as if he watched for the culmination of a well-understood and expected movement of familiar machinery.

Ginsburg flourished his revolver. "I makes no mistake," he stormed. "Confess, you fake barber!"

"I do!" said Sheldon tranquilly.

"Huh! You did murder your wife, you brute! You are Mr. Potter, of New York!"

"Not too fast," interposed the New York detective. "You are not in possession of the facts of the case. Let me lift the veil of mystery. I am Sebastian Clancy, private detective, and I hereby serve warning that I have discovered this man first. I know him. Lettys & Myant, the New York attorneys, will give me \$500 for locating this man, who has

COMPENSATION.

BY WALTER G. DOTY.

When Klimber got famous they dug up his past And found that his record held many a blot.

They proved that in youth he was wayward and fast And that later he failed to improve a whole lot.

They rifled his waste-basket, hunted and pried; They had data to cover each year of his life;

And they published his letters as soon as he died— Including a few to another man's wife.

I formerly wished an illustrious name As a statesman or painter or writer of plays.

It is plainer each day I shall never win fame. My virtues and graces are hid from the gaze

Of a public that never will weep at my tales Or stare at my pictures or laugh at my jokes;

But my failings as well my obscurity vells, So I've learned to be thankful I'm just common folks.

been an outcast from his father's home in England for more than ten years. He is Sir Thomas Vere Cortsonby."

Sheldon opened his mouth, and shut it again without emitting a sound.

"Speak!" commanded Sebastian Clancy. "I am Sir Thomas Vere Cortsonby!"

And Sheldon's face became as expressionless as a wooden mask.

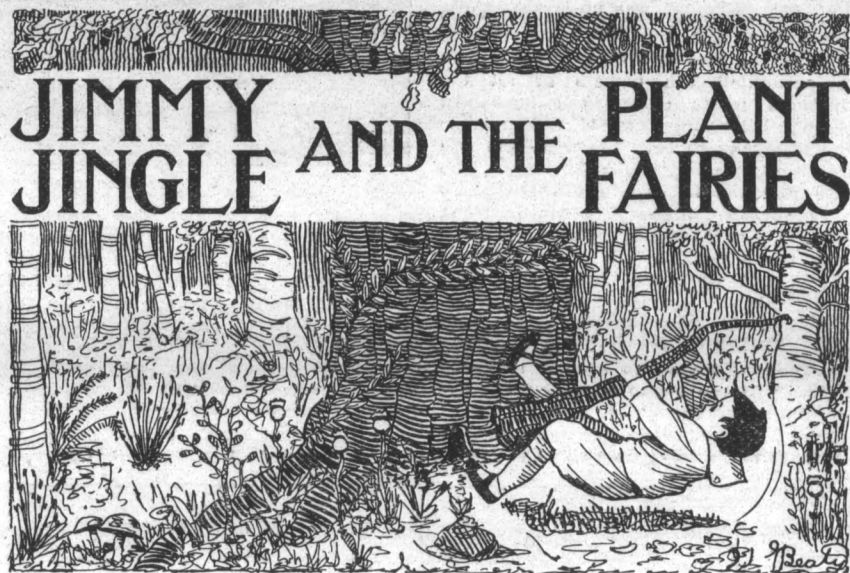
Ginsburg eyed him with an expression of scornful incredulity.

"Liar what you are!" he hissed.

"I knew my man, you see," said Mr. Clancy, "but as long as Mr. Ginsburg thought he was a murderer I did not try to shake his belief. Sir Thomas, being the oldest son, gets the entire Cortsonby estate. And I, Sebastian Clancy, get the \$500 reward offered by Lettys & Myant. I only practiced a little harmless deception, gentlemen."

"Which was clever of you!" snorted Ginsburg with a look of mock admiration in his asymmetrical brown eyes. "But do you think we are der only fellers who

(Continued on page 64).



By JOHN Y. BEATY.

JIMMY JINGLE, Jimmy Jingle, what do you want?"

Jimmy sat up and looked around. No one was in sight, and fairies are usually such elusive creatures that Jimmy thought he must have imagined the voice.

But it came again. "Jimmy Jingle, Jimmy Jingle, what do you want?"

Jimmy did want something indeed, and this time he knew that he had not imagined the voice so he decided that some fairy had grown bolder than the rest and had addressed him.

"I want to see something that no one else has ever seen, and I want to go where no one else has ever gone, and I want to learn something that won't be learned out of books."

"You want more than is usually asked of fairies, Jimmy, but I am going to grant it on one condition and that is that you promise to tell what you learn to other boys and girls, for I shall indeed take you where no one has been before and you shall learn things not taught in books. Do you promise?"

"Yes, kind fairy, I'll promise, but when am I to begin?"

"At once, Jimmy. Take that crooked

stick against the bank there and wave it over your head three times and say, 'Fairy grows, fairy knows, now I wish to grow smaller.'"

"But I can not take that stick," complained Jimmy; "it is the root of a tree and is still fast to the tree."

"Do as I tell you Jimmy or the tree will fall down upon you and crush you. I am the fairy of punishment and reward, and when anyone does not obey me they suffer harm to themselves."

At that, Jimmy seized the root with both hands and pulled and pulled and pulled. Finally he felt it giving and then, with a sudden lurch, he fell to the ground with the piece of root in his hands.

But great was his surprise to find that he had pulled open a door. It was a very small door and led into a room that was as black as night, but the threshold was so beautifully carved in gold and silver that he knew there must be something good inside.

"Step inside, Jimmy, and meet the fairy."

"But I am too big to get into that little door," objected Jimmy.

"Wave the stick above your head."

So Jimmy waved the stick above his head and said, "Fairy grows, fairy knows, now I wish to grow smaller."

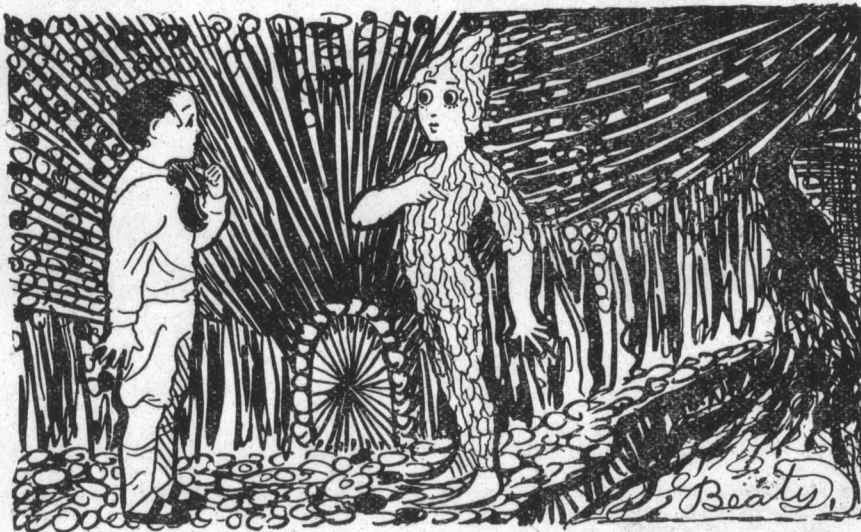
Immediately the door appeared to enlarge. Jimmy thought it was getting wider and taller, but in reality, he was growing smaller.

Jimmy stepped from the threshold of the door and at once he was blinded with a great light. "Oh," cried Jimmy, and fell back upon the ground.

He jumped up quickly, but there was no light there.

"Good Fairy," pleaded Jimmy, "I am ready to do what you tell me to do. I'll not be able to enter though if that light appears again."

"Very well," called the fairy from far



"I am Arbor, king of all the tree fairies."

down the cavern, "enter quickly and take the boat you find at the wharf just at the right of the entrance. You'll have to keep your head about you and not lose any time or you will miss your trip."

Jimmy stepped across the threshold and this time there was no great light, but a little one which shone out of his own hand. He was in such a hurry to get into the waiting boat that he didn't stop to examine the light until the boatman had pushed out from the wharf and they were sailing swiftly with the tide.

The light, he found, was no larger than his little finger, and it seemed to be a part of his hand like a wart would be. He felt of it, but it was hard and would not move.

The boatman did not seem inclined to talk, so Jimmy spent his time observing all that was passed.

They seemed to be in a cave and were accompanied by hundreds of other boats, each loaded with freight and a solitary boatman. None of them had oars or paddles, but seemed to operate their boats by signals to other fairies on shore.

When a boatman would wave his hand above his head, the fairy on shore would open a gate and the current would take the boat and its contents into the by-stream. As quick as a flash the gate would shut again, and the other boats would go on their way as before.

Presently Jimmy realized that the cave through which they were sailing was getting smaller. It finally got so small that Jimmy and the boatman had to lie down in the boat to keep from bumping their heads. After a short ride through the part with the low roof, the boat drew up to a landing and there Jimmy saw for the first time the fairy who had brought him on this wonderful adventure.

The fairy introduced himself. "I am Arbor," he said, "I am king of all the tree fairies. The journey you are about to take is a most perilous one. No one else has even attempted it but the fairies, but if you do as I tell you, you can expect to get back safely."

"I'll do all that you tell me, Arbor," promised Jimmy.

"Then we are ready," and with that, Arbor knocked loudly on a small door just before them. The door was so small that Jimmy could not understand how they were going to get through it.

"It may be that the flood is on and we will have to wait for a while," explained Arbor.

But the flood was off and the door was quickly opened. It was a heavy door and was provided with heavy bolts on the inside. It was the kind of door that keeps water from going through it.

As they crawled through the opening on their hands and knees, Jimmy heard a rushing sound, and before he could get his body entirely through the hole he was seized roughly and dragged up a rocky path to an over-hanging cliff above.

Scarcely had they reached the ledge

when a great wall of water swept in and covered the floor deeply with a gurgling mass.

Jimmy watched it, trembling and wondering what would become of him. He noticed, in spite of his fright, that the water was filled with hundreds of small particles. These bumped against each other and here and there some collected in little coagulations and settled temporarily into a niche in the wall.

Jimmy had nearly recovered from his fright when Arbor appeared.

"If you had been one-thousandth of a second later you would surely have been drowned," he said. "This is the flood house—one of millions in this same tree. There are water-tight gates around that

accompanied him on another, so he felt that everything must come out all right.

For a while they floated lazily about in the flood room, but suddenly, with a mighty roar, the whole mass of water and food began to move and Jimmy hung to his transport with difficulty.

His feet were dangling in the water, and while they were going through a very narrow part of the tunnel several other pieces of food crowded against him. His feet were inclosed on both sides and when he tried to move them he found that the new pieces were apparently a part of the piece on which he was riding. He was so frightened he couldn't ask Arbor how he should be released.

Jimmy wasn't sure about the direction they were going. Sometimes he thought they were going straight ahead, and again it seemed that they were going backwards. Finally, however, he knew that they were traveling upward.

The progress was rather slow now, and very irregular. For awhile they would travel rapidly, and then they would stop altogether.

On one of these stops Jimmy summoned up courage enough to ask Arbor where they were.

"We are now in Sap-wood Elevator," Arbor informed him. "Our progress is intercepted by numerous gates. It is somewhat similar to a series of locks in a canal. We cannot move on to the next section until that has been emptied by the previous load moving to the section above that. The whole elevator is controlled by the stoves in the kitchen. As fast as one lot is cooked, another lot is taken from the elevator to be rendered, and then it is that we move up."

After several hundred stops and as many fitful progressions, they felt the temperature growing warmer. Jimmy remembered that Arbor had told him that the furnaces in the kitchen were seven times hotter than the furnace in his home and he again wondered how he could release himself from the pieces of food that had wedged themselves so firmly about his little legs.

He squirmed and pushed and pulled and twisted, but he was held fast. Finally he



"Hundreds of fairies were throwing particles of food into the furnaces."

the millions of mouths through which this old oak is fed.

"The only way you can get to the kitchen, however, is by riding on one of the particles of food. Sit astride it like you would a horse and hang on tightly. You may be afraid, but there is no opportunity for turning back now."

So Jimmy watched for a large piece of food and hopped aboard. The fairy ac-

thought he could feel the food becoming softer, and as they came nearer to the hot furnaces it grew softer and softer till he was able to withdraw his legs.

The heat was now so intense that Jimmy thought he could not stand it to go another section nearer the furnaces, but just as he was wondering what to do, Arbor told him to clamber to the bank. "We are going by another route to the

was lighted as with a searchlight. They entered and shut the doors behind them. Without a driver, the car started. Jimmy could see no track to guide it, but still it traveled in a curved line and seemed to be under perfect control of some unseen power.

Soon they came to a long tunnel that, instead of being black inside, was all red. In fact it looked like it was all afire. But Jimmy felt no heat.

"We are now entering the furnace room," announced Arbor.

The car had stopped and Arbor was dismounting.

"We shall enter the furnace room through this chute," said Arbor. "Just jump in and hold your breath."

Jimmy clambered in with some trembling, and—whisk! he went shooting along at a great rate. With a sudden jerk he found himself upright, staring into the open gullet of a mammoth furnace. Hundreds of busy cooks surrounded him and each seemed to be trying to heave the most food into the fires. Particle after particle was thrown in, but Jimmy could not understand what became of it.

Finally Arbor came and said, "Come this way."

Jimmy followed down a winding flight of steps and came, at the bottom, to a big room in which were several large bins. Each bin was provided with a long spout and each spout had a fairy in charge. Below the spouts was a canal in which the current flowed rapidly.



Pueblo Indian Shepherd on his Burro.

furnace room, a route that is not so hot as this," he explained.

They went into a very dark passageway and Jimmy followed close at the heels of Arbor. Finally they came into a big room that was lighted. It seemed to receive its light through the ceiling, which was very beautiful. It was all set with green emeralds.

"Are you ready to go to the furnaces that are seven times hotter than your furnace at home?" inquired his guide.

Jimmy nodded and the door opened of itself. They passed through and came upon the most beautiful little automobile you can imagine. It was a bright green and the emeralds that replaced the headlights shown so that the road before them



Feeding the Chickens in a Pueblo Indian Village.

"Don't smoke yet!
Smoke after enjoying **clean,**
pure, healthful

WRIGLEY'S
SPEARMINT

You'll digest your meals and enjoy
smoking a great deal more if you
Chew it after
every meal

It makes you feel more
like smoking because it
cools and soothes your
mouth and throat.

It also aids digestion—
prevents or relieves
heartburn. It brightens
and preserves the
teeth wonderfully—
purifies the breath
instantly. It's real
"springy" chicle gum
—flavored with real
juice of real mint
leaves—if it's

WRIGLEY'S

BUY IT BY
THE BOX

of twenty packages. It costs less—
of any dealer—and stays
fresh until used.



Two Fours and a Six

Jackson
"No Hill
Too Steep—No
Sand Too Deep"
Three great models to
choose from, \$1385 to \$2150.
Twelfth successful year. Write
for catalogue today.
JACKSON AUTOMOBILE CO.
1508 E. Main Street, JACKSON, MICH.
978 Woodward Ave., Detroit, Mich.

Beacon Burner FREE
FITS YOUR OLD LAMP.
100 Candle Power Incandescent
pure white light from (kerosene) coal
oil. Beats either gas or electricity.
COSTS ONLY 1 CENT FOR 8 HOURS
We want one person in each locality to
whom we can refer new customers.
Take advantage of our Special Offer to
secure a Beacon Burner FREE. Write
today. AGENTS WANTED.
HOME SUPPLY CO., 139 Home Bldg., Kansas City, Mo.

WANTED position as farm manager. Fully posted
in all kinds of farm work. References
exchanged. S. Care of Michigan Farmer, Detroit.

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

WANTED—Railway Mail Clerks, Carriers
and Rural Carriers. Examination
soon. I conducted examinations. Trial exam-
ination free. Write, OZMENT, 17 E. St. Louis.

INTELLIGENT Farmers can write Life Insurance.
I Why not represent in your community? Commis-
sions ample. Renewals vested. No middlemen between
you and the home office. Write N. G. Spangler, 2nd Vice
Pres., Columbus Mutual Life Insurance Co., Dept. B, Columbus, O.

WANTED—Agents to sell Power, Pump and Field
Sprayers through Fruit and Potato
districts of Michigan. Good pay out for active man.
Address Sprayers, or Michigan Farmer, Detroit, Mich.

Want Price on 1 Stillard Second Hand Stump Puller
For large pine stumps Address
C. SAMPSON, 517 Mather St., Chicago, Ill.

Mention the Michigan Farmer
when writing to advertisers.

This Girl Could Not
Walk or Stand

—at the age of four

Pink Vosburg, daughter of Mrs. Sula Vos-
burg, Bedford, Ia. Mrs. Vosburg brought
her daughter to this Sanitarium January,
1911, for treatment of Infantile Paralysis.
The child could neither walk nor stand
alone, but could only crawl
on her hands and knees. She
was here eight months; now
walks, goes to school and gets
about splendidly. Mrs. Vos-
burg will affirm the above.
This is not a selected case,
nor are the results unusual.



The L. C. McLain
Orthopedic
Sanitarium

is a thoroughly equipped private
sanitarium devoted exclusively to
the treatment of crippled and de-
formed conditions, such as Club
Feet, Infantile Paralysis, Hip Dis-
ease, Spinal Diseases and De-
formities, Wry Neck, Bow Legs,
Knock Knees.

Let us advise you regarding any cri-
pled, paralyzed or deformed child or
person in whom you may be interested.
It will cost you nothing, and in view of
over 30 years' experience in this work,
our advice should be valuable. Our
Pamphlets and Book of References will
be sent postpaid and free of all charge,
on request.

The McLain Orthopedic Sanitarium
905-L Aubert Avenue, St. Louis, Mo.

Let Us Send You a Genuine
Edison Phonograph
on Free Trial

right to your own home. Entertain
your family and your friends. Send
it back at our expense if you don't
want to keep it. \$2 a month now
pays for a genuine Edison Phonog-
raph at Rock-Bottom prices and
without even interest on monthly
payments. Send today for our
beautiful Free Edison Catalog.
A postal or a letter is enough. But
send it at once. Write today.

Edison Phonograph Distributors
4341 Edison Block Chicago, Illinois

"Tell me, Arbor, if you please, what it
is that I have seen."

"You have seen the Sun Kitchen, Jim-
my. In the furnaces the heat of the sun
changes the food particles which you saw
come into the flood chamber in the roots,
into all kinds of materials which the big
oak can use in its growth. We are now
in the leaves, where all the food of the
tree is prepared for it. The food as it
comes into the roots cannot be used at
all, but after it has gone through the fur-
naces that are seven times hotter than
your furnace at home the ingredients are
changed into materials that the tree can
use.

"We will get aboard one of these loads
and see what becomes of this food on the
downward trip. The name of this canal,
as you will see by the sign on that post,
is Cambium, and its waters flow just be-
neath the bark of the tree."

With that they jumped aboard a load
of food and started on the downward
journey. This, too, was quite irregular.
It was not a steady flow, but a movement
from one section to the next.

Arbor called Jimmy's attention to the
many by-streams. Every so often one of
the boatmen would signal to a gate keep-
er on shore and a gate would be opened
through which he would pass with his
load.

"Each load," explained the fairy, "is
made for a particular purpose. This load
ahead, you will see, very much resembles
sand. It is called 'Silica' and is a very
necessary part of the leaf structure. The
load on that side is sugar. The boatmen
have orders for a certain kind of food for
a certain place and they deliver their load
where it is needed."

"Where does our load go?" asked

Jimmy, in an easy and natural way.
"This load goes to the roots. Even the
roots cannot grow without using the food
prepared in the furnaces of the leaves.
The food that they take in is of no use
to them; all of their growth is made from
the cooked materials. We will get off
again when we get to the door where
you entered and then your adventure is
over."

The wharf was finally reached and
Jimmy scrambled off the load and, wav-
ing good-bye to the fairy, ran out of the
door.

Everything looked strange to him, but
he thought he knew the way home, so he
ran and ran and ran. But he couldn't
recognize familiar objects along the way.
Finally he realized that he was still small
like the fairies and his little legs were
so short that, although he had run for
half an hour he had not gone more than
a foot from the base of the tree.

"What ever shall I do," cried Jimmy;
"I am so small that my mother can't see
me at all, and at this rate it will take
me two years to get home."

But just in his deepest despair he heard
the voice of the fairy again.

"Jimmy Jingle, Jimmy Jingle, what do
you want?"

"I want to grow big again," cried Jim-
my, "so I can run home to my mother."

"Wave your right hand above your
head and say, 'Fairy grows, fairy knows,
now I wish to grow larger.'"

Jimmy quickly obeyed, and before you
could say "Jimmy Jingle," he was a boy
again as he had been before. Without
stopping to look about him, he ran off to
his mother as fast as his legs would take
him, to tell her of his wonderful adven-
ture with the tree fairy.



THE CALCULATING BARBER.

(Continued from page 62).

got it a murder suspicion on his feller?
Oh, nit! Dere been two Norristown de-
tectives here and vat is it dey—"

"Nathan!" cried Vatman, a curious elation
upon him. "Wait a minute! Here
comes! Here comes! Wait a minute!"

The door of the barber shop opened
and softly closed. Two large, square-
jawed, shaven-necked men with keen,
scrutinizing eyes joined our little group.

"Here been der rekular detectives, Na-
than!" cried Vatman.

Ginsburg, stirred to action, waved his
revolver excitedly. "Confess, you loafer!"
he shouted. "Here been der real police
already."

Sheldon's voice was low and gentle. "I
confess!" he said.

"You bet you confess. You been Phillip
Potter, ain't it?"

"Sheldon stared ruminatively down at
his feet. "Yes, I am Phillip Potter," he
said at length.

"He it is! He it is!" Ginsburg chort-
led in glee.

At this juncture Sebastian Clancy came
to the fore. He disregarded Messrs. Gins-
burg and Vatman as quite out of the
sphere of rational consideration.

"Gentlemen," he said, addressing the
newcomers, "I understand you are Nor-
ristown detectives?"

"We are," said one.

"I am Sebastian Clancy, private detec-
tive, of New York. These gentlemen,"
indicating Ginsburg and Vatman with a
gesture of bridled disdain, "aver that
this man is Phillip Potter, the wife mur-
derer wanted by the police of New York,
while I—"

The Norristown men went off into
spasms of derisive laughter.

"While I," continued the triumphant
Clancy, "say he is—but then, he tells it
himself when he is not intimidated by
this man's revolver. Who are you, mil-
lord?"

"I am Sir Thomas Vere Cortsonby!"
replied Sheldon.

Sebastian swelled with gratuitous pride.
Again the Norristown men guffawed.

"This is too rich!" gurgled one, hold-
ing his shaking sides.

"Yes, I am Phillip Potter!" mumbled
Sheldon. "I am Sir Thomas Vere Cort-

sonby, too. I have more than five per-
sonalities. In one I am absolutely and
utterly good and in another I am—"

A light broke upon me. I pressed Shel-
don's hand in the profound sympathy of
perfect understanding.

Just a word, gentlemen," I broke in.
"We all know of the remarkable case of
Dr. Jekyll and Mr. Hyde and have seen
it duplicated in real life. I presume you
have all read the story—the allegorical
mode the great Stevenson took of repre-
senting the ethical quality in man. Might
not this poor fellow—"

"Can it!" roared one of the Norristown
men. "Come here, Pete!"

Sheldon snickered, and walked over to
the two detectives as naturally as a
storm-driven bird seeking a nest.

"This is Pete, the Goose," said the de-
tective who acted as spokesman. "He's
a harmless 'nut' who escapes pretty fre-
quent from the Norristown Insane Asy-
lum, and he gives us some hot chases.
He was a barber before he went off his
noodle and always follows his trade on
little vacations like these. He's no an-
archist, no murderer, and no baronet, but
he is a d—n good barber."

And, eliminating the profanity, I say
amen to that.

OLD JIM SMITH.

BY CHARLES H. MEIERS.

Some people say that old Jim Smith
is quite the meanest man they know—
That good, to him, is but a myth;
But I don't think that it is so.

Jim has a gruff way, I'll admit;
I've seen him scowl and heard him
swear,
And once he almost had a fit
About our preacher's length of prayer.

But when that preacher lay in bed,
With fever ravaging his power,
Jim did not stand and shake his head—
He paid for medicine and flour.

'T is true that I once saw Jim kick
A hired man, and punch his face—
He would not let the fellow lick
The horses working on the place.

Once, when I saw Jim mowing grass,
He raised his sickle-bar, with care,
High in the air, to let it pass
O'er Mrs. "Bob. White," nesting there.

Some people say that old Jim Smith
is quite the meanest man they know—
That good, to him, is but a myth;
But I don't think that it is so.

FRIENDSHIP.

BY J. A. KAISER.

Though wealth and fame knock at his door,
Though fortune greet him with her smile,
A man's not rich but truly poor,
Despite the baubles that beguile,
Unless with wealth and fame doth blend
A loyal and a loving friend.

Though poverty doth watch and wait,
Though fortune frown and never smile,
A man's not poor but rich and great,
Despite the chains that gall awhile,
If dark adversity doth send
The true heart of a loving friend.

The brightest gems that mortals wear,
The richest boon to mortals giv'n;
Of preciousness beyond compare,
On earth foreshadowing of heav'n,
The silken, golden strands that blend
The heart of friend with heart of friend.

WHEN WE LOSE OUR GRIP.

BY ORIN E. CROOKER.

All of us lose our grip once in a while. Often without warning the bottom seems to drop from under and everything suddenly appears to be bound for the everlasting bow-wows. One who has thus lost his grip is a sad sight. The world speedily pigeon-holes him with the "has-beens" or with "the-never-was-at-alls." The procession does not even pause to give him a chance to gain a new grip, but presses on, leaving him exhausted by the wayside.

What is one to do in such a crisis? The best thing that one can do is to refrain for a while from doing anything at all. One's vision at such times is warped, and it is best not to do anything until one is certain of his ability to form wise judgments and make plans that hold the best solution of the problem. Nine-tenths of the desperate deeds recorded in the public press are probably accomplished while the doers of them are in a despondent, frantic state of mind—wholly incapable of mapping out a wise course of action.

But doing nothing under such conditions is exceedingly difficult. One feels as though he would burst unless he can plunge into the center of things and do something—anything, in fact, so long as it offers a safety valve for the escape of pent-up feelings within. Very well! If something must be done, then let one go and tell one's troubles to someone—not to the proverbial policeman, but to the most sympathetic soul of whom one can think. It will make the burden grow lighter. Even if such a friend laughs at one's fears it will be a warm-hearted laugh with no sting to it.

Ten to one after such a sharing of troubles they will look less menacing than before. Someone has called attention to the curious fact that if one shares a dollar with another, one has half a dollar left, while if one shares a trouble with the right kind of a friend the trouble dwindles to one-tenth its former size.

The thing to do when one loses one's grip is to get a new hold as soon as possible, but not the blind, feverish kind of a hold that means only another failure. Take time to think, to meditate, to counsel; time to look things squarely in the eye; time to take stock of the real cause of failure; time to plan for a way in the future that will overcome the shortcomings of the past. Then one can meet the issue with something more than a mere chance of success. One will have made almost certain that the new hold upon life will mean victory.

JUST A FARMER.

BY EARLE W. GAGE.

"Who am I?" Well, just a farmer. My trade is one of wealth and worth, For I'm partner with both sky and earth; A partner, too, with the sun and rain, And we cannot lose for our gain. A mighty task is mine, though men may rise or fall, For I'm the fellow who feeds you all. But, I'm just a farmer!

BOOK NOTICES.

Gyp. Petit Bleu. Edited for school use by F. Th. Meylan, Head of the Department of French, St. Agatha School, New York City. Petit Bleu is the charming story of a little French girl, educated in a convent about the middle of the nineteenth century. Cloth, 16mo, 152 pages. Price, 35c. American Book Co., Chicago.

Reading, Writing, and Speaking Spanish for Beginners. By Margaret Caroline Dowling, B.L., Teacher of Spanish in the Mission High School, San Francisco. Designed to give a working vocabulary and the ability to use it in speaking and writing simple Spanish. Cloth, 12mo, 256 pages, illustrated. Price 75c. American Book Co., Chicago.

A Tax-Exempt 6% Investment, Legal for Michigan Savings-Banks

\$225,000

THE PEOPLES ICE COMPANY

DETROIT, MICHIGAN

(General Ice Delivery Company)

FIRST MORTGAGE 6% GOLD BONDS

TAX-EXEMPT IN MICHIGAN

Dated October 1, 1912

Denominations, \$1,000 and \$500

Principal and semi-annual (April 1 and October 1) interest payable at the office of the

SECURITY TRUST COMPANY, DETROIT, TRUSTEE.

Redeemable on October 1, 1914, or any interest date thereafter, at 102.

MATURITIES

\$25,000	October 1, 1914	\$25,000	October 1, 1917	\$25,000	October 1, 1920
25,000	October 1, 1915	25,000	October 1, 1918	25,000	October 1, 1921
25,000	October 1, 1916	25,000	October 1, 1919	25,000	October 1, 1922

CAPITALIZATION

	Authorized	Outstanding
Preferred stock.....	\$200,000.00	\$ 99,990.00
Common Stock	400,000.00	389,359.95
First Mortgage 6% Bonds.....	500,000.00	225,000.00

These bonds are part of an authorized issue of \$500,000, of which \$25,000 was retired October 1, 1913. The unissued balance of \$250,000 can be issued only to the extent of 50% of cash expenditures for further improvements and additions, when such expenditures shall have been approved by the Security Trust Company, Trustee under the mortgage, providing, however, that the net earnings of the company for two years preceding the date of issue shall have been at least three times the annual interest charges on all bonds then outstanding and such amount as is proposed to be issued.

From information that we consider authentic we condense the following important features of this issue:

- (1) These bonds are the direct obligation of The Peoples Ice Company, which is the largest ice company in Detroit and which supplies about 60% of the ice consumed in the city. With 175 wagons and over 600 men, this company serves more than 47,000 families and business houses.
- (2) The first mortgage that secures these bonds covers property valued at \$1,055,952.49, or more than 4½ times the amount of the outstanding bonds. This property consists of real estate in Detroit, Waterford, Fair Haven and Otter Lake, Michigan; buildings and refrigerating-machinery at Detroit; natural ice plants at Waterford, Fair Haven, Otter Lake and Grosse Point; horses, wagons, tools, boats, barges, etc.
- (3) The audit of the books of the company by the Security Trust Company shows net earnings for the year 1912 of \$99,291.96, and for ten months ending October 31, 1913, of \$161,696.21, which is over four times the maximum annual requirements of principal and interest under this mortgage.
- (4) The large increase in earnings of 1913 over those of 1912, as shown above, was due to the company's increased facilities and the fact that over 10,000 new customers were gained in 1913.
- (5) The property covered by the mortgage securing these bonds was appraised by leading experts; the books of the company were audited by the Security Trust Company Trustee; and all legal matters pertaining to this bond issue were passed upon by Messrs. Keena, Lightner, Oxtoby & Oxtoby, Attorneys, of Detroit.

We offer the unsold remainder of these bonds at
PAR AND INTEREST, YIELDING 6% PER ANNUM

The Tillotson & Wolcot Company

Cleveland INVESTMENT-BONDS Cincinnati

Detroit: Dime Savings Bank Building

KITSELMAN FENCE



We make you the same price we would make the Dealer or Jobber. That is why we can save you money. Look at these very low prices.

14 CENTS A ROD

for 26-in. hog fence
23½ c. a rod for 49-in. farm fence
25½ c. a rod for 60-in. poultry fence
\$1.40 for 80 rod spool of Ideal
styles of Farm, Poultry and Lawn Fence.
KITSELMAN BROS. Box 278 Muncie, Ind.



The "Berlin" The White Basket
That secures highest prices for your fruit. Write for 1914 catalog showing our complete line and secure your baskets and crates at WINTER DISCOUNTS.
The Berlin Fruit Box Co.
Berlin Heights, Ohio.

MASON FENCE
12" A ROD AND UP
Costs Least. Lasts Longest.
MASON weaves his conscience into every rod of his fence. That is why he can afford to ship direct from factory to you for 60 days' trial with a money-back guarantee. Largest assortment, biggest stock and quickest service are yours when you deal with Mason. Our FREE CATALOG means money in your pocket. Write for it today.
The Mason Fence Co.
Box 68 Leesburg, O.

Get the Facts About No. 9 Empire Open Hearth Steel Fence
Our book shows you why No. 9 Empire and Empire, Jr., made of Open Hearth Steel, great big wires, galvanized as a wire fence should be galvanized, outlast any soft Bessemer steel fence made. Illustrates big wires—the strong Empire knot that holds good as long as the fence. The rust proof, rot proof, hog tight fence. Write for book and get money saving fence facts.
BOND STEEL POST COMPANY
16 Maumee Street Adrian, Michigan

Why Pay Two Prices For Fences?

Buy direct from our factory. Hundreds of exclusive styles. Wire and Ornamental Iron guaranteed Fences for every purpose: Gates, etc. Write for Free Catalog, First Order and Early Buyer's Offer! Ward Fence Mfg. Co., 168 Penn St., Decatur, Ind.

BROWN FENCE
13 Cents Per Rod Up
Strongest, heaviest wire, Double galvanized. Outlasts others nearly 2 to 1. Low prices direct from factory. Over 150 styles for every purpose—hog, sheep, poultry, rabbit, horse, cattle. Also lawn fence and gates of all styles. Mail postal for catalog and sample to test and compare with others. Address
THE BROWN FENCE & WIRE CO.
Department 49 Cleveland, Ohio

HARNESS OUR OWN MAKE
Hand or Machine Made
Out of No. 1 Oak Leather, we guarantee them. If your dealer does not handle them, write direct to us.
SHERWOOD HALL CO. Ltd., Ionia & Louis Sts. Grand Rapids, Mich



Woman and Her Needs

At Home and Elsewhere



Deeds, Not Creeds, Demand of the Day

SOME weeks ago I wrote an article in which I deplored the present-day tendency of young people, especially girls, to affect a disbelief in God and a hereafter. Purposely I avoided defending Christianity, yet almost immediately I was taken to task by "Hay Rube," who proceeded to point out the weak spots in the church's armor.

I often wonder why it is that so many people insist on making the term Christianity synonymous with religion. When one stops to consider that there are millions of people on the globe who never heard of Christ or the Christians' God, yet who still have a religion and a very lively belief in a God and in immortality, isn't it strange that if we timidly mention religion we should be immediately taunted with the shortcomings of Christians? Religion may be anything, Buddhism, Brahminism, Mohammedanism, or the idol of worship of the heathen in darkest Africa. And I still maintain that belief even in these forms of religion is better than the atheism which denies the existence of a God at all.

In spite of the atheistic trend which is permeating the works of our, so-called, best fiction writers, there is a deeper interest in religion today than in any previous era in the world's history. In fact, religious history is in the making today, and we who are living, and thinking, are having our part in it. Slowly, but surely, Christianity is being purged of forms and ceremonies, and the real spirit of Christ's teachings is being received.

It is growing increasingly unpopular and impossible to call one's-self a Christian, if all the claim one has to Christianity is church attendance, an avowed belief in the creeds and donations of money. Men and women are no longer asking what do you believe, but how do you live. It makes no difference to the thinking person whether you believe in predestination or free grace for all, providing you are square. Churches are no longer insisting on lengthy confessions, but upon clean living. Many have even gone so far as to admit you to fellowship even if you are a bit hazy as to your belief, providing you are thoroughly in earnest in your desire to live by the golden rule.

Deeds, rather than creeds, this is the demand of the new religion. Ages ago a prophet wrote, "And what doth the Lord require of thee, but to do justly, and to love mercy and to walk humbly with thy God."

Christ, Himself, advocated the same religion. When the rich young ruler said, "Lord, what shall I do to be saved," Christ did not tell him he must believe the creeds, the 39 articles of faith, infant damnation, immersion, perfect holiness, or transubstantiation. His answer was, "Sell all that thou hast and give to the poor, and come and follow me." Service, not profession of faith, was the religion taught by Christ.

All that has been added to His religion since is the work of theologians. Today the people are stripping off the husks to find the kernel of truth beneath it all. In the process many are getting so far from the professions as to deny everything, but in the end truth and sanity will triumph.

Man has always had a religion; he always will have, for without a knowledge of some higher power, this life would be a wilderness and civilization would revert to savagery. It is not by copying ourselves that we rise, but by imitating our ideal of perfection as expressed in our God.

And even with those who profess disbelief there is still the acceptance of all the good which has come through man's hope of immortality. Privately, I am fairly convinced that the avowed disbelief is with the most, only a pose. For the moment it may seem "smart" to pose as an

agnostic, but underneath it all there is firmly implanted in every human being the divine spark which silently witnesses to the great Light.

DEBORAH.

PAPER HELPS.

BY SUSAN KANE.

The value of paper as an item of economy both in labor and money, cannot be too much exploited among busy, thrifty housewives. A drawer in the kitchen for the old newspapers, and the strong paper in which the household supplies come wrapped, proves a great convenience. When beginning the day's work place a heavy paper on the floor before the sink, kitchen table, and any other place where much of the work is done, thereby saving the linoleum and making it necessary to scrub the floor's less frequently. After the work is done gather up the papers and throw into the waste basket.

Keep the pan under the gas burners on the range lined with paper. It will not take fire and catches the refuse that naturally accumulates when cooking and keeps the tray free from grease.

Washing the garbage-can is certainly an unpleasant task, and a dirty one is not to be tolerated. Try lining it, bottom and sides, with several thicknesses of newspaper. Watch the smile the clean can provokes when the garbage man looks into it after it is empty.

Use paper on the table when cleaning a chicken, preparing fruit and vegetables, or cracking nuts. Roll up the refuse and thus make it less accessible to flies when in the garbage can, and there will be no dirty table to wash after the work is done.

Save the hands and reduce the dish pile by using a square of paper for flour, sugar, or cracker crumbs when preparing food which needs to be rolled in any of these materials. Lift the paper by the corners or edges and shake the piece to be dusted in it until it is covered.

Lay fried foods on paper and it will absorb the fats. A layer of paper, if its surface be soft, will take up extra fat and oils from soups and gravies.

Bread, biscuits and gems that have become a little dry may be made like fresh, if sprinkled lightly with water and then wrapped with paper or put into a paper bag and placed in a hot oven from seven to ten minutes. The paper prevents over-browning and retains the steam which softens the bread.

A mince or apple pie re-heated in a paper bag, becomes crisp like when first baked. Stale bread, for crumbs, dried in a paper bag, needs less attention than when put into the oven in an open pan.

If short of bed clothes for an extra cold night, spread newspapers between the quilts. Wrapping the feet and legs in newspapers, before starting on a long cold ride, will be a great help in keeping them warm and comfortable.

Heavy, unprinted paper under the table pad helps to preserve the surface of a well-finished dining-table.

These are only suggestive of the many ways old papers may be utilized, saving the time and labor of the housewife. If she wishes to use paper more extensively in her daily tasks, a visit to the household paper section of some department store will be a revelation, for there its possibilities are fully shown as a commercial product, appearing in many different forms, designed for specific purposes.

There are the dish cloths, long lived, sanitary, and white and clean to the end, whether used for scouring pots and pans or washing the silver and crystal. And a package containing six parchment dish-cloths costs 15 cents.

Paper towels come in rolls of 50 each, costing much less than laundering, be-

sides there is the added pleasure when using them of having a fresh one for each washing. Infection is often passed from one member of the family to the other by the use of the towel in common. Where paper towels are a part of the equipment of the bathroom there is less danger of the spread of any infectious disease. In the kitchen they are excellent for polishing, absorbing fats, and anything spilled on delicate fabrics.

Soft and pliable diapers that may be used on the youngest child are among this commercial paper. These should be crumpled and squeezed in the hand before adjusting and are worn under the regular cloth. It is needless to comment on them as a factor in saving mothers much disagreeable labor. Another nursery aid is the moisture-proof mattress pad.

Rolls, containing 100 feet of pure white washable paper, costing very little, may be put to a variety of uses, such as shelf covering, linings for cake and bread pans, coverings for jelly glasses, linings for chests, and dresser and table drawers. Being grease proof it is of great value about the kitchen, cellar and ice box.

There are paper combs, soaped-paper washrags, drinking cups, and ice-blankets. Twenty-five cents will purchase 300 waxed paper tops for jelly glasses and from \$1.00 to \$2.00 will buy a paper-lined cooking utensil for meats and vegetables that will greatly improve the flavor of the foods cooked in them. After a meal cooked in these paper-lined vessels there are no pots or greasy pans to wash, the bags fully protecting the metal from contact with the food. The bags are thrown away. New ones are inexpensive.

Dainty doilies, luncheon cloths and small-sized table cloths made of paper are reasonably priced.

Any housewife who once sets about using judiciously the paper products on the market will be slow to return to the use of fabrics, with the endless amount of labor it takes to keep them supplied, repaired and clean.

TATTING NOVELTIES.

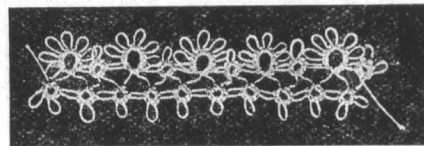
BY ELLA L. LAMB.

Tatting Edge.

ds—Double Stitch.

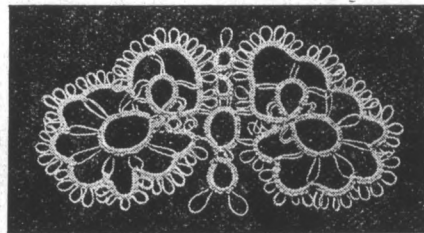
p—Picot.

Make ring of 2 d s, 7 p each separated by 2 d s, the 2 d s and close. Turn the work, and leaving about one-eighth inch of thread, make a small ring of 2 d s, 3 p,



each separated by 2 d s, then 2 d s and close. Turn, and make ring 2 d s join to first picot of large ring, 2 d s, 1 p, 2 d s, 1 p, 2 d s close. Turn and make another tiny ring like the last and repeat.

The tatted butterfly illustrated is made



of D. M. C. No. 80. It is much prettier made of No. 100.

To make wings.—Begin with single thread and make 5 d s, 8 p each separated by 5 d s, then 5 d s and close ring.

Make 5 d s fasten to last picot of first ring, 4 p each separated by 5 d s, 5 d s and close.

With two threads 2 d s, 1 p, 2 d s, fasten to last p of small ring. Make 2 d s, 4 p with 2 d s between each. 2 d s and fasten to next p; 2 d s, 9 p with 2 d s between each, 2 d s fasten to next p of ring; * 2 d s, 5 p with 2 d s between

them, 2 d s fasten to next p in small ring and 2 d p of large ring.

Repeat from * 6 times which brings you to beginning of first ring. Cut threads, tie neatly and clip closely.

To make body.—With single thread make 3 d s, 1 p, 5 d s, fasten to 3 d p of last scallop of upper wing, 10 d s, fasten in 2d p of 2d scallop of lower wing, 3 d s, 1 p, 3 d s, 1 p, 3 d s, 1 p, 10 d s, 1 p, 5 d s, draw up and turn.

To make head.—With same thread and about the same distance from last ring as the length of last picot, make 3 d s, fasten to last p 10 d s, 1 long p, 5 d s, 1 long p, 10 d s, draw up, tie thread and clip closely.

To make lower body.—With single thread, make 3 d s, 1 p, 5 d s, fasten to 2d p in end of body, 5 d s, draw up.

With the same thread and at the same distance from the last ring as the length of the last picot make 3 d s, fasten to 1st p of last ring 6 d s, 1 p, 6 d s, draw up, tie thread and clip closely. Make the other wings and fasten to body to correspond with first pair.

This butterfly may be used in various ways, on dainty bow for neckwear or as insert in combination with embroidery on waists and dresses. Made of very fine thread it may be used in handkerchief corner.

CONTRIBUTED RECIPES.

Fine Wedding Cake.

Cream together two pounds each of sugar and butter, add beaten yolks of 12 eggs; stir well, then add two teaspoons of melted chocolate, one tablespoon of cinnamon, allspice, same of powdered cloves; stir well, add one glass of grape juice and two teaspoons of rose water. Add next the beaten whites of 12 eggs. Brown two pounds of flour, roll five pounds of seeded raisins, one and one-half pounds of shredded citron, one pound of figs, one pound of crystallized cherries and one pound of dried pineapple in one cup of the flour, and add to former ingredients. Stir well, then add one pound each of shelled pecans and blanched almonds cut fine, and one glass of apple jelly. Stir well and add balance of flour, in which two level tablespoons of baking powder have been sifted. Bake in slow oven, four to six hours, and when cold ice with thick coat of boiled icing, keep in cool place. Will be better if kept several weeks before serving.

Apple Puff.

Fill pie tin one-third full of finely sliced apples. Sprinkle sugar, cinnamon and little pieces of butter over them. Moisten them with water and cook them half done. Remove and pour over them a thin batter made of sifted flour with baking powder, a pinch of salt, a good-sized lump of butter. Bake in a quick oven until a golden brown. Serve with cream and sugar.

Bread Pie.

Soak six slices of stale bread crumbs in milk until they are tender. Water can be used as a substitute. Squeeze them out, add the whites and yolks of three well-beaten eggs, one small lump of melted butter, a pinch of salt, a cup and one-half of milk, and nutmeg or lemon flavoring. Bake in a pie tin lined with nice, short crust. When it is done, place over it the beaten white of an egg, and slightly brown in the oven.—Z. I. D.

THE CARE OF ONE'S SHOES.

It is not everyone who understands how to take care of shoes. And upon care largely depends the life of a pair of shoes, as well as their appearance while being worn.

It is more economical to have different kinds of shoes for different kinds of wear. There should be dress shoes and shoes for hard wear; street shoes and those for the house. For dress shoes and those for the street it is well to get the best available. They will not only outwear the cheaper grades but look much better as long as they last.



**The Gold
is thin—
but the diamond
still shines
brightly**

This picture illustrates a letter from
one of our friends, which
we quote below:

August 24, 1913.

"Just thirty-one years ago today my wife now, then my sweetheart, sat under a large chestnut tree in her parents' front yard, in the same position as the cover of your Catalogue No. 82 represents, selecting a diamond ring from your Catalogue..... That ring and book told my future life. Ever since the ring was secured, it has been worn. It is just as good now as then, only the band is thinner—but the stone is the same old diamond— * * * * *

"Since those days times have changed. Montgomery Ward & Company have grown from a small store room to a vast city by itself and I have grown from a family of five sons and a daughter and from a farm hand to a farmer of over 800 acres of choice land.

"Small profit, honesty and saving are what make people progress in this country.

"If you look over your filing list, you will see my name down every month for something, sometimes every week. And as long as God spares my wife and I you will find us on your list—also my son."

Yours respectfully,

(Name on request).

Is our latest Catalogue in your home? The great showing of thousands of bargains will absorb your attention. The pictures show home comforts you need. By comparing the articles and prices you will realize the economy there is for you in every purchase from this wonderful thousand-page bargain book. Fill out the coupon now and send for your Catalogue today.

Montgomery Ward & Co.

Montgomery Ward & Company
Send me free a copy of your new Catalogue.
do is to look it over.

Name.....

Street.....

Town.....

State.....

R.F.D.....

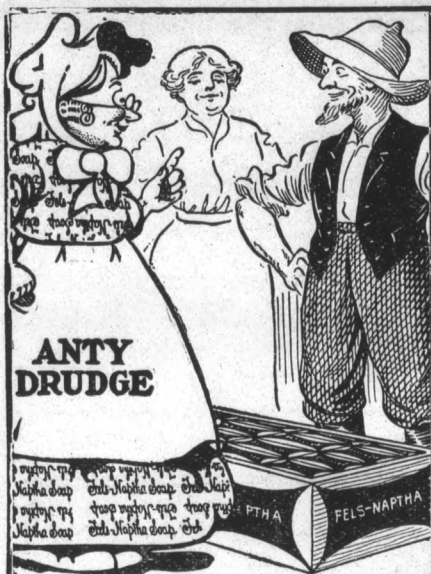
Dept. G. G. 11.
All I agree to

Drawn expressly for
Montgomery Ward & Co.,
by Dan Sayre Groesbeck

DAN SAYRE
GROESBECK

MONTGOMERY WARD & CO.

New York Chicago Kansas City Fort Worth, Texas Portland, Oregon



Farmer Medders: "Here's your box o' soap, Maria. Good morning, Anty. Maria keeps me buying her Fels-Naptha Soap now. Won't use anything else. Seems to me she's getting most too spry these days, with no work to do. That boarder rode to town with me today, and she asked me, 'Don't you ever come to the city to see the sights?' And I sez, 'Oh, no; we see 'em every summer.' Ha! ha! Well, seeing you don't need wood for a fire or anything, I'll go out to the barn and let you get your washin' done. I don't have to help any more, Anty, since Maria's using sense and Fels-Naptha Soap."

There is no need for women to be tired and sick from overwork. Fels-Naptha Soap will cut your work in half. It is the easy way of doing all the disagreeable parts of housework.

Use Fels-Naptha in cool or lukewarm water for your weekly washing, housecleaning—everything you have to do. Clothes washed with Fels-Naptha do not need to be rubbed hard nor boiled and are on the line in half the time it used to take.

For making your work easy, use Fels-Naptha Soap and follow directions on the red and green wrapper.

Better buy it by the box or carton.

Fels & Co., Philadelphia.



One should insist on careful fitting. The uppers should fit snugly around the ankle so that there may be allowance for stretching. Shoes too narrow should be avoided, even if they are comfortable; shoes too small always give the impression of being larger than they really are. Neither should the shoes be so large that the foot slips around in them. These are as fruitful of corns and other inconveniences as shoes too small. The end of the big toe should be at least a half-inch from the tip of the shoe.

In buying shoes avoid patent leathers, unless one need never be exposed to the wet, high heels and fancy trimmings should be avoided. The value of the purchasing price should go into the quality of the leather, a superior shape and good sewing. The judgment of the novice is not to be trusted; therefore, shoes should be bought of a reliable dealer only. Fire sales and special bargains should be avoided, unless one knows the dealer not to be dishonest.

The dress shoes should be as pretty as one can afford; there is no article which makes or mars a pretty toilet more than the shoes. Cheap shoes with the heels run down and the ties frayed, will make a dowdy of the handsomest, otherwise best dressed woman. Shoes with a dull finish are the prettiest. They should be large enough to slip on and off easily.

For the house, slippers or low-cut shoes are the best. When one comes home from work, or outside, the street shoes should be slipped off; this will give the feet a delightful rested feeling. In the house none but the house shoes should be worn. This alternation in wearing will make all one's shoes wear much longer.

Before putting on one's street or dress shoes, they should be critically examined. The street shoes should be blacked, the dress shoes oiled. Any missing buttons should be sewed on. If the ties are damaged in appearance, they should be replaced. In short, they should be kept right up in all the smartness of new shoes.

Shoes should be kept out of the dust them new looking, the second will pre- and on shoe trees; the first will keep serve their shape. As soon as the heels begin to run down, they should be straightened. This costs but little and keeps up the appearance. As soon as the soles grow thin, they should be renewed.

One's shoes should be brushed every time they are worn. About once a week they should be polished. Beforehand they should be washed clean, with a cloth dampened with soapsuds; then apply an oil paste thoroughly and polish well.

For the dress shoes and any dull-leather shoes use sweet oil. This will not only improve the appearance of the shoes but greatly advance their lasting qualities.

DEBT PAYING.

BY TOMMIE BAKER.

At the beginning of a New Year many people in this broad land of ours vow to "turn over a new leaf;" to start out with a clean page and by a species of self-goading to live next year on a higher plane than ever before. They plan to do some good thing each day, read a chapter from the Bible, speak kindly to everyone, visit the sick, etc. Any or all of these are well enough if adhered to, but the main trouble is they are only kept for a week or two, perhaps a month, and then dropped permanently by the would-be idealist.

To my mind, in making resolves of this kind it is essential to fix upon something practical and wholesome that will count for the greatest happiness of the individual for the present year and the remainder of his life. A resolution of this order well-nigh forms a basic principle.

We all know the dark wings of debt hover over many American homes, and the habit of running accounts becomes a troublesome problem at times. When we run in debt we give creditors power over our liberty. Then, would it not be a good idea to begin the New Year by paying cash for everything we buy and get a substantial discount thereby? And, if one does not have the wherewith to buy a given article would it not be wise, if possible, to wait until the money is in hand.

But when cash is paid for all our purchases, that is not all of our debt-paying we owe. If we are not careful to return social obligations devolving upon us, we will soon find we are making a reputation for being selfish. This we do not relish. We must not neglect to visit our friends. In so doing we are the losers for there come times when friends are invaluable.

Again, most of us owe debts religiously. Just how broad the field is, is hard to de-

termine. In this age of hurry and money-getting, the religious life, sad to relate, is dwarfed in many instances. It seems to have no part in the careers of men and women. This should not be. It is a noticeable fact, however, that in the proportion the religious life receives wholesome nourishment in the same ratio does the individual rise in his chosen vocation in favor with God and man, natural gifts being equal. Hence, it is highly important that we endeavor to discharge this duty. We can, at least, attend church with some degree of regularity, meet a part of the expense of maintaining same and so live as to be able to take the communion worthily. Some may argue this is not religion, that the church is full of hypocrites.

So the resolution, "To pay cash for what I buy, discharge my debts socially and religiously," seems to me to be a good one for the New Year, as it is no more than the duty of us all, and duty is the sublimest word in the English language.

TEACHING DOMESTIC SCIENCE IN BELGIUM.

BY MRS. F. NISEWANGER.

We have been thinking ourselves quite progressive with our Agricultural Colleges and their extension departments, our demonstration trains and short courses a few years old, and our county agricultural experts who are, as yet, but little more than a dream. It takes some of the conceit out of us to learn that Belgium, a country so tiny that it would be lost in many of our states, has for 30 years systematically sent expert agricultural advisers out through its rural districts to teach farmers how to conserve the fertility of their land and get the greatest possible yield from it, and for nearly the same length of time has had its traveling schools of domestic science for farm girls.

The wide-awake little country's modest explanation of its agricultural advancement is an adaptation of the old saw, "Necessity is the mother of invention." Pointing out that while they have 7,500,000 people, they have but 7,500,000 acres from which to feed them, they explain that it early behooved them to make farming a profession and to spread the science of farming in every possible way.

The position of the Belgian farm woman being somewhat different from that of her American sister, since both the material and social life of the country depends largely on her, it was to the interest of the nation to make her as efficient as possible, hence, perhaps, the traveling schools of domestic science.

Those thoroughly equipped schools go to the different villages and the girls come in from their near-by farm homes to attend them, any girl between the ages of 17 and 25 years being eligible as a pupil. The schools never lack support for they are very popular and are eagerly welcomed to the villages. They continue in session six hours each week day during the four months slack winter season. The morning session is four hours long then the girls go home for dinner and return for the afternoon session of two hours.

The pupils are divided into four groups of four or five girls each and take their regular turn at the different work of the morning session. While one group is attending to the work in the kitchen another is doing practical sewing, the third is doing laundry work, bringing soiled clothes from home for the purpose, and the fourth is attending to the dairy work, testing milk, using the separator, churning and making cheese.

The afternoon session of two hours is occupied by lectures, illustrated whenever possible, on home economics. Some time is given to every topic of interest to farm women, both in and about her home, so that, during the term, the curriculum not only includes practical information and demonstrations relating to kitchen, laundry, sewing room, nursery and dairy, but also that on gardening, raising poultry and caring for young stock.

The nearest we have approached this system of instruction for farm girls is the domestic science course of three or five days, sent out in connection with the short courses of the agricultural colleges, and a few instances of teaching the subject in a limited way in rural schools.

Belgium has 500,000 farm women and they have for some time recognized the need of organization and co-operation, so they have their numerous established societies for marketing and their "Circles" for self-improvement and education, that are active throughout the year. In 1912 there were 183 of these circles with 21,460 members and their enrollment is steadily increasing. These circle members are

known as voracious students, studying everything pertinent that they can get hold of, making great use of the technical books in their traveling libraries, similar to our own, and securing the services of practical lecturers and demonstrators whenever possible. Some of their topics for discussion are: "General Agriculture," "Qualities of Farms and Farm Work," "A Day's Work on the Farm," "Poultry Raising," "Dairying," "Hygiene," "Duties of Mothers," "Mother Love," and "The Farm Woman's Dress."

COLD WEATHER PLAY FOR THE LITTLE ONES.

LITTLE folks shut in from exercise and play in the open air by reason of severe cold weather or when slightly indisposed, are always hard to amuse. Especially is this the case where one child is alone.

A two-year-old, proud of the growing use and control of its fingers, will sometimes sit for an hour quietly cutting paper into bits with a pair of blunt-pointed scissors, small enough to be easily managed. When tired of this form of amusement the child itself will take pleasure in picking up the scraps with the carpet sweeper, thus saving the mother the job of clearing up.

For a three or four-year-old, stringing beads is a fascinating employment. A child of this age soon learns not to drop them and can get a great deal of fun out of the different colored beads in combination with some strong thread and a blunt-pointed needle. One little girl plays grown-up by threading baby ribbon or even a piece of wrapping twine through the holes in a piece of coarse embroidery. Stringing buttons is equally enjoyable.

For a child old enough to be entrusted with paste, nothing is more fascinating than pasting strips of colored paper into rings and chains. Dressing paper dolls, which now are found in many of the household magazines, furnishes amusement, too. Soap bubbles, while rather sloppy, are lots of fun for most children and when suitable arrangement is made for this, play is really not so sloppy after all. Even older folks enjoy watching the sport as the brilliantly colored spheres go floating off into space.

After Christmas there is usually an over-abundance of toys in a home where there are little ones. The wise parent does not allow all these in use at one time but puts aside certain pieces to be brought out later, when the first are beginning to lose their charm. A few toys at one time are better for several reasons than a large assortment.

GUARDING AGAINST FIRE.

BY ELLA E. ROCKWOOD.

Losses by fire would be less frequent if in every family certain rules were observed and old and young alike trained to think when handling matches, lamps, lanterns and fire-making materials in general. There are instances on record where blazing buildings have been saved by prompt and intelligent action on the part of some individual, and there are plenty more where total loss was entailed which might have been avoided had not the one who discovered the fire lost his head and forgot what to do in the emergency.

At the beginning of winter, chimneys should be examined for defective flues, since a large proportion of all residence fires start from that source. Lamps left standing in too close proximity to inflammable material is another source of danger. Also a lighted lamp or candle carried into a garret or a clothes press where material easy to set on fire is close at hand. At holiday time there are fires, often attended by fatalities, resulting from the use of cotton, wool, tissue paper decorations and candles on Christmas trees. Every precaution should invariably be observed by those participating in such occasions to see that every element of danger is eliminated, and nothing left to chance.

Children playing with matches are responsible for many a blaze, and many a horrible death is attributable to the same cause. No child should ever be permitted to play with such dangerous articles. Furthermore, as soon as a child is old enough to understand the character of fire it should be impressed with the peril attending the careless handling of all sorts of blaze-making material. The foolhardiness of children at play about bonfires in daring each other to feats of supposed bravery is equaled only by that of the man or woman, usually the latter, who refuses to be warned by the repeated accounts of similar accidents and

carelessly uses gasoline about an open fire, or pours kerosene upon fuel to coax a blaze, which, by the way, usually requires very little coaxing to do an immense amount of damage.

Children, I repeat, should be early instructed regarding the danger of playing with fire. They should be told what to do first in case of accident. I once knew a brave little boy who saved his life, no doubt, by thoughtfully lying down on the ground and rolling over and over instead of running when his cotton blouse caught from a spark from an outdoor fire. Older persons often lose their senses completely when the emergency arrives but children who have had it impressed upon them time after time will be very apt to do the right thing in case of accident. Reports are common of some boy or girl who saved the life of a playmate by snatching a rug or blanket and smothering the fire which had caught in the clothing.

Lamps need watching. They sometimes act in a very dangerous manner when lighted. Only a short time ago I saw one which was about to explode when it was caught up and thrown outside the house. Care should be exercised at this season, when they are in use so many hours each night, to see that they are in proper condition. A well filled lamp rarely explodes. It is the one which is nearly empty, leaving a large space for the formation of gas, which causes the trouble.

Fire is a good servant, an indispensable one, but it is capable of making much trouble unless carefully watched.

THE DARNING BASKET.

BY MRS. JEFF DAVIS.

When the weekly wash comes in, select the clothes that need mending, and find patches of the material, yarn to darn with, or whatever is necessary to mend with, and pin the pieces to the articles to be mended; then put them aside in a place especially reserved for such use, until you have time to sit down quietly and sew. Having everything ready, you will accomplish much more at one sitting. This method robs the weekly mending of half its terrors for the busy housewife.

When darning stockings run a thread around each hole before beginning, and draw until the edges lie flat. This makes the hole smaller, and it will be easier to mend.

When the children's hose become very thin on the knees, as they usually do before being worn through, run stitches across to strengthen, then try this method. Cut off the feet and turn the back of the legs to the front of the feet, sewing by hand to make a soft seam that will not hurt the feet. You get double service in this way, and the unsightly darns on the knees do not show when turned around.

Another way to prolong the usefulness of children's stockings is this: Before the stockings are worn, take a deep tuck in them just below the shoe-top. When they are worn through at the knee, let out the tuck and the wornout part will come up too high to be noticed when mended.

When the elastic of children's hose supporters is worn, replace with new elastic. If the supporters are soiled, wash before sewing in the new elastic. Enough elastic may be bought for the price of one pair of supporters to make over several pairs to be as good as new.

Hose Protection.—At the 10-cent stores, and many of the department stores you can get separate feet for refooting worn-out hosiery. It isn't necessary to take the trouble to attach them. Merely slip them over the regular hose, washing them often. These save the thin lisle and silk hose that girls often insist on wearing even in winter when high-top shoes are worn.

Mending a Sweater.—When you have the difficult task of mending a sweater, or any other garment that has a rib, do not darn the tear. Take yarn of the same color, and run stitches across the rent, then begin at the upper left-hand side and chain-stitch down the row of cross threads, catching into a thread every stitch. These chain stitches look the same as the knitting, and the tear will not be noticeable.

Strengthening Pillow Slips.—Pillow slips made from tubing may be given a longer lease of life by reversing the end seams. Rip seam and turn half way round so that former side folds meet in the center, and stitch up again. This gives a new surface to the heavier wear, and literally doubles the service of pillow slips.

When the embroidery ruffles of a petticoat is worn on the edge, cut off as much

as is shabby, and turn a narrow hem, then get some torchon lace, as wide as the edge you cut off, sew it to the hem just made. Thus the life of the petticoat is doubled, and its appearance improved.

A good use to make of the fronts of embroidered waists when all the rest is worn, is to make them into fancy aprons. Put lace, or embroidery around the edge for a finish.

To Mend Lace.—Place a piece of paper under the torn parts, and darn well on the machine; then tear away all of the paper.

To Mend Overshoes.—Get a roll of strong surgeon's plaster and when an overshoe becomes torn cover the place with the plaster, then go over it with black shoe polish. This will last longer than the overshoes, and will not be noticeable.

All of these "stitches in time" will prove helpful in solving "the high cost of living."

SHORT CUTS TO HOUSEKEEPING.

Small screws, brads and tacks may be kept from rusting by putting them in wide-mouthed bottles and corking tightly.—Mrs. J. J. O'C.

An ounce of alum added to each gallon of rinsing water will render lace curtains and children's clothing almost fire proof. When a match head strikes against a curtain thus treated the lace smolders instead of bursting into flame.—L. M. T.

The baking of potatoes may be hastened somewhat by cooking them in boiling water about 15 minutes before placing them in the oven.—A. E. L.

Severe neuralgia in the head may often be relieved by binding bruised horseradish on both wrists.—L. M.

To clean floors, buy a common black-board eraser and fasten it firmly to an old broom handle. If the eraser is dipped in a little coal oil it will take up all lint and dust and polish the floor at the same time.—Mrs. J. J. O'C.

When cleaning white enamel woodwork try using sweet milk and ammonia, two tablespoonfuls of ammonia to a quart of milk. The enamel will not turn yellow if this mixture is used.—Mrs. O. W.

If a teakettle has boiled nearly dry fill it by pouring the cold water into the spout without removing the cover.—L. M.

When dressing a chicken, hold by the neck and pull the feathers downward. This is done in less time and leaves fewer pinfeathers.—Mrs. L. L. G.

FASHIONS BY MAY MANTON.

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



No. 8062-A—Sports coat for misses and small women, 16 and 18 years.

No. 8069—Coat with full front and belted back, 34 to 42 bust.

No. 7659—Single-breasted coat, 36 to 46 bust. With cutaway or straight fronts.

No. 7815—Four-piece skirt, 22 to 32 waist. With high or natural waist line.

No. 7941—Two-piece draped skirt, 22 to 30 waist. With high or natural waist line.

No. 7991—Four-piece skirt, 22 to 30 waist. With cutaway or straight front edges, high or natural waist line.

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

Cuts Grease and Soot From Kettles

One rub with "OLD DUTCH" will prove its marvelous cleaning power. Try it where grease and stains stick.

Does the work in half the time with half the effort.



Don't be without it — 10¢ LARGE CAN

COLEMAN LIGHTING SYSTEMS

Can be quickly and easily installed at low cost in any home. Guaranteed for 5 years. Absolutely safe, made strictly according to underwriters' rules. Furnish average home with beautiful, soft and eye-easing natural light at 1-10 cost of kerosene. 30 times cheaper than electricity. Lamps work independently of each other. Make and burn their own gas. Fuel furnished from pressure tank placed either inside or out-of-doors. Full particulars and catalog free, also a lighting plan for your home, if you write us at once.

ONE AGENT WANTED in every locality. Experience not necessary.

Coleman Lamp Co., 221 St. Francis, Wichita, Kan. 1007 Summit St., Toledo, O.

A LAMP FREE Silver Herring 3c.

SELECTED QUALITY.

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

WISCONSIN FISHING CO.

Department Y. Green Bay, Wis.

The Michigan Farmer one year, The New York (3-a-week) World, one year, both only \$1.20

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

MEN WANTED

We positively teach you at home by mail to earn \$25 to \$50 weekly as Chauffeur or Repairman. Students assisted to positions. Best system, lowest prices. MODELS FURNISHED. Write for Free Book. Practical Auto School, 86-W Beaver Street, New York.

Holland Furnaces Make Warm Friends

"ASK ANY LUCKY OWNER" If You Buy, Build or Own—It Pays to Have

A Holland Warm Air Furnace

"The Heart

Has fewer joints, smaller joints, is simpler and easier to operate than any other make. It will burn any kind and all grades of fuel—hard coal, soft coal, slack or wood—without waste of gases, without internal explosions and without opening of joints.

You can buy no cleaner Heating Plant than a Holland Furnace.



of the Home"

The Holland Furnace, size for size, will give more heat from fuel consumed than any other furnace on the market, because it has the grate surface, the radiation and the most perfect and natural way of burning fuel. Sold under a Double Guarantee from factory direct to consumer.

We have fifty branch offices and warehouses in the States of Ohio, Indiana, Illinois, Wisconsin and Michigan. We can absolutely insure correct installation by experts.

Send for Beautiful Catalog

Holland Furnace Co.

Holland, Mich.

Largest Direct Installers

of Furnaces in the World

Farm Commerce.

Direct Dealing and the Public Market.

THE great problem of the farmer is the distribution and sale of his products so that he may deal more directly with the consumer. The problem of the consumer is cutting down the cost of living. Not until both farmers and consumers realize the advantages of a more efficient system of direct dealing can the problem be worked out in a practical way. While the interest in direct selling has been stimulated by the parcel post, very few farmers have succeeded in building up a profitable trade with city customers. City newspapers have co-operated with farmers and consumers by publishing names of farmers with produce to sell direct, and consumers have been active in devising means to deal direct with farmers. The scheme is correct in theory, but in the majority of cases it fails to work out successfully.

The most puzzling problem confronting both parties is that of determining the honesty and businesslike dealings of the other. How is the farmer to decide whether the city consumer is trustworthy? How is the city consumer to decide whether the farmer is trustworthy? All of these problems must be worked out before any satisfactory system of direct dealing can be established between the farmer and consumer. Experts have written interesting articles telling farmers how to size up customers for credit and explained the numerous advantages of dealing directly with farmers who have produce to sell. These articles have made mighty interesting reading and, perhaps, proved helpful to many farmers and consumers in working out the letter writing end of their problems. But the practical fact, however, is that the customers who size up best for credit are not the ones interested in cutting down the high cost of living.

For example, Mr. Peter Smythe, president of the Great Sand Bank of Chicago, is not interested in buying two dozen eggs each week from Sunnyside Farms, of Oak Park, Ill. Undoubtedly, Mr. Smythe would be a very desirable customer from the credit man's point of view, but the truth is that a man of his standing in the commercial world has other more important business on hand than employing an office force to look after a mail order business in eggs, broilers and farm produce.

We must deal with these problems as we find them, and not as we picture them in our minds. Perhaps Mrs. Smythe while attending a meeting of the "Woman's Uplift Club," has been appointed to the committee to investigate how to cut down the cost of living. She returns home and writes to a farmer who has produce to ship direct to the Smythe home. The first month she buys a few dozen eggs, some dressed fowls and maple sugar, but eventually the fad is abandoned for another. She is elected president of the "Society for Finding Homes for Indigent Cats." Her new duties require so much of her time and attention that she neglects to order more produce from the farmer.

The problem of sizing up customers for credit would be simple, indeed, provided one could build up a direct trade among bank presidents, capitalists and successful business men, but the fact of the matter is the great mass of consumers, the ones most interested in cutting down the cost of living, are people in the middle walks of life. How to size up these people and separate the sheep from the goats is a far greater problem than some of our learned experts would have us believe. All direct dealing should be on a strict cash basis, at least until the parties are sufficiently acquainted to have trust and confidence in each other. Most of the investigations of the farmer-to-consumer problem wind up with the same conclusions and the same recommendations. It is found that unless the business is conducted on a strict cash basis the risks are too great; the losses absorb the profits.

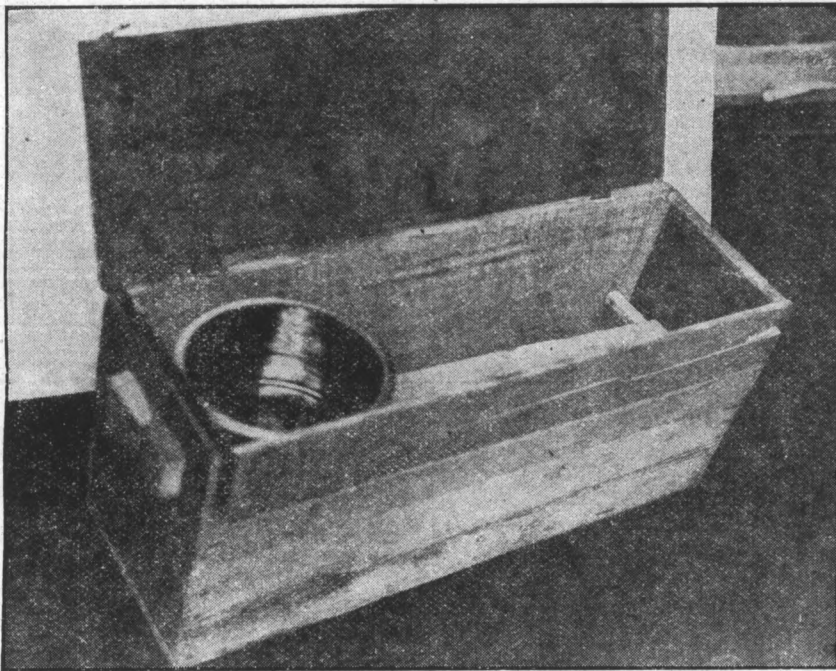
In working out a system of direct dealing and delivering the produce from house to house in a large city the farmer is compelled to spend too much of his time on the road to make the business profitable. Then, too, city customers have become so accustomed to buying from their groceryman on time that it is very diffi-

cult to get his money when he delivers his produce. I have followed the articles pro and con in the various farm papers as to "How to eliminate the middleman," and I have been interested, amused and in turn saddened by some of the remedies that have been suggested. After all of the arguments have been presented and the case given over to the jury of readers, the fact is that the farmers and middlemen have not been proven guilty. Who is the guilty party? In ninety-nine cases out of a hundred it is the consumer. I have spent considerable of my time in the city for the past five years and I know families who have become so accustomed to buying on the credit system that they had rather pay their grocery 30 cents a peck for apples and potatoes, and have them charged, than to pay the farmer 50 cents a bushel cash for the same products. When the consumer begins to pay cash, and show the desire to deal directly with the farmer, then, and not until then, can we cut out the middleman's profits. Consumers who trade on the credit system always have

customers from day to day, and the woman with her basket is not compelled to crowd through a mass of fighting humanity to get to the farmer's wagon.

In order to bring farmers and consumers together week after week so that the farmers will get more money for their produce and the consumers more produce for their money the market must be located where the farmer's can meet the best customers. Can the farmer make enough profit going to the market to cover the expenses? Can the city consumer save enough to pay her car fare and pay her for carrying her basket to and from the market? In the last analysis it is the problem of how much each party can save by direct dealing on the public market—and whether or not they can afford to go to market and, if so, how they can manage best.

In Buffalo there are several markets where farmers may sell their products. These markets are owned by the city, and the policy has been that the farmer should be allowed to drive in and sell his products from his wagon. Buffalo is a city with a population approaching one-half million and it now has several of these markets serving different sections. In these markets the farmers from the surrounding country may be found nearly every week day selling from their wagons. There is a fee of 25 cents for one-horse loads and 50 cents for two-horse loads—a tax levied for meeting the expenses of cleaning the markets and paying a clerk to attend to keeping order and



About 360 pounds of butter have been shipped in this crate since last May—30 pounds being sent every two weeks from Davisburg to Detroit. The crate holds six five-pound crocks—three are placed in the bottom, a board laid in when three more crocks are set on top. While all express companies will not accept butter for shipment when packed in a crate, it has the advantages of easier handling and of keeping the butter cooler in warm weather.

to pay dearly for the privilege. It is wrong to heap the sins of the consumers upon the farmer, or to blame the middlemen, for the high cost of living. They are both innocent of the crime. Eliminate the buying on credit, and the problem will solve itself. Money talks.

The public market in which the farmer can sell his products directly to the consumer affords an outlet for mixed lots of produce, too small to cut any figure in the regular channels of trade, but which in the aggregate amount to millions of dollars annually. For several months the writer has made a careful study of the public market problem as well as the class of products produced by farmers who haul their stuff direct to these markets. One of the discouraging features of the present-day public market is the fact that the farmer who wants to sell and the well-to-do woman with her basket have no convenient and sanitary place of meeting. The average city market is a clearing house for a class of produce that appeals largely to the cheap foreign trade, it, therefore, fails to bring the farmer in touch with the better class of customers who are willing to shop with a basket and pay fair prices for quality products when they can buy them direct from the farmer's wagon. In order to get the best prices for their products it is necessary for several farmers to co-operate, rent space on the market, and employ a competent salesman to grade and assort their stuff so that they can supply a regular trade during the year. In this way they can hold regular

looking after the placing of the wagons.

Many farmers have telephones and keep in touch with conditions and prices. They have regular customers and load their wagons according to sales made a day or two before going to market. Most of these farmers deal with city grocerymen and hucksters, rather than bother with the woman with a basket, the reason being that the woman with a basket is usually a foreigner who is looking for something cheap. Many prosperous little farms depend on these markets as an outlet for their produce but few of them devote any attention to quality. Fruits, vegetables, poultry and dairy products are hauled to market. The men who produce the better grade of products usually sell to dealers who have space on the part of the market where the stores are located or else have a store of their own where they can meet the woman with her basket in a comfortable and sanitary place.

Farmers come to these markets from as far as thirty miles, but the bulk of the produce is produced on small farms within a radius of twenty miles from the city. The usual vehicles are two-horse wagons, many with covers and well-protected against dust and storms. This year many farmers are operating motor trucks, a few of these trucks come from as far as forty miles. When the wagons arrive at the market they are put in place and the horses taken to a barn and stabled. There is no protection for the wagon or products except occasional awnings which farmers themselves have provided.

The largest market is located near the geographical center of the city and the bulk of the farm produce goes to this market—the other markets do a larger business in a retail way, but do not have adequate accommodations for the farmer's wagons. The city dealers who have stores at the other markets depend upon buying most of their produce at the big central market. This scheme enables the city dealers to control prices and practically prohibits the farmer meeting the consumer and adds greatly to the cost of distributing the produce after it reaches the city. A number of extensive grocers and meat dealers have taken advantage of the situation and established chains of stores in various parts of the city. These men keep representatives on the big central market who buy, grade and distribute produce to their various private markets in the better residential sections of the city. In this way each class of trade can be supplied with just the grade of produce it demands and the buyer has an outlet for every grade of produce purchased in the cheap mixed lots.

After making a careful study of the marketing problem as well as the distribution of farm products after they reach the city it seems as though there is plenty of chances for farmers to reach the city consumers if they would get together and establish small stores on these city markets where they could deal direct with city consumers. Fitting co-operation to these hundreds of small farmers who produce such a wide variety of products, so that they may get their share of the consumer's dollar means a direct system of marketing through a co-operative society or farmer's exchange. The possibilities of such an exchange are by no means confined to the local city markets, for the demand for quality produce from several large eastern cities absorbs a large quantity of the choicest products hauled to the Buffalo markets. A number of large commission firms operating in the city buy annually thousands of dollars worth of quality produce to be loaded and shipped by fast freight and express to New York, Philadelphia and Boston. In a future article I shall discuss this phase of marketing and point out the reasons why a farmer's exchange would prove of immense benefit to the farmer who lives in close proximity to large city markets, as well as some of the problems connected with the sale and distribution of farm products after they reach the city. Those of our readers who realize what one is up against when he starts out to obtain facts about the inside workings of the commission business in a large city will appreciate the hard work necessary for an outsider to gain a practical knowledge of how the game is played and be willing to overlook any possible mis-statements which I may make; however, it will be my aim to get at the true facts as nearly as possible to get them from a careful investigation.

New York.

W. MILTON KELLY.

EGG MARKETING.

We market 65 per cent of our egg crop in April, May and June, although the consumption of eggs runs very nearly even throughout the entire year. The American farmer today is paying the middleman the princely sum of \$238,600,000 per annum for storing and selling his eggs. This sum of money would build and equip sufficient storage to care for the agricultural production of the nation. The value of the nation's egg production during a decade is equivalent in value to all the farm property in Texas, and would pay the national debts of Spain, Japan and the United States combined.

The poultry yard census of continental United States taken by the federal government, shows that the farmers of this country gather approximately 1,591,311,000 dozen eggs per annum, which sell at a farm price of \$606,688,960, and a retail price of \$545,289,000. These eggs, according to the market reports, are marketed about as follows:

January	47,739,000 dozen
February	63,652,000 dozen
March	65,000,000 dozen
April	302,349,000 dozen
May	318,262,000 dozen
June	270,432,000 dozen
July	79,565,000 dozen
August	143,218,000 dozen
September	111,311,000 dozen
October	79,565,000 dozen
November	47,739,000 dozen
December	64,152,000 dozen

The average farm price of eggs per annum is known to be 20 cents per dozen, and the average retail price was 35 cents per dozen.

P. RADFORD.

Crop and Market Notes.

Michigan.

Emmet Co.—An open weather month has been the conditions for the month of December. Fall plowing was done as late as the middle of the month and there has been no snow to speak of. The weather is fine for getting up wood, but unpropitious for the lumberman, or the best interests of winter grains, new seedings, and meadows. Some wood is being hauled to market, on wagons, of course, for there has not been more than an inch or so of snow, at any time; conditions before unknown in this country. Wood (seasoned) is selling for \$2.25. There has been no change in the price of farm produce since our last report.

Kalkaska Co., Jan. 5.—Owing to good prices, stock of all kinds has been reduced to the minimum on most farms. Hens are laying in a conservative way. The roads have been fine for wagons. It commenced snowing on the 2nd, and there is now four or five inches, but not very good sleighing, on account of soil mixing with snow. Hard freezing with bare fields has not been beneficial to fall grain, new seeding of clover, alfalfa, etc. Potatoes are principally out of the hands of the growers, and warehouses are carrying light stocks, so that prices may be expected to advance in the near future. Farmers not engaged in lumbering devote their time to caring for stock, cutting and grinding feed, cutting wood, etc. Taxes are very high.

Branch Co., Jan. 5.—The weather has been unusually fine and roads are excellent. Enough snow fell Jan. 3 to make fair sleighing. Much fall plowing has been done, and work is in good shape for spring. Not much stock in feeding, as farmers seemed afraid of the market. There was also a shortage of feed, owing to drouth last summer. Farm produce is in good demand at auctions, corn having sold as high as 74c for 72 lbs. Apparently wheat and seedling went into winter in good condition. Hens have not commenced to lay much yet. Poultry selling at 10¢@11c.

South Hillsdale Co., Jan. 1.—But little snow has fallen and but little frost in the ground. Farmers are nearly all busy now, some setting fence posts and making fence, others tile drainings, some preparing to build the coming summer and are now doing their hauling as the roads are very good. Hogs are nearly all sold, which is about the only stock fed for market. Few sheep and young cattle raised, calves nearly all go as veals. Hay and other feeds plentiful, a good deal of hay for sale, but none being sold, as the price does not seem to be satisfactory. Oats are also being held. Wheat is looking fine, and seedling in good condition. Milch cows high and in good demand at \$60@150; hogs \$7.50@7.75; wheat 86c; corn 30c a basket; oats 35c; eggs 30c; butter 30c; chickens 12c; milk \$2 per cwt. Hens have continued to lay during the fall.

New York.

Genesee Co., Jan. 7.—We have had an insufficient amount of rain, some wells are very low. We got enough snow for sleighing for the first time this season, on Dec. 26. No potatoes are being marketed, the growers declaring they will hold until they get a dollar a bushel. Most of them are in grave doubts, however, about getting it. The elevators are full of beans; some producers have sold, others only stored. Dealers are not marketing any to speak of, market is not brisk enough and the price too low. Some hay sold. There is only a small amount of stock being fed this winter. The weather was so mild all through December that many hens started laying, therefore the price of eggs declined. A good deal of the seedling failed owing to the drouth, but those which have caught, also fall grain, went into winter quarters in fine shape, the ground being frozen very little before the snow came. Following are dealers', not retail, prices: Butter, dairy 32c; creamery 35c; milk 8c per qt; pork, dressed 10c; live 7½c; eggs 34c; chickens 12¢@14c; lambs, dressed 12c; wheat 92c; oats 45c; potatoes 55c; beans \$1.90@2.75; cabbage \$20 per ton; hay, loose \$11@13.

Pennsylvania.

Erie Co., Jan. 5.—We are having as fine winter weather as we have had for a number of years. The snow is about 18 inches deep, with the sleighing fine. The farmers are feeding a little more stock than usual this winter. Hens have begun to lay. Seedling is looking good. No wheat is grown in this section. There is not much for marketing here in winter except hay at about \$10 per ton. The Erie County Milk Association is going to start a milk condenser in Greenfield which is under construction now. It will be a great help to the farmers.

Perry Co., Jan. 5.—We are having real winter weather, with sleighing not very good on account of some heavy hauling being done on wagons. Stock is in fine condition. Wheat and young grass were well started when snow fell. Farmers are engaged in getting wood ready for summer, hauling lime and manure to the fields, and attending Farmers' Institutes. Hens are laying few eggs. Quite a few farmers will have sales in March and quit farming, and are getting their stock in fine condition with special feeding. Prices: Wheat 88c; potatoes \$1; eggs 35c; turkeys 20c; chickens 12c.

Ohio.

Clermont Co., Jan. 6.—Ground covered with two inches of snow. Few eggs since New Year. Tobacco raisers are stripping and hauling tobacco, which is selling at 9¢@12½c according to crop. Dairymen are busy fixing barns and caring for stock. Hogs still being shipped to Cincinnati market at 8½c. Wheat and rye are in good condition. County roads are bad, but this county has a number of good pikes. Shipping of cream and milk to Cincinnati is the leading business now.

Farmers of small farms find profit in butter making. Butter selling at 30c; eggs 32c; cows \$60@75; calves \$13.

Fairfield Co., Jan. 6.—We are having nice winter weather with about six inches of snow. The temperature is very mild for winter, just about the freezing point, with prospect of more snow or rain. Stock is doing well except where cholera is causing much loss to farmers whose hogs are affected with the disease. Much fall plowing has been done. The roads are in bad condition except where plenty of good gravel or limestone was used. Timothy sown last fall is not very promising, perhaps because seed was not good, as very little was saved last season, and no telling how old what you buy is. Wheat 94c; corn 60c; potatoes \$1; chickens 9¢@11c; turkeys 17¢@25c and are scarce; eggs 25¢@30c; butter 25¢@30c; apples retail at 5¢@6c per lb; hay \$15 per ton. Milch cows very scarce and prices high.

Hancock Co., Jan. 3.—We are having fine weather at present, with very little snow. Quite a number of cattle and hogs are being fed in this locality. Hens are beginning to lay. Wheat and seedling are looking very good. Farmers are marketing corn and hogs at present. No cattle sold yet, as farmers are holding them at around 8c. Roads are very good for the time of year. Farmers are doing their winter butchering and chores. Farmers' Institute at Macomb Jan. 5-6. Poultry is about all marketed. Chickens 12c; eggs 28c; butter 25c; hogs 8c.

Indiana.

Elkhart Co., Jan. 5.—Have been having fair winter weather with a few inches of snow, which has been a protection to the wheat. The usual amount of stock is being fed and are in fair condition. Hens are not laying very well. Eggs are 40c; butter 30c; chickens 12c; hogs 7c. Farmers are selling considerable corn at 55c; also poultry and hogs. Roads have been in fair condition during the last month. The year 1913 was a fairly prosperous one for this county.

Daviess Co., Jan. 5.—Land hilly, dirt roads bad, improved roads in fairly good shape, and work on them goes on nicely. Very few hogs and cattle are being fed and marketed on account of the light corn crop. Dairymen seem to be doing well. Hens are beginning to lay and egg prices are lower. Plenty of fall and early winter pasture helped to solve the feed problem. Mild winter is favorable for feeding operations, but the freezing and thawing is hard on wheat and fall sowings of grass, which do not look as promising as in early winter. Feeds, generally are scarce. There is considerable building, especially barns. Prices: Hogs \$7.50; steers \$6@7; horses \$125@300; wheat 90c; corn 60c; oats 55c; butter 27c; eggs 27c; chickens 10c; potatoes \$1 per bu; apples \$1.50 per bu. Plenty of rain with no cold weather nor snow to speak of.

Wayne Co., Jan. 3.—We are having ideal winter weather with about three inches of snow on the ground, and it is still snowing. The weather has been favorable all fall for the wheat, which is in fine condition. The roads are in excellent shape, and the farmers are well prepared for winter and are therefore not very busy. Those using wood for fuel have been getting their year's supply cut. About the usual amount of stock is being wintered, and all in good condition. Hens are not laying much so far. Not much being sold from farmers now. Wheat 93c; corn 60c; oats 40c; hogs \$7.50; cattle 6¢@7c; chickens 10c; eggs 27c; butter 25¢@27c.

Wisconsin.

Polk Co.—There is not very much snow here as yet. We have as fine roads as anyone could wish, and those having autos say they were like cement pavement up to New Year's day, when about four inches of snow fell. The amount of stock being fed is not very much, as it is a dairy county. Quite a number of fall pigs kept which will be ready for market about April 1. Hens are not doing very well. The price of eggs is 30c per dozen for stamped and 26c for unstamped. Some hay sold for \$12 per ton. No winter wheat seeded this fall, but a lot of rye sown which looks fine. Clover seeding so far looks as good as could be expected. Creameries are paying 42c a lb. for butter-fat for December. A few farmers are logging a little for themselves, as they are going to build barns and silos the coming season, others are getting wood for next summer, while most of the farmers are just taking care of their stock.

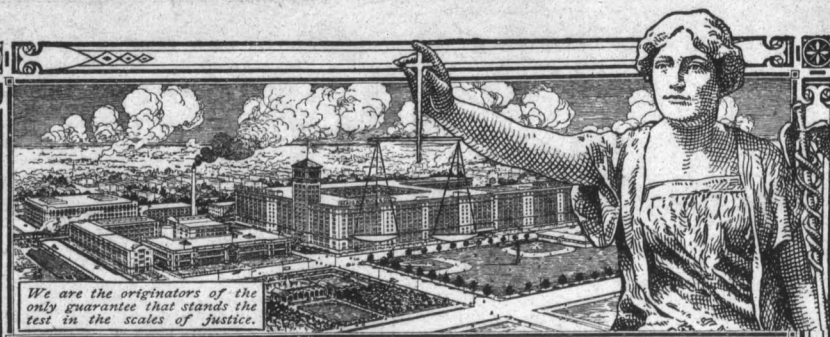
Illinois.

LaSalle Co., Jan. 2.—Now have a snow fall of two or three inches. Weather is warm and snow is melting fast. Wheat appears to be in good condition. Hens are laying well for this season of the year. Farmers are planning and preparing for the spring work but have nothing steady to do right now. Butter is selling at 30c; fresh eggs 33c; lard 11c.

Livingston Co., Jan. 5.—The farmers are resting comparatively easy during this mild weather. There is very little work to be done except to husk some corn that was pulled in the field and thrown in the dry places in shed or barn. People here intend to construct more pikes this year, and in order to plan the work along intelligent lines, a good roads congress was held recently. There was a large and enthusiastic attendance. Prices for produce remain very encouraging. A two-inch snow is (Continued on page 72).

HOW TO CLASSIFY YOUR CORN.

It is an important thing for farmers to understand to what grade their corn belongs when marketing, since prices are graduated to suit the comparative values of the different kinds. The government will establish fixed grades for this cereal to take effect July 1. Learn the kind of corn that will be allowed in the different grades from the Farm Commerce Department of the Michigan Farmer next week.



David Bradley PLOWS

Many vital improvements in design and construction have kept David Bradley Plows far ahead of other makes. You should know about Bradley Plows as they are today.

Whether you want a walking plow, a riding plow, a sulky or gang, you will find it in our big General Catalog, or if you prefer, send for our new Plow and Implement Book which contains descriptions and illustrations of the complete line of Bradley plows, cultivators, harrows, spreaders, planters, etc., besides buggies, wagons, harness, gasoline engines, supplies for dairymen, poultrymen, fruit growers and bee keepers. Just say "Send me Plow Book No. 75M75" on a postal card and mail to

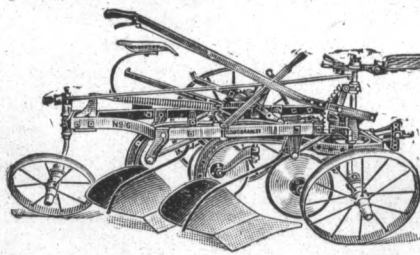
Sears, Roebuck and Co., Chicago

SINCE 1832 David Bradley Plows have been the accepted standard of plow excellence. For 82 years they have stood the test of service under all conditions, in all parts of the country.

Before we purchased the David Bradley implement factory in 1910, this Bradley No. 6 Gang Plow would have cost you \$60.00 or more.

Today, because of economical methods of manufacture and direct from factory dealing, we sell it for \$45.95. The description of this plow in our big General Catalog or in our new Plow and Implement Book will prove to you its exceptional high quality; the price speaks for itself.

Our guarantee insures your receiving the value and service you have a right to expect.



Wood-working Tools with Character

Keen Kutter tools have character and quality. They make a man do better work and faster work. They have the best stuff in them that money will buy, and first-class workmen make them. You ought to have Keen Kutter tools in your shop for quick repairs of sudden breaks, for building that new brooder house, for new floors, for the horse stalls, for making the feed bins rat-proof. For any of the many jobs you want to do right now.

KEEN KUTTER

Tools will serve you as no other tools can or will. So good are they, and so positive are we that you'll get the very limit of long wear and good work out of them, that they're sold with the distinct understanding that you can get your money back, double-quick, for any tool you say isn't everything that it ought to be. Just tell the dealer you want the price and he'll trade the amount for the balky tool. There won't be any discussion nor any side-stepping. You get that money quick.

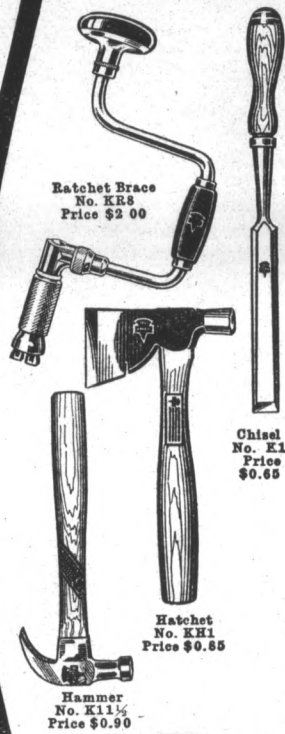
"The Recollection of Quality Remains Long After the Price is Forgotten."

Trade Mark Registered.

—E. C. SIMMONS.

SIMMONS HARDWARE COMPANY

St. Louis New York Philadelphia Toledo
Minneapolis Sioux City Wichita



Get This Book First!

Before you buy a buggy from anyone at any price, get this big free book! No one can fool you on a buggy after you have read this book.

All I Want is Your Name

and address on a postal. Learn how nearly 200,000 people have saved from \$25 to \$40 by buying buggies direct from my factories. Everyone Guaranteed for 2 Years with 30 days' free road test! Send for book today. Address H. C. Phelps, Pres.

Ohio Carriage Mfg. Co.
Station 32, Columbus, O.

Split-Hickory Vehicles



Markets.

GRAINS AND SEEDS.

January 13, 1914.

Wheat.—The wheat market took a bullish turn on Monday. Up until the close Saturday, trading had continued on a steady basis. Reports from nearly all sections of the world favored better prices. The crop of Argentina is reported as small as early estimates placed it. European markets are coming to this country for wheat and a considerable amount has been purchased in Chicago during the past few days for immediate export. The American visible supply shows a very nominal increase over a week ago, farmers holding back any surplus now in their hands for better values. Corn showed considerable strength, and this aided in giving wheat a better tone. The extreme cold wave threatens the growing plant in sections having no snow. All these factors worked to strengthen the trade. One year ago the price for No. 2 red wheat on the local market was \$1.15 per bu. Quotations for the past week are:

	No. 2 Red.	No. 1 White.	May
Wednesday	98	97½	1.03½
Thursday	98	97½	1.03½
Friday	98	97½	1.03½
Saturday	98	97½	1.03½
Monday	98½	98	1.04½
Tuesday	98½	98	1.04½

Chicago, (Jan. 13).—No. 2 red wheat, 96½c; May, 92c; July, 88c.

Corn.—Although corn values have ruled lower this past week, there was a change of sentiment Monday with the arrival of the cold wave. Feeding operations will demand a larger amount of this cereal should the cold weather continue. On the local market there are only moderate receipts and the trade is inactive. The visible supply shows an increase of over two million bushels. One year ago the price for No. 3 corn was 50c per bu. Quotations for the past week are:

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

Chicago, (Jan. 13).—No. 2 corn 64½c; May 65½c; July 65½c.

Oats.—Prices were the same at the close of the first market day this week as they were a week earlier. A very small quantity of oats is being brought to market, while the demand shows improvement. The visible supply decreased two-thirds of a million bushels. One year ago standard oats were quoted at 36½c per bu. Quotations for the week are:

	Standard.	White. No. 3
Wednesday	41	40½
Thursday	40½	40
Friday	40½	40
Saturday	41	40½
Monday	41	40½
Tuesday	41	40½

Chicago, (Jan. 13).—No. 3 oats 38½c; May 39½c; July 39c.

Beans.—The cold weather added some strength to the bean trade by increasing the demand and otherwise favoring the movement of the legumes. Prices are steady. The local board of trade quotes immediate and December shipments at \$1.85; Jan., \$1.87; Feb., \$1.92 per bushel. Chicago reports a small trade. Pea beans, hand-picked, choice, are higher at \$2.05; common \$1.75 to \$1.90; red kidneys, choice, higher at \$2.90 per bushel.

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

Barley.—At Chicago barley is quoted at 52½c per bu., while Milwaukee quotes the malting grades at from \$58 to \$76c.

Cloverseed.—Although a good demand prevails prices are off 35c for common seed but higher for alsike. Prime spot is quoted at Detroit at \$9 per bu; March \$9.10. Prime alsike steady at \$11.75. At Toledo prime cash is quoted at \$9.10 and prime alsike at \$10.90.

Timothy.—Prime spot is 5c higher, being quoted at \$2.55 per bu.

Alfalfa.—Up 5c. Prime spot \$7.25 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$4.80; straight, \$4.50; spring patent, \$5.10; rye flour, \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$25; coarse middlings, \$27; fine middlings, \$29; cracked corn, \$29; coarse corn meal, \$28; corn and oat chop, \$25.50 per ton.

Hay.—All grades are steady. Prices: Carlots on the track at Detroit are: No. 1 timothy, \$15@16; standard \$14@15; No. 3, \$12@14; light mixed \$14@14.50; No. 1 mixed \$13@13.50.

New York.—Hay market quiet. No. 1 timothy \$20.50@21; No. 2 \$16@17; clover \$17@18 per ton for large bales.

Chicago.—Choice timothy is quoted at \$17.50@18 per ton; No. 1 \$16@17; No. 2 \$13@14.

Straw.—All grades rule steady. Rye \$8@9; oat straw \$7.50@8; wheat straw \$7@8 per ton.

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

New York.—Rye straw, \$17@18 per ton; oat straw, \$12.

DAIRY AND POULTRY PRODUCTS.

Butter.—There has been a sharp decline in butter prices all over the country, the local price dropping 2c. Quota-

tions: Extra creamery 33c per lb; firsts 29c; dairy 21c; packing stock 18c.

Chicago.—Conditions on the market were very quiet. There is a good supply on hand and demand is light. The better grades have declined in price while the poorer stock advanced slightly. Quotations are: Extra creamery 32c; extra firsts 28@29c; firsts 26@28c; seconds 22@25c; lard 20@21c; packing stock 12@20c per lb, according to quality.

Elgin.—Market firm at 32½@33c per lb, which is 2c lower than last week.

New York.—Market unsteady with prices down 3½c. Quotations: Creamery extras 33@33½c; firsts 28@32c; seconds 24@27½c; packing stock 19½c.

Eggs.—Local receipts light. Demand is fair. Prices ½c lower. Current receipts of fresh stock is quotable at 31c per dozen.

Chicago.—The colder weather has kept the market firm. A small percentage of receipts are newly laid stock which has to be rehandled to satisfy particular trade. Quotations are: Miscellaneous lots, cases included, 28@31½c, according to quality; ordinary firsts 29@29½c; firsts 31½@31½c; refrigerator stock is steady at 28½@28½c for April firsts.

New York.—Market firm with prices about 2c lower than last week. Quotations: Fresh gathered extras 36c; extra firsts 34½@35c; firsts 33@34c per dozen.

Poultry.—Local market holds firm but with prices about 1c lower on all stock except geese and ducks which remain unchanged. Receipts are easily disposed of. Quotations: Live.—Springs 14c; hens 13@13½c; turkeys 19@20c; geese 14½@15c; ducks 16@17c.

Chicago.—Market conditions look better than last week. Demand is increasing. Prices show but little change. Quotations on live are: Turkeys, good weights, 16c; other 12c; fowls, choice 13c; spring chickens 12½c; geese 10@12c, according to quality; ducks, choice 15c.

Cheese.—The market continues firm with prices about ½c higher on flats. Michigan flats are quoted at 15½@16c; New York flats 17½@18c; brick cream 16@16½c; limburger 14@15c.

Veal.—Market is firm with prices unchanged. Quotations: Fancy 15@16c; common 12@14c.

At Chicago the trade was quiet with light receipts and little demand. Good to choice, 90@110 lbs., quoted at 14@14½c; 60@90-lb. weights 12@13c.

FRUITS AND VEGETABLES.

Apples.—Market active with prices increasing. Quotations: No. 1, \$4.80@5; No. 2, \$2.50@3.50 per bbl. At Chicago a good steady feeling prevails. Prices are slightly higher than last week. Offerings are cooler apples. Value for country picked range from \$3.50@5.50 per bbl. No. 1 Jonathan's are selling for \$4.50@5.50; Spies are \$4@4.50; Baldwins are \$4.25@4.50.

Potatoes.—The local market is steady with prices unchanged. Demand is good. Quotations: In bulk 65@70c per bu; in sacks 70@75c per bu. for carlots. At Chicago prices are steady. Cold weather slightly restricted trade. The general quality of receipts are good. Michigan stock is held at 63@71c.

Cabbage.—Steady with prices unchanged. Good quality is quoted at \$2.50@2.75 per bbl. The market is firm at Chicago. Demand for old stock is good. New southern stock is quiet. Prices are unchanged. Quotations: Holland \$1.85 per bbl; \$2@2.50 for red; new \$2.25 per bbl.

Onions.—On the local market prices are steady. Quoted at \$1.15 per bu. for yellow and \$1.40 per crate for Spanish. At Chicago trade in domestic stock is good and supply is ample. Sacks 65@70 lbs., Michigan grown sell at \$1.25@1.35.

PRICES ON DETROIT EASTERN MARKET.

The market was very small Tuesday morning because of the cold wave; there were not over a dozen wagons, and these brought vegetables only. Parsnips were selling around 70c; carrots 70c; cabbage 90c@91. Celery varied greatly in quality, the prices asked ranging from 15@30c per bunch, and none of the celery offered could be considered high grade. Loose hay is not moving freely as yet, with the majority of the loads selling at \$16@17 per ton.

GRAND RAPIDS.

While beans have advanced 10@15c in the past three weeks the market just now is pretty quiet, with \$1.60@1.70 the ruling quotations to farmers for white pea, and \$2 for red kidney. There is some speculation in beans and at Flint last week prices were advanced 15c. As to the future of the bean market the wisest ones are making no predictions. As to potatoes there is equal uncertainty, the local market remaining steady at 60@70c. Sharp winter weather early this week is expected to stiffen egg prices, and will also affect other produce. Grand Rapids mills are quoting grain as follows: Wheat 93c; corn 65c; oats 39c.

THE LIVE STOCK MARKETS.

Buffalo.

January 12, 1914.
(Special Report of Dunning & Stevens,
New York Central Stock Yards,
East Buffalo, New York.)

Receipts of stock here today as follows: Cattle 199 cars; hogs 150 double decks; sheep and lambs, 90 double decks; calves 800 head.

With about 200 cars of cattle on our market here today and 29,000 reported in Chicago, all the best grades of cattle sold about steady with last Monday up until noon. About the noon hour there were about 20 loads of fresh cattle arrived which had to be sold from 10@15c per cwt. below the opening of the market. However, at the close about everything was sold, and if receipts west are not too heavy the remainder of the week, we expect a steady market here. Bulls sold from \$6.75@7.40 for top kind. All fat bulls in demand. Milkers and springers selling low and from \$8@10 lower than two weeks ago.

Total receipts today footed up to about 150 double decks; a good liberal supply and a few more than were generally expected, consequently a lower market. Yorkers and mixed grades sold at \$8.50 generally. Pigs as to weight and quality \$8.25@8.40; roughs \$7.50@7.75; sties \$6.50. A good many hogs arrived late for market and, owing to the blocked condition of the yards, quite a number of them are going over unsold. Closing trade was steady and looks like about a steady market for tomorrow.

The market was active today on handy lambs and sheep but dull on heavy lambs. Prices steady with the close of last week. Choice handy lambs selling mostly from \$8.35@8.40; heavy lambs selling mostly at \$7.50. We look for slow trade on heavy lambs all the season. Most of the order's calling for lambs weighing from 75 to 80 lbs. Look for about steady prices on sheep and lambs last of week, unless we have heavy receipts.

We quote: Choice lambs, \$8.30@8.40; heavy do, \$7.50@7.65; cull to fair do, \$6@8; yearlings, \$6.50@7.25; bucks, \$3.50@4; handy ewes, \$5.50@5.75; heavy do, \$5.25@5.50; wethers, \$6@6.25; cull sheep, \$4@4.75; veals, choice to extra, \$11.50@12; fair to good, \$10@11; heavy calves, \$5.50@8.

Chicago.

January 12, 1914.

Cattle, Hogs, Sheep.
Receipts today

Same day last year

Receipts last week

Same week last year

Cattle start off this week with quite a good demand, the cold snap imparting more animation to trade, and fat butcher stock is selling especially well. Steers are steady to a dime lower, the run being much greater than usual, the best heavy steers reported so far going at \$9.35. Hogs are steady to a nickel lower, the extreme range of prices being unchanged. Hogs received last week averaged 214 lbs., comparing with 209 lbs. a week earlier, 226 lbs. one year ago, 211 lbs. two years ago, 243 lbs. three years ago and 209 lbs. four years ago. Sheep and lambs are in good demand, with prices pretty largely a dime lower. Tops reported are: Lambs \$8.30; yearlings \$7.10; wethers \$6.15; ewes \$5.50.

Cattle prices received a boost last week and showed net gains of 15@25c for most descriptions, with a smaller advance in cows and heifers. The meager offerings during the first week of the year resulted in a larger demand last week than usual, packers having unfilled buying orders, and the bulk of the beef steers went at \$7.75@9, with the best class bringing \$9@9.40 and choice little yearling steers and the better class of heavy beefs selling for the first time in weeks on a level. The predicted falling off in marketings of long-fed cattle is at last taking place, and they may be expected to do better for sellers for the remainder of the winter season. The cheaper class of light-weight steers sold at \$6.65@7.75, with a medium class bringing \$7.80@8.35 and good steers fetching \$8.40@8.80, while steers classed as choice brought \$8.85 and upward. Good feeding weather has caused many stockmen to hold their cattle back, but severe storms will be sure to start in many warmed-up lots. Butcher cows and heifers had a good demand at \$4.75@8, a few prime heifers selling around \$8.25@8.50, while cutters brought \$4.15@4.70, canners \$3.25@4.10 and bulls \$4.75@7.50, a few yearling bulls going for \$7.75@8. There was only a moderate business in stockers and feeders, offerings being not large and prices tending upward. Most of the heavy feeding steers found buyers at \$6.50@7.65, while stock steers went at \$5.25@7.40, prime yearling stockers being the highest sellers. Stock and feeding cows and heifers had an outlet at \$4.80@6.50, while prime stock calves brought \$6.75@8. Calves made a new high record by selling up to \$12 per 100 lbs. for the best light vealers, with sales all the way down to \$5@6 for coarse heavy lots. Milch cows had a very small sale at \$50@75 each, only those from other states on which health certificates were issued being permitted to go to Illinois dairymen.

Hogs were marketed freely last week, but they came to a good market, for there was a lively local demand, as well as a large call for choice hogs of strong weights for shipment to eastern packing points. This eastern outlet has increased greatly of late, as eastern hogs are becoming much scarcer, and by causing lively competition between buyers, prices have risen to the highest level recorded in a long time. The preponderance of light hogs among the daily runs still causes the best hogs carrying lots of weight to bring a premium over all others, the best light hogs selling around 15c under top quotations. The extreme range of prices for hogs of the various descriptions is very much narrower, however, than during the past summer, and pigs of good weight sell relatively much better than then. Prospects for hogs appear to be bright, with no likelihood that future supplies of matured swine will be as large as recent supplies, and healthy hogs should not be sent in prematurely. Fresh and cured hog products continue in large demand, but stocks of provisions in Chicago warehouses the first day of the year were unusually large, aggregating 86,246,503 lbs., comparing with 62,483,771 lbs. a month earlier and 74,800,099 lbs. a year ago. Closing sales of hogs Saturday were the highest of the week, the range being \$8@8.40, with pigs bringing \$7@8 in most instances, while stags went at \$8.25@8.60 and throwout packing sows at \$7.60@8. Hogs were 10@15c higher than a week earlier.

Sheep and lambs have sold recently at much the highest prices recorded in sev-

eral months, doing what was predicted some weeks ago, at which time the range shipping season was in full blast. This applies to everything fat, including yearlings, wethers and ewes as well as lambs, while feeding lambs are so scarce that even at ruling high prices it is extremely difficult for country buyers to make purchases. The best prices for prime flocks of popular weights brought the highest figures recorded since last July, and prospects for the future could hardly be any brighter. Shippers competed with local slaughterers for the best lots, and this made better values. The week closed with lambs selling at \$6@8.35 after an \$8.40 top, while recent sales were made of feeding lambs at \$6.25@7.25. Yearlings have been going at \$6.25@7.25, wethers at \$5.40@6.35, ewes at \$3.50@5.75 and bucks at \$3.25@4.

CROP AND MARKET NOTES.

(Continued from page 71).

on the ground and some sleighs and sleds are being used as the old snow had not gone before the new one came.

Marion Co., Jan. 2.—With the exception of a light snow on Christmas day, the winter has been unusually mild. Much rain has made the roads almost impassable. More stock than usual is being wintered, but a large number of horses and mules have died. This loss is laid to the feeding of corn fodder made poisonous by last summer's drouth. The wheat and grass seeding appear to be in good condition. The hens have begun to lay, so eggs at 30c a dozen and hogs at 7c a lb. are the chief products marketed. The farmers are chiefly employed in cutting wood.

Champaign Co., Jan. 5.—Weather very mild, very little winter under freezing point yet, very little snow. Roads all through December were rough and muddy. Nothing being marketed. Corn is in very bad condition, containing 20 to 25 per cent moisture, and on account of excessive discounts at terminal market, farmers will not sell. Butter and eggs very scarce. Hogs are pretty well cleaned up, and no cattle being fed. Farmers have nothing to do but are waiting for better roads and better markets to deliver their corn.

Missouri.

Vernon Co., Jan. 5.—Not much stock being fed in this county owing to shortage of feed. The weather has been very threatening for two weeks, but no snow to amount to anything. The ground is frozen. The wheat and meadows seem to be standing winter fine. Farmers are busy laying in their supply of winter wood. Hens are beginning to lay and eggs are worth 27c a dozen, which looks good to the farmers, as that is what we have to look to for our living.

Nodaway Co., Jan. 3.—The weather has been cold and damp all fall, with not much snow so far. Seeding is in fine shape. Not much stock being fed, owing to the high price of corn. Not many hogs in the county. Hens not laying much as yet. Farmers selling but very little as the corn is still out. There are quite a number of public sales and good prices are being received. Good milch cows bring \$100 or more.

Lafayette Co., Jan. 5.—This section has no snow, and the roads are very rough after the mud and this cold weather. Farmers are cutting their fire wood. There are very few cattle fed in this section, as dairying is the main branch. They are still shipping a few carloads of hogs every week while the price is going up, hogs selling at \$7.25 per cwt. Wheat looks fine. The hens are not laying very much, eggs selling at 28c; butter 35c.

Mississippi Co.—Owing to the mild fall and winter the early wheat has made good pasture and late wheat is fine. Corn is selling at 63c and a very poor grade. A good many horses dying from blind staggers from feeding bad corn. The year has not been a successful one for farmers in Mississippi county. Hogs are selling for 7c; eggs 40c; chickens 40c; good hay scarce and very high, plenty of poor grades.

Kansas.

Franklin Co., Jan. 5.—There is little feeding being done, as stock was sold off close this fall. Some young cattle and young mules are being fed. Brood sows and pigs are being kept. It seems a general complaint that for the past two months hens were not laying well, but they have begun to lay quite well again. Eggs 30c. The latter part of December we had about three inches of snow which nearly all melted in one day, making the roads muddy, but they are now frozen and very rough. Much attention is given the roads in this county, and they seldom get in as bad condition as they are now. Wheat is looking fine, but seeding is only fair. Farmers have little to market at this time of the year. They all keep quite a few dairy cows and sell cream, which is now 30c. Farmers in this locality have been doing their butchering and preparing wood for the winter and next summer's use. Natural gas is used here to quite an extent. This county furnishes some good gas and oil wells.

Marion Co.—Weather moderate; snow about gone. Only 10 per cent of usual number of cattle on full feed. Sheep about normal. Fat hogs getting scarce and there will be a shortage of brood sows. Prices of grain a little lower than a month ago. Eggs have been quite plentiful here so far this winter. Last year's drouth practically relieved the farmers of any remunerative employment for this winter. At present some are cutting osage hedge for fuel and posts, butchering, mending harness, etc. Tenants are moving or preparing to do so. There will be no stock. Cattle are being brought here until time to turn them on grass, which is May 1. No ice put up yet. Winter wheat and fall grass seeding in good condition. Prices on horses are becoming so low as to stop sales. The average farmer has little to sell but lots to buy, and times will not be good until we get a good corn crop.

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.
January 15, 1914.

Cattle.

Receipts, 1058. Market strong at Wednesday's prices.

We quote: Best steers and heifers \$8 @ \$8.25; steers and heifers, 1000 to 1200, \$7.50 @ \$7.75; do 800 to 1000, \$6.75 @ \$7.25; do that are fat, 500 to 700, \$5.75 @ \$6.50; choice fat cows, \$5.75 @ \$6; good do, \$5 @ \$5.50; common do, \$4.50 @ \$5; canners, \$3 @ \$4.25; choice heavy bulls, \$6.50 @ \$6.75; fair to good bolognas, bulls, \$6 @ \$6.25; stock bulls, \$5 @ \$5.75; choice feeding steers, 800 to 1000, \$6.75 @ \$7.25; fair do, \$6 @ \$6.50; choice stockers, 500 to 700, \$6 @ \$6.50; fair do, \$5.50 @ \$6; stock heifers, \$5 @ \$6; milkers, large, young, medium age, \$7 @ \$10; common milkers, \$4 @ \$6.

Bishop, B. & H. sold Hammond, S. & Co. 4 steers av 755 at \$6.60, 1 cow wgh 960 at \$4.50, 2 do av 1010 at \$5.50, 4 butchers av 900 at \$5.25, 2 cows av 950 at \$4.15, butchers av 731 at \$7, 1 cow weighing 930 at \$6, 25 steers av 980 at \$7.50; to Thompson Bros. 2 cows av 960 at \$4.25, 4 do av 965 at \$5.50, 2 do av 1075 at \$5.25; to Goose 5 do av 900 at \$5.25; to Sullivan P. Co. 1 bull wgh 1100 at \$6.65, 1 do wgh 1330 at \$6.25, 3 canners av 850 at \$4.35, 1 do wgh 920 at \$4.25, 8 steers av 786 at \$7.25, 1 bull wgh 1470 at \$6.25, 3 butchers av 870 at \$6, 4 do av 847 at \$7, 2 cows av 1220 at \$6, 1 do wgh 840 at \$4.25, 2 butchers av 605 at \$5, 5 steers av 1126 at \$8.25, 3 cows av 950 at \$4.50, 8 cows and bulls av 1105 at \$6.10, 1 heifer wgh 600 at \$6, 2 butchers av 925 at \$6.75, 4 cows av 1037 at \$5.35; to Bresnahan 8 heifers av 707 at \$6.30; to Mich. B. Co. 10 cows av 1125 at \$5.90; to Newton B. Co. 26 steers av 1050 at \$7.50, 5 do av 858 at \$7.25, 3 cows av 1053 at \$5, 4 do av 1012 at \$6, 1 canner wgh 790 at \$4.

Haley & M. sold Mich. B. Co. 2 cows av 855 at \$4.75, 1 steer wgh 1000 at \$7, 4 butchers av 870 at \$6.10, 1 cow wgh 1090 at \$5.50, 3 steers av 870 at \$6.10; to Newton B. Co. 3 butchers av 870 at \$6.50, 5 steers av 924 at \$7.60, 2 cows av 1080 at \$4.85, 5 do av 1086 at \$6, 1 bull wgh 1190 at \$6.25, 4 cows av 895 at \$6, 11 steers av 812 at \$7.15, 4 do av 845 at \$7.60, 24 butchers av 960 at \$7.35, 1 steer wgh 900 at \$6; to Sullivan P. Co. 5 cows av 990 at \$5, 1 do wgh 750 at \$5.10; to Thompson Bros. 2 do av 995 at \$4.75, 2 do av 860 at \$4.25; to Fieldman 2 do av 1030 at \$4.90; to Kamman 2 heifers av 765 at \$5.50; to Mich. B. Co. 6 butchers av 745 at \$6.60, 1 cow wgh 1170 at \$4.75.

Steele & R. sold Kamman B. Co. 19 steers av 1010 at \$7.50; to Applebaum 7 cows av 997 at \$5.50, 1 bull wgh 860 at \$6.25; to Sullivan P. Co. 10 steers av 797 at \$6.65, 1 bull wgh 1140 at \$6.50, 5 steers av 824 at \$7, 2 do av 660 at \$5.50; to Murray 4 stockers av 557 at \$6; to Newton B. Co. 8 cows av 994 at \$5.50; to Rattkowsky 2 steers av 810 at \$6.25.

Roe Com. Co. sold Newton B. Co. 3 cows av 937 at \$5.25; to Murray 10 stockers av 684 at \$6.50; to Newton B. Co. 6 butchers av 706 at \$6.60; to Sullivan P. Co. 4 cows av 1087 at \$5, 2 do av 910 at \$4.25; to Murray 2 stockers av 585 at \$6, 2 feeders av 720 at \$6.75; to Rattkowsky 6 cows av 923 at \$5, 2 heifers av 670 at \$6.50, 1 bull wgh 840 at \$5.50, 1 cow wgh 1060 at \$5.50; to Hammond, S. & Co. 4 canners av 912 at \$4; to Goose 6 cows av 890 at \$5, 4 do av 917 at \$5; to Mich. B. Co. 7 butchers av 680 at \$6.10, 1 cow wgh 850 at \$5.50, 14 steers av 727 at \$7, 1 bull wgh 1700 at \$6.75, 2 heifers av 640 at \$6; to Mason B. Co. 6 butchers av 1000 at \$6.25; to Parker, W. & Co. 3 cows av 833 at \$4, 4 do av 812 at \$4; to Breitenbeck 23 steers av 1024 at \$7.

Veal Calves.

Receipts 421. Market steady. Best, \$11 @ \$12; others \$8 @ \$10.50.

Bishop, B. & H. sold Thompson Bros. 2 av 155 at \$11.50, 10 av 151 at \$11.75; to Ratner 1 wgh 180 at \$12, 1 wgh 160 at \$11.50, 1 wgh 110 at \$11.50, 2 av 155 at \$10, 14 av 150 at \$11.50; to Goose 10 av 127 at \$11.25; to Rattkowsky 3 av 120 at \$10; to Nagle P. Co. 10 av 136 at \$11, 9 av 140 at \$10, 2 av 125 at \$10.50; to McGuire 2 av 140 at \$11, 2 av 130 at \$10.50, 7 av 150 at \$11.50, 11 av 120 at \$11, 2 av 180 at \$12, 3 av 145 at \$11.

Roe Com. Co. sold Mich. B. Co. 2 av 155 at \$11, 2 av 105 at \$9, 2 av 130 at \$9, 3 av 145 at \$11.50.

Sharp sold Mich. B. Co. 7 av 125 at \$11. Spicer & R. sold Mich. B. Co. 3 av 125 at \$10, 4 av 140 at \$11.50, 3 av 125 at \$10.

Sheep and Lambs.

Receipts 9366; market steady. Best lambs, \$8; fair to good lambs, \$7.50 @ \$7.75; light to common lambs, \$6.50 @ \$6.75; yearlings \$6.50 @ \$7; fair to good sheep, \$4.50 @ \$5.25; culls and common, \$3.50 @ \$4.25.

Bishop, B. & H. sold Chapman 41 sheep av 110 at \$4.60, 32 do av 125 at \$5.10, 28 lambs av 70 at \$7.25, 62 do av 60 at \$7.40, 63 sheep av 95 at \$4.75, 13 lambs av 60 at \$7.25, 71 do av 75 at \$8; to Swift & Co. 612 do av 80 at \$8, 24 do av 110 at \$7.35, 13 do av 85 at \$7.85; to Parker, W. & Co. 7 sheep av 100 at \$4.25; to Sullivan P. Co. 8 do av 95 at \$4.50; to Hammond, S. & Co. 47 lambs av 60 at \$7.80; to Nagle P. Co. 13 do av 58 at \$7, 19 sheep av 120 at \$5, 199 lambs av 78 at \$7.90, 41 do av 65 at \$7.75, 15 do av 65 at \$7.25, 91 do av 88 at \$8, 122 do av 78 at \$7.75, 43 sheep av 110 at \$5.25, 13 lambs av 58 at \$7.50, 43 sheep av 110 at \$5.25, 374 lambs av 75 at \$8, 77 do av

74 at \$7.70, 74 do av 63 at \$7.50; to Turnbull & H. 138 do av 81 at \$8, 37 do av 85 at \$8; to Costello 20 do av 60 at \$7.75, 23 do av 58 at \$7.50, 16 do av 70 at \$7.40; to Thompson Bros. 44 do av 70 at \$7.25; to Breitenbeck 32 do av 67 at \$7.50; to Newton B. Co. 50 yearlings av 88 at \$7; to Sullivan P. Co. 51 do av 90 at \$7.

Haley & M. sold Mich. B. Co. 14 lambs av 55 at \$6.50, 33 do av 75 at \$7.85, 53 sheep av 115 at \$5; to Nagle P. Co. 18 do av 120 at \$4.75, 18 lambs av 95 at \$7.75.

Spicer & R. sold Mich. B. Co. 14 lambs av 75 at \$7.65, 13 sheep av 95 at \$4, 21 lambs av 75 at \$6; to Nagle P. Co. 64 do av 75 at \$7.90; to Costello 33 do av 50 at \$7, 17 do av 55 at \$7.50.

Roe Com. Co. sold Sullivan P. Co. 30 sheep av 70 at \$4.35; to Nagle P. Co. 133 lambs av 75 at \$7.90, 30 do av 72 at \$7.90, 12 do av 80 at \$7.75; to Barage 80 do av 85 at \$8; to Sullivan P. Co. 57 do av 60 at \$7.15, 5 sheep av 90 at \$5, 37 do av 80 at \$4.35, 11 do av 105 at \$4.75, 2 bucks av 160 at \$4.

Sharp sold Mich. B. Co. 69 sheep av 115 at \$4.80, 56 lambs av 85 at \$7.85.

Sandall sold Breitenbeck 24 lambs av 80 at \$7.

Bennett & S. sold Nagle P. Co. 49 lambs av 73 at \$5, 117 do av 85 at \$7.90.

Stier sold Sullivan P. Co. 14 sheep av 105 at \$4, 58 lambs av 85 at \$7.65.

Sandall sold Hammond, S. & Co. 21 sheep av 110 at \$4.40.

Hogs.

Receipts 5233. None sold up to noon; looks like \$8.25 @ \$8.35.

Roe Com. Co. sold Sullivan P. Co. 225 sheep av 190 at \$8.30.

Bishop, B. & H. sold Hammond, S. & Co. 3190 av 190 at \$8.30, 415 av 160 at \$8.25.

Haley & M. sold Parker, W. & Co. 660 av 195 at \$8.30.

Spicer & R. sold same 875 av 190 at \$8.30.

Friday's Market.

Cattle.

Receipts this week, 1990; last week, 1528; market steady.

We quote: Best steers and heifers, \$8 @ \$8.25; steers and heifers, 1000 to 1200, \$7.50 @ \$7.65; do 800 to 1000, \$6.75 @ \$7.25; do that are fat, 500 to 700, \$5.50 @ \$6.25; choice fat cows, \$5.75 @ \$6; good do, \$5 @ \$5.50; common do, \$4.25 @ \$4.75; canners, \$3 @ \$4; choice heavy bulls, \$6.50 @ \$7; fair to good bolognas, bulls, \$6 @ \$6.25; stock bulls, \$5 @ \$5.50; choice feeding steers, 800 to 1000, \$6.75 @ \$7.25; fair do, \$6 @ \$6.50; choice stockers, 500 to 700, \$6 @ \$6.50; fair do, \$5.75 @ \$6; stock heifers, \$5 @ \$5.75; milkers, large, young, medium age, \$7 @ \$8.50; common milkers, \$4 @ \$5.50.

Hogs.

Receipts this week, 5508; last week, 10,204; pigs steady; others 5 @ 10c higher.

Range of prices: Light to good butchers, \$8.30 @ \$8.35; pigs, \$8.25; light yorkers \$8.30 @ \$8.35; heavy, \$8.30.

MICHIGAN CROP REPORT.

Wheat.—In answer to the question, "Has wheat during December suffered injury from any cause," 129 correspondents in the state answer "yes" and 237 "no," and in answer to the question, "Has the ground been well covered with snow during December," all correspondents throughout the state answer "no."

The total number of bushels of wheat marketed by farmers in December at 80 flouring mills was 146,202, and at 85 elevators and to grain dealers 89,138, or a total of 235,340 bushels. Of this amount 173,126 bushels were marketed in the southern four tiers of counties, 49,922 in the central counties and 12,292 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in the five months, August-December, was 3,500,000.

Sixty-two mills, elevators and grain dealers report no wheat marketed in December.

The average condition of live stock in the state is reported as follows, comparison being made with stock in good, healthy and thrifty condition: Horses and sheep 96; cattle 97, and swine 95.

The average prices Jan. 1 of some of the principal farm products were as follows:

The average price of wheat per bushel was 91c; rye 62c; corn 69c; oats 41c. The average price of hay per ton was \$13.18. The average price of fat cattle was \$6.40 per cwt; of fat hogs \$7.25 per cwt, and of dressed pork \$9.68 per cwt.

The average price of each class of horses was as follows: Under one year old, \$56.69; between one and two years old \$92.96; between two and three years old \$134.37, and three years old and over \$173.18.

Milk cows were worth \$60.34 per head. Cattle other than milk cows, under one year old \$17.77; between one and two years old \$30.14; between two and three years old \$45.09 and three years old and over \$58.10.

Sheep under one year old \$4.07 and one year old and over \$4.79.

Hogs not fattened \$6.74 per cwt. The prices given are for the state.

The price of wheat is 5c lower than one year ago; rye the same; shelled corn 13c; oats 6c and hay 58c higher.

The average price of horses, etc., one year ago was as follows: Under one year old \$53.52; between one and two years old \$92.36; between two and three years old \$129.26 and three years old and over \$168.00.

Milk cows were worth \$46.85 per head. Cattle other than milk cows, under one year old \$14.02; between one and two years old \$23.53; between two and three years old \$35.10, and three years old and over \$44.76.

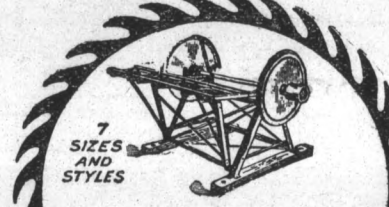
Sheep under one year old \$3.75 and one year old and over \$4.30. Hogs not fattened \$6.20 per cwt.

Prices Compared with Ten Years Ago.

On Jan. 1, 1904, the average price of wheat was 80c; shelled corn 47c, and oats

35c per bushel; hay \$8.35 per ton; fat cattle \$3.41; fat hogs \$4.19, and dressed pork \$5.53 per cwt. Horses under one year old \$33.24; between one and two years old \$52.75; between two and three years old \$78.06, and three years old and over \$108.29.

Milk cows were worth \$34.32 per head. Cattle other than milk cows, under one year old \$10.26; between one and two years old \$17.35; between two and three years old \$26.59 and three years old and over \$34.21. Sheep under one year old \$2.82 and one year old and over \$3.43. Hogs not fat \$3.78 per cwt.



7 SIZES AND STYLES

Shall we send you free book about **APPLETON WOOD SAWS**

It shows pictures of all our buzz, drag, circular log saws and portable wood sawing rigs, with or without Appleton Gasoline Engines. Tells you straight facts which we guarantee our saws to back up. Opens a way for you to make money this winter sawing your own and your neighbors' wood. You want a saw to last—made strong—boxes that never heat—don't experiment with cheap saws then, buy an Appleton, 40 years the standard. Send for booklet to-day.

Batavia, Ill., U.S.A.
APPLETON MFG. CO. 620 Fargo St.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 95 North St. Adams, N. Y., and he will send you a free trial package. Also color card and full information showing you how you can save a good many dollars. Write to-day.

DIRECT FACTORY SALE

THE WARREN MOTOR COMPANY are closing out all surplus stock of new auto parts at prices that demand quick sale.

100 Spark Plugs.....	\$.19
150.00 Full floating rear axles.....	50.00
30.00 Front axles.....	12.50
50.00 Pressed Steel Frames—all sizes.....	10.00
100.00 Auto Bodies.....	30.00
60.00 Radiators—many sizes and styles.....	15.00
100.00 Magnets.....	35.00
8.00 Iron Vices.....	3.19
15.00 Electric Horns.....	3.98
5.00 Complete Tool Kits.....	1.98
50.00 Steering Gears.....	12.19
1.00 Gasoline Tanks—square.....	1.00
18.00 Oval and round Tanks.....	3.00

Anything else? We have it. Send for a big bargain list of new goods being sold at this sale. Get on our mailing list. Hundreds of other automobile parts and accessories, are shown on our Big Bargain Sheet of goods sold at this sale. Write for this quick.

WARREN MOTOR CAR CO. 62 Tenth Street, Detroit, Mich.

Monarch Guaranteed Steel Stump Puller

Best in the World—Send for Proof

It's best in material, best in construction. Far ahead of all on improvements. Made in our own factory, backed by 20 years' experience.

MONARCH STEEL STUMP PULLER

Stump Pulling now easy work. Our new double power machine with latest improvements make stump pulling easy. Clear from 1 to 6 acres per day.

Don't Buy the Ordinary Kind—Investigate the Monarch

Compare the Mighty Monarch with the ordinary stump puller. Test it. Find out about the improvements and equipment we give you. Send for catalog and guarantee.

Zimmerman Steel Co., Dept. M. F., Lone Tree, Iowa

Grow More OATS

Grow the choicest procurable! Grow the oats that broke all records for yield per acre and weight per bushel. Grow the oat that is bred especially to suit your soil conditions, grow

CORN BELT OATS (Cartons No. 5)

Of earliest maturity, with strongest straw and thinnest hull. The large berries carry pure white grain of richest quality. Write for

FREE Samples and Illustrated Catalog

Learn all about our 100 % pure oats and money-back guarantee. Write a postcard today.

Garton-Cooper Seed Co., Box 14 Sugar Grove, Illinois

It Pays to Feed Dried Beet Pulp

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

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

35 BUSHELS PER ACRE was the yield of WHEAT

160 ACRES IN WESTERN CANADA FREE

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

J. Keys arrived in the country 5 years ago from Denmark, with very little means. He homesteaded, worked hard, is now the owner of 330 acres of land, in 1913 had a crop of 800 acres, which will realize him about \$4,000. His wheat weighed 68 lbs. to the bushel and averaged over 35 bushels to the acre.

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

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

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

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

Save \$50 to \$300

I absolutely guarantee to save you \$50 to \$300 on any Galloway gasoline engine. Made in sizes from 1 3/4 h.p. to 15 h.p. My famous 5 h.p. engine—without an equal on the market—sells for \$99.50 for the next 60 days only! Buy now! Same size costs \$225 to \$300 through your dealer. Think of it! Over 20,000 Galloway engines in use today. All sold on same liberal, free 90 day Trial Offer I make you—and all giving satisfaction. Isn't that proof enough?

Get My Catalog and Low Direct Prices

Write me before you buy any other style or make. Get my catalog and low direct price on the famous Galloway line of frost-proof, water cooled engines. Free Service Department at your disposal. My special 1914 offer will help you get an engine partly or wholly without cost to you. Write today. Do it now.

WILLIAM GALLOWAY COMPANY, 185 Galloway Station, Waterloo, Iowa

TRY STEEL WHEELS

The Empire Kind

Don't guess about them—try them. Thousands use Empire Steel Wheels because they have tried them and find them far better than high wooden wheels. Save your horses by making pulling through soft fields and over muddy roads easy. Make sure of no breakdowns. Eliminate repair bills. Empire Steel Wheels do these things. Try them. We'll make it easy for you on our plan.

EMPIRE MFG. CO. Box 89H, Quincy, Ill.

For Sale and Exchange

One of the most modern, fire-proof, completely equipped tile, brick and hollow-ware manufacturing plants, with all necessary drying cars, R.R. switches, etc., in Northwestern Ohio. Located in good clay district and near large city markets. Demand for clay products unlimited, and plant has not been able to supply demand. Will sell outright or will take in exchange for good portion of purchase price of plant, good farm land. Balance easy terms, do not answer unless you mean business.

Address, Lock Box 17, Rising Sun, Ohio.

HOME MIXED FERTILIZERS

SAVES MONEY BETTER CROPS

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

NITRATE AGENCIES COMPANY, McCune Building, Columbus, Ohio.

HEAVES CAN BE CURED

Or Money Refunded Promptly.

Dr. Holland's Specific Heave Remedy will cure heaves, broken wind or chronic cough, no matter how long standing, how severe, or how many times you have given up hope: \$2.00 per bottle. One bottle has accomplished wonderful results; three bottles positively guaranteed to cure. Money refunded if it fails. Order now—today.

FREE VETERINARY ADVICE CERTIFICATE

Entitles you, as a customer, to expert veterinary advice, privately mailed for one year on any horse or cattle trouble; absolutely free.

DR. HOLLAND COMPANY 207 Water St., Boston, Mass.

We Want HAY & STRAW

We get the top price on consignments, make liberal advancements and prompt remittances.

Daniel McCaffrey's Sons Co. PITTSBURG, PA.

Reference, Washington Trust Company, or any bank in city.

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

FOR SALE or EXCHANGE

Hotel, livery, potato cellar, coal & wood business in connection, \$4000, cash or will exchange for farm worth up to \$6000, and pay difference. Address Box 7, Clarion, Mich.

FARMERS

We are paying good premium above the Official Detroit Market for new-laid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich.

Poultry and Bees.

MAKE YOUR HENS EXERCISE.

January, February, and part of March, generally are three of the coldest and stormiest months, and it is up to us poultrymen to keep our fowls reasonably comfortable. One of the best ways of doing this is by making the birds exercise or work as much as possible. Exercise on cold mornings is actually worth more than feed. It sets their blood into circulation, warms them up and makes them feel more comfortable. There is no question but that one of the greatest essentials necessary for winter egg-production and the production of fertile eggs, is plenty of exercise. Exercise not only helps keep the hens warm, but it aids digestion, and prevents bad habits.

In order to do this subject justice we will have to start with the condition of the house and the litter. Provide enough ventilation to keep the interior and the litter dry at all times. Increase ventilation until this is possible, remembering that the more ventilation the drier the house. Admit all fresh air through one end only, preferably the south. During the winter the other three sides must be absolutely air tight. Allow no drafts of any kind in your poultry house.

For winter litter I prefer either coarse oat straw or fine wheat straw. The deeper the litter the better, and we would consider nothing deep enough that did not measure at least a foot. All the grain feed should be scattered in this dry, loose and deep litter and a fork should be used to get it well down into the same, so they will have to work for every particle. As soon as the litter gets broken up, damp and solid, remove it, and replace with fresh clean and dry material. If your house is properly ventilated, and not over crowded, this will not be necessary more than once a month. Change the litter often enough to prevent it from becoming damp, soiled, solid and broken up. Whenever you put in new clean litter and have scattered a little grain in it, take a little of your valuable time and watch the hens. See how busy and contented they are, and how they will sing and work. Remember, a singing and working hen is nearly always a laying hen.

In feeding green food make them work as much as possible, in order to get at it. In feeding cabbage and mangolds, suspend the same from the ceiling high enough up so that they will have to jump just a little in order to reach it.

I have even found it advisable to raise the self-feed hoppers two feet above the floor for the same reason. The water dishes should also be raised above the floor for the same reason. The grit and shell hoppers we leave down near the floor, so we may be sure they always have enough of it. These may appear like small and insignificant things, but they all count in increasing winter egg production, and the health of the flock.

I occasionally give a feeding of corn on the ear or wheat in the sheaves, for no other reason than to make them work more. In such cases I cut out entirely the regular morning feeding of grains, because I take great care not to feed too much grain feed in the morning. If it is done, you will see them filling up with it, and sitting on the roosts until the next feeding. The most important factor really coming under this subject, is the matter of the amount of grain to feed in the morning. It must be fed very sparingly, only about a quarter as much as they would get if a full feed was given. At night I feed about three times as much as in the morning.

All of our dry mash hoppers are equipped with doors, so they can be closed at night and not opened before the next day noon. This is also done to induce the fowls to exercise more.

New York.

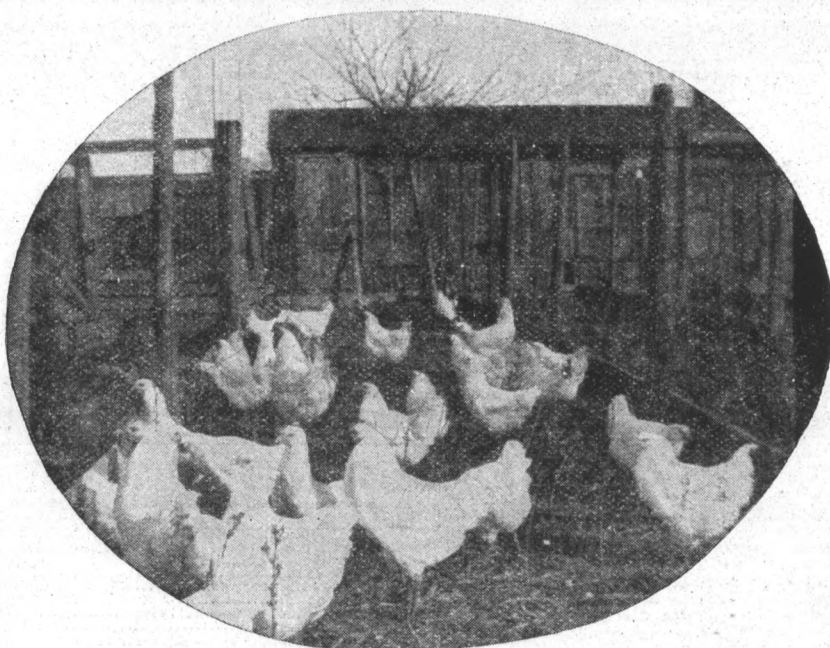
F. W. KAZMEIER.

MATING FOR EARLY CHICKS.

When early chicks are wanted for summer shows, or for use as spring chickens, no time should be lost in getting the breeding stock together. Sound judgment must be exercised if the best results in the way of strongly fertilized eggs and rearable chicks are to be secured. In the first place the hen which should be discarded for early breeding is the one that has been forced to lay during the time she was changing her plum-

age, as the hen which produces eggs during the moulting time is under a double strain which unfits her for the parentage of early chickens. Either her eggs will prove unfertile or they will produce chicks incapable of withstanding the cold winds, etc., incidental to early breeding. The hens that were the quickest through the month and that are reddening up for laying are the ones to select for the breeding pen. I have only referred to hens not pullets, as experience has taught me, that the older birds will produce the strongest early chickens. If two-year-old hens are mated to a strong vigorous well-matured cockerel, the best results can be obtained. Only from fully matured birds can chickens of good size be bred, and since it does not follow that because a pullet is laying she is fully developed, it is unwise to use her as a breeder.

Some poultry keepers like to get a hatch of early chickens out with the object of securing eggs, when the older birds are moulting. Chickens hatched in February or March, should, if of good laying strain, be laying in August. In mating fowls for the production of early laying stock one has a better chance of producing good layers from hens than



A Good Bunch of Farm Hens.

from pullets, because one knows the capabilities of the hens as layers, while those of the pullets is an unknown quantity. It does not follow that because any particular hen laid say 180 eggs in her pullet year, that all her female progeny will in turn produce this number.

Should the hens be backward in the production of eggs, they may if in good healthy condition, be mated up as early as possible as the presence of a male bird will hasten egg production. Should the hens, however, be laying prior to the introduction of the male, the latter should account for fertile eggs after running with the hens for two weeks. It is not advisable to run too many hens with the male bird, remembering that the breeders are deprived of those natural conditions which contribute to fertility when summer conditions prevail. During the time breeding operations are carried on, meat and green vegetable food should be supplied. Exercise is also of great importance.

The male bird should be watched occasionally to ascertain his disposition towards his mates. Some males are spiteful and drive the hens away from their food. Such males are practically useless as early breeders. Other males will allow the hens to consume all the food, whilst they stand idly by, and these are generally the most reliable breeders when rightly managed. Such birds should be removed from the breeding pens for an hour daily, and should be given a good feed of mixed grain, oats, wheat and peas; also they should have lean meat and a drink of milk. Unless the males are well fed the breeding operations will not be successful.

Canada.

W. R. GILBERT.

Watch that the ducks have suitable attention and regular feed. A few well cared for pays better than too many that are slighted.

AN EGG PRODUCTION RECORD.

Persons interested in poultry production will no doubt be interested in the hen produced at Purdue University. The hen is named Miss Purdue and has produced 443 eggs, weighing 41.5 pounds, in the last two years. She is a White Leghorn.

Miss Purdue weighs only 3½ pounds and during these two years has produced 11.8 times her own weight. Can you think of any animal existing today that has produced 11.8 times its own weight in two years? The answer is, no. During this time she consumed 32 pounds of food. From every pound of food consumed she produced 3½ eggs. This shows how efficient the vital organs of this hen really are. Certainly not very much of the food consumed by Miss Purdue was wasted.

Experiment stations have proven that it takes about 12 pounds of feed to lay on a pound of flesh on a steer and about four pounds of feed to make a pound of pork. Compare these figures with those above and see how much more efficient the hen is than either the steer or hog.

The feed cost \$1.93 cents for the two years but the value of the eggs in the Lafayette market was \$10.10. All of them sold for 27.4 cents per dozen while it only cost 5.2 cents per dozen to manufacture them. The profit in the two years was \$9.08 over the cost of the feed.

The above shows plainly what can be done in egg production. The average hen is regarded as an animal of very little value but if they are given the proper

those were runty on account of imperfect fertilization.

Growers of greenhouse truckery have the problem of having contents of greenhouse properly fertilized. Many owners have taken this problem into their own hands and provided the remedy. A colony of bees is put into the greenhouse during blossoming time, and bees in their efforts to get pollen from the blossoms, go from one to another and thereby effect perfect fertilization. The results are very gratifying. This treatment is very hard on bees, however, and many wear themselves out in efforts to get out of the glass top.

In clover and fruit growing districts it is certainly worth while to give some attention to the bee industry of the locality. It would not be easy to say how many colonies of bees may be kept for the proper fertilization of blossoms and the largest yield of honey. Bees generally use the nectar nearest to their hive, although a source from which honey is easily obtained will induce bees to go a longer distance. When nectar supply is exhausted nearby, bees will go about three miles in every direction from the hive. Very few places are so poorly located that bees will need to go over one and one-half miles from home except where a large number of colonies are kept.

Bee-keeping will prove profitable for the farmer aside from value rendered in the fertilization of blossoms.

The old methods of farmers should be given up, for there is no reason why beekeepers should not handle their bees by more profitable methods, even if they have only a few colonies. Bees are generally kept on the farm, a few colonies here and there, scattered in different localities, ordinarily do the best in honey production, for location is not overstocked, as they are frequently with the bee-keeping specialist with his large apiaries. Almost double the amount of honey can be obtained from a colony thus situated, if given proper attention. The greatest mistakes farmers usually make are that bees are not given a little attention in spring so that colonies will be strong in numbers for the honey flow and later in furnishing bees with too small amount of super room. The bees fill this limited space in a few days at the opening of honey flow and then turn their attention to swarming. Several swarms result from these cramped quarters instead of a large yield of honey. Farmers might as well have hundreds of pounds of the finest honey instead of but a few pounds of the inferior kind, if plenty of storage room was given and honey promptly taken away as soon as completed.

Bee-keepers should know the honey-producing plants of their localities and date near which they blossom so that he may provide super room at the right time.

N. F. GUTE.

POULTRY NOTES.

Feed plenty of green stuff because it aids and increases digestion and keeps the fowls healthy. Green food, sunshine and plenty of fresh air are all the tonics needed by fowls. I feed about an armful of alfalfa hay to a flock of 100 hens once a day at about 10 o'clock. At noon one day we give a feeding of cabbage, the next day a feeding of mangolds, alternating thus each day. Of the cabbage and mangolds only as much as they will eat by four o'clock is fed and no more.

If the late-hatched pullets do not start laying as early as they ought to, feed at noon a grain mash mixed with an equal amount of buttermilk. That means to 100 lbs. of dry mash mixture add 100 lbs. of buttermilk. Feed about 7 lbs. of this wet mash to each flock of 100. This mash acts as a stimulant and forces them along a little faster. It is, of course, fed in addition to the regular ration of dry mash in hoppers and grain in the litter. I find it produces most excellent results and gets them into the pink of laying condition in a short time.

Study the fowls carefully. It helps one to determine how much to feed and what to feed. Any poultry owner can profitably spend a few minutes each day studying his flock of chickens. By so doing he will be better able to supply their needs properly; also he will notice the unprofitable individuals—those which are last upon the roosts in the morning and the first on them again in the afternoon.

The latest census reports show that there are 9,967,039 fowls in this state and about three-fourths of them are egg producers. The annual production is 59,915,851 dozen eggs, with a farm value of \$11,734,799. The yearly poultry production is 12,877,537 fowls, valued at \$6,191,440.

BEES ON THE FARM.

There are a number of good reasons why farmers should have at least a few hives of bees. So close is the relation between bees, clover and fruit trees, that they are indispensable to the farmer who is striving for the largest yields. The principal reasons for the lack of clover seed in some seasons is because of the absence of bees, blossoms were not properly fertilized.

The presence of bees in a fruit district greatly increases quantities and quantities of the orchard's yield. Many seed growers and fruit men make large inducements for the apiarist to locate his yard or yards in or near his property. The furnishing of a house, location for the bees and garden spot are some of the inducements offered by men who know the valuable services that bees render him in the fertilization of blossoms.

Some farmers have doubted, as to whether insects, most important of which are bees, are necessary in order to effect fertilization in clover and on fruit. This question has been carefully investigated many times. Clover plants growing mid other plants have been separated by covering them with a sieve through which bees could not pass. With this exception, treatment of clover and its exposure to sunlight was exactly similar to other plants growing around it. The results showed that no seed was furnished by plants thus covered, while those around them produced abundantly.

Fruit trees have been covered with mosquito netting to prevent bees from reaching the blossoms and while uncovered trees produced well, the covered ones had a small amount of fruit, and

SOME COMMON CHICKEN AILMENTS.

Diarrhoea.

One of the chief ailments to which wrongly-fed chickens are subject is diarrhoea, the result of feeding on sloppy or sour foods, drinking impure or sunheated water, and dampness in the sleeping quarters. When chickens are fed on soft foods containing much moisture, their digestive systems become debilitated, and the result is looseness of the bowels. The same remarks apply in the case of chickens fed on stale, sour food. Chickens that are confined to damp coops, or compelled to run on damp ground during spells of cold weather are liable to contract chills, which are, if they affect the bowels, the cause of bowel looseness.

The ailment is catarrhal in its origin and resembles catarrh of the nostrils, which is caused by irritation of the lining membrane of that organ. Catarrh of the intestines gives rise to looseness in those organs, and the voidings are frequent and liquified. Whatever may be the cause of the trouble, diarrhoea is an indication of intestinal irritation, and until the irritant matter is removed from the bowels, the frequent and watery evacuations will continue. A chick suffering with diarrhoea should be given a few drops of warm castor oil to rid the intestines of irritant matter, and this should be followed a few hours later by a few drops of olive oil, which will have the effect of soothing the bowels. Rice boiled in milk is the best food while the diarrhoea lasts but should the birds be too weak to eat, then let them have as much thick barley water as they care to drink. The old method of giving powdered chalk in cases of diarrhoea was based upon ignorance, and often did more harm than good owing to the gritty nature of the stuff. Chalk is more likely to cause irritation than allay it in the intestines, and consequently is not safe to use in cases of bowel looseness.

Constipation.

Chickens that are reared on land devoid of grass are more liable to suffer with constipation than is generally imagined. It is inactivity in congested quarters, and lack of green food which causes the trouble. Cases of this kind rarely occur among chickens that are allowed the run of a rich pasture; indeed, should bowel stoppage occur among such birds it is generally traceable to some obstruction in one of the passages. The too frequent use of bone meal or other limy substances in the dietary of chickens is liable to cause constipation, so that, although such things are a necessary part in the dieting of the youngsters they should be used with discretion, and in conjunction with plenty of green vegetable matter. In cases of constipation it will be seen that the voidings are attended with much straining on the part of the birds, and that the vents of the latter are more or less clogged with the excreta. The accumulated matter should be removed from its location, being first softened with a sponge dipped in warm water, and then cut away with a pair of scissors, care being taken not to injure the skin. Both the accumulated matter and the feathers to which it adheres may be removed, after which a little vaseline should be applied to the bare parts. The best food for the chickens so treated will be brown bread crumbled and mixed with other soft foods for a few days. But the cause of the trouble must be remedied by inducing the birds to exercise, and by allowing them a good supply of vegetable food.

Cramp.

Cramp is either the result of running and sleeping on hard floors, or exposure to wet and cold. In the former came the leg joints are stiff and sore, whilst in the latter case the toes are drawn in by contraction of the muscles. It is a great mistake to attempt to rear chickens on hard ground, or to allow them to sleep in coops where floors are unprovided with plenty of soft dry litter. It is equally as unwise to attempt the raising of chickens on and that is naturally damp, or to give them no means of adequate shelter from cold rains. The remedy for cramp such as is caused by running on hard ground, or sleeping in coops with bare floors will be apparent to all those concerned in the welfare of the little ones. For cramp caused by damp and exposure, a simple remedy is to hold the birds legs in fairly hot water, to which has been added a little common washing soda, and then to dry them and give them a brisk rubbing with some good lotion, after which the patient should be kept in a warm place for a day or two.

Canada.

W. R. GILBERT.

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



Jim Rohan, Pres.



Mr. Geo. W. Black, Ind. Winner 1911



Mr. Wm. C. Schell, Ind. Winner 1913



Mrs. Laura J. Clark, Ill. Winner 1911



Mrs. Alta Hamlyn, Ind. Winner 1913



Mr. F. E. Bennett, Ohio Winner 1912



Mrs. F. H. Osman, Ohio Winner 1910



Mrs. M. J. Clifton, Ohio Winner 1910



"Tyson" Cup, won by the Belle City

Write Me Today for My Big Free Book "Hatching Facts." It Tells the Whole Story

about these wonderful championship hatches—how Belle City owners everywhere are the Champion Poultry Raisers in their locality—and how you can become the Champion Poultry Raiser in your neighborhood. Get this book. Satisfy yourself. You'll get the greatest Incubator Bargain ever offered on an exact duplicate of the prize winning

Eight Times World's Champion Belle City

The Incubators used by all the World's Championship Winners—by the U.S. Government—by leading Agricultural Colleges—and by over 276,000 leading poultry raisers all over the world. In my book I give you full description, proof and all particulars—illustrate the machines in actual colors—give you my Personal Money-Back Guarantee, and tell you why I can afford to send you an 8 Times World's Champion Belle City Incubator for half or less than half what others cost you, and prepay the freight. No one else can give you so much hatching value for so little money. I take all the risk. Send your name and address today and you'll get the whole interesting story free. Write me personally for quick service. Jim Rohan, President.

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



NEVER Such Poultry and Egg DEMAND

—before in poultry business. Shortage of beef, pork, mutton makes this poultrymen's bonanza year. Poultry profits high. But use right tools—get full measure success.

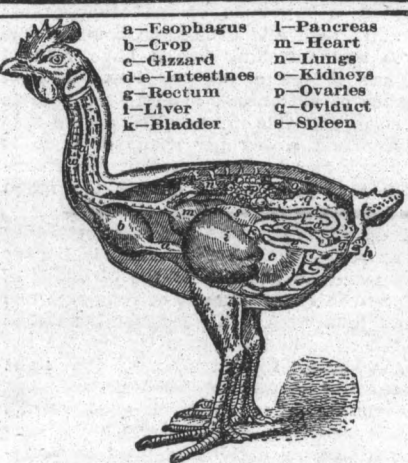
CYPHERS INCUBATORS and BROODERS

World's Standard. Self-regulating; self-ventilating. Fireproof; insurable. Highest records for big, continuous hatches. Get Cyphers Company's 244-page catalog and poultry guide before you buy. 8 vitally helpful chapters. Address today.

Cyphers Incubator Company Dept. 35 Buffalo, N. Y.



Write For Big Free Book



You can find it in the I. C. S. Poultry or Agricultural Handbook—

The above illustration is one of the ninety-five shown in the I. C. S. Poultry Handbook.

This book contains 343 pages of the best ideas and working methods of the most successful poultry raisers in the country—boiled down and indexed for ready reference.

It treats of Poultry House Construction; Composition and Value of Foods; Feeding Chicks, Growing Fowls, Guineas, Geese and Pheasants; Natural and Artificial Incubation; Brooding; Forcing for Eggs and Market; Breeding; Diseases; Treatment; Judging; Poultry Show Rules; Marking Technical Terms; etc.

The I. C. S. Agricultural Handbook contains 381 pages and treats of Soil Improvement; Drainage; Tillage; Farm Crops; Fruit and Vegetable Culture; Livestock; Feeding; Diseases; Dairying; Bacteria; Bee Keeping; Implements; Machinery; Agricultural Tables; etc.

For a limited time we offer the readers of this magazine either of these regular \$1.25 Handbooks at a special introductory price of 50c.

INTERNATIONAL TEXTBOOK CO. Box 1147, Scranton, Pa.

I enclose \$ for which please send me the following Handbooks....Poultry Handbook....Agricultural Handbook.

Name.....

St. & No.....

City.....State.....

Wanted—Honest, Energetic Men

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

\$1,000 to \$3,000 a year

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

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



7.35 LOWEST PRICE YET 155 EGG INCUBATOR

Think of it! The old reliable Progressive 155-Egg Incubator for \$7.35. Money back with 8 per cent interest if not satisfied. Wonderful bargain! Only incubator with hundreds of dead air cells. Copper hot water boiler, double disc regulator, deep nursery, double doors, egg tester, safety lamp—every big feature—all for \$7.35 freight prepaid R. of Rockies. Incubator and Brooder ordered together, \$9.85. Send your money now, or, if you want more facts, write for our Big Free Book. PROGRESSIVE INCUBATOR CO. Box 184 Racine, Wis.

130 Egg Mankato Incubator \$7.25

A high grade hatchery direct from factory to user. Has red wood case, triple walls, asbestos lined, copper hot water tank, self regulator, nursery, high legs, safety lamp, etc. Safe, simple and sure. All set up ready for use. Money back guarantee, 18 years experience. Brooders for 120 chicks \$2.50. For 240 chicks \$4.00 and up. Write for big free catalogue.

Mankato Incubator Co., Box 727 Mankato, Minn.

112-PAGE POULTRY BOOK FREE

If you are thinking of buying an incubator or brooder, you should send for our big 1914 catalog at once. Describes many new, exclusive improvements in this year's PRAIRIE STATE Incubators and Brooders. Also contains about 60 pages of valuable poultry information—how to feed, rear and breed; treat diseases; poultry buildings; home grown winter feed, etc. Just out—postal brings it FREE. Write today—now.

Prairie State Incubator Co., 123 Main St., Homer City, Pa.

130 Egg Incubator and Brooder \$10

Ordered Together. Freight paid out of Pockets. Hot water, copper tanks, double dead air space, double glass doors, all set up complete, or 190 Egg Incubator and Brooder \$11.50. FREE Catalogue describes them. Send for it today or order direct.

WISCONSIN INCUBATOR CO., Box 148 Racine, Wis.

YOUR HENS YOUR FARM YOUR MONEY

Farmers and Fanciers should get the FREE POULTRY BOOK and Catalogue written by ROBERT ESSEX well known throughout America. After 25 Years With Poultry. It tells how to Make Most From Eggs of 30 Poultry Houses; tells cost to build; describes AMERICA'S LARGEST LINE OF INCUBATORS AND BROODERS—\$2.25 to \$48 each. Write today. Robert Essex Incubator Co., 113 Henry St., Buffalo, N. Y.

55 BREEDS

Pure-Bred Chickens, Ducks, Geese, Turkeys, also incubators, supplies, and Collie Dogs. Send for large Poultry book: Incubator Catalog and Price List. H. H. HINKER, Box 55, Mankato, Minn.

56 BREEDS

Chickens, Ducks, Geese and Turkeys. Hardy, northern raised, pure bred, of finest plumage. Fowls, eggs and incubators at lowest prices. America's greatest poultry farm. Send for large, fine 1914 Annual Catalog and Poultry Book. R. F. NEUBERT CO., Box 887 MANKATO, MINN.

When writing to advertisers please mention The Michigan Farmer.

Rider Agents Wanted

in each town to ride and exhibit sample 1914 bicycle. Write for special offer. Finest Guaranteed \$10 to \$27

1914 Models with Coaster Brakes & Puncture-Proof tires. 1912 & 1913 Models all of best makes... \$7 to \$12 100 Second-Hand Wheels All makes and models, \$3 to \$8 good as new

Great FACTORY CLEARING SALE

We Ship on Approval without a cent deposit, pay the freight, and allow 10 DAYS FREE TRIAL. TIRES, coaster brake rear wheels, lamps, sundries, parts and repairs for all makes of bicycles at half usual prices. DO NOT BUY until you get our catalogues and offer. Write now, LEAD CYCLE CO. Dept. W-77 CHICAGO

POULTRY.

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

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

WHITE HOLLAND TURKEYS. Large, big boned, healthy, hardy, vigorous. J. B. & C. H. McDONAGH, Burt, Michigan.

BUFF PLYMOUTH ROCKS—Heavy winter layers. Eggs \$2.00 per setting. Write wants. GEO. W. WAGNER, Ann Arbor, Mich.

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

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

Barred Rock Cockerels, Hens and Pullets. W. C. COFFMAN, R. No. 6, Benton Harbor, Mich.

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

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

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

Full Blood, Rose Combed Rhode Island Red Cockerels \$2 each. Elmer Trim, Milan, Mich.

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

FOR SALE—Choice Columbian Wyandotte Cockerels, \$2 each, Eggs \$1.50 per 15. MRS. S. MCKINLEY, New Hudson, Mich.

WHITE WYANDOTTES—A few choice cockerels from my winter laying strain. L. M. OLDS, Ypsilanti, Michigan.

White Wyandottes—(Fisher Strain) Cockerels \$3 up. Orders booked for eggs, \$1 per 15, \$6 per hundred. Mrs. G. A. Wigant, Watervliet, Mich.

WHITE LEGHORNS DAY-OLD-CHICKS—Wyeckoff Maple City Poultry Plant, Box C., Charlotte, Mich.

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

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

DOGS AND FERRETS.

Fox and Wolf Hounds

of the best English strain in America 40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog.

T. B. HUDSPETH,

Sibley, Jackson County, Mo.

HOUNDS FOR HUNTING Fox, Coon, Skunk, Rabbits, and Raccoons. Send 2c stamp. W. E. LECKY, Holmesville, Ohio.

7 Full Blood Scotch Collie Puppies—10 weeks old for sale. R. C. WOODWARD, Elsie, Michigan.

Thorough bred—Sable & white collie pups 3 mo. 1 male 10, 2 females \$5. Single comb White Leghorn cockerels \$1. G. B. JONES, Sherwood, Michigan.

Live Stock.

The Dual-Purpose Cow.

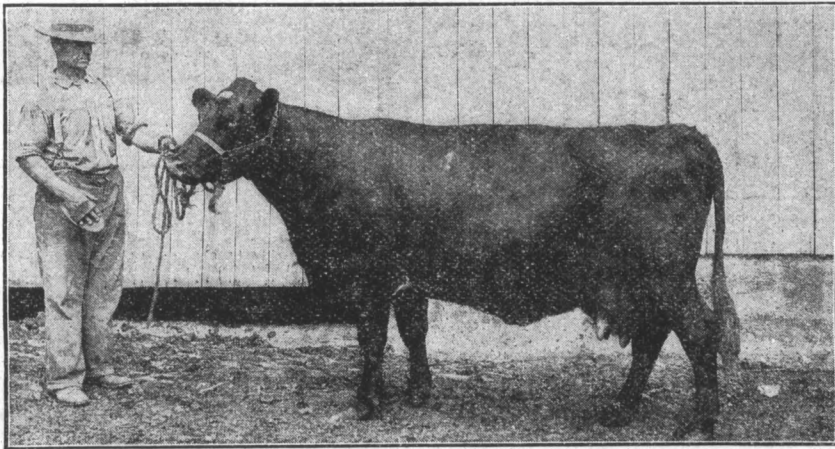
This is the heading of an article by Mr. Lillie, appearing in your issue of December 27. I am surprised that a man as well informed on most subjects as Mr. Lillie, should write an article so misleading (to say the least) and showing so much ignorance in regard to dual-purpose cattle and Shorthorns in general. That such men as Prof. Shaw and Mr. J. J. Hill should endorse the Dairy Shorthorns, ought to be enough to make Mr. Lillie inform himself before he poses as an authority in instructing his readers.

Mr. Lillie says that many English farmers prefer Shorthorns for dairy cows. As a matter of fact, four-fifths of the cattle of England are of the dual-purpose types and they furnish fully 80 per cent of the milk supply. A large per cent of these are Dairy Shorthorns, but all the dual-purpose breeds, including the Milking Shorthorns, the Lincolnshire Red Shorthorns, the Red Pol's, and the South Devons, are regularly represented at the great dairy shows held at Thring and Smithfield, where they compete with the

fairs. They have 82 cows in their herd with records above 8,000 pounds; 34 cows above 10,000 pounds; Bell Clare, 15,215 pounds, and Rose of Glenside, with a record of 18,075 pounds in a year. These are large cattle, the bulls weighing on an average of 2,450 pounds and the cows making 1,600 pounds of top-priced beef when their breeding days are over.

Mr. Lillie says, "They do not call these cattle dual-purpose, they call them Dairy Shorthorns." Yes, and breeders have been severely criticized for that, as they are not only bred for milk but also for beef, (being judged in the show ring 50 per cent for each). I think, however, breeders have a just right to call them Dairy Shorthorns to distinguish them from Shorthorns which have been bred simply for beef, whose owners point with pride to records made by Dairy Shorthorns (as well as some notable exceptions in the strictly beef-bred cows), in establishing their claims that Shorthorns are a dual-purpose breed.

That Mr. Lillie failed in producing both



Dairy Maid, a 1,400-lb. Dairy Shorthorn just after Producing 12,483 lbs. of Milk in a Year. Owned by C. B. McClain, Fulton County, Ohio.

special dairy breeds. All give good account of themselves but a goodly share of the honors fall to the Dairy Shorthorns. There are many splendid milkers coming to the front from year to year. I will mention but two: Eaglethorpe Amy 5th, and Dorothy. Eaglethorpe Amy 5th produced 86 pounds of milk in a day, 13,239½ pounds in a year. (The year included the time she was resting before giving birth to a calf about the middle of her test). Dorothy, the Dairy Shorthorn bred by Lord Rothschild, won first milking prize at Barnham, Spencer, and the Lord Mayor's Challenge Cup at the London Dairy Show, 1908. Her first calf was dropped in 1903 and from that date until September 30, 1912, she gave 89,582 pounds of milk, or an average of 9,953 pounds yearly for nine years.

Notwithstanding the amount written concerning the English Dairy Shorthorns, those well informed say we have better ones in America. Among the early importations to this country were many bred for milk as well as beef, and their descendants have been bred along the same lines. These cattle were formerly owned largely in some sections of New York and Pennsylvania, but there has recently been such a demand for them that now there are good herds in many of the other states. We have a small herd owned by Mr. W. W. Knapp, of Berrien county. Mr. Knapp has several good ones, among them being Charlotte B., with a record of 15,401.3 pounds of milk, 712.6 pounds butter in a year.

The record for the year past was made by Ruth 3d, owned by Mr. H. W. Avery, Cayuga Co., N. Y. She gave 15,599 pounds of milk, testing 4.53 per cent, or 831.33 pounds of butter for the year. Mr. Avery also owns Juliet, with a record of 10,395.5 pounds and 11,308 pounds at two and three years of age. Daisy Oxford, another of his cows, produced 1,788 pounds of milk in a month and has never fallen below 8,000 pounds of rich milk, and a good calf every year.

There are many breeders, but May and Otis are the largest and continue to take a large share of the honors, both at the International and at the various state

milk and beef by crossing beef-bred bulls on dairy cows is not strange. Would he not have produced equally as poor milkers, if he had used bulls bred for generations simply for dairy form with no reference to milk production?

The production of milk is in a large measure independent from size, form, or color. Yet it has been proven that large cows (in abundant feed) are more economical producers than small ones, and most of the long time records of the strictly dairy breeds have been made by the more rugged cows. Indeed, the Brown Swiss champion comes from the beefy, not the dairy, type of the breed.

I have no quarrel with the dairyman because he keeps strictly dairy cows. If I were a dairyman I would. But when they claim there is more money in keeping dairy cows, and raising the calves for beef, than in the dual-purpose cow, it is about time to call a halt. I am surprised that Mr. Lillie should try to raise Jersey steers—"the little Jersey whose only excuse for living is the dab of butter she will make."

Ionia Co.

RAY NORMINGTON.

FEEDING COTTONSEED MEAL TO SHEEP AND LAMBS.

I was very much interested in Floyd Robison's article on "Balancing the Ration for the Lambs," published in the December 27 issue of the Michigan Farmer, for, although perhaps considerable experimenting and feeding has been done along that line very little has ever been published concerning the theme of his article, i. e., the using of cottonseed meal to balance the ration for fattening sheep and lambs. For the past three years I have carefully watched in the three or four agricultural papers we are subscribers to for something concerning this, but have seen practically nothing pertaining to it until I read Mr. Robison's article.

The first cottonseed meal I ever fed to lambs was three years ago when we had a deck load of lambs with only corn and timothy hay for feed. As I had always obtained good returns from feeding cottonseed meal to the steers, I thought I

would try it on the lambs and the result was that the deck of lambs topped the Detroit market the day they were sold without a single throwout. Since then as we have had plenty of corn, oats and clover hay, I have not fed cottonseed meal to the lambs with the exception of a little last year. Last year I bought four or five bunches of native lambs to feed with the lambs of our own raising. One of these bunches was badly afflicted with the scours, and after I had sold the best of all the lambs along in January most of this bunch was left and they still had the scours. Of course they had not been doing as well as they should have done so I started mixing some cottonseed meal with the other grain. The lambs stopped scouring and afterward sold at a very satisfactory price.

For the past three years I have been feeding it to the ewes as soon as they drop their lambs, and even where one has corn, oats, clover hay and other good sheep feeds, I am inclined to believe that it pays to buy the meal to feed, especially where the ewes are getting old and have poor teeth, for it is a great milk-producing grain and the little lambs always seem to thrive. Perhaps linseed meal would be better to buy in this case but I have fed but very little of that to sheep or lambs.

Sheep and lambs are very particular about starting to eat cottonseed meal, but when they get accustomed to the taste of it, they will lick it out of the troughs in good shape. I was sorry Mr. Robison did not give the amounts of meal fed in the experiments he mentioned. I have found that in starting to feed it one has to be very careful and not get too much of the meal mixed with other grain, for they will not eat any if you do, and so, in order not to throw them off their feed one has to use a very small amount of the meal to start with and then gradually increase the amount of it fed each day. I mix less than two pounds of the meal to 150 pounds of the other grains to start with and even then some of the ewes and fattening lambs have refused to eat it for a day or two. Fifteen pounds of cottonseed meal to 150 pounds of corn, and this mixture fed at the rate of a pound a day per sheep or lamb is as heavy as I have ever fed it, and I consider that mixture as having too much meal in it.

I do not know what feeders consider a nutritive ratio for feeding lambs or sheep and on account of the difficulty of telling the exact amount of roughage one feeds to a flock I have never been able to tell even had I known the proper ratio, whether I was feeding the right amount of cottonseed meal or not, but I certainly have obtained good results and I consider that especially under certain conditions cottonseed meal is a valuable addition to the grain ration for sheep and fattening lambs.

Livingston Co.

H. T. ROSS.

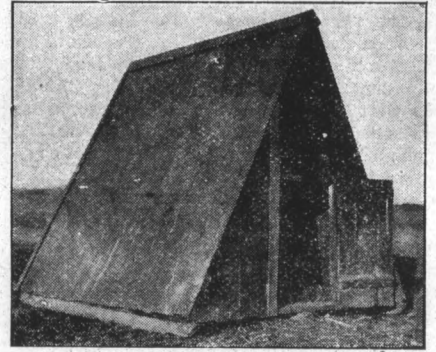
FORAGE CROPS AS A FACTOR IN PORK PRODUCTION.

(Continued from First Page).

ered with snow, and they have made a most rapid and thrifty growth.

Another advantage in alfalfa as a hog feed is the possibility of using the hay in connection with grain, especially with reference to the maintenance of brood

able to withhold the grain entirely except possibly with the brood sows, and then it is doubtful. But experience as well as experiment has shown that a limited grain ration in connection with green forage, of which alfalfa is best for hogs, will very materially reduce the cost of production. With this knowledge at hand, every farmer should plan to have



The Portable Hog House is an Important Factor in Profitable Pork Production.

green forage throughout the season for the hogs maintained upon the farm, preferably alfalfa, but if not, some succulent feed which will reduce the amount of grain required to produce a pound of gain, and thus increase the profit in pork production.

FEEDERS' PROBLEMS.

Buckwheat Middlings for Pigs.

Kindly advise me which would be the cheaper feed for growing pigs, wheat middlings or buckwheat middlings (the hulls and middlings together); wheat middlings to cost \$1.55 a hundred and buckwheat \$1.30 a hundred. Would buckwheat middlings give the pigs a disease called the buckwheat itch, as it usually gives them if allowed to run in buckwheat field?

Oakland Co.

SUBSCRIBER.

Buckwheat middlings containing the hulls would not be a very good feed for young pigs, the hulls being mostly fibre and containing very little nutriment. Wheat middlings are a much better feed for young pigs, and at the prices noted, would undoubtedly be a more profitable ration. Buckwheat meal does not affect the pigs injuriously as suggested, but in Canadian experiments it has not been found to compare with wheat or wheat products as a pig feed.

The Roughage Ration for Horses.

Kindly tell me how to feed oat straw, corn fodder and clover hay, each one once a day to horses.

Ingham Co.

SUBSCRIBER.

Having these three kinds of roughage to feed the horses, the better way would be to feed corn fodder in the morning, the straw at noon and the clover hay at night. When hay is fed at night, the horses will have a period of rest which is desirable, for the reason that they will eat it more greedily than the other forage and it will be much better for them to pick over the corn fodder and straw when idle in the stable during the day than to have the clover hay before them. The grain ration should of course be adapted to the roughage fed and the amount of work required of the horses.

Exercise for Horses.

Many farmers do not appreciate the importance of regular exercise for the farm horses during the winter season. If



Brood Sows and Litters Farrowed on Alfalfa Pasture without Grain (see 1st page).

sows. In another column of this issue will be found an account of the experience of a man who grows alfalfa extensively, and who states that he is feeding it without grain to his brood sows during the winter season. To what extent alfalfa may be made to supplement grain feeding with pigs will depend somewhat upon conditions, but it will not be profit-

they are to be maintained in a healthy condition this is quite as essential as that they be fed intelligently. Where there is no work for them to do they should be given the run of a yard or small lot for a time each day, to give them an opportunity to move about, stretch their muscles and get their blood in active circulation.

Veterinary.

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

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

Slavering.—My nine-year-old mare, due to foal April 6, slavers when eating, and our local Vet. floated teeth and prescribed an alum wash for mouth; but this treatment failed to help her. D. E. W., Kent City, Mich.—The mouth should be examined closely for there may be a piece of wire or a small splinter of wood fastened there, producing the whole trouble; or it may be that her food is causing it.

Foot Soreness—Contracted Hoofs.—I have a horse that I have owned a year which seems sore in fore feet; the hoofs are contracted and I am told that the feet were somewhat affected two years ago. F. W., Ovid, Mich.—Clip hair off coronet and apply cerate of cantharides every week or ten days; also apply lanoline to hoof once a day. If you apply shoes, let them have a wide web and rolling motion, and perhaps filling bottom of foot with pine tar and oakum, and use leather soles, will relieve him.

Filly Cries.—I have a two-year-old filly that has been crib-biting ever since she was weaned and I would like to have her cured. J. H. O., Rosebush, Mich.—It is now a chronic habit or vice with your filly; therefore, I believe her incurable. Arrange the stall so that it will be impossible for her to bite on corners of boards and edges of wood, and let her eat out of an oval-shaped feed box, resting on floor. Giving her a dessertspoonful of bicarbonate of soda and the same quantity of ground gentian at a dose in feed three times a day might help her.

Navicular Arthritis.—I purchased, in April, 1913, a gelding ten years old, some time later went lame in right foot, seemed to recover, but went lame in left fore foot last August. Now I am inclined to believe him wrong in both. C. A. C., Lansing, Mich.—Apply one part red iodine mercury, one part iodine and ten parts fresh lard to navicular joint and coronet as often as necessary to produce a light blistering effect. Also give him 1 dr. sodium salicylate and 1 dr. powdered nitrate of potash at a dose in feed three times a day. It is needless for me to say that if the fore feet are feverish, wet swabs should be applied to hoofs or apply lanolin daily.

Sprained Back.—My two-year-old colt was frightened by a dog while running in pasture and must have sprained his back and ever since he shows considerable stiffness in hind quarters while turning around. If he bumps into anything, is inclined to fall. O. C., Grandville, Mich.—Your colt either sprained muscles of back or displaced a bone, causing him to have poor control of hind quarters. Give ½ dr. ground nux vomica, ½ oz. of ground gentian and 1 dr. powdered nitrate of potash at a dose in feed two or three times a day. You had better apply equal parts turpentine, aqua ammonia and raw linseed oil to back two or three times a week.

Hogs Have Worms.—I would like to have you give a remedy for worms in hogs, or a formula for a good condition powder, for some of my feeding hogs lack appetite and are not thriving. D. B., Hamburg, Mich.—Mix together equal parts ground gentian, bicarbonate soda and salt; give each hog a teaspoonful at a dose in feed three times a day. If you are sure that any of your hogs have many worms, give equal parts fluid extract of speigelia and fluid extract of senna and not less than one-half ounce at a dose two or three times a day until bowels move freely, then discontinue treatment.

Soreness in Stifle Joint.—I have a seven-year-old horse that has shown some stiffness and soreness in stifle joint for nearly a year and shows it most after he does hard driving or heavy pulling. G. F., St. Louis, Mich.—Apply one part red iodine mercury and ten parts cerate of cantharides to stifle three times a month.

Barren Heifer.—I have a two-year-old heifer that comes in heat every 20 days but fails to get with calf. D. A. N., Fremont, Mich.—Your heifer has perhaps become infected with abortus bacillus germs and if she should get with calf, would perhaps abort; therefore, all things considered, I believe you had better feed her for butcher.

Sluggish Acting Kidneys.—Have a grey gelding seven years old with rough coat, good appetite, which is somewhat out of condition and when left in stable over night his legs stock. Have given him several home remedies without results. G. N., Levering, Mich.—Feed your horse some well salted bran mash or roots to keep his bowels open, exercise him daily, groom him twice a day; give him 1 dr. ground nux vomica, ½ oz. ground gentian and a teaspoonful of powdered nitrate of potash at a dose in feed two or three times a day and continue this treatment until his coat grows glossy and his legs cease to stock.

Incipient Bone Spavin Lameness.—Some three months ago my three-year-old colt showed lameness in left hind leg and our local Vet. has treated him for lameness in whirlbone, but fails to affect a cure.

Don't BLAME your Horse



A horse cannot be expected to pull a load on icy roads or streets if his shoes are dull and smooth.

If you expect him to exert all his pulling power, he must have a foot-hold. Get

Red Tip Calks

today and save your horse from danger and yourself from delay and annoyance.

On and off in 20 minutes, RED TIP CALKS put you in the always ready class.

Compared to injuries sustained by your horse from falling, or possible fatal loss, not to mention damage to wagons and harness, RED TIP CALKS are CHEAP INSURANCE.

Send today for booklet D

NEVERSLIP MANUFACTURING CO.
NEW BRUNSWICK, N. J.



HEWO BELGIANS They Are Here!

H. & H. Wolf, importers of Belgian Horses exclusively, advise old and prospective patrons that their new 1913 importation is now in their barns. It is in all respects by far the most select lot of horses of this breed that have ever been stabled in their barns. Big, weighty, typey drafters of quality all through, that challenge comparison with the Best Anywhere. A select lot of mares, too. Get our terms and Guarantee. This will interest you as much as the horses.

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

Metz Bros, Niles, Mich.

We have a fine lot of imported and American bred

Percheron Stallions

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

METZ BROS., Niles, Michigan.

JACKS and MULES

Raise mules and get rich.

18 Jack and Mule farms under one management, where can be seen 420 head fine large Jacks, Jennys and Mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices today. Address

KREKLER'S JACK FARM
West Elkton, Ohio.
Branch barns, Clinton, Ind.



18 Percheron Stallions

2 to 4 years old, blacks. Also young mares.

A. A. PALMER & SONS,
BELDING, MICH. 1 1/2 Miles from Orleans.



VETERINARY RECIPES

—Sure cure for Fistula, Polleivil, Ringbone, Bone Spavin, Splint, Curb, Cancer, Warts. Directions for each fully prescribed. Each recipe \$1, or all above recipes \$3, no fake. Dr. C. C. Orider, V. S. Mt. Vernon, Ohio.

PUBLIC SALE OF MULE FOOT HOGS

Jan. 27, 1914, at Findlay, Ohio. 50 head of bred sows and gilts selected from America's 1913 champion show herd. For catalog and information, address: LONG BROTHERS, ALVADA, OHIO.

PUBLIC SALE—JANUARY 20, 1914.

1-80 Reg. Rambouillet ewes, due to lamb in April; 20 ewe lambs, 9 Poland China sows, due to pig in April and May, 1 boar 16 months old; 30 Sept. and Oct. pigs, both sex. JOHN Q. A. COOK, Morrice, Mich.

44-Lb. Stock for Sale.—Bull calf 3 mos. old, dam, a granddaughter of King of the Pontiacs, sire of the champion 44-lb. cow; sire, King Mead De Kol, a sister to Queen of Juliana Dairy. Butter 365 days 3 3/4 years, 1021.72 world's record. Price \$150. Write for extended pedigree. 1 bull calf, 6 mos. old, dam an A. R. O. cow, 314 lbs. butter in 344 days, at 1 year and 11 months of age; sire, Sir Jewel Parthenos Dyade 38639, sire of Miss Netherland Artis Parthenos 29.97 lbs. butter in 7 days. Nice individual, price \$100. Write for extended pedigree. NETHAWAY BROS., R. F. D. No. 1, Burton, Mich.

WANTED—Shropshires, Oxfords & Lincolns

A few bred yearling ewes. Give price, weight of sheep and fleece in reply. A. E. CRAMTON, Vassar, Mich.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS

Herd, consisting of Trojan Ericas, Blackbirds, and Prides, only, headed by BLACK QUALITY ITO, a bull of exceptional individuality and merit. A few young bulls for sale.

WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of the foremost dairy breeds. Bull calves for sale. Write for description. Michigan School of the Deaf, Flint, Mich.

A FEW CHOICE Holstein Friesian Bull Calves for Sale. A. R. O. Stock. GREGORY & BORDEN, Howell, Michigan.

GUERNSEYS—Reg. Tuberculin Tested. Windsor Farm, Watervliet, Mich. J. K. BLATCHFORD, Auditorium Tower, Chicago, Ill.

A VERY CHOICE HOLSTEIN BULL CALF for sale, from a 30 lb. bull and a 21 lb. dam that is from a sister of a 3240 lb. cow, and has produced an 1885 three-year-old heifer. Hillcrest Farm, Kalamazoo, Mich.

HOLSTEIN BULLS AT FARMERS PRICES Sired by one of the best bulls of America. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

REGISTERED HOLSTEIN BULLS—One to three mos. old, \$50 to \$100, excellent type and breeding. I deliver them free and guarantee safe arrival. Hobart W. Fay, Mason, Mich.

Reg. Holstein Bull 1 year old dam and sire's dam average 2169 lb. butter 7 days, A. R. O. Write for pedigree and price. CHAS. S. RILEY, Metamora, Mich. R. I.

BULL CALVES—Sired by Albina Bonte Butter Boy No. 5524 whose dam as a Jr. Yr. A. R. O. record Milk 64.8 lbs. Butter 27.03 lbs. W. B. READER, Howell, Michigan.

"Top-Notch" Holsteins.

Choice bull calves from 1 to 3 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices.

MOPHERSON FARMS CO., Howell, Michigan.

Purebred Registered HOLSTEIN CATTLE The Greatest Dairy Breed Send for FREE Illustrated Booklets

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

Bigelow's Holstein Farms

Breedsville, Mich.

Have for sale several fine young bulls out of cows with high official butter and milk records.

Send for circular.

3 FINE YEARLING BULLS!

1 Son of Sir Jolie Johanna, out of an 18th 3-year-old daughter of Sir May Hartog Posch.
2 Sons of Johanna DeColantha 5th and out of A. R. O. dams.

5 Bull Calves, by Johanna Concordia Champion, No. 60575. A copy of the 24th volume of the Holstein-Friesian year book with each of these bulls.

Prices right to quick buyers.

L. E. CONNELL, Fayette, Ohio

Maple Lane Register of Merit Herd—Offers register of merit and tuberculin tested Jersey Cattle of all ages for sale. IRVIN FOX, Prop., Allegan, Michigan.

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

JERSEYS—Bulls calves bred for production. Also cows and heifers. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

Lillie Farmstead Jerseys (Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Mich.

DAIRY BRED SHORTHORNS—26 best bates Strains Short horns. J. E. HUMMEL, Mason, Michigan.

YOUNG SHORTHORN BULLS—Strong in Bates blood WARNER BROS., Almont, Michigan.

2 YOUNG SCOTCH SHORTHORN BULLS—1 aged Short horn bull. For sale. Write, H. B. PETERS, Burton Michigan, for particulars.

Short horn bull calves from good milking cows. Also 1 Reg. Percheron yrl'ng Stallion, an extra good one. M. A. BRAY, Okemos, Mich.

9 Shorthorns—Bulls from 8 to 12 months old. Best of breeding. Write for pedigrees. W. W. KNAPP, Howell, Mich.

SHEEP.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS. "The sheep man of the east." Shropshires, Rambouillet, Polled Delaines and Parsons Oxfords. R. I. Grand Ledge, Mich.

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

INGLESIDE FARM SHROPSHIRE—Offers recorded ewes bred to choice rams for \$15.00 per head. HERBERT E. POWELL, Ionia, Michigan.

O. I. C.—two boars weighing 200 lbs. \$20 each. One extra fine boar \$30. C. J. THOMPSON, Rockford, Michigan.

HOGS.

DUROCS & VICTORIAS—Prize winners at the large fairs. Choice stock for sale. STORY FARMS, Lowell, Mich. City Phone 56.

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

Chester Whites—Spring and summer pigs, write us your wants. Price and quality right. Meadow View Stock Farm, R. F. D. No. 5, Holland, Mich.

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

Improved Chesters—Boars all sold, but have a few choice young sows bred for Apr. farrow. No fall pigs. W. O. Wilson, Okemos, Mich.

WRITE US Your Wants For Reg. Chester White Swine. Holstein Bulls, Scotch Collie pups. Sept. pigs now ready for shipment. RAY B. PARHAM, Bronson, Michigan.

O. I. C's—Gilts bred for Mar. and Apr. farrow. Aug. pigs. All of right type. I pay express. GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

O. I. C.—Spring boars all sold. Have a fine lot of spring gilts. Sept. pigs, ready to ship, not akin. Lengthy Prince No. 38161, head of herd. (Will weigh ½ ton when mature.) A. Newman, R. 1, Marlette, Mich.

O. I. C.—Spring Boars all sold, fall pigs ready to ship, also a few choice red poll heifers. JOHN BERNER & SON, Grand Ledge, Mich.

O. I. C's.—Two Good Last spring boars. A fine lot of gilts and fall pigs on hand. OTTO B. SCHULZE, One-half mile west of Depot, Nashville, Michigan.

THIS

O.I.C.

SOW WEIGHED 932 LBS.

AT 23 MONTHS OLD

IONIA GIRL

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

O. I. C.—Swine. Holstein Bull calf. Bf. R. and White Leghorn Chks. Write me your wants. FRED NICKEL R. No. 1, Monroe, Michigan

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

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

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

Duroc Jersey Gilts of the large heavy boned type, bred for April farrow. Also fall pigs pairs not akin. F. J. Drott, Monroe, Mich. Route No. 1.

Fancy bred Duroc Jerseys—Boars & Gilts of spring & summer farrow. Good individuals at reasonable prices. John McNicoll, Station A, R. 4, Bay City, Mich.

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

DUROCS—36 High Class improved boars ready for service. Special prices for 30 days. Write or come and see. J. C. BARNEY, Coldwater, Mich.

DUROC JERSEY BRED GILTS to farrow in March and April of the best blood lines. W. C. TAYLOR, Milan, Michigan.

DUROC JERSEYS—20 Bred Gilts for Sale CAREY U. EDMONDS, Hastings, Michigan.

DUROCS—Fall yearling sows and spring gilts, bred for March and April farrow, bred to two of the best bred boars in the state. Also a few boars, (all are immune.) Come or write. H. G. KEESLER, Cassopolis, Mich.

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

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

LARGE TYPE P. C.—A few boars left. Am booking orders for bred gilts. Bred to Young Hadley, Big A Wonder and Big Defender. H. O. SWARTZ, Schoolcraft, Michigan.

Poland Chinas—The Large Prolific Kind. We have a nice lot of spring boars at farmers prices. ALLEN BROS., Paw Paw, Mich.

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market in 6 months. Why? Because we've bred them that way for 20 years. Buy a bred sow or some pigs now, and make more money. 50 bred sows, 100 fall pigs. Poland China history free. J. C. BUTLER, Portland, Mich.

Poland China—Sows bred, also summer and fall pigs, from large, prolific sows. Barred Rock cockerels, 41 each. ROBERT NEVE, Pierson, Mich.

Poland China Bred Sows Fall Pigs and Minorca cockerels. Satisfaction guaranteed. R. W. MILLS, Salline, Michigan.

POLAND CHINA Bred sows and fall pigs prices right. G. W. HOLTON, R. No. 11, Kalamazoo, Mich.

Large Type P. C.—Bred gilts ready to ship weighing from 300 to 325 lbs. Sired by and bred to the largest boars in the state and from dams weighing up to 700 lbs. Come and see and be convinced. Expenses paid if not as represented. W. E. LIVINGSTON, Parma, Mich.

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

MULEFOOT HOGS FOR SALE, Both Sexes, all ages. C. F. BACON, Milan, Michigan.

Mule Foot Hogs—All ages for sale. Big growthy, prolific, profitable, healthy. Write for what you want. G. C. KREGLOW, Ada, Ohio.

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

YORKSHIRES—Boars all sold. Have a few sow pigs being held for last of April and May farrow. OSTRANDER BROS., Morley, Mich.

YORKSHIRE Swine—Boars and gilts all sold. Aug. farrowed pigs, pairs not akin, for sale. Special price on trios. Geo. L. McMullen, Grand Ledge, Mich.

YORKSHIRES—For sale Yorkshire gilts, bred for April farrowing. MEADOWLAND FARM, Waterman & Waterman, Ann Arbor, Mich.

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

Lillie Farmstead Yorkshires Spring gilts, splendid ones. Fall pigs, either sex. Gilts bred for Spring farrow. COLON C. LILLIE, Coopersville, Michigan.

When let out of stable he is very lame, but after taking some exercise, can scarcely notice him limp. This is a valuable colt and I am anxious to have him cured. W. H. S., Beaverton, Mich.—I am more inclined to believe that your colt suffers from hock lameness and on account of exercise reducing his lameness, rather than to increase it; indicates soreness rather than weakness. Clip hair off hock and apply one part red iodine mercury and eight parts cerate of cantharides every ten days. The colt should be kept quiet and not allowed to exercise, then he will recover.

White Scours.—Have recently purchased at a sale five head of Jersey heifers from one to three years old and have been told that when these heifers have calves they will suffer from white scours. I would also like to know if there is any danger of our stock bull contracting this disease and spreading it through our herd? B. J. S., Oxford, Mich.—Your informant is mistaken and you need have no fear of your heifers giving birth to calves with white scours; but remember, the importance of treating the navel of every calf. The cord should be tied with a silk or linen thread about one inch from the body and the end of it painted with iodine or an antiseptic healing remedy, or apply one part iodoform and ten parts boracic acid.

Lumpjaw.—I have a cow that has lumpjaw and I would like to know if she would be fit for beef or not. P. D., Ada, Mich.—The United States government and local meat inspectors pass as fit for food quite a number of carcasses which are slightly affected with lumpjaw (actinimycosis) as fit for food, but of course make tankage of the head or diseased part of body. When the disease assumes a suppurative condition, I do not believe it proper to use the beef for food.

Barren Cow.—Heart Disease.—My Durham cow came fresh June 10, 1913; since then she fails to come in heat and appears to move about with some difficulty, but shows no sickness and is giving 20 lbs. of milk a day. I would like to have you tell me what caused the death of a litter of pigs 11 weeks old that were fed milk and middlings. These pigs seemed to take sick one after the other and showed the following symptoms: First, I noticed them breathing fast, heart thumping, and after eating a mouthful or two, some of them would fall over in a sort of a fit, squeal as if in pain, then in a few hours die. S. J. J., Bad Axe, Mich.—Give your cow 1 dr. ground nuxvomica, 2 drs. ground capsicum and 1 oz. ginger at a dose in feed three times a day. Also feed her heating, stimulating food. I am inclined to believe that the whole litter of pigs suffered from valvular heart trouble and doubtless had more or less indigestion. If they were fed cold thick slop or swill, they possibly choked or suffered from spasm of larynx.

Feeding an Unbalanced Ration.—Delirium.—I have been having an unusual occurrence among my spring pigs that I am fattening. Now they have been on mixed feed with some green stuff all fall, without apparent reason, I found them, several at a time, attacking one of the fattest and most peaceful ones. They were so in earnest that they paid little attention to their feed and I was compelled to remove the one from pen at once. A couple of days later I found them going after one of the principal ones that had led in the former chase. This one seemed also in danger of his life. I enjoy every number of your paper and would like very much to have your opinion of this trouble. C. W. C., Garden, Mich.—The conduct of your pigs indicates mental disorder and a sort of confusion in their brain. I do not believe that they suffer from organic brain disease, but am inclined to think that they suffer from the effects of a high temperature, causing delirium, possibly brought on by feeding the same kind of food too long in too large quantities; they are perhaps not all affected, but imitate and do as the leader does. This auto-intoxication from food can be best controlled by a change of feed, giving either castor oil or epsom salts as a cathartic, increasing their exercise and reducing their food supply. Give each hog 10 or 15 grains of potassium bromide at a dose in feed three or four times a day. Their bowels should be kept open, and they should be supplied with clean water to drink.

Obstructed Teat.—For the past three months, milking my 13-year-old cow has become more difficult all the time and it is almost impossible to draw milk from one fore teat. J. S. R., St. Charles, Mich.—Apply one part iodine and 20 parts of fresh lard to teat or bunch in udder every day or two. If you find it necessary to use a milking tube, do so.

Indigestion.—Worms.—Have a five-year-old cow with rough coat, fairly good appetite, but is losing flesh and has shown a little lameness lately. Also have a brood sow that farrows some time next spring that is not thriving, grits her teeth and I would like to know what to do for her. J. A. O., Grand Rapids, Mich.—Give your cow 1 oz. ground gentian, 1 oz. ground ginger, 1/2 oz. fenugreek and 1 dr. ground nuxvomica at a dose three times a day. Give your sow 15 grains ground nuxvomica, 1 dr. of ground gentian, 2 drs. ground ginger at a dose in feed twice a day. It would be good practice to examine her mouth.

Internal Hemorrhage.—Choking.—Partial Paralysis.—I had two hogs that I expected to butcher, one weighing 225 lbs., the other 150 lbs., both apparently in perfect health until recently. The larger one seemed to have a sort of spasm, trembled, jerked in muscles, sat down, then tumbled over, kicking a few minutes, then got up, ate a few mouthfuls. When urged to get up walked a few feet, then lay down again and next morning we

found him dead. When opened found the abdomen full of blood and water. What caused his death? The other hog commenced to jerk and three hours later became paralyzed in hind parts. These hogs have been fed on rape pasture and had plenty of corn to eat. C. F., Camden, Mich.—The largest hog died from internal hemorrhage, and your other hog has been fed an unbalanced ration, too much corn and not enough food containing protein. Feed oats, oil meal, tankage, etc. Or perhaps it would be good judgment to butcher him now.

Cow Comes in Heat Regularly, but Fails to Get with Calf.—I have a six-year-old Durham cow that comes in heat regularly, but fails to get with calf. Could you advise me what to do? L. G., Oxford, Mich.—If you have not already done so, perhaps you had better mate her to another bull. Dissolve 1/4 lb. bicarbonate soda in a gallon of tepid water and wash out vagina thoroughly, soon as she comes in heat; but don't breed her for three or four hours after you have used this lotion.

Fall Pigs Cough—Choking—Stomach Worms.—I have 20 fall pigs that cough a great deal, it is not unusual for six or seven to cough at the same time. R. S., Caledonia, Mich.—Mix together equal parts ground wormseed, ground gentian, quassia and salt. Give each hog a teaspoonful at a dose in his feed two or three times a day. The feed should perhaps be heated which, if done, will have a tendency to prevent choking and spasm of larynx when they are eating.

Animal Parasites of the Liver.—I have lost some sheep lately, but they seem to eat good up to a certain time, then gradually lose flesh and die. On cutting them open I find the liver covered with sores and filled with little worms. These worms are about an inch long and very much like a wireworm and I have thought that the gall sack was enlarged. G. E. C., Pewamo, Mich.—No satisfactory method of treating this ailment is known. You perhaps know that the disease is set up by the ingestion of the eggs of the taenia echinococcus; therefore, animals should be prevented from eating food or drinking water that are soiled with the feces of dogs. However, this is perhaps impractical and impossible. A change of food and water and giving your sheep each 5 grs. of powdered sulphate iron and 20 grs. of salt at a dose in feed two or three times a day, it will perhaps help them. All your fat sheep should perhaps be marketed for food, for by doing so you will sustain less financial loss than by keeping them. From the symptoms you give me I hardly believe they suffer from liver rot.

Weak Stomach.—I have a Scotch Collie dog three years old that is usually thirsty but for the past 30 days has been inclined to vomit and he had an attack of sickness which affected hind quarters, but this he has recovered from, and is now suffering from stomach trouble. L. L., Grass Lake, Mich.—Give your dog 1 gr. quinine, 5 grs. of sub-nitrate of bismuth in 2 ozs. of hot black coffee at a dose three or four times a day.

Dog has Tapeworm.—I have a shepherd dog which is out of condition, his appetite is fierce, he eats large quantities of food, but is gradually growing thinner. E. B. P., Sherman, Mich.—For every pound that your dog weighs, give him 1 1/4 grs. of powdered kamala on an empty stomach once a day for two or three days, then give him smaller doses a week later. If you believe it necessary, give him 1 oz. or 2 ozs. of castor oil two hours after giving him the worm medicine.

Distomatosis.—I fed 300 lambs last winter; 150 of them western, and the rest natives; they were fed corn and oats in the morning with plenty of good mixed hay. In the evening fed corn and oats and 1 1/4 lbs. of silage to each lamb, and they seemed to thrive, gaining 9 lbs. a month for each lamb, but I lost two a week on an average, and those that died seemed to be the thriftiest. Now, this winter I am starting in with a carload and am having the same trouble, except I am feeding some beans, about a bushel a day, to each 100, and some of the lambs are dying. Some of them stagger around for a day or two then die. Our local Vet. says it is liver trouble caused by too rapid gain. E. L., Delton, Mich.—I think your sheep die from an acute inflammation of the liver and bile ducts; a germ that causes this trouble is usually found in marshy places and I might say that this parasite is much more common in southern Europe than in this country. I fully believe a critical postmortem will reveal this parasite in the liver and you may be able to find it is causing liver rot. Treatment in these cases is not attended with satisfactory results.

B. A. C., Clyde, Mich.—Your chickens die the result of either enlargement of the liver or tuberculosis of the liver, and no treatment would do them any good.

Abscess.—Last winter I had four old hens die with seemingly nothing only a slight dysentery, but this winter I had a pullet die which showed some of the same symptoms, but upon examination found two soft lumps the size of a hickory nut—one on the neck and one on the side. They appear to be very much like boils, but are purple in color and when opened discharge some blood. These chickens appear to be very weak and only live about a week. I am anxious to know how to prevent this sickness. W. C., Vanderbilt, Mich.—Your chickens die the result of suppurative lymphatic trouble and I know of no means of preventing it, other than to keep their roost as clean as possible, feeding them a good quality of food and plenty of clean water to drink. Their roosting place should be kept free from drafts, also dry, warm and well ventilated. Mix together equal parts ground gentian, ginger and charcoal—give each four fowls a teaspoonful at a dose in feed two or three times a day.

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

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



Bad Habits Cured

By Beery System

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

To the first 100 men owning

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

World's Greatest System of Horsemanship

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

Master Any Horse

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

Break a Colt in Double-Quick Time!

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

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

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



My Graduates Are Doing Wonders

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

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

Send the Coupon

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

PROF. JESSE BEERY
 Box 42, Pleasant Hill, Ohio



Warranted to give satisfaction.

GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lamenesses from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, 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 express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Take Care Of Your Hogs

Keep them dry, warm, comfortable and sanitary. Help them to rear profitable litters by providing

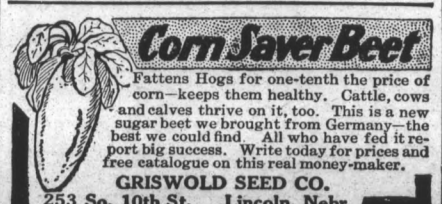
Last a Life Time

Buckeye Hog Pens

Easily set up and kept clean, germ proof and well ventilated. Large enough to guarantee satisfaction. Made of galvanized iron. Reasonable in price.

Write For Catalog To-Day

Thomas & Armstrong Co.
 115 Main St., London, Ohio



Corn Saver Beer

Fattens Hogs for one-tenth the price of corn—keeps them healthy. Cattle, cows and calves thrive on it, too. This is a new sugar beet we brought from Germany—the best we could find. All who have fed it report big success. Write today for prices and free catalogue on this real money-maker.

GRISWOLD SEED CO.
 253 So. 10th St. Lincoln, Nebr.

SAVE-THE-HORSE BOOK FREE

Why We Make a Contract to Cure
 Mr. W. C. FRALEY, 502 Fisher St., Salisbury, N. C., Mar. 27, '13, writes: I used 2 bottles and cured two horses and one pony of bone spavin two years ago and they are sound as a dollar.

FOUR YEARS AFTER—STILL SOUND.
 Mr. H. G. PUTNAM, dealer in Coal, Danvers, Mass., Oct. 6, '13, writes: Four years ago I sent for Save-the-Horse for thoroughpin and made a cure. The horse has done a good day's work almost every day since on coal wagon.

WE ORIGINATED the plan of treating horses Under Signed Contract to Return Money if Remedy fails. You risk nothing by writing; it will cost you nothing for advice and there will be no string to it.

OUR LATEST Save-The-Horse BOOK is our 18 Years' Discoveries—Treating Every Kind Ringbone—Thorpin—SPAVIN—and ALL—Shoulder, Knee, Ankle, Hoof and Tendon Disease—Tells How to Test for Spavin; how to locate and treat 58 forms of LAMENESS—Illustrated.

OUR CHARGES for Treatment ARE MODERATE. But write and we will send our BOOK—Sample Contract and Advice—ALL FREE to (Horse Owners and Managers—Only).

TROY CHEMICAL CO., 20 Commerce Ave., Binghamton, N. Y.
 Druggists everywhere sell Save-The-Horse WITH CONTRACT, or we send by Parcel Post or Express paid.

SAVE THE HOG

My "EXCELSIOR HOG TONIC" positively prevents Cholera, Cough, and other hog diseases. I sell the receipt (any druggist can fill it) with full instructions for \$1.00 and with it I give a little book of 50 pages containing 140 of the best tried and tested Stock Receipts for Horses, Cattle, Sheep, Hogs, and Chickens ever printed. I guaranteed this Tonic to prevent Cholera and other hog diseases. Money back if not entirely satisfactory. Keep hogs in healthy condition during winter and you will have no trouble next spring and summer. "An ounce of prevention is worth a pound of cure." Just enclose a dollar bill. I also publish Dr. Chase's Last and Complete Receipt Book, for which I want agents.

F. B. DICKERSON,

Desk. 2 Detroit, Michigan

When writing to advertisers please mention The Michigan Farmer.

Farmers' Clubs

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

CLUB DISCUSSIONS.

Will Hold Meeting in Church.—The Rives and East Tompkins Farmers' Club held an oyster dinner at the home of Mrs. Monroe Perrin, Saturday, January 6, about 60 being present. The morning was spent in social intercourse. After dinner the meeting was called to order by the president, singing of America by the Club, followed by prayer by Chaplain Andrews. It was decided to hold the next meeting at the church, holding morning and afternoon sessions. Everybody is invited to come and help make it a success. After a good musical and literary program had been rendered, the president introduced Mr. Lepelley, who gave an excellent address. Mr. Lepelley is a native of Guernsey Islands, also the home of the celebrated Guernsey cattle, and he gave us many interesting facts concerning his country.—Ina Stringham, Cor. Sec.

Hold Annual Meeting.—The Hadley and Elba Farmers' Club held its annual meeting December 18, at Maple Grove, with Mr. and Mrs. B. L. Snook. After the bountiful dinner, President B. L. Snook called the meeting to order. Instrumental music by Mrs. Earnest Hasting was followed by invocation by Rev. Eberhardt, and a solo by Ward Mott. The minutes of the last meeting were approved as read. Rev. Eberhardt, chairman of the U. of M. lecture course, reported Prof. Friday would lecture on Tax Reform, in Hadley, Feb. 6, and C. S. Riley reported the program for the Farmers' Institute. Roll call, "Something I've accomplished in 1913," was followed by a solo by W. H. Johnson. The following officers were elected for the ensuing year: President, B. L. Snook, vice-president, C. A. Davenport; secretary, Mrs. R. J. Pierson; treasurer, Mrs. Earnest Hasting. The appointment of various committees on 1914 program, arrangements for farmers' institute and Club oyster dinner was followed by a very interesting report of the State Association Meeting in Lansing, Dec. 2-3, by the delegate, Mr. W. E. Ivory, and the Club adjourned to meet at the Hadley Town Hall, Jan. 15, for the annual oyster dinner.—Mrs. C. P. Johnson.

Discuss Prison Problem.—Mrs. Ellen Purdy opened her home in Caro for the December meeting of the Indianfields Farmers' Club, and the 65 persons who attended found it tastefully adorned with holy and evergreens in honor of the holiday season. The dinner was served under the capable direction of Mrs. Mary Fournier, and after a social hour the serious part of the program was considered. James Paul gave a report of the meeting of the State Association of Farmers' Clubs, to which he was the Club delegate, and it was exceptionally good in giving a clear account of all of the proceedings. Mrs. Robert Park, chairman of the committee on program for the coming year, read the report, which pleased all. Mrs. Amos Andrews read "Celebrating Christmas Day Anciently and Now," and Mrs. J. Paul, "Good Old Santa Claus Goes to Many Homes." Vernon Taggett, a former Caro boy, now living in Illinois, gave by request, a short talk regarding convicts in prisons, expressing the belief that persons convicted of minor offenses should not be confined with hardened criminals. Mrs. Vernon Taggett was induced to sing "The Rose by the Garden Wall," composed by the hostess-member of the Club, Mrs. Ellen Purdy. An important result of the meetings of the Club is felt from the free discussion of arrangements and methods both inside and outside of the home practiced by the members, leading to a general improvement of all, and making better farmers and housekeepers.—Margaret Arnold, Rec. Sec.

The Farm Horse.—At a recent meeting of the Napoleon Farmers' Club, of Jackson county, F. M. Andrews read an excellent paper on "The Selection and Care of the Farm Horse." He said in part: "In weight I would prefer 1200 to 1500 lbs., Percheron or Clydesdale grades; of course, I would not object to full bloods. Blocks are more preferable as a rule, they are not any better drivers or workers, but are more easily kept than the more rangy horses. The care of a farm horse in winter depends on what you have for them to do. If you drive or work them enough to warm them up much, they should not be turned out of the barn in rough weather. Growing colts and horses that are not driven at all should be turned out in the yard every day that the weather will permit. Many who take good care of their horses during the spring and summer then turn them out and let them go during the fall and winter. To give them a run to grass is a good thing, but to take the grain all away and compel them to subsist on frost-bitten grass is a severe ordeal. The grass will not sustain them and they lose flesh, the main reliance for strength and sustenance being taken away. From an economic standpoint it is a losing game. Do not turn the horse which has been housed and cared for all summer, out to endure the cold rains and frosty nights. Reduce the amount of grain but do not take it entirely away. Average draft colts can be broken well and cheaply by being worked moderately by the side of older horses.

Grange.

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

THE JANUARY PROGRAMS.

Suggestions for Second Meeting.
Song.
Reading, "A question of property."
Next steps farmers should take: 1. To establish rural credit. 2. Co-operate with neighbors. 3. Extend use of parcel post.
A musical treat.
The 300-egg hen—what does her record mean to the ordinary hen?
Reports on the moving picture shows of the nearest town, four persons.
"The Grange Life Insurance Messenger," a surprise feature.
Closing song.

WASHTENAW COUNTY CORN CONTEST.

Forty-seven boys and girls sent ten-ear corn exhibits to the ninth annual products contest held under the auspices of Washtenaw Pomona Grange. Moreover, and very much to the point, most of these boys and girls came with their corn. This means a decidedly different atmosphere from that which used to prevail at meetings of this staid old southern Michigan Pomona, one which has in it much to augment hope. The meeting was held in the Y. M. C. A. building at Ann Arbor, which afforded convenient access and gave the country boys a chance to watch the town boys in their Saturday morning gymnasium practice and sport. Some day we hope they will be able to more than look on, but as yet we have no rural movement in recreation organization over our county.

For the first time, this year a two-day meeting was tried for this contest, which annually attracts a large number of people from different parts of the county who never get together in any other way. On the first day, poultry was the exhibit feature. The talks were upon "Co-operation," by C. H. Bramble, of Tecumseh, who never did better in a concise and to-the-point argument of the present economic situation from a farmer's standpoint, and a discussion of practical poultry matters by J. O. Linton, of M. A. C. The latter was kept upon the floor two hours, talking plain facts straight from the shoulder and answering questions that increased in number as the early twilight deepened. About a dozen coops of fowls served for illustration of his talk and attracted knots of poultry raisers at intermissions. "Is this comb right?" "Is that eye a good one?" "How about this shape for this breed?" "Am I working in the right direction for an egg-type hen?" "Which of these ducks is the better egg machine?" Such was the trend of the questions one heard through the day. Enthusiasm ran high over the way in which Mr. Linton met these inquiries and, all in all, the poultry part as an experiment was voted very satisfactory.

From year to year the character of our Grange exhibit differs. Since the schools have united with the Grange, through the efforts of Commissioner Evan Essery, we have accomplished a more vital work by reaching the children. The merchants of Ann Arbor, this year, were very generous in their encouragement of the project, and the press has given liberal reports of the feature. All these things count. Besides, the local Granges contribute to the prize money and the result of all is a unique event. At this last meeting Pittsfield Grange served as partial hosts and the big picnic dinner under their direction was not the least pleasant part; another enjoyable number on the program was the singing of the Webster male quartet.

JENNIE BUELL.

AMONG THE LIVE GRANGES.

Charlotte Grange conducted a successful corn and apple show in December. The sisters served a supper in connection with the netted the Grange more than \$50.
Morenc Grange installed its new officers at the first January meeting as follows: Master, Sanford Schaeffer; overseer, M. L. Willsberg; lecturer, Ella Schaeffer; steward, L. Lown; assistant steward, V. B. Colegrove; lady assistant steward, Nellie Colegrove; chaplain, Fanny Smith; treasurer, Leo Ashley; secretary, Frank Sanborn; gate keeper, Sam Schaeffer; Pomona, Mrs. Baker; Flora, Molly Willsberg; pianist, Alta Cowgill; chorister, D. Smith; insurance director, O. D. Colegrove.

Ironton Grange, of Charlevoix county, at the last meeting of the old year, elected the following officers for 1914: Master, W. F. Johnson; overseer, Jerry Saunders; lecturer, Sadie Hammond; steward, Ben Nowland; assistant steward, Grant Hammond; chaplain, Lillian Saunders; treasurer, Matthew Saunders; secretary, John Knudsen; gate keeper, Charles Hyres; Ceres, Sylvia Lewis; Pomona, Julia Williams; Flora, Louisa Saunders; L. A. S., Cora Hammond.

COMING EVENTS.

Pomona Meetings.

Shiawassee Co., with Laingsburg Grange, at Laingsburg, Thursday, Jan. 29. State Master Ketcham, speaker.
Ingham Co., with Telephone Grange, at Leslie, Friday, Jan. 30. Address by Dr. Ethel Cook Carpenter.

Europe Will Pay Most for Your FURS!

Get 15 to 30% More This Season

Ship Your Raw Furs to Traugott Schmidt & Sons

We sell direct to largest European manufacturers through our three big branch houses in St. Petersburg, Paris and Leipzig, and pay prices that will astonish you.

Our \$200 Extra Offer

In addition to our regular high prices, we have set aside \$200 to be paid in premiums of \$50 each to the shipper of the best Skunk, Raccoon, Mink and Red Fox received in the judgment of our Mr. Edw. J. Schmidt, by April 1. Write for details.

Send Us a Trial Shipment

We pay more because we get more. Write for our price list before you make a single move! Over 67,000 trappers and shippers are getting our higher prices. It will pay you to send a trial shipment. Write today—now!

Traugott Schmidt & Sons
117 Monroe Ave. Detroit, Mich.

LET US TAN YOUR HIDE.

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

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

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

The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y.



Custom Fur Tanners

FREE INFORMATION ON HOW TO DO TANNING

Send for our illustrated circulars, on taxidermist work, custom tanning and mfg. of ladies furs, robes, coats, rugs, gloves and mittens, from the trapper to the wearer.
W. W. WEAVER, READING, MICH.

HIGHEST PRICES FOR FURS

WE SHARE OUR PROFITS WITH YOU

We pay highest prices, and remit promptly. Send for Free Catalog for Co-Operative Raw Fur News—Explains how you can get more money for your furs. Forty years' experience and satisfied shippers everywhere. Send a postal NOW for your copy. THE CO-OPERATIVE RAW FUR CO., 38 Jefferson Ave., DETROIT.

Trappers

Write Us First Get our price list and shipping tags.

Highest Prices for Furs We buy any quantity—every kind. Send today for prices and shipping tags sure.

McCullough & Tumbach, 124 N. Main St., St. Louis, Mo.

Cut More Wood With Less Labor

This machine simply eats up the work. Fills every need of the wood-sawyer. Saves time—saves labor. Straight-line motion. Free from vibration.

The Ireland Drag Saw Machine

costs little, but it's the most reliable machine made. We also manufacture Circular Saws, Hay Hoists, Saws and Shingle Mills. You can't beat our prices on Canvas Belting. Write for circulars and prices today.

IRELAND MACHINE & FOUNDRY CO., 33 State St., Norwich, N. Y.

Horse overshoes that are sharp-shod for icy weather. Buckled on in one min. Let us send you 1 or 2 sets C.O.D. by Par. Post, \$3 per set delivered. Extra treads with sharp calks 30c. each, guaranteed to prevent slipping. write for circular. Herman Mfg. Co., 1420 Pa. Av., Washington, D. C.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

C. D. Rose Farm Agcy. SELL FARMS. Send State and Warren Sts., Trenton, N. J. Estb. 1908.

WANTED—Improved farms and wild lands. Best system for quick results. Full particulars and magazine free. Don't pay big commissions. Western Sales Agency, Minneapolis, Minn.

NEW YORK FARMS Are the best anywhere, and lowest priced. We show and sell them every day, winter and summer. Ask for list. McBURNEY & CO., Fisher Bldg., Chicago, Ill.

186 a. of heirship property. Level land, good soil and water. 17 a. of timber, large house and good roomy buildings for all kinds of stock. An ideal dairy or stock farm. 2 1/2 miles from town of 3 R's. To make quick sale it is offered at the low price of \$5.00 per acre. Address, F. H. Carpenter, R.D. No. 2, Otsego, Mich.

For Sale or Exchange for good business. 320 acres 3 1/2 miles N. W. of Hastings on Main road. Sand and Gravel loan soil lays level, 2 sets of good buildings with silos. Well fenced and watered. 1/2 mile from school. Price \$50 per acre. Feldpausch Bros., R. 9, Hastings, Mich.

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

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

A DESIRABLE FARM FOR SALE—220 acres, 1 1/2 miles soil gravel loam, under good state of cultivation, 2 houses, 3 barns, other outbuildings, 12 acres of fine oak timber, woven wire fences and running water on place. For particulars write to owner. F. A. DUFFEE, Eaton Rapids, Michigan.

Here is a Farm For Three Families!

450 acres; 3 dwelling houses, 6, 12 and 15 rooms, 3 barns, 68x100, 36x50, 36x76. Hen houses, hog houses and granaries with all barns. Apples, pears, cherries and grapes. Railroad town 3 1/2 miles; school 4 miles. Phone and R.F.D. Price \$7,500; part cash, balance time to suit purchaser.

Hall's Farm Agency, Owego, Tioga Co., N. Y.

Michigan Farmer's Club List.

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

EXPLANATION—The first column is the regular subscription price of the other papers. The second column gives our price for a year's subscription to both the other paper and the Michigan Farmer. The third column gives the price at which the other paper may be added when three or more are ordered. If price is not given in this column ask us. Example: We will send the Michigan Farmer and Detroit Semi-Weekly Journal for \$1.15. If, for instance, McCall's Magazine also is wanted at \$1.40 making total \$2.55. Any number of papers may be added at third column price if they are for a subscriber to the Michigan Farmer.

If you want the MICHIGAN FARMER THREE YEARS and the other papers one year add 75c to the second column price. For the Michigan Farmer 5 years add \$1.50. We do not send samples of other papers. Address the publishers direct.

Send all orders to the Michigan Farmer or through our agents.

We will take your order for any publication you want whether listed or not. Write for rates.

NOTE—So long as a subscriber is on our list for one or more years he may order at any time any publications at third column price. So that a three of five year subscriber does not lose the advantage of the reduced price if he wants any other paper next year or the year after.

Subscriptions ordered to Canada require postage. Write for rates unless postage is known, in that case include with order. Postage on Michigan Farmer alone to Canada is 1 cent per week.

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

Overland

\$950

Completely Equipped. f. o. b. Toledo

1914—A Bumper Overland Year

FOUR years ago the Overland passed into the hands of its present owners. During this same time many other automobile manufacturers have come and gone—flared up and out. But our progress has not only been phenomenal, but strong and healthy. Each year our sales have increased by millions. In the last four years we have accomplished *more*, done a *larger* business and given the farmer *more* car for *less* money than any other automobile manufacturer in the world.

All this is a matter of record.

This is going to be our banner year. We are producing 50,000 cars, and the largest portion of this great output is going to the American farmer.

Farmer's Now Using 65,000 Overlands

The farmer consumes more automobiles and more Overlands than all the rest of the world put together. Today 65,000 Overlands are giving satisfactory service on American farms and ranches. And if ever an automobile must "deliver" it's on or around the farm.

One of our largest western distributors has contracted for 5,000 Overlands. This is significant and typical of the west. He would take *more* if we could supply them.

Like as not your nearest neighbor owns an Overland. Ask him. He'll tell you of its all around ability and economy.

We repeat, 1914 is going to be our bumper year. Never before has the farmer shown such keen appreciation of the Overland as he is doing right now. Never before has he so thoroughly realized that we are actually giving more car for less money than any other manufacturer in the business.

And why not?

Larger In Every Respect— But Lower In Price

Look at the car—read the big specifications—see the low price.

A wheel base as long as on most \$1200 cars.

A motor as large and as powerful as the power plant in most \$1200 cars.

A car as large, roomy and comfortable as most \$1200 cars.

Tires as large as you find on the average \$1200 car.

Electric lights—even under the dash—deep upholstery, an unusually heavy frame, a large steering wheel, Timken and Hyatt bearings, three-quarter floating

rear axle, a jeweled Stewart Speedometer—all the same identical features you find on the average \$1200 car.

The body is designed with graceful cowl dash and flush U doors with concealed hinges. Everything right up-to-date.

The car is finished in that magnificent dark Brewster green, trimmed with polished nickel and aluminum. It could not be made prettier. It could not be made more striking if it cost \$3000.

Our price \$950—

Others Must Charge \$1200

To duplicate this car any other factory would have to charge you \$1200 and more. Our price \$950—because we are the largest producers and can effect the greatest number of manufacturing economies. And you save the difference.

This is the car everyone is demanding. See it before you buy. See how economical it is on gas, oil and tires.

Get in touch with the nearest Overland dealer. There is one near you.

Write us for a handsome 1914 catalogue. Please address Dept. 86.

Read The Big Specifications

Electric head, side
tail and dash lights
Storage battery
35 horsepower motor

114-inch wheelbase
Three-quarter floating
rear axle.
33 x 4 Q. D. tires

Cowl dash
Brewster green body,
nickel and aluminum
trimmings

Deep upholstery
Mohair top, curtains and boot
Rain-vision, Clear-vision
windshield

Stewart speedometer
Electric horn
Flush U doors with
concealed hinges

With electric starter and generator \$1075—f. o. b. Toledo

The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Garford and
Willys-Utility Trucks.

Full information on request.

