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FARM NOTES.

An Uneven Stand of Grass.

I have a clover field where some patches are bare on account of being killed out by drouth. What can I do to reseed these patches to make good pasture for my cows this summer? Some parts of this field have a fine stand of clover while other places the clover is nearly all gone.

Jackson Co. T. E. M.
It is difficult, if not impossible, to sow anything on these patches where the clover has killed out that will make a good growth and improve the pasture this season. This is true, both because it is hard to establish a new pasture plant without a thorough fitting of the seed bed, and because the stock pasturing in the field are always inclined to keep the fresh growth of the young plants pastured down so closely that little feed is secured from them. This is one reason why it is an advantage to sow some grasses with clover in seeding land to that crop. Another very good plan is to top dress the patches where the stand is thin with a light dressing of stable manure, which will encourage the growth of such grass as remains and will make the pasture appear much less uneven than would otherwise be the case.

Seeding Alfalfa After Oats.

I have a five-acre field of clay loam which has been heavily manured, having been in corn two years. Wish to sow to oats this spring and follow with alfalfa. Would it be a good plan to sow a little alfalfa seed with the oats to inoculate the soil, as the farm has never grown alfalfa? Should we disk the ground for oats and then plow under the oat stubble for alfalfa, or plow first and then disk the stubble, or would it be best to plow each time?

Jackson Co. A BEGINNER.
In a case of this kind it would seem to the writer that it would be far better practice to sow the oats a little thinly and seed the alfalfa with the oats, using sufficient seed to make a good stand. Or, if the oats will make a too big growth of straw on this land to insure a fair chance of getting a seeding, then substitute barley for the oats and seed the alfalfa with the barley, inoculating the seed with a pure culture to secure the bacteria necessary or sowing a little soil from a successful alfalfa field on this piece before seeding. There are a number of successful alfalfa growers in Michigan, having a similar soil to that described in this inquiry, who have had good success in seeding alfalfa with barley. Barley has some advantages over oats for this purpose, in that it does not shade the ground as much and it matures some days earlier, so that the crop is more likely to be off the field before the summer drought, should there be one, has affected the young alfalfa plants. In his new work on alfalfa Joseph E. Wing, of Ohio, advocates the seeding of alfalfa with barley, the barley to be cut for hay instead of being allowed to mature for grain, which plan he considers superior under his conditions, to sowing alfalfa without any nurse crop. However, as above noted, good results have been secured in many cases in this state, by seeding alfalfa with barley and cutting the crop for grain, upon good strong clay loam soil.

But, as above noted, even if it is desired to grow oats upon this field,

it would seem a better plan to use a moderate seeding of oats and seed to alfalfa with the oat crop for several seasons. First, if the season should be dry it would be impossible to prepare a good seed bed for the alfalfa after oat harvest, and be certain that sufficient moisture would be present to readily germinate the seed and produce a strong, vigorous growth of the young plants. Then it would be a little late in the season to get the best results in sowing alfalfa, if we take the experience of those who have

thoroughly and fine it properly to make a good seed bed, then sow the alfalfa as soon as weather and soil conditions seem to indicate that a good germination of the seed will be secured. This is a plan which may succeed and in case the inquirer concludes to try it, we trust that he will report his success for the benefit of other Michigan Farmer readers who are interested in this forage crop.

Potatoes in the Crop Rotation.

I would like to have you advise me in the columns of your paper in regard to

are much less likely to be troublesome where the crop is not planted on the same ground in successive years. Insect pests are also less likely to be troublesome under these conditions. Another very good reason for a rotation of crops is that the soil can be kept in a much better physical condition, not only for potato crops, but for the other crops in the rotation, by practicing a short rotation from the start, without any doubt, you would get a good crop of potatoes on this new ground by plowing and planting to this crop again next spring. But it would be a better plan to sow some spring grain and seed the ground to clover following the crop with potatoes again in the rotation. In this way you will keep the soil well supplied with humus, and available plant food from the start, which is a much better plan than to exhaust the available fertility, thus depleting the soil of plant food and at the same time exhaust the supply of humus, thus getting the soil in a poor, physical condition, which will necessitate the adoption of means for its renovation later on. It is much better to keep a new soil in a proper physical condition right from the start and this can be better accomplished with a judicious rotation of crops than by any system of handling if the same crop is planted on the ground for two or more years in succession.

The Seed Corn.

At the risk of worrying the readers with another reference to a question which is often discussed in these columns, we can not let this favorable season pass without again emphasizing the importance of making a suitable test of the seed corn to determine its vitality before the planting season arrives. So much has been said about the advantages to be derived from the plan of testing each ear separately that it is unnecessary to reiterate it here. Every farmer knows that if some seed ears are of poor quality, and the kernels from them do not germinate or, if they do germinate will not make strong, vigorous plants, that the result will be noticeable in the stand secured. It will also be noticeable in the crop which may be harvested next fall. No more need be said about the advantage of the plan of making a simple ear test of the seed corn. Every farmer will appreciate its advantages, but the trouble is that as the season for planting the corn approaches there are so many things to be done upon the average farm that jobs of this kind which can be neglected do not get done. The only safe way to insure that an ear test will be made is to get this job done before the season of the spring work arrives. It will not require much time, and the time will surely be most profitably spent. The method of laying off a box in squares and planting several kernels from each numbered ear in the square of the corresponding number, has been so often described that it is unnecessary to repeat instructions, but by again calling attention to the beneficial results to be derived from this method of testing the seed corn, we hope to interest more readers to try it this season. Where a considerable area is to be planted, the use of a seed



How 400 bu. Per Acre Looks in the Row. (Growing Big Crops of Potatoes, p. 258).

been successful in growing it in our state as a guide; altho in some sections fall seeding is considered more certain of good results than spring or summer seeding. But in the event that a good catch was secured by seeding with the grain, the alfalfa would have a better start than would be possible where sown late in the season. However, if one desired to try out this plan, it would be the better policy to disk the stubble as soon as the oats are cut to conserve the soil moisture to the greatest extent possible; then plow not too deeply and pack the soil

raising potatoes on the same ground two years in succession. This piece of potato ground was new ground plowed a year ago. The potatoes yielded 250 bu. to the acre last fall. Would it be advisable to plow in the spring?

Ingham Co. R. M. DELL.
While potatoes may be successfully grown for several years in succession on the same soil, and while the yield may be kept up with proper fertilization, yet it is much better to practice a rotation of crops from the start for several seasons. One good reason for this is that the fungous diseases which affect potatoes



Farm Home of Mr. George Shults, of Lapeer Co., a Type of Modern Rural Architecture.

corn grader, which will sort the kernels to even size, will also prove profitable. No corn planter can drop corn evenly if the kernels vary in size, which makes the grading of seed to uniform size an important factor in getting an even stand.

The Seed Potatoes.

The selection of the seed potatoes is also a subject which will interest many readers at this time. In this connection a point brot out by Mr. Woodman at the recent Round-Up Institute in answer to a question is worthy of special mention. Mr. Woodman contended that by selecting potatoes for seed averaging in size from a bulk of a hen's egg to twice that size, a natural process of selection is carried out which is similar in results to that of selecting from the best hills when the potatoes are dug in the fall. His contention in this regard was that the hills having the most merchantable potatoes in them would have more potatoes of the size noted than any other kind of hills, and that by selecting the smaller merchantable potatoes for planting one will be much more apt to get potatoes from prolific hills than by the use of large potatoes for seed, since the hills which have but few potatoes in them generally grow those to a good size, while the larger producing hills have many more potatoes, some of which will average medium size. Thus these medium sized potatoes are, in his opinion, superior for seed to either the larger or the smaller ones. This point is passed on for the consideration of readers who will select their seed potatoes from marketable stock this year. The theory is a reasonable one and seems to have given satisfactory results in Mr. Woodman's case, as will be noted from the summary of his talk which appears in another column. The smaller potatoes from the best hills are better seed than the big potatoes from poor hills.

Where to Apply the Stable Manure.

I would like to ask thru the columns of your paper how we can get the most benefit from our manure, by top dressing or plowing it under. I do not remember of seeing it discussed in your paper. I believe in plowing it under; it adds humus to the soil, especially heavy soil. Some advocate top-dressing the young seedling. I have 10 acres of bean ground to put into barley, 10 acres seeded to clover and 10 acres of clover sod to put into corn. I have enough barn yard manure to cover any one of the fields, 10 loads to the acre on the sod for corn or five loads to the acre on the seeding and bean ground. Which place would I get the most benefit from the 100 loads of manure, to be put on with a manure spreader? V. E. C.

Except under special conditions the best place to apply stable manure is undoubtedly on sod ground intended for corn. This is true for several reasons. First, as the inquirer says, by applying manure to the sod ground before plowing, a maximum profit is obtained thru the addition of humus to the soil, as this manure is rich in vegetable matter. Then the manure can be applied to the sod ground with practically no waste of plant food. It can be drawn during the winter or early spring as most convenient, and the grass roots will absorb and hold in an available form the soluble plant food contained in it. After being plowed down, the coarse vegetable matter will gradually nitrify or decay and the plant food which it contains become available later in the season and for the crops grown in succeeding years, while the humus which will result from the plowing down of this coarse vegetable matter will prove a more lasting benefit to the soil than where handled in any other way. By all means apply the stable manure to the sod ground intended for corn under the conditions named above. There are, however, circumstances in which top dressing with stable manure is both desirable and advisable. Where a field has been allowed to become depleted, both in plant food and humus, and has been sown to fall grain with the object of seeding it to clover, both the crop of grain and the chance of getting a good stand of clover will be materially bettered by giving the field a light top dressing with stable manure. Where the land is being prepared for alfalfa, or some crop in which it is desirable to promote a rapid growth, from the start, a top dressing of stable manure will prove beneficial. The permanent meadow or pasture is another place where such an application can often be given with profit, but unquestionably the best place to apply stable manure in the regular crop rotation is on sod ground to be plowed in the spring for some spring or summer crop, such as corn or potatoes, for by this means the greatest returns will be secured from it the first season and the largest permanent benefit to the soil will be derived from the application.

GROWING BIG CROPS OF POTATOES.

One of the most interesting addresses given at the recent Round-Up Institute, from an economic standpoint, was that on the above subject by Hon. Jason Woodman, of Van Buren Co. Mr. Woodman has kindly summarized his talk for the benefit of Michigan Farmer readers as follows:

For the year 1909, in the total production of potatoes, New York stands first, Michigan second, Maine third and Wisconsin fourth. In yield per acre Maine stands first with an average for the state of 225 bushels; New York second with 126 bushels; Michigan third with 105 bushels; Wisconsin with an average of 102 bushels. The ten year average yield per acre in bushels is for Maine, 171; Wisconsin, 94; New York, 85, and Michigan, 84. That is to say, the average yield of potatoes in Maine is about twice as great as that of the crop in New York and Wisconsin, and more than double the production per acre in Michigan. During these years the average farm price of the Maine crop has been \$80 per acre, and of the Michigan crop \$32 per acre.

It is evident that the ordinary Michigan potato grower has not been making very much money from the crop, nor will he do so in the future, unless he changes some of his present methods of doing business.

The average Michigan potato grower raises 1,008 bushels on every 12 acres of land. If, instead of planting 12 acres, he should plant five and make those five acres produce 1,000 bushels, he would not increase the total number of bushels placed on the market; he would, however, largely increase his net profit on the crop, a "consummation devoutly to be wished," not only by the farmer, but by the business and professional people who are dependent for their living upon the profit of the farmer's acres.

The three main reasons why Michigan farmers do not get a satisfactory yield, are, first, they do not make the soil of their potato fields rich enough; second, they do not plant a sufficient quantity of the right kind of seed; third, they do not, by thorough spraying, eliminate the blight.

Over most of Michigan, the last season was a favorable one for the production of a large crop, and yet, we only raised an average of 105 bushels per acre.

In Paw Paw township there were four fields that averaged 377 bushels per acre. The largest yield was produced by Mr. Harry Lurkins, who, on a field of nine acres and 79 square rods, produced 425 bushels per acre. These fields were measured and the yield is the number of weighed bushels when marketed. Practically the same methods were followed in raising all of these crops. The plans used are the results of experiments carried on during a series of years.

In all cases, the basis of each of these crops has been a field seeded to clover before it got poor. This clover sod reinforced with a heavy coat of manure, applied the year or the winter before the crop is planted.

We have found that the most profitable variety of potatoes to grow for the general market are of the "Rural" type, preferably the Rural itself. All things considered, the best seed to plant is a whole potato from the size of an egg up to twice the egg size. If the seed potato is cut at all, it should only be cut once, split lengthwise through the seed end.

The seed-end eyes are the strong eyes. If seed potatoes have been properly kept, a seed-end backed by the whole potato in every hill, means every hill will be a good hill.

With the Rural potato, if the whole tuber is planted, the eyes at, or around, the seed-end will send out from one to four stalks; while the weaker eyes will remain dormant, thus the whole of the plant food in the potato goes to nourish the growth from the strongest eyes. If seed potatoes are cut, the pieces containing the weaker eyes will grow weaker hills and that means a smaller yield per acre. These statements are based on the results of experiments I have carried on for a series of years.

For five years I have planted a portion of each of my potato fields with uncut seed. Invariably the area planted with whole potatoes has outyielded the part of the field on which cut seed was used. I have tried experiments along this line by planting carefully measured plots. In every instance the uncut potato seed has proved to be the best. This last year for the first time I used only uncut seed and obtained the best crop I have ever grown.

Some one asks if egg-sized potatoes planted whole are used year after year will not the size of the stock deteriorate and the potatoes run out. On the contrary, the yield has been increasing, and the quality has, if anything, grown better. I raised this year 3,410 bushels of potatoes on eight acres and 113 square rods of ground, and from this crop I was able to grade out only 140 crates of potatoes that were as small as the bulk of two eggs.

Late potatoes should be planted in drills, the rows from 35 to 45 inches apart, and the distance between rows depending on the weight of the soil, and the seed should be planted from 12 to 15 inches apart in the row; from 18 to 25 bushels of seed should be planted to the acre.

About eight days after planting, the field should be harrowed two or three times with a spring tooth drag, the teeth set from an inch and a half to two inches deep. This cultivation, given just before the potatoes come up, will destroy the life of every little weed and is the one most necessary cultivation.

The late potato crop in the south half of the lower peninsula is diminished on an average at least twenty-five per cent by blight, and the yield is often greatly shortened in the northern counties by the same cause. Moreover, the quality of the potatoes for food is injured. A potato, to be at its best, must mature; and mature in cool weather. Thorough and effective spraying is necessary to the production of a large crop and a good quality. A spraying machine, to do good work, must spray up against the lower side of the leaves and the stems of the plants; for there is where the blight spores, during warm and muggy weather, germinate and grow. The machines that only spray down on the tops of the vines will not properly control the blight, and cannot be depended upon. The Bordeaux mixture I use contains ten pounds of vitriol and fourteen pounds of stone lime to the hundred gallons. I begin spraying when the tops are eight or ten inches high and spray once in about every eight days, spraying up until the vines begin to spread out on the ground; after that, spraying down on top of the vines. If spraying is properly done, the tops will not die from blight, nor will the potatoes rot. The tubers will continue to grow during the latter part of September and until the severe October frosts come. The quality of the stock will be materially improved and the quantity greatly increased.

If the Michigan farmer is to make money growing potatoes, he must keep live stock, make and save a liberal quantity of manure, plant not more than thirty or forty per cent of the acreage he is now growing and manure every foot of it. A ton of good manure will bring from six to ten bushels of potatoes and is worth on the average, at least, three dollars and a half per ton on that crop, aside from the benefit it is to the land after the potatoes are removed. Plant enough of good seed, cultivate properly and spray thoroughly. If he does these things, he will grow no more bushels of potatoes than he raises now, but he will do a great deal less hard work, and make a good deal more money.

HOW MR. LURKINS GREW HIS BIG CROP OF POTATOES.

Mr. Harry Lurkins, of Van Buren Co., to whom Mr. Woodman refers in the preceding article as growing the biggest crop of potatoes in Paw Paw township has, upon our request described the methods which he employed, as follows:

Yes, we raised a good crop of potatoes this past year. We raised 3,920 crates of saleable potatoes from 9½ acres. Nothing but saleable potatoes grew. Not any small ones nor overly large ones. Each crate contains from 60 to 65 lbs. of potatoes.

This 9½ acres is a heavy loam containing some gravel and stones. It was a clover sod mowed one year. Half covered with barnyard manure after harvest and the other half covered during the winter before March 1. It was plowed 8½ inches deep the last of April, rolled as fast as it was plowed, then dragged with lever spring tooth drag after every rain, for about every eight or ten days, till the 15th of June. June 16 and 17 the potatoes were drilled with a potato planter, the rows being made three feet apart and the potatoes dropped 17 inches apart in the row, one piece in a hill.

The variety was the Rural New Yorker. The seed was treated for scab in a solution of formaldehyde. The seed was

from the size of a hens egg, up. They were taken out of pit, treated for scab, cut (those needing cutting) and planted all the same day.

In four or five days after planting we cultivated between the rows, where the horses and wheels of the planter traveled. Seven or eight days after planting we harrowed this way: They were planted with a lever spike tooth drag. Eleven or 12 days later we harrowed across the rows with lever spike drag. When the potatoes were three inches high we cultivated, and stirred the ground after every rain. Before the last cultivation we handhoed every hill; so that leveled down the ground so all the hilling they got was what the last cultivating did.

When the potatoes were about eight or 10 inches high we sprayed them the first time, using the regular Bordeaux mixture. We sprayed four times this last year; we try and spray after the heavy rains. After the last spraying we pulled what little grass and few weeds were left by hand, so there wasn't a bit of grass or a weed in the field. The crops covered the ground and stayed green until we had our first frost and five inches of snow, October 11, 1909.

We commenced digging October 31, using a potato digger and picked them up by hand.

EXPERIMENTS IN ROTATION OF POTATOES, RYE AND CLOVER.

For twelve years the Rhode Island Experiment Station has been making experiments, having as their basis a rotation of potatoes rye and clover. The rotation consists of winter rye the first, clover or clover and grass the second, and potatoes the third year.

On an average for the whole period of 12 years, plat No. 11 received per acre 54.0 lbs. of potash, 91.6 lbs. of phosphoric acid, 27.2 lbs. of nitrogen, and 250 lbs. of lime; plat No. 14, 58.2 lbs. of potash, 0.4 lbs. of phosphoric acid, 26.9 lbs. of nitrogen and 232 lbs. of lime; and plat No. 13, 67.7 lbs. of potash, 37.2 lbs. of phosphoric acid, 27.1 lbs. of nitrogen and 232 lbs. of lime each year.

Previous work showed that the proportion of merchantable tubers in the potato crop is greatly increased by liming, even sometimes in cases where the total yield remains the same. The results obtained so far indicate that after the three-year rotation is well started, further liming once in six years at very moderate rates will be sufficient.

The general improvement of the soil was found to have far less beneficial effect upon the rye crop than upon potatoes and clover. With the improvement in the soil it was necessary to omit nitrogenous top-dressings for rye, with the result that the yields of straw were somewhat lessened and those of grain increased. The experiment also taught that it is advisable to sow grass seed with the clover, as grass usually more readily survives under extreme winter and excessive dry summer conditions. No success was secured in trying to grow clover without first applying lime or wood ashes to the land.

As calculated by the station, the net returns per acre during the first six years were \$279.40 and during the second six-year period \$371.46 or \$92.06 in favor of the last two rotations.

Washington, D. C.

G. E. M.

OATS AND PEAS FOR HAY.

I am a subscriber of the Michigan Farmer and would like to ask a few questions concerning oat and pea hay. How does it compare in feeding value with clover hay? At what stage of growth should it be cut? Is one as sure of getting a catch of clover as with the oat crop? How much seed per acre should be planted? How many tons per acre is a fair crop? My ground was fall plowed. Would you drill oats and peas together?

Shiawassee Co.

R. G. BROOKS.

Oat and pea hay compares favorably with clover hay in feeding value, ton for ton. This crop should be cut when the oats are in the early milk stage. Don't wait until the berry of the oats or the pea forms. It is not considered a good crop to seed clover with because it makes a rank, heavy growth and shades the ground too much. I have got a fairly good catch of clover with this crop but the season was very favorable. Mix the peas and oats together in the proportion of one bushel of peas to one bushel of oats by weight and sow two and a half to three bushels per acre. You ought to get two or three tons per acre on good land if the season is favorable.

COLON C. LILLIE.

THE PROPER PROPORTIONS TO MAKE GOOD CONCRETE.

As many farmers do not understand the proper proportion and the correct methods of handling to insure good concrete, I will explain the most essential points to observe, as advocated by the best authorities on concrete, so that the reader may judge for himself what the work he is planning will require.

The aggregate of sand and gravel must be "clean." This does not refer simply to clay or other soil, for while that is highly detrimental and positive to cause the work to be weak and crumbling in spots; yet the gravel mixed with quicksand or any very fine beach sand is fully as bad when present in any large quantity in the aggregate and many causes of failure in concrete work may be traced directly to the mistaken impression which many have; that the fine aggregates make the strongest concrete when the result is exactly to the contrary—the coarse sand and gravel requiring less cement to make a concrete that is far stronger.

A rough test to determine the quality of the gravel is accomplished by measuring one quart of gravel into an ordinary meal sieve, shaking it over a sheet of paper; if the sifting of fine sand averages more than five tablespoonfuls to the quart I would not advise its use in a mix of one part cement to five of the gravel as it comes from the pit.

Now, use a coarser sieve, with the spaces so as to allow a grain of wheat to pass same and sift the balance of the gravel, the coarse gravel and pebbles remaining in the sieve must average from three-quarters to seven-eighths of filling the quart measure; if it does not you should add coarse gravel to make up this deficiency.

The principle lies in the fact that you pour the coarse gravel and pebbles which should run from one-quarter to three-quarters of an inch in size, into the quart measure, upon this pour the coarse sand and shake down or stir together and the coarse sand will nearly fill the voids between the pebbles. You now add the cement which, in a proportion of one part cement to six of gravel, will be ample to coat the particles of sand and bind all together into one solid mass.

If you add too much cement you are preventing the proper bonding together of the particles of sand and gravel, as the space that should be filled with the coarse sand is taken up with cement which has no strong material to adhere to.

You may say that cement in itself is the strongest; but as a convincing test mix a mass of neat cement, plain Portland cement and water, spread this out upon a board about an inch thick; at the same time make concrete with sand and gravel and spread upon the board at the same time; leave both to dry in the same atmosphere and you will find that the neat cement will be a mass of minute cracks and may be easily broken, which the concrete made with gravel and cement is strong and free from the cracks.

This is just the action that takes place in your concrete when you overload the mixture with cement. The surplus cement has nothing to bond together, except in itself, and the result is that you have a weak point in your concrete susceptible to the action of frost and the cause of the concrete scaling off.

This is the fact, even if the gravel is correctly proportioned, but when you use very fine, powdery sand you will note that you have a greater percentage of voids, i. e., it requires more cement to coat each particle; now, suppose this cement is added, it means that the aggregate is so minute in size that it is lost in the mass of cement required and that the mixture has but little more strength than neat cement mortar.

The greatest cause of crumbling is the use of gravel that is not properly proportioned, in which the sand is greater than the voids between the larger stone. When anyone condemns a 1:6 mixture the usual cause may be found in the fact that they have used an unevenly proportioned gravel or it has been mixed with earth or clay; for if the gravel meets the test as given above and is properly mixed with a cement of standard make there is absolutely no danger of crumbling.

In the many tests I have made of concrete, I have found that properly proportioned sand and gravel, when mixed at 1:8 was greater in compressive strength than concrete mixed at 1:4 by using fine sand in which there was but very few pebbles or exactly the quality I have seen many farmers employ for concrete.

Wayne Co.

A. A. HOUGHTON.



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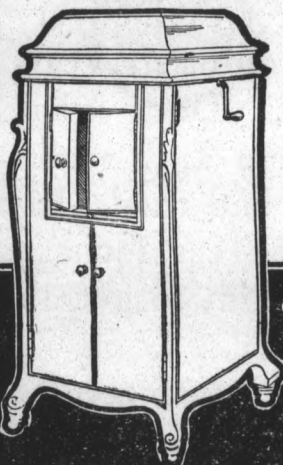
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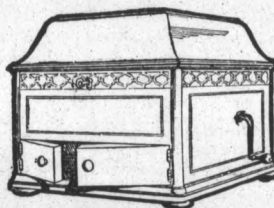
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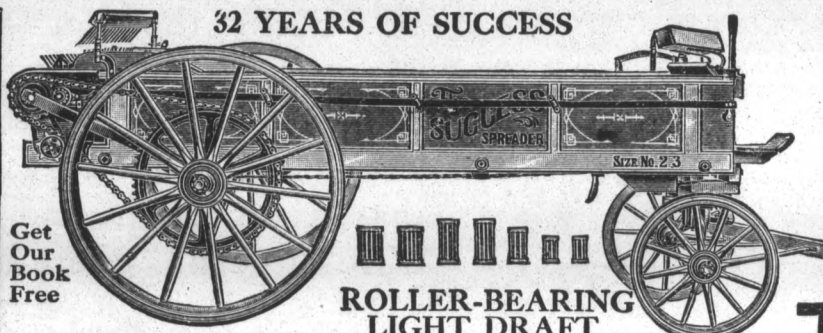
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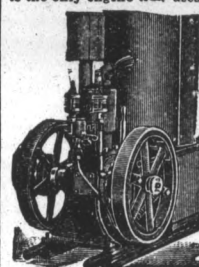
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OTSEGO COUNTY ORGANIZATION SURVIVES DISCOURAGEMENTS.

Replying to your letter asking for a few points regarding the work of the Otsego County Potato and Clover Growers' Association, I will say that the association offered prizes of \$25, \$15 and \$10 for the first, second and third best acres of potatoes respectively, all entries to be in or before June 15, 1909, and each contestant to pay an entrance fee of one dollar.

Strange to say, not an entry was made, tho many are always ready to boast of their enormous yields from an acre; yet, when it comes to the final test, it seems to cool the ardor of some, and the boaster usually finds a way to avoid having his yield weighed and his land measured.

Statements based on anything less are valueless. To say, "I got about 250 bushels of potatoes from about an acre," is one thing; while, to find that by weight, 198 bushels were grown from what proved by measure to be one and one-third or one and two-fifths acres, is another.

No prizes were awarded. Had contestants appeared, the plan was to swear in assistants before a notary or a justice, and have them go to the field with platform scales and tape line, and measure the ground to an inch, and to see each hill of potatoes on it dug and weighed.

The past summer was probably the worst, in an agricultural sense, that Otsego county has experienced since it was opened up some thirty years ago. An unprecedented drought took the heart out of both men and crops. Many farmers did not grow what feed they need this winter, while, with many others, the small yield of potatoes coupled with the low price, hardly paid for digging, where a grower was obliged to hire his digging.

A farmer who secured enough potatoes for house use, and to pay expense of digging, was fortunate. Few secured enough to cover the above items plus cost of feed, rent of land, labor, and Paris green.

We experienced a killing frost the night of August 20.

In some senses, the season made a most un auspicious beginning for our well-meant Potato and Clover Growers' Association, for it seriously reduced attendance at our subsequent meetings, and will make it much more difficult to get a paying membership large enough to provide funds for a liberal amount of postage, printing, prizes, etc.; for with the crowd "Nothing succeeds like success," and few have the martyr's spirit that prompts them to stand faithfully by a new movement, or an unpopular, tho right, cause. Least of all is the typical farmer willing to disturb his set habits of mind to see if there are better ways. Too many take it for granted that the best ways were long ago found out, and that he, of course, has learned those ways, by some mysterious process, and that there is no use troubling himself to set himself a higher standard or to stir himself out of his unthinking routine to look towards and to strive towards that higher, different standard.

To prove this, notice the scant attendance at the splendid Farmers' Institutes, which are probably not attended by one farmer in ten.

To prove it further, notice that we sent out, with great care, 300 postal card notices of a meeting of the Potato and Clover Growers' Association at Gaylord, December 1-2, to be conducted by two extra able men, Prof. C. Beman Smith, and Prof. J. C. McDowell, both from the United States Department of Agriculture. These men came at the request of the executive committee of the association; no admission was charged, and we held five splendid sessions. At no session did we have in attendance twenty-five actual farmers!

Talk about "Emergency Methods on the Farm," which is a favorite Farmers' Institute topic! The great emergency in farmers' lives is not when a calf gets choked, or a cow gets off her feed, or when a pig gets weak in the hind legs. The great emergency in a farmers' life is when he is deciding whether or not he will open his mind to new truth; whether he will discontinue unskillful methods or not; whether or not he will stop blaming the government, the weather, and his luck, and reach out and take the good to be derived from state and government bulletins, from speakers who have done things, and from a learner's attitude of mind.

The first forenoon we had an attendance of two. At this session Prof. J. C. McDowell demonstrated the Babcock test. It is too bad that at least 200 farmers were not there to learn to use the test, and its value, as it would doubtless make a very material difference in their income, for practically every farmer in Ot-

sego county ought to keep high grade dairy cows, as but little profit is made in raising beef here.

Unintentionally, the first day of our meeting, the Superintendent of Public Instruction held here a meeting of the school officers of the county. That meeting was well attended, as one member of each school board would, by law, receive two dollars a day and expenses for attending. Holding the meeting and paying an officer to attend is right and proper; for schools will be administered enough better to make it a good investment.

Why farmers—most of them desperately poor in pocket, in life, in comforts, in ideals, depending entirely upon soil for their living and their hope of anything better than they now have—will not attend gatherings held for their own advancement, is a delicate question to answer.

For the sake of hearing Prof. C. Beman Smith tell, in the forenoon of the second day, how to raise a crop even in a very dry time, a man who must live by the soil, could have well afforded to let his best horse die of colic rather than miss the meeting. The writer has no doubt that the able demonstration given in that talk will change the whole farm practice of some men who heard it.

The second day, there were no competing meetings, and some of us were curious to note the effect upon the attendance at our meeting. We did not have over half as many in attendance as the Superintendent of Public Instruction did the day previous—we could not give immediate payment for attendance.

However, many near home may have neglected to show an interest in this uplift work, one member from Elmira, 12 miles away; one from near Elmira, one from Alba, 15 miles; one from Vanderbilt, nine miles; one from Wolverine, 19 miles, attended both days at their own expense.

Tho I have written in such a discouraging vein, the association feels that it has taken a long step forward in securing the services of Messrs. Smith and McDowell.

The faithful nucleus of the association will push along, and have other meetings, some of which will be conferences among ourselves; some, led by specialists from a distance.

Strange as it may sound, the writer personally looks upon the unusually poor season as a distinct blessing, and a help to our association, to the potato industry, and to agriculture in general in Otsego county. The needs of skilful methods are now apparent to some; we can no longer now be arrogant and careless, upheld by faith in our new, strong soil; some, now, are in a state of mind to receive agricultural truths, so earnestly and clearly told us by able men who would help us in a disinterested way, of the principles of maintaining fertility and preserving soil moisture.

Some of the benefits derived from our association will be mentioned in a future article.

Otsego Co.

R. D. BAILEY.

A SMOOTH ROLLER VS. A T BAR OR CLOD CRUSHER.

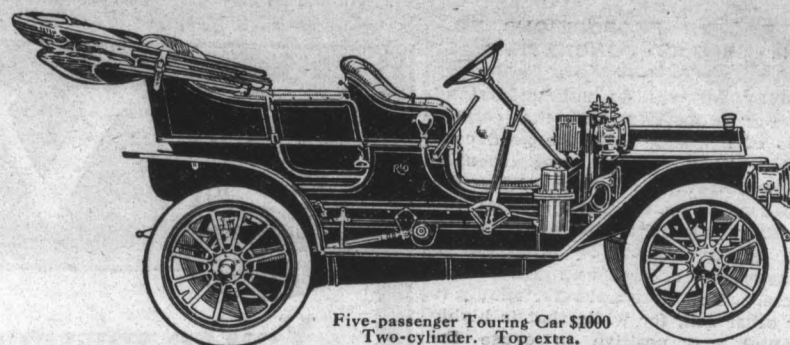
I wish to buy a roller this spring and would like a little advice thru The Farmer as to the best variety, a smooth roller or a clod crushing roller, either T bar roller or round bar roller, as some advocate one and some another. I have never used anything but a smooth roller, and it is a question in my mind whether or not one could pack plowed ground as solid and as even with a bar roller as with a smooth roller. If it will, then I would prefer a bar roller as it would leave a dust mulch and would not dry out as fast and the high winds would not raise a cloud of dust so easily.

St. Joseph Co.

G. S.

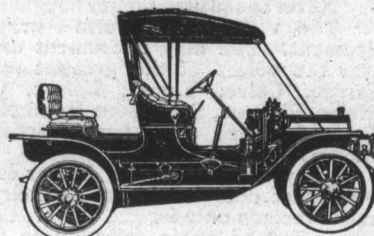
I think Mr. Schneider has the correct idea of a roller. I have both the smooth roller and the clod crusher, and personally I prefer the clod crusher for the very reasons which he mentions, and also for one more. Before now I have rolled my oat ground in the spring after the oats were sown and soon thereafter there came a good rain. On the clay spots a heavy crust will form which prevents the oats from coming up, because the surface is left smooth with the smooth roller; but this crust does not form so readily when the ground is rolled with a clod crusher. It leaves it more like harrowing. In fact, one going along past a field rolled with a clod crusher, unless he examines the land closely, is under the impression that the field was harrowed crosswise from the way he is looking at it. This is just the condition to leave it in. It helps to preserve the earth mulch and packs the ground just as well and avoids the sand or dust drifting or a heavy crust forming, and is in every way, I think, a better implement.

COLON C. LILLIE.

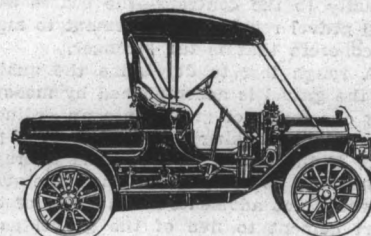
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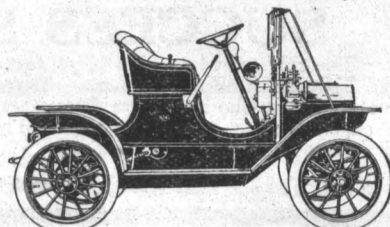
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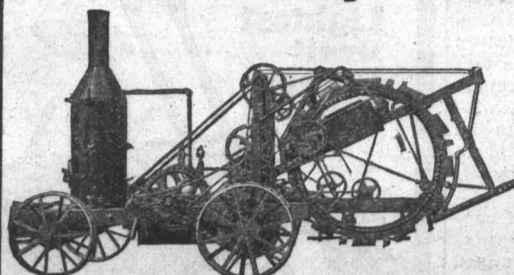
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TILE DRAIN QUESTIONS.

Leveling a Tile Drain Thru a Bank or Ridge.

Will someone please describe thru The Farmer how to level a tile drain thru a bank, with lots of fall on the opposite side of bank.

C. S.
It would depend something upon the width of this ridge and the depth one had to dig thru it as to the most practical way of grading a tile drain thru the raise in the ground. If it was for a long distance and the cut would make an unusually deep ditch, in order to get it done accurately, I would recommend that C. S. get this surveyed and grade stakes stuck every 100 feet, so that he would know just exactly how deep the ditch should be dug. He can stretch a line tight over the ditch at the proper height and grade his bottom and lay his tile as he goes along. Then there will be no trouble caused by the caving in of the ditch or anything of that sort. But, on the other hand, if the ridge is not too high, and the distance is not too great, it is not necessary to survey and set grade stakes. Under these conditions, I would dig the ditch thru the ridge and grade it sufficiently with the eye so that water would run down the ditch. Then you can draw your grade line over the ditch, taking pains to give it sufficient fall by using a common spirit level, and finish the bottom of your ditch or grade it to this line and lay your tile as you would in any ditch. It will pay anyone, even on naturally quite level and smooth ground, to use the grade line above and ditch to this line, because no man can finish up the bottom of the ditch as accurately as it ought to be finished up with his eye, or with running water. The trouble in grading by the use of running water, while water may not run up hill, yet the total fall may be sufficient so that the water runs thru a depression in the bottom of the ditch. It works all right as long as there is plenty of water running thru the ditch, but as the water gradually ceases to run it settles in this low place because there is no momentum behind it, and sediment also settles here year after year. This will finally fill so that the capacity of the tile is reduced very much. By laying to a grade line, or measuring the bottom of your ditch to a grade line drawn above the ditch, this difficulty is entirely done away with.

Size of Tile for Ten-Acre Field.

In a field that I desire to drain there is a sag that extends across the field. Will a 3-inch tile be large enough to drain it? The ditch will have two branches, the field containing 10 acres. The ditch will extend across this field and 20 rods into the adjoining one.

Montcalm Co.

O. C. M.

Since your main drain is to have two laterals or branches, I would use a four-inch tile for the main drain because I would under no consideration use less than three-inch tile for the laterals. They are small enough. If you lay smaller tile than this, they have got to be very carefully laid or there will be depressions which, if sediment settles, greatly obstructs the flow of water. Consequently, if you have two or more branches of three-inch tile, for the main drain I would use a four-inch. It is a very safe practice anyway, to have the tile plenty large enough, because they will assist in getting the water off more rapidly. You could economize some by having the upper end of the main drain of three-inch tile, but the lower end, until you get by the two three-inch laterals, and from then up to the end of the ditch, you could use a three-inch tile quite satisfactorily.

Tiling Clay Soil; Clover on Cold, Wet Ground.

I have a 20-acre lot in the center of which is a raise which is perfectly level and contains about four or five acres. The raise is heavy clay. I was thinking of tiling same, laying the tile between 2 and 3 ft. deep and about 2 or 3 rods apart, but I am told that the water would not drain down thru the clay to the tile. I have another 20 acres which is low land and rather cold ground. Occasionally I find a little hardpan when plowing. I had it planted to corn last summer. I have no way to manure it, it being too far from barns. I had been thinking of harrowing it up this spring and seeding it to mammoth clover to turn under. I am a new beginner in farming and a little advice will be greatly appreciated.

Ottawa Co.

E. R.

I do not think you will have any difficulty in having the water percolate down to the tile in clay ground. In ordinary clay ground, if the tile are not down over two feet and a half to three feet you will have no trouble. We want to get the tile as deeply in the ground as we can and have it practical, because the deeper the tile are the farther they will drain on either side, that is, the wider strip they will drain; but, of course, it is well understood that in heavy clay that puddles

and is very close and compact, you can get the tile in so deep that the water is so slow in percolating down thru that you do not get the full effect of tile draining, and this must be avoided, but I think I am safe to say that two feet to two and a half is shallow enough for tile drains on clay soils. And I think you can put the drains three or four rods apart instead of two or three, and they will work satisfactorily. I have some clay where the tile is fully three feet deep and this works quite satisfactorily, yet one cannot judge because he does not know the nature of the soil to be drained. There is a difference in clay soils.

If your field is low and wet, it is not a typical place for the clover plant. It would pay you well to drain this field like the other, then put on your clover and you can be assured of a good stand and success. Most all of this soil with a hardpan bottom ought to be drained to lower the water table before one can be successful in growing clover.

COLON C. LILLIE.

ALFALFA AS A FORAGE CROP IN MICHIGAN.

This topic was discussed at the recent Round-Up, by Mr. H. F. Probert, of Jackson. Mr. Probert is an enthusiastic advocate of alfalfa. He now has 60 acres in this crop, which has been secured by persistent seeding. He has sown something like a total of 2,000 acres to alfalfa since he began to experiment with this plant. In preparation for this crop Mr. Probert considered the application of lime as essential. He uses liberal applications of carbonate of lime in the form of ground limestone rock. He uses the pure cultures sent out by the Department of Agriculture for the purpose of inoculating the seed, and believes that five tons per acre is a moderate estimate of what can be made the average season's production in Michigan, he having secured much more than that during a single season, in many cases.

AS TO LAND VALUES.

Would it be advisable to buy a 40 acres of pine land? Same has about 150 cords of buzz wood on it and can be bot for \$250. Can such a piece of land be made to grow profitable crops of potatoes where a rotation of crops is practiced? I shot of potatoes, then rye, wheat, oats, or some such cover crop, then seed to clover, plowing the clover down again for potatoes, using commercial fertilizer every time potatoes are planted. This would make two cash crops every time rotated if the first crop of clover is not, and is it advisable to cut the first crop or turn down the entire amount of clover? Where can the fertilizer be procured and what is the cost per ton freight, charges included? What is the value of sand vetches as a green manure on such land and can it be used in the rotation same as clover? Is it hard to kill out when once in the ground, and what is its feeding value?

Allegan Co.

SUBSCRIBER.

There is such a difference in the character of pine land that I would not like to express an opinion as to its value without first seeing the land. Some of our pine land is pretty good soil, and some of it is simply blow sand. If this land is good, you are all right. If not, better let it alone. There is plenty of good land to be bot and don't waste your energy on worthless soil. It would be a splendid thing to plow down the first crop of clover. A good fertilizer for sandy land can be bot for about \$25.00 per ton. You can buy it of firms advertising in The Farmer.

COLON C. LILLIE.

ADVOCATES PRACTICAL FORESTRY.

Forestry topics were given some prominence in the program of the Round-Up Institute at the M. A. C. during the last week of February. Prof. R. S. Kellogg, of the U. S. Forestry Service, in discussing the cost of growing timber, was frank in the statement that timber can not be grown to a marketable age at a profit at the present range of values, but expressed the idea that practical forestry should be applied, since we must have the timber and prices will necessarily advance to cover the cost of growing it in a commercial way. Touching this subject as applied to Michigan, Hon. Alexander Forsyth, of Standish, advocated the planting of quick growing varieties of timber and showed some specimens of lumber cut from trees but six years old which had attained a diameter of eight inches and gave a very clear lumber, the variety being one of the quick-growing populars which seemed to be well adapted to the northern sections of the state from which the timber had been cut.

The GREAT WESTERN Endless Apron Spreader

A Giant in Strength Will Increase Your Crops \$4.00 to \$8.00 Per Acre



Endless Apron Is Always Ready

The GREAT WESTERN has an Endless Roller Apron exactly the same as an ordinary tread power. There is absolutely no argument on the superiority of the endless apron over the old-fashioned half apron with all its reverse gears, springs, catches, etc.

The Front Truck is set back nearly two feet under the load. The GREAT WESTERN is coupled up short like a wagon. We can do this because there is no half apron to run down under the axles and come in contact with the front wheels in short turns. See the point? Other spreaders cannot be made this way.

Wheels Track Our front wheels track with the rear wheels. Only two furrows are opened instead of four. The wheels track like a wagon because the front axles are the same length as the rear axles and the spreader turns in its own length. This means that the GREAT WESTERN will spread manure on corn ground, straddling two rows of corn.

Simple Ratchet Feed This insures steady movement of the apron. The double dog ratchet works like a two-cylinder engine. The driver changes the feed from the seat—without stopping the team—to spread thick or thin. No worm gears or bevel gears.

Double Oak Bolsters Above the big malleable fifth wheel we place two heavy oak bolsters—each 3x5 inches. We Guarantee that we can carry 1,000 pounds more over our front axle than any other machine will stand with its old style arched axles and cast fifth wheel.

Rigid Oak Frame The frame is secured by two steel truss rods running diagonally from all four corners, making it absolutely impossible for the frame to be warped or pulled out of true. The side boards are held in line with the main sills by ten oak stakes so there can be positively no spreading of frame or sides.

Our Pole (oak—not pine) is flexible, like a wagon—not fastened rigidly to the fifth wheel. Horses are hitched close up to the load—not away out in front like an old-fashioned dump cart.

Chain Drive The power is given to the beater by means of a chain. This makes the drive flexible. There is a

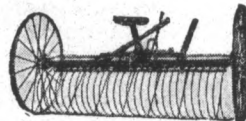
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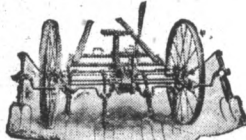
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All steel construction—strongly and rigidly constructed—no complicated parts to give trouble. The wheels are light, high and very strong; the frame is angle steel trussed. The teeth are long, flat-pointed, oil tempered and interchangeable.



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is also of entire steel construction. This is the original "hurry up" tool. Full roller bearing. Very rigid. More tedders are being sold than almost any other farm tool—and the reason is, that they make good hay quickly—you should have one. Let us give you full detailed information. Write today for 1910 catalog covering the complete Johnstone line.

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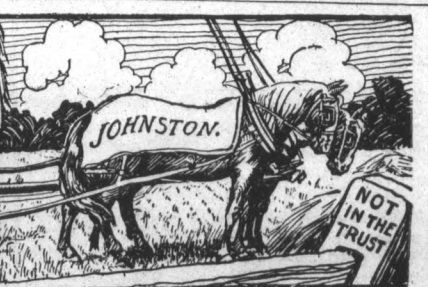
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If interested in farming, get our FREE book called "BETTER FARMING." It tells all about—

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We will send you the 80-page, illustrated book free if you write and ask for

Package No. 5

Mention the package number sure, then you will get exactly the right stuff.

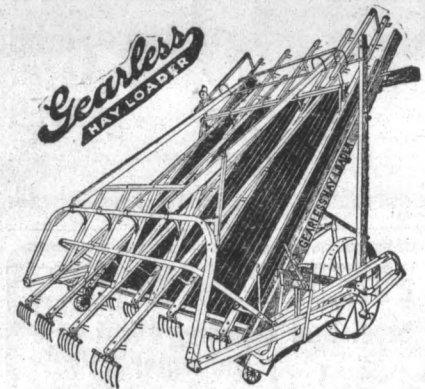
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If you have been thinking of getting a hay loader, now is the time to write for our booklet and read it carefully. It's full of hay loader facts that will interest you. Take the *Gearless* Hay Loader and any other you may choose, compare them point for point and you will find the *Gearless* is superior in every respect. That's why farmers everywhere are disposing of their old style loaders and are buying the *Gearless* Hay Loader. Let us send you our illustrated booklet. Write us today.

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THE BOY AND THE FARM.

One of the questions that is occupying the attention of the American farmer to-day is, "How to keep the boys on the farm?"

All are agreed that the farm must be made interesting and enjoyable to the youth. But how is that to be done? Judging from my own experience on a farm and from what I have observed in other boys, the two strings that exert the greatest pull in holding a boy's attention upon and interest in the farm are novelty and personal interest.

The ordinary farm life presents no novelty whatever. It is chores and work, chores and work, the year round. As a boy, I would have taken great delight in trying experiments with different crops, methods of cultivation, fertilizers, etc., but, tho I was given all the advantages that, at that time, were that necessary for a boy and I appreciate the kindness and affection shown me, I was not encouraged in this interesting and profitable diversion. However, I did some experimenting unknown to the family, but without system or purpose, simply to find out what would happen. I learned some things in this way, but how much more might I have learned and how much more the farm would have appealed to me as a place of enjoyment, if those boyish tendencies and tastes had been fostered and directed; for instance, had I been given a half acre of land as an experiment farm where I could have worked out my ideas, what a claim the farm would have had on my life plans. Some boys would be more inclined to stock raising, some to fruit, some to gardening. Give the boy a chance to choose and when he has chosen be a godfather to him in his efforts and, in so far as the boy is successful in his experiments, you are successful in leading him to enjoy the farm.

I said personal interest was another string with which to tie the boy to the farm. Give him an interest in something he likes and allow him his share of the profits as scrupulously as you would exact them from a renter; and, with these profits, let him start a bank account.

I would begin this with the boy when quite young, 11 or 12 years of age; it will start a growth of thought—trees that will grow up in the mind and have for their source of nourishment the farm and the bank, one of the most healthy conditions of mind for a young farmer. And, if his aspirations do not point him to greater accomplishments and the sweet allurements of personal glory, you have, at least, in all probability, saved the boy from a life as a poor mechanic, a hod carrier, a sewer ditcher, or some other menial labor which is honorable in itself but not satisfactory as a life work. MC.

GOOD ROADS.

We can't all have gravel pikes. Oh! Yes, possibly we could have, but not under prevailing conditions, possibly.

Gravel is not handy in all sections of the country, and with the long haul often makes road building so expensive as to become prohibitive.

It is the same way with macadam, with long hauls, and freight rates, it often makes the road building very expensive.

It has been demonstrated in the last few years that dragging roads is a paying proposition, if a community wants good roads.

We have had a home-made township drag in our possession for two years and during that time we have tried it under different conditions. We find to make a good road by dragging, one must first have a good grade, or in other words, the road must be graded with a grader, and should be about 30 to 36 inches higher in the center than the level of the side ditches, good side drainage being one of the essential points in road building.

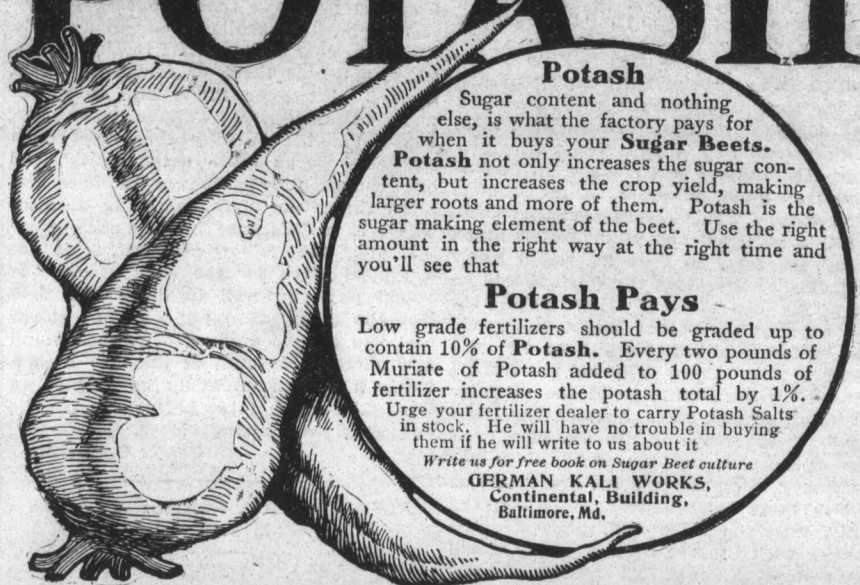
It is preferable to do this grading in the spring, so that the summer's travel will settle it.

With this kind of a grade, the drag should be run over it at any time when water stands in the horse or wheel tracks, it is necessary to have some water in these tracks so that the drag will "smear" the surface. This smearing hardens, naturally, just as working ground too wet will harden it.

Drag along one side and back up the other. This continually works the earth to the center, where it should be. Even on the ordinary roads we find the drag does good, presses out the standing water and makes the drying quicker, then if it comes a quick freeze we have a smooth surface. For a good road one wants to manage to have the water drained off as quickly as possible.

A. B.

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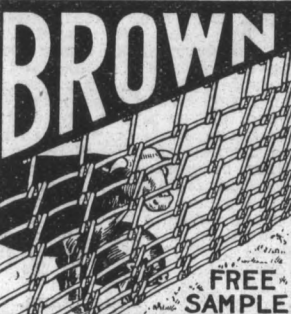
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LIVE STOCK

SHEEP FARMING IN AUSTRALIA.

The time of our visit to Australia was during their mid-summer, arriving at Brisbane on our journey southward from the Philippine Islands, on December 23.

It seemed odd to see the people on Christmas Day take picnic strolls out into the country and into parks, seeking cool places in shady groves. It was a strange experience to us to be able to eat fresh luscious watermelons out in the shade of the veranda on Christmas day. That we saw the country at its worst, viz., during the dry season, we count as an advantage rather than otherwise, for we had acquired a special interest during recent years, in the possibilities of the economical utilization of semi-arid land. We should, however, have liked to see more of the crops and of the harvesting which was over for the grain crops in the respective states before we reached them.

One thing that first, last and all the time impresses itself upon a traveler, is the large amount of pasture land throughout Australia, and the relative smallness of the area of cultivated land. From previous reading we expected to find Queensland mainly a pastoral land, but in New South Wales and certainly in Victoria we expected to find much intensive farming. We were surprised to find even in these localities, the main part of the land, which, from its lay and soil conditions, would be arable, to be in permanent pasture of mainly the natural vegetation.

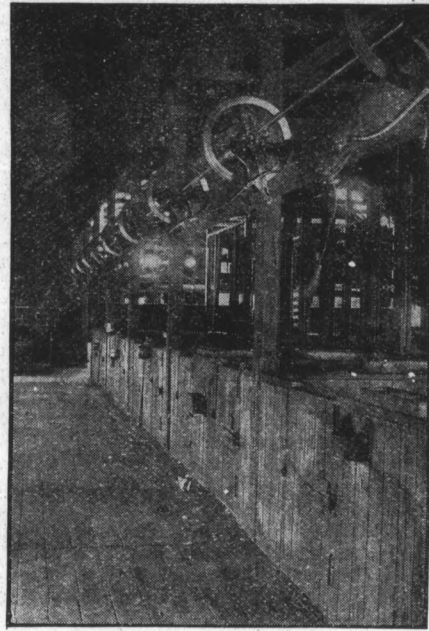
The characteristic landscape in Australia is, therefore, not a vast area of waving grain fields, or a checkered plain of variegated crops interspersed with freshly plowed fields. It is rather a vast expanse of rolling hills or flat plains covered with a dense green sod and partly shaded by a scattering grove of white-boughed Eucalyptus gum trees, or it is in a more forsaken looking, but more profitable condition with these gum trees ring-barked and standing dry and naked, a reminder of their former greatness when this tree reigned supreme in Australian forests.

If it happens to be in a time of drouth, the refreshing green of the sod is changed to a parched brown. In either case, to complete the picture we need to include the scattered flocks of sheep or dairy

western country we would call a large sheep or cattle ranch. Sometimes they carry on a little farming on these stations, but if so, then usually only to raise some feed for the horses, or some provisions for the employees. Feed for the sheep they rarely put away. The winter is very mild in Queensland, in fact, throughout Australia, so that there is no occasion for keeping up the stock on account of the cold. In the dry season, the grass and other vegetation has usually dried off without rains, therefore with the nutritious elements not leached out, leaving it rich like cured hay. To be sure, they sometimes have long continued drouths in which large numbers of sheep starve, but in years of plenty the managers seem, strange to say, very soon to forget the importance of having a reserve store of hay or silage. The Yandilla station includes at present about 75,000 acres of land. It is all fenced and is divided into "paddocks" (lots) averaging about 450 or 500 acres each. On it they keep about 80,000 sheep, besides some horses and cattle for station use. One member of the English family that owns it lives on it, in a large and comfortable house, surrounded by a large park-like garden of flowered beds, shrubbery and trees. He has employed under him a manager and a bookkeeper, besides blacksmith, teamsters, riders, etc., all of them together constituting a little village. In this village is a church, likewise owned by the firm. The shearers are a special set of employees who locate there temporarily while the shearing lasts, which for this station is about six weeks. There is floor room in this shed for twenty-two shearers, and twenty were actually at work during the time of our visit. Besides the twenty shearers, there were as many of shed employees, including the pickers-up, the skinters, the rollers, and the pressers. Besides these common hands there is the floor-foreman, the wool-classers, and the machinist, all of whom must be experts in their respective lines. In this shed, as in most of the large sheds, they use shearing machines. With steam engine of about ten horsepower, they drive the two shafts running along each of the two sides of the shed thru about half the length of the shed. Friction disks on these shafts communicate motion thru the flexible and jointed shafts to the clippers. These are similar to the hair clippers which the barbers use, except that a rotary motion in the leather covered handle works the jaw very rapidly. It is

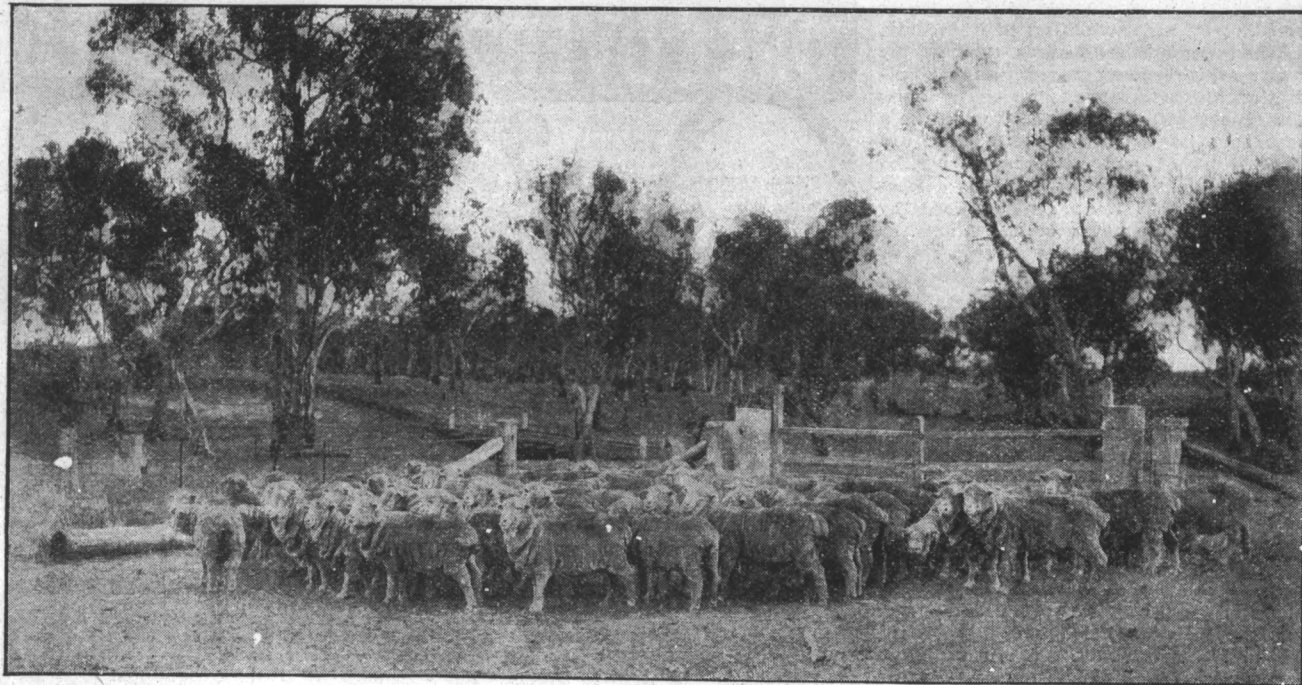
now ready for the roller, who is at hand, to properly fold and roll the fleece and to place it on the classing table for the expert classer. This probably is the most expert work in the shed. So important is this work and so great is the demand for experts trained in wool classing that the agricultural colleges take it upon themselves to train students for this work.

The number and kind of terms which the wool grader, the merchants, and the manufacturers use in describing wool are



A "Station" Shearing Floor.

bewildering in the extreme to a novice. Thus we hear them speak of serrations; of crimps; of yolk, of binders, of staples; of watered, clear and straight staple, of tips; of pearl, rapeseed, cauliflower, blunt, mossy, club, and tippy tips; of quality, fineness, elasticity, and density of fibre; of superfine, crape, flat-crimped, webby, wiry, overfine, hungry, wistened, oakum-like, plain, uneven, untrue, irregular, fluffy, spongy, shafty, sound, strong, vigorous, robust, effeminate, lofty, fribbly, and kind wool; of atrophy and hypertrophy in wool; of combing and clothing wool, of 60's count and 70's count, etc.; of the tops, the slivers and the nolls, etc., etc. Learning of a text book on the subject by an Australian wool specialist, we



Flock of Selected Ewes and Pasture on the Yandilla Station, Queensland, Australia.

cattle busily grazing over the broad expanse, or lazily chewing their cud, sheltered under shade trees from the burning sun.

It is our purpose in this article to deal mainly with these large pastoral areas, and therefore mainly with the sheep industry, for which these large areas are mostly used.

A Visit to a Big Sheep Station.

Shortly after our arrival in Australia, we had opportunity to visit a characteristic medium sized sheep "station" at Yandilla about 200 miles inland from Brisbane. The shearing was in progress and thru the kindness of the foreman of the shearing shed and the wool grader we were enabled to learn considerable about the arrangements and organization to do shearing and also a little about the management of the station. By "station" the Australian means about what in our

one of the machinist's duties to keep these clippers sharp and otherwise in good working order. Extra jaws are provided that he may grind the dull ones while the shearers are using the other ones. Each shearer has a separate pen outside the shed in which he turns the shorn sheep, to be counted later. From a central gangway in the shed he takes another sheep and at once proceeds as before. Meanwhile a picker-up has carefully picked up the fleece from the floor and the sweeper has gathered the loose locks into a basket so that the shearer has a clean floor for the next sheep. The picker-up carries the fleece to the skirting table where, by a deft motion, he throws it down spread out upon the table for the skirter to trim off the very inferior parts from belly, legs, etc., throwing the several classes of these skirtings into separate baskets. The skirted fleece

purchased it in the hope that the scientific writer would give clear definitions, intelligible to a "layman," of these vague terms as applied to wool, but, while we found it sufficiently clear on some terms, on other terms the definitions were as vague as the terms themselves.

The wool classers in the shearing shed examine the wool and according to length, fineness, shortness, of crimps, character and distinctness of staple, etc., he classes it and thereby assigns it to the proper bin in the other end of the shed, which is placarded for that class. As sufficient wool accumulates in any one bin for a bale, viz., 300 to 450 lbs. of grease wool, the pressmen bale it. The press consists of a box about three feet square and 12 feet high, and of a suitable device for powerfully pressing a piston from the top down thru the box. The lower section of this box for about four feet is lined

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with a baling sack and the sides here are readily removable. First, then, the fleeces are packed into this 12-foot deep box as firmly as a man can tramp them, then the greater pressure is applied by screw or lever until the wool is compressed into the lower section of the box, after which the sides are removed and the sacks are sewn up, the bale rolled out, and by means of stencils marked to indicate the station, the class of wool, and sometimes the breed of sheep.

At this shed they were shearing Merinos and the wool was being divided into six classes of fleeces, viz., first, second and third combings, and first, second and third skirtings, the bellies and the locks. We learn that in some sheds they make yet more classes. If different breeds of sheep are shorn on the same station, their wool is separated by breeds. Hoggets wool, i. e., the first shearing of the grown sheep, is usually kept separate from that of the sheep that have been shorn before.

After the baling it is ready to be delivered to the railway for shipping. At this ranch, or station, they use large wagons upon which they load about five tons and to which they hitch five teams of heavy draft horses. One driver handles this ten-horse team. Like many other large stations, this one ships its wool directly to England where they have agents to sell it. Smaller stations, and the farmers who have small flocks of sheep, usually ship to the store-rooms of the big wool merchants or auctioneers, where the lots are sold at public auction to the highest bidder, or they sell directly to some wool merchant.

A few words about government control of labor, or, as some of the employees would put it, government interference with labor, as exemplified in this shed, may be of interest. Australia has a Factories' Act that establishes an Arbitration Board which investigates labor disputes. Its findings have the weight of law on the questions submitted. Sheep shearing has been ruled to come under this Factories' Act. By the rulings of this court, the maximum time to be required of the shearers is 48 hours a week. They must be paid 24 shillings (\$6.00) a hundred head of sheep for shearing. They must be furnished room of not less than 360 cubic feet dimensions per each man, and must not have more than four men to a room. Certain sanitary regulations in the bunk houses, cooking houses, and out-houses must be complied with. Besides these restrictions, there is also a life and accident insurance feature that requires the employer to pay certain sums to the employee or his heirs in case of any accident disabling or killing the employee, unless it can be proven that the accident was due to the employee's carelessness.

The shearers furnish their own cook and provisions. Their shearer's day commences at 6:00 a. m. They stop for breakfast, 8:00 to 9:00 a. m. Sometimes between breakfast and luncheon they stop for a half-hour smoker. Luncheon from 1:00 to 2:00; smoker and tea, half hour during the afternoon. Quit at 5:45 to 6:00 o'clock. No one is allowed to work overtime unless all the others consent. We are told a good shearer averages 130 sheep a day. Others have said 100 sheep a day is a good average.

Louisiana.

P. A. YODER.

TECHNICAL BREEDER'S LANGUAGE.

It is commonly understood that language is the vehicle of thought, and in order to convey a correct idea such words should be used as will express the thought, or mental image, that one wishes to have impressed on the mind of the listener. Some words have a definite meaning and should only be used to convey a definite idea or thought—perchance, a name. This fact is apparent in regard to terms used by professional breeders of live stock. It would cause confusion, and in many cases legal entanglements, if they, in their dealings, were to use the definite terms interchangeably. The name, or term used, must exactly express what the speaker or writer wishes to convey.

There are those who are not familiar with breeders' nomenclature, that are persistent in the use of breeders' terms with but little regard, or just conception, of the technical meaning of those words. There are those who flippantly declare that common usage fixes the meaning of words. Usage within a profession may fix the meaning of terms, but usage outside the profession does not, and can not, fix the meaning of terms. Medical men have their terms which have a fixed and definite meaning among and with those in the medical profession; and any misuse of the terms by those outside the medical

profession does not change the meaning of the same. The rule is true with the sciences. The rule is also true with the breeders' terms; their use of them fixes their meaning and no "common use" can alter their meaning.

The "Thoroughbred."

The word "Thoroughbred" has a fixed, and definite meaning among breeders, and although frequently in conversation wrongly applied, the real and original meaning, as understood among breeders, is not changed. Among breeders and writers, who aim to be correct, the term thoroughbred is only applied to the English Thoroughbred running horse. While he originally descended from oriental stock, the persistent breeding and weeding out for centuries, by the skill and intelligence of the English and American breeders, has done more to fix his capabilities and characteristics than the blood of the Arabian or Barb. The term should not be applied to any other breed than the English Thoroughbred. I will quote from J. H. Sanders, as high an authority as there is in the world. On page 188 of his book on Horse Breeding he says: "The term thoroughbred is often used in America, but seldom in England, as a synonym for well-bred or purely bred; but it was originally, and should now be used, only as the name by which the English race horse is designated."

The Farmers' Cyclopedia of Live Stock, by Wilcox & Smith, speaks of the English race horse as the Thoroughbred, and does not use the appellation in connection with any other breed of animals.

In the book, Types and Breeds of Animals, by C. S. Plumb, the Thoroughbred (the English race horse), is treated separately, as a breed, but he does not apply the term to any other breed or any animal outside that particular breed of horses, the English race horse.

Line Breeding.

The term "line breeding" seems to be very imperfectly understood outside the classes of professional breeders. It is a term that stands by itself and is, or should be, used to designate a system of coupling animals practiced by the professional breeders. Only those that are skilled in the art of breeding know its advantages and can safely put it in practice, for there are great difficulties to be avoided, which only the skillful hand can avoid. One might as well trust the steering of a ship to an inexperienced sailor, where there were rocky shoals on both sides of a stream, as to expect to secure good results at the hands of a novice in breeding by his attempting line breeding.

When the breeder desires to limit the range of variations, or reduce the possibilities of variations, by strongly fixing the type that he is breeding toward as a standard, he couples animals that are similarly bred and possess the desired characteristics. By this plan the defects and weaknesses that are possessed by some of the members of the family or animals of the tribe, can be got rid of and the desirable characteristics can be fixed. In such a union desirable traits can be so fixed that animals produced by that union can be depended upon to transmit them with a great degree of certainty.

The Thoroughbred horse, some families of the Bates Shorthorns, and the Atwood tribe of the American Merino sheep, are among the many examples of line breeding. At present the American breeders of Berkshire swine are practicing a system of line breeding equal to anything ever practiced by the breeders of any other breed or class of animals. The blood of some of the noted sires appears as frequently as did the names of the famous "Dukes" in Shorthorn pedigrees thirty years ago. At the same time the American Berkshire hogs are superior to any hogs of the same breed found anywhere else in the world.

Other Terms Used.

When a type has been so fixed, by a long course of breeding and selection, that it can be, and is, recognized as a breed, then the animals composing that breed are designated as pure-bred. The term pure-bred applies to the animals of all breeds that do not carry in their veins any outside or alien blood. When two animals are bred together that are closely related they are said to be in-bred. When animals of two distinct breeds are coupled together, the progeny is cross-bred. When a pure-bred animal is coupled with a native, the progeny is a grade. When the grade animal is the product of several crosses of pure-bred animals, it is termed a high grade. The process of breeding up with pure-bred sires is termed up-grading.

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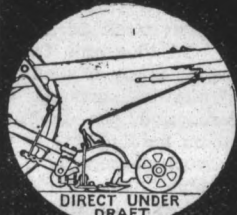
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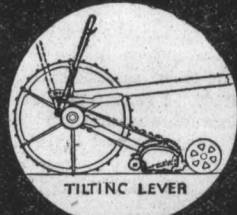
Oldest and Largest Independent Manufacturers of Harvesting Machines.



FLOATING FRAME



DIRECT UNDER DRAFT



TILTING LEVER

ONCE OVER IS TWICE DISKED

If You Use An Imperial Flexible Frame Double Disc Harrow

A complete Foretruck Disc Harrow (out-throw) with a second pair of disc sections (in-throw) attached by a jointed frame that harrows the ground twice at one operation, saving one-half in time and nearly one-half in horsepower. The forward pair of disc sections cuts the ground and throw it outward; rear pair works it again and throws it back, leaving the surface level and finely pulverized. The soil is put into better condition for seeding than after two workings of an ordinary disc.

Only one more horse required than would be used in a single Disc of the same width cut; four are sufficient for the 6 and 7 foot sizes.

SIZES:
16-Disc, 4 foot cut.
20-Disc, 5 foot cut.
24-Disc, 6 foot cut.
28-Disc, 7 foot cut.

(Patented)

Unequaled for discing corn stubble, plowed ground, or for any purpose for which an ordinary disc harrow could be used.

You can try an Imperial Double Disc at our risk and test our statements. Any dealer who handles our implements is authorized to put them out on trial with intending purchasers. Write us for descriptive circular and full particulars.

THE BUCHER & GIBBS PLOW CO., 806 East Seventh St., CANTON, O.

PILLING CATTLE INSTRUMENTS

Pilling's Hard Milker Outfit contains: Bistoury, \$1.50; Teat Opener, 75 cents; Teat Expander 50c; Milk Tube 50c., and Teat Soap, 50c. Complete in case with "Easy to Use" directions, sent prepaid on receipt of \$3.00.



EASY TO USE

Pilling's Cattle Case No. 2 contains \$3 Milk Fever Outfit and 8 other cattle instruments needed by every dairyman. Complete in case for \$10; regular value \$15. Sent prepaid, with full "Easy to Use" directions, on receipt of \$10. Order today.



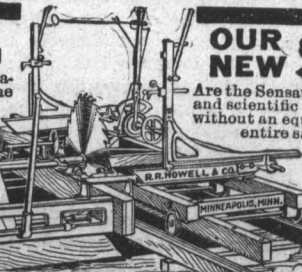
Send for Booklet, "Air Treatment for Milk Fever."

G. P. PILLING & SON CO.
2237 Arch St., Philadelphia, Pa.

30 Days Free Trial

A wonderful machine. Every one guaranteed.

Established in 1879



OUR NEW SAW MILLS

Are the Sensation of the Year. The result of the greatest practical and scientific mechanical minds in saw mill construction. A mill without an equal on the Globe. The mill that is revolutionizing the entire saw mill business. The simplest, lightest running, fastest cutting, and easiest mill to handle in the world. Original in design, result of over 30 years painstaking experiments, observation and practical tests. Sold on 30 days free trial. Just try the mill—that's all we ask—it costs you nothing—we take all the risk. BIG PROFIT in sawing lumber with our up-to-date Saw Mills. Keep your engine earning money all the year. Now is the time to buy when the price of lumber is going up. Write today for catalog and prices.

R. R. HOWELL & CO., Minneapolis, Minn.

FEEDERS' PROBLEMS.

A Ration for the Work Horse.

Will you kindly tell thru your paper what proportions of corn, oats, bran, and oil meal should be mixed for horses at moderate work, with oat straw and shredded corn fodder for roughage? Also how much oil meal should be fed to brood sows of 250 lbs. weight, with corn and one quart middlings per day?

Branch Co.

C. E.

The proportion of these different feeds to use for most economical results will always depend upon their relative value. Speaking from the standpoint of a desirable ration, containing the right proportion of nutrients for good results, a mixture of about 600 lbs. of corn, 100 lbs. of oil meal, 200 lbs. of bran, and as many oats as you feel that you can afford, will prove a satisfactory feed for horses at moderate work, the oats being more nearly a balanced ration, can be increased or diminished, without reference to the proportion of other feeds used, but at present prices, are the most expensive of any of the grains suggested.

Oil meal is not a particularly good feed to use in the brood sow's ration in connection with the other grains mentioned. The brood sow needs a bulky feed with little corn and some sort of roughage which will be readily consumed. The writer has been feeding middlings and skim-milk with a very little corn, fed in the bundle just as it was tied by the binder, and the brood sows have consumed a liberal amount of this feed, eating the fodder nearly, if not quite as closely, as the other stock. They are also given a feed of clover hay by way of variety occasionally, and benefit thereby not only by the addition of bulk to their ration but as well by the exercise gotten thru this feed being given them at a distance from the pen in which they are housed.

The Feeding Value of Potatoes.

What is the feeding value of potatoes compared with the present prices of grain?

Huron Co.

N. C.

There are two or three ways of figuring the feeding value of potatoes. The best feeding tables indicate that potatoes contain 0.9 per cent of digestible protein; 16.3 per cent of carbohydrates, and 0.1 per cent of other extract or fat. This comparatively low analysis of digestible nutrients is undoubtedly due to the large amount of water contained in the potatoes, which reaches nearly 80 per cent. Thus from the standpoint of chemical analyses alone, one could not place a very high value on potatoes as a stock food. However, when mixed with other feeds in proper proportion to make a suitable ration, they add the desirable elements of succulency and palatability to the feed, thus assisting the process of digestion and proving of greater economic value than the digestible nutrients which they contain would seem to warrant.

Quite extensive experiments have been conducted to determine the feeding value of potatoes as compared with grain for different kinds of stock. In the earlier experiments, it was determined that four pounds of potatoes when cooked and fed to pigs with their grain ration were equal in feeding value to one pound of grain. In later experiments conducted at Wisconsin it was shown that 445 lbs. of potatoes were required to displace 100 lbs. of corn meal in the ration for pigs when properly mixed with grain feeds. A summary of the results secured at different stations in the feeding of potatoes to pigs shows, however, that four pounds of boiled potatoes will about equal one pound of grain for pig feeding which, at present prices for corn and other grains, would make potatoes worth from 17 to 18 cents per bushel for feeding pigs, when used in the proper combination with grain foods for that purpose.

Potatoes have also been used in experimental feeding for cows and horses, their value being compared with hay in this case, 280 lbs. of potatoes having about the same value as 100 lbs. of hay.

However, the writer's experience in feeding potatoes to sheep, horses, pigs and cattle leads him to believe that, where fed only in comparatively small quantities as a means of providing succulency in the ration, with its attendant benefit upon the digestion of the animals, potatoes have a much greater value than this and probably a value in excess of their present market price. Our small potatoes are fed in this way each year and at the present comparative high price of other feeds, both hay and grain, we believe it will pay to feed a fairly liberal quantity of potatoes to all farm animals. For pigs they should, of course, be cooked, and fed with grain, but for other stock where fed only in limited

quantities, better results will be secured from feeding them raw, altho they should be sliced to prevent the animals from danger of choking, as they sometimes do where fed on whole potatoes.

An interesting feature of the experiments conducted in European countries where potatoes are more generally used as a stock food than they are in this country, was the comparative effect of raw or steamed potatoes where fed to milch cows. In these experiments the results showed that raw potatoes favored an increased milk secretion, while steamed potatoes increased the live weight of the animals. In this fact is a helpful hint to those who would feed potatoes to fattening animals, and where it is desired to feed a considerable quantity, it will be of interest to the feeders to know that in these foreign experiments the best results were secured when the potatoes furnished 50 per cent or less of the total dry matter in the ration. Altho it was ascertained that cows could be maintained on an exclusive ration of potatoes, eating about 7 per cent of their weight daily, this, of course, would be impracticable, and was tried for experimental purposes only.

But the results of these various experiments show that where grain and hay is unusually high, and where potatoes are very cheap, as some predict they will be this spring, it will pay to feed them to almost any kind of stock. And even at present prices it will undoubtedly pay to feed them in limited quantities, especially where silage is not available as a factor in the ration, or where no other roots are at hand to provide succulency which is essential in the ration to promote health and a desirable degree of thrift in any kind of animals maintained under the artificial feeding conditions which are necessarily incident to our winter season.

CLIPPING FARM HORSES.

When the practice of clipping horses first came in vogue, it was confined largely to horses used for driving, but as farmers became more familiar with the advantages of the practice from their own standpoint, the practice became more common among them, until today a very fair percentage of the farm horses of this section of the country are clipped each spring. Those who have followed this practice in years past, need no rehearsal of its advantages at this time. They are fully acquainted with the many advantages derived from clipping the farm horses. If the horses have not had good feed or care during the winter or if they have been allowed to run in the yard, their hair will be long and heavy and they can not be worked without perspiring freely on account of the soft condition of their muscles, consequently this heavy coat of wet hair will not quickly dry out and the horses are likely to take cold and suffer in health as well as discomfort as a consequence. If this coat of hair is removed before the horses are put to work, the horses in the same condition can do much more work without undue perspiration and are quickly warmed and dried when blanketed in the stable. Then there is a great saving in the work of caring for the clipped horse as compared with the one having a long heavy coat of hair which in itself will amply repay for the cost of clipping and the trouble of keeping the horse blanketed for a few weeks thereafter. In addition to this saving of work, it is a great annoyance to have the horses' hair flying about when the rough coat is being shed, which will not be noticed of the bulk of the hair is removed by clipping. It has been determined that horses will harden down with work much more quickly with less loss of weight when clipped, so that in this way it is in line with good economy to clip the work horses in the spring. Some farmers have adopted the policy of clipping the bodies only of the work horses, leaving the hair on the legs as a protection and to save time in clipping. This practice is not a bad one for farm horses altho the horse will not have as good an appearance when handled in this way. But there is no question about the economy of clipping the average horse at this season of the year or at least before he is put to hard work after comparative idleness during the greater part of the winter season.

FREE SCHOLARSHIPS FOR EVERYBODY

Rochester, N. Y., March 2, 1910.—The Directors of Franklin Institute, today voted to prepare candidates for the next Railway Mail Clerk Examinations free of charge. A postal, containing the applicant's name, addressed Dep't R 48, is sufficient application.

You do not need to ask your dealer in buying your next rubber boots if they will wear well, if the name

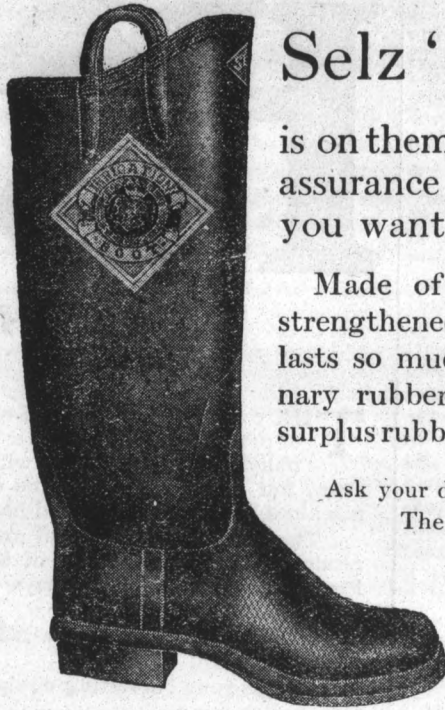
Selz "Irrigation"

is on them. That name is your assurance that you'll get what you want.

Made of the best Para rubber, strengthened where most wear comes; lasts so much longer than the ordinary rubber boot that you'll have surplus rubber money for other things.

Ask your dealer for Selz "Irrigation"

The best dealers keep it



Largest makers of good shoes in the world

THE LANKFORD COLLAR



The "LANKFORD" is made of Duck and stuffed with Cotton; adapted to heavy dray, wagon and general farm use. Guaranteed to Cure Galls and Sore Shoulders, and prevents Sweeney, tender Shoulders and balking in young stock. Does its work while the animal does his. Try one five days, if it fails to prove the most humane collar you ever used, return it and get your money. They are guaranteed to all good dealers who sell them.

Write for booklet that tells all about our Cotton Collar Family. COUCH BROS. MFG. Co., Dept. 102, Cincinnati, Ohio.

Guard Against Stomach Worms

SAVE YOUR LAMBS!

Here's lambing time. What have you done to rid your ewes of worms? Are you going to let them re-infect your pastures this spring? Are you willing to stand the usual heavy lamb losses?

Give your lambs a chance; you can save them by ridding the ewes of worms before they have had a chance to re-infect your pastures, and the time to begin is NOW!

There is no way so easy, economical nor effective to accomplish this, as by giving both sheep and lambs access to



the highly medicated salt, and just letting your animals doctor themselves. Lambs on SAL-VET escape worm infection and therefore grow fast and vigorously.

Give SAL-VET as we direct, and it will positively destroy and expel all stomach and intestinal parasites. Animals thus freed from deadly worms must thrive—because the stomach and intestines are aided in the performance of their activities, and they gain the greatest possible benefit from what you feed.

SAL-VET is just as good, for your hogs, horses and cattle, as it is for your sheep. Remember SAL-VET is not an expense; every ounce you feed returns a big profit.

SAL-VET enables your stock to digest more and assimilate more—to get all the nutrition from their rations.

From New Hampshire Agricultural Experiment Station

"We have obtained wonderful success in the use of 'Sal Vet' for destroying stomach worms. Since we began its use, our entire flock of sheep have become much healthier and more vigorous. I cannot praise it too highly."

(Signed) T. R. ARKELL,
Prof. Animal Husbandry.

A SIXTY DAY TRIAL

SEND NO MONEY—WE PROVE BEFORE YOU PAY

We know what "Sal-Vet" will do, and in order to convince you of the truth of our claims, we will send you enough of it for all your stock; the coupon explains our offer. SAL-VET costs one-twelfth of a cent a day to feed each sheep or hog; one-third of a cent for each horse or cattle. Prices: 40 lbs. \$2.25; 100 lbs. \$5; 200 lbs. \$9; 300 lbs. \$13; 500 lbs. \$21.

Larger quantities at lower prices. Begin the fight to save your lambs TODAY. The first move is to send us the coupon—NOW.

THE S. R. FEIL CO., Dept. M. F. Cleveland, O.

CUT OUT—MAIL TODAY
Send no money—Sal-Vet to feed my stock 60 days. If it does what you claim I will remit. M. F. March 12, 1910.
Name.....
P. O.
State.....
Shipping Sta.
No. of Sheep.....
Cattle.....
Hogs.....

HELPING OUT THE CALF PASTURE.

The winter being advanced the thots of all must now turn to next summer's work, to the planning of which we can now give more time than when the rush of spring work is here. For several years we have kept as a calf pasture a small lot near the house, containing perhaps 1 1/4 acres. This lot is, or was, a heavy June grass sod, which furnished the best of pasture both early and late, but thru the hot months of summer was practically bare.

Last summer, wishing to raise several calves, we decided to try a new plan. A cheap fence was run thru the lot and one-half or less was plowed early, then kept thoroly worked till about the 10th of May, when it was marked the longest way, having the rows three feet apart. The small boy of the house did the planting, using a one-hand planter and planting heel and toe of the planter, thus putting the corn, (a good variety of sweet corn was used), about 10 to 12 inches apart. He also planted pumpkins on the outside rows. This lot being handy to the house was kept thoroly cultivated and on the 6th of July I commenced feeding the corn, pulling every other hill and feeding an armful twice a day. This seemed to do the remaining corn as much good as hoeing, for you could almost see it grow. By the time it was all thinned it was ready to go over again, in the same manner, taking every other hill, tho by this time it was so large that it took much longer than the first time, pulling of course, only what was needed at a feed. Before getting over the second time, there were lots of ears big enough for roasting, and how those calves did thrive. The third time over the ears being nearly ripe, I cut it clean as I went. Even then there was still some left when frost came. As it had clean cultivation the lot is in good shape to plant again this spring. Nevertheless it will receive a heavy dressing of manure.

While I knew the corn would be a good feed, I had no idea that so small a patch would furnish such a quantity, six calves and four pigs being fed twice daily from the 6th of July until the 20th of September. This plan of furnishing feed would not work as well if too far from the house or barn, as too much time would be required in going to and from it, but nearly every one has more or less idle ground around the buildings which might be utilized in this way to good advantage.

In the lot left for the calves to run in, is a row of small stanchions in which the calves were placed to receive their milk, after which each was given a handful of grain. While they were eating this it was an easy matter to pull and throw over the corn. Needless to say, those calves gave no trouble by sucking ears or ropes or anything else, which was also a saving of temper, for who ever saw a man who did not feel provoked to see a calf stand and suck or chew a rope for half an hour or more after he was fed.

Ottawa Co. A MICHIGAN FARMER.

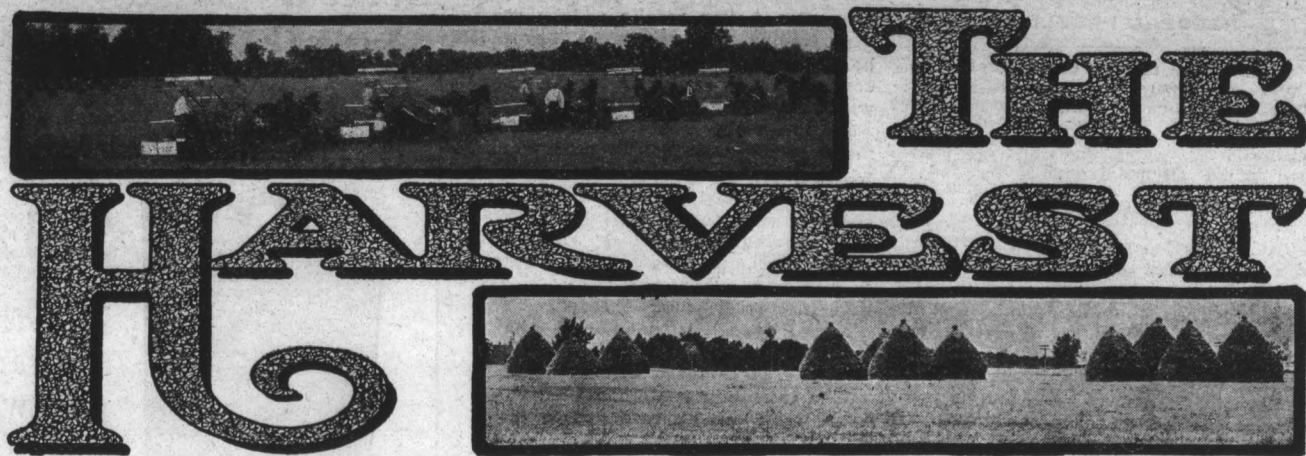
PREPARATIONS FOR THE SPRING PIGS.

Each year a good many pigs are lost by being crowded against the wall or laid on by the sows, that might have been saved if a ledge or shelf of plank had been placed around the farrowing pen about eight inches from the floor. This prevents the sow from lying so close to the side of the pen that the pigs can not escape getting pinched if they are nestling in the bedding. This precautionary measure will, in many cases, obviate this difficulty, and has been found to work satisfactorily by a good many farmers and breeders who have tried the plan.

WELSH PONY SOCIETY MEETS.

At the annual meeting of the Welsh Pony & Cob Society of America, held recently at Aurora, Ill., the reports of the secretary and treasurer showed a very satisfactory condition of the society, an encouraging number of entries and a considerable addition to membership. A liberal amount was voted for prizes at leading shows for 1910. Arrangements will be made for separate classes for this breed. Nearly all of the former officers were elected: President, Geo. E. Brown; vice-president, Edw. S. Frazier; secretary, John Alexander; assistant secretary, G. W. Fulton; treasurer, Wm. George.

A short time ago it was reported that fully one-half of the corn crop of southwestern Iowa was still in the field, and that very few farmers were making any effort to pick the corn, as there was a heavy covering of snow. Fewer cattle and hogs than usual are being prepared for market.



How the Farmer Controls the Cost of Living

THE cost of living depends on the volume and cost of production. The farmer can determine only partially the amount nature will permit her soil to produce, but he can regulate the cost of his crop by the machines he uses in tilling and harvesting.

The markets of the world are now watching for the results of the grain harvest of the farmers of America. Prepare properly against delays and waste and you will reap rich reward.

The responsibility for wasted grain and profits rests with you.

Choose your harvesting equipment—make your selection before the rush comes—take no chances—avoid experiments either in machines or binder twine.

From experience hundreds of thousands of farmers endorse the adaptability of the I H C line of harvesting machines.

Champion McCormick Osborne
Deering Milwaukee Plano

Hundreds of thousands of farmers, hard-headed business men, with the same problems that confront you, have had their problems solved by some one of these machines. They didn't buy because they were prejudiced in their favor—they bought because they were convinced that these machines represented the highest standard of excellence in harvesting-machine construction, because these machines met their requirements, because they thought they were getting the greatest return on their investment.

The experimental period has passed, and efficiency, durability, simplicity, dependability and absolutely interchangeable parts are now at your order. Improvements in time and labor-saving features, finer materials, more skilled and painstaking workmanship are now strictly car-

ried out in the manufacture of these six lines of machines, so that all element of risk on your part is eliminated.

With any machine in the I H C line you are safe—for smooth, rapid, uninterrupted, perfect work at harvest time.

Materials, workmanship and quickly available interchangeable I H C parts are backed by the most responsible and trustworthy guarantee in the farm-machine world today. Such perfection would not be possible if the manufacturer did not have available ore mines, steel mills, timber lands and saw mills so as to make sure of the raw materials, and if the buying power and large output did not insure the first choice of raw materials from all other sources—and the ability to employ the right men to work up these materials, and to furnish these men with the most perfect facilities in the world—all this is of equal importance to you. It is these resources, insuring the highest degree of efficiency in every machine turned out, that means the lessening of your responsibility at harvest time, the elimination of most all the risk, the freedom from anxiety and worry and discouragement. Profit by the experience of hundreds of thousands of others who reap all their harvests and all the profit with one of the six leading machines. See the International dealer at once. Take your choice. The quality is the same in all—the best possible. The lines include grain and corn harvesting machines, haying machines and tools.

From the I H C dealer you can get repairs that fit when repairs are needed. Repairs having the I H C standard of excellence can be secured at almost every cross roads or village. This availability is not only a great convenience, but also saves valuable time, which means money to the busy farmer in case of accident in the harvest field.

Don't experiment with binder twine, either. Get one of the seven perfectly dependable brands of twine and be sure. Choose Champion, McCormick, Osborne, Deering, Milwaukee, Plano or International in Sisal, Standard, Manila and Pure Manila brands.

If it is not convenient to see an International dealer, write for full information and the catalogue you want.

INTERNATIONAL HARVESTER COMPANY OF AMERICA CHICAGO U S A

(Incorporated)

LOOK FOR THE I. H. C. TRADE MARK. IT IS A SEAL OF EXCELLENCE AND A GUARANTEE OF QUALITY

Lightning Proof Forever—and Insured!

That means your home and buildings when they are equipped with **Shinn Heavy Pure Copper Cable Lightning Rods!**

W. C. Shinn's legally binding guarantee which you get as soon as your rods are up, insures you the return of your money to the extent of the making good to you for damage caused by lightning. And that guarantee is backed by Mr. Shinn's \$75,000 bond! The bond guarantees to you that every promise and guarantee in this ad or any other Shinn ad will be fulfilled to the letter. \$75,000 is deposited in the bank to vouch for every guarantee!

Don't wait until the storm threatens—go to your dealer today for

Shinn Heavy Pure Copper Cable Lightning Rods

It is the rod backed by judgment of thousands of American farmers! See its 3 cable strength! Its 32 strands! and the wonderful double cable in the center that balks the bolts! The Shinn process gives this valuable rod the greatest possible electrical carrying power. That means that the biggest bolt that ever

It is the rod backed by judgment of thousands of American farmers! See its 3 cable strength! Its 32 strands! and the wonderful double cable in the center that balks the bolts! The Shinn process gives this valuable rod the greatest possible electrical carrying power. That means that the biggest bolt that ever

Lightning Arrester for Telephones

Here is absolute protection to telephone users. No shock possible. Protects against lightning running in over long distance on the telephone wires—protects against every form of lightning. Saves telephones, avoids fires, and guaranteed not to interfere with the strength of the telephone.

Protects forever. Is automatic! No levers! Just have a Shinn lightning rod dealer attach it to the telephone.

Here's the Wonder Book—FREE!

A postal will bring you Mr. Shinn's own masterpiece—"Lightning and How to Control It"—the most wonderfully fascinating book ever written on nature's lightning laws.

It tells how protection can be secured easily at low cost; how houses and barns take fire; how people and stock perish and about household articles that attract lightning bolts.

This book will be given to every reader of this paper for the asking. Better send that postal today. Address

W. C. Shinn
128 N. 16th St. (12) Lincoln, Neb.

See this Thunder Storm Machine At Your Dealer's!

It shows just why your buildings should be rodged with Shinn Rods.

If your dealer has none, write us—a postal will do. State your dealer's name and we'll write you by return mail, telling where you can see this wonderful lightning production.

See this Thunder Storm Machine At Your Dealer's!

It shows just why your buildings should be rodged with Shinn Rods.

If your dealer has none, write us—a postal will do. State your dealer's name and we'll write you by return mail, telling where you can see this wonderful lightning production.

PROTECT YOUR BUILDINGS WITH THE ECONOMICAL ROD!

LIVE STOCK NOTES.

There has been a tremendous advance in prices for pork, lard, hams, bacon, etc., since the boycott break in prices of several weeks ago, and there is no telling where the advance is going to end. The Chicago provision market has been an extremely hazardous one of late for speculators of a bearish turn of mind, and an impressive influence at various times has been the ability and desire of the eastern packers to purchase a large proportion of the offerings of live hogs. This has not only stampeded the usually staid local hog buyers at the Chicago stock yards, but has also alarmed the packers and "short" sellers of provisions who had made future sales. The dominant holding interest in provisions took advantage of such conditions and lost no time in placing prices on a high range where profit taking was on a satisfactory basis. It seems only reasonable to conclude that the recent large advances in hogs and hog products have discounted some of the universally admitted hog shortage and that some reaction is due, especially in instances where part of the load has been transferred from strong hands to weaker ones, but ultimately it is generally believed that hogs will go higher than ever.

Basing his opinion on a canvass of the hog producers in the five principal corn belt states, a Chicago commission man predicts that hogs are bound to advance to \$10.50 or perhaps \$11 per 100 lbs. before next June, and that there will be no appreciable decline in hog values before October next. He also ventures the prediction that the best grade of hogs will not sell below \$7 in any day before the first of October, 1911.

It has happened frequently recently that the packers in the Chicago cattle market wanted to buy a cheap class of steers, but were unable to secure many for less than \$5.50 or \$5.75 per 100 lbs., as country feeders were aggressive competitors in the market for that grade of stock. Since the marked recovery from the despondency caused by the agitation of high prices and the meat boycott there has been a great reversal of popular sentiment on the part of farmers regarding preparing cattle for the market, and urgent buying orders have served to bring about sharp marking up of prices for both feeders and stockers. Where farmers have sufficient corn and roughage and own well-bred cattle, it does not seem at all likely that they will make a mistake in deciding to finish off their holdings.

Prices for both sheep and lambs have had big advances in the Chicago market in recent weeks as a natural result of abnormally small supplies shipped in from all directions, the supplies frequently being so much curtailed that the packers were unable to keep their gangs of workers busy. The demand for shearing lambs to ship back to the country and shear and fatten has so greatly exceeded the slim offerings that owners have been enabled to ask and receive wonderfully high prices, and buyers appear to have taken too great chances. However, it is a phenomenal period in the sheep trade, and no one can tell how high prices may go later on. Michigan and Ohio farmers who have remained in the sheep industry are bound to come out well ahead if they only do their part in making their flocks good and fat.

Colorado lambs have been moving marketward recently in large numbers, a great many showing up in Kansas City and other far western markets, while northern Colorado sheepmen have been forwarding good numbers to the Chicago market. The tendency is to shear flocks in advance of their shipment to market, as wool is such a valuable item these times. A difference of about \$1 per 100 lbs. is made between woolled and shorn flocks.

Official figures show that the shipments of stocker and feeder cattle from Chicago, Kansas City and South Omaha in recent weeks have been greatly below the large numbers sent out in corresponding weeks last year. The three prime factors in the decreased movement are summed up by observers as activity of slaughterers in the purchase of heavy cattle of the feeder class, decreased offerings of thin cattle and marked unwillingness of stockmen desirous of stocking up to pay the high prices demanded. Recently, however, many stock feeders have seen good reasons for revising their views.

Authorities on the cattle trade look for good marketings of cattle in the near future on account of the high price of feed of all kinds and rough weather. Muddy feed lots always start many cattle to market, but after the middle of March better market conditions are hoped for. There is known to be a great shortage of cattle in feeding districts of Texas and Oklahoma for the April, May and June markets, and obviously this will be a favorable item for cattle feeders located in the middle west and west. It is believed by those whose opinion is usually valuable in such matters that after the middle of March there will be a large call for cattle in good flesh, including both light and heavy weights.

A marked improvement has taken place in recent weeks in the eastern beef trade, and there must be lots of beef eaters after all, for in recent weeks cattle have sold materially higher, with the customary reactions from time to time. Everywhere it is remarked that the small supplies of cows and heifers in the markets of the country have had a marked effect in bringing around a wonderful increase in the popular demand for steers of light and medium weights. Of course, this is explained by the insistent demand nearly everywhere for light cuts of beef.

Recent market prices for sheep and lambs broke the record for February in past years. Future prices will depend on how conservatively the sheepmen of Michigan, Ohio, Indiana, Iowa and other sheep sections market their remaining holdings. It is a good thing for an intending shipper to get the advice of reliable commission firms as to the most favorable time for marketing stock, and now, more than ever before, every feeder

should use every effort to produce prime mutton on the hoof. It cannot fail to pay well.

The bulk of the sheep and lambs now arriving on the Chicago market is furnished by near-by feed lots, sheepmen who are feeding flocks unloading as fast as their holdings become ready for the market. In fact, the general disposition is evidently to ship when money can be made, and many stockmen are anxious to get rid of stock on account of the high cost of feed this winter. It is all right to keep matured stock moving marketward, but owners should not neglect making their flocks fat before selling, if they have sufficient feed and suitable sheds to provide shelter from the cold and snow.

L. J. Schwabacher, the Chicago provision expert, says: "The government hog report is regarded by us as too large. I do not believe there are over forty million hogs in farmers' hands."

Meatless bills of fare at hotels and restaurants in various places have aided to maintain high prices for other articles of food.

The Department of Agriculture reports the number of horses in the country Jan. 1, as 21,040,000 head, compared with 20,640,000 a year ago.

Word comes from Panola, Illinois, that farmers are holding their corn for 60c a bushel on the farm, and there will not be any heavy spring feeding on account of lack of hay.

In recent weeks eastern stock feeders have competed in the Chicago cattle market with city packers and butchers, paying from \$4.75 to \$5.35 per 100 lbs. for weighty feeder cattle.

Hogs have had rallies in prices recently, but the undertone in the markets has been bearish, and country shippers to the Chicago stock yards have lost in many instances from \$50 to \$75 a car on their consignments. There are a great many spring pigs now matured sufficiently to ship to market, large numbers having been kept back by inability of shippers to obtain cars from the railroads, and larger supplies are promised. A fall to \$8 as a basis for the Chicago market is not unlikely, altho the government report makes the hog supply in the United States only 47,782,000 head, compared with 62,876,105 nine years ago, when the population was very much smaller than it is today.

Because the state military board is unable to make payments to the different military organizations of the state, some of the companies may be unable to continue in their present quarters because of their inability to pay rent.

At the recent swine sales in Mason City, Iowa, extraordinary prices were paid, the average price for each porker at one sale being \$62.50, while one fancy hog brot \$152.50. At another sale the highest priced hog brot \$202.50, while the average reached \$84.45. Both of the hogs bringing the top price at each sale were purchased by Minnesota men.

Edward F. Morris, the Chicago packer, has purchased the "Riverside Ranch" in Mexico, containing 1,256,000 acres, the consideration being reported as \$1,000,000. The ranch is situated in the state of Chihuahua, and is bounded on the north by the Rio Grande River, and is located about ninety miles southeast of El Paso, Texas.

Despite the fact that many hardships were endured thru the military maneuvers about Boston last year, another scheme similar to the one carried out then, will be arranged for the coming summer. One set of maneuvers will be conducted at Pine Plains, New York, and another will probably be held in Maryland or Virginia.

Writing recently from Pinedale, Wyoming, Wm. Wells said that several ranchmen in that region who have been raisers of beef cattle exclusively sold their herds this season and went out of business because at the ruling prices of beef on the hoof cattle raising did not pay the same returns on their capital as they could obtain in other lines.

The live stock markets of late have got into a rut, an unpleasant one for the buyer, but a delightfully agreeable one for the seller. Owners have acquired the habit of asking higher prices, and upward movements are the order of the day, this course being due to moderate supplies and a large general demand. Last week saw prime lambs bringing the highest prices ever known, while fat sheep followed the same course, sellers being surprised to see what high prices buyers would pay. Boycotts on meats, high prices and observance by some churches of the lenten season doubtless exert an influence in checking the consumption of mutton, but for all that, the supply grown scarcely suffices to supply the trade, and there is a good deal of competition between buyers to secure the choicer flocks of lambs, wethers, ewes and yearlings. Extremely fancy prices are practically assured for a long time, and many farmers would like to buy feeders, but very few are to be had, even at ruling fancy figures.

John N. Dighton, of Piatt county, Ill., is feeding about 4,000 lambs, which came originally from Idaho and Montana. They are about nine months old, and they have been shorn recently, clippers similar to those used in shearing horses being used. Seven men did the work, each man clipping about 70 lambs a day, and each animal yielding about five pounds of wool. Last year Mr. Dighton, in his two feedings, handled about 7,500 lambs, and this year he expects to handle 8,000. From the time the lambs are received until they are marketed they are kept in a large barn which Mr. Dighton constructed for this express purpose, the barn being 500 feet long and 60 feet wide, and divided into pens which have a capacity of about 300 lambs each. The barn is fitted with all modern conveniences for feeding and watering the lambs. Piatt county, while comparatively small in area, is one of the thriftiest, most progressive in the state, fertility of the soil being well kept up by feeding cattle, hogs and sheep, and yet enormous amounts of grain are marketed, nearly every town having one or two large elevators.

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Take the "Golden Medical Discovery" in time and it is not likely to disappoint you if only you give it a thorough and fair trial. Don't expect miracles. It won't do supernatural things. You must exercise your patience and persevere in its use for a reasonable length of time to get its full benefits. The ingredients of which Dr. Pierce's medicines are composed have the unqualified endorsement of scores of medical leaders—better than any amount of lay, or non-professional, testimonials although the latter are received by thousands.

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VETERINARY

(Conducted by W. C. Fair, V. S.)

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to some one else. When reply by mail is requested, it becomes private practice, and a fee of \$1 must accompany the letter.

Leucorrhoea.—I have a mare that failed to breed last year; she has a whitish discharge. What ails her and what can I do for her? T. E. M., Grass Lake, Mich.

Dissolve 2 drs. permanganate of potash in a gallon of water and inject her thru a rubber tube with funnel once a day, using not less than 1/2 a gallon at a time, and preferably warm.

Horse went Deaf.—My eight-year-old horse lost his hearing some two months ago; can anything be done to relieve him? H. K. Coloma, Mich.

Partial Paralysis.—My mare laid down and was unable to get up; she had shown no sickness; her hind parts swelled and some bed sores appeared on her from chafing. She is now all right except a sore leg which I would like to heal. J. E. W., Shelby, Mich.

Apply equal parts oxide of zinc, powdered alum and borax acid twice a day and give her a teaspoonful powdered nitrate potash at a dose in feed twice a day for five days, then once a day for ten more.

Navicular Disease.—I have a lame horse and I am pretty sure it is in coffin joint. What had I better apply? W. R. K., Gobleville, Mich.

Apply one part alcohol and two parts warm water until the inflammation subsides, then blister with cerate of cantharides.

Indigestion.—I have a team four and five years old that are thin; took them to a Vet. a month ago and he floated their teeth. They are well fed and should be in good condition. C. E., St. Johns, Mich.

Give each of them 1/2 oz. ground gentian, 1 oz. bicarbonate soda and 1 dr. ground nux vomica at a dose in feed twice a day; perhaps you should increase their grain supply when working and feed them some vegetables. R. H. W., Birmingham, Mich.

See treatment for indigestion in this column for it will help your mare.

Weak Back.—Have a cow that will soon be fresh, which seems to be weak in her back. Her appetite is not good, and I would like to know how to tell if she has tuberculosis. J. E., Grand Haven, Mich.

Apply mustard and water to back every day or two. Give her 1/2 dr. ground nux vomica and 1 oz. of ginger at a dose in feed three times a day. Also give a tablespoonful of powdered saltpeter in feed once a day. Have her tested with tuberculin. This will determine if she has tuberculosis or not.

Roarer—Feeding Horses.—We have a horse that seems to be perfectly healthy, but makes a noise when over exerted; also tell me the cheapest kind of grain to feed a horse that is fed clover hay. J. S., Grant, Mich.

Drugs will not help your horse very much; however, you might try giving 1 dr. iodide potassium at a dose in feed twice a day; also feed less bulky fodder. One part oats and two parts corn by weight with clover hay makes a very good food for work horses.

Horse Perspires too Easily.—My horse is in good condition, but have that perspires too much. E. B., Ludlowville, N. Y.

Clip him and give a teaspoonful of citrate of potash at a dose twice a day for a week, then give the medicine once a day.

Rheumatism.—I am quite sure my hogs have rheumatism, for they are crippled some. The hind quarters seem to be the seat of this ailment. W. C. R., Carlton, Mich.

Give your hogs equal parts powdered nitrate potash, salicylate soda and colchicum in feed twice a day, a teaspoonful is plenty for four hogs. Keep them dry and warm.

Horse Out of Condition—Pin Worms—Colic.—Have a horse nine years old that does not thrive. Another horse that has a few pin worms; also another that has an occasional attack of colic. W. G. W., Sekirk, Mich.

Give your horse 1/2 oz. ground gentian, 1/2 oz. ginger and 1 oz. powdered charcoal at a dose in feed twice a day. Dissolve 1 oz. sulphate of iron in three pints of water and wash out rectum three times a week and for the horse that has colic give two tablespoonfuls of ginger at a dose in feed twice a day.

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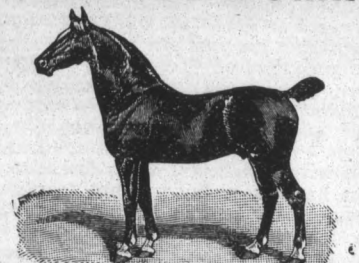
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Lump Jaw.—For some time my cow has
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Partial loss of Power of Hind Quarters.
—I have a cow due to come fresh March
8, that has been unable to get up for
the past four days. The cow does not
appear to be sick, but has no strength in
hind quarters. It is possible that she
hurt her back when getting out of snow
bank, for she has been down ever since.
M. C., Allegan, Mich.—Apply equal parts
turpentine, aqua ammonia and sweet oil
to loins once or twice a day and if you
have no good home liniment on hand ap-
ply mustard and water instead. She no
doubt wrenched her back; therefore needs
no internal medicine; she will perhaps be
all right in a few days.

Bog Spavin.—I have a three-year-old
filly with soft swellings on the fore part
of both hocks; what had I better apply?
R. R., Ravenna, Mich.—Apply equal parts
tincture iodine and spirits camphor to
bunches daily.

Lymphangitis.—My 12-year-old horse
shows lameness in left hind leg. The in-
side of thigh is swollen and tender; have
been feeding corn and clover hay, now I
am feeding timothy and corn. M. J. M.,
Freeseil, Mich.—Feed no corn or grain
but hay and vegetables until the swelling
subsides. Give 1 dr. iodide potassium and
½ dr. nitrate potash at a dose in feed
twice a day. Apply extract phytolacca
to inflamed glands of thigh once or twice
a day.

Milking Tubes.—Hard Milkers.—Milking
tubes are much advertised, to be used
where the cows are hard milkers and in
various other cases, but is it known that
they neither injure the cow nor cause any
pain in insertion or use and are less a
toy than a practical part of the dairy
outfit? A. B., Adrian, Mich.—First of all,
let me say, I have no interest whatever
in either the sale or manufacture of milking
tubes, but believe that every dairy-
man should own two or more of them.
They are useful in making milking easier
in many cases besides in cases of stric-
ture of the teat or obstructed teats they
are very useful, but the greatest objection
to their use is carelessness on the part
of those who use them. Every time
they are used boil them or dip them in
one part carbolic acid and 30 parts water;
this prevents udder infection.

Warbles.—We killed a steer a few days
ago for home food and would like to know
if the meat is fit for domestic purposes.
Along the back we found several grubs;
all other parts of body in a healthy con-
dition. F. C. B., Farwell, Mich.—The
hide is not quite as valuable but the flesh
is all right and fit for food.

Indigestion.—Foul Sheath.—I have a colt
nine months old that is unthrifty. He
has never done well and is under size.
I treated him for worms but failed to get
any away from him. I also have a three-
year-old stallion that is troubled with a
foul sheath but has no pain or swelling
in the parts. F. N. R., Manchester,
Mich.—Give the colt 10 grs. sulphate quin-
ine, 1 dr. ground gentian, ¼ dr. ground
nux vomica, ½ dr. nitrate potash and ½
dr. powdered sulphate iron at a dose in
feed twice a day. Give your stallion 2
drs. citrate potash at a dose in feed
twice a day for ten days and wash
out sheath with soap and water once a
week, using some vaseline afterward.

Foot Soreness.—Last summer my four-
year-old horse became foot sore; when
standing he would stretch out as if try-
ing to relieve himself of pain. I am work-
ing him every day and he seems to be
in good health. R. B., Grand Rapids,
Mich.—The whole trouble is in the fore
feet and perhaps he has a little kidney
trouble. Give ½ oz. fluid extract or pow-
dered buchu at a dose in feed once a day
for 10 days and apply lanolin to fore feet
daily.

Blood Poison.—My 11-year-old cow
freshened some three months ago; since
then she has not thrived and has not given
much milk. What can be done to make
her well? H. F. K., Ithaca, Mich.—Your
cow no doubt suffered from septic poison
following calving and has not recovered
from it and she may be a long time in
getting well. It will help her to give ½
dr. quinine at a dose in feed three times
a day.

Lice on Cattle.—My cattle rub them-
selves on account of being lousy and I
would be pleased to know the safest reme-
dy to use to kill the lice. H. S., Hud-
sonville, Mich.—Drop ¼ lb. crushed
stavesacre seeds in a gallon of boiling
water, let it simmer for two hours, strain
thru a cheese cloth, fill to original gallon
then apply every two days until the lice
are killed. Remember, you should white-
wash the stable or spray the walls with
kerosene or use one part carbolic acid
and 30 parts water.

Abscess on Jaw.—My dehorned cow
bunted another cow and must have
bruised her jaw for it swelled and broke
open. I also have another heifer that
itches and rubs when out doors. C. A.
C., Plymouth, Mich.—Open abscess freely
to allow drainage, inject with one part
carbolic acid and 50 parts water, twice a
day and give 1 dr. iodide potassium at a
dose in feed or water twice daily. Dis-
solve ¼ lb. baking soda in a gallon of
water and apply to heifer once daily.

Acute Indigestion.—Grease Heel.—I bot
a horse last spring that had been castrat-
ed two years ago, which had two sick
spells last fall. Our local Vet. that it
was catarrh of the bladder. This horse
soon lost flesh after I began to work him

and remained thin all summer. I have
another horse that has grease heel and
the leg stocks. C. E. B., Lawton, Mich.
—Your horse had indigestion. Give ¼ oz.
gentian, ½ oz. ginger and 1 oz. baking
soda at a dose in feed twice a day. Ap-
ply one part oxide of zinc and two parts
petrolatum to sore heel once a day and
give a teaspoonful nitrate of potash at a
dose in feed twice a day.

Acidity of the Stomach.—My 8-months-
old Jersey bull has not been doing well
for some time; he is inclined to eat rub-
bish and gnaw bones. A. C., Rockford,
Mich.—Give 1 oz. bi-carbonate soda, 1 oz.
powdered charcoal and ½ oz. gentian at
a dose in feed three times a day until
he recovers. Salt him well.

Lump Jaw.—Have a four-year-old cow
due to freshen soon that has a bunch in
throat which discharges; what had I
better apply? R. G., Bentley, Mich.—
Apply tincture iodine to sore and bunch
daily and give dram doses iodide of pot-
assium in feed daily.

Nasal Gleet.—Have a registered year-
ling sheep that has been discharging
from nose since October, causing him to
cough and snort a great deal. J. M.,
Howell, Mich.—Clean nostrils by dropping
in some peroxide hydrogen and water one
to three of water twice a day. Give 3
grs. quinine and 10 grs. powdered sulphate
iron at a dose twice a day.

Film on Eye Ball.—I have a ewe that
has a film on eye ball, causing almost
total loss of vision. What had I better
apply? W. J. C., Argyle, Mich.—Dissolve
1 gr. nitrate silver in 1 oz. of rain water
and apply to eye twice a day. Give 5
grs. iodide of potassium at a dose twice
daily.

Cataract.—My collie dog is losing his
sight; he seems to bump into things and
must be real nearsighted. G. A., Lapeer,
Mich.—Blow some calomel into eyes once
or twice a day; also give 20 drops syrup
iodide of iron at a dose in feed twice a
day.

Grub in the Head.—Three years ago I
lost 100 sheep out of a flock of 300, caused
by grub in the head. I was told to try
coal-oil and lost but two after I used it.
Some of them sneezed out no less than
ten grubs. J. P., Plymouth, Mich.—You
are quite right; kerosene is a fairly good
remedy for grub in the head, but care
must be exercised lest some of the oil
drops down into the lungs and brings on
pneumonia. Another very good remedy
is one part peroxide-hydrogen and three
parts water; also blow Scotch snuff up
nostrils.

Pigs Are Lousy.—Tongue Lolling.—I
have pigs three months old that are cov-
ered with lice. What can be done to pre-
vent a horse hanging out his tongue when
in harness? F. C., Bucyrus, Ohio.—Put
4 ozs. of stavesacre seed in a gallon of
hot water, keep it hot for an hour or two,
then strain thru a cheese cloth, adding
water to make it the original quantity,
then apply to pigs every two or three
days. Tongue lolling is best prevented
by wearing a spoon bit, or an appliance
placed on the bit to prevent the animal
putting his tongue over the bit. Several
kinds of bits are made for such horses.
If one kind fails try another.

Bruised Shoulder.—Some time ago my
mare slipped and fell, striking heavily on
her shoulder and side; three weeks after
the accident she began to show lame-
ness; she stands squarely, but nods when
traveling. L. J. C., Sterling, Mich.—Ap-
ply equal parts tincture arnica, extract
witch hazel and arnica to shoulder twice
a day.

Stocking.—My 4-year-old mare stocks
badly in hind leg when allowed to stand
in the stable. What can be done for
her? F. S. W., Charlotte, Mich.—Band-
age legs in cotton and give a dessert
spoonful of powdered saltpeter at a dose
in feed night and morning, for a few
days; then give the medicine once a day.
Also give 1 dr. ground nux vomica and
½ oz. ground gentian at a dose in feed
three times a day.

Indigestion.—Cow Does Not Shed Hair.
—My cow eats well, milks fairly well and,
altho she is well fed remains thin; she
does not appear to ever shed her old
coat. C. E., Coldwater, Mich.—Your cow
is not in a perfectly healthy condition.
Give ½ oz. ground gentian, 1 oz. bicar-
bonate soda and 1 oz. powdered charcoal
at a dose in feed three times a day.

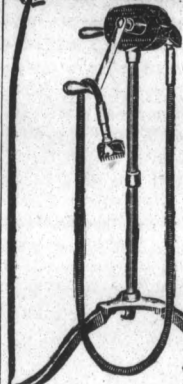
Catarrh.—I have a brood of seven
Poland China pigs, three weeks old, that
are kept in box stall; three of them
breathe with difficulty, but are fleshy.
S. H. P. H., Munith, Mich.—Give the pigs
good care, keep them dry and warm and
they will get well without treatment, for
they are too young to medicate. They
have no doubt taken cold. Small doses of
quinine and cough mixtures such as you
use in your home are all right for them.

Bruised Shoulder.—I have been a reader
of the M. F. for 30 years and often come
to you for advice. Now I would like to
know how to treat a three-year-old filly
that fell on her right side, injuring the
shoulder. I applied wormwood, salt and
vinegar and that it helped her, but lately
the shoulder is becoming swollen. C.
C. H., Grass Lake, Mich.—Apply equal
parts tincture cantharides, turpentine and
sweet oil to shoulder two or three times
a week.

Obstructed Teat.—I have a 3-year-old
cow that came fresh January 14; a few
days later a small bunch came in one of
her teats which obstructs the flow of
milk. What had I better do? S. E. B.,
Evart, Mich.—Apply iodine ointment over
bunch once a day. Also use a milking
tube, but before doing so dip it in one
part carbolic acid and thirty parts water.

Congestion of Lungs.—I had eight
shoots about five months old that were
doing fine till about two weeks ago I
found one on its side, breathing fast and
short, it refused to eat. Two days later
another took sick, then a third one. One
of them died. I found the lungs congest-
ed. I gave the sick hogs linseed oil and
salts. C. A., La Salle, Mich.—If you have
any more such cases apply mustard and
water to chest and side daily and give
a teaspoonful of sweet spirits of nitre,
20 drops of fluid extract of belladonna
and a tablespoonful of whiskey three or
four times a day. Keep the hogs warm
and dry, but don't give castor oil or salts.

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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

CULL OUT THE UNPROFITABLE COW.

Since 1908 the Department of Agriculture has had a number of its agents at work thruout the south rendering assistance to such dairymen with whom they come in contact as may need help. One of the most important lines of work is that of showing how profit may be obtained by culling out the cow which does not "earn her salt." During the first year of the work 116 herds, containing 3,921 cows, were tested. Of these herds, 43, containing 1,428 cows, were discarded before the work had been in progress very long because of the indifference of the owners, and with 73 herds the work has been successfully conducted. As soon as good results were obtained the owner usually purchased a pure-bred bull for his herd unless he already had one. Within two months after the testing begins the owner usually begins to cull out the poorest cows.

Numerous letters attesting the practical value and results of this work of herd testing have been received by the Department. A Georgia farmer writes: "It took nearly a year to convince us that some of our favorite cows were losing money, but as soon as this was found out they were disposed of. The first winter we milked 20 cows most of the time and shipped an average of 100 lbs. of butter per week. The second winter we milked 12 to 14 cows and shipped an average of 99 lbs. per week. The difference was due to the silo, scales and Babcock test. I thot all our cows were about the same until the record was kept and tests made."

A dairyman in Louisiana says: "As a result of the facts obtained in carrying out this idea I reduced my herd 30 per cent and yet increased the production 15 per cent."

Here is a lesson which should be learned by every dairyman in the country. The results are obvious.

SOME LIGHT ON HIGH PRICES FOR DAIRY PRODUCTS.

One does not need to be accomplished in the higher branches of mathematics to comprehend that it takes more food to satisfy 100,000,000 people than it does 50,000,000. Our public schools are able to instill this in the minds of the children before they pass from the eighth grade.

The state of Illinois ranks as seventh in the union in the number of cheese factories she maintains and as eighth in the number of creameries operating; at least, the department of agriculture so grades her. We believe the changes taking place in Illinois to be a fair index to the general trend of affairs, agriculturally speaking, the country over. The state board of agriculture of that commonwealth has just issued a report in which are compiled figures showing the number of dairy cows kept by the farmers, the amount of milk reported sold and the annual output of butter and cheese for the past thirty-three years. A review of these figures in the light of the unquestioned conclusion arrived at in the first paragraph above, will be instructive and suggestive at this time.

And first, as to the population of Illinois and the country: That state homed 2,539,891 persons in 1870; 3,077,871 in 1880, 3,826,351 in 1890; 4,821,550 in 1900, and increasing at about the same ratio there is probably in round numbers 6,000,000 at the present time. For the year 1870 the census of the United States was 38,558,371; for 1880 it was 50,155,783; for 1890 it was 62,622,250; for 1900, 76,303,387, and in all probability the increase from immigration and birth has now raised it to the 100,000,000 mark. These figures are exclusive of our insular possessions. Thus since 1870 the population of Illinois has practically doubled, and since 1880 the number of people in the country has about doubled. Now let us see how the cow population of Illinois has changed.

The number of dairy cows in that state in 1879 was 571,628; in 1889 there were 761,050; in 1889, 628,841, and in 1909 the number reported was 558,335. That is, during the years when the population of the state has increased from 3,826,351 to 6,000,000 people, the number of dairy cows had declined from 571,628 to 558,335. At no time in the years intervening did the number of dairy animals exceed the cen-

sus of 1889 when, as stated above, there were 761,050 cows.

The amount of milk sold in the state in 1879 was 96,659,845 gallons. This was larger by over 100 per cent than for the next preceding years or the three years immediately following for which we can not definitely account. The amount sold in 1889 was 69,874,016 gallons. The amount sold in 1899 was 99,300,132 gallons, and 1909, 92,982,131 gallons. The price paid per gallon for the milk on the respective dates were eight cents, 11 cents, 12 cents, and 18 cents.

The cream sold in 1879 amounted to 230,947 gallons. In 1889, 2,778,952 gallons were sold. In 1899, 851,063 gallons; in 1909, 2,274,061 gallons were sold. The price paid per gallon on the respective dates were, 49 cents, 49 cents, 63 cents and 70 cents.

Of butter there were 25,028,225 lbs. sold in 1879; 22,840,998 lbs. in 1889; 14,812,464 lbs. in 1899; 10,534,606 in 1909. The prices paid for butter on the dates are 19 cents, 18 cents, 20 cents, and 29 cents per lb. respectively.

Of cheese there were sold 6,618,212 lbs. in 1879; 1,600,592 lbs. in 1889; 2,096,381 lbs. in 1899, and 655,102 in 1909. The prices paid per lb. for the respective dates were 13 cents, 12 cents, 12 cents, 17 cents.

A general review of the tables from which the above tables were taken, show that there has been a decided increase in the amount of milk used, the figures indicating that for the 15 years previous to 1894, there was sold about three-fifths the amount of milk as was sold for the 15 years following this date. The figures for the cream, however, indicate a general falling off in the amount of butter and a decided decrease in the cheese put upon the market, the average for the latter comparing closely with the figures indicated above for the specific years mentioned. It would seem therefore that the large amount of milk demanded by the residences of our large cities is greatly reducing the amount of milk and cream that can be used for making butter, cheese, and to be sold as cream. Milk prices have, as a result of this demand, advanced more proportionately, than have the prices of the other products. We believe that the situation as indicated by these figures is sufficient reason, when taken in connection with the fact that our population has doubled, to warrant the prices that are now being asked when placed upon the simple basis of supply and demand; for it is a rule of economics that where one business gives larger returns for the money invested and the expense demanded than other businesses, then greater attention will be given to the more profitable interest and if the supply and demand have raised the prices to the present height and not materially increased the number of cows farmers are keeping, it would indicate, at least to business men, that prices are proportionately none too high. And in this connection it is no challenge to the conclusion reached to say that dairymen are, generally, prospering. For there is no class of men who are more industrious and who, partially of necessity, devote themselves more closely to their business than the men who produce dairy products.

THE SILO.

This was the subject of a most interesting and instructive address at the recent Round-Up Institute, by Prof. A. L. Haecker, of the University of Nebraska. In discussing the cost and value of silage, Prof. Haecker estimated the rent of the ground to be worth \$4.50 per acre; the cost of plowing and harrowing, \$2.00 per acre; the cost of seed, 25 cents, and planting, 30 cents per acre; the cost of harvesting other than filling the silo, \$2.25 per acre, making a total of \$9.30 which, with an average production of 13 tons per acre would make the cost per ton to this stage, 72 cents. Adding the cost of filling, with everything liberally estimated, including the interest on the silo, the investment in machinery, etc., the total cost would reach about \$1.94 per ton; or, if three farmers located in the neighborhood purchased the machinery together, the cost would be reduced to \$1.71 per ton. Prof. Haecker estimated the feeding value of silage to be at least \$6.00 per ton, which makes a showing of more than 200 per cent profit for the farmer in the production of silage, when the same is marketed thru the medium of his farm animals. Surely this is an argument for the silo which should not be neglected by the practical dairyman or stock feeder who would get the most from his corn crop.

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The razor received all O. K. I am very much pleased with it. I think it is equal to one my brother-in-law paid \$1.50 for.—Wm. A. Bevins.

THE MICHIGAN FARMER, Detroit, Michigan.

SHALL WE BUY GRAIN?

W. Milton Kelly has an article in a recent number of The Farmer in which he refers to one written by the author under the above title? I have read what he says with considerable and careful thought and want to say at the outset that there is much truth in it. The difference in our opinions, in my judgment, results mainly, from environment.

In order to understand any man perfectly we must first get his viewpoint.

Now, I am in dead earnest about this matter. Either it will pay to buy concentrates for our dairy cows, or it will not. Believing it will, I have adopted the practice, and am anxious to have my friends who read the Michigan Farmer do the same.

If, on the contrary, Mr. Kelly, or any other man, can prove to me that I am making a mistake then I shall be under obligations to him and shall feel it incumbent upon me to recall in so far as possible, any influence I may have exerted in support of a bad method.

Mr. Kelly admits at the outset that the cow must be fed liberally, for he says, "The highly organized, special purpose dairy cows, the most profitable producers, could not be kept at a profit in a northern latitude without a liberal supply of grain food." Now, there is but one question—shall we try to grow this grain ourselves, or may we, if we are so disposed, grow a larger amount of roughage, keep more cows and buy a considerable part of our grain ration, rich in protein, to balance the carbohydrates in the roughage and grain grown on the farm. But he further says: "In many sections of the eastern states where dairying is the leading branch of agriculture, the plow has been largely laid aside, the farms converted into the production of hay and ensilage, the great grain garden of the country furnishing grain, the main product required to make the milk. Is this the type of dairy farming that Mr. Taylor would advise the Michigan dairymen to develop?"

It certainly is not, and I had never a dream that such an inference from my article would be possible to a Michigan man. Had I been writing for the farmers in the older sections of our country I should have been careful to warn them against this practice to which Mr. Kelly wisely objects. But to the man in Michigan the danger of perpetual corn fields and ancient timothy and June grass meadows is so far off as not to excite immediate alarm. I know of a great many men in Michigan who are buying grain heavily, and they are among our best farmers. They are producing large yields of clover hay per acre, growing some excellent wheat, and harvesting far greater yields of corn and oats than they formerly did. Some have ceased to grow oats and have adopted a three-year rotation of corn, clover and wheat. The corn and clover are largely fed to the cows, the former from the silo, the latter from the mow, and the grain ration is mainly purchased.

What Mr. Kelly says about the value of a garden crop is doubtless true. In some localities, many acres of peas and beans are grown for the canning industry. These crops work in nicely on a dairy farm, but they are not essential to the prosperity of the dairyman. The man who grows clover, corn and cows, and wheat, or some other grain crop, with which to seed, who cures his clover hay well, puts his corn into the silo, and keeps good cows enough to consume all of both that is not otherwise needed, may buy every pound of grain his cows eat, if he chooses, and not look to any side line to keep his buildings in repair, educate his children, or sustain his credit.

There is something in what is said of the value of a cultivated crop to the soil, but we have people who have cultivated too long. Cultivation destroys humus. There are plenty of men who have grown potatoes, beans, and beets until they can no longer secure a catch of clover without difficulty. Of course, it is not the potatoes, the beans, nor the beets, nor yet the cultivation that causes the trouble, but the failure to plow under enough organic matter to keep up the humus in the soil. The man who grows a corn crop once in three years has opportunity for quite thorough cultivation if he embraces it, and if he finds that weeds are getting the start of him, he can lengthen out his rotation with another cultivated crop. He can, if he chooses, grow corn two years in succession, build another silo or two, buy more grain, add a few more cows to his herd and produce a little more barnyard fertilizer.

Our friend Kelly says that many dairymen believe "that the cows will keep up the soil and this belief has caused many to neglect every modern method of soil handling and to depend upon a few more loads of manure to correct every torture of nature and restore the fertility of their soil after it has been subjected to twenty or more years of plant food dissipation, with the manure made from feeding purchased grain foods, thousands of farmers have not maintained the fertility of their farms."

I know little of the farmers of New York but from personal acquaintance in more than fifty counties in Michigan, I know beyond question, that the farmers of our state who are dairying heavily, feeding liberally and buying the grain they cannot raise, are caring best for their farms, are producing the most and the cleanest milk, and reaping the largest profits in their business.

Without doubt, any man, if he is unwise, or negligent enough, may slight the most valuable opportunity of a life time. He may grow hay and ensilage, buy grain and keep cows, and all with no definite ideal; he may not know what a single cow in his herd is producing or what her product is costing him. He may have neither knowledge of her ancestry, nor purpose in her posterity. He may just drift, and drift and drift, while the manure piles bake in the sun, or wash in the spring and autumn rains, while the briars and elders make wider the border around his old June-grass meadow; while the soil grows more unproductive, the machinery wears out and the scrub-bull remains monarch of the herd.

But, oh reader, is this any reason why you and I with hands to work and heads to think, in this age of agricultural colleges, farm papers, and dairy associations should follow his wretched example and suffer his miserable fate? If any man doubts let him subscribe for the Michigan Farmer for five years, and read and accept the gospel according to Colonel C. Lillie. Let him grow all the roughage he can, turn under plenty of clover sod, take good care of his corn and put it in the silo. Let him feed his roughage to a well selected herd of cows, buying all the grain he can raise. And if he fails, I will yield my pencil and write no more advice on dairying.

Oceana Co.

W. F. TAYLOR.

REGARDING MICHIGAN'S ICE CREAM CROP.

According to statistics received from the state dairy and food department the amount of ice cream manufactured in Michigan annually amounts to around 2,000,000 gallons, or about 10,000,000 lbs. A state law compelling manufacturers to use 12 per cent butter-fat in the ice cream they make went into effect last July. During the first inspection of the manufactories it was discovered that the amount of fat being used was less than nine per cent. Warnings were sent out and four months later when the rounds were made the average had gone up to 12.9 per cent. This increase in the percentage of butter-fat, required from the dairymen furnishing the cream, about 400,000 lbs. more of fat than was required before the law was enforced. This extra demand for butter-fat means about \$80,000 extra that will go into the pockets of the dairymen of the state.

It was a common remark among those who used ice cream before the law went into effect, that the standard of the product put upon the market by the big manufacturers was not high. While a large amount of the cream was being used because of its popularity, it was certain that the trade would ultimately be hurt if the conditions which existed were allowed to continue. The raising of the standard is getting for the consumers a better cream, and the satisfaction that follows the consumption of a superior product is sure to swell the demand for it. There is no reason why the law referred to will not become the basis for making the ice cream business as large a business as the butter industry is now. The product is wholesome and contains nothing but elements that are valuable as food; which coupled with the refreshing qualities, especially during the warmer months of the year, ought to make, and in all probability will make, a permanent outlet for the milk from thousands of Michigan cows.

The ice cream business, like the butter business, demands one thing, and that is that the manufacturer get hold of the cream as soon after the milk is drawn from the cow as possible, or in other words, that the cream be sweet



Let Us Tell You How to Select a Silo

It means a great deal to a farmer to have the RIGHT SILO—it means the difference between *big profits* or severe loss—it means *Satisfaction* or *Disgust*. The purchase should be made carefully, thoughtfully, *intelligently*. Let us help you select. Let us tell you what makes one silo good and another poor, and what makes the time tested and proved Saginaw Silo the **Best Silo—Because Most Efficient and Most Durable.**

We have spent thousands of dollars and have put in years in study and experiment in bringing it to its present state of supreme perfection.

There is no comparison and never can be between the Saginaw Silo and so-called silos made by carpenters or cistern makers, who have no knowledge of the conditions the silo must meet to give *long and satisfactory service*. And who would not know how to meet such conditions if they *did* know them. Money comes too hard to waste it on something entirely unsuited for the purpose—so investigate carefully and decide cautiously. We will gladly help you.

Don't think of making up your mind until you have read our *Silo Book*. It will open your eyes on the silo question, and will be of great help to you in deciding on ANY silo. Better write for it now while you think of it. It's FREE.

When you write ask for our **SPECIAL PRICE** on the

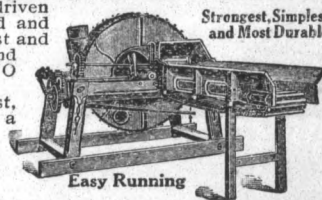
Whirlwind Silo Filler

—the drive is direct on the big, heavy fly wheel, which acts as cutter, blower and shredder (where required). Combined fly wheel, cutter and blower are driven *direct*, not through gearing—EASY RUNNING. Mounted and "down" machines same height—NO DIGGING. Simplest and sturdiest cutter on the market—NO REPAIRS. Knives and Shear Plate adjustable without taking anything apart—NO DELAYS.

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No matter how hard you try you can't make an old stable with dirt floors and wood partitions sanitary—you can't keep it clean and sweet. Wood partitions gather dust and disease germs. Dirt floors with their trapped-in filth should never come within a stone's throw of your milk pail. When a cow gets off her feed and her milk yield falls below normal, look to your stable. It may be as clean as you can make it; but that may not be clean enough. Equip your stables

The Loudon Way

then profits will not fall off. The cow that is best treated gives the most milk—the best milk—the richest milk. She has a heap of cow sense. She appreciates light and air, and she will see that you get your money back for making her home modern. If you will put a **Louden Litter Carrier** to work behind her, your boys or your man will clean the barns in less time and with less labor. We have been fitting up barns for 50 years. We will be glad to give you the benefit of this experience by suggesting what you need for yours, without any expense to you. Send for catalog, tell number of cows you have and submit rough sketch of stable. **LOUDEN MACHINERY COMPANY, 603 Broadway, Fairfield, Iowa.**



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THE NATIONAL ROTARY HARROW ATTACHMENT is destined to become the greatest farm labor-saver of the age! It does the work far better and easier than the old drag, because of the **draw cut** blades, and also because the ground is easiest pulverized and leveled when it is fresh turned. When your plowing is done, your harrowing is done! By all means SEE this great machine attachment. It will save you dollars, time and trouble. Ask your dealer to show it to you today. If he hasn't it, write us today and we will see that you are supplied. **NATIONAL HARROW COMPANY, Box 121, LEROY, ILL.**

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Remember! Sharples Dairy Tubulars have no disks or "fillings"—do not need them—yet produce twice the skimming force, skim several times cleaner, skim faster, wash several times easier, last several times longer than common machines. The World's Best. World's biggest separator works. Sales easily exceed most, if not all, others combined. Probably replace more common machines than any one maker of such machines sells. **Don't be caught among the thoughtless.**

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Not the OLDEST but the BEST
If you buy a separator, don't fail to see the CLARINDA—a machine embodying the LATEST IMPROVEMENTS.

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Comparison solicited.
If the best is none too good for you, write me for terms and catalog. Address

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We make an attractive offer on the first machine in a community. Write at once for particulars. **Do It Now.** Address

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Scientific men agree that Lightning travels on the surface of a conductor.

The Burkett rod is constructed so that every wire is a surface wire, while at the same time it comes in contact with the spiral tape core.

The tape form increases the conducting capacity of the rod, gives it stability and keeps it perfectly round and smooth.

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GOOD Nickles & Shepard Engine 20 H. P. simple traction, can be used for plowing and threshing, with Cyper Wagon Tank and Pump complete. Write, A. G. R., Box 14, R. No. 4, Holland, Mich.

BUCKWHEAT VS. BUCKWHEAT MIDDINGS.

I would like to ask thru the paper, the feed value of buckwheat, ground with ear corn, for milch cows and other stock, and what proportion to mix. I have quite a large quantity on hand. Would it pay me to feed it, or sell it at \$1.10 per cwt. and buy other feed?

Washtenaw Co. C. S. D.
It will pay best to sell the buckwheat and buy cottonseed meal, or oil meal, or gluten feed, or, better still, make the buckwheat into flour and sell the flour and feed the buckwheat middlings. The middlings, pound for pound, are worth more to feed with corn than the buckwheat, because the middlings are richer in protein. The buckwheat also is not as valuable protein feed as would be desired to mix with corn meal. Mix 100 lbs. of buckwheat middlings with 200 lbs. of corn meal, or mix 100 lbs. of cottonseed meal or oil meal or gluten feed, with 200 lbs. of corn meal, and feed one pound of the mixture per day for every pound of butter-fat produced by your cows in a week.

GOOD RESULTS ON A SMALL FARM.

A small general farm, comprising 20 acres, of which dairying is the backbone, is being operated in Wayne county by W. H. Anning with considerable success. At present there are seven cows in the herd, five his own and two belonging to the next door farm, the summer home of a city manufacturer.

This small farm was purchased four years ago and it is the intention to develop a dairy herd of about eight good grade cows. While there is the desire to make dairying the main field of effort, attention will also be given to chickens, hogs, and some vegetables and fruit.

A stave silo 10 feet in diameter by 26 feet high with a good cement foundation was built last summer and filled with corn from three and one-fourth acres. This corn was obtained from a field that for some time previous had been discouragingly unproductive. The good crop of corn was the result, primarily, of a tile drain which was laid last year in the early spring, and secondarily to efficient cultivation and manuring. The results obtained from draining this small field have been so satisfactory that other parts of the farm are to be drained.

The herd of cows, with their owner, is shown on the opposite page. All of the coarse feed used and some of the grain is grown on the twenty acres. The outside feed purchased consists of buckwheat middlings and old process linseed meal, six pounds of the feed being given each animal each day. Four years ago Mr. Anning declares that it was with difficulty that he could keep one cow upon the products of the farm but that now he is getting the farm where he feels that a larger part of the grain feed can be produced at home for these seven cows besides all of the roughage and that he is now in contemplation of adding to the herd.

The cows cost on an average \$40 a piece and could be classed medium to good grade animals. They are housed in a warm barn conveniently arranged. The barn was given a new cement foundation when the silo was put up and there is a cement floor and a cement feeding trough with patent stanchions. The cows are mostly well along in the period of lactation yet Mr. Anning's check for milk delivered at a local creamery shows returns amounting to better than \$5.00 apiece for his cows for January.

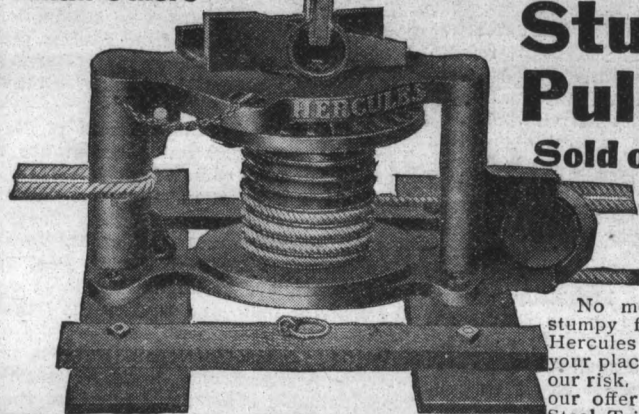
The average percentage of butter-fat for the five cows for the year just past is as follows: For Jersey grade cow of 5 years' standing in front, 4.2 per cent; for Holstein grade, 3 years, second from left, 4 per cent; for Guernsey grade, 3 years, at extreme left, 5 per cent; for Durham grade, 3 years, next to Holstein, 4 per cent; for Jersey grade, 7 years, next to Mr. Anning, 6.2 per cent.

Mr. Anning regrets he has not kept complete farm records. He, however, has started to do so from January 1, 1910, and will be glad at some future time to give the result of his experiment in a more complete form. Whether you can make a dairy farm pay and only have 20 acres is still of interest to many. Mr. Anning believes one can. W. K. W.

(A general interest is being manifested in the small dairy farm. Many farmers with a few acres are making a success at dairying. We believe the dairy business would be benefited thru the publication of articles describing such farms, how conducted and with what results, and, therefore, in the interests of our readers, would be glad to receive from men who have "scored" along this line, contributions for use in these columns.—Eds.)

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400% Stronger Than Others



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FREE TRIAL

No more excuses for stumpy fields. Try this Hercules Stump Puller on your place for 30 days at our risk. Write NOW for our offer on the only All-Steel Triple-Power Stump Puller made.

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The strength is there and the power is there. You may have had trouble with iron pullers, but this Hercules genuine steel puller is a different matter. It has 400% more strength than the best iron puller ever made, and with our triple-power attachment a one-third greater pull is developed. The Hercules is in a class by itself.

It is the only stump puller that is guaranteed for three years. The only stump puller made with double safety ratchets, making them doubly safe. The only stump puller having all bearings and working parts turned, finished and machined, reducing friction, increasing power and making it extremely light running.

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"The greatest need of this country (United States) in another generation or two will be the providing of homes for its people and producing sufficient for them. The days of our prominence as a wheat exporting country are gone. Canada is to be the great wheat country." J. J. HILL.
This great railroad magnate is taking advantage of the situation by extensive railway building to the wheat fields of Western Canada. Upwards of

125 Million Bushels of Wheat were harvested in 1909, and the average of the three provinces of Alberta, Saskatchewan and Manitoba will be upwards of 25 bu. per acre. Free homesteads of 160 acres, and adjoining pre-emption of 160 acres (at \$3 per acre), are to be had in the choicest districts. Schools convenient, climate excellent, soil the very best, railways close at hand, building lumber cheap, fuel easy to get and reasonable in price, water easily procured, mixed farming a success. Write as to best place for settlement, settlers' low railway rates, descriptive illustrated "Last Best West" to Sup't of Immigration, Ottawa, Canada, or to the Canadian Government Agent. (S) M. V. McInnes, 176 Jefferson Ave., Detroit, Mich.; O. A. Laurier, Marquette, Mich.

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Steadies the plow, saves the horse, does away with hard work. Right or left hand—wood or steel beam. Absolute control of plow wherever hard the ground. Address

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A BETTER DAIRY HERD.

Are we dairymen after profit or fun? No one thinks it is real fun to milk cows twice each day, night and morning, year in and year out. To make money out of any kind of business it is always best to look to the business side of it instead of the pleasure side. My object in keeping dairy cows is to make money. I also have a liking for it. And when I find a real successful dairyman I usually find him willing to do what ever may suggest itself for the betterment of his herd.

In selecting the dairy cow, first, always look for type. There is a sentiment prevailing in the minds of many people that the dual purpose cow is the cow for the farmer, and especially the farmer who is not making a specialty of dairying. This dual purpose business has been installed and pounded in the minds of many people because they could raise a beef steer for less, losing sight of the fact that the butter and milk was the main object they were striving for, and is the primary value of the dairy animal. Perhaps up until recently, the dual purpose cow had a place on the farm. Lands have been cheap, grass plenty; and it is only a few years ago that a man could keep all the cattle he wanted for five months of the year at the expense of herding, and the other seven months he could keep them on coarse forage that cost practically

scribed in detail the profits derived from cow testing associations, with which those who have read the dairy department of this paper are somewhat familiar. Mr. Lillie referred to Prof. Haecker's address as proof of the need of such associations, since the appearance of the dairy cow is not a satisfactory indication of her ability in the dairy, and the cow testing association by which an official test can be made is the most practical method by which the farmer may determine whether the individual cows in their herds are profitable or otherwise. Other benefits of these associations were touched upon, such as the benefit to the owner of the herd in the compounding of cheaper rations thru the advice of the tester and the possibility of using the cow testing association as a means of securing official tests upon which the individuals of some breeds may gain entrance into the advanced register, or register of merit, which is attained only thru actual performance.

DAIRY STOCK.

In discussing this topic at the recent Round-Up Institute, at M. A. C., Prof. A. L. Haecker, of the University of Nebraska, made a point in favor of the greater economy of the dairy cow than the beef steer upon the farm, which was at once interesting and forceful, in the statement that only five dollars' worth more



This Herd of Seven Cows Kept on a 20-Acre Farm. (See previous page).

nothing. Indeed, I have, in past years put up hay on other people's land, people that held the land for speculation, for the cost of labor, and at that rate a man could keep almost any kind of cows and make some money, but that time has already passed. Feed is high, and land also high, and thus it becomes necessary to have the improved breeds of dairy animals so as to make the most out of this high-priced feed.

A real dairy cow has two purposes. One is the milk and butter-fat she will produce, and the other is the traits that she can hand down to her offspring. The first dies when the cow dies and if she has no prepotency, then her family value is gone when she is dead; but there is an inherent value in the single purpose dairy cow, of the full blood, and high grade; and for that reason the special dairy cow is worth more money than another cow that will perhaps give equal production but does not hand down her characteristics to her offspring. This is the kind of cows that are the most profitable, if we are after the money in the dairy business.

Just the other day I was talking with a farmer on this same subject and he made a statement like this: "A dairy calf will consume more rough food than any beef animal I ever saw." Well, that is exactly what we want; we want to make a good, big, strong digestive tract for the food to pass thru, and there is no other way in the world to do it but just by breeding and feeding. Both types of animals have their place, and neither is real successful without a combination of the two. However, proper breeding, and proper feeding will surely improve the dairy calves.

Illinois.

R. B. RUSHING.

COW TESTING ASSOCIATIONS.

This was the topic of an address by Hon. Colon C. Lillie at the Round-Up Institute at Lansing. Incidentally, Mr. Lillie took up the question of high prices for farm products and emphasized the fact that the farmer was not getting it all. He said that the cow testing association was a means to the desirable end that the farmer may get a maximum of profit from the dairy where this branch of farming is made a specialty. He de-

feed was required by the cow Rosa, at their station, to produce 10 times as much edible solid matter as was produced by the champion steer, Challenger, which is a stronger argument for the dairy cow than the old claim that a pound of butter can be made as cheaply as a pound of beef. In further discussion of the characteristics of the dairy cow, Prof. Haecker stated that the show ring is not a safe guide to follow in the selection of dairy animals; that production alone is the test upon which they should be selected. While often the characteristics of the dairy type and form indicates a good cow, yet this is not always the case and the cow's ability to make good, rather than her general appearance, should be considered.

PEA STRAW FOR ROUGHAGE.

I would like to know if pea straw would make a good roughage with cornstalks and mixed hay for cows, and, also, if it is good to feed horses once a day and mixed hay twice a day. Would it do any harm to feed to foal mares due to foal in April and June?

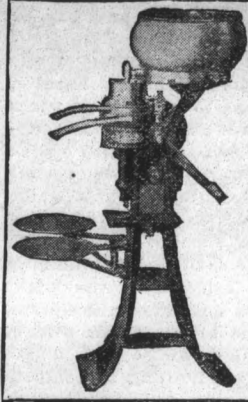
Missaukee Co.

A. B.

Pea straw is a good food if the peas were not too ripe when cut. It becomes woody, like clover hay, when overripe. If you cut the peas just as early as they would do, and take pains in curing them, then the straw is a valuable feed, and is good for all kinds of stock. It is good for horses and mares with foal. But if your peas were dead ripe and the straw weather bleached, then it, like overripe clover hay, is poor stuff.

NO CHANCE FOR WATERING MILK HERE.

In Foochow, China, a city as large as St. Louis, the few who would have pure milk are supplied by a walking dairy. The milkman leads his cow to the front door of his customer's house, and there, in his customer's presence, milks the required measure. The ordinary customer takes no more than about a third of a pint. After one is supplied the cow man leads his cow and calf to the front door of the next customer and thus passes on until all customers are supplied or his walking dairy's limited supply is exhausted. There are probably no more than half a dozen such "dairies" in Foochow.



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The World's Standard DE LAVAL Cream Separators are not sold in the "mail order" way, and therefore not advertised with the big newspaper space and big "word claims" used to sell second and third grade separators in that manner.

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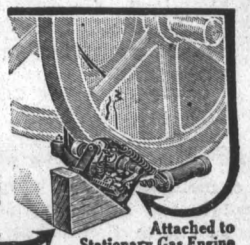
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The Michigan Farmer

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 The Lawrence Pub. Co.,
 Detroit, Mich.

DETROIT, MARCH 12, 1910.

LEADING ARTICLES OF THE WEEK.

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OUR PONY CONTEST.

As announced on page 295, we are offering, absolutely free, a Shetland pony outfit, including a fine pony, buggy, harness, saddle and bridle to the boy or girl who wins out in the contest which begins on March 12 and closes April 30, inclusive. A picture of the pony and saddle is shown on page 295, and the balance of the outfit will be illustrated in the next issue. As the pony alone will cost us about \$200,

the value of the prize which they may win will at once appeal to any boy or girl. The only condition imposed for entering this contest is the sending of one subscription to the Michigan Farmer, either for one year at 75 cents, three years at \$1.50 or five years at \$2.00, which condition is made to insure good faith on the part of the applicant who desires to enter this contest, and because the outfit which we send applicants is expensive, including one of our farmers' account books, which we offer free with each subscription. It will cost nothing aside from the slight effort necessary to get this subscription, for any boy or girl to enter this contest and the subscription will count in the contest. It will cost nothing to compete in the contest except a little of their spare time during the next few weeks, which covers the spring vacation for the school boys and girls. To make the contest absolutely fair and give no boy or girl any advantage over any other boy or girl, the contest is made to open with the date of this announcement, so no time should be lost in entering the contest. Cut out the coupon on page 295 and send at once for certificate of entry and picture of the pony. Send the one subscription with the request for certificate of entry to contest, and outfit. DO IT NOW.

CURRENT COMMENT.

A bill, known as the Lafean bill, Would Standardize Packages and Fruit. has been introduced in congress, providing for the standardization of "closed packages of apples" and for the grading of the apples contained in such packages and the marking of the grade on the outside of the packages, where the same enter into interstate and foreign commerce and commerce within the District of Columbia or the territories of the United States. In this bill the term "closed package" is defined as any barrel, box or basket in which the apples cannot be readily seen or inspected. The standard of such packages, as designated in this bill is as follows: A standard box package for apples is a box having a capacity of not less than 2,342 cubic inches; a standard basket package is a basket having a capacity of not less than 2,342 cubic inches, and a standard barrel package is a barrel with staves 28½ inches long, heads 17½ inches in diameter, the distance between heads 26 inches and the circumference at bulge 64 inches, outside measurement.

The grades of apples which may enter into interstate or foreign commerce, or commerce within the District of Columbia or the territories of the United States are designated in the bill as follows: Apples of one variety, which are well-grown specimens, hand picked, of good color for the variety, normal-shape, practically free from insect and fungus injury, bruises and other defects, except such as are necessarily caused in the operation of packing, or apples of one variety which are not more than ten per centum below the foregoing specifications, are standard grade "U. S. Size A," if the minimum size of the apples is two and one-half inches in transverse diameter; or are standard grade "U. S. Size B," if the minimum size of the apples is two and one-fourth inches in transverse diameter; or are standard grade "U. S. Size C," if the minimum size of the apples is two inches in transverse diameter.

The bill further provides that apples in closed packages shall be deemed misbranded within the meaning of the pure food and drugs act of 1906 in the following cases: First, if the capacity of the package alleged to be of standard size is of less capacity than is prescribed as above stated; second, if the package is of less size than above stated unless plainly marked "short box," "short basket," or "short barrel," or with the number of cubic inches which it actually contains, or with words or figures showing the fractional relation of the actual capacity of the package to the standard package as above designated; third, if the package bears any indication that the apples contained therein are of any of the standard grades above designated, and the apples do not conform to the requirements prescribed for such grade; fourth, if the package is otherwise properly marked but fails to bear also the name of the variety, the name of the locality where grown and the name of the packer or person by whose authority the apples were packed and the package marked. The bill further designates the manner in which the packages shall be marked and the size of the letters in which the marking shall be

done, and has a section providing for the enforcement of its provisions from and after July 1, 1910.

This bill is apparently modeled after the Canadian Fruit Marks law, which was enacted something like five years ago by the Canadian parliament, which is claimed by Canadian apple growers to have benefited them greatly in building up a profitable foreign trade for their apples. In other words, this law has accomplished for the Canadian growers, what local organization has accomplished for our own western fruit growers, in that only apples of good quality and of standard grade have been shipped to outside markets, with the result that foreign buyers have come to look upon their product with favor, thus enabling them to get better prices than would otherwise be the case.

This proposed law would be a new departure in national legislation for the United States, in that it would apply to a product of the soil the same protection to the purchaser which is now afforded him in the purchase of manufactured foods and drugs. At the same time it would tend to eliminate the poorer grades of apples from shipment to distant markets, which would probably be in line with true economy, altho it might be considered a hardship by some. Undoubtedly it would tend to better the reputation of Michigan apples in the markets of the country and the world, since it is well known that no apples are better in flavor or quality, notwithstanding the fact that careless grading and packing has given our product a doubtful reputation in distant markets, as compared with the western product which is put on the market in standard packages and of standard grade.

This bill is now before the House Committee on Agriculture, and its passage will doubtless depend largely upon the attitude of the commercial apple growers of the country regarding it. That it is favored by the organized farmers of some sections of the state is indicated by the fact that at a meeting of the Grand Traverse District Grange, held on March 3, a resolution was passed endorsing the bill and urging Michigan representatives and senators to favor its passage.

Of course, the question of how far this policy of inspecting and supervising the quality of food products should be carried is one that must necessarily enter into the consideration of this proposed legislation, since this is opening up a new field for federal control. There is, however, no question but that the pure food and drugs act has proven welcome legislation to the people of the country, without proving a hardship to honest manufacturers, and there seems to be similar grounds upon which to base the opinion that this proposed legislation would prove beneficial to the apple growing industry as well as to the trade and the consuming public. In any event, it is a subject well worthy of the consideration of the apple growers of the state, and upon which they should give their representatives in the national congress early advice regarding their attitude.

An eastern man was recently heard to remark that if an adequate parcels post law

is enacted he had definitely decided to go into the truck business on Long Island and deliver his fresh products to customers in New York thru this medium. At first that this new idea regarding the scope and usefulness of the parcels post to the farmers of the country may seem a little ludicrous to the reader, yet there is no reason why such service could not be rendered by the postal service as well as by the express companies and with considerable saving to the shipper as well as convenience to the consumer. Generally speaking, the farmers who have universally favored the extension of the parcels post have that of it more as a convenience which would facilitate the delivery of goods which they might purchase at a distance than in connection with shipments which they might desire to make, except at the holiday season. But if a ten-pound box containing a variety of vegetables could be shipped fresh from the farm to the city resident, who would receive it fresh the next morning, the business of supplying such necessities could be greatly extended, and without doubt the plan would be popular with the people who now have to content themselves with stale vegetables from the corner grocery.

But, of course, this is anticipating. Without doubt the future growth of the parcels post idea will include features of this kind, but the benefits to be derived from the parcels post in its commonly

understood meaning are sufficient so that every farmer should use his influence to secure its adoption at this time. To this end write your representatives in congress, urging them to favor the passage of an adequate parcels post law at the present session. Concerted action along this line will work wonders, and there will be no more favorable time than the present for such action.

OFFER TO NEW SUBSCRIBERS.

We are making a special offer of the Michigan Farmer four months for 25 cents and giving with it free one of our Michigan Farmer pocket account books. This offer is to new subscribers only and is made in order to get the paper introduced to new readers. Should the trial subscriber desire at any time during the four months to renew for a year or more, he may do so and the 25 cents will apply on his renewal, and he will also be entitled to any of the free premiums allowed for the period he renews for.

The account book we send free, postage paid, is 64 pages, has record for hired help, daily egg record, cash receipts and expenditures; in fact, it is a complete farmers account book and retail's for 25 cents.

Readers, tell your neighbors. We also want agents.

HAPPENINGS OF THE WEEK.

Foreign.

Vesuvius is again active. Several new fissures have been opened and gas and lava are flowing from them. The last report stated that the flow was continuous for 25 hours and that there were detonations within the crater of the famous volcano.

The Prince of Monacas has been approached by a deputation of citizens who plead that the little nation is the only absolute monarchy in the world. The citizens want a constitution.

There is a deadlock on between the President of Honduras and her congress, and a general political disturbance is taking hold of the people, largely to the disadvantage of the Americans in the country and to American interests, several propositions having been turned down simply on the ground that Americans were behind them.

Late reports from the insurgent troops in Nicaragua indicate that their chances have improved with the events of the past few weeks and that progress towards taking the capital, Managua, is very encouraging.

The royal geological society of London, England, is arranging for a lecture by Col. Roosevelt upon his tour of Eastern Africa when he is in that city on his return trip home.

The German geological society is organizing a south pole expedition to vie with similar organizations in America and England to lead the way to the south pole.

Thirty-three miners are dead as the result of the explosion of a powder magazine in an Alaskan gold mine at Juneau.

National.

It is reported that all of the Sumatra tobacco plants of Florida have merged and that the resulting corporation is capitalized at \$7,000,000.

Louis James, the well-known American actor, died at Helena, Mont., March 5. He was born at Fremont, Ill., in 1842.

Boston is holding a big automobile show this week.

The Wisconsin Ayrshire breeders formed a state organization last week for furthering the interests of that breed of cattle.

The interstate commerce commission has ruled that the railroads entering Chicago must give assistance to the fruit and produce consignees in unloading fruit and produce. The roads recently quit giving this service after providing it for many years and an action was brought by the fruit and produce interests demanding a continuation of the practice with the above result. The ruling does not extend to other packages and products.

A campaign has been begun by the milkmen furnishing milk for the Chicago trade, to compel distributors of the product to pay them a higher price for the offerings.

A case is now before the United States supreme court involving the 28-hour clause in the live stock shipment law. The special issue is whether each individual shipment included in the train load is the unit of computing the damages or whether it is on the basis of a whole train load as the unit. Many of the features of the famous \$29,000,000 case decided by Judge Landis, of Chicago, will be reviewed in the controversy.

James Joy, a Detroit capitalist, died of apoplexy last Monday morning while on his way to his office.

The strike conditions in Philadelphia are assuming serious proportions—20,000 laboring men are said to be lined up and there is an equal chance for the strike to spread to other interests of the city as well as to outside places in that state should a settlement of the differences fail within the next few days. The attempt on the part of labor leaders to spread the influence of their cause to numerous other organizations than the street car men did not meet with general approval and the laboring element is somewhat dampened in their enthusiasm by the result; altho the number now out gives the conflict a serious character and it may in the course of events, demand troops to protect the property of the government and of the city.

The loss of lives from avalanches in western states and western Canada have gone to nearly the 200 mark. The heavy

snows of the past winter and the sudden thawing of the past two weeks which have loosened the deposits in the mountains and imperiled trains passing thru the cuts of the ridges is responsible. On Tuesday morning only 20 bodies had been taken from Rogers Pass in British Columbia where the latest accident occurred.

A movement to unite two of Detroit's hospitals is under way and the resulting institution will have assets amounting to over \$2,000,000.

By the overheating of starch at a manufacturing plant in Roby, Indiana, at least eight men were killed and 17 wounded.

Former United States Senator Thomas Collier Platt, of New York, republican leader of that state for a number of years and a figure in national politics, died in New York city last Sunday afternoon at the age of 76. The immediate cause of his death was Bright's disease. He is survived by three sons.

CROP AND MARKET NOTES.

Clinton Co., March 1.—February was an exceptionally fine month from start to finish, thawing in the early part of the month enough to settle the snow, leaving a small amount of crusted snow so that any necessary hauling could be done thru the woods or fields. The main roads were a bed of ice and with the sharpshod horses we could haul as large a load as we wished. All kinds of feed is scarce and hard to buy at any price. No. 1 timothy is selling at \$15 per ton but do not know of any for sale in this section at any price. Straw is out of the question and they are paying as high as 44c per bu. for corn in the ear at auction sales. Fat steers are bringing 5c per lb. A neighbor recently sold a very fine bunch of steers, 23 in number, at that price, the bunch bringing about \$1,400.

Northern Isabella and Southern Clare Co.'s.—Ten weeks of fine sleighing, the best we have had for a number of years. The average farmer is doing but little work more than his chores and getting up the year's wood. Hay is selling at \$15 per ton, and scarce at that. Potatoes plentiful and cheap, but 10 cents per bu. more than a month ago. Beet, chickory and pea men hustling for contracts. Quite a lot of sickness among horses. Cows and sheep in good demand. A few cases of hog cholera, one man losing three fine hogs.

Southeast Mecosta Co.—Potato crop was only an average one here the some got extra large crops, others had poor ones to even up and only an average per cent remains in the growers' hands with less than the average in the buyers' hands. They have been selling for from 20 to 25 cents per bu. Wheat and rye went into winter in good shape and the winter has been an ideal one for them and for fruit, too. Beans were hardly half a crop and buckwheat only a little better. White beans are worth \$1.95 per bu. and red \$2.50; apples about 45c; wheat has been a little over a dollar, with oats from 40c to 45c and corn 30c to 35c per crate this winter; hay from \$12 to \$15 per ton. Eggs about 20c and butter 24c.

Emmet Co., Feb. 28.—We had steady, cold weather for the month, with moderate snow fall. On three occasions the thermometer registered 18 degs. below zero. Sleighing has been fairly good during the month, where there has been any effort toward keeping the track open. In some instances the roller has been used. In other cases the plow has been used. In many places the snow has accumulated to a depth of three to four feet over the roadbed. The fields are pretty well covered, too.

Washtenaw Co., Feb. 21.—The wide-awake farmer is already planning his spring campaign, deciding what fields shall bear cereal crops, what kinds and quantity of fertilizer shall be used from year to year. More farmers are planning to use commercial fertilizer, and altogether, it seems to be as good business to feed the ground as to feed the cows. High prices for farm crops are stimulating farmers to greater efforts in their productions. The attempted boycott on meat seems to have had the effect of increasing prices and especially to make plain the fact that in hogs, at least, "we haven't got 'em." With the exception of butter and eggs, prices of commodities are rather better. Farmers at least have the promise of another prosperous year.

Gratiot Co., Feb. 21.—Excellent weather has prevailed thru the month. Sleighing could not have been better. Wheat is well protected. The ground is but thinly crusted because of the snow which has not been off since early December. Produce of all kinds finds ready market at high prices. Eggs have fallen off but at 22c a hen is able to earn about fifty cents a month, thereby paying 75 to 100 per cent on her owner's investment every four weeks. Where can one do better? Coarse fodder and hay sells exceptionally high at auction. Hay at \$15@18 per ton. Stalks as high as 7½c a bundle. Stock is keeping pace with everything else and the farmer who needs a team does well to be an early buyer. Beans, \$1.90@2; butter, 20@22c; eggs, 22c.

Calhoun Co., Feb. 21.—Some of the snow which fell in December is still with us tho much of it is converted into ice, and enough fresh snow has fallen from time to time to keep the runners going nicely the entire winter. A number of farmers in this locality are getting ready to build the coming season and the sleighing allows them to get their logs to the mill to the best advantage. Whether the hard snow and ice will prove as desirable for the wheat is hard to say until it has gone. Personally, I do not believe many fields are as yet severely injured, but the amount of injury will depend upon whether the ice goes off with a rain or by sunshine, as there would be more scalding in the latter case. Little wheat is being sold, tho the price is better than for several weeks. The farmers are pretty well cleaned out. Considerable oats and corn are changing hands, tho little corn is going out of the neighborhood. Sales are quite plentiful and farm tools, stock, and produce is selling at a good price—two to three times what it would bring a decade or two ago.

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Studebaker Wagon

There is just as much difference between the value of wagons as there is between the worth of horses

IN selecting a horse much depends upon the "breed" and in buying a wagon the "make" is the most important thing to know. If it's a "Studebaker" you know that the "pedigree" is the very best. For almost 60 years the "Studebaker" has been recognized as "Standard" and everywhere it is known as the longest wearing and lightest running wagon. A Studebaker wagon offers you more value for your money than any other make, and it's a reasonably priced wagon.

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We buy the very highest grade of wood stock. Every piece of wood is thoroughly and scientifically air dried, preserving the full strength and life of the wood. We use the finest grades of iron and steel, and our wagons are reinforced wherever extra wear may be called for.

Our inspection of both materials and workmanship is the most thorough and rigid of any vehicle factory in the world

Going more into details of construction we might mention, New England Black Birch Hubs, slope shouldered spokes, and many other reasons, all of which are fully described and given in detail in our 36-page illustrated book—"THE FARMER'S FRIEND"—sent free on request. It will pay everyone using a wagon to send for this book.

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WE want every farmer in this country who uses our twines to go through the entire harvest season without one break in the field. We have set out to make that the standard test of all twines, and we believe that I H C twine comes nearer being such a grade than any other twine.

We have taken this matter the more seriously because we have stood back of the Sisal and Standard Sisal twines and the better grades of Manila ever since twine was made.

85 to 90 per cent of all the twine used is Sisal. It comes in a larger strand than the Manila twine; and, as all binders are adjusted to use this twine, the result has been that the bigger, stronger twine has proved more satisfactory in actual mechanical binding. Its only equal is the higher grade, higher priced Manila, which also bears the I H C trade-mark.

These two twines represent the highest point of excellence thus far attained in binder twine. You get the best when you ask your dealer for an

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You get a twine that has made its record in millions of wheat fields. One that is guaranteed of standard length and standard strength. One that is smooth-running; that works at a steady tension, without kinking or tangling in the twine box, and consequently without any loss.

One that has the smallest percentage of breaks and that works well in binder knotter. Good binder twine is as important to you during harvest as good weather. You cannot regulate the weather, but you can pick your twine. If you want to be positive that you will have no twine delays, choose your twine—Sisal 500-ft.; Standard (which is made from pure Sisal) 500-ft.; Manila 600-ft., or Pure Manila 650-ft., from any of the following I H C brands:

Champion Deering McCormick Milwaukee Osborne Plano International

These brands mean time-insurance for you during harvest. Let your local agent know well in advance what your needs will be. The mills are working now. And if you want more interesting facts on binder twine, write us for particulars.

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Studebaker Bros. Mfg. Co.,
South Bend, Ind.

Dear Sirs:—I have had a "Studebaker" 3¼ in. Wagon in constant use for 23 years without any repairs, not even the tires reset. Yours very truly,
A. S. DENSLOW.

"Studebaker Wagons Give Splendid Satisfaction"
Studebaker Bros. Mfg. Co.,
South Bend, Ind.

Gentlemen:—We have used a "Studebaker" Wagon on our place about 28 years. It is in good running order yet, and will carry just as much today as it did when it was new. Your wagons give splendid satisfaction. Yours truly,
JOHN KOENIGSREITER.

"Used for Over 30 Years"
Studebaker Bros. Mfg. Co.,
South Bend, Ind.
Gentlemen:—My father used a Studebaker wagon for over 30 years, and I am still using the same wagon. Yours truly,
A. F. MADDOX.

SAVE MONEY ON ROOFING

\$1.00 buys full roll (108 sq. ft.) of strictly high grade roofing, either rubber or flint coat surface, with cement and nails complete. Most liberal offer ever made on first class roofing. Better than goods that sell at much higher prices. Don't spend a dollar on roofing until you have seen

UNITO ASPHALT ROOFING

You send no money when you order Unito Roofing. Satisfaction Guaranteed. Write today for free samples for test and comparison and our unparalleled selling plan.

UNITED FACTORIES CO. Dept. A22, Cleveland, O.



NATURAL Fine-Grained Phosphate

The Reliable Land Builder

INCREASE YOUR CROP YIELD 50 to 75 percent by applying \$1.25 worth per acre to the soil direct. AAD 50 to 75 PERCENT TO THE PRODUCTIVE CAPACITY OF YOUR MANURE by applying only 20c worth to each ton of manure. Write for free Booklet telling how to apply it. Address, Farmers Ground Rock Phosphate Co., Mt. Pleasant, Tenn

Agricultural Lime

Our Crushed Quick Lime and Hydrated Lime is the best for improving the soil. All experimental stations advocate its use. It is the **STRONGEST IN OHIO.**

Write or wire for booklet, sample and prices. Address

SCIOTO LIME & STONE CO., Delaware, O.

Shaving a Luxury

With Herman Boxer's

RED INJUN RAZOR.

You get a nice Satin Finish Shave Razor, set and honed ready for use. Instructions with each razor. Guaranteed to give satisfaction.

We have purchased only a few of these EXTRA FINE razors for our subscribers who want something that is the very best.

Price \$2.00, to Subscribers Only.

The Michigan Farmer, Detroit.

Buggy Prices Fully Exp.



H. C. PHELPS, President

I Am the Bona-Fide Manufacturer of Split Hickory Vehicles—Selling Only Direct From My Factory at Factory Prices.

Local Buggy Dealers don't like the Phelps way of selling vehicles.

I don't blame the local dealer.

He can't sell very much in volume anyhow because he's forced by all circumstances to charge high prices to make any profits.

All buggy concerns that sell through dealers are waking up to the fact that they've got a **problem** on their hands when I can cut \$26.50 or more right off their retailer's prices and send you a better job—the best job in America today—or duplicate any job they can offer—and send it to you on

30 Days' Road Test

I am bound to satisfy and please you. You to be the judge from the time you start to investigate my offer. Do you realize that you would waste your money needlessly and not get as good value in any kind of a vehicle that you want if you bought from a dealer this season, instead of writing for my Big, Free Style Book and investigating the big factory made-to-order bargains that I offer you on

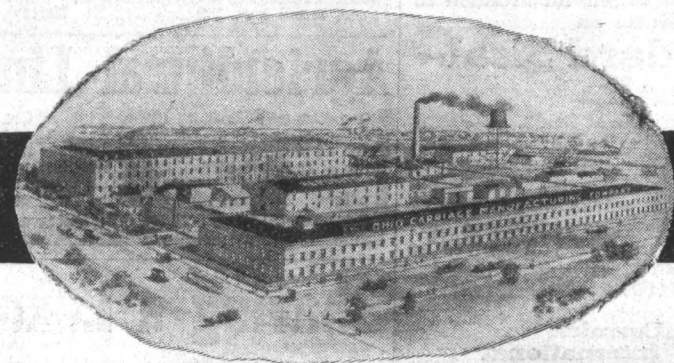
2 Years' Guarantee

Do you realize that as the actual manufacturer, with my big volume of business, I could sell even the dealer at lower prices than he could buy from any other manufacturer? But, I don't do business through dealers.

You may hear a lot of this home-patronage talk—but what does it mean to you?—\$26.50 or more, out of your own pocket.

That \$26.50, or more I'll save you.

Don't buy in a hurry. Don't let your dealer—or anybody—rush you into buying until you investigate the Famous Split Hickory Line.



Buy Direct from the Actual Factory
Here's a Small View of the Phelps Split Hickory Factories

—My Book shows a much larger view, with actual photographs inside and out. It stands to reason that it pays you—besides the big cash savings—to have the actual factory and manufacturer's 2-year guarantee behind any vehicle that you buy. My factory is the largest in America making vehicles and harness sold direct. I make every vehicle I sell and sell every vehicle I make direct to the users. That's why, when I guarantee a job to you, I know just exactly what I am guaranteeing and you also have the satisfactory experience of over 100,000 owners behind the standard of high quality that I make for you in Split Hickory Vehicles. Mine is a personal man-to-man business. I make to your order just the vehicle you want (out of 125 styles).

Remember, also, that I guarantee to **duplicate** any vehicle that any dealer offers you and save you \$26.50 or up direct from my factory. I can make-it-to-order for you and save you all dealer's and jobber's profits in my low, direct price. Any one of my 100,000 customers will tell you these facts. They know me by satisfactory dealings of over 9 years.

EVERY once in a while some buggy concern that sells through high-priced local buggy dealers comes out and advertises to try to persuade people not to buy direct from the factory at wholesale factory prices. I've come here to tell Michigan Farmer Readers about the **other** side of that subject and save you a lot of **cash** on your buggy money, any time you want to buy one.

Other Manufacturers Who Sell Through Middlemen have to advertise that way to try to keep prices high.

I Am Fighting High Priced Local B By Saving My Customers \$26.50 and Up on All Sp

Just remember this—When you deal with Phelps, you deal with headquarters—the factory that **makes** what you buy.

Phelps is no "Catalog house"—"no middle man"—no "supply concern"—no "merchant" buying cheap jobs to "fill orders" with, here one time and there the next, making the best price-deal possible on some "job lots" that some makers don't want to carry over.

When you buy of Phelps you get brand-new, latest styles of famous Split-Hickory Vehicles that set the pace for style—and equal or **outlast** even with hardest usage the highest-priced buggies made today in the United States.

I give you the facts here below. Facts and figures which are a very small part of the valuable information on Vehicles and Harness that you ought to have before buying—all told and illustrated in my Split Hickory Vehicle and Harness Book.

You have probably seen and read my announcements in this great paper for years. Have you ever sent me your name? If not, why not do so now?

I know what my Split Hickories will do beside any other vehicle on earth. It

And you know that all m—want to keep prices **high**. fancy profits. That's how th **with the actual manufactur** you buy buggies or anything That's what I've always sto deal direct with me I'll save want out of the biggest line.

has been my business and the k years ahead of the trade; and e which put an end to all local-d hicle goes into any neighborhood dealer is. My Split Hickories hav neighborhood, or else I do not ma

It is by repeat orders in each vehicle grows, after I sell others Split Hickory Vehicle is doing for

I do not have to trail my Sp eling men from my factory after other makers do.

You are the sole judge. If yo it back if you are not satisfied. satisfaction or no satisfaction. Isr

Example—

Here's how I will save you some money. I come to you here, right over the heads of all jobbers and your local dealers—cutting out their two fancy profits for you—and I offer to prove to you that I can and will save you \$26.50 cash, and up, on your buggy money.

By my advertisements and big Split Hickory Books I've told my story to hundreds of thousands of buggy buyers and have built up the largest vehicle business in America direct with the people, by saving my customers money every time they bought from me.

Read what I tell you here.

Then ask yourself: "Why not send Phelps my name on a postal or the coupon below?" Here,—**on the blackboard**—is one of my examples, as the bona-fide manufacturer, side by side with the dealer's example, for you to judge of.

This example shows the saving figures on only one out of over 125 that I show you in my price-saving, illustrated book. I have made it fair to the dealer on **quality** by assuming that the job he would sell you for \$81.25 actually cost \$46.25 in material and workmanship at the factory.

But I'll leave it to you whether my Split Hickory Vehicles are not of much higher quality than any you can buy and I'll save you the \$26.50 and up besides.

I can do business quick with any old customer of mine—or get a satisfied new customer when any man interested in any style vehicle gets my book or tests a Split Hickory.

I originated, started, and have built up the biggest direct-from-factory vehicle business in America—the only vehicle factory that will turn you out any kind of a high-quality job, made-to-order, to just suit your taste and send it to you direct, at a price that cuts out all dealer's profits, dealer's rents, dealer's selling cost—cuts out all jobber's profits—all middlemen's profits—and keeps that difference in price right in your own pocket.

When you see my factory prices this year and book of 1910 styles of Split Hickories, you will say yourself that it is no wonder that Phelps and Split Hickory Vehicles have been successful on—

2-Year Guarantee and 30-Day Free Road Test

Two Interesting Examples

| Buying From Phelps Direct | Buying From a "Dealer" |
|---|---|
| Actual factory cost of buggy \$46.25 | Actual factory cost \$46.25 |
| Jobber's profits 5.25 | Jobber's profits 5.25 |
| Dealer's profits 14.75 | Dealer's profits 14.75 |
| Dealer's clerk hire, rent, expense, etc. 8.50 | Dealer's clerk hire, rent, expense, etc. 10.00 |
| My small profit 8.50 | Dealer's average credit losses on others who don't pay 5.00 |
| Costs you from me \$54.75 | Costs you from dealer \$81.25 |

How To Save \$26.50 Cash

Which Will You Buy, Even if the Quality Were Exactly the Same? Remember that I'll Duplicate Any Vehicle that Your Dealer Can Offer and Save You \$26.50 at Least

My factory and my Book of Styles, offer you more vehicles and more choice of selection than all the local dealers in your city. Suit your own taste and have trimmings and finish, etc., made-to-order for you, just as you want everything. See all explained fully in my New Split Hickory Book.

Wait! Buyers of Buggies Everywhere—Before Buying Vehicles Get My 1910 Free Book of Styles and Prices

Safe, prompt delivery guaranteed—on 30 Days' Road Test and 2 Years' Guarantee direct from my factory and factory sub-stations in leading trade centers—you don't have to wait for just what you want in any Split Hickory made-to-order Vehicle illustrated in my Big, Free Book.

Split Hickory V

Do this little bit now. Take a chance of saving \$26.50 or more. You're bound to, if you direct—to convince you after you send me your name. It costs you only a postal. All the papers and all manufacturers know me to be responsible and know my w for splendid value. Write today and let me prove my promises. Get My Big Boo

H. C. Phelps, President, (Actua

The Ohio Carriage Manufacturing Co

Prompt Shipments—Safe Delivery Guar

Explained

Now that all middlemen—like dealers, agents and jobbers—pay prices **high**. That's how they make their money—in that's how they exist. **Why, then, don't you deal direct with the manufacturer who sells direct to the consumer** when you buy anything else? I'm for direct-from-factory dealing. I've always stood for and done for years, and if you'll let me I'll save you \$26.50 and upward on any style you want from my biggest line of high-grade vehicles in America.

Local Buggy Dealers All Split Hickory Vehicles

Business and the keynote of my great success, to keep about two-thirds of the trade; and establish styles and standards of vehicle quality and to all local-dealer competition when once a Split Hickory Vehicle is in your neighborhood. I am not there to talk to you like the local dealer who has to sell you and sell others for me in your neighborhood. I do not make money. I sell orders in each neighborhood that my one small profit on each order I sell others to your neighbors, because they see what your vehicle is doing for you. I trail my Split Hickories around the country and send traveling salesmen after them to get high prices from you like some other judge. If you pay me a buggy price you know you can have a vehicle not satisfied. When you pay the dealer your money is gone—no satisfaction. Isn't that true?

Proof—

One cash dollar spent with us has almost the value of two dollars at your dealer's. Of course, he may give you a little time, but look at the awful interest you pay for the accommodation—\$26.50 to \$40 on even the few styles he can show you.

You save all that with me.

I can ship you the handsomest job direct from my factory anywhere in America—to Alaska, to California, to Maine, to Florida, to Texas, or to any cross roads on the American continent, and save you from \$26.50 and up, and give you better quality, beside any local dealer in your town, no matter where you live or who happened to make his jobs this season.

I have the vehicle business down fine on the purchase of enormous quantities of high grade raw materials—and keep the most expert workmen employed all the year 'round—and have such splendid special machinery equipment in my large factories that, when taken together with the savings that I make by dealing with you direct, enables me to duplicate and undersell any vehicle job made by any manufacturer in the United States today. References—

Ask any bank, business house, express company or the postmaster in Columbus or Cincinnati, Ohio. Over 100,000 Satisfied Customers located all over the United States. Either R. G. Dun & Co., or the Bradstreet Mercantile Co.'s reference books. The Editor of this paper, or any magazine, farm paper or religious paper in the United States. Investigate our references and fully satisfy yourself.

Our 2-Year-Guarantee has been made famous by Split Hickory Vehicle Durability of construction. We use second growth hard seasoned split hickory—split with the grain—not sawed across, which gives strongest, most dependable and durable yet light and handsome running gears. Every part of a Split Hickory Vehicle is guaranteed in workmanship and materials to be the very highest quality for the purpose. Our catalog tells you every point more accurately, carefully and truthfully than any dealer could be expected to know, of the construction of other vehicles he never saw made. Celebrated Sheldon French-Point Automobile Springs used on all Split Hickory Vehicles. Fully explained in my Big, Free Split Hickory Book.

Remember

—I can duplicate any local dealer's job or style in America—
No matter whose make—and save YOU from 25 to 40 per cent cash.



SAVE \$26.50

**30 Days' Road Test
2 Years' Guarantee**

Split Hickory Special—Made-to-Order

This Split Hickory Laminated Auto-Seat Buggy At a Cash Saving of \$26.50

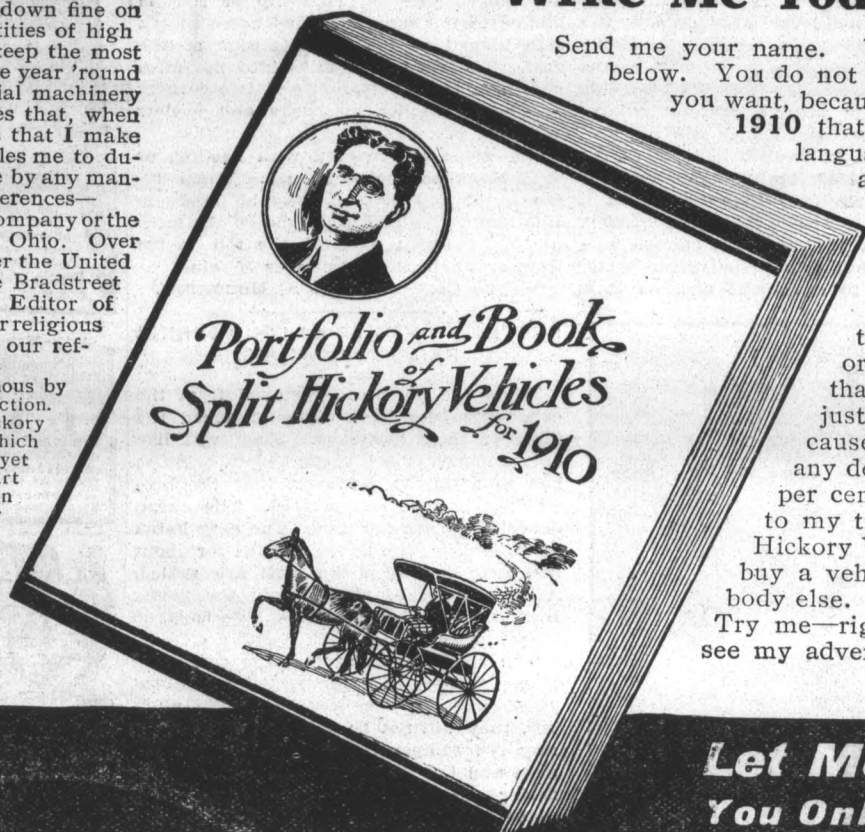
Among my 125 superb styles for 1910, this is my special, my leader, **your best bargain**. In addition to the dashing, stylish appearance and comfort of the Laminated Auto-Seats, I offer, in this buggy, **Many Exclusive Special Features:** Extra long top, water-proof; extra leg room in body; wide seats; Sheldon's genuine French point springs; soft auto springs in cushion and back; heavy Australian wool broadcloth upholstery; in fact, every feature possible to obtain snappy style, easiest riding and greatest durability. Shown in colors in my 1910 Book, with various styles of trimmings, but **made to your order**—all the finishing touches to suit your taste.

30 DAYS' ROAD TEST—2 YEARS' GUARANTEE

Write Me Today—The Easiest Way

Send me your name. Use a postal card or letter or the coupon below. You do not even have to tell me what kind of a vehicle you want, because I will send you **this big book of mine for 1910** that will illustrate and describe to you in honest language and in honest photographs more carriages and buggies and other vehicles and high-grade harness than you can find in ten average big dealers' stores anywhere in this country. You just "walk right into my book" with your eyes open and look over my prices—look over my jobs—look over my proposition to you, offering to put one of my Split Hickories into your barn. When you have once done that, it is 9 chances out of 10 that you will order just what you want direct from my factory, because you will find it in my book; or, I'll duplicate any dealer's job in America and save you 25 to 40 per cent. And it will be perfectly safe for me to add to my two years' guarantee, that if you buy one Split Hickory Vehicle, direct from my factory, you will never buy a vehicle of any kind in any other way from anybody else.

Try me—right now—do not wait for the next time you see my advertisement.



**Let Me Pay the Postage
You Only Send Me Your Name**

**H. C. Phelps, Pres.,
The Ohio Carriage Mfg. Co., Station 32 Columbus, O.**

Here is my name. Send me your Split Hickory Vehicle and High Grade Harness Book and Prices **FREE**.

Name.....

Address.....

City.....State.....R.F.D.....

Book Free

Remember that this gives you the chance to get just what you want, Made-to-order.

Vehicles and Harness

bound to, if you buy from me. It's up to me—the manufacturer—selling only a postal or a postage stamp to write to me. Then I'll do the rest. I know my work to be of the highest quality and prices the lowest at My Big Book Free. You to be the judge.

(Actual Manufacturer)

ng Co., Station 32, Columbus, O.

Guaranteed to You Anywhere

POULTRY AND BEES

SOME BUILDING PROBLEMS.

Are Cement Poultry Houses Damp?

I wish to build a poultry house for about 100 fowls. Have thought of making it a cement building with shingled roof but am told that cement houses are always damp and become frosty in winter. Would like opinions as to healthfulness of cement houses as compared with frame buildings. Shawasssee Co. E. B. M.

We regard the rather general impression referred to by this inquirer as erroneous. Not that cement is especially to be recommended as a material from which to build poultry houses, since some good arguments may be urged against its use for this purpose upon the general farm. It is true that there are many poultry houses—altogether too many—in which the fowls suffer because of dampness, but these conditions are by no means limited to houses of cement construction. In the great majority of cases the trouble is due to faulty location and methods of construction rather than to the building materials.

In locating farm buildings the natural drainage of the soil should receive first consideration, and in the case of the poultry house it is more important than in any other, aside from the dwelling house itself. Some kinds of live stock will endure the discomfort and overcome the dangers which lurk in damp quarters fairly well, but poultry will quickly and inevitably show the effects of such conditions. A spot from which surface water drains quickly and easily is, therefore, most desirable, and the building problem is somewhat simplified for the man who has such a location. But many farmers are forced to build poultry houses on far less desirable locations. In such cases the building must stand well up from the ground. If it is to be a permanent building, substantially constructed of good lumber or cement, it is advisable to insure against future trouble by providing under drainage. Then grading up to an easy slope about the building will enable the surface moisture to get away rapidly. Of course, the floor, or the ground enclosed, will then be considerably lower than the graded surface outside, and this must be brot up to a point several inches above the outside surface. This may call for considerable labor in filling in, but it is absolutely necessary, no matter what kind of floor it is desired to put in the building, if dampness is to be avoided.

With due precautions taken to prevent the collection of moisture about the foundation of the building, there is no good reason why the walls should become moist or the building damp, no matter what its construction, provided, of course, that proper regard for ventilation and the ad-

for suggestions as to plan of house, we believe that he should consider well the principle of the so-called open-front house, a style of building which has become rather popular in the past few years. Its success depends upon having the rear and end walls absolutely tight, and this is easily possible in a cement house—much more so than in a frame building.

One objection to the cement poultry house is that it is the most permanent kind of a structure, thus making it more difficult to alter or enlarge the structure than in the case of the frame building. It must also be admitted that the cheaper buildings, or those of more temporary character, have an advantage in that, upon the average farm, it is sometimes desirable to move the poultry quarters, or to raze or totally destroy a building which has become infested with disease germs or vermin. However, a permanent structure may be so built as to render thorough disinfection possible and easy, and this point should not be lost sight of when planning the building.

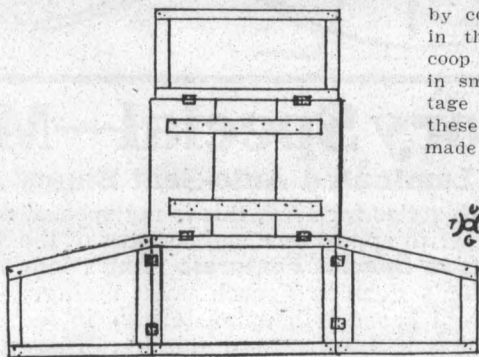
Wants a Cheap But Practical House.

Please give plan for an up-to-date chicken house that will accommodate 50 to 100 fowls—something practical for the average farmer that will not cost over \$100.

Ionia Co.

W. H. W.

A house that may be cheaply built and which has many features that commend it to the average poultryman was illus-



A Collapsible or Folding Coop for Hen and Chicks.

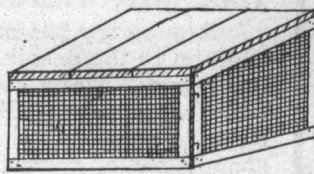
trated and described in these columns last week. What has been said in answer to the first query upon this page regarding the choice of a well-drained location applies here. If obliged to build upon practically level ground, set the house upon posts extending well above ground, or to the height which it seems advisable to grade up to. Enclose this foundation with boards, preferably hard lumber, as it will last longer and will prevent rats from burrowing in beneath the sills. Then fill in, both outside and inside. The earth floor thus formed, if it extends slightly above the grade outside, should remain dry and prove entirely satisfactory. In fact, many poultrymen prefer such a floor to a cement one, as it is

cheaply built after the open-front plan. If the open-front plan is deemed preferable we suggest placing a medium-sized window in each of the ends, pretty well forward. Then a curtain should drop from the roof so as to hang directly in front of the roosts to give the fowls protection at night. This may be a single curtain or it may be in sections as shown in the photograph reproduced upon this page which makes it possible to darken a portion of the roosting apartment during the day if desired. The front, which need not be open clear to the roof, should be provided with a curtain for use in stormy weather. It will probably be economy to cover the building with one of the standard prepared roofings.

In determining the size of building, allow from 5 to 6 sq. ft. of floor space to each fowl. If you use the open-front plan do not make the building more than 16 ft. from front to rear, making the length to suit the number of fowls. If 100 or more are to be accommodated it will be best to divide into two flocks by erecting a partition midway between the ends, which may be either a tight board partition or one of poultry netting.

A COLLAPSIBLE COOP FOR SMALL CHICKS.

The annoyance of building new coops for the chicks every year can be avoided by constructing the form of coop shown in the accompanying illustration. This coop is easily folded up and stored away in small space, giving it a great advantage over the usual coop. Again, as these will last for years, they may be made better and so give more comfort



to the young fowls. When needed it is but a moment's work to set it up.

A framework is made for each of the four sides. As illustrated, three of these are hinged together; the top or roof is hinged to the center one, with the fourth side hinged to the opposite side of the roof. The coop thus folds into the form shown in the illustration and two corners are held together by hooks and eyelets when in use.

The sides are covered with netting, or with slats, as you may wish. When desired, the top or roof may be made in this manner, which gives the chicks more air but requires covering the top on hot days or when there is danger of rain.

Wayne Co.

A. A. HOUGHTON.

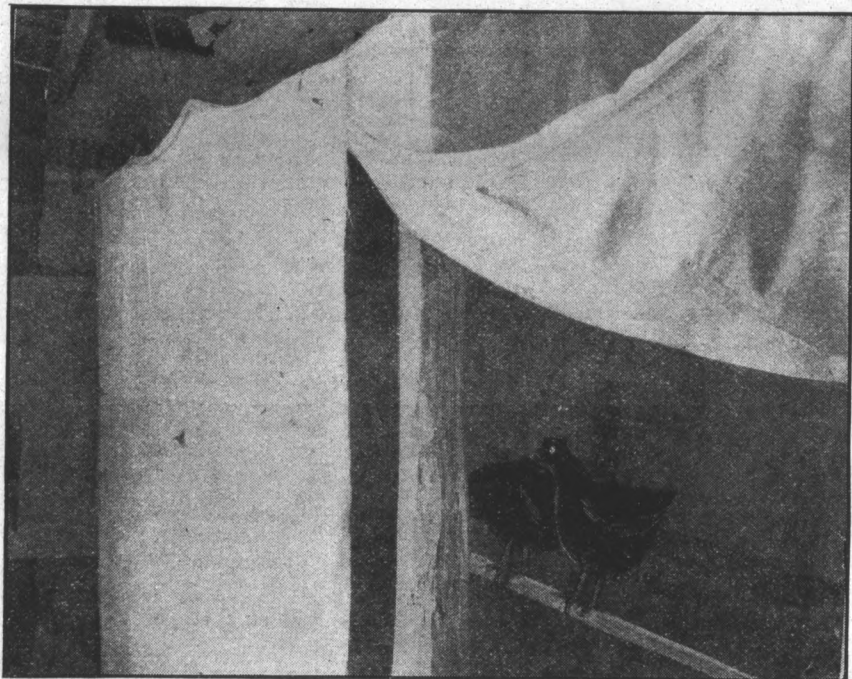
PROTECT HIVES FROM COLD SPRING RAINS AND WINDS.

When the hives are removed from the cellar the bees have almost reached the limit of their existence. They will live only a month or six weeks longer. Nature has so arranged, however, that the hive will not become depopulated. The queen deposits eggs in the cells. The eggs hatch in three days, the larvae are fed for about six days and then the cells are sealed. After a lapse of twelve days the young bees come forth. Thus the hive is given new workers.

The bees cluster around the comb and keep the eggs at a temperature of about 95 degrees. If the bees be few in number, they will not be able to maintain the required temperature over a large comb area and the result is the old bees die off faster than the young can take their place.

From the above it will be plainly seen that hives exposed to the cold winds of early spring are often not able to maintain a temperature sufficiently high to produce their young. If the hive is in an exposed place, and is full of cracks and holes which allow the rain to beat in on the bees, the keeper need not expect his colonies to be strong enough to gather surplus honey from the spring flowers. They will be busy rearing brood at that time.

The bee-keeper is not able to control the weather, but he certainly can find a sheltered location for his bees. A high board fence, or a clump of trees, will serve to break the force of the wind. Perhaps there is a farm building that will furnish protection if the hives are placed along the side opposite the direction from which the worst winds blow. Pieces of old carpet spread over the tops of hives will help keep the heat in.



Roost-protecting Curtain as Used in a Wayne County Open-front House.

mission of sunlight is observed. While cement walls constructed of hollow cement blocks are deemed safer and warmer than a solid cement wall, we are creditably informed that there are a number of poultry houses in the vicinity of Detroit in which the solid cement wall is being used with satisfactory results, and we believe that this correspondent may safely build his poultry house of cement after he has satisfied himself that the question of drainage has been satisfactorily cared for.

While our correspondent has not asked

SCROFULA

Scrofula disfigures and causes life-long misery.

Children become strong and lively when given small doses of

Scott's Emulsion

every day. The starved body is fed; the swollen glands healed, and the tainted blood vitalized. Good food, fresh air and Scott's Emulsion conquer scrofula and many other blood diseases.

FOR SALE BY ALL DRUGGISTS

Send 10c., name of paper and this ad. for our beautiful Savings Bank and Child's Sketch-Book. Each bank contains a Good Luck Penny. SCOTT & BOWNE, 409 Pearl St., N. Y.

\$7.55 Buys the Best 140-Egg Incubator Ever Made

\$4.50 Buys the Best Brooder
Both Incubator and Brooder, ordered together, cost but \$11.50. Freight Prepaid. The Belle City Incubator has double walls and dead air space all over, copper tank, hot-water heat, self-regulator, thermometer, egg tester, safety lamp, nursery, high legs, double door. The Belle City Brooder is the only double-walled brooder made, hot-water heat, platform, metal lamp. No machines at any price are better. Write for our book today, or send the price now under our guarantee and save waiting. Satisfaction Guaranteed. Box 14, Racine, Wis.

WRITE YOUR NAME ON A POSTAL

and get this big book on Poultry Raising, free, post-paid. It tells how successful poultrymen feed, breed, rear, hatch and house. Full of valuable hints and helps you'll be pleased to know. **80 PAGES** Practical Poultry Raising Experiences. Secrets of others' success. Plans for Poultry Houses—how to make a first-class brooder out of a piano box. Describes the 1910 Sand Tray Prairie State Incubators. **Prairie State Incubator Co.** 413 Main St., Homer City, Pa.

Hatch With the Least Cost Per Chick
That is what we guarantee you can do with the **Invincible Hatcher**. Try it and if it doesn't produce more strong, healthy chicks than any other incubator, regardless of price, send it back. **50-Egg Size Only \$4.50.** Same low prices on larger Hatchers, Brooders and Supplies. Write for 176-page FREE catalogue. **The United Factories Co., Dept. X-22, Cleveland, O.**

POULTRY PROFITS DOUBLED
If you want \$2 profit where you now get \$1, either from eggs or poultry for market, simply send us your name and address and let us tell you the real poultry secret that has doubled the profits of poultry raisers. Its the only real way to poultry success. Make every fowl a profit earner. Write at once for this information whether you have 3 fowls or 300. It's free to you. **Blanke & Hauk Supply Co., 130 Blanke Bldg., St. Louis, Mo.**

Send Us a Postal for a Price
Just your name and address on a postal brings special low prices on all sizes of **RACINE Incubators and Brooders**—guaranteed to hatch highest percentage of eggs. Liberal Trial Plan. Best Incubator Proposition on the market. Postal brings all printed matter and special prices at once. Address **RACINE HATCHER COMPANY** Box 64, Racine, Wis.

SHOEMAKER'S BOOK OR POULTRY
and Almanac for 1910 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. **C. C. SHOEMAKER, Box 694, Freeport, Ill.**

.90% Hatches
From the Cyphers—in every country and climate—for old-timers and beginners. For you. **CYPHERS INCUBATORS** and Brooders are non-moisture, self-regulating, self-ventilating. Write for 160-page Catalog. Address Nearest City. **Cyphers Incubator Co., Department 35** Buffalo, N. Y.; New York City; Chicago, Ill.; Boston, Mass.; Kansas City, Mo.; Oakland, Cal. **STANDARD CYPHERS INCUBATORS** First Patent—Inalienable

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There is not one farmer in ten who does not realize that diversified farming pays. Some farmers think that all a grain drill should be expected to sow is wheat, oats, rye, barley and various grass seeds. The fact of the matter is that a grain drill should be able to successfully sow any kind of seed that man is likely to plant with a grain drill, from the small grasses to large bush lima beans, without injury to the seed, and in such quantities as are known to be proper. The Empire Grain Drill—which is made in a large number of styles and sizes, both plain grain and combined grain and fertilizer—will successfully sow any and every kind of seed. With it a man can plant all his small grains and grasses and in addition, he can sow peas, beans, beets, corn, flax, etc. New canning factories are being constantly started. These factories furnish a good and ready market for peas, beans, sweet corn, etc. These are paying crops, too, especially when they can be put in so quickly and cheaply as they can with the Empire Grain Drill, manufactured by The American Seeding-Machine Co., Incorporated, Richmond, Indiana. Send to the manufacturers today for a copy of their Empire catalogue. Go to your implement dealer and insist on seeing the Empire Drill. This drill is sold under such a liberal guarantee that no person runs the slightest risk in purchasing.

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Get new low, delivered prices on all sizes of famous
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Incubators. Metal-covered all round, self-regulating and ventilating. Safest and surest. Delivered free east of Missouri River and north of Tennessee. Write for delivered prices to points beyond. Lowest prices on Brooders, too. Send for free book today.
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Has all of the feeding elements of good wheat and costs less.

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MEN WANTED to become mechanical draftsmen; pay \$38 to \$75 weekly; complete course at your home four months.
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Bees may be made to furnish a nice income on almost any farm if treated in the proper manner. No considerable amount of labor is required in caring for them, and their product is always entirely acceptable to their owner.
Ohio. S. C.

A FEW 1909 EGG REPORTS.

The figures which represent the work of my flock during the past year are as follows:

| | No. Hens. | No. Eggs. |
|--------------------------|-----------|-----------|
| January | 92 | 602 |
| February | 154 | 882 |
| March | 150 | 1,944 |
| April | 147 | 2,011 |
| May | 143 | 1,900 |
| June | 135 | 764 |
| July | 115 | 542 |
| August | 111 | 738 |
| September | 111 | 942 |
| October | 86 | 684 |
| November | 82 | 315 |
| December | 82 | 304 |
| Average | 117 | 11,628 |
| Sold 60 hens | | \$23.54 |
| Killed 4 hens | | 2.50 |
| Sold 901% doz eggs | | 190.30 |
| Used 67% doz. eggs | | 14.10 |

Total

The average income per hen was \$1.75.

I kept no account of feed used. Did not grow any chicks but raised 82 turkeys, 81 of which were sold for \$150.79.

Lenawee Co. I. W.
(Here is a flock which averaged less than 100 eggs per hen for the year. While there surely is room for improvement in that direction, it should be noted that the average income yielded by the hens is a pretty respectable one, due, no doubt, to good management in marketing the product. The average price received for eggs thruout the year was a trifle better than 21 cents. With these hens averaging 150, or even 125, eggs for the year the average income would have been materially increased. The owner of the flock places the average low, for, figuring on the basis of 117 hens, and crediting them with eggs and poultry used on the farm, the income becomes practically \$2 per hen instead of \$1.75. Figures showing cost of food consumed would add to the interest of this report but such are usually difficult to give where a good proportion of the feed is grown upon the farm.—Ed.)

My flock of 11 ordinary Barred Rock hens produced, during the year 1909, a total of 1,522 eggs. Their feed consisted of wheat, cracked corn, clover cut from the lawn, beef meal, corn meal, peelings from the kitchen with bran and oyster shells.

Vermillion Co., Ill. M. BRANSON.
(A good variety of food, and an average a trifle above 138 eggs per hen. In the absence of prices received for eggs and prices paid for food, we venture the opinion that this little flock paid a fairly satisfactory profit, since an average price of only 20c per doz. for eggs would yield a gross income of \$2.30 per hen.—Ed.)

PROTEIN-YIELDING CROPS FOR POULTRY.

Can any poultry raiser advise us as to the advisability of raising Kaffir corn, sunflower seed, buckwheat and millet for chicken feed? We are anxious to push the poultry business as a side line on the farm.

Jackson Co. T. E. MOON.
Any or all of the crops named can be used to advantage in feeding poultry, since a more nearly correct ration can be made up with their aid than otherwise. A very common trouble in feeding chickens upon the average farm in winter is that they are simply fed whatever is at hand. If corn is the only grain that can be spared, their ration will consist largely of corn. If their owner is long on wheat they are apt to have to subsist upon a wheat ration mainly. They are not only expected to subsist, but to produce a good yield of eggs. Now, while either of these grains may be, and is, used to good advantage by all up-to-date poultrymen in making up laying rations, in neither one is the nutritive ratio such as to warrant its being used alone or practically so. In these grains the digestible nutrients are not present in the proper proportions to make either of them, or any combination of the two, a very satisfactory egg-producing ration. The same is true of oats, altho in a lesser degree. To offset the preponderance of the fats and carbohydrates over the protein element in these grains it is necessary to bring into the ration vegetable or animal foods which carry a liberal proportion of protein. This extra protein, required to balance the excess of other elements in the common grains, is now quite generally supplied in the form of meat scrap, green bone, skim-

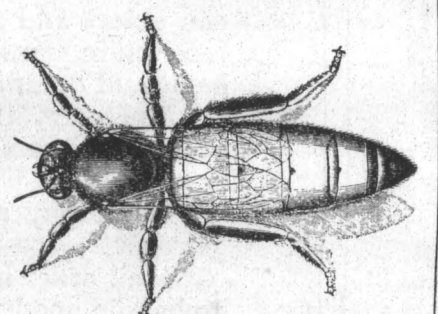
milk, etc. The use of these has brot results in most instances, altho at a considerable increase in cost of feeding.

Now there is little doubt that some of the strong protein-yielding crops which you name can be used with profit in compounding a balanced ration for poultry. They can at least be made to take the place of a portion of the animal products now being fed, which should make for economy, as upon the average farm they can be grown more cheaply than animal products. Of the crops named, the least promising is Kaffir corn. We suggest that it be dropped from the list, unless desired simply to give variety, as it does not differ materially from Indian corn in food nutrients. Of the others, sunflower seed is the heaviest protein bearer, having more than twice the per cent found in corn and nearly twice that contained in oats and wheat. It is very low in carbohydrates or starch but very rich in fat. It is very easily grown and in limited quantities can be used to very good advantage. Buckwheat is about on a par with wheat so far as protein is concerned, while millet is considerably above wheat. Both are far better protein-bearing feeds than corn and have the further advantage of containing a somewhat smaller percentage of starch and fat.

FINDING THE QUEEN BEE.

A haphazard search for the queen of the colony will sometimes locate her, but oftener it will not. The man who already has his hands full wants the way which takes the least time. Here is my method, which is used by many of the successful bee-keepers of today.

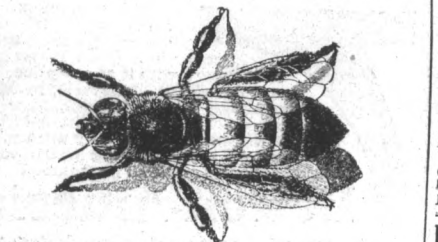
Sit, by choice, where the light shines over your shoulder, striking the side of the frame next to you. Take out the frame next to you first, and glance quickly over the side of the next frame before examining the one in your hand. There are two reasons for doing this.



Queen Bee.—Note great Extension of Abdomen beyond Tips of Wings.

First, if the queen is of a nervous disposition she will run for the other combs when the light strikes her; second, it takes only an instant to do this and, if she is in sight, there, you can pick her up on the frame at once without further examination of the frame in your hand.

After this first glance at the frame in the hive, examine both sides of the one in your hand. Then set it to one side and proceed in like manner thru the hive. Very little attention need be given the frames next to you until you find the first brood, but when you get to the other side you will be just as liable to find her on a frame of honey as upon brood, since she runs from the light. One need not take more than one or two minutes at the most in going over the frames,



The Worker—Smallest of Hive's Inmates.

and usually this first search will find her. If not, they can be gone over again more carefully.

You should select the middle of the day for this work, or at least a time when the main force of workers is in the field, as the combs will then have fewer bees on them and the queen will be easier seen. Dr. Miller says that if the queen

Change The Vibration It Makes for Health.

A man tried leaving off meat, potatoes, coffee, and etc., and adopted a breakfast of fruit, Grape-Nuts with cream, some crisp toast and a cup of Postum.

His health began to improve at once for the reason that a meat eater will reach a place once in a while where his system seems to become clogged and the machinery doesn't work smoothly.

A change of this kind puts aside food of low nutritive value and takes up food and drink of the highest value, already partly digested and capable of being quickly changed into good rich blood and strong tissue.

A most valuable feature of Grape-Nuts is the natural phosphate of potash grown in the grains from which it is made. This is the element which transforms albumen in the body into the soft gray substance which fills brain and nerve centres.

A few days' use of Grape-Nuts will give one a degree of nervous strength well worth the trial.

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EGGS—EGGS from my prize-winning Single Comb Brown Leghorns at easy prices. Cockerels, hens and cock birds for sale. CHAS. W. RUFF, St. Clair, Michigan, Dept. M. F.

EGGS—Pure bred S. C. BROWN LEGHORNS, 15, 75c; 50, \$2.50; 100, \$4. MRS. ELNA OLMSTEAD, Nashville, Mich., R. 4.

CROSS BRED—Thoroughbred Leghorn and Rhode Island Red cross produces finest layers and Table Fowl in the world. 50c for 13. \$4 for 100. Edella Farms, Box 47, Grosse Pointe, Michigan.

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LARGE, VIGOROUS Rhode Island Reds, White Wyandottes
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R. C. R. I. REDS—Am now booking orders for eggs for spring delivery. Choice pens \$3 per 15; Utility pens \$2 per 15; \$5 per 100. B. A. Fraser, Fountain Farm, Rosebush, Mich.

DOGS.

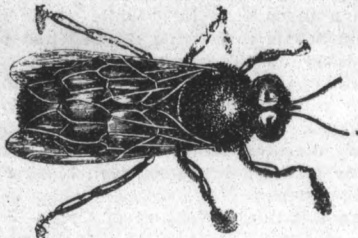
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Collie Puppies sable with white markings thirty on hand, more coming. Write to-day for prices. W. I. ROSS, Rochester, Mich.

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Why pay more than our price? If ordered together we send both machines for \$10.00, —freight paid east of Rockies. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery underneath the egg-tray. Both incubator and brooder shipped complete, with thermometers, lamps, egg-testers—all ready to use when you receive them. All machines guaranteed. Incubators are finished in natural colors showing the high grade lumber used—no paint to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate the "Wisconsin" before you buy. Send for the free catalog today, or send in your order and save time.
WISCONSIN INCUBATOR CO., Box 111, Racine, Wis.

still eludes you, after trying this method, the combs should be spread in pairs. The queen will always be found between the combs. Those who are not familiar with bees and queens can distinguish the queen by the fact that she is the only bee in the hive whose abdomen extends clear beyond the tips of her wings. She is much larger than the worker bee. However, the drone is nearly if not quite as



The Body of the Drone is Thicker Thru than Either Queen or Worker.

large, but he is so much different in build that one need never mistake them.

If you have occasion to look for a queen when brood rearing is not in progress, remember that she will then be small, very little larger than a worker, tho still distinguished by the elongated abdomen. Virgin queens are also smaller than laying queens.

Mecosta Co.

L. C. WHEELER.

MICHIGAN BEE-KEEPERS PLAN AGGRESSIVE CAMPAIGN.

At the annual meeting of the Michigan Bee-Keepers' Association, held in Lansing, Feb. 23 and 24, plans were laid for beginning a state-wide campaign for new members and for giving greater publicity to the importance of this industry. It is estimated that there are close to 25,000 keepers of bees in this state, a very small percentage of whom have, in the past, affiliated with the state organization. It is now planned to make an earnest effort to demonstrate to producers and to dealers the advantages of business system and co-operation in handling the product.

In order to properly finance the proposed publicity campaign an advance in the Association's membership fee was proposed. However, as one-half of each annual membership fee goes to the National Bee-Keepers' Association it was voted to retain the present membership fee of \$1, and to levy an assessment of fifty cents on each member for the purpose of raising the necessary funds. Suitable compensation was voted the secretary to enable him to put the necessary time and energy into the campaign which will be waged to advance the interests of the Association and of the industry in general.

The various sessions were fairly well attended and many live topics were presented and discussed. Speakers from outside the state were President Geo. W. York, of the National Bee-Keepers' Association, whose talk dealt with various phases of the marketing problem; R. F. Holterman, of Canada, who discussed hives, giving his well-defined ideas, acquired thru long experience, as to their size, ventilation and construction, and N. E. France, of Wisconsin, manager of the National Bee-Keepers' Association, who offered some timely suggestions touching the betterment of the state organizations.

Last year's officers were all re-elected, the list standing as follows: President, L. A. Aspinwall, of Jackson; vice-president, E. D. Townsend, of Remus; secretary, E. B. Tyrrell, of Detroit. The next annual meeting of the Association will be held in Grand Rapids.

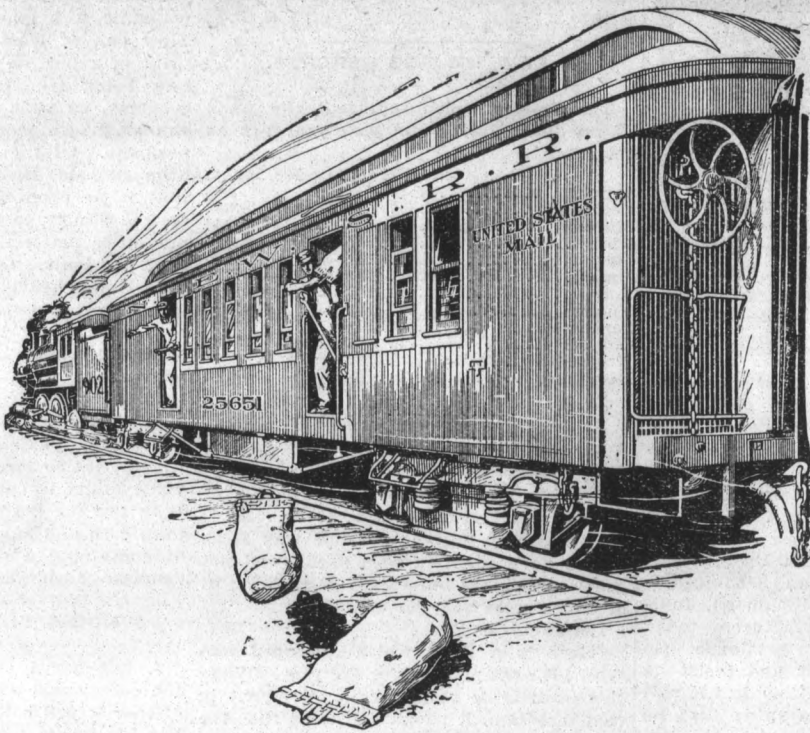
Some excellent exhibits of apian products were shown at this meeting, and prizes were awarded as follows:

For best 10 sections of clover comb honey, L. C. Wheeler, of Mecosta Co., first, and C. S. Foote, of Lenawee Co., second.

For best 10 lbs. of clover extracted honey, A. D. Wood first and L. C. Wheeler second.

For best 3 lbs. extracted honey containing smallest per cent of water, L. C. Wheeler first and A. D. Wood second.

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Do you want your watches delivered this way?

Every American knows that Waltham Watches are good watches.

A watch should always be bought from a responsible jeweler. Jewelers are educated in watch-making. They can see if a watch is in the same perfect condition as when it left the factory and can detect and remedy any little accidental defect it may have received in transportation, as well as regulate it to your personal habit and occupation.

Moreover, the Waltham Watch Company will guarantee every Waltham Watch sold by a recognized watchmaker or jeweler.

Never buy a watch, Waltham or any other, except from a jeweler.

Mail order houses are not, in our opinion, properly equipped to handle good watches.

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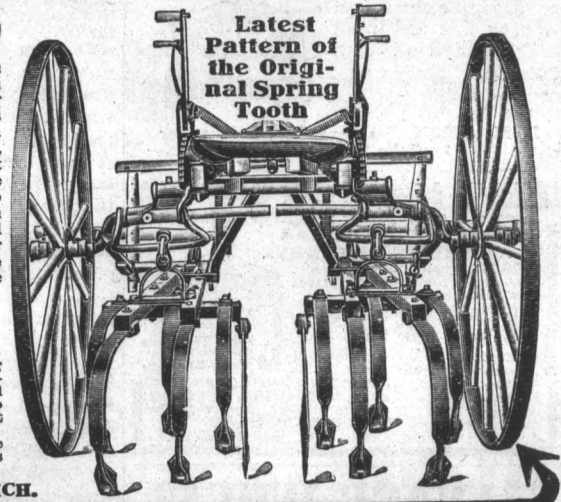
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Doubles Your Crop

The Man-Power Sprayer is an all-purpose machine for the medium-sized grower, cheap in price, light, strong and durable. All our sprayers are GUARANTEED FOR 5 YEARS. We pay the freight. Write a letter or card to-day—and we'll send you Spraying-Guide, Catalog of all kinds of sprayers, and Special Free-Sprayer Offer for first in each locality this season. Don't delay—Write now.

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machines are designed for greatest efficiency, economy, speed. Sprays four rows at once. Handles the heaviest mixtures. Relief Valve controls pressure. Fruit Tree attachment furnished. Also broadcast attachment for spraying weeds.

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Stop that loss from damage to your crops by bugs and diseases! Spray fruit and vegetables with "Orchard Brand" Tested Spray Materials—it will check disease and put the bugs on the run. Whatever you grow, there are "Orchard Brand" products with which to spray them—they are ready to use by adding cold water—no loss of time getting them ready.

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Seed Barley

Wisconsin's famous Odebrucker barley. Mich. grown Seed pure and clean. \$1. per bu; bags 20c extra Sample on request. A. E. Illenden, Adrian, Mich.

Please mention the Michigan Farmer when writing to advertisers.

HORTICULTURE

LIME-SULPHUR FOR APPLE SCAB.

If the experiments that have been conducted for the past two or three seasons by W. M. Scott, of the Department of Agriculture, can be regarded as conclusive the probabilities are that in a few years lime-sulphur will become the standard remedy for the scab, as it is for the scale. After giving the results of their experiments in Virginia, and at Douglas, Mich., Mr. Scott goes on to say that he feels that the information at hand is not sufficient upon which to base definite conclusions, but that it seems evident that some form of lime-sulphur is destined to replace Bordeaux mixture in spraying varieties of apples subject to Bordeaux injury, that is, to the rough, dull, russet appearance which the Bordeaux causes on well sprayed varieties like Wagner, Greening, Ben Davis, and others.

In conducting the Virginia experiments plots were sprayed with self-boiled wash in two strengths, 8:8:50 and 10:10:50; home-made wash, boiled with 5 lbs. sulphur, 2½ lbs. of lime, and 50 gallons of water, and commercial lime-sulphur registering 33 degs. Boume in four strengths varying from 1½ to 2½ gallons to 50 gallons of water. With the commercial preparation arsenate of lead was used, 2 lbs. to 50 gallons; also Paris green, 6 ozs. to 50 gallons. The same strength of arsenate of lead was also used with the other washes. Four sprayings were given at the usual times.

Where the Paris green was used with the commercial lime-sulphur the foliage was quite badly burned, and its use in this connection can not be advised. Commercial lime-sulphur, 1½ gallons to 50 gallons water, and 2 lbs. arsenate of lead injured the foliage very little, not more than the 3:3:50 Bordeaux mixture, but where two gallons of the commercial solution was used there was some injury to the not serious. Where no poison was used the injury to the foliage was slightly greater than where arsenate of lead was used. The home-boiled wash caused no injury to the foliage worth considering, while the self-boiled wash caused none at all, but the foliage sprayed with the latter seemed more vigorous than that sprayed with the other lime-sulphur preparations. Bordeaux mixture caused some spotting and yellowing of leaves on some varieties, but not at all serious.

In the Virginia orchards where these experiments were conducted scab was not severe, even on unsprayed trees, so the test was not as valuable as it should have been. The sooty fungus and fruit spot was controlled by all the preparations. The self-boiled lime-sulphur made the best showing against leaf spot. As for apple scab the results were as follows: Commercial lime-sulphur, 2 to 50, and Paris green, 0.63 per cent found to be scabby; commercial lime-sulphur, 2 to 50, and arsenate of lead, 0.51 per cent found to be scabby; self-boiled lime-sulphur, 10:10:50, and arsenate of lead, 3.75 per cent found to be scabby; Bordeaux mixture 3:3:50, and arsenate of lead, 2.15 per cent found to be scabby; check plot, unsprayed, 30.27 per cent found to be scabby.

At Douglas, Mich., co-operative experiments were quite similar to those at Virginia, and the results obtained were much in accordance with those given above, tho the per cents are not as low as scab is more prevalent here. The injury to the foliage by commercial lime-sulphur, 2:50, was more severe than in Virginia, and Mr. Scott advises not over 1½ gallons to 50 to guard against the possibility of serious injury to the foliage. Where the commercial solution was used with arsenate of lead the scab injury was 4.8 per cent, while Bordeaux mixture gave 3.6 per cent, self-boiled lime-sulphur 19 per cent, and unsprayed 81 per cent. These results seem to indicate that self-boiled wash is not as good to control the scab as the commercial or boiled washes, while the latter is nearly as good as Bordeaux mixture to control the scab.

As to the condition of the fruit, the varieties subject to Bordeaux injury that were sprayed with lime-sulphur were smoother and more highly colored than those sprayed with Bordeaux.

Reasoning from the results of the experiments above it would seem safe to experiment on a part of our apple trees, especially those subject to Bordeaux in-

jury and russetting, by substituting 1½ gallons of commercial lime-sulphur, or its equivalent of home-made wash, to 50 gallons of water for the Bordeaux mixture, using the arsenate of lead as before. For this purpose the commercial solutions would be handiest and fully as cheap, since we want something that will keep during the summer, will not clog the pumps, and can be quickly prepared. These will be ready at all times, and all that need be done is to draw out the required amount, pour into our sprayer of water and go to work.

As to the cost there will be little difference. If we compute copper sulphate at 5c per lb., (small quantities will cost more), and lime at half a cent, a 50 gal. barrel of the Bordeaux mixture will cost for the materials, from 18 to 20 cents. Computing commercial lime-sulphur at the horticultural society contract price after deducting rebate for the barrel at 15c per gallon, 50 gallons would cost 22½c. The extra labor in making the Bordeaux will about compensate for the difference in price, so the cost is practically the same. The materials for home made wash would be somewhat cheaper, but taking the extra labor into consideration I doubt if there would be any gain in economy by using it on a small scale.

Also there have been several experiments in our state in using the lime-sulphur for apple scab, and the results point to its more general use in time, we should not be over hasty in adopting it to replace Bordeaux. As for myself, I intend to try it out the coming summer on different varieties, but think I shall still tie to Bordeaux as the main fungicide.

Calhoun Co. S. B. HARTMAN.

SOME FERTILIZER QUERIES.

As it is near the time now when most gardens receive their annual allowance of fertilizer these questions are timely. If we know the kinds of crops that will receive benefit from the coarse dressing and those that will be injured, or at least receive little help, it will be of assistance in the distribution of the green and rotted product, and the planting of the various kinds can thus be arranged. It follows, of course, that the detail of garden management as to the location of various crops should be well in hand before any application of manure is made.

As to coarse barnyard manure, all the vine crops will be benefited; and especially is this true of melons, squashes, pumpkins, etc. While we would not neglect plentiful hill manuring with the well rotted material, the green manure plowed under will be a late feeder and supply the needed humus. Corn, also, or any long standing crop, excepting the root varieties, will be benefited. Thoroughly rotted manure will give quicker results, but the coarse will furnish the much needed plant food in the later season when the demands are still heavy in maturing the crop. Avoid its use, however, with the root crops, especially with all the long or half long sorts. It will be less harmful with globe or turnip shaped varieties, but with carrots, parsnips, salsify, etc., are more than liable to receive injury. Cabbage, cauliflower and that class will thrive under almost any amount of it, and there is little or no danger of overfeeding. Never use it for the onion crop, as, while gross feeders, they will almost certainly grow necky, soft or run to scallions. The above is generally true as to the uses of green manure but circumstances sometimes compel us to modify these general principles.

Poultry droppings are valuable for almost any crop, but care is essential in using it as it will burn many crops if used too freely. In general, it is a good plan to mix it with about its own bulk of garden soil, muck or loam. Some crops, as onions and celery, will stand it in pretty full force but it can be applied around the hill and worked into the soil with beneficial results with almost all crops. It will pay to use all of both kinds you can obtain.

There is little time to lose now with the harder plants, as tomatoes, cabbage, lettuce and onions and they had better be started very soon, even if the beds require extra protection at night. For the more tender plants that will require late transplanting at best, as peppers, egg plant, etc., there is no hurry as yet. They will not go into the open ground with safety until the latter part of May unless it be an exceptionally early season. Cabbage and lettuce will ordinarily be safe to go out early in April and even early in March will be pretty late to start them.

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L. R. SLOTE, R. No. 4, Constantine, Mich.

PLANT FOOD FOR FRUIT GROWING.

There is one subject that it seems to me is going to be of vital interest to this section of the state that is not much touched upon. The farmers of this county are setting thousands of dollars worth of fruit trees, amounts all out of proportion to their ability to furnish natural fertilizer and as the trees grow each year they will demand more and more plant food, and it seems to me that the farmers must go into something that will produce larger amounts of fertilizing matter to supply the needs of their orchards in this line, and this must be stock raising of some kind, either dairy or beef production, or a combination of all kinds of stock. I don't wish, in this note, to express any decided opinion or remedy of my own but would like to have Mr. Lillie and other farmers who are acquainted with the conditions which obtain in this county and the territory adjoining as to market for milk, cream, beef, pork, kind of soil, products, etc., discuss this subject thru the Michigan Farmer and give their opinion as to the best remedy that we all may gain new ideas and profit thereby.

Grand Traverse Co. B. M. JAMES.

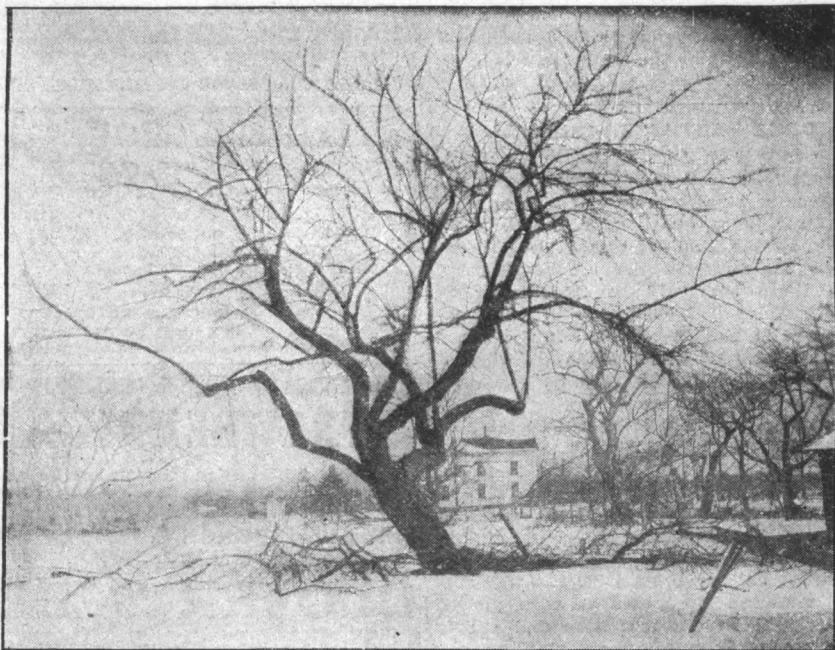
Mr. James certainly brings up a very important question. Fruit orchards in Michigan will have to be fertilized in some way. Carefully growing cover crops and turning them down will help preserve the fertility of the soil, but eventually some plant food must be added if we want to keep up the productiveness of our orchards. Now, Mr. James suggests stock growing for this purpose, but I do not think he looks at the subject in just the right light. Really, stock raising does not add fertility to the land; that is, it

conclusion that the only way to keep up the fertility of an orchard is by the use of stable manure. I am positive that this can be done by cover crops and commercial fertilizer. Commercial fertilizers will furnish the plant food, there is no doubt about that. The only question to consider is to keep up the mechanical condition of the soil by the incorporation annually of a sufficient amount of organic and vegetable matter and this can be done quite as well by growing cover crops and green manure as it can by the use of stable manure. I believe this method is ultimately the solution of maintaining the fertility of our orchards and fruit lands. The average fruit grower has not faith enough in fruit growing to use it in sufficient quantities to get profitable results. But the time will come when he will do this and will get results.

COLON C. LILLIE.

RENOVATING THE OLD ORCHARD.

This was the topic of an excellent address by Mr. T. A. Farrand, of Eaton Rapids, at the State Round-Up Institute last week. Mr. Farrand emphasized the advantage in the renovation and proper care for the old orchards, believing it to be more important than the planting of new ones, which is being done at the present time to such an extent, since immediately profitable results can be secured from giving proper attention to the old orchards which, in a great many



Evidence of a Difficult Task.—Note the use of watersprouts at the right to form new top. Were the tree in an orchard row, more pruning in the extreme top, and less nearer the ground, would make a more convenient tree to care for with fully as much bearing surface.

does not add plant food. It simply preserves the fertility. Simply puts back into the soil if you carefully save the manure, what the growing crops take out of the soil, but you add nothing only so far as you may add a certain amount of nitrogen by growing leguminous crops like clover, beans, vetch, etc. Consequently, when we talk about growing live stock on a portion of the farm and using the resultant manure to fertilize bearing orchards, it is simply "robbing Peter to pay Paul." The ground on which you grow the crops to support your live stock is gradually getting poorer while you have fertilized your orchard. Now it requires stock growing to keep up an ordinary stock farm in the production of crops suitable for the maintenance of live more than holds its own, even with the careful preserving of fertilizer, providing you do not buy feed outside the farm for the stock. Of course, every pound of food you buy outside the farm to feed the stock adds fertility and organic matter to the soil, and in this way you can build up a soil. And so the fruit man, if he would keep stock and buy his feed to feed them, then he would be adding fertility to his farm, but if he simply takes a portion of his farm to raise feed for live stock, feeds these crops to the live stock and saves the manure and puts this onto his orchard, the land on which he raised the crop is bound to grow poorer. If a portion of his farm is not suitable for the production of fruit, then I certainly would keep a certain amount of live stock. I stock. In other words, a stock farm little would keep enough dairy cows to consume the food grown upon that portion of the farm, but you need the manure back on that portion to make dairying profitable.

Now, I think Mr. James is wrong in his

cases, are now paying little if anything to their owners. The one point which Mr. Farrand emphasized as essential to the securing of a profitable crop from the old orchard was thorough spraying. This spraying should be done at the proper time and should be very thorough. Mr. Farrand stated that the average man was inclined to think that he had a tree sprayed when he had applied a few gallons of spraying material to it, but stated that four or five gallons of material did not cover a tree sufficiently well; that for a good sized tree it takes 10 or 12 gallons, and the trees should be sprayed from both sides. Mr. Farrand is a firm believer in the efficiency of Bordeaux mixture as a preventive for scab and other fungus diseases and, where it has been applied full strength for the first spraying and the quantity of copper sulphate used at future sprayings reduced, there will not be the trouble of russetting of the fruit which is experienced with full strength mixtures. He would spray thoroughly just before the calyx of the blossom closes to prevent the attack of the codling moth in the spring, as by this means only can the damage from these worms be reduced to a minimum. He would spray again in August for the second crop of the codling moth, since an apple that has a worm hole, no matter how large or attractive it may be in other respects, will not be accepted either as a first or second grade, and with proper spraying from 80 to 90 per cent of the apples can be placed in this class.

Mr. Farrand has rented a good many old orchards and renovated them to a profitable degree by spraying alone. Cultivation and pruning he considers important where one owns the trees, but not essential to growing a fair crop of apples in an old orchard which has had

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Tell us now—if you should unexpectedly grow the most valuable of all varieties of seed corn this year, what would you name it? It may be worth many dollars to us. Remember, neither you nor we are to decide. Hon. J. J. Esch, Congressman of Wisconsin, Prof. R. A. Moore, of Agricultural College, University of Wisconsin; Hon. Robert Calvert, U. S. Customs, LaCrosse, are the judges. The name you have in mind may strike the official judges just right. The contest will run only a short time, so enter at once. Win the big prize. You have much to gain by acting on this suggestion immediately. Costs not a penny to enter the contest.

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In Comparing Southern Soils, States of the Old South Lead Entire Country

Georgia Ahead of All

Led by no less distinguished authority than Collier's Weekly of January 22, "Dixie" proper is coming to the front with a rush.

The face of the farmer is turning from the exaggerated allurements of the arid lands of the West and the Southwest, away from the winter winds of the snow-bound North, back to Georgia and the garden-heart through which William Tecumseh Sherman mowed that historic swath forty miles wide from Atlanta to the Sea.

Down in Georgia and Mississippi they are telling themselves today that Sherman was a mighty smart man after all, for when he set out to destroy the richest part of the whole soul of the Confederacy he chose Georgia to do it in.

And Georgia was then, as it is now, capable of supporting a population of twenty millions of people. Its soil is the richest in the country, especially South Georgia.

How many readers of this journal realize that Georgia is the biggest State east of the Mississippi River? It is.

How many people realize that the increase in the value of farm crops in Georgia in the last ten years is greater by 20 per cent than that of any other State in the entire Old South? Twenty times as great, according to the map in Collier's Weekly, as the growth in Florida—twenty times as much money into the farmers' pocketbooks. All the Southern States show marvelous increase in the value of farm crops—but the queen of the Old South is Georgia.

The Atlantic Coast Line Railway, the Atlanta, Birmingham & Atlantic Railroad and the other through lines of transportation give Waycross and South Georgia the finest freight facilities in the South, wonderful advantages for shipping of fruits, early vegetables and garden truck, and at a freight rate 25 per cent lower than Florida. The land here is 137 feet above the level of the sea. Perfect drainage, pure air and no flood. Land values in Florida, a short distance from Senator Deen's Deenwood Farms, for instance, are selling at \$1,000 and upward per acre. Yet the soil is exactly the same and the water not as good. South Georgia lands are bound to increase in value by leaps and bounds just as soon as the settlers' rush begins to come in, and the quicker they come the more they will make by the advance. Potatoes here yield as high as \$350 per acre, on the Deen lands and right around Waycross. Corn yields as much as \$125 an acre. Pecan nuts \$40 to the tree, with about fifty trees to the acre. Cantaloupes and melons yield as high as \$400 an acre (this is due, of course, to the early fancy growth and the fast haul to the big cities). For the same reason cabbages yield from \$200 to \$300 an acre, peaches \$400 to \$500, onions as high as \$400, and celery \$700. Snap beans and tomatoes bring as much as \$300 and \$400 per acre, and Sea Island cotton sweeps to the front with easy cultivation yielding from \$50 to \$200 per acre.

Here's a picture taken in the dead of winter—photographed January 20th. No cold here, no storms, no droughts, no floods; all in the midst of a perfect climate and a glorious country.

We want settlers, growers of truck—small farmers. That's why this land is selling now at \$25 an acre; \$1 per acre down and 50c per acre per month. Two years from today you wouldn't sell it for \$200 per acre.

NOW LISTEN!

These farms are the Deenwood farms, 2 miles out from Waycross, Ga., the bravest little city in the South; absolutely prohibition, "went dry" twenty-five years ago; 14,000 population, 12 railroads—27 hours by fast freight from New York, which is the biggest big-price market for farm products and garden truck on the continent—and you beat Florida's freight rate by 25 per cent.

Now read what Senator Deen says, and remember even if he does weigh but a hundred pounds, 98 of it is backbone. He's the kind of a man to tie to. He's the kind of a man to buy land from. He's a farmer himself, and he's the farmer's friend. This is what he says:

"I want farmers, actual settlers on this land. If you are one, then I call to you to come here and settle with us. Give yourself and your family a chance here in the midst of health and happiness, where the people are living clean and right. Bumper crops, cultivation continuous, something growing every minute, money in all the time, and a top-notch market for what you raise. Look at our picture. There's a story in it, and a message for you. No crops anywhere to compare with ours here on Deenwood farms. I want a hundred settlers immediately.

"Now let me send you a sample of this soil; the regular run of the land as it lays. There's no picked sample about it. I give you my word for this. I want you to compare this soil. Show it to your government experiment station; show it to any expert. Send to Washington and get the government bulletins on this land of South Georgia.

SEE THIS SOIL — SEE IT!

Come, and bring the boys! If you can't come to Georgia, let me send Georgia up to you! A sample of the soil!



IT'S
THE
SOIL
THAT
DOES
IT

Compare it with anything in the Southwest, or the Far West, or the Northwest, or anywhere else.

I'll send you our prospectus, our comparative crop reports (not some big yield of some big year that makes a showing, but the regular average product). That's what counts. You'll be interested in our magnificent public schools, our colleges, our splendid hotels, the experimental station, our fine churches, guaranteed pure water, freedom from malaria, splendid hunting and abundance of game, cool nights in the hottest summer. And the soil sample! If you can't come at this time, I'll pick a farm for you, and I say on my honor that I'll give you the best there is up to the minute I have your letter.

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Best rust-resisting onion seed ever put on the market. Thoroughly tested by the largest onion growers. A tremendous cropper. No onion equals it for storage. Our customers in 1909 harvested over 800 bushels per acre. \$1.75 per pound, prepaid.



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D. HILL Evergreen Specialist
Box 230, Dundee, Illinois

(Continued from page 282.)

poor care. He has not found it necessary in his experience to fertilize the orchards under his care to any considerable extent, a fact which he attributes to the unproductiveness of the orchards in previous years. He believes, however, that, after the stored up plant food in the soil is exhausted, some fertilization will be necessary.

With regard to pruning and cultivation, he cautioned his hearers against cutting off the low limbs to enable them to cultivate close to the trees. The best fruit will be found growing upon these limbs and they are more easily sprayed and the fruit is more easily picked from them than from the high ones and he would never cut off the low limbs to enable him to cultivate close to the trees, preferring to adopt any kind of a system which would avoid this necessity in preference to clean culture at the cost of these lower limbs.

In closing his talk, Mr. Farrand expressed the opinion that with a proper renovation of the old orchards in the state, the Michigan apple product would be not only much larger, but much better in quality than that of the favorite fruit sections of the west, and that not in the Hood River Valley of Oregon, nor in the Yakima district of Washington, nor in the Grand Junction region of Colorado, but right here in Michigan will be found the land of opportunity for the apple grower.

THE DWARF APPLE.

The importance of the apple in a dwarf form is of interest to many, especially to those who have but a limited space for the growing of tree fruits but who wish to have apples among the fruits grown.

To the farmer who does not wish to have a commercial orchard, but who wishes to supply his own table with choice fruit the dwarf apple is of economic importance. To the city man who lives in the suburbs or suburban town and who enjoys taking care of a fruit garden the dwarf apple holds an important position, and the fruit from these trees excel in size, color and quality.

The apple as a dwarf bears much quicker than a standard of the same variety. Dwarf apples often bear the second year after planting or four years from the graft while standards seldom bear before six years and some varieties not until fifteen years of age. The fruits are generally of larger size, due to better care and to a larger amount of available food per apple and of better color for about the same reasons.

As the trees are comparatively small they can be sprayed, pruned and cared for much more easily than large trees, and, therefore, insects and diseases give less trouble than on standards. Dwarf trees can be planted ten feet apart while a standard tree should be planted at least 33 feet apart.

To make an apple tree dwarf it is only necessary to graft a cion of a standard apple such as a Jonathan, upon a root of an apple which in nature develops but a small top. The roots of such a tree can only furnish sufficient nourishment to grow a tree of similar size. A standard top, however, would outgrow the root unless severe pruning is resorted to. The Paradise crab apple which grows in France is especially adapted for this purpose as our common varieties of apples do well upon it and with careful pruning seldom grows over 10 to 12 feet across. Dwarf trees cost about the same as standard trees; 300 trees should be set to the acre, whereas 30 standards are sufficient for the same area.

Many gardens, suburban lots and similar locations are very often too small for standard trees that would be sufficiently large for several dwarf trees. Dwarf trees can also be planted along walls or fences and trained to nearly any shape, taking up but very little room and make a desirable screen for unsightly places.

The dwarf apple as a commercial venture has not been a success but for the small lot and garden it not only gives enjoyment to the grower but gives fruit of such size and quality as to make them a success from a money standpoint.

Dwarf trees are not as long lived as standards but often live to be 30 years of age, bearing, on the average, three pecks of fruit per year.

A word about pruning. A dwarf tree cannot be successfully grown unless great care is used in pruning. The trees should be headed very low, within a few inches of the ground, and encourage fruit spur production by pruning severely.

One-half to two-thirds of the yearly growth should be cut back annually. This keeps the tree from becoming too large for the small root, quickens fruitfulness and at the same time distributes fruit spurs over the entire tree surface.

Agri. Col., Mich.

O. I. GREGG.

GARDENING FOR THE TRADE.

Our annual population of summer resorters with their ever increasing numbers, whom we must feed from three to four months of the year, has compelled the adoption of market gardening as a special line of horticulture. It is a patronage exacting in requirements and correspondingly generous in expenditures. There is an educative feature in catering to this trade inasmuch as a fine discriminative taste asserts itself in the choice of vegetables.

Sweet corn is one of the items that must be just such and nothing else, and this favorite is the Black Mexican, with small ears, blackkerneled, deliciously sweet and tender. It is grown from successive plantings to last the season thru. Its especial devotees start back to their city homes in September with a bundle of ears, bespoke for delivery on the way to the depot, snugly tucked under the arm. One customer of the writer's declared there was no other corn fit to eat.

Lettuce, to be acceptable, must be brown and curly-leaved, such as we find in the Early Prize, All Cream, Tomhannock and Bronze Head, the last two possessing special merit. Of string beans cultivated for the trade, which says nay to all but yellow pods, there are several well worn white-seeded sorts on which we ring the changes. The advantage gained by using white varieties is that the left-over stock brings a second income for dry beans. Of the bush forms there is the trio of waxes, with prefixes as respectively, Davis, Michigan and White. When pole beans are preferred, we have them in the White Creaseback, Lazy Wife's and Dutch Case-knife. All are good and may safely be selected at random. Our canning factories, on the contrary, use green podded varieties, the seed of which is provided for the patrons.

Of all demands made by the appetite upon the early garden the most insistent and abiding is for green onions, and herein is seen nature's nicety in adjusting supply and demand as the ready-grown bulbs stretch up their crowns of green and exhale their garlic even from beneath the melting snow.

One of our truck gardeners who makes the onion a leader has worked out a routine of culture that gives him green stock for market practically all the year. The first requisite, of course, is the thoroly prepared bed as to fertility and fineness of texture. It is scarcely possible to get an excess of plant food and humus or to overtilt the soil. Before sowing the seed a liberal quantity of salt is worked into the drill to kill grubs, the worst enemy of the onion crop. When the plants are up large enough to handle, the first thinning and transplanting is done. As growth advances this process is repeated until the bulbs are large enough for market. There is never any waste of the thinned out plants. What are not reset are dried and reserved for planting the following spring. But the product from these starters is not his earliest crop. The first yield is derived from a sowing of seed made in September, which comes to the thinning stage before winter, and remaining in the ground, is up betimes to minister to the first hungry call for something green. So, year after year, is repeated the same round of culture with the ever-recurring results.

Oceana Co.

M. A. HOYT.

A new disease among pears has been noted in Belgium. The diseased fruit shows round brown spots, which increase in size until the greater part of the fruit is affected, after which it falls. In one instance the loss due to this fungus was great, fully one-half of the fruit being destroyed. Where the pears had been bagged they did not suffer from the fungus. Spraying with Bordeaux mixture it is believed will prevent the disease.

FREE TO FARMERS.

By special arrangement, Ratekin's big 1910 seed catalogue, with a sample of "Diamond Joe's Big White" seed corn that made 153 bushels per acre, will be mailed free to every reader of this paper who is interested in the crop he grows. This big book tells how to make the farm and garden pay. It's worth dollars to all who plant or sow. Write for it and mention this paper. The address is Ratekin's Seed House, Shenandoah, Iowa.

PLEASE MENTION THE MICHIGAN FARMER when you are writing to advertisers.

IT PAYS TO PLANT RIGHT.

There is a right way and a wrong way to plant. Soil conditions vary, even in adjoining fields, and no ironclad rule can be made to fit every condition. It is essential to have the land in proper condition for seeding, and no one will deny it. There is a time to sow and a time to reap, and the ruler of the universe has never yet failed to provide a time for both. However, some men get in such a hurry to seed that they think they cannot possibly wait another hour, so they get stampeded, mud in their crops and then wonder why their more successful neighbors get more bushels to the acre. Yes, it pays to plant right. It pays to have a good reliable grain drill to do the work—a drill that will not clog, choke or skip—a drill that will handle any size seed in any quantity desired—a drill that will sow all brands of commercial fertilizers, no matter how difficult to handle. That old, reliable grain drill, the Farmers' Favorite, manufactured by The American Seeding-Machine Company, Incorporated, Springfield, Ohio, is a drill that can be thoroughly relied upon to do the work of any farmer in any part of the world. Among the many styles and sizes of Farmers' Favorite Drills will be found drills exactly suited to the seeding conditions anywhere. This drill is guaranteed in such a way that the purchaser runs no risk. Send for the Farmers' Favorite catalogue. Go to your implement dealer and insist on looking over the Farmers' Favorite Drill.

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BEST IN THE WORLD

PRICES BELOW ALL OTHERS

I give a lot of new sorts for trial with every order I fill. A Grand Big Catalog illustrated with over 700 engravings of vegetables and flowers. Send yours and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Illinois

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FOR ORCHARD, LAWN and GARDEN.

From Grower to Planter—LOW PRICES.

Forty Years' Experience in well-known GREAT NURSERY CENTER.

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SEED CATALOG—Send us your name and address, and we will mail you free our new 1910 catalog of seed potatoes, seed oats, seed corn, alfalfa seed, in fact everything in seeds. MACE & MANSFIELD, Greenville, Ohio.

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On Strawberry, Raspberry, Blackberry, Currant and Grape Plants. 18th annual descriptive and illustrated wholesale and retail catalog FREE. A. R. WESTON & CO., R. D. 1, Bridgman, Mich.

PEACH TREES 4 and 5c, orchard size, Elberta, etc. Kansas Raspberries, \$8 per 1000. Catalog free. Woodbine Nurseries, W. A. ALLEN & SONS, Geneva, Ohio.

Peach Trees 3c, Cherry 12c and up. Apple, Pear, Plum, Quince, and all kinds of Trees and Berry Plants. Peach Blow Potatoes, B. P. R. Chickens and Eggs. Ct. Free. ERNST NURSERIES, Moscow, Ohio.

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Carefully grown, Leading Sorts. Send for 1910 list GEORGE E. STARR, Royal Oak, Michigan.

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Michigan Grown are the best for Michigan Planters. Healthy, finely rooted. Direct to you at great Money-Saving Prices. Handsome 1910 Catalog and price list FREE. Write to-day. CELERY CITY NURSERIES, Kalamazoo, Mich.

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Regenerated Swedish Select Oats. This oat has no competitor. It is in a class by itself. My seed is perfect, never wet. CURED UNDER HAY CAPS. Write for samples and prices. COLON C. LILLIE, Coopersville, Mich.

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Swedish Select Oats, Pedigreed Manchuria and Oderbrucker Barley, Golden Glow Corn, Rural New Yorker and White Victor Potatoes, Clover and Timothy Seed. Write for prices. J. P. BONZELET, Eden, Wis., Fond du Lac Co.

E. H. Hutchins, Choice pure bred seeds: corn, oats, barley, potatoes, alfalfa, etc. Commercial Fertilizers, high grade goods, shipped direct from factory. Fertilizer drills and planters. Box 108, Clayton, Lenawee Co., Mich.

ALFALFA SEED \$18.00 per cwt. on board cars at Dietz, Wyo. Bank ref. given. TOM ROGERS, Pearl, Mont.

Always mention the Michigan Farmer when writing to advertisers.

GRANGE

Our Motto—"The Farmer is of more consequence than the farm, and should be first improved."

THE MARCH PROGRAMS.

Suggestions for Second Meeting.

Fifteen-minute practice of new songs in Grange Melodies.

How the Grange plans to help farmers more and more.

Farm Business—IV. Rural law, (relating to line fences, contracts, liabilities, of employer and employee, etc.)

Instrumental music, to which all march about the hall.

Cookery—II. Cakes, candies, custards. Reading, "A Choice Cake."

Men vote on favorite variety of cake. Young people pass samples of home-made candies and give recipes.

ARE GRANGES AWARE?

There never was a time when the Grange had such powerful incentives and encouragements to apply itself to the promotion of bettered farming. The demand for staple food products, the prices offered for them, and the cry that a serious shortage is in sight—all these tend to put the man who is already on the farm in position to take his calling at high tide, providing he knows how. There is the rub—does he know how to farm to best advantage? Has he been awakened from the sleepy notion that anyone can plow and harrow, sow and reap? Such a hampering notion is part of his inheritance from the past. He must be awakened. He must be made to see his opportunity. He must be taught, line upon line, here a little, there a little. More often than not, he is past school age; and even if he is young, the common school is not yet equipped to fit him for farming to advantage. It remains for the Grange and kindred institutions to rouse and instruct him.

Do the rank and file of our Granges realize this open door of opportunity? Do they appreciate how Michigan is stirring in tardy recognition of her resources as an ideal fruit section? How she is becoming conscience-smitten at her low average yield in corn, potatoes and other common crops? How she is seeing that her horses, cattle, sheep and swine should be of higher grade? You who read this, who have attended farmers' institutes this winter, know these things well, and more. You know how the boys are coming to the front in corn study, under the stimulus of here and there an institute manager, a school commissioner, a Grange officer, or county Y. M. C. A. secretary. You have perhaps heard how well these boys follow instructions given them; you have looked into their eager faces on "contest day" and watched their interest; you have listened to the judge's prediction that in three years, perhaps in less time, they will outstrip their fathers.

But the institute, the "school of corn instruction," or the contest day comes but once or twice a year. The Grange you have twice a month. Are you using it for the actual help of your farmers who do not know how to farm the best they might? Are you enlisting the boys and girls in profitable crop experiments? Are you teaching your members how to keep farm and household accounts, so that they may know whether they are working at a loss or gain?

These things—and they are things that every Grange might do—are timely and most practical. The times are ripe for them. The Grange has the machinery set up and fitted most admirably to do this vital work for its members as no other institution can possibly do it for them just at this moment.

JENNIE BUELL.

AMONG THE LIVE GRANGES.

Benzie Co. Pomona recently held a good meeting in South Blaine Grange hall, with every Grange in the county represented. There were also visitors present from Manistee Co. where a number of new Granges have recently been organized. A class of four was initiated into the mysteries of the fifth degree.

East Eaton Grange.—National Deputy John Wilde organized a Grange at the Royston school in the eastern part of Eaton township, Eaton Co., Saturday evening, Feb. 19, with the following officers: Master, Ralph Newth; overseer, A. J. Dennison; lecturer, H. Thurman; steward, L. Sargent; ass't steward, Harold Grousbek; lady ass't steward, Mabel Newth; chaplain, Justin Alwood; treasurer, H. F. Martin; secretary, J. S. Newth; gate keeper, Chalmer Alwood.

Practical Topics discussed at last meeting of South Arm Grange, of Charlevoix

Co., included "Why the Boys Leave the Farm." Opinions differed, some believing the reason was that the boys were obliged to work too hard, and left because they believed they could get a living with less manual labor. Another was "Why Are Beets not more Extensively Raised in this Community?" The general belief was that the farmers had not learned to raise them in the easiest way; also that the work was harder to do, requiring more hand labor than any other crop. This Grange has installed a lighting system, for lighting its hall, consisting of two 500-candle-power lamps and a tank generator capable of generating 2,500 candle power.

Gratiot Patrons Consider National Legislative Measures.

At a recent meeting of Gratiot County Pomona, held with Ithaca Grange, the Patrons were favored with the presence of Bro. Holden, of Lansing, and State Lecturer Buell, who gave interesting, helpful talks. Interest centered in a letter from Congressman Dodds pledging support to postal savings banks and declaring for a local parcels post. Both measures were discussed and the Grange adopted resolutions favoring the postal savings bank bill now before congress and asking the congressman to give his support to a measure providing a general rural parcels post instead of a local post. The resolutions also declare that the Grange is opposed to any change in the present rate of postage on second-class mail matter. A class of six was given the fifth degree, and a conference, attended by 14 masters and lecturers, was held between the sessions.

Charlevoix County Pomona.

About 100 members representing seven Subordinate Granges met in Pomona session with Wilson Grange, Thursday, Feb. 17. After enjoying a most bountiful spread, in which there was no apparent sympathy manifested for the "boycotting" of any article of diet, the meeting was called to order in the fifth degree. The usual order of business was then taken up, the work being relieved from time to time by selections from the program previously prepared by the lecturer. The state speaker being unaccountably absent, volunteer remarks were called for, and several members responded in an interesting manner. The master withdrew as member of committee to draft constitution and by-laws and Bro. J. A. Newville was appointed in his stead. This committee is expected to report at next meeting. The discussion on the topic, "Why Farm Accounts Should be Kept," led by Bro. H. L. Olney, evoked considerable interest and several members agreed to keep a strict book-account during the coming season with at least a portion of their crops, and to submit a report of same at its close. The evening session was largely taken up with the reports of committees. Of the twelve Granges reporting, Deer Lake was declared the banner Grange for the quarter ending Jan. 1. Ironton Grange was a close second, having made the largest increase of membership during the quarter. The auditing committee reported cash on hand to the amount of \$91.75. Two applications for fifth degree membership were accepted and candidates were obligated. Grange closed in form to meet with Deer Lake Grange, Thursday, April 21.—Secretary.

Ohio Patrons Active.—Several new Grange halls have recently been erected and dedicated to the use of the order in Ohio. At the recent State Grange meeting Master Laylin reported forty new subordinates organized and eleven reorganized during the year. Two Pomona and two Juvenile Granges have also been organized. About 4,500 new members had been added since one year ago. The proverbial rainy day is well provided against by a comfortable balance of \$28,000 in the State Grange treasury. During a portion of the year two organizers were kept in the field, the expense being shared equally by the State and National Granges. The experiment proved very satisfactory. The field meetings were largely attended and afforded an excellent means for getting a hearing upon the principles and work of the order before the people of the state.

COMING EVENTS.

Pomona Meetings.

Emmett Co., at Harbor Springs, Friday, March 25.

Benzie Co., with Thompsonville Grange, Tuesday and Wednesday, May 31 and June 1.

District Lecturers' Conferences.

Dates have been assigned for Lecturers' Conferences, as below, in the hope that lecturers living within convenient reach of the several points named will endeavor to attend. Granges are asked to send their lecturers to these conferences, paying their necessary expenses. It is believed it will be of mutual good to the Grange and the lecturer to be represented in at least one of these conferences, which will consider successes and difficulties of the lecturer and train for better and more effective methods:

March 28, Lansing, Hotel Wentworth, 11:00 a. m.

March 29, Grand Rapids, Hotel Cody, 10:00 a. m.

March 30, Big Rapids, Court House, 10:00 a. m.

March 31, Cadillac, Court House, 10:00 a. m.

April 1, Clare, Calkins Hotel, 10:00 a. m.

April 2, Bay City, Y. M. C. A. Building, 10:00 a. m.

April 5, Port Huron, 10:00 a. m.

April 6, Flint, Court House, 10:00 a. m.

May 12, Kalamazoo, Western Normal School, 1:00 p. m.

Those in attendance at the Kalamazoo Conference are invited to remain for the Fourth Annual Rural Progress Lecture to be given that evening by Hon. Henry Wallace, of Iowa.

FARMERS' CLUBS

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

Associational Motto.—

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

Associational Sentiment.—

The farmer, he garners from the soil the primal wealth of nations.

HOLD JOINT INSTITUTE.

The institute held under the auspices of Wixom Grange and Farmers' Club at the K. O. T. M. hall, Feb. 10, was an interesting and instructive occasion. It was well attended, the hall being filled in the afternoon. The meeting was called to order by President Nicholson, after which Rev. Salves offered prayer. The president introduced the State Speaker, Mr. Taylor, his subject being "Improving Herd and Farm." Some of Mr. Taylor's thots that he left with us were, an ideal is essential, make the herd better each year, some read too much, it is better to read half the time and think the other half. Cultivation liberates moisture and kills weeds. Moisture is the most important article we get from the soil. Humus conserves moisture. Clovers furnish humus, brings up fertility from the subsoil and admit air. So long as the people are well fed our republic will continue. No question is so important as the bread and butter question; all patriotism and culture rest with the man in overalls and the wife in the kitchen; every dream of future Americanism rests on the soil. It is not ours; we only tend it for a few years—we have no right to depreciate the soil that our fathers cared for for us. In choosing cattle for the dairy take those that have a good dairy form. Patronize the sire that has the most good performers in his immediate family.

Mr. Taylor was followed by Mr. Stevens, who said, put your thot in practice. Choose sires like dam, if for dairy; if for breeding for beef, choose sire like sire. It was voted to omit the rest of the program, it being past the dinner hour.

The afternoon meeting was called to order by the president, who announced the program, which included several recitations and instrumental music. Mr. Clapp, of Northville, gave an interesting talk on soils, telling us the essentials for plant life and their sources. Also how to tell what the soil lacked and how to replace it. Mr. Taylor continued his address, pointing out how, while we are improving the herd, the herd would improve the farm and the work would improve the man.—Cor. Sec.

CLUB DISCUSSIONS.

Hold Club Institute.—February has been a full month for Lookingglass Valley Club. On the 10th an all-day institute was held at Macabee hall, Waconsta. The neighboring Club in Riley was invited, and the two Clubs began an acquaintance which promises to strengthen the work in this part of the county. Geo. A. Brown, professor of animal husbandry at M. A. C. was the speaker of the day, and much valuable information was gained from his talks on "Raising Skim-milk Calves" and "Care of the Farm Breeding Flock." Good music and an oyster dinner completed a perfect institute. Feb. 24 was sheep day, three flocks were reported on: First, 40 sheep; expense, \$85.40, returns, \$325.05; second, 34 sheep; expense, \$110.16; returns, \$237.28; third, 64 sheep; expense, \$285.12, returns, \$623.47. The subjects of binder twine and money value of good roads were ably discussed.

Meet with Neighboring Club.—March 2 the Club was invited to return the visit of the Riley Club. Thirty-four accepted and spent a day long to be remembered. Reception committees gave us cordial welcome. A sumptuous chicken-pie dinner was served and a fine program carried out. The subject of organizing the county was discussed, both Clubs being in favor of such an organization. At the March meeting the subject of local option will receive attention. Bel Maier, Reporter.

Have Oyster Dinner.—The regular meeting of the Hadley and Elba Farmers' Club was held at Hickory Ridge, the home of Mr. and Mrs. Robert J. Pierson, Feb. 17. An oyster dinner was served to 100 people, and we certainly had a very pleasant meeting. The program was short but spicy, consisting of recitations by Wm. Brewer and Martha Davenport, and music by Miss Sadie McLeod and others. Hickory Ridge is on the southern boundary of our Club territory, and some of the members drove over 10 miles, so it was necessary to close the meeting early. The next meeting will be at Pierson Stock Farm, the home of Mr. and Mrs. Dewey C. Pierson, who extend a cordial invitation to all their friends to meet with them March 17.—Mrs. C. P. Johnson.

The Old Country School.—At the beautiful home of Mr. and Mrs. W. L. Eldridge. Nearly the entire membership of the Indianfields Farmers' Club assembled Feb. 17, together with a number of visitors, to enjoy the regular monthly meeting and some special features of entertainment which had been provided. After a sumptuous dinner was served, it was noticed that one of the members began to arrange chairs and tables for some unusual program, and when a little later Mrs. J. M. Miller appeared as a teacher in an old-fashioned dress, with curls and bonnet, and rang a hand bell, a clapping of hands from the spectators followed, but when in trooped eight gentlemen and ladies of the Club dressed in school boy and girl fashion, and with their dinner pails, the laughing and clapping of hands was exhilarating. Then came the roll call to which each responded to fictitious names.

and the rollicking "Fair Song" was sung by the school. After this followed questions by the teacher, which the scholars answered with ready wit and humor. The natural history class was something that would make any sober person laugh, and when the water was passed it took one back to the old country school of long ago. When the spelling class of eight stalwart scholars lined up on the floor with their toes on a mark, and to hear them spell and mispell words, was certainly laughable. After this came the dinner hour, when they all got their pails and went to eating and cracking jokes, the teacher then rang the bell and all took their seats in as decorous a manner as could be expected. Following this came the program by the school. Billie Johnson, nee Willie Park, read a diary of 1909 which was very comical. Rettie Kitclay, nee Mrs. B. H. Smith, appeared in an old shawl and bonnet and recited "Auntie Doleful." Sally Dolittle, nee Margaret Park, recited "Angels Can do no More," and responded to an encore. "The face on the Barroom Floor" was given by Jack Washington, nee Amos Andrews, Jr., who responded to an encore. "Juniata" was sung by the school. "Doughnutting Time" was spoken by Jimmie Poor, nee J. M. Miller. Professor Jack Washington and Samuel Dolittle played two fine selections. "Nobody's Child" was a fine reading by Mollie Baun, nee Mrs. A. Andrews. Rose Milligan, nee Gladys Miller, showed them how to "Catch a Beau on Broadway." The "Dutchman's Snake" was recited by Billie Johnson, nee Willie Park, who responded to an encore. The four school boys then sang the "Parody of the Old Oaken Bucken." The last, but not the least of the old country school play, was when Samuel Dolittle, nee B. H. Smith, came forward and read the valedictory. The school closed with many congratulations by the members of the Club, who all agreed it was one of the most enjoyable meetings our Club had ever had. At a late hour the company left for their homes, hoping that all would meet at the home of Mr. and Mrs. George Carpenter the third Thursday in March.—Mrs. J. M. Miller, Cor. Sec.

How to Improve Our Roads.—The February meeting of the Ingham County Farmers' Club was held at Brookside with Mr. and Mrs. B. L. Green. The house was prettily decorated with flags and the little flags each side of the driveway made a pleasing picture upon the snow. Miss Beaumont gave a paper upon "Things Washington Never Saw," confining her remarks to educational lines. This was freely discussed and the second question of the day was "How to Improve our Road System," by R. J. Bullen. He emphasized the use of the King drag, especially after a rain. Keep the roadbed higher in the middle, get rid of the water and keep the ruts out, and the roads will take care of themselves. All realize the less expense of hauling produce to market over good roads.

Will Hold Temperance Meeting.—The year books were ready for distribution and the next meeting will be a temperance mass meeting at the court house in Mason. It will be an afternoon meeting only. Ingham county votes on local option at the spring election and the following resolution was presented by J. H. Shafer and unanimously adopted. "This Club stands for clean government, the economical administration of government affairs, temperance, morality and the best type of American citizenship."—Mrs. Tanswell, Cor. Sec.

The Washington Center Farmers' Club held its February meeting with Mr. and Mrs. O. J. Campbell, with a good attendance. Roll call was responded to by "Things George Washington Never Saw." Music for the day was furnished by the Club and the question box was of more than usual interest. Several new members were installed from the visitors present. The principal topics for discussion were, "Securing and Caring for Seed Corn," "The Farmer's Problems," "The Value of Teaching a Child to Save," and the "Possibilities in an Old Apple Tree." Each topic was well discussed and many valuable suggestions offered. This Club mourns the loss of its oldest member, William Long, who was nearly 83 years of age. He was present and took part in the discussions at the January meeting. Mr. Long has been a resident of Washington township for nearly fifty years and has always taken an active part in everything that would advance the moral, social and religious life in this section. One of the earliest pioneers, he served his day and generation well, and departed this life Feb. 21, 1910. The next meeting will be held March 10, with Mr. and Mrs. George Hill.

Hold Temperance Meeting.—The Assyria Farmers' Club held their first meeting of the new year at the hospitable farm home of Mr. and Mrs. H. L. Thompson. Owing to the delightful weather and fine sleighing, nearly 170 were in attendance. The forenoon session was carried out in the usual manner, after which an excellent Club dinner was served to which everyone did justice. The program for the afternoon opened with the Club singing "America." Next was a fine instrumental solo by Emma Smith, Emma Hill's select reading, "The Country's Attitude Toward Life's Refinement," was fine, showing the difference between the farmers of pioneer days and the present time, the farmer of today not being the isolated being of a century ago for, owing to the telephone and rural free delivery he is enabled to talk fluently on the current events of the day. L. Reams led in the discussion, "Does Local Option make Taxes Higher?" This topic caused quite a spirited discussion in which G. Gibson, A. F. Mead, A. T. Shepard, Chas. Tuckerman and others participated. It was decided it would make taxes lower, and break up many places from home to vice and prisons. After some well rendered instrumental numbers, the program was closed in a fitting manner by Mr. and Mrs. A. F. Mead, of the Penfield Farmers' Club, who sang in their delightful manner, "Where is My Wandering Boy Tonight."—Mrs. John Hill, Reporter.

MARKETS

DETROIT WHOLESALE MARKETS.

March 10, 1910.
Grains and Seeds.

Wheat.—This has been a bearish week in the wheat pit. Prices slumped several cents per bushel and from last Thursday until Tuesday of this week, holders of the grain were at the mercy of the buyers. The cause of the drop was that farmers are now beginning to get their holdings to the primary elevators, and the crop reports have generally been favorable to the growing crop, besides millers have their bins filled and the demand for flour is slower than it has been since the strong demand began last fall. The bulls tried to get a grip on the situation by scaring buyers with news of the effect of the recent cold wave but the news was early contradicted. This sentiment was much changed on Tuesday, however, when the government crop report came in showing that the farmers held about 10,000,000 bu. less of the grain than the trade counted upon. It also claimed that there was damage to the crop in the southwest and that Kansas and Nebraska would not be able to produce an average crop for the injury that the crop has already sustained. This news caught many of the buyers sold short and there was a hustle to cover with the result that a bullish feeling rapidly took hold of the trade and values advanced a little. Little attention is being given the foreign situation since the home crop is the all important consideration just now. One year ago the price for No. 2 red wheat was \$1.20 1/2c per bu. Quotations for the past week are:

| | No. 2 | No. 1 | Red. | White. | May. | July. |
|-----------|----------|----------|----------|----------|------|-------|
| Thursday | 1.20 1/2 | 1.20 1/2 | 1.21 1/2 | 1.07 1/2 | | |
| Friday | 1.19 1/2 | 1.19 1/2 | 1.20 1/2 | 1.07 1/2 | | |
| Saturday | 1.18 1/2 | 1.18 1/2 | 1.19 1/2 | 1.06 1/2 | | |
| Monday | 1.16 1/2 | 1.16 1/2 | 1.17 1/2 | 1.05 1/2 | | |
| Tuesday | 1.17 | 1.17 | 1.18 | 1.07 | | |
| Wednesday | 1.18 1/2 | 1.18 1/2 | 1.20 | 1.08 1/2 | | |

Corn.—Corn prices suffered the same decline as wheat values. The bears worked the market hard and succeeded in getting a margin of over three cents between the figures of this week and those of a week ago. But the government report gave this market a support that brought the bulls back into temporary power again, if not for a considerable time, since it showed the farmers to have far less of the grain on their hands than was expected. The greatest strength was in the cash grain. One year ago the price for No. 3 corn was 67 1/2c per bu. Quotations for the week are:

| | No. 3 | No. 3 |
|-----------|---------|--------|
| | Yellow. | White. |
| Thursday | 61 1/2 | 62 1/2 |
| Friday | 61 1/2 | 62 1/2 |
| Saturday | 61 | 62 |
| Monday | 60 | 61 |
| Tuesday | 59 1/2 | 60 1/2 |
| Wednesday | 61 | 62 |

Oats.—Liquidation and short selling weakened this market, as it did the others, during the early days of the month and prices fell off some but showing less margin here than for corn and wheat. The government report showed 36.1 per cent of the crop in the farmers' hands, or, in figures, 363,159,000 bushels. This was less than the brokers thought they were holding, which caused the stronger feeling to pervade the pit. One year ago the price for No. 3 oats was 56 1/2c per bu. Quotations for the week are:

| | Standard. | No. 3 |
|-----------|-----------|---------|
| | | Yellow. |
| Thursday | 48 | 47 1/2 |
| Friday | 47 1/2 | 47 1/2 |
| Saturday | 47 | 46 1/2 |
| Monday | 47 1/2 | 46 1/2 |
| Tuesday | 47 1/2 | 46 1/2 |
| Wednesday | 47 1/2 | 47 |

Beans.—There is practically no demand for beans and the conditions of the trade are no different than they have been for a number of weeks back. The quotations given below are only nominal. They are:

| | Cash. | March. |
|-----------|--------|--------|
| Thursday | \$2.15 | \$2.17 |
| Friday | 2.15 | 2.17 |
| Saturday | 2.15 | 2.17 |
| Monday | 2.15 | 2.17 |
| Tuesday | 2.15 | 2.17 |
| Wednesday | 2.15 | 2.17 |

Cloverseed.—The cloverseed market is active. Prices have moved down considerably during the week as the quotations below witness. Alsike is off 25c from the quotations of last week. The farming sections are demanding seed for seeding purposes. A year ago prime spot was selling at \$5.35 and alsike at \$8.00 per bu. Quotations for the past week are:

| | Prime Spot. | Mar. | Alsike. |
|-----------|-------------|--------|---------|
| Thursday | \$8.10 | \$8.05 | \$7.50 |
| Friday | 8.00 | 7.85 | 7.25 |
| Saturday | 7.75 | 7.75 | 7.25 |
| Monday | 7.65 | 7.65 | 7.25 |
| Tuesday | 7.60 | 7.60 | 7.25 |
| Wednesday | 7.75 | 7.75 | 7.25 |

Rye.—Market dull and easy. No. 1 is quoted at 82 1/2c per bu., which is a decline of 1c.

Visible Supply of Grain.

| | This week. | Last week. |
|--------|------------|------------|
| Wheat | 25,783,000 | 25,516,000 |
| Corn | 14,357,000 | 13,481,000 |
| Oats | 9,039,000 | 8,740,000 |
| Rye | 734,000 | 771,000 |
| Barley | 2,917,000 | 2,873,000 |

Flour, Feed, Provisions, Etc.

Flour.—The flour situation is changed and a slow demand with lower prices are characteristic of the trade this week: Quotations as follows:

| | |
|-----------------|--|
| Clear | 5.80 |
| Straight | 5.80 |
| Patent Michigan | 6.15 |
| Ordinary Patent | 5.95 |
| Hay and Straw. | Prices unchanged. |
| Quotations are: | No. 1 timothy, new, \$17.50@18; No. 2 timothy, \$16.50@17; clover, mixed, \$16.50@17; rye straw, \$8.50; wheat and oat straw, \$7 per ton. |

Feed.—Bran and corn meal are lower, other grades steady. Carlot prices on track: Bran, \$27 per ton; coarse mid-

dlings, \$27; fine middlings, \$30; cracked corn, \$28; coarse corn meal, \$27; corn and oat chop, \$25 per ton.

Potatoes.—The stock of potatoes is ample. Demand fair and market easy at unchanged quotations. Michigan grown are selling in car lots at 30@32c per bu. **Provisions.**—Family pork, \$26.50@27.50; mess pork, \$25.50; medium clear, \$26.50@27.50; pure lard, 15 1/4c; bacon, 18@18 1/2c; shoulders, 13 1/2c; smoked hams, 17@17 1/2c; picnic hams, 12 1/2@13c.

Hides.—No. 1 cured, 10c; No. 2 cured, 9c; No. 1 bulls, 8c; No. 1 green calf, 14c; No. 2 green calf, 13c; No. 1 cured calf, 15c; No. 2 cured calf, 14c; No. 1 horsehides, \$3.50; No. 2 horsehides, \$2.50; sheepskins, as to wool, 50c@52.

Dairy and Poultry Products.

Butter.—This has been a quiet week in the butter deal and the situation is not counted as being so firm as a week ago, although the prices are placed at the same level except for dairy goods, which are lower. Quotations are: Extra creamery, 31c per lb; first do., 30c; dairy, 21c; packing stock, 20c.

Eggs.—There was a slump in the receipts of eggs this past week and because of the heavy demand prices went up, the quotations being 2c above the figure of a week ago. It is 23 1/2c per dozen for fresh receipts, cases included.

Poultry.—A falling off in demand has put poultry prices down a little but the trade is firm on the new basis. The offerings are small. Following are the quotations: Live.—Spring chickens, 16c; hens, 16c; geese, 14c; turkeys, 18c. Dressed.—Chickens, 17c; hens, 17c; ducks, 18@19c; geese, 15@18c; turkeys, 20@23c.

Cheese.—Michigan, late made, 15@15 1/2c; Michigan, fall made, 16 1/2@17c; York state, 18 1/2c; Limburger, Wisconsin, 18c, New York, 19c; bricks, 18 1/2@19c; Swiss, domestic block, 20c; Swiss loaf, 22@23c.

Calves.—Higher. Choice to fancy, 11 1/2@12c; ordinary, 10@11c per lb.

Fruits and Vegetables.

Apples.—Market more active. Spy, \$3.50 @4; Baldwin, \$2.50@3; common, \$1.50@2.50 per bbl.

Cranberries.—Cape Cod berries selling at \$2 per bu.

Onions.—Domestic, 70@75c per bu; Spanish, \$1.25 per crate.

Cabbage.—\$1.75@2 per bbl.

Vegetables.—Beets, 60c per bu; brussels sprouts, 20c per qt; carrots, 50c per bu; cauliflower, \$1.75@2 per bu; celery, 35@40c per doz; eggplant, \$1.25@2.50 doz; green onions, 12 1/2c per doz; green peppers, 60c per bu; lettuce, hothouse, 12@13c per lb; mint, 25c per doz; parsley, 20c per doz; radishes, 25c per doz; spinach, 70@75c per bu; turnips, 60c per bu; watercress, 35c per doz; wax beans, \$5 per bu; pieplant, 50c per doz.

OTHER MARKETS.

Grand Rapids.

The potato situation grows worse, rather than better, as the spring advances. Prices are off again, and seem likely now to go still lower until they will not bring enough to pay freight charges to outside markets. The prices paid this morning (Tuesday) are as follows: In Grand Rapids district, 20c; at Big Rapids and Cadillac, 18c; in Traverse City district, 16c. Prices, as usual, are a little better in the Greenville section, ranging from 24@25c. A. G. Kornhurst, of the Loveland & Hinyan Co., estimates the total shipments of the 1909 crop out of Michigan to date at only 55 per cent, which shows an enormous amount of stock yet to move and with the outside territory to be reached steadily closing in as the season advances. To prove that shipments have been light, take this one instance: In normal years the five shipping stations between Muskegon and White Cloud send out 400 cars. This year's shipments have been two cars. Potatoes brought 40c at the opening of the season last fall, and prices since that time have steadily fallen off.

Dealers are paying the country trade 20c for fresh eggs, a drop of 2c. Dairy butter is unchanged at 25c, creamery at 30c. Dressed hogs are higher, bringing 12 1/2c. Poultry is firm and scarce, prices for dressed stock running as follows: Turkeys, 18@20c; chickens, 16@17c; hens, 15@16c; ducks, 16@17c; broilers, 1 1/4 to 2 lbs. each, 30@32c. Grain prices are lower, wheat now bringing \$1.12; corn 60c; oats 47c. Prices paid for vegetables are as follows: Vegetable oysters, 20c; radishes, 20c; turnips, 40c; parsnips, 60c; cabbage, 60c doz; lettuce, 9@10c; pieplant, 8c lb.

New York.

Butter.—Creamery goods steady with last week. Western factory firsts, 22@23 1/2c; creamery specials, 33c.

Eggs.—There are heavy offerings of fresh eggs. Demand is large but stocks are pushing values down. Trade is active. Western firsts quoted at 22 1/2@23c per doz; do. seconds, 22c.

Poultry.—Dressed, weak, with prices on a par with those of a week ago. Western chickens, broilers, 16@17c; fowls, 14@18 1/2c; turkeys, 18@25c.

Chicago.

Wheat.—No. 2 red, \$1.16@1.19; May, \$1.12 1/2; July, \$1.05 1/2.

Corn.—No. 3, 57 1/2@58 1/2; May, 62 1/2; July, 64 1/2c per bu.

Oats.—No. 3 white, 43 1/2@45 1/2c; May, 44 1/2c; July, 42 1/2c.

Butter.—The advance a week ago has been maintained and the market continues steady at the quotations. They are: Creameries, 26@31c; dairies, 21@25c.

Eggs.—Increasing receipts and rather indifferent demand have brought further reductions in prices. Prime firsts, 24c; firsts, 23c; at mark, cases included, 22@23c per doz.

Hay and Straw.—Hay strong at former values, while straw is unchanged. Quotations: Timothy, choice, \$18.50@19; No. 1, \$17@18; No. 2 and No. 1 mixed, \$16@17; No. 3 and No. 2 mixed, \$12@13.50; rye straw, \$8.50@9.50; oat straw, \$7.50@8; wheat straw, \$7@7.50.

Potatoes.—The deal is unchanged and steady at former prices. Choice to fancy

quoted at 38@40c per bu; fair to good, 33@36c.

Beans.—Common beans lower; red kidney same as a week ago. Choice hand-picked, \$2.20 per bu; fair to good, \$2.15; red kidneys, \$2.80@3.10.

Boston.

Wool.—The attention given old wool is practically faded away and the interest of the dealers is entirely in the west where the crop of the southwestern states is now beginning to move toward the centers. Prices asked by the flockmasters are high and it appears from the stand they are taking that they will, in all probability, realize, for in many cases agents are meeting them on the sellers' grounds. Buyers are urging contracts usually to the advantage of the growers. The following are the leading quotations for domestic grades: Ohio and Pennsylvania fleeces—No. 1 washed, 40@41c; delaine washed, 39@40c; XX, 37@38c; half-blood combed, 36@37c; three-eighths-blood combed, 36@37c; quarter-blood combed, 35c; delaine unwashed, 29@30c; fine unwashed, 27@28c. Michigan, Wisconsin and New York fleeces—Fine unwashed, 25@26c; delaine unwashed, 31@32c; half-blood unwashed, 35@36c. Kentucky, Indiana and Missouri—Three-eighths-blood, 36@37c; quarter-blood, 35@36c.

Elgin.

Butter.—Market firm at 31c per lb., which is the quotation of a week ago. The sales for the week amounted to 432,900 lbs., compared with 433,600 for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

March 7, 1910.
(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of sale stock here today as follows: Cattle, 145 loads; hogs, 8,000; sheep and lambs, 13,000; calves, 1,600.

We had a good brisk trade in the cattle division today on all kinds. There were no real prime cattle here but we had a few that sold as high as \$7.35. We think the cattle trade will improve from now on and look for considerably higher prices before we get any lower prices. If the receipts in Chicago are not too heavy we can hold our market all right. Fresh cows and springers sold about the same as last week.

We quote: Best export steers, \$7.10@7.35; best 1,200 to 1,300-lb. shipping steers, \$6.75@7; best 1,100 to 1,200-lb. do., \$6.25@6.50; medium 1,050 to 1,100-lb. butcher steers, \$5.75@6; light butcher steers, \$5.50@5.75; best fat cows, \$5.25@5.75; fair to good do., \$4.75@5; trimmers, \$3@3.25; best fat heifers, \$6@6.25; fair to good do., \$5.25@5.50; common do., \$4.75@5; best feeding steers, 950 to 1,000 lbs., \$4.75@5; do. 800 to 900 lbs., \$4.60@4.75; 700 to 750-lb. dehorned stockers, \$4.25@4.50; 600 to 650-lb. do., \$4@4.25; little common stockers, \$3.50@3.75; best bulls, \$5.50@5.75; bologna bulls, \$4.50@5; stock bulls, \$4@4.25; best fresh cows and springers, \$5.50@5.75; fair to good do., \$4.50@5; common do., \$2.50@4.

The hog market opened strong 10@15c higher than Saturday's best time and closed strong at the opening with a good clearance. The prospects look fair for the near future.

We quote: Mixed, medium and heavy, \$10.40@10.45; best yorkers, \$10.35@10.40; light yorkers, \$10@10.25; pigs, about 10c; roughs, \$9.50@9.60; stags, \$7.50@8.25.

The lamb market this morning opened active with most of the best lambs selling at \$9.50@9.60. The market closed firm, and if the receipts are not too heavy the balance of the week we look for some higher prices.

We quote: Best lambs, \$9.50@9.60; fair to good, \$9@9.50; culls, \$8.50@9; skin culls, \$7@7.50; yearlings, \$8.75@9; wethers, \$7.75@8; ewes, \$7@7.50; cull sheep, \$4@6.25; best calves, \$10@10.50; fair to good do., \$9@9.75; cull to common, \$7.50@8.50; heavy, \$4@5.50.

Chicago.

March 7, 1910.
Cattle. Hogs. Sheep.
Received today 23,000 28,000 14,000
Same day last year, 24,771 46,701 17,400
Received last week, 58,141 110,436 44,204
Same week last year, 50,145 182,092 63,691

Another week opens today, and cattle are having a fair sale at substantially unchanged prices, although there is less urgency in the demand for the cheaper class than of late. There is a lack of fancy beefs, which are quotable at \$8@8.25. Hogs are in limited supply and in strong demand at advances of 15c, values reaching still another high record. There are rumors of \$10.25 being paid, and there was a sale of part of a load at \$10.30, with regular sales at \$9.75@10.10 for light packing and selected shipping hogs averaging 140 to 195 lbs., heavy packing and selected shipping hogs averaging 255 to 350 lbs going at \$9.85@10.20 and mixed packing and medium butcher weights averaging 195 to 250 lbs. at \$9.80@10.17 1/2. Stags sold at \$10@10.60, boars at \$6@6.50 and pigs at \$8.75@9.80. Sheep and lambs were scarce and higher than ever, lambs selling at \$6.75@9.50. Colorados sold at the top, the rise being 10c. Wethers sold at \$7@8.45, ewes being salable at \$4@8.10, bucks and stags at \$5@6.25 and yearlings at \$8@8.75. Feeding and shearing lambs were salable at \$7.50@8.35 and clipped lambs at \$8.25@8.50.

Cattle made further high price records for the year during the past week, moderate receipts meeting with a large local and shipping demand, so that by Wednesday sales of steers, cows, heifers and bulls were 15@25c higher than at the close of the preceding week. The long predicted scarcity and booming prices are taking place already, and further advances may be expected. A set-back by Thursday did not cut much figure, for buyers are apt to do their principal buying during the first half of the week except when unable to do so from lack of supplies. Beef steers sold during the week largely at \$5.75@7.50, the poorer class of light steers selling at \$4.80@5.80 and the best grade of heavy shipping cat-

tle at \$7.50@8.25. Cattle that were really good went above \$7, the class selling at \$6@7 being medium in grading. Local packers and city butchers got a great many 900 to 1,100-lb. steers on the feeder order at \$5.75@6.35, and their condition served to cause a sharp advance in stockers and feeders, particularly in feeders, which had a big demand at \$5.35@6.25, while a Pennsylvania buyer had the nerve to pay \$6.60 for 18 fancy feeders that tipped the scales at 1,127 lbs. These high-priced feeders have plenty of "kill" in them, and their buyers plan to give them a quick feed, depending on sending them back as prime heavy beefs in a short time, when they hope to receive high prices. Stockers sold at \$3.50@5.50. The highest price paid for feeders last year was \$5.85, and in 1908 the top was \$6.05. Cows and heifers were active last week at \$3.80@6.75, canners and cutters being good sellers at \$2.50@3.75, while bulls were active and higher at \$3.60@5.85. Calves had free outlet at \$3.75@10 per 100 lbs., the demand being mainly for the better class of light vealers selling at \$9 and upward. Milkers and springers were fairly active and firm at \$25@65 each.

Hogs passed a memorable week, small supplies and a big local and shipping demand resulting in sending prime heavy barrows up to \$10.10 per 100 lbs. There had been numerous bets made that February would see 10 hogs, and the bettors on this price won "by the skin of the teeth," that figure being paid on Monday afternoon, the last day of the month, for a consignment of prime heavy barrows. On that day only two sales were made above \$9.90, one of these being at \$9.92 1/2 to a speculator, and he resold them the same day for \$9.90. A break in prices later in the week created no particular surprise, it being natural after the recent sudden great boom in hogs. Eastern shippers have been large purchasers of the better class of hogs, and they are expected to continue good customers, as eastern supplies are known to be nearly exhausted. Provisions have had great advances, sharing in the great rise in hogs, which was almost inevitable, with Chicago stocks of provisions on March 1 down to 81,352,226 lbs., compared with 75,601,109 lbs. a month ago and 148,998,356 lbs. a year ago. The present situation is unparalleled, with almost a famine in the hog supply, and farmers should lose no time in breeding as many pigs as possible, for money cannot be made any faster.

Sheep and lamb receipts have continued on a limited scale for still another week, and sellers obtained very much higher prices, even for the poorer consignments, than in former years, although buyers at different times resisted the efforts of owners to insist upon full prices. Their resistance was effectual in a number of instances, and this was especially the case so far as the less attractive offerings were concerned, while even the choicer flocks of lambs were apt to go at lower figures. There was a difference of 75c@1 per 100 lbs. between woolled and shorn flocks, with the latter forming an increasing percentage of the receipts. On several recent days the average quality of the offerings has been too poor to meet with the approval of buyers, and it was evident that many sheepmen were hurrying their holdings to market before finishing them properly, owing to the dearthness of feed. Doubtless, they made good profits by doing so, but profits would be much increased by holding until full maturity.

It is probable that the 35 per cent reduction from 1908 figures in the receipts of hogs at the principal western points this year fairly measures the deficiency in the hog "crop," and similar reductions in marketings for the remainder of the year may be looked for. In former years hogs have been marketed in especially large numbers around the first of March, as farm renters move the first of March, as a rule, and cash in their hogs prior to moving. In other years hogs by thousands have been contracted by country shippers for March delivery, but this season high prices drew swine to market prematurely. That the hogs are not in the country is evident, and it is stated that Pacific coast buyers are taking hogs within 100 miles of Missouri river markets, and paying Kansas City, Omaha and Sioux City prices. Buying hogs in the Chicago market for shipment to Detroit and Cleveland has been conspicuous recently, indicating that Michigan and Ohio are at last bare of supplies. Buffalo is poorly supplied and has to buy in Chicago.

E. G. Stephens, from Vermillion county, Illinois, marketed a bunch of fat ewes in the Chicago stock yards recently that brot \$6.80 per 100 lbs. He purchased them on the Chicago market about four months ago at \$2.25 per 100 lbs., and since then clipped them. The price he received for the ewes shows what liberal profits are obtained these times by sheepmen who thoroughly understand the business.

S. C. Claggett, of Lexington, Illinois, says there is only one hog in that section where in former years there were ten, and as farmers have plenty of money, they are taking their own time in marketing their small holdings. About half the usual number of cattle are on feed, with a very marked scarcity of butcher stock.

During the recent combination sale of harness horses at Chicago many animals were sold at auction for \$400 to \$900. Iowa and Illinois breeders were conspicuous among the buyers, particularly for stallions and brood mares, and eastern horsemen purchased numerous horses with race records. A two-year-old filly brot \$600.

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THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

March 10, 1910.

Cattle.

Receipts, 1,561. Good grades steady to 10c higher. Bulls steady; common butchers 10@15c lower; common cow stuff 15@20c lower.

We quote: Extra dry-fed steers and heifers, \$6@6.50; steers and heifers, 1,000 to 1,200, \$5.75@6; steers and heifers, 800 to 1,000, \$5.50@5.90; steers and heifers that are fat, 500 to 700, \$5@5.25; choice fat cows, \$5; good fat cows, \$4.50@4.75; common cows, \$3.25@3.50; canners, \$3@3.25; choice heavy bulls, \$5.25; fair to good bolognas, bulls, \$4.75@5; stock bulls, \$4@4.25; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Spicer & R. sold Mich. B. Co. 12 cows av 821 at \$4.85, 3 bulls av 1,233 at \$5, 32 steers av 860 at \$5.50; to Breitenback Bros. 6 do av 855 at \$5.75, 3 cows av 1,066 at \$4.50; to Newton B. Co. 9 steers av 1,260 at \$6.25, 20 do av 900 at \$6, 4 cows av 1,012 at \$4.75; to Rehfuß 1 bull weighing 2,000 at \$5.75, 7 cows and bulls av 921 at \$4.25; to Bresnahan 14 butchers av 559 at \$4.50; to Hammond, S. & Co. 1 cow weighing 780 at \$4; to Sullivan P. Co. 2 bulls av 1,435 at \$5.25; to LaBoe 13 steers and heifers av 711 at \$5.40; to Goodwin 11 do av 702 at \$5.40; to Regan 4 heifers av 342 at \$4.25; to Fry 4 cows av 1,032 at \$4.40; to Breitenback Bros. 2 do av 955 at \$3.50; to Newton B. Co. 17 steers av 900 at \$5.50, 1 cow weighing 900 at \$3; to Sullivan P. Co. 1 bull weighing 1,050 at \$4.50, 2 cows av 840 at \$3.25, 2 do av 1,165 at \$5; to Rattkowsky 2 heifers av 350 at \$4.

Bishop, B. & H. sold Hammond, S. & Co. 5 cows av 974 at \$4.50, 3 steers av 893 at \$5.75, 2 cows av 1,095 at \$3.50, 15 steers av 834 at \$5.90; to Goose 5 cows av 1,010 at \$3.40; to Mich. B. Co. 8 steers av 972 at \$5.75, 3 butchers av 643 at \$4.75, 1 cow weighing 1,030 at \$3.75; to Heinrich 19 steers av 909 at \$5.75; to Sullivan P. Co. 12 butchers av 800 at \$4.85, 3 steers av 823 at \$5.50; to Kamman 2 cows av 890 at \$3, 6 do av 1,166 at \$5; to Zoehner Bros. 5 do av 1,076 at \$4.75, 2 do av 860 at \$4.75, 1 steer weighing 1,000 at \$5.50, 5 do av 950 at \$6, 1 bull weighing 1,120 at \$5.50, 1 do weighing 1,080 at \$5; to Hammond, S. & Co. 3 cows av 990 at \$3.50, 5 do av 1,000 at \$4.50, 1 heifer weighing 830 at \$5, 5 bulls av 1,400 at \$5.25, 3 steers av 873 at \$5.75, 7 cows av 927 at \$3.50, 9 butchers av 610 at \$4.75; to Sullivan P. Co. 3 cows av 900 at \$4, 6 steers av 963 at \$5.75; to Fronn 3 cows av 947 at \$3.90, 2 do av 910 at \$4.25; to Goose 2 do av 1,020 at \$3.90; to Sullivan P. Co. 4 bulls av 1,112 at \$4.85; to Breitenback Bros. 12 butchers av 625 at \$5.10; to Thompson Bros. 5 cows av 1,034 at \$3.60; to Sullivan P. Co. 1 bull weighing 1,680 at \$5.25; to Newton B. Co. 3 cows av 1,083 at \$5, 4 heifers av 737 at \$4.25; to Kamman B. Co. 6 steers av 690 at \$5, 7 do av 811 at \$5.60; to Rehfuß 4 cows av 1,155 at \$4.40; to Sullivan P. Co. 5 do av 1,020 at \$4, 1 do weighing 940 at \$3; to Zoehner Bros. 20 steers av 1,144 at \$6.25, 13 do av 970 at \$5.75, 2 cows av 1,030 at \$5, 2 do av 1,075 at \$4.75, 9 steers av 997 at \$6; to Sullivan P. Co. 5 bulls av 1,000 at \$4.75; to Hammond, S. & Co. 12 steers av 1,140 at \$6, 2 do av 1,020 at \$5.50.

Roe Com. Co. sold Sullivan P. Co. 18 steers av 880 at \$5.85, 2 cows av 900 at \$3.25, 5 butchers av 704 at \$4.75, 6 steers av 1,080 at \$5.75, 2 cows av 1,000 at \$5, 1 cow weighing 770 at \$2.50; to Mich. B. Co. 9 steers av 870 at \$5.50, 6 cows av 963 at \$4.50, 15 do av 971 at \$4, 2 do av 1,235 at \$4.75, 1 do weighing 820 at \$3, 29 steers av 1,014 at \$6; to Sullivan P. Co. 17 do av 925 at \$6.10.

Haley & M. sold Kamman 6 butchers av 840 at \$4.50, 10 steers av 680 at \$5, 3 butchers av 763 at \$5, 5 do av 566 at \$4.35; to Sullivan P. Co. 2 cows av 1,025 at \$4, 1 do weighing 740 at \$3.60, 1 steer weighing 1,230 at \$5.50, 1 bull weighing 1,200 at \$5, to Goose 1 cow weighing 1,130 at \$3.90; to Coke 4 butchers av 912 at \$5, 1 bull weighing 750 at \$4, 7 steers av 950 at \$6, 3 do av 897 at \$5.50; to Kamman 4 butchers av 512 at \$4.10; to Mich. B. Co. 5 steers av 862 at \$5.75, 2 do av 630 at \$5, 5 cows av 850 at \$3.60, 4 do av 1,250 at \$4.50, 1 do weighing 1,000 at \$3.75; to Breitenback Bros 1 do weighing 1,060 at \$3.75; to Mich. B. Co. 1 bull weighing 1,370 at \$5; to Zoehner Bros. 3 steers av 976 at \$6, 2 do av 885 at \$5.50, 7 do av 1,023 at \$6.10; to Sullivan P. Co. 10 cows av 813 at \$3.75, 2 do av 705 at \$3.25, 1 do weighing 1,170 at \$3.25, 3 steers av 833 at \$5.60; to Cooke 3 steers av 777 at \$5.25.

Sharp & W. sold Mich. B. Co. 1 bull weighing 1,500 at \$5, 4 cows av 1,070 at \$4.75, 2 do av 940 at \$4, 8 steers av 920 at \$5.75.

Bohm sold same 3 steers av 956 at \$5.50, 4 do av 1,025 at \$4.40.

Buck & W. sold Sullivan P. Co. 3 cows av 947 at \$4.25, 10 steers av 604 at \$5, 2 do av 1,090 at \$5.75.

Patrick sold same 15 steers av 910 at \$5.50.

Eddy sold same 6 do av 1,083 at \$6, 7 do av 700 at \$5, 8 cows av 937 at \$3.30.

McAninch sold Kamman B. Co. 3 cows av 1,010 at \$4.50, 2 heifers av 665 at \$5.

Patrick sold Marx 2 cows av 1,015 at \$3.50, 3 bulls av 1,076 at \$4.75.

Veal Calves.

Receipts, 891. Market steady with Wednesday. 25@50c lower than last week. Best, \$9@9.50; others, \$4@8.50; milch cows and springers steady.

Bishop B. & H. sold Swift & Co. 23 av 133 at \$9, 14 av 130 at \$8.50, 9 av 150 at \$9.50, 2 av 100 at \$5, 3 av 150 at \$8;

to Parker, W. & Co. 16 av 130 at \$7.50; to Nagle P. Co. 16 av 120 at \$8.50, 7 av 120 at \$7.75, 3 av 120 at \$7.50, 1 weighing 140 at \$9, 4 av 140 at \$9.50; to Swift & Co. 7 av 150 at \$9.50, 9 av 140 at \$8, 3 av 145 at \$9.50, 4 av 130 at \$6, 13 av 150 at \$9.50.

Spicer & R. sold Parker, W. & Co. 3 av 125 at \$8.50, 2 av 155 at \$7.50, 4 av 100 at \$7, 12 av 130 at \$8.75; to Breitenback Bros. 2 av 130 at \$7; to Sullivan P. Co. 6 av 150 at \$9; to Newton B. Co. 7 av 155 at \$9.75; to Breitenback Bros. 9 av 105 at \$7.50, 4 av 120 at \$9; to Rattkowsky 5 av 250 at \$3.75, 1 weighing 230 at \$5.50, 1 weighing 240 at \$3.75, 2 av 120 at \$5.50.

Haley & M. sold Sullivan P. Co. 2 av 125 at \$8, 4 av 125 at \$8.25; to Nagle P. Co. 12 av 130 at \$7.75, 10 av 131 at \$7.50, to Newton B. Co. 7 av 135 at \$7, 15 av 150 at \$9.50.

Sharp & W. sold Sullivan P. Co. 11 av 145 at \$9.50.

Downing sold same 1 weighing 160 at \$9.50.

Bohm sold same 3 av 155 at \$8.75.

Burden sold Burnside 13 av 135 at \$8, 1 weighing 130 at \$6.

Berry sold same 10 av 123 at \$7.75.

Groff sold Breitenback 13 av 135 at \$8.25.

Roe Com. Co. sold Nagle P. Co. 10 av 155 at \$7, 34 av 140 at \$9.25.

Stephens sold Nagle P. Co. 2 av 255 at \$5, 15 av 155 at \$9.50.

Fisher sold same 6 av 125 at \$8.25.

Wagner & A. sold Newton B. Co. 3 av 125 at \$5, 3 av 150 at \$9.

Cheney & H. sold same 9 av 120 at \$7.25.

Sheep and Lambs.

Receipts, 3,881. Market steady at Wednesday's prices, 35@40c higher on lambs, 50@75c higher on sheep than last week.

Best lambs, \$9.50; fair to good lambs, \$8.75@9.25; light to common lambs, \$7.50@8; fair to good sheep, \$6.50@7.50; culls and common, \$3@4.50.

Roe Com. Co. sold Mich. B. Co. 5 sheep av 120 at \$6, 8 lambs av \$8 at \$9.25.

Downing sold Mich. B. Co. 62 lambs av 75 at \$8.25.

Lewis sold same 6 do av 75 at \$9.20.

Patterson sold Hammond, S. & Co. 115 lambs av 85 at \$9.50.

Haley & M. sold Mich. B. Co. 2 sheep av 155 at \$5.50, 3 lambs av 60 at \$8.50, 6 sheep av 120 at \$6.50, 2 do av 135 at \$5.50, 3 lambs av 70 at \$9; to Sullivan P. Co. 3 sheep av 140 at \$9.

Bohm sold Sullivan P. Co. 52 lambs av 60 at \$8.25.

Leach sold same 120 do av 77 at \$9.25, 20 do av 60 at \$8, 13 sheep av 85 at \$5.50.

Bishop, B. & H. sold Mich. B. Co. 5 lambs av 50 at \$7.50, 72 do av 65 at \$8.65; to Nagle P. Co. 51 do av 75 at \$9.25, 222 do av 88 at \$9.50, 62 sheep av 100 at \$7.25, 7 do av 90 at \$4; to Swift & Co. 5 do av 140 at \$5.50, 12 do av 95 at \$7.25; to Fitzpatrick Bros. 5 lambs av 55 at \$8, 95 do av 80 at \$9.50; to Nagle P. Co. 73 do av 85 at \$9.25; to Eschrich 42 do av 55 at \$8; to Nagle P. Co. 23 do av 73 at \$9, 96 do av 75 at \$9.25; to Parker, W. & Co. 60 do av 80 at \$9.35; to Strauss & A. 4 do av 80 at \$8.60, 33 do av 85 at \$9.35.

Spicer & R. sold Mich. B. Co. 11 sheep av 110 at \$6.50, 1 do weighing 140 at \$5.25, 7 lambs av 100 at \$9.35, 13 do av 65 at \$8.60, 16 sheep av 90 at \$5.75, 6 do av 100 at \$5, 20 lambs av 65 at \$9, 24 do av 85 at \$9.35, 4 sheep av 115 at \$6.25.

Patterson sold Newton B. Co. 106 lambs av 80 at \$9.50, 4 do av 90 at \$8.25.

Wagner & A. sold same 32 sheep av 85 at \$5.50.

Buck & W. sold Nagle P. Co. 13 lambs av 55 at \$7, 223 do av 70 at \$9.25, 198 do av 72 at \$9.25, 2 sheep av 75 at \$3.

Bordine sold same 208 lambs av 85 at \$9.25, 4 sheep av 130 at \$6.

Hogs.

Receipts, 2,531. Market 10@15c higher than last Wednesday; 50@75c higher than last Thursday.

Range of prices: Light to good butchers, \$10.60@10.70; pigs, \$10@10.25; light yorkers, \$10.40@10.50; stags, 1/2 off.

Haley & M. sold Hammond, S. & Co. 80 av 160 at \$10.60, 40 av 170 at \$10.50.

Spicer & R. sold same 163 av 185 at \$10.50.

Roe Com. Co. sold same 279 av 190 at \$10.60, 12 av 150 at \$10.25.

Haley & M. sold Sullivan P. Co. 70 av 180 at \$10.50, 64 av 170 at \$10.40, 110 av 160 at \$10.25.

Bishop, B. & H. sold same 91 av 140 at \$10.25, 47 av 120 at \$10.10, 89 av 180 at \$10.50, 77 av 160 at \$10.40.

Same sold Parker, W. & Co. 158 av 175 at \$10.60, 161 av 140 at \$10.40, 118 av 200 at \$10.70, 262 av 160 at \$10.50, 159 av 190 at \$10.65.

Sundry shippers sold same 210 av 180 at \$10.60.

Intending purchasers of stock cattle are complaining that several Iowa men who advertise feeder cattle of superior grade at moderate prices fail to carry out their promises. The advertisers claim that the cattle advertised have just been sold and then offer some that are inferior in quality at the advertised price. After making several investigations, H. C. Newmyer, of Atlanta, Mo., says "They will not sell you what they tell you they will by \$1 per 100 lbs." He reports very few cattle and hogs in his part of the country for marketing this spring and says corn has sold to stock feeders as high as 68c per bushel.

A. D. Long, of Shelby, Missouri, says: "There are no hogs left in this county. There are not ten car loads of cattle within ten miles of Clarence that will be ready for marketing in the next 60 days, and this is one of the best shipping places on the Hannibal & St. Joseph railroad. Light cattle cannot be secured at any price. I have been feeding and shipping for 35 years, and I have never seen fat stock scarcer at this season of the year than now."

ing around for bargains in this line.

Sheep salesmen at the Chicago stock yards have been complaining recently that there are too many unfinished lambs coming to market and that about the only way to keep the market free from accumulations is to force buyers to take common stock along with the finished offerings. There is no reliable demand for

anything except choice flocks, feeders excepted, but in the absence frequently of prime grades of lambs, yearlings and sheep, buyers have to fall back on less attractive offerings. It seems strange that at a time when feeding operations are so much smaller than usual, so much trashy stock should be sold, for it is practically a certainty that sheepmen who make their holdings first-class will reap a rich reward, no matter how high the price of feed may be. Michigan and Ohio are looming up prominently this winter as sheep and lamb feeding states, and far larger numbers would be fattened if suitable feeder stock was to be had. Of late, feeders have been turning more to sheep and yearlings and less to lambs than heretofore, and high prices have been paid. It was expected that Iowa, where most lambs are kept out-of-doors all the winter season, would rush in half-fat westerns liberally on the first appearance of stormy weather, but such movement failed to come anywhere near expectations, feeders showing no disposition to cut loose as in other years, as they evidently have faith in the future.

ADDITIONAL VETERINARY.

Weak Tendons—Sore Necks.—My horse goes lame on fore leg on account of having weak tendons, and I might add that he has had trouble for years. Also, what shall I do for sore necks? V. W., Coldwater, Mich.—Apply peroxide-hydrogen; then apply equal parts powdered alum, oxide of zinc and iodoform twice a day.

Stifle Lameness.—Have a colt that has been very lame for a long time in the stifle joint. What had I better apply? W. K. C., Detroit, Mich.—Apply one part red iodine mercury and six parts lard once a week until the colt gets well; this medicine will, of course, blister.

Recipes from a Reader.—I notice that you advise cutting a wart off the eye instead of applying medicine. Your treatment is cruel; why don't you prescribe strong copperas water, which will take it off. Strong alum water kills lice on live stock and by feeding sulphur to sheep with salt it will kill sheep ticks. These prescriptions are worth knowing for I have tested them, but when feeding sulphur to sheep in cold weather, avoid exposing them to storms. E. O., Weideman, Mich.—Using a saturated solution of copperas will injure the eye, while cutting the wart off is almost painless if done with a sharp knife or, if cocaine is used, it is painless. A solution of alum will kill lice but it is not a good lice killer and feeding sulphur to sheep does not kill ticks, but many sheep are killed by feeding them too much sulphur and, as you say, they take cold readily when it is fed to them.

Indigestion—Torpidity of Kidneys.—We have a two-year-old steer that perspires when standing in the stable and our local Vet. is at a loss to know what ails him. J. V. C., Perry, Mich.—Give 1 oz. baking soda and 1 oz. powdered resin at a dose in feed twice a day.

Eversion of Vagina.—A bunch appeared in the vagina of my cow before she came fresh four weeks ago, but left right away after calving; will it be safe to breed her right away? W. V., Grant, Mich.—Yes, breed her right away.

Chronic Cough.—We have a valuable cow that has been troubled with a cough for some time; what can be done for her? A. W. B., Otia, Mich.—Give 1 dr. Gualacol (Merck) in 2 ozs. or more of water three times a day.

Lice on Sheep.—My sheep are troubled with lice and I should like to have a remedy that is dry, because it is too cold weather to dip. C. F. R., Royston, Mich.—Why don't you apply one of the lice killing powders that are advertised regularly in this paper?

Sweeny.—Have a three-year-old mare that is sweened and I would like to know if she can be worked while being treated? C. C. H., Grass Lake, Mich.—Apply equal parts turpentine, aqua ammonia and sweet oil once a day and if the colt is not lame moderate work will be of benefit.

Catarrh—Egostosis.—My chickens are troubled with a discharge from the nose and eyes. I also have a horse that has a small bunch on fore leg that I should like to have taken off. A. E., Bayshore, Mich.—Give the chickens copperas in their drinking water. Apply iodine ointment to bunch on leg once a day.



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Completely takes the place of all other wrenches put together. Adjusts itself instantly and automatically to fittings, pipe, rods and nuts. All you have to do is to pull, and the harder you pull the harder it grips. The Automatic is the strongest, handiest and most useful wrench ever placed on the market for the auto owner, farmer, mechanic or any one else who ever has use for one. You will marvel at it and wonder why some one didn't make wrenches like this long ago. Your money back if you're not satisfied after using it a reasonable length of time.

6 in., opens to 1/2 in., 7 1/2 in., opens to 1 1/4 in., \$1.00

12 in., opens to 1 1/2 in., \$1.25

Send stamps, coin or money order.

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of a good 160-acre Farm, all fenced, about 50 acres under cultivation, good house, barns, tubular well and wind mill, good small orchard, berries, etc. 12 miles east of Grayling. Sale at Court House,

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at one o'clock, p. m. Terms—1/3 cash, 1/2 on time, with interest at 6 per cent. For particulars address

HUGO SCHREIBER, Administrator,

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Farms to RENT—Twelve miles north of Toledo. Good buildings, 160 acres or more. Farmer must have help and stock to farm with.

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For Sale or Exchange—134-acre Farm in Allegan Co. Well located and improved. Address OWNER, Box 56, Route 8, Otsego, Mich.

GREAT opportunities in Washington and Oregon Farm Lands. Write today for free lists. Robinson Land Co., B-1261 Empire Bldg., Seattle, Wash.

FOR SALE—120 Acres house and barn, near Pleasant Lake. M. SHEPARD, Byron, Michigan.

FOR SALE—Select corn and other lands in Southern Michigan. Write now for list. The Ypsilanti Agency Co., Inc., Ypsilanti, Mich.

WRITE for Booklet—Map, Farms and wild lands in Fruit Belt. Address J. W. Saunders, Publisher, Benzie County Leader, (Co. Seat), Honor, Mich.

FOR SALE—100 Cheap Good Improved farms and grain. For descriptions, prices address W. E. BOWEN & Son, Middleville, Barry Co., Mich.

READ THIS If you wish to buy Farm to write me for my 1910 land catalog, sent free to any address. C. A. HAMER, Marion, Mich.

So E. Z. To Get a Nice FARM HOME in the mild climate of Virginia. May we tell you how? CASSELMAN & CO., Est. 20 years, Richmond, Va.

Michigan Farms—Fruit, Grain and Stock Farms in Barry, Eaton and Kent Co's. Big bargains; low taxes, good schools, churches and roads, splendid water and climate. Write for list No. 8. BUCKLES & MATTHEWS, Hastings, Mich.

FOR SALE—240 acres good undeveloped land, some timber, good water in Lincoln Township, Osceola Co., Mich. Must be sold to settle estate. Price, \$1,600. Inquire H. L. FOSTER, Reed City, Michigan.

MICHIGAN FARMS—Fruit, Grain and Stock Farms; big bargains; splendid climate, water, roads and schools. Write for list No. 4. C. R. BISHOP & CO., Hastings, Mich.

Farm For Sale, Best Bargain in Mich.

278 acres in Mecosta Co., right at station on G. R. & I. R. R. About 220 acres free from stumps, 20 acres timber, good buildings, good soil, raise anything that can be grown in Mich. or, is a good stock farm. Time can be had on part of purchase price. Write for full description.

J. A

WOMAN AND HER NEEDS

The Family Pocketbook Shall It Be "Ours", or "His"?

Some good advice on how to manage husbands is given to farmers' wives in that quaint book, "The Second Mrs. Jim." "Mrs. Jim" was an "old maid" when she married. "Jim," of course, was a widower.

"Before we was married, when Jim was talkin' about his bank-account, I says, 'When you go to town for the license, just bring along another check-book. Then, when I need anything I won't have to ask you for money.' Course, when I got married, half he had was mine, and I wasn't goin' to skimp myself and try to get along on the butter an' egg money, like so many women do.

"That's another trouble with gettin' married young. The poor girls know how hard up they be, and that both of them have to skimp an' save all they can, an' so the fool wife does the housework, an' makes butter, an' tends the garden, an' maybe feeds the pigs, an' always gathers the eggs, an' takes care of the chickens an' turkeys, an' picks the fruit, an' cans it, and maybe helps milk, an' cut an' husk corn, all so's to save money, an' how much does her husband skimp himself? He has a hired man to help him, and for his wife to do the cookin' an' washin' for, an' he works 14 or 16 hours a day. An' he always has money to spend when he goes to town. But his wife! How much money does she get to spend? Just what comes from the butter an' eggs, an' that she takes to run the house on. Instead of turnin' that money into the common fund, an' drawin' out what she needs, she gets along on that little egg an' butter money, an' the man gets into the bad habit of thinkin' that's all she needs. So it comes harder an' harder to get anything more than that out of him. An' by an' by when the children come, there's the children's clo'es an' her own, an' dozens of other things, all to come out of that egg an' butter money. Well, you've seen so many cases just that way that I don't need to tell you about 'em.

"Now I made up my mind that I wasn't goin' to depend on the egg an' butter money. That was goin' into the common fund, an' the household expenses was comin' out of that same fund. Oh, it was new for Jim, but you know there's two times to get a man to agree to things, an' of course, after he's agreed it's a poor stick of a woman that can't make him hold to 'em. One of the two times is when he's just married. That does for young married men. The other time's when he's courtin'. That's the time to get things out of widowers. So Jim an' I understood just how things was goin' to be run before I even set the day."

So there is Mrs. Jim's advice on the "egg an' butter money," which I pass along in the hope that it will do some one some good. Every family has its own way of managing the money question, but in the average family that way seems to be the man's. It makes no difference whether it is city or country, the husband thinks that because the money is paid over to him, he is the only person who has had a hand in earning it, and therefore it is his alone and the wife should consider what she receives as a bounty, not as a matter of right.

As a matter of fact, the wife is entitled to as much as the husband when a question of money is concerned. She works as hard, usually harder for her strength, and her part of the work is just as important, tho it is not reckoned in dollars and cents. If any man does not believe in the importance of his wife's work, let her stop everything for two weeks. Leave him to cook his own meals, wash his own clothes, sew on his own buttons and keep his own house clean. Probably the last would not affect him, as a dirty house doesn't bother the average man, but two weeks of living without well-cooked meals, would open any man's eyes to the importance of having a good cook on hand.

The wife earns half the money legitimately, but she never gets it. If women would tell the truth about the matter the money question would be found to rankle in many a bosom whose owner is apparently happy, and who seems to have a

kind husband. The policy of having one pocketbook, and that carried by the husband, is the cause of many a heartburn, and thousands of women do without actual necessities for weeks before they screw up their courage enough to ask "him" for money. Yet these women will declare loudly and insistently that their husbands are generous and liberal with their money, declare it because they are ashamed to let their world know what skinflints the husbands are.

As Mrs. Jim says, it all comes from starting wrong. There should be a thorough understanding from the first that there is

to be no "mine" about everything, but that everything is to be "ours." In a business partnership, you never see one partner cringingly begging the other to allow him a little money for legitimate expenses. Marriage is a partnership of the highest type, and it should be so considered. There should be absolute fairness on both sides and there can not be when the husband controls the pocketbook and obliges his wife to ask for money, and carefully state where and how every nickel and every cent is to be spent.

How the "egg and butter money" is to be used is a matter for every family to settle. But it should not be understood that this is all the wife is to handle, while the husband alone directs the spending of the vastly greater sum derived from the sale of other products.

DEBORAH.

Michigan Country Women as Money Earners.

No 1.

Hotbeds for Early Vegetables Prove a Bonanza for One Woman— How Miss Smith of Wayne County Succeeded With Home Made Cold Frames and Hotbeds.

IN one of Detroit's many suburbs there flourishes a business, built up and controlled by a woman, which furnishes a considerable part of its owner's living expenses. Said owner is just a trifle gray but young at heart, and contented in her work, which is "just growing green things," for the early spring trade, as she puts it. "Fate tried to con-

strip of half-inch board two inches wide and 12 feet long. This frame was supported on some boxes of convenient height in the attic by driving a nail thru the ends of the boards into the boxes and Miss Smith was ready for her painting. This she did with a rather wide brush, using the linseed oil and egg mixture recommended by the Michigan Farmer a few years back. Two coats were given the cloth, each being allowed to thoroly dry.

When in use, the cover is attached to the upper side of the box by driving two or three nails thru the wooden strips into the side of the box; the cover is stretched across and the weight of the strip on the lower side keeps the cloth from sagging down into the box, which is just a little less than six feet in width. When work is being done the cover has to be folded or rolled back. Regular sash would perhaps be more convenient but Miss Smith is no carpenter and feared to undertake the frames.

The hotbed sashes are glazed with 10x12 glass of double thickness, the extra size giving less lap, insuring more sunlight, and the thickness giving extra protection from cold. The first crop sown in hotbed is Early Jersey Wakefield cabbage and Early Snowball cauliflower, three sashes of the former and one of the latter. When the second leaves appear the plants are transplanted from the rows in which they were sown to the spaces between rows and allowed to grow there until the first of April, when they are put into the cold frames to harden off, from which they are sold as wanted.

The hotbed is then immediately sown to tomato, egg plant and pepper seed, usually three of tomatoes and one-half sash, each of egg plant and pepper. When asked as to varieties Miss Smith said she aimed to raise the very earliest good kinds and changed seed from year to year. Earliana, Early Detroit and June Pink tomatoes are in her list this year;



Miss Lorena Jane Smith, of Wayne Co. ceal her, by naming her Smith," but the excellence of her stock has brot at least some local fame. Emerson very truly said that "The man who does something better than his fellows, even to the making of a mouse trap, and tho his house were built in a wood, the world would make a path to his door"—and the saying is just as true of a woman.

Miss Lorena J. Smith raises plants a little better than others. Her own individual world knows well the path to her door, and she finds little need for advertising. She has no trouble in disposing of all the plants she can grow in the space and time at her disposal, both of which are rather limited.

"Don't tell where I live nor who I am," she begged with a laugh, when I asked the privilege of writing up the story of her work; "You see, I have all the trade I can handle, and I'm too busy to have company during the spring rush and I cannot bother to answer many questions. You may just say I'm 'Miss Smith, of Smithville.'"

But she told me her story while she busily looked over seed packages and made memorandums of new things to be ordered. For tho the snow was still piled deeply over her garden she was mapping out the season's work, which begins with filling and sowing the hotbed about March 1. There is only one hotbed 6x12 feet, and two cold frames of like dimensions. These latter are simply boxes (without bottoms) which are set upon beds of earth which have been deeply spaded and raked fine like a first-class seed bed. A gentle slope to the south is given the frames by making the beds higher at the north sides. The covers for these frames are made of prepared plant cloth, which is better for the "hardening off" of the plants. The arrangement is rather different from that usually found. The cloth is common sheeting of medium weight. Two strips, each four and one-fourth yards long, are seamed together and hemmed across the ends like a very long sheet. Then each edge is tacked to a

by the tomatoes are planted to Early Scarlet Globe radishes and May King lettuce. Cucumber seed are planted in quart berry boxes filled with rich soil. As the lettuce grows, some of the plants are pricked out into whatever space there may be left in the cold frames or hotbed and allowed to form heads for early market, while still other plants are put in open ground or sold. The radishes require about three weeks to mature and find their way to near-by grocery stores.

After all plants are cleared out of the beds the sash and cloth covers are put away for the season, the soil is raked smooth and the cucumber plants are transplanted from the berry boxes into the frames, setting them two feet apart, in two rows lengthwise of frame. As the vines grow they fill the frames and run out over the sides. From these vines cucumbers for slicing are sold as long as the demand is good and from that time on they furnish fruits for pickling. Extra care must be given these vines as the large cucumbers draw heavily upon them, but if they are picked regularly and vines kept well watered, with occasionally a dose of liquid manure they will produce abundantly.

As to yields and profits, of course these vary. A bed of this size will grow 1,000 plants to the sash, provided one has cold frame space to allow of shifting plants



A Head of Crisp and Tender Lettuce.

while they are comparatively small. Thus we should have 3,000 cabbage plants, 1,000 cauliflower, 3,000 tomato, 500 pepper and 500 egg plants. Stock twice transplanted as this is, brings the highest market prices, usually \$1.00 per hundred for cabbage, \$1.25 per hundred for cauliflower, \$1.50 for tomato and pepper and \$2.00 for egg plants by the hundred. Sold in dozen lots the prices are still higher.

In addition to money received for the above plants, there is usually eight or 10 bushels of lettuce, a good many dozen bunches of radishes and the crop of large cucumbers. The lettuce will average about 50 cents per bushel; radishes, six to 10 cents per dozen bunches, and cucumbers 15 cents per dozen.

In her small garden Miss Smith raises tomatoes, string beans, and onions and a few peppers and cauliflowers. From these and the small cucumbers she puts up quantities of home-made catsup and fancy mixed pickles in pint fruit jars, which she sells at a fancy price to private customers.

The secret of her success lies in keeping up to the times in best varieties; in the great pains taken with every detail of the work; in looking out for the interests of customers by giving them instructions in setting out and growing their plants to maturity, and a pleasant personality which not only gains but holds trade.

EVA ALICE MORSE.

"COMPROMISE A LITTLE."

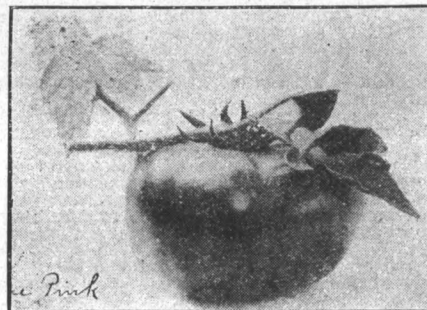
The young man had just been married and as it was his first offense his father was giving him some advice, as to how he should treat his young wife. "When you have any little differences of opinion," he said to the boy, "if you can't persuade Mary that you are right—and you probably can't; for they are all about alike—you must compromise. Be very firm but be considerate and compromise, my son."

"Yes, father," replied the boy thoughtfully.

"I well remember a little experience on the very threshold of the married life of your mother and me and it was the basis of all our future disputes. It was in this way it happened. I wanted to spend the summer, our first vacation, in Indiana and your mother wanted to go to Kentucky. That was over thirty-five years ago, but I shall never forget how firm and yet how considerate I was with your mother, and how well we compromised, avoiding all dispute.

"It was this way that we did it. We stayed over night in Indiana and spent the rest of the summer in Kentucky."

M. A. P.



A June Pink Tomato.

Black Beauty egg plant and Giant Crimson pepper will be planted. A good deal of care is put upon this crop, the soil is stirred very frequently between the rows of seedlings, the bed is kept moist by frequently watering with a spray pump which simply delivers a fine mist over the growing plants. Great care must be taken to ventilate the beds by raising the sash during the warmest part of the day for a few minutes at a time.

About May 1 a part, or all, of the tomato plants are transplanted into cold frames from which the cabbage plants have been sold; but the egg and pepper plants are left in the hotbeds two or three weeks longer, receiving one or two transplantings before they are ready to go out.

In the meantime, the sashes left vacant

WHY YOU FAIL WITH BAKING POWDER.—No. 6.

BY MRS. ALTA L. LITTELL.

NEVER have any luck with baking powder," is the complaint of many a housewife. If that is the case with you who read this, rest assured that either of two things is the cause of your bad luck. The baking powder is poor, or you do not know how to use it. Baking powder rightly handled gives better results with white flour than do soda and sour milk or cream. This combination is best with cornmeal, but for white flour, baking powder and sweet milk are preferable.

The secret of success in using baking powder is to handle it quickly. And to see why this is true, it is necessary to know what baking powder is. It is a mixture of baking soda with a little more than twice its weight of cream of tartar and a little less flour or cornstarch than you have soda. At least, this is the usual formula, altho alum and other substances are sometimes used instead of cream of tartar.

Soda contains carbon dioxide, the gas which makes bread light, and the gas is liberated from the soda by contact with an acid. Cream of tartar is an acid, but it will not fully liberate the gas unless the two are moistened and heated. A slow change begins as soon as the baking powder is moistened and that is why we must work quickly with baking powder mixtures after the milk or water is added to our biscuit or cake. Until the moistening is added no change takes place, so we can sift our flour, baking powder, etc., together and let them stand dry if we wish.

Those housekeepers who often wonder where the ingredients they use come from and have not the time to look up what they would like to know, will be interested to learn that cream of tartar is manufactured from a deposit found on the inside of wine casks. It exists in grapes and during the process of fermentation when the sugar in the fruit is changing into alcohol this substance is deposited in the casks. The best is obtained from the wine countries of Europe. Soda is a deposit found in the earth and the best comes from Greenland. The soda we use in baking is charged first with carbonic acid gas. So, when you next reach for your baking powder can, you may reflect that of the two chief ingredients therein one probably came from Greenland and the other from sunny France, and that the two may be mixed with Minnesota or Michigan flour.

In making baking powder it is usually sifted ten times to coat each grain of soda and cream of tartar with the starch so as to guard against any possible liberation of the gas in the soda before it is ready for use.

In using baking powder the rule is two level teaspoons to one measuring cup of flour for biscuits, dumplings and foods without eggs. Use one and one-half level teaspoonsful or one rounding teaspoonful to a cup of flour in egg mixtures.

Cream of tartar and baking powder are frequently adulterated so that when we think we are using a pure article, our baking powder is really tainted. Alum and ammonia are frequently added as are sulphuric acid, phosphates, lime and chlorides. If any housekeeper suspects she is using an impure baking powder and would like to make a test, an easy one will be furnished her upon request. All tests call for a chemical. As they are not often used by cooks, they will not be included in this article.

(Mrs. Littell will gladly answer any questions pertaining to food and dieting).

A ST. PATRICK'S DAY PARTY.

BY GENEVA M. SEWELL.

St. Patrick's Day occurs on March 17. The party may be held either the evening before or in that evening, just as is most convenient. The invitations should be issued at least ten days before so as to give every one a good chance to get her costume fixed. The invitations may be written on a post card, which contains a map of "Ould Erin," or if these are not easily obtained cut a picture of Ireland out of green paper and paste at the top of the note of invitation; if that is too much trouble just stick on a pretty green shamrock. If the guests are desired to come as some special person tell whom you would like them to represent, or you may simply write at the bottom, "Come in Costume."

Many characters may be represented, such as "Mr. Dooley," "Happy Hooligan," "Gloomy Gus," "Irish Washerwoman,"

"Bridget," "Irish Immigrant," "Kathleen Mavourneen," and a host of others.

The decorations should consist of plenty of shamrocks, clay pipes, top hats and snakes, all cut from tissue paper and pinned or fastened up around the room. Then, of course, there should be the "blarney stone," which every one is required to kiss occasionally. It should be placed high enough so that one has to step up at least one step to reach it. It may be made from a piece of cement block, but should be a good-sized piece and irregular in shape, and fastened securely in place.

For entertainment, if you do not care to indulge in cards or dancing, try some progressive games, such as "Flinch" or "Nihlo," or if you want something bearing more directly on the Irish question, try making telegrams from the words "Ireland" or "St. Patrick," and give a prize to the one voted the best. "Illumine recent events," "learned about new doctor," "Sarah tied Peter," "Announce triangle recently invented," "can't kick," are samples of telegrams recently winning prizes.

For an entirely new game try "Helping St. Patrick drive the snakes from Ireland." For this take some green ribbon and stretch across the room in two parallel rows about five feet apart, allowing room on each side for the contestants to stand. In the space between the ribbons place a tissue paper snake, then give each contestant a fan. The trick is to try and blow the snake with the air from the fans from between the ribbons into the "country" on one or the other sides. The contestants should be evenly divided and the contest should last ten minutes. The side that wins may be given some of those atrocities that, when you blow on them will unroll in snakes. Next try a guessing game from cities in Ireland. These are given as some we used: The letters are all jumbled up. Nibdlu, (Dublin); Rock (Cork); Stablef (Belfast); Kicermil (Limerick); Gundana (Dungannon); Raptrepey (Tipperary); Ladgone (Donegal); Rakedil (Kildare); Steenquown (Queenstown); Lickwow (Wicklow); Stulre (Ulster); Rastlerab (Catsbar). It will take some time to puzzle these all out, by even a "Happy Hooligan." Prizes of shamrock stick pins may be given to the winning couple, while a clay pipe and a plaster cast of "Gloomy Gus" may be given the losers.

SHORT CUTS TO HOUSEKEEPING.

This department is opened as a means for the exchange of new and successful ideas in housekeeping. Every housekeeper is anxious to learn the quickest and best way of doing her work, and is constantly looking for new ideas. If you have what you consider a good idea send it on for the benefit of your sisters. They will do the same by you. Please do not send recipes. Every housekeeper now has more than she can use. But if you think you have the quickest and best way of washing, ironing, sweeping, dusting or doing anything else about the house, please write and tell us about it.

When you buy your boy new stockings interline the knees. It will be twice as long before you need to darn.—A Mother, Oak Grove.

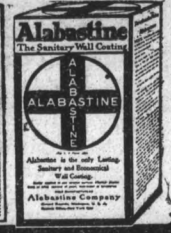
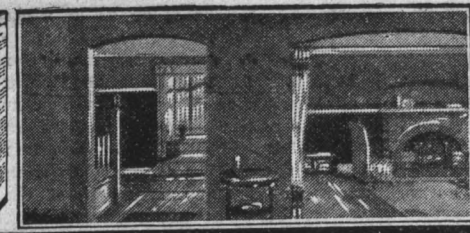
Arrange your fruit on the shelves by seasons, pineapples first, then strawberries, cherries, raspberries, etc. You can go directly to the shelf and take just what you want.—B. M., Romeo.

If you are going to spend the whole day sewing, spread an old sheet on the floor under the machine. At night take it up and you have all the threads and ravelings ready to burn.—Seamstress, Milan.

In making apple sauce I never peel apples. Of course, this is a well-known way, and we are told the right way, but it is a time saver as well. It does not take so much time to put the fruit thru a colander after cooking, as it does to remove the skins before, and it is not so hard upon the hands.—Mrs. John, Midland.

Most women save their fruit juice for mince pies. I save mine for pudding sauces. Sweeten a cupful of juice with a half cup of sugar and thicken with two teaspoonfuls of corn starch. Boil until it is clear. This is delicious over corn starch molds or rice, as well as over stale cake steamed and freshened.—T. M., Brant.

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FISH DAYS.

BY EMILY L. RUSSEL.

In these Lenten days the delicious, healthful fish "comes into its own." There are different traditions why it was chosen as the proper Lenten food. One, which hints of "graft," declares it was to benefit the fish-mongers; another says it was a sanitary measure, after a winter of meat eating; while a third reason, for all Fridays as well as Lent, is that no blood is shed in its preparation for food. All agree that fish has, from very early times, been a favorite article of food. In the very first chapter of Genesis, it is given precedence, in order of mention, over the fowls of the air and the cattle. In the New Testament it is given prominence on many occasions, and our Lord chose many of his closest friends from the humble fishermen.

In some countries the fish is a lucky omen. In Bengal, when the bride comes with the bridegroom, for the first time, into his house, she has to catch hold of a fish, as a welcoming ceremony. Over a large part of Northern India the "water-vegetable," as it is called by high-caste punjabis, is eaten to assure good luck. In some countries the proverb, "Better a little fish than an empty dish," is as common as our "Half a Loaf is better than none."

There are as many, or more, ways of cooking as there are varieties of fish. One sure test that it is done is when the flesh separates readily from the bone.

Lemon brings out the flavor of the fish better than anything else can. It is said that tea should never be used at same meal with fish, as the tannin renders it tough and indigestible. When tea is properly made it contains very little tannin. But that is another story.

DISHWASHING MADE EASY.

BY ELLA E. ROCKWOOD.

I always find it necessary in washing dishes to wipe every piece, and like most other housewives have looked with suspicion upon any suggestion to abbreviate this diurnal task, the one which is called the humblest amid the multitude of tasks connected with the domestic routine.

Not long ago when an aunt from classic New England, was making us a visit she became quite enthusiastic in praise of a short-cut which relieves this homely duty of half the time usually devoted to it and yet answers excellently all reasonable demands as to ultimate results. If it satisfies a Bostonian it may be good enough to pass along.

Her plan is to have at the side of the dish pan another, which may be considerably smaller, containing clear water as hot as the hand can endure. As fast as the pieces are cleansed they are taken in the left hand, one by one, and passed quickly thru this hot water than placed in a position to drain, either upon a clean folded cloth or in an ordinary dish-drain upon the sink board. Piled in this manner the dishes are allowed to remain until thoroughly dry which, owing to the heat of the pieces as transferred will not be long. Every dish, to the last cup and pitcher, will be shining and spotless. The silver alone will require wiping in the ordinary manner. If one desires to go still further in this direction there need be no subsequent putting away but all allowed to remain where they are until time to set the table for the next meal. This plan works remarkably well, and can be recommended to every woman who is pressed with household duties, or whose strength must be hoarded and conserved in order to enable her to get along.

No matter how great the number of pieces, I enjoy scraping and rinsing and stacking each size and kind by itself, all arranged in orderly piles by the side of the worker. Then, with a big table to work on, abundance of hot, soft water, white, clean-looking soap which is unperfumed in any way, a clean white dish cloth, and plenty of soft towels which also are white and clean, I enjoy the moments which follow. Not even the pots and kettles dampen my enthusiasm. In the first place, these are neither so many nor so heavy and black as they formerly were for other ware has largely displaced the iron. In the second place if put to soak in plenty of clear cold water the moment they are emptied they will almost wash themselves by the time I get to them. It is imperative that there be two dish cloths, else the one of white cheese cloth doubled and stitched together will speedily be badly soiled by working about the stove and in washing the cooking utensils

where more or less black will be wiped off.

After every meal the dish cloth must be thoroughly washed with soap and water else it will soon become grimy. It must never be left sodden and damp until the next period of use but so hung that it will become dry in a short time.

One advantage of the draining method of drying dishes lies in the fact that there are no towels to be cleansed, or at least only those for the silver and carving set. Even the glassware will be spotless save for an occasional drop of water which may settle upon it. By the way, I often wish I might again see some of the old fashioned soap which used to make such nice suds to wash dishes with. With the passing of wood fires this characteristic country product has disappeared. The imitation article prepared with concentrated lye is not at all the same. Memory carries me back to the soap making which was a regular feature of the spring work. But inquiry among my friends reveals the fact that everybody now buys their soap and the old custom has been dropped.

HOME QUERIES EXCHANGE.

Dear Editor:—Will you kindly inform me thru Home Queries Exchange what is the length of the longest boat on the Great Lakes?—A. J., Goodrich.

The longest passenger boat is the City of Cleveland, 444 ft. long, and 96 ft. wide.

Dear Editor:—Will you please tell me thru the Michigan Farmer, what to put on the steel part of my range to keep it from rusting? I have used kerosene but it don't seem to do any good.—Mrs. L. M. C., Parma.

Try coating the steel with a thin layer of vaseline. If there are obstinate rust spots, touch them first with muriatic acid and then with ammonia. This should remove them.

Dear Editor:—Will you kindly answer these questions in the Home Queries Exchange Column? 1. What colors will be worn the most this spring in ladies' suits? 2. Will the coats be much shorter than last season? I hope someone can answer these questions.—Mrs. F. W., Forestville.

Undoubtedly the best color this spring will be blue, welcome news to women, as 99 out of every 100 can wear this color. Then come green, gray, lavender, wistaria, prune and old rose. Brown is passe. The coats are about 27 inches long, just long enough to cover the hips. I would advise you to read the fashion articles in The Farmer as we aim to tell what is to be worn in Michigan. Thank you for your kind words of appreciation.

Dear Editor:—Will some of our readers tell me how to make hartshorn cookies crum pie? Also, how to stuff green peppers for pickles or ripe cucumbers? Can you tell me if orange punch is a drink and how it is made? Did Cook or Peary discover the north pole?

The term "punch" has two meanings, a drink and a soft ice. You probably mean the latter. Punch, in this sense, means an ice or sherbet to which a liquor has been added after it is frozen. Orange punch is made by boiling for 20 minutes a quart of water and two cups of sugar, then adding a teaspoonful of gelatine which has been soaked in cold water. When this is cold, add one pint of orange juice and the juice of a lemon. Freeze hard and beat in one cup of champagne with a wooden spoon. Serve in glasses and eat with a spoon, just after the meal course and just before the game. Peary has been adjudged the discoverer of the north pole.

Dear Editor:—In reply to A. H., I would say that a thoro smoking will restore the tainted hams if they are not too bad. Care should be taken not to allow the heat from the smoke to reach the meat as the heat would serve to hasten the decomposition. I suppose the smoke is similar to charcoal in its renovating properties.—L. S., Central Lake.

Dear Editor:—I wonder if any of my sister readers of the Michigan Farmer have ever had experience with bed bugs in an unfinished house? The sleeping rooms are all upstairs and for the last two summers I have had a desperate warfare with the pests. It seems the harder I fight the worse they are. I painted and varnished my beds and springs, and even the slats, looked the beds over thoroughly every day, and applied kerosene and carbolic acid with a small paint brush. The rooms are unfinished; just rough pine boards. Now do you think, with the hot sun beating down on the roof, they would breed in the pine? Will some one please tell me what to do this spring? I have that some of white washing the rooms. Is there anything I can put in it that would kill them, as I am sure they are in the ceiling? Have heard burning sulphur was good. If so, how much would I have to use? I have kept house for 12 years and never had to fight the pests before. Any advice from the readers will be very thankfully received by "A Troubled One."—Mikado.

THE YOUNG WIFE DESERVES PITY.

Dear Editor:—I would like to ask Deborah if, in the article, "Do Not Pity the Young Wife," you have gleaned your observations from the country or city sisters?

Have you ever done the work on a large farm alone, and cared for small children? One that perhaps is sickly and takes a good share of your time, several men coming in to breakfast and an impossibility to get the child out of your arms? Have you washed from 5 a. m. until 4 p. m., cared for two babes, then worked and packed from 20 to 30 pounds of butter ready for the Detroit market? Then perhaps help churn, if the men were too busy.

Have you had to cook for ten men, hay presses, for three days, with the baby sick, hanging on your dress and begging of you to take him? I have, and then fruit that had been ordered before, arrived at the same time and I had to stay up two nights to care for that, until 2 a. m. My husband helped until I sent him to bed. During the rest of the month, July, I cooked for five men beside three children. I was too tired to eat much, did our own washing and ironing, also had more fruit to do up. Yes, I mowed a large lawn, too, for exercise, but it was done a good many times by moonlight.

I can not help pitying a young wife raising babies, especially if they have a struggle to raise them, as we had with our last two. We tried everything nearly, for our last child, now nearly three years old. Then, when he was a year old he passed thru a terrible sickness. We had everything done that love and medical skill could prescribe, and God has spared his life. He is quite well now, but we have to give him great care.

Now, I received both kinds of pity when first married. The kind you speak of rankles yet a little. My mother's helped me. We gave up making butter. Now, my husband is the reverse of being stingy, but it is almost an impossibility to find any help in this part of the country. Before I was married I taught school in both country and town, attended institutes, concerts, lectures, helped mother when home, also attended a couple of National C. E. conventions and the world's fair at Chicago, besides taking other trips. I miss some of those advantages, but love to read and do not consider myself a martyr, if I have passed thru all these trials and others too numerous to mention. No one else does. The sparing of my boy's life is reward enough for me.

I know of numbers of women that work harder during the winter months than I. Perhaps others have not such a struggle with a sick child, but I can not think of anyone that is not doing her best, keeping homes and children nice, with no time to think of back aches and divorces. We all look more careworn and older than we should, but are merely doing our best, trusting the rest in God's hands.

With best wishes for the Household.
Brown City, Mich. FARMER'S WIFE.

A WOMAN'S PHILOSOPHY OF LIFE—MIND TRAINING RESTS THE BODY.

"Hello, Mis' Smith," said Hanna Hull, as she appeared at her neighbor's front door armed with a parasol, a fan, and a large handkerchief, with which she wiped the perspiration from her flushed face. "How can you look so cool on a day like this? Why, I almost die of the heat! It was so hot this afternoon I couldn't take my usual nap so I made out to get here, but I almost wish I hadn't come. I don't see how I shall get back."

"Well, Hanna," said Mrs. Smith, "I think of the weather no oftener than I can help, because I feel the heat so much more when I do. I never use a fan because if I do I have to keep at it and it takes too much time. I do not take a nap for the same reason. A healthy person does not require more than eight hours' sleep in the twenty-four. I find that change of occupation rests me more than a nap in the afternoon."

"Change of occupation!" exclaimed Hanna, "I should think housework presented enough change of occupation. I believe I have done no less than ten different kinds of work this forenoon."

"And yet," said Mrs. Smith, "if your work brot you just the right change of occupation, I am sure you wouldn't look so tired. A day, to be well balanced, should have something to occupy the mind as well as the body. Now, I do not take a nap but I usually take an hour or two in the afternoon to do just as I wish. Sometimes I read, sometimes I work in

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my flowerbeds, and sometimes I take my camera and search in woods and fields for a suitable subject for a picture. This afternoon I was thinking of mounting some photos, but I am sure a little chat with you will rest me as much," she said cordially.

"You always do seem to get on well with your work," said Hanna.

"Well," said Mrs. Smith, "I am sure if it wasn't for the little reward I promise myself in the shape of an afternoon rest I wouldn't be as apt to hurry thru the morning's work. I believe I can accomplish more in a year, with the afternoon rest than without, and during this hour of rest I am storing my mind with something to think of while I am at work."

"I declare, how it rests me to hear you talk," said Hanna, "and I am getting cooled off, too. I 'sposed I was getting too old to improve my mind, but if it will keep me cool it will be pleasanter than setting on the cellar steps to keep cool."

KATRINKA.

ONLY HARDY PLANTS CONTINUE TO GROW OUTSIDE OF NURSERIES.

Unless there are glass houses to nurse the plants in after they have been used for decorating the room, it is impossible to grow any except the hardiest and most vigorous. No plant is more enduring, even when exposed to draughts, than the Aspidistra or Parlor Palm, as it is usually called. The long strap shaped leaves are a clear green in the type, but in the variety variegata have stripes and bands of creamy white. It is not of very rapid growth, but even in its infancy there is something attractive in the bold, handsome growth.

The India-rubber plant, *Aralia Sieboldi*, *Cyperus Alternifolius*, which requires much water; Norfolk Island Vine (*Auracaria excelsa*), of course, in its small stage, and the Ferns *Pteris Tremula*, *Perelica* and *Perelica Albolineata*, live many years in a room, if they are carefully watered, and, in the case of smooth, hard-leaved plants, carefully sponged occasionally to remove accumulations of dust and dirt.

The Aspidistra will develop into a mass of beautiful foliage, and in time will outgrow its place, necessitating division of the roots, which is best accomplished in the early spring. Put them in a soil of loam and leaf mould, about one-fourth of the latter to three-fourths of the former, and put two layers of crocks in the bottom, the larger first, then the fewer pieces with a little of the rougher soil over to keep the compost from sitting down and obstructing the egress of water. When growth is in full swing in spring a little fertilizing stimulant will work wonders.

The *Cyperus* requires to be almost placed in water, and is a very graceful reed-like plant of distinct appearance; so much so that it is quite a relief to see a well developed example of it. Care in watering and handling must be exercised to bring about success in the plants mentioned, and they must be kept away from cold draughts.

Canada.

W. R. GILBERT.

WOMEN AT ROUND-UP INSTITUTE.

The Women's Congress of the Fifteenth Annual Round-Up of the Michigan Farmers' Institute met with Miss Maude Gilchrist, Dean of the woman's department of Michigan Agricultural College, in the chair, and Mrs. E. J. Creyts, conductor.

Mrs. E. E. Bogue, of East Lansing, gave an address on "Balanced Activities." In the discussion that followed, Mrs. C. M. Parth, of Armada, and Mrs. Mary Youngblood, of Charlotte, took part.

"The Up-to-Date Housekeeper" was the subject of Mrs. C. L. Barber's talk. She said in part: A housekeeper must understand ventilation; how to care for all household stores and prevent needless waste and extravagance; prepare for motherhood and the rearing of children; proper foods and proper combination of food elements that make children develop physically and mentally and make them happy; must have good, clean, sanitary homes, and teach the danger of the spitting habit and of dust. Farm houses should contain bath room and toilet as in a city home. Many farm homes are thus equipped and more ought to be and could be. Mrs. E. O. Ladd discussed the paper, after which Mrs. Florence Tremble of Grand Ledge, gave a reading. Martha Van Rensselaer, of Cornell University, N. Y., spoke of "Women in Agriculture." She read statistics showing how the per-

centage of women in agriculture has been increasing of late years, many women carrying on farm labor independently. The number of women in Cornell University has doubled in the last four years.

Then Miss Van Rensselaer read letters from farmers' wives telling about the kind of work they were doing, the difficulties they encountered, their success, their social opportunities, advantages etc.

Owing to the number of speakers in attendance, an all-day meeting was held Thursday. Miss Jennie Buell was chairman. Professor Victor Wilson, the first speaker, took for his subject, "Art in the Home." "The whole of life is a fine art," he said. "Molding of a life and character is an art; fulfilling of ideals is an art; to adapt ourselves to our surroundings is an art. Art is a motive that runs thru all civilization. Even the savage has a vague comprehension of art, paints and carves in a rude way. Art began in the domestic side of life, began in the home. Just as nations grow and expand so does art develop in its most healthy growth in the home. Our boards of education do not always realize the necessity for this subject. Train the hand to obey the dictates of the mind. You must see and have imagination to carry out the dictates of the mind. To woman we must look for grace and refinement in home."

After a discussion of this address, Dr. C. E. Marshall, of M. A. C., spoke on "The Control of Infectious Diseases." Dr. Marshall said that in the past we have been in the habit of isolating families. By observing and following plans, it has been made possible to isolate only the patient and the one who has charge of him. He recommended an isolation hospital and the isolating of patients there and not in the home; spoke of the danger of whooping cough among children and the many disorders which follow, and necessity of guarding against it; advised guarding against such diseases as measles, diphtheria, whooping cough and smallpox; showed and demonstrated how the different disinfectants are used in order to make them effective; illustrated combining different solutions; how to fumigate and also warned of the danger in some of these disinfectants.

Miss Pearl McDonald, of the Department of Domestic Science of Michigan Agricultural College, gave a talk on the medical inspection of schools, prevention of spread of contagious diseases, and physical welfare of children. She talked on home cookery and economics.

Mrs. J. L. Snyder, of the M. A. C., presided in the afternoon. After an instrumental selection by the Misses Clemans, Mrs. Dora Stockman, of Lansing, gave a description of "The Farm Art Gallery," a treasure that all dwellers on the farm may possess, as Mother Nature has bountifully supplied the material.

Miss Maude Gilchrist then spoke on "Changing Educational Ideals." Miss Gilchrist thought that the subject might better be read, "Changed Ideals," as the period of transition is almost past and the new has been accepted. "The newer view of education is to correlate the school life with the future, the practical," said Miss Gilchrist. "We want accomplishment, but we want substantial training. Women never wanted to be anything but womanly. The scholarly ideal is often that of leisure. The present ideal is largely a practical one. A perfect education means a perfect product for the better service of mankind. Men are rapidly achieving the perfect ear of corn. Why should we not aim for a perfectly swept room? Sociology, bacteriology, economics are new subject in school but woman must be informed on these subjects. Recent statistics show that 59 per cent of graduates from higher institutions enter work of the home. Housekeepers do not, as a rule, use their brains with their hands, do not learn to lighten labors. Why not invest some brain power as well as hand power? Education should teach girls how to do work well, in the least possible time."

Miss Martha Van Rensselaer, of Cornell, gave another talk on "Education and Home." She said, "Work does not hurt anyone as long as it is inspiring. A woman does not mind the work as long as she is happy. If she understands chemistry of foods, principles of bacteria and yeasts she enjoys doing work in which these principles are involved. If mental attitude is satisfactory work is not distasteful nor menial. We entrust the health of the family to a woman cook who has not had the proper education. We need to put these things into our elementary schools. Let women know they can write to agricultural colleges for information along the various lines."

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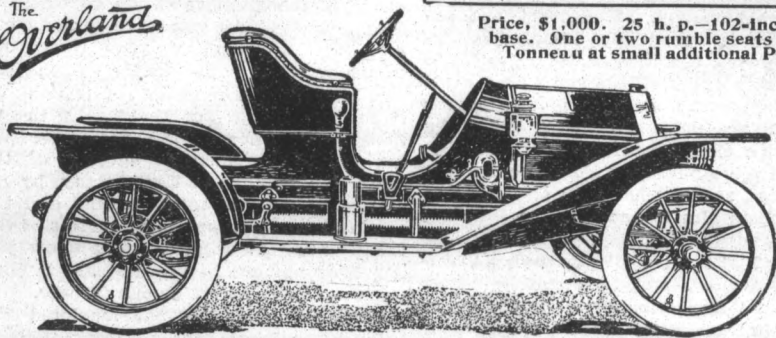
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HOME AND YOUTH

WHEN LEM WIGGINS CAME BACK.

BY CHARLES A. HARTLEY.

Beatrice Richards, the village dress-maker, slipped a silver dollar into her faded cotton glove next to the palm of her left hand, carefully lowered the blinds of her little shop windows and emerged on the sidewalk just as a faint sound of horns could be heard in the distance.

The village of Tinkerville was throbbing with excitement, and somehow Beatrice had been caught up in the swirl which had swept the entire village off its feet. In the ten years that she had made dresses for the villagers she could not recall that she had deliberately closed her shop and gone to a place of amusement and entertainment, but this was to be so radically different from the usual village entertainment that she had decided to go, notwithstanding the price of admission was four times the usual figure.

As she stood on the sidewalk and listened to the drum beats of the village band, approaching from the village station a mile distant, for some reason she fell into a fit of musing with a retrospective tendency. Away back in her memory was the picture of a rugged, boyish face, and deep in her heart was a wound not fully healed. This fresh, vigorous face often appeared to her at most unexpected times and sometimes the heart ache would pain her anew when she could not account for its recurrence. As she stood there pondering, there was a vivid flash of the picture and a throb of pain at the old wound. She could not account for it except by association. In the old days Lem Wiggins never failed to take her to every village show that came along, hence the memory picture of his face and the unhealed wound caused by his sudden disappearance from the village nearly twelve years before when an evil report had reached her ears and she had turned from him to another.

A few days before a stranger had reached Tinkerville. He gave his name as Dan Custer, and immediately began setting the fire of curiosity in the grass by putting up three-sheet posters of a Professor Spaghetti, renowned as the greatest mind reader on earth. He plastered every barn within a radius of ten miles with the pictures. The story he succeeded in getting in the Tinkerville Tattler, the only paper published within sixteen miles of the place, would do credit to a certain baron of wicked renown and a limited acquaintance with truth. The article sizzled with big headlines and enough meaningless foreign words and italics to trip the tongues of the most advanced in the village.

The first move was a daring one, but was based largely on human nature be it at the poles or the equator. The price of admission was to be one dollar each, with no dead-heads or press complimentaries, with the admission fee and one dollar each back in case the entertainment was voted unsatisfactory. A local man was to be chosen by the villagers as doorkeeper and was to take possession and hold the receipts until the close of the performance. At that time the audience was to vote on the question of whether or not the entertainment was worth the money. In case of a majority voting in the affirmative, Mr. Custer and the professor were to walk off with the door receipts. By an adverse vote the money was to go back to the original owners, with a like amount from the showmen's sinking fund, and besides Mr. Custer and the professor were to have their pains for their trouble. The proposition looked like an exceedingly good thing to the villagers. By the same token a little game known to civilization as a harmless pastime, which is manipulated with three half nutshells and a small rubber pea is likewise a seeming good thing—until one gets away by himself and thinks about it.

When Mr. Custer had worked up the village to a frenzy of curiosity he brot forth the renowned professor. He met the mind reader at the station with the local band, and they marched to the playhouse of the village, which in this case happened to be the village schoolhouse. The professor was broad and brawny and wearing a pointed black beard with a long mustache, the latter tip-tilted.

When the band, Mr. Custer and the professor had entered, the populace raced from the street to the front door and entered with bated breaths. More than one

hundred had raised the price of admission by hook or crook and were determined to see the show.

When Mr. Custer saw, by peeping thru a hole in the curtain, that about all the available cash in the village had been left at the door he sent down word to admit the impecunious free of charge as an educational offering on his part. That was the way he put it to the audience, but he might have acknowledged to a friend he could trust that he might need a few disinterested votes in the wind-up and expected to get them in that way if occasion demanded.

When the audience was seated in breathless suspense, Mr. Custer requested the band to play something soothing, like the wind sighing thru the tops of the trees, for instance. This, he said, was to quiet the nerves of the audience and make the minds of those more susceptible to the professor's manipulation. He got the solemn tune, and when the curtain rolled up there stood the professor in all his toggerly, boring into the audience with keen eyes. It was a moment long to be remembered, and a creepy sensation seemed to pervade the audience—a feeling like when one is out in a pasture and is sure a serpent is close about, or when the wind moans around the corners of the house at night when one is at home alone.

Mr. Custer raised his right hand for silence, which was a needless effort, as there was not one in the house taking more than a half breath.

"This most marvelous and instructive entertainment is about to begin," said he, glancing at the professor, "and I see that my companion, lately over the big water and a little lame in the language of the greatest nation on earth, is in fine fettle. As you have already ascertained by reading your very entertaining and enterprising town paper, the brilliant editor of which we have the honor of having with us tonight, my friend, the professor, has fairly set the scientific tongues of the earth to wagging, as I might say, by his marvelous feats of mind reading and the revelations of the innermost secrets of the heart. He is a wonder, and I know you will bear me out in the statement when the evening's entertainment is over.

"The professor has not mastered the English language to the extent that he feels able to express himself clearly, but he understands it readily. So I shall address him in the language with which you are familiar, receive his message in his own tongue, and give you the translation in all its freshness and versatility.

"Before we proceed to the first test, good people, I must in all fairness say to you that if any of you have any heart-buried secrets you would not better think of them until the professor gets thru with you. Step on the chilblains on your other foot or stick a pin in yourself to make you think of something besides the secrets you are trying to hide.

"Another thing I should like to say before proceeding to the tests, and that is that the professor is capable of doing all of that of the professionals, and more. Blindfolded, he can drive a horse at break-neck speed to any point at which you may secret an article, recover it and return it to the person hiding it. He can do this without anyone accompanying him. He can find your box at the post-office, unlock it, if furnished with the key, take out a letter that you may have left there to entrap him, read the letter without breaking the seal, and get any article in any store you may order in the sealed letter. I recall," reminiscingly, "while the professor and I were once hunting out a bomb factory for the Czar of Russia, he stumbled onto a letter done up in red seals and much tape, which he read more from habit than with a disposition to pry into royal secrets and with no intention to stir up an international ruction. He thoughtlessly told someone about it, who in turn published it, with the result that all Europe was set agog.

"As a result of this slip we had great difficulty in getting out of the cold climes of the Czar. He had in mind to give orders to forbid us to cross the border, but the professor read the great man's mind before the order could be reduced to writing and we sailed away from the roof garden skating rink before the soldiers could get their guns trained on us.

"All ready, professor?" turning to the man in the background and who, up to this time, had been leisurely leaning against a post.

With an affirmative nod he stepped forward. "Datta man Swink da firsta man on de grid," said the professor, grinning.

"Swink, John Swink, the groceryman, do you mean?" asked Custer.

The professor nodded vigorously and said something which sounded very much like the language which goes with a banana cart.

"Stand up, Mr. Swink," commanded Custer. "The professor says," he went on, gravely, "that those circulating the report that you became rich by placing sand in your sugar and keeping your thumb on the scales when weighing it are seriously in error on this point at least. He says you are not affluent enough to endow a library. That is clear, I hope. What next, professor?"

Again the professor rattled off a few sentences hooked together as with a string.

"He says that amount you collected off the widow Gray," translated Custer, "after her husband's death, was incorrect. You made an error of ten dollars in the footing in your favor, which, of course, you will return since you have found out about the error."

Just then the professor broke in with a jumble of words and Custer looked up suddenly. "Ah," he exclaimed, "Mr. Swink must have had a sudden call. I see he is leaving the room, and the professor says our grocer friend thinks he will not return this evening. It is remarkable how some people shirk their public duties. Mr. Swink should have remained and placed himself unhesitatingly on the altar of science."

At this little by-play the audience roared with laughter and stamped until the building shook.

"The professor calls for Joel Jacoby," said Mr. Custer, at a rush of words from that individual. "Is, Mr. Jacoby in the house?"

He was and started to leave hastily, but two lusty seat-mates clutched him by the coat-tails and compelled him to remain.

"Remain standing, Mr. Jacoby, and I will ask the professor what he has to say about you," turning to the man with the jet black beard, who jabbered excitedly for a moment, spreading and closing his fingers in a nervous sort of way.

"He asks whether or not you ever knew a boy by the name of Lem Wiggins, Mr. Jacoby," looking straight at the trembling man.

Mr. Jacoby moistened his lips with the end of his tongue and then nodded in the affirmative.

"Where is he now?" asked Custer.

Mr. Jacoby shook his head.

"Did you ever look in the old well under the attic window?" asked Custer, rather impressively.

Mr. Jacoby turned pale and clutched the back of the seat in front of him, when Custer interrupted him with: "Do not be alarmed, Mr. Jacoby. I have it from a reliable source that Lem jumped over the mouth of the well the night he made his escape from your guardianship something like a dozen years ago and is very much alive somewhere on the footstool tonight. Hist!" cried Custer, breaking off suddenly and holding up both hands. "The professor tells me something which may be of interest to Mr. Jacoby. He says that at this very instant a dark-browed man with a spade over his shoulder is speeding across the pasture lot in the rear of Mr. Jacoby's home for the purpose of digging up a milk crock filled with silver dollars and buried thereabouts."

With a whoop and a tug Mr. Jacoby had torn off his coat-tails and had gone, before a hand could be raised to restrain him.

For ten minutes thereafter the audience was in the throes of convulsive laughter.

When a semblance of order had been restored, Custer asked evenly. "The professor desires to know of the lady who was formerly Miss Beatrice Richards, if she has ever regretted throwing over this same Lem Wiggins for Peter Rankin? Before an answer is given the professor desires me to further say that no one could criticize her for her change of mind, but it is just a matter of curiosity on his part. Lem was a lad of little promise and Mr. Jacoby, his guardian, and Mr. Swink, the groceryman, were firmly of the opinion that he would come to some bad end. It seems to have been the general opinion when he left that it was a good riddance to a crooked stick."

At that instant the little dressmaker got to her feet, her face flushed with anger and confusion. The audience subsided to a deathly stillness. "I am Beatrice Richards, if you please," she said, her face burning red, "and I can not sit here and have a former friend of mine slandered in that way without raising my

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voice in protest. If alive, as you say, he knows best why he went away, but the fact that he was taken from an orphan asylum by Mr. Jacoby and worked almost day and night is no reason why he should be slandered, if he did run away. I, for one, think he did right." Whereupon she sat down with her face pink to the tips of her ears.

At that instant the professor also manifested the fact that there was something wrong with him. He staggered to one side and leaned against a post, which Custer was quick to notice.

"My friend from the sunny clime," said he, "has experienced a slight fluttering of the heart and must be excused a moment," at the same time running down the curtain. "In the meantime," stepping out in front of the curtain, "the doorkeeper will come forward with the receipts of the evening and place the bag containing the same on the teacher's desk. 'Have we earned the money?' he asked, and then turned at a noise from behind the curtain. 'Wait a moment, please,' to the audience. 'What do you say, professor?' turning back again. 'Tell the doorkeeper to place back in the sack what he palmed from the door receipts? Is that it? Ah, beg pardon. You say he had in mind to take from the fund his admittance fee and as much more for his trouble, but changed his mind and put it back. Well, that is all right. The doorkeeper, is honest, you see, particularly when the professor is about.'

The doorkeeper left abruptly at that and again the audience stamped and whooped.

"Do the professor and I get the money, or do you get it back with a donation of the same amount from us?" asked Custer calmly.

"It's yours; it's yours," cried the audience in concert. "I'd sell a cow to pay for seeing more of it," yelled one old fellow who had been lawing Mr. Jacoby over a line fence for the previous twenty years.

"Very well, all in favor of the money being handed over to the professor and myself will arise to your feet," said Custer confidently.

They arose in a body, except Miss Richards, who missed being in concert by her hand slipping from the back of the seat when she first grasped it.

Custer's attention was attracted to the rear at this moment and he peeped behind the curtain. He held up his hands in amazement at the sight which met his eyes, and exclaimed: "The professor has shed his toggery and fierce whiskers and whom do you suppose he turns out to be? Why, Lem Wiggins, and no other," with the curtain rolling up at the same instant.

Lem stood there in the yellow lamp light with his arms folded and a satisfied smile playing over his features.

Miss Richards gave one quick glance and flushed in the deepest confusion. Lem deliberately walked down from the stage over to his old sweetheart. They shook hands and then sat down together a little away from the rest. They talked quietly but earnestly. At first Miss Richards shook her head with a vigor which showed she was opposed to something Lem was advocating. Wiping the tears from her eyes, she looked away. Lem's lips carried another whispered message to her pink ear, whereupon she twisted her handkerchief into a knot and, looking down, blushed furiously, then nodded slowly in the affirmative.

They arose without a word and walked to the platform. Glancing down over the audience Lem motioned the Rev. Mr. Harkness forward. They were married in short order, then and there, the audience grouping about in the greatest good humor.

After it was all over, as those present supposed, Lem seated his bride in a chair at the end of the platform and then stepped forward. "Friends," said he, "now at last that I have Beatrice where she cannot escape, I have a confession to make, but first let me introduce to you my old friend and comrade, Mr. Dan Custer, who knows no more of the occult mysteries than I do, and that is precious little. Danny, come forward and bow to the audience."

Mr. Custer bowed solemnly and said he was charmed to appear before an audience of such good cheer. Then he retired to a chair at the side of the interesting Mrs. Wiggins.

Lem resumed: "Most of my confession consists in accusing the other fellow. Neither of us know enough about mind reading to injure our morals, but I have a reasonably good memory. We just cooked up this little entertainment while up in the Klondike country and talked

about it to keep our tongues from freezing to the roofs of our mouths."

The audience picked up its ears at the mention of the gold country, and Beatrice looked over the shoulder of Dan at the side of the face of her rugged husband.

"Yes, we did pretty well," Lem resumed, interpreting the thot uppermost in the minds of those before him. "We have enough for our own use and sufficient besides to endow a Carnegie library, but do not propose to do anything of the sort. We have come back in the flush of our success, but to bring you little mementos of the occasion—sort of mid-summer Christmas gifts—so that you may remember us kindly in the future. We are pained to know that Messrs. Swink, Jacoby and the doorkeeper were called away before it was time to cut the wedding cake. The expressman has just brot up a box on a wheelbarrow containing some \$12,500 in good old yellow boys, which has been divided into one hundred and twenty-five packages of equal value. This will make a nice little present for each of you. This is different, you see, from the average entertainment where you pay fifty cents to get in and five dollars to get out. In this case you paid one dollar to get in and will get one hundred dollars when you go out," laughing and rubbing his hands. "This is a plan, on the part of my old partner and myself, to wake up Tinkersville and give you a new date for reckoning events. The great frost of '56, the flood of '57 and the locust plague of '59 are to be no longer the dating points for reckoning important events. 'When Lem Wiggins came back' will do for a change," laughing.

"Friend Harkness will come forward first," dropping his jocular vein and looking out over the audience, which was half stupefied with surprise. "You get the door receipts as a wedding fee," when the old minister presented himself trembling in every limb. "Eh, Beatrice, dear, is that right?" glancing at the bride, who nodded and smiled. "And here is another package of one hundred," reaching back to the box which had been opened, which goes with the first as a token of goodwill. Good evening and good luck, Mr. Harkness," waving the astonished old man aside before he had an opportunity to stammer his thanks.

"Now, Mr. Editor man," pulling two packages from the box, "you are such a nice and gullible old gentleman that you get the regular present first intended for you and that intended for Mr. Swink, who does not seem to take kindly to our enterprise. Give us a nice little send off in your paper and do not forget to say how pretty Beatrice looked."

"Where is Betty Small, the little girl who used to wear her hair braided in pigtails down her back and spell me down every Friday afternoon?" asked Lem, still smiling and talking so fast that no one could break in on his flow of language. "Why, bless me, Betty, how you have grown and how pretty you are," as a smiling young lady came forward. "It is lucky for Beatrice that I did not see you before I submitted to the yoke."

By that time the audience had almost fully recovered from the shock of galloping events and more fully realized the situation, and demonstrated the same by a shout which nearly raised the roof.

"You get a double prize for those spelling bee feats," when he could again make himself heard, "the one originally put up for you and the one the kind doorkeeper went off and missed getting."

"Now, where is Auntie Moore?" with the glibness of a sideshow barker, "that good old woman who could make doughnuts to the queen's taste and who gave bushels of them to we ravenous children. Stay where you are, Auntie," as an old lady began getting to her feet. "I will come right down where you are," picking up two packages from the box and plunging into the crowd. "Auntie, you were as good as a mother to me, and many, many times I thot of you when away up in that frost land. Here," extending the two packages, "your reward is late in coming, but it is here. You get your own and that which might have gone to the milk crock treasury of my old guardy, who, I have no doubt, is now out in his orchard performing the resurrection act where his heart was interred. But we procrastinate," springing back to the stage. "The rest of you form in line around the sides of the room and file by and get your pie, and then pass out at the door, for it is getting late, and I want a few moments yet this evening to get acquainted with the new Mrs. Wiggins. Here you, Dan and Beatrice, come and help at the pie counter."

The crowd filed around, thrust up eager



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hands with a "thank you, sir," which meant much to the returned orphan. A public demonstration was proposed as the crowd meandered out on the grounds, but Lem sent word out that he would not permit it. He said he was never happier in his life, and hoped that he had given his old home people at least one happy and exciting hour. "If anyone has been missed," said Lem, as he tucked Beatrice's hand in the crook of his arm, "let him or her come around tomorrow and all will be made right. Come, Danny, walk down the lane with Betty."

A DAY'S PEARLING ON THE BIG SUGAR.

BY LAVILLA W. MACOMBER.

"Well, I declare. Where'll you two be trillin' off to next?"

The voice was gruff but held a note of pleasantry, and we knew before we turned that the speaker was Benjamin Woodbury, an elderly cousin whom we called Uncle Ben.

"Goin' to the river I s'pose," he continued. "Here, hand over that pearl-rake. Guess I'll be goin' part o' the way."

Anne very gladly relinquished the heavy rake which we had taken turns in carrying.

It was only a mile from our home to the banks of the Big Sugar, and we had planned to spend the day, the last of our vacation, under the shade of the maples by the water, digging clams or lounging, as suited our fancy.

The day was typical of late autumn, tho early in September. In the middle distance the heat waves shimmered and danced, and the usually busy bird life which was one of the tree-lined river's most pleasant features, was nowhere in evidence. The leaves of the huge maple by the bridge hung limply in the still warm air, thickly coated with the yellow dust with which the sand storm of the day before had coated everything.

"I'm goin' down to the swale to look after the cattle," said Uncle Ben, as we paused by the gate beyond the bridge. "If you get stuck, just holler!" he chuckled, limping away in the direction of the bayou which could be seen thru a group of maple and poplar saplings.

"It is evident that someone has been working here," said Anne, as we passed a pile of freshly opened clam shells heaped on the high, grassy bank. "Let's go down nearer the bridge where we saw that sand bar."

So we dragged our rake down to the bar and threw ourselves on the clean white sand beneath an overhanging tree. The sand bar was broad and high above water, extending almost across the river, the opposite end being covered by only a few feet of water.

The map of Wisconsin shows the Big Sugar straggling diagonally across the counties of Rock and Green, crossing the line between the two only a few miles from where we sat. The river is small and unimportant in most senses, tho it is known to certain New York pearl buyers as the home of some of the finest of fresh-water pearls. A few years ago excitement ran high at the finding of several valuable pearls at this point. Professional and amateur pearl hunters flocked to the river in such large numbers that the clam beds were nearly stripped of shells. Both classes of pearl hunters use the long-handled wire-hooded rake, or even more primitive implements, as the numerous snags lying just beneath the water, and the constantly shifting sand bars, made navigation practically impossible, thus preventing the use of more modern methods of pearling.

Uncle Ben was just rounding the bend in the river ahead as we drew in the third rakeful of clams.

"I believe we've got some big ones this time," panted Anne as we inverted the hood of the rake to prevent the clams from slipping away, and dragged rake and shells to the dry sand. We were fortunate in having stumbled upon a bed of clams under the edge of a snag, and there were several varieties of shells represented in our little pile.

Uncle Ben stood silently watching me as I vainly tried to open a huge crinkly one with a thin-bladed knife.

"Here, lemme show you how to open that," he said at last. "If there is a good pearl in that shell you'll scratch it pushin' the knife in that way."

We watched him as he cleverly inserted the end of the knife in the edge nearest the hinge of the clam, pushed it thru to the other side and, with a quick turn of the wrist, brot the knife blade out between the lips of the shell.

"Now run your thumbs along the edge of the shell," he said, handing me the open clam. "Y' won't find any good pearls around the hinges."

Our shells yielded no perfect pearls but we were content with a number of deep pink, oddly shaped slugs which we planned to have set in stick-pins. The slugs are of the same color and substance as the pearls but are usually lustrous only in spots and are of irregular shapes.

On examining our shells we found that they represented a wider range of types than we had at first supposed. There were the huge sand clams of a greenish black color; some clear sage-green, pearly white inside, and showing the marks of age on their broad mossy backs; the broad flat sailers with their pinky-white interior; the little round, warty nutmegs; the deep rounded rollers with closely-lined edges, and several other varieties with such suggestive names as pigeon-wing, buck-horn, lady-slipper and elephant-ear. The buck-horn is a long irregularly pointed shell, thickly covered with little wart-like knobs. Of the crinklies, there are said to be forty different varieties which are distinguished by the waves or crinkles on the outside of the shell, these being more or less distinctly marked on all of the varieties. Only one variety of this type, however, contains pearls of any value. The lady-slipper is a beautiful shell; long, smooth and pointed, of a rosy-

Nearly all of the pearlers sell the shells they have opened, after cleaning, to a representative of a large button factory, who collects a carload at intervals during the summer.

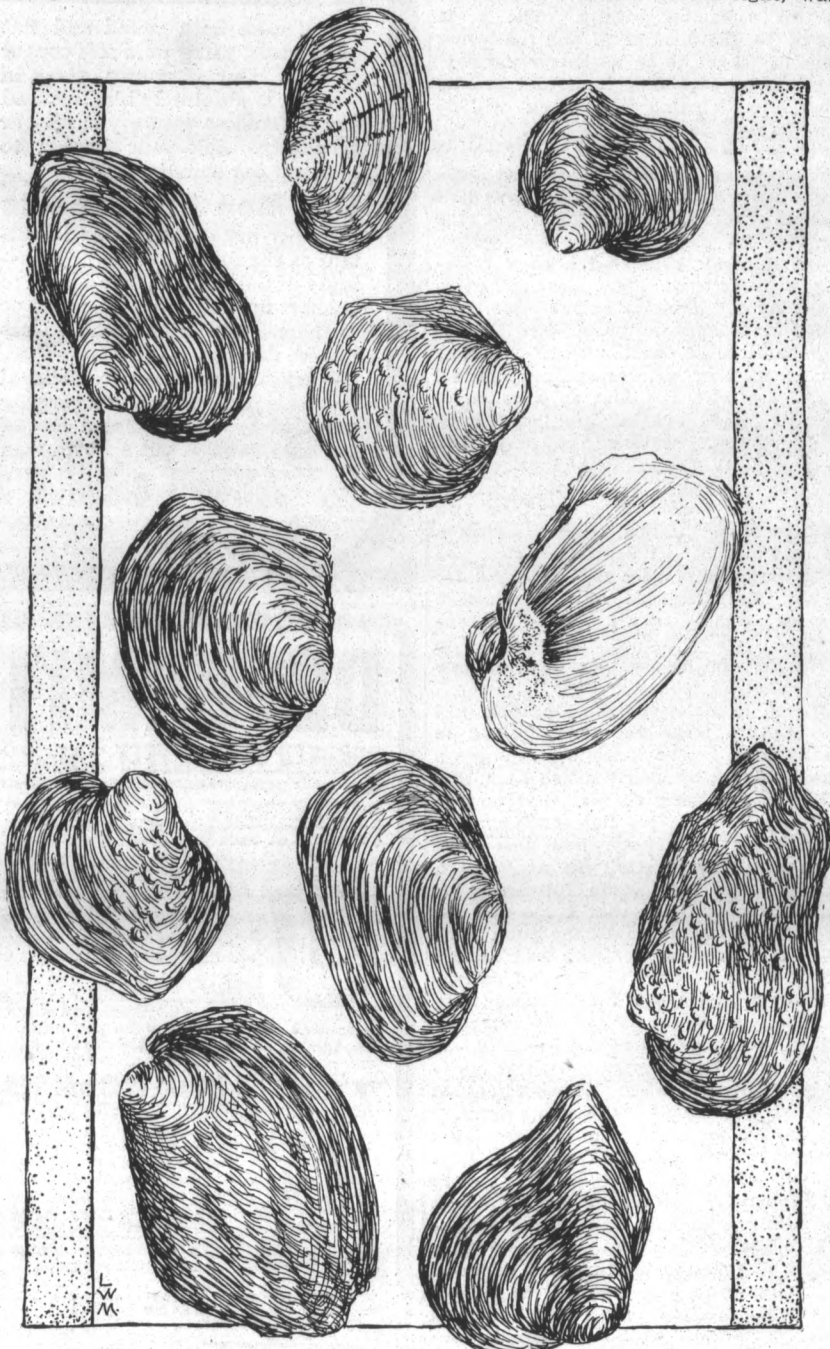
"Guess I've got the craze, too," laughed Uncle Ben. "An' if you girls ain't goin' to use the rake again right away, I'd like to try my hand at pearlin'."

"Certainly, you may use the rake," said Anne, and I hastened to add my permission.

The water was in most places fully exposed to the hot sun, and Anne preferred to rest awhile in the cool shade while I got out my pencil and pad and proceeded to sketch the bridge with its surroundings and some of the more pronounced types of shells.

Uncle Ben stood waist deep in the warm shallow water, cautiously feeling his way on the treacherous sandy bottom to avoid plunging suddenly into some deep hole. He drew the rake to the surface occasionally and opened the few clams it contained where he stood. Not caring to preserve the shells he threw them back into the water, which act no doubt brot down upon his unknown head the maledictions of some other pearler who perhaps incautiously went into the water with bare feet and stepped upon the sharp edges of the open shells.

Just beyond the group of black ash saplings, a few rods to the right, was a



Types of Shells Taken from Sugar River, Wisconsin, by Pearl Hunters.

purple color inside, it is a fine specimen for polishing.

The polishing of shells is accomplished by first grinding off the black outer coating, rubbing smooth with a fine sandpaper, and finally ending up the tedious process by means of emery powder and chamois skin, persistently applied. Treated in this manner the shell shows up all its rainbow tints and rivals the finest pearl in the iridescent colors reflected beneath the lustrous polish.

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Poultrymen living near the river often feed their fowls on the freshly cut clam meat, it being considered a valuable egg-producing food. They also crush the shells for poultry grit.

pond of sluggish water. The large flat pads of the water lily covered the surface, and the edges were thickly dotted with clumps of water arum with their graceful, arrow-shaped leaves and curious seed pods swaying in the breeze, careless of the torrid rays of the sun since their roots were so well nourished. The cicadas droned sleepily in the tall marsh grass, and higher up on the pike the golden-rod waved its yellow banner.

"Why, is that Uncle Ben, away down on that sand bar?" exclaimed Anne, shading her eyes with her hand.

In the direction she indicated I could see the figure of a man emerging from the water, dragging a rake up onto an island sand bar. Evidently it was Uncle Ben, so we gathered up our umbrellas and sketching material and started down the river. Uncle Ben had worked his way down



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the stream until he was within a few feet of the bend where the tail-race wound its way down to join the river.

"Got a pearl!" he yelled excitedly, as we came within speaking distance. "Wait till I get out o' this an' I'll show you."

He slid into the water between us and the sand bar and soon clambered up the grassy bank. The pearl which he had found was a small button pearl almost perfect in shape and of a beautiful greyish-pink color. Such pearls often sell for a neat sum, even tho they are not entirely perfect in form. The color of most button-shaped pearls ranges from pearly-white thru the various shades of flesh, pink, rose and steely-blue to the deepest reddish purple and black. The steely-blue or grey are said to be seldom found and are very valuable.

From the point where we stood we could see the river stretching away like a shimmering ribbon in the blinding afternoon sun, until an abrupt bend hid the water from view. Groups of trees at irregular intervals indicated the winding course of the stream, and far to the southward we could see dimly in the distance the clump of trees clustering around the county-line bridge.

In the early spring when the creeks and drainage ditches empty their swollen floods into the Big Sugar at that point, the wagon road, never very good, is practically impassable. There may be seen deep gullies on either side of the road, where the swiftly rushing waters, swerving from their course, have torn jagged pathways thru the black loam across the low dipping wagon track, thru the dense undergrowth of hazel and oak, laying bare the roots of the huge maples and sweeping on over the slough beyond. A wild, gloomy place, untouched by the woodman's ax, and the home of wild animals and birds which avoid the haunts of men.

We paused by the bridge to watch the swirling water and listen to the contented twitter of the birds as they flocked back to their favorite haunts. The big maple by the bridge was literally alive with English sparrows twittering and scolding at each other. A sharp tap of the rake-handle on the trunk caused the whole flock to rise in the air and fly to another tree. Somewhere in the thicket a mourning-dove cooed its mournful song. "Sign o' rain," muttered Uncle Ben.

Far off in the distance we heard the faint lowing of cattle as they wended their way thru the odorous marshes to their homes. A muskrat trailed slowly across the pasture grass and slid into the water by the pier. A huge night-hawk swept and circled in the upper air and as we turned homeward a pair of bats brushed silently by.

COUNTLESS THINGS.

BY FLOY SCHOONMAKER ARMSTRONG.
The sands of the sea-shore, the hairs of your head, Are deemed well-nigh countless, I've oft heard it said; But these would seem scanty if mothers could tell A few of the countless things they know so well.

Suppose that you counted from youth till old age, Had wisdom and learning—the gifts of a sage, Could you number the times that our youth—goodly crop— Have heard "Rock-a-bye, baby, on the tree-top?"

Just count up the journeys "to Danbury Cross To see an old woman ride on a white horse;" And think of the times—night, morning and noon— That that frisky old "cow jumped over the moon."

And "Old Mother Hubbard went to the cupboard," How often, now, do you suppose? While "Little Tom Tucker sang for his supper" More times than anyone knows.

Then "Little Miss Muffet sat on a tuffet Eating of curds and whey," And "Pussy cat mole jumped over a coal," How many times in a day?

"Hark, hark, the dogs do bark," (Our grandmothers heard them of old), And Solomon Grundy, born on a Monday," How often have these facts been told?

"There was an old woman, and what do you think?" Were this question counted 'twould take seas of ink, And more would be needed to give a just due To the busy "old woman who lived in a shoe."

Just count up the kisses, the good-nights, good-byes, And the aggregate figures would reach to the skies. The hairs of your head, the sands of all seas Would seem microscopic when likened to these.

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