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M.E. WILLIAMS

Weed Seeds in Manure.

THERE is a great diversity of opinion among farmers as to the vitality of weed seed in manure. Many of those who have an opportunity to haul manure from town hesitate to do so for fear of seeding their fields to obnoxious weeds. In turn there are those who contend that the vitality of the weed seeds is destroyed, when it is masticated and digested by the animal. However, it is the general consensus of opinion that seeds falling from feed racks into bedding, the latter being removed directly to the field, will do considerable damage in seeding the field.

Primarily, it was the former question that invoked our interest in the matter and in sequence to this, the records were turned to for inquiry as to whether any scientific work had been accomplished along this line. The subject has been very well treated, especially by the Maryland and Vermont stations. The work carried out at Maryland is especially instructive and interesting.

The latter station noticed that foreign weeds were rapidly gaining entrance to the state from an unknown source. It is to be remembered how, in many of the corn states, farmers have blamed the entrance of certain weed pests to the entrance of live stock used for feeding purposes.

Weed seeds gain entrance into manure in two ways. They may fall direct from manger to bedding or may pass directly through the animal's body. Usually, both end in the same product, i. e., the so-called barnyard manure.

Weed Seeds in Manure Six Months.

Separate heaps of cow manure, horse manure and a mixture of the two, were constructed, each pile being about four feet high and four feet square, and each containing several tons. Each pile was well tramped. A sample of each was taken and thoroughly sterilized by boiling for one hour. This, of course, destroyed all fungous growth and foreign seeds. From the sterilized substance, sufficient material was taken to fill six small bags. Into these bags of sterilized manure were placed the weed seeds that were to be tried. They were then buried in the center of various piles of manure to which the samples respectively belonged. A vitality check was previously run with similar aged seeds in sterile soil. The temperature of the heaps was taken daily. The highest temperature recorded for the horse manure was 201 degs. F., and the lowest 40 degs. F. The highest for the cow manure was 168 degs. F., and the lowest 40 degs. F. The average temperature outside the piles was 60 degs. F.

After sixty days the temperature remained constant within the piles, but in order to duplicate results upon the average farm, the material was left for six months. At the end of this time, the bags were taken from the piles and an attempt was made to grow the contained seeds in sterilized soil. Not a seed grew. They rotted and became easily crushable in the fingers.

Weed Seeds in Manure One Month.

To duplicate the average conditions under which the truck gardener and dairyman labors, the experiment was again duplicated, and like conditions repeated, except that the trial was closed at the end of one month. The seeds were tried out as before in sterilized soil, and the same results obtained, except that the seeds of six varieties remained hard. It is doubtful whether any of these would have grown, although Dr. W. J. Beal, of the Michigan Agricultural College, found, in weed seed vitality experiments, that at the end of 25 years, one more variety germinated than had germinated at the end of five years. The seeds that could easily be crushed in the fingers, of course, never would have grown.

We may well assume that there is little danger of germination from seeds that have remained in manure piles one month and none at all from those that have remained six months.

Masticated and Digested Weed Seeds.

To determine the vitality of digested seeds, three healthy, yearling calves were chosen. As before, samples of the weed seeds were germinated in sterilized soil to test their natural vitality.

A ration of wheat bran, gluten meal, malt sprouts and corn fodder was fed twice a day. These feeds were used in

order that no weed seeds would be consumed except those purposely fed.

The calves were fed four days before collecting the manure. This was done in order to decrease any chance of error from seeds previously eaten. As a further precaution the calves were not bedded. A total number of 2,000 seeds were fed from each variety. Over 35 varieties were tested.

Three agricultural conditions were imitated as follows:

(a) Where the manure is hauled direct upon the field as a top-dressing and subjected to the action of the rains.

(b) Where the manure is hauled from the stable and plowed under immediately.

(c) Where the voidings are allowed to remain as they occur by chance.

The following results were obtained:

(a) When the manure was used as a top-dressing, 12.8 per cent of the seeds fed to the animals germinated.

(b) In the case, where the manure was plowed under, but 2.3 per cent germinated.

(c) Only 3.1 per cent of the seed grew when placed under conditions similar to those of cattle in the field.

The seemingly low per cents have a tendency to make the germination of the weed seeds seem relatively small, but when we taken into consideration that certain commercial feeds have been found to contain 1,000 to 125,000 seeds of obnoxious weeds to the pound, the danger becomes obvious.

Taking the least per cent of 2.3 and the lowest number of seeds to the pound, we have 46,000 weed seeds to the ton. This figure, we may well assume, is many times too low.

Indiana.

L. E. NEUFER.

FARM NOTES.

Is the Use of Land Plaster Profitable?

Will you please tell me the real value of land plaster? Could I buy it at \$4 per ton and be sure that it would be a paying investment? On what crops would it give the best results, and about how much is necessary to apply on an acre?

Lapeer Co.

A. J. S.

In former years, when Michigan soils were comparatively new, gypsum or land plaster was in very common use, being generally sown on new seedings of clover at the rate of from 100 to 200 pounds per acre. Often the beneficial results were very apparent, but as the land became older in cultivation, these results were not so apparent, and finally the use of plaster was almost entirely abandoned upon the older agricultural lands of the state. The reason for this was simple. Land plaster is not a fertilizer, but when applied to the comparatively new land which contained a surplus of unavailable mineral fertility, notably potash, a chemical action resulted from the application of the land plaster, which is chemically known as calcium sulphate, which converted a portion of this unavailable mineral fertility into a form which could be used at once by the plants. The failure of the land plaster to produce beneficial results after a few years, was not due to any deterioration of the quality of the product itself, but rather to the fact that this store of unavailable mineral fertility upon which the plaster had power to act as above noted, had become so depleted as to be a negligible quantity. Thus the question as to whether land plaster would be a profitable investment would depend very much upon the soil to which it is applied, but upon the older soils of the state it is doubtful whether any beneficial results would be noted from its application, for the reasons above set forth.

Eradicating Quack Grass.

Please advise as to best method of killing quack grass, both for light, sandy and heavy clay land, if any difference. Have read in some farm paper to plow in the fall and in spring sow two bushels of buckwheat per acre, plow down when in blossom, and follow with sand vetch. Have heard that following buckwheat with millet would also kill it.

Cheboygan Co.

H. T. R.

No matter what kind of soil quack grass may be growing on, there is just one sure method of eradicating it, and that is by not permitting it to make any top growth above ground for a sufficient period of time to starve the roots. The best method of accomplishing this result will depend not a little upon where the grass is growing, whether in an old sod in a pasture or meadow, or in a cultivated

field used in the regular crop rotation. Where growing in a pasture or meadow undisturbed for some time, the roots are much nearer the surface than where growing in a cultivated field which is stirred at a considerable depth. In this case, the best way to eradicate it is to plow very shallow after haying time and keep disking it different ways of the field frequently during the balance of the summer. This cuts up the sod into small squares and, under usual summer weather conditions, it dries out sufficiently so that it will not grow. Then in the spring this same land should be plowed to a considerable depth, when it may be used for a crop with very little trouble, if any, from the quack grass. Whether it can be smothered out by the use of other crops as suggested, is a debatable question. Some claim to have had success with the plan suggested in this inquiry. In some states, experiments have been conducted in the use of different crops for smothering out quack grass, of which crops hemp is said to be the most promising, but we have not seen a statement of the result of these experiments. If the plan of using buckwheat followed by vetch or millet is tried, we should be glad to learn the result, but from present knowledge can recommend no method, except some system of thorough cultivation which will prevent quack grass from making a growth above the ground, which promises any degree of certainty in its thorough eradication.

Applying Lime to Growing Alfalfa.

I saw an item in the Michigan Farmer about sowing alfalfa. I sowed seven acres of alfalfa the first of September, 1912, but it did not seem to make any growth this summer. I cut it three times, but from three cuttings I did not get over four tons. There seems to be a good stand on the ground. Would you kindly inform me through the paper whether lime would be of any good if sown on in the spring, or not?

Lenawee Co.

SUBSCRIBER.

It is very doubtful whether the application of lime to the surface of this field would act as a soil corrective to an extent which would cause the plants to become inoculated and make a good growth at once. Provided the lime could be applied and worked into the surface soil with a harrow before the alfalfa starts in the spring, beneficial results might follow, depending somewhat upon weather conditions. In order for the lime to act as a soil corrective, it must be in a moist condition in contact with the soil with which it had been previously well mixed or act upon it in solution in the soil water, as would be necessary in this case, which is a much slower process. It would perhaps be profitable to experiment a little to determine what results may be secured by this method, but it is a better plan to apply the lime and work it into the soil when fitting it for some crop, and the longer this is done before the alfalfa is sown, the better the results that will be noted in the early inoculation and vigorous growth of the alfalfa. Whether it will pay better to leave this stand of alfalfa and attempt to improve it as suggested will, in the writer's opinion, depend somewhat upon whether any of the plants are inoculated or not. If there is scattering inoculation, which can be determined by the appearance of the plants, whether they are of a dark green color and make a vigorous growth or of a light green and of stunted appearance, or an examination of the roots can be made to determine whether nodules are present upon them. If there is scattering inoculation, it perhaps might pay to leave the stand, but otherwise it would be better to plow it up for some crop and apply lime at once as a preparation to reseed to alfalfa at the proper time in the crop rotation.

Corn vs. Oats.

Which would you consider the harder on our soil, a 100 basket yield of corn per acre or a 50 bushel yield of oats per acre, soil being a gravelly loam with a clay bottom?

Grand Traverse Co.

H. W. B.

From the standpoint of the actual plant food taken from the soil by a 100-basket yield of corn and a 50-bushel yield of oats per acre, the corn would take the most plant food from the soil. According to the tables used by Van Slyke in his work on "Fertilizers and Crops," a corn crop yielding 50 bushels of shelled corn per acre would contain, including the cornstalks and cobs, 78.4 lbs. of nitrogen, 27.6 lbs. of phosphoric acid and 55.2 lbs. of potash, while the 50 bushel crop of oats, including the straw, would contain 48 lbs. of nitrogen, 18 lbs. of phosphoric acid and 40.8 lbs. of potash as an approximate average. Thus the corn would

take from the soil plant food in excess of that taken by the oats amounting to 30.4 lbs. of nitrogen, 9.6 lbs. of phosphoric acid and 15.4 lbs. of potash.

In the consideration of this question, however, other facts should be taken into account aside from the amount of plant food actually taken from the soil by these two crops. The oat crop, in common with other small grains of its class, has comparatively shallow roots which occupy the surface soil only, and thus take practically all of their plant food from that portion of the soil which forms the furrow slice when plowing. On the other hand, corn is a comparatively deep rooting plant, and reaches down for a considerable portion of its plant food below the soil occupied by the oat crop. Then, too, the method of culture followed in producing a corn crop is such as to increase the available fertility of the soil through the chemical processes which take place after a thorough mixing of the soil, thus bringing different soil particles into juxtaposition, and by this means increasing the available fertility in the soil, although, of course, not its total content of plant food.

It will thus be seen that it is difficult to answer this question in an authoritative manner. Taking crops of the yield mentioned, the corn crop would actually take from the soil a considerably greater amount of plant food than would the oat crop, yet it by no means follows that it would be harder on land, when considered from the standpoint of the soil's ability to produce future crops. As a matter of fact, experience has proven that it is better for the soil to produce a crop of corn and a crop of oats following it than two crops of oats in succession, even though the corn does actually take more plant food from the soil, which is one of the reasons for the use of crop rotation instead of a single crop system of farming where it is desired to maintain the fertility of the soil. There are, of course, other reasons, and perhaps still better ones, for using a carefully planned crop rotation, yet it is certain that a succession of crops having different habits of growth will not produce soil exhaustion as quickly as a single crop grown year after year, even though a larger aggregate of plant food is actually taken from the soil by the variety of crops.

Top-Dressing Fall Sown Grain.

I have a field of rye which I am thinking of top-dressing with manure. Is it all right to top-dress either wheat or rye after it is up?

Ingham Co.

SUBSCRIBER.

Rye or wheat may be safely top-dressed with stable manure, provided it is evenly and thinly spread after the grain is up, if the soil is in condition to permit its application. This should be done with a manure spreader after the surface of the field is frozen so that it will not be badly cut up by the process. This treatment will undoubtedly increase the prospect of getting a seeding of clover in the grain next year, and in fact, many farmers have found that it practically insured a good seeding where other methods failed. Only thin applications should be made, which can be far better accomplished by the use of a manure spreader than where the manure is spread by hand.

REINFORCE THE OLD STYLE OF TILE SILOS.

There was no experience to guide the men who erected the first tile silos. At that time the stress on the walls was not well understood and the resistive power of the tiles was in some cases overestimated. As a result of this lack of knowledge some of the first silos built of tile collapsed. One owner lost 200 tons of silage just as he was ready to take his herd into winter quarters. In every instance that has come to notice the fault was in the insufficient reinforcement provided. Where this had been properly looked after there was no trouble. Those who have such silos should see to it immediately, if they have not already done so, that additional reinforcement is provided to prevent the possibility of loss. Iron bands or rods fastened firmly about the silo will accomplish the desired end. In recent years the builders of this style of silo have had experience and the aid of actual tests of the strength of tile to guide them, and the structures erected with this information at hand have met every demand made upon them.

SELF-MADE FARMERS.

In the next issue will appear the first of a series of articles entitled, "True Stories About Self-made Farmers," telling how a young man earned his own farm.

How to Get a Farm.

I **C**ONTEND that every man who intends to make a livelihood by tilling the soil should aspire to have a farm of his own. It may be discouraging to a young man when he looks around over the country, and sees that every foot of land is owned by somebody. To such we will say that we never knew a time when money would not buy land, and we never knew a time when an able-bodied man could get money easier than at the present time. With every farmer begging for help, he ought not to be entirely without money. Two months' wages will purchase an acre of improved land and no man who tills the soil should be content without at least one acre.

When we consider the possibilities of one acre of land it looks like no small affair. But we must remember that the possibilities are much greater than the probabilities. People who have not studied the matter closely are often deceived about the profits of farming. They figure on the possibilities only, and from such reckoning they conclude that the farmer's profits are immense. The man who owns one acre of land has one spot on the face of the earth which he can not be crowded off from to please the convenience or fancy of a landlord.

In many, and perhaps most instances, it would not be policy for a young man to invest his first two months' wages in an acre of land, but I will say that he can do much worse with his first wages. Even a small piece of land makes a man an important factor in a neighborhood. The neighbors look upon him as a fixture, and they will take more pains to get acquainted with him. There are many different crops raised at the present time from which the gross receipts are large, although they require a large amount of labor. If a man has a surplus of labor he can do well by raising such crops. As one of these crops I will mention strawberries. I intend to raise strawberries enough every year to supply my family, and I frequently raise one bushel of berries on a square rod of ground. A little figuring will show that there is a profit there if we have a market. And in this section of the state a farmer who has a strawberry patch, has the whole country

hunting him up in strawberry time. Then it gives the boys and girls a chance to put in their time. A man with a small farm can usually rent adjoining land, and he has this advantage that he cannot be crowded off.

A man with a small farm can sell out and buy larger when he gets able, or perhaps he can do better by buying adjoining land. When a man works and earns money, and pays the owner of the land a fair price for it, he has just as legitimate and honorable a right to it as the man who goes into the forest with his axe and hews out a farm for himself.

I once knew a man who was a large and successful farmer; he also had other business interests, and was looked upon as a man of ability and judgment. In conversation with a neighbor I overheard him remark that a man could be just as independent on 40 acres of land as he could on more. He claimed that the necessities of life were very simple and the man who could be satisfied with them was all right on 40 acres. He gave as the principal reason for coming to such a conclusion that the 40-acre farmer was not bothered with the perplexing question of securing proper farm help. I have observed that the man who does good farming on 40 acres of land can soon buy more. On 40 acres of land a man can keep some stock and that will help him to solve the greatest of all great farm problems, which is that of soil fertilization.

I wish to give a leaf from another man's experience. A few months ago I was talking with a large and successful sandy land farmer, and the question of clover seeding came up. He claimed there was only one sure way of getting a stand of clover and that was secured by fitting your land up in good shape in the spring, and sowing your clover alone. Then, by clipping your seeding a number of times during the summer you were sure of a good stand. This seems like an expensive way of getting a stand of clover, but I feel certain that the farms of this vicinity would be in much better condition had their owners adopted that plan some years ago.

Branch Co. O. A. VANDERBILT.

A ROTATION OF CROPS FOR A DAIRY FARM.

I would like to see the matter of crop rotation on a dairy farm discussed in the Michigan Farmer. It seems to be conceded that corn and alfalfa are about the two crops to grow, and how can these two be alternated to best advantage? Hon. James W. Helme, at the State Round-up last winter, stated that he has 50 acres, 10 of which is in permanent pasture, 20 in corn, and he aims to cut 15 acres of alfalfa every year. What is done with the other five acres is not stated. All of the latter cannot be occupied with buildings and yards. Each year he seeds three acres to alfalfa and plows up three acres. Now, with such a system of rotation it would seem to be necessary to replant some of the ground to corn a number of times before it should be again reseeded to alfalfa. Ordinarily we do not consider it good practice, nor profitable, to plant corn on the same ground two years in succession, and to continue this four or five years without a sod plowed down, even with a liberal application of stable manure, would hardly be expected, to give a satisfactory yield. Apparently the largest profit is not gained from alfalfa either, without leaving it for cutting a few years. It would not be most profitable to plow it up after cutting one season, as is done with red clover. How may a rotation of these two crops be arranged on, say, 40 acres so as to get the most out of the alfalfa and still not plant any ground to corn year after year, that is, so as to have these properly balanced up for a dairy herd?

Allegan Co. EDWARD HUTCHINS.

A number of years ago before I began to raise sugar beets and other special crops and while I was almost exclusively in the dairy business, I had a three-year rotation of corn, clover and wheat. My experience is that bedding must be produced on the dairy farm, as well as the roughage and the concentrates. Of course, I didn't feed the wheat, but I had the wheat to sell to buy cottonseed meal and oil meal or any other feed that I chose to feed the cows. With red clover of course this rotation worked very nicely. We plowed clover sod which had been covered with stable manure and put it into corn for silage. The corn was taken off the last of August and first of September and the ground fitted without plowing, usually with a cultivator, and sowed to wheat. Then the next spring

the clover was seeded in the wheat. This worked nicely. We had good crops of clover, good crops of corn and good crops of wheat. For a seven-year average I had over 30 bushels of wheat per acre with this sort of a rotation without plowing for the wheat and with the application of about 200 pounds of commercial fertilizer on the wheat. That was all the fertilizer that was used in the rotation.

But now when we want to substitute alfalfa for red clover and when we realize that we can't get the best out of alfalfa unless we keep it more than one year, the problem is not so simple. Gov. Hoard thinks that we can get along nicely by using alfalfa two years and then plowing it up and putting it to corn. If we keep alfalfa down two years the rotation is not so simple as with my old rotation of three years and three crops. On a farm of 40 acres as suggested, probably you would want about ten acres of alfalfa. This would leave about 30 acres for other crops. Now if you kept the alfalfa down two years, then, of course, you would have to plant part of the ground to corn two years in succession. My knowledge of alfalfa is not sufficient yet to warrant me in saying that you could seed alfalfa in wheat the same as I do red clover, although I think the time is coming when we can do this, after we get our soil well inoculated with the alfalfa bacteria. We could put in oats in place of wheat. Some think this would be better. And then we could seed alfalfa in oats in the spring, seeding a light seeding of oats, say a bushel to the acre. And I think this is the best time of the year to sow it. I don't think there is any better crop than oats or barley to seed with, providing we do not sow too much seed per acre to smother the young plants. If we will properly lime the soil and supply the proper amount of phosphoric acid and on the sandier soils some potash as well, and properly inoculate the soil. I don't think there is any question of getting a good seeding with oats. Then for two years 10 acres of alfalfa on a farm ought to be a sufficient amount of hay for the dairy and also for what work horses it is necessary to keep. You certainly ought to

get from 40 to 50 tons of good alfalfa hay off from ten acres.

Now if we will plow our ten acres of alfalfa up and plant it to corn, after the corn we can sow oats or oats and peas, and if necessary we could do this without plowing in the spring, which would save a little work. And then, too, if we wanted to we could put this into oats and peas again by manuring it well and plowing it in the fall, and this would put it into good condition to seed to alfalfa, after we had supplied an abundance of lime and phosphoric acid. One cannot tell just exactly how much oats and peas with the alfalfa, but a little experience would determine this.

If one wanted four crops in the rotation he could put in a special cash crop, potatoes for instance. There is nothing better to grow in the state of Michigan than potatoes, and ten acres of potatoes with the peas and oats and corn, and two years of alfalfa make a splendid rotation. If ten acres of alfalfa did not provide enough roughage in the form of hay, the pea and oat straw would be good enough for one feed for the cattle, providing there was not a sufficient amount of alfalfa. Then the peas and oats would make an ideal ration to feed in connection with alfalfa hay and corn silage to the dairy cows and the growing stock, and if you could produce enough of it you wouldn't have to purchase any other kind of grain. I wouldn't want to positively figure this out without a little experience but I hope to learn from experience just how long we can leave alfalfa to the best advantage, and I doubt if very many people know at the present time.

COLON C. LILLIE.

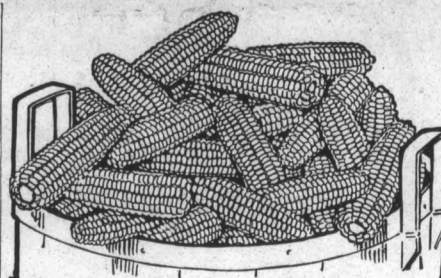
ANOTHER HOME-MADE CONCRETE MIXER.

In your issues of November 1 and 29, Mr. F. E. Smith, of Cass county, describes his concrete mixer for O. F., of Iosco county. I am much interested in labor-saving devices, too, and had occasion to use some 70 barrels of cement in and about my new barn this season, using my gasoline engine to do the mixing with. In the wall construction I used a barrel mixer, something similar to Mr. Smith's description of November 29. But this one would not mix wet. Mr. Smith does not say that his does.

I considered this rather inconvenient, so when it came to the concrete floors, of approximately 2,350 sq. ft., I decided I would have a good mixer of my own. I secured the assistance of my brother and we constructed the one which we now use. I got an extra heavy galvanized stock tank, 18 gauge, 3 ft. in diameter and 2 ft. high. I then got an old mower, removed the left hand drive wheel, made two skids of 2x6 planks, fastened them 26 inches apart with two 3x4's running crosswise on top securely bolted. We then removed pitman wheel shield to allow the use of a larger belt pulley which we bolted to it; we allowed this to be outside of the skid; we then fitted and bolted this side of mower frame to one of the cross pieces, after the right hand side had been raised to about 35 degrees. We removed tilt lever and bolted two heavy iron legs in its place, which rested on the other cross piece near the skids and were securely bolted. We bolted two 3x4's across outside of right wheel, fitted with a pair of heavy strap hinges at one end. We then made a wood bottom just the size of the bottom of tank, fastened this to hinges, tank to this with 1/4-in. bolts about every foot around the bottom on the outside, and fastened opposite side of wood bottom to cross pieces on wheel by means of a lock lever device, so tank may be dumped (when washed, if no other time). We run tank about 22 revolutions per minute. It will mix from one to 25 shovels of wet as well as dry. Gravel may be shoveled in and out while in motion, or may be dumped if desired, when not in gear.

Lower corner is sawed off of skids, like a boat runner. Two men will move it from place to place, yet it is heavy enough to require no staking down. Cotter pin in end of axle may be removed and wheel and tank may be removed if desired, to load in wagon or otherwise. One of the pawls in wheel should be reversed so the tank can not turn backward or forward unless axle also turns. Lower front side of tank is only 28 in. from floor. Machine should be run in opposite direction to that used in mowing, so as to not unscrew little bevel pinion. A two-inch belt runs it. Outer end of tank is entirely open. Mixture may be seen at all stages and mixer may be thrown in or out of gear any time.

Hillsdale Co. C. J. HOUSMAN.



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Practical Science.

BALANCING THE RATION FOR THE LAMBS.

BY FLOYD W. ROBISON.

Considerable space has been devoted in these columns and elsewhere to the standardization of rations for dairy cows. Great attention has not been given to the study of rations for sheep, doubtless because sheep, unless being fattened, are not producing a product in which variation in feed and treatment is so noticeable as with dairy cows.

Wool Similar to Meat in Composition.

It is an interesting fact, however, that the product wool is in a measure a product similar in general composition to the product of the dairy cow, and the beef steer. Wool, milk and beef are to a degree quite similar in composition. The principal constituent of milk to which we give attention in the feeding of a dairy cow is protein. The casein, the albumin of milk are protein compounds and therefore we find it desirable in establishing the optimum ration for the dairy cow to provide a ration with a more or less conspicuous percentage of protein; likewise with the beef steer in the production of beef. With beef the lean meat is a protein product and it becomes desirable in the finishing and development for market of beef critters to provide a certain more or less definite percentage of proteid material in the ration. Wool is a typical protein compound. In fact, pure wool is as essentially a protein compound as is the white of egg, the casein of milk or the lean meat tissue. It may be assumed, therefore, that it is just as essential that a certain definite constituency of protein be provided in the ration of sheep as in that of dairy cows. Of course, this has not forced itself to the attention of feeders as plainly as in the case of the dairy cows because the commodity, wool, is marketed at much rarer intervals than is the case with milk and the effect, therefore, of any particular feed is not so apparent as in the case of dairy cows.

In the fattening of lambs and sheep it also becomes quite essential to establish more or less rigid lines in balancing the ration and the present prices of the different commodities fed to sheep makes it necessary that feeders should scrutinize the economy and waste in feed materials for sheep quite as carefully as for any other class of domestic animals.

Timothy Hay Has Been Largely Used for Sheep.

The great feed for sheep heretofore has been the various roughages, oat straw, bean and pea straw, timothy hay, etc., and there has been not nearly enough attention paid to the incorporation of higher protein roughage feeds in the ration.

Many farmers have stubbornly held on to the feeding of timothy hay in spite of the fact that the data given in various experiment stations have definitely shown that leguminous feeds, such as clover and alfalfa, are far ahead of timothy hay in their economic relationship to the feeding of sheep.

Some Actual Results.

In pursuing this investigation the Indiana station procured some very valuable results in a comparison of timothy hay and clover for fattening lambs. One lot of lambs was fed timothy hay as a roughage, corn as a grain ration; and another lot of lambs fed clover as a roughage, and corn as the grain ration, to establish the difference in the effects of the two rations, the unknown factor in one being the timothy hay and in the other clover hay.

The average of three trials showed that the lambs fed clover hay and corn ate as much as 20 per cent more grain and 53 per cent more hay than the lot fed on timothy hay and corn. In the case of the lot fed clover and corn, the lambs showed a gain of 69 per cent over the lot fed timothy hay, and a 40 per cent reduction in the grain required to produce a pound of gain and a 10 per cent reduction in the roughage.

It is apparent that from the data on feed consumed that probably much of this difference was due to the lack of palatability of the ration containing timothy hay, as much more feed was consumed on the other ration. It might be

reasoned also that the difference in the nitrogenous equivalent caused by the lowering of the protein content in the timothy hay ration was in part responsible for this difference.

Clover Superior to Timothy.

In figuring the cost of the gain produced, it was established that the lambs receiving clover hay made gains varying from \$1.50 to \$3.50 per hundred less than the lambs receiving timothy hay. The lambs fed timothy hay were marketed at 40 cents per hundred weight less than those fed clover hay, indicating again that there must have been a very marked inferiority in the finish of the lambs receiving timothy hay.

When cottonseed meal was added to each of these rations the behavior of the lambs under this feed indicated at once that a lack of protein in the previous diet was one of the causes of the difference in values of the two rations. Cottonseed meal, of course, enhanced the value of each ration from a protein standpoint but even then the clover hay ration was found to be again superior to the timothy ration, and in spite of the fact that a concentrate high in protein, or nitrogen, had been added. The Indiana summary of this experiment is interesting, and is as follows:

1st.—Timothy hay in all rations when it was fed proved a very unsatisfactory feed for fattening lambs.

2nd.—The lambs fed shelled corn and timothy hay were very unthrifty.

3rd.—Lambs fed shelled corn and clover hay made more growth and economic gains than those fed shelled corn and timothy hay.

4th.—A ration of shelled corn and clover hay produced better finish than did a ration of shelled corn and timothy hay.

In the case of cottonseed meal being added to both rations, the clover hay produced more economical gains and a better finish as well than the ration containing timothy hay.

Corn Silage.

With the addition of corn silage to the ration there were no great differences shown. Shelled corn and clover hay plus corn silage did not seem to affect either favorably or unfavorably the rate of gain on fattening lambs. Corn silage was fed at the rate of approximately one pound per day per head and this amount while not affecting the rate of gain did slightly reduce the cost of the gain, although from our perusal of the data we would not give any consideration to this item for it is very small.

Neither the consumption of clover hay nor the consumption of grain was affected to any extent by the addition of silage to the ration and aside from the small saving in the cost of the ration, the corn silage was without any apparent benefit. Of course, corn silage is a succulent feed and we apprehend that much of its value is due to this factor of succulency, accompanied by its effect in increasing the palatability of a ration. These items are of a much more minor importance in the case of sheep feeding than in the feeding of dairy cows or of steers.

Increasing the Protein Content of the Feed with a Concentrate.

It has been apparent from the results detailed herein that the addition of clover hay to the ration for fattening lambs was very advantageous and far superior to the use of timothy hay in the ration. This shows here at a glance the superiority of a feed containing a larger quantity of protein and it is apparent from this that it is just as essential that a high protein content be maintained in the case of fattening and maintaining lambs as in that of other domestic animals. The question of what concentrates to use depends to a considerable degree on the cost of the different concentrates.

In the first experiment conducted by the Indiana station the lambs fed timothy hay and corn gained approximately 18 lbs. per head, and those fed cottonseed meal in addition to corn gained over 26 lbs. per head. In the second trial the lambs fed timothy hay and corn alone gained 10 lbs. per head and those on cottonseed meal gained 26 lbs. per head.

(Continued on page 583).

Dairy.

CONDUCTED BY COLON C. LILLIE.

THE DUAL-PURPOSE COW.

The high price of beef leads farmers, as a rule, to consider the dual-purpose cow. Several years ago Governor Hoard, through the press and from the lecture platform, had the dual-purpose idea pretty well subdued. But good beef was then only four or five cents a pound. Now it is practically double that price and people are again beginning to think of the dual-purpose cow, the cow that will be profitable producer of milk and butter-fat and at the same time will raise a calf that will be a profitable feeder. Mr. James J. Hill, the great railroad magnate of the Northwest, has recently been induced to invest in some dual-purpose Shorthorns for breeding purposes. He is going to establish a herd. We learned from Prof. Shaw and also from other people who have visited England, that very many of the English farmers prefer Shorthorns for dairy cows. They don't call them, however, dual-purpose cows, they call them dairy Shorthorns.

Now I am of the opinion that this revival of interest in the dual-purpose cow is going to do some farmers a lot of damage. They are going to lose money. People are going to breed cows again to Shorthorn bulls for the purpose of raising calves to sell for beef, and the first they know they will have a herd of dairy cows that won't pay for the feed and care necessary to keep them.

The purposes of beef animals and dairy animals are antagonistic. Cattle that have been bred for generations to consume large quantities of feed and put that feed into meat are not good milk producers. On the other hand, animals that have been bred for generations to consume large quantities of feed and put that feed into the milk pail rather than into choice cuts of meat upon their backs, are not going to change all at once and produce splendid sirloin steaks and sirloin roasts, or what the epicure needs and is willing to pay for. That is impossible. If you breed so as to have good square-backed, heavy-joined steers their dams are not going to be good milk producers.

On the other hand, you can take Shorthorn cows and by selecting them and breeding them for generations you can get just as good milk producers and profitable ones as you can with Holstein cows or Jersey cows or Guernsey cows. There is no question about that, because all of the dairy breeds have been developed along this line, just the same as all the beef breeds have been developed by selection and breeding. But when you come to combine the two ideas, choice beef production and heavy milk production in an animal, you are asking too much. You are asking the impossible, and it will never come to pass.

Now as I have stated before, I am of the opinion that at the present price of beef that there is money in raising beef in Michigan. I do not know but what it would be better for some of the dairymen who are milking cows now to go to raising beef. Men who do not like cows, do not take an interest in them, will not handle them as they ought to be handled, or cannot get the help to handle them properly, such men perhaps had better go into beef production. I do not believe there will be any chance for an over-production of beef for a number of years to come, and it looks to me that it would be quite a safe proposition to go into the beef business at the present time, and I believe that there would be more money in going into the beef business than there would be in going into the dual-purpose business. If a man is going into the dual-purpose business he might just as well stick to the Holstein business or the Jersey business and have cows that will produce butter-fat economically, and then if he has surplus young cattle that are not needed for the dairy business he can fatten them and sell them for beef. They will eat all right. They do not cut up as nice, but they will make about as many pounds of growth on feed consumed as will Shorthorns. They will make as much as dual-purpose Shorthorns. Of course, it will not be as good beef, you will not get as nice heavy loins and cannot have such nice tenderloin steaks or roasts. There will be a larger per cent of offal to the net weight of the carcass, and all that, but I believe a man had better not

change if he has a good herd of cows.

The dairyman has got to raise a good many heifer calves to keep up his herd, because all practical dairymen know that something is happening all the while to his best cows. He must have a number of heifers coming into the stable every year in order to keep up his herd. Now if he breeds his dairy-bred cows to a beef bull the heifers will not be worth saving for milk purposes. He will be disappointed, I have tried it. The herd will deteriorate as milk producers. But this very thing will be done for the sake of having a steer that has a little broader back and a little deeper loins. He had better raise his Holstein steers or his Jersey steers, if he can get more out of them for beef than he can for dairy purposes. For instance, I had four Jersey bull calves that didn't shape up to suit me and when they were nearly a year old I castrated them. They were not out of cows that did very well and I didn't want to sell them as dairy sires. Last winter we fed them ensilage and a very little grain and this summer turned them into the pasture and along early in the fall I sold them for \$40 a head. Well, it was not a big price for steers, but they didn't cost much. Of course, if I had had Shorthorn calves they perhaps would have brought me nearly twice as much, but how much more profit would they have returned? I would have received little more per pound, if any more, as anything goes for beef now, and if Shorthorn steers were twice as large and weighed twice as much it would have cost nearly twice as much to produce them.

HOLSTEIN BREEDERS MEET.

The West Michigan Holstein Breeders' Association held the first of a series of three winter meetings at Grand Rapids, December 3, with a large attendance. President M. W. Willard, of Grand Rapids, introduced C. Hunsberger, of Kent county, as the first speaker, who talked on the Holstein cow for profit and economical milk production for the city. Mr. Hunsberger is getting 18 cents per gallon for milk delivered in Grand Rapids. He has a grade herd, keeps careful record of each cow's performance, and says that cows giving less than 7,000 pounds annually are not profitable for the city milk trade.

In the matter of feeding, Mr. Hunsberger uses ensilage, about 18 pounds per cow, stalks and a little straw for roughage, and for grain he mixes dried malt, cottonseed meal, gluten meal and dried beet pulp. Peter Butth, of Kent county, who has a large herd, stated that he feeds to fresh cows, 25 pounds of ensilage per day, once a day, and stalks cut fine, all they will clean up. He feeds malt, dried beet pulp, cottonseed meal and oil meal, equal parts, and half the quantity of bran. He uses the wet pulp. To put flesh on dry cows he feeds 100 parts oil meal, 100 parts corn meal and 50 parts bran.

Judge Williams, of Allegan county, told of the waste that comes from unnecessary duplication of milk routes in city deliveries in the retail trade. This expense in Chicago is estimated at \$5,000,000 a year, and it is a tax on the producer and the consumer.

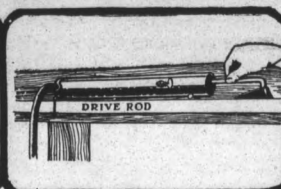
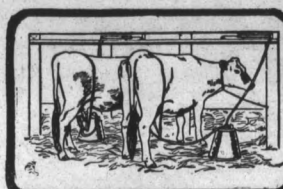
At the afternoon session Arthur Clark, of Kent county, spoke on the value of high-grade sires. One solution of the problem of keeping boys on the farm, he says, lies in starting them in the pure-bred cattle business. President Willard told how, with his mixed herd, he increased the butter-fat average per cow from 270 pounds to 320 pounds by the use of two pure-bred bulls. Judge Williams, of Allegan, has increased the average milk production in his herd from 3,700 pounds to 8,200 pounds, which is attributed in part to the use of pure-bred sires.

Dr. Elzinga, a Kent county veterinarian, explained the tuberculin tests and answered many questions. Secretary Harper, member of the state live stock commission, told of the work that is being done in behalf of the breeders. He warned the farmers especially in regard to buying cattle from Illinois, where there is no state inspection. A number of the Kent county breeders will place their herds under federal inspection, so that they may sell stock in any state, or in Canada.

A. GRIFFEN.

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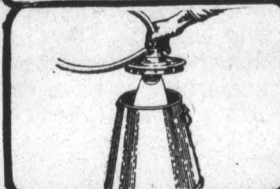
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Horticulture.

JANUARY SUGGESTIONS FOR THE FRUIT GROWER.

January is one of the farmer's rest months. He has considerable time which he can use as he wishes. He can either waste it or put it to valuable use. The former involves doing nothing and rusting, or doing something which would be worse than nothing. The latter means that he put his time to increasing his knowledge so that he can work more intelligently the coming season. It is never too late to learn and one can never learn too much, are two common expressions full of truth.

Reading is probably the most common method of reviewing the experiences of others, which are of great value in our education. January is undoubtedly the reading month of the year for the farmer. It is during this month that the editors of the farm papers are working overtime to furnish us with reading material, and investigators and others who have had experience and have the faculty of putting it on paper are busy writing up the results of their past season's work.

It is quite surprising to learn through a government investigation that 40 per cent of the farmers involved in the investigation claimed that they farmed by their own experience alone. It is especially surprising because the farmer has more sources of information than the man in another line of business; he has available more good reading matter at a cost of practically nothing, than the worker of any other trade. That any of the 40 per cent have farmed without any outside help is much doubted. In their conversation with other people they have received suggestions which were used to advantage. These in turn were taken from someone's experience, which was recorded in some farm paper or experiment station bulletin. A farm paper, or a bulletin, is nothing but a record of people's experience. So, in fact, these sources which are not given due credit, are benefiting the 40 per cent most every day. No one lives today without taking advantage of the experience of the past and the present.

In the early days speech was the only means of conveying thought from one person to another. Signs on trees and stones, and the written message, were steps in the progress of improvement. The invention of the printing press made it possible to make numerous copies of a message and the development of the government messenger system or post-office department increased greatly the ease and speed of delivering messages. The present farm paper is but a collection of messages sent to a large number of people. Imagine, if possible, the transference of thought at the present time, by speech alone. Our present age of progress would not be possible under such conditions.

Reading is a means of education which all can afford. Many of our most prominent men got their early education borrowing books from others. While many of us read, thorough and systematic reading is a rare thing. We read promiscuously, throw the paper aside and forget what we have read. As each issue of a farm paper is a veritable encyclopedia of agricultural information, it would be of little value to read all of it. The items of general interest, and then those departments of the paper which touch upon your particular kind of farming, should be read. As farming is quite a generalized business, a great majority of the articles will be of interest to you. Articles which strike you as being of special merit may be cut out and filed away. The common book letter files are very good for this purpose. The subjects can be arranged in alphabetical order, and an index may be written on the inside of the front cover of the file. Arranged in this way, items of important information are in shape for quick reference, in the busy season. Some farm papers compile indexes for the convenience of their readers. The Michigan Farmer does this twice a year. This makes it convenient to save the papers of each volume and bind them with the index. Such a volume will contain reference to most every phase of farming that can be thought of.

The fruit grower has an excellent opportunity to improve his knowledge of his occupation during the winter months. His work is laid aside until spring and he is

entirely free for the pursuit of knowledge. The time can be spent in no more valuable way.

REGARDING LIME-SULPHUR AND ARSENATE OF LEAD.

There are probably no two materials which are of more importance in the production of good fruit than lime-sulphur and arsenate of lead. They are the only materials needed, with the exception of water, in the spraying solutions for most all fruits; exceptions to this are the peach and grape. In spraying for peaches the materials are the same but the lime-sulphur is in different form. In the case of grapes, Bordeaux mixture must substitute lime-sulphur as a fungicide.

Both lime-sulphur and arsenate of lead are of quite recent introduction in fruit work, having come to notice at about the same time. In 1892, arsenate of lead was first used for spraying purposes, the Gypsy Moth Commission of Massachusetts using it in the control of the gypsy and brown-tail moths. Shortly before this time lime-sulphur, a sheep dip, was first used as a spray by M. F. Dusey, of Fresno, Cal. But it was not until recent years after lime-sulphur was shown valuable as a fungicide by western investigators that the two were combined; then, by the efficient work they did they speedily took the place held by the once popular combination, Bordeaux mixture and Paris green.

As with many new things, the combination of lime-sulphur and arsenate of lead was thought to be impossible for spraying purposes by many authorities. Some were sure that the chemical action which resulted when they were mixed would be harmful, and recommended anything but the addition of arsenate of lead to lime-sulphur. It may be recalled that the introduction of lime-sulphur as a spray was also received in the same way. Eastern authorities stated that while it worked well in the west, it was not at all suited to eastern conditions. But now there is an unanimous vote in favor of both these.

Everyone who has used the materials has noticed the color change when arsenate of lead and lime-sulphur were mixed. At first the color is a reddish yellow, then gradually turning darker until the color is a chocolate brown. If there is an excess of lime-sulphur, the mixture will turn black. This is due to chemical action, and the blackish substance is the precipitate of this action. Often after the tank has been sprayed out, the black material will be found in the bottom of the tank. This can be prevented to a great extent by adding the arsenate of lead after it is thoroughly worked into liquid form and by keeping the dilute lime-sulphur thoroughly agitated when the arsenate of lead is being added.

According to the chemists the addition of arsenate of lead to lime-sulphur decreases the sulphur and calcium in solution and increases the thiosulfate and sulfite in solution. The latter two are thought to be the active agents in killing insects, and are also the parts of the solution which add fungicidal value to the lime-sulphur.

Regardless of the chemical action, actual experimentation has shown that the addition of arsenate of lead adds greatly to the fungicidal value of lime-sulphur and it has also shown that the arsenate of lead has slight fungicidal value when sprayed alone.

There is a vast amount of work being done by experts in the endeavor to improve lime-sulphur and arsenate of lead, or to find something better. No substitute for arsenate of lead has been found which will give as good results. A few get discouraged with lime-sulphur and go back to the Bordeaux; in a short time they are advising lime-sulphur again.

FARRAND ON VARIETIES.

The chief speaker of the December meeting of the Oakland County Horticultural Society was T. A. Farrand, of Eaton Rapids. His subject was, "Varieties of Fruit." He stated that he believed many of our old standard varieties are here to stay and urged that growers be careful in selecting varieties which are best adapted to their locality. For commercial purposes he said that the Elberta stood first among peach growers.

The next meeting will be held at the Farmington Town Hall, January 3, 1914, at 10:30 a. m.

Spray and Spray Right IT PAYS

You can do it with a "NEW-WAY" High Pressure Power Sprayer Guaranteed to carry 200 lbs. Pressure Continuously

"NEW-WAY" means reliability.

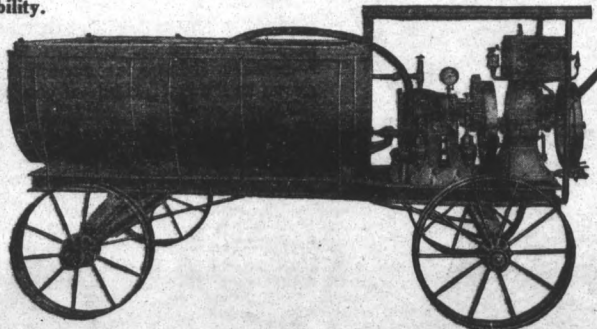
Keyser, W. Va.

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

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

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

Write for Catalog SCI. **THE NEW-WAY MOTOR COMPANY** LANSING, MICHIGAN, U.S.A. 7 Ann Street.



Live Stock.

SMOKEHOUSES AND SMOKING MEAT.

About six weeks after cutting up, our hams, shoulders and flitches of bacon are taken from the brine, made with salt, sugar, molasses and saltpeter, and prepared for hanging in the smokehouse. The meat could remain longer in the brine, or until spring, if desirable, as it could not get any saltier than the brine which has made it salt enough to suit the taste.

When the meat is taken out a slit is made in the rind deep enough not to tear out, and a strong string is tied in it for hanging up between two poles placed in the smokehouse overhead, about four inches apart. A short stick is put through the loop in the string in the ham or shoulder, and between the two poles, and turned crosswise of them. These poles are placed in pairs overhead in the smokehouse, but never directly over the fireplace, in the middle of the house, because too much heat will injure the meat and fry out the fat. No meat is hung on spikes driven into the side of the house, because where it rested against the house it would not get nicely browned with the smoke. For the same reason the different pieces of meat are not allowed to touch each other. For wood to make the smoke, hickory, hard maple, or black birch are preferable. Pine, hemlock, oak and most other woods should not be used to make smoke, as they will impart a disagreeable taste to the meat.

We cut our wood in small chunks and if seasoned, will hold fire, smolder, and smoke without making a great heat, which is undesirable. Green wood will make a great smoke, but does not hold fire well and needs more attention. In the absence of proper wood, corn cobs will do, but are apt to make too hot a fire, and are not equal to wood. If the fire is inclined to blaze it is smothered by throwing an old tin dish pan over it. It is better to get the smoking done, and the meat put away before the green flies come around hunting for a place to lay their obnoxious eggs.

We put our hams and shoulders in 50-lb. flour sacks, tie up tightly, and hang up in a cool, dark room between two poles, as described for the smokehouse. They will keep good all summer or until eaten sooner. We have found this method of hanging up preferable to packing in barrels with oats or wheat bran. Farmers' smokehouses are generally too small and too low. They should be large enough to hold all the meat without hanging against the sides of the building, or over the fire, and they should be high enough for a person to stand erect in hanging up the meat and taking it down.

Some smokehouses are built with brick. They last longer than a board building and are not liable to get burned.

The cost of sugar-curing hams and shoulders is so little more than the old way of salting, it is surprising that all farmers do not practice it.

Pennsylvania. J. W. INGHAM.

BALANCING THE RATION FOR THE LAMBS.

(Continued from page 580).

tonseed meal in addition gained over 14 lbs. per head. The cost of gain was greatly reduced by the addition of cottonseed meal. The grain required to make the gain was reduced from 5.29 to 4.36 by the addition of cottonseed meal, while the hay required, quoting from the Indiana report, was reduced from 4.84 to 3.66 lbs. for each pound of gain to the fattening lamb. This resulted in a saving in the cost of feed from \$1.00 to \$2.18 per hundred weight, or an average saving throughout of something over \$1.50 per hundred pounds when a concentrate such as cottonseed meal was used in the ration. The results of this experiment, particularly in the use of cottonseed meal, thereby increasing the protein in the ration, is very interesting indeed, and the summary of the Indiana station is here given in full, as reported by them:

Summary.

The addition of cottonseed meal to a ration of shelled corn and timothy hay increased the appetites of the lambs for both grain and hay.

The addition of cottonseed meal to a

ration of shelled corn and timothy hay improved the thrift of the lambs; increased the rate of gain; decreased the cost of gain, and added greatly to the selling value of the lambs.

The addition of cottonseed meal to a ration of shelled corn and clover hay did not greatly affect the appetites of the lambs for either grain or hay.

The addition of cottonseed meal to a ration of shelled corn and clover hay slightly increased the rate of gain and added materially to the selling value of the lambs.

The addition of cottonseed meal to a ration of shelled corn and clover hay did not on the average of three trials, affect the cost of gain when corn was as low as 40 cents per bushel but made slight decrease in cost of gain when corn was above 40 cents per bushel.

The addition of cottonseed meal to a ration of shelled corn, clover hay and corn silage had no effect on the roughage consumption but slightly increased the grain consumption in one of the three trials.

The addition of cottonseed meal to a ration of shelled corn, clover hay and corn silage slightly increased the grain consumption in one of the three trials.

The addition of cottonseed meal to a ration of shelled corn, clover hay and corn silage slightly increased the rate of gain and added to the selling value of the lambs.

The addition of cottonseed meal to a ration of shelled corn, clover hay and corn silage did not affect the cost of gain when corn was valued at 50 cents per bushel but made a slight decrease in cost of gain when corn was above 50 cents per bushel.

The results of this experiment are very gratifying indeed, in that they indicate that probably much better results might be obtained in the feeding of lambs and sheep, particularly in the fattening of lambs, if a more concentrated ration be fed, with a correspondingly narrower ratio between the protein and the non-nitrogenous constituents of the feed. We apprehend as well that it will be found that by giving greater attention to the question of feed for sheep, much more profitable results might be obtained through the medium of wool production as well.

LIVE STOCK NEWS.

General conditions existing in the Chicago hog market have undergone no very radical changes in recent weeks, and the liberality of the supplies there and at other important receiving points has tended to depress prices for all descriptions. This state of things is likely to exist, with the customary frequent rallies in values from time to time so long as marketings are kept up so generously, but it seems to be pretty unanimously admitted by dealers all around that ultimately there must come a time of reckoning and that these enormous premature marketings will in the end result in deficient supplies of matured swine and much higher prices. As for a fortnight past the hogs marketed in Chicago have averaged in weight but 205 lbs. per head, pigs and light hogs have felt the brunt of the attacks made on the market by slaughterers, including the big packers and the smaller butchers, and on days when hogs broke from 10@15c per 100 lbs., pigs went off from 25@30c.

"Scarcely any cattle are on feed, and where some years ago from 200 to 400 cars were fed every year, one can get only a few odd loads now," said Frederick Schaeffer, of Iowa, recently. More sheep are being cared for than ever before, as farmers want some stock to eat their grain, but few hogs are on feed, as they have been dying everywhere. Vaccinating with serum does little or no good, even when state or commercial medicine is used, and I have spent over \$3,000 in the last few years to get rid of the sickness, but with no good results. Some died quicker than others, and most frequently the fat ones got dizzy and died in a few hours, while at other times they got better, but died later on. Thin hogs last longest, and young suckling pigs do well. One veterinarian vaccinated 1,700 hogs within a radius of seven miles, but all died. Extreme changes of weather from wet to dry are always followed by many pigs getting sick, with those in dusty buildings or around straw stacks suffering most severely. Brood sows are going to be worth \$100 by next spring. Some cattle are coming in from Canada, but prices have advanced over there until it is hardly a paying proposition to purchase Canadian stock to send to the markets of the United States, and by another year the movement will be of very small volume."



Straight Talk on Plows—No. 3



In our previous talks on Plows, we have explained that the most vital feature of any plow is its share. Also, we have told you of the discovery of the wonderful ACME Steel which is used in making our famous ACME Steel Shares and Moldboards. Now let us consider this subject a little further:

Let us suppose you are in a store selecting a razor or a knife—you are undecided which one of the two to buy. They are practically the same price—each has an attractive handle and highly polished blade, but one has a fine steel blade that you can re-sharpen—it will retain its original hardness as long as you use it—while the other has a blade which will not hold an edge after you have sharpened it the first time and soon becomes dull.

Which one would you buy—the one that will stand re-sharpening, of course. All new plows are attractively painted—they all have their foot lift, etc.—the shares are all bright and sharp when new—in fact, to the naked eye there are several plows that look very much alike. So then in selecting a plow remember the SHARE is the blade of the plow and that is what you should consider, just as you do when you buy a razor or a knife.

You should demand a Plow with a Share that can be successfully re-tempered every time it is sharpened. You should demand a Share that you can keep as hard as new and with a sharp, keen cutting edge all the time.

Acme Steel Shares



Numerous heavy blows can't break Acme Shares.

are the only Shares that can be successfully re-tempered after re-sharpening. They are the only Shares that can be kept as sharp and hard as new during their entire life.

They have the quality of steel in them that no other plow share has or can have, because they are made by our own patented secret process, in our own factory and they are used only on Plows manufactured by the Moline Plow Co.

ACME Shares hold a hard, sharp, keen cutting edge. This means light draft—more acres per day and the best plowing you have ever done.



One light blow easily breaks other Shares.

More than 1,000,000 farmers will testify to this. A gilt-edge Guarantee goes with every ACME Steel Share. It guarantees that you or your blacksmith will not break it in the field or in the fire.

Our Free Booklet is full of valuable information on Plow Shares and Plows. Write for it. OUR 1914 ALMANAC FREE. WRITE TODAY.

Your Flying Dutchman Implement Dealer sells MOLINE PLOWS with ACME Steel Shares—see him.



Best Ever

Moline Plow Co.

Dept. 26

MOLINE, ILLINOIS



Good Enough

Genasco

THE TRINIDAD LAKE-ASPHALT

Ready Roofing

gives lasting protection to all your buildings.

The natural oils of Trinidad Lake asphalt keep life in Genasco through all kinds of weather on all kinds of roofs.

This makes them proof against rain, sun, wind, heat, cold, alkalis and acids. It is the economical roofing for every building on the farm.

Ask your dealer for Genasco. The Kant-Leak Kleet comes with every roll of smooth surface Genasco—does away with cement and prevents nail leaks.

The Barber Asphalt Paving Company Philadelphia

Largest producers in the world of asphalt and ready roofing

New York San Francisco Chicago

SUPERIOR

GRAIN DRILLS

WARRANTY—Castings replaced FREE ANY TIME—one year or 20 years—if shown to be defective. Disc Bearings Warranted for LIFE OF DRILL; replaced FREE if they ever wear out. Every Drill guaranteed to be and do all we claim.

Superior Drills are made in all sizes and styles in plain and Fertilizer—Disc, Hoe and Shoe.

No seed too large; none too small for the Superior Double Force Feed. Be sure and send for the Superior Catalogue. Tells just what you want to know. Read it. Then go to your local dealer and insist on seeing the SUPERIOR—"The Name Tells a True Story."

THE AMERICAN SEEDING MACHINE CO. INCORPORATED
SPRINGFIELD, OHIO U. S. A.

The Michigan Farmer

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The Lawrence Publishing Co.

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Three years, 156 issues.....\$1.25
Five years, 260 issues.....\$2.00

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

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

DETROIT, DEC. 27, 1913.

THE VALUE OF CROP NEWS.

Readers of the Michigan Farmer have noticed that in recent months we have been publishing items of crop and market news from the more important agricultural states of the north, as well as from Michigan. Our corps of correspondents have been carefully selected with a view of making this service of the greatest possible value to the subscriber. While the Michigan farmer wants his trade paper to deal with the technical problems related to Michigan agriculture, as the Michigan Farmer does exclusively, yet he also wants to know what is being produced in other sections of the country and what the farmers are getting for the products which they grow along lines in which he is interested, how they market them, etc. Our crop news service was developed to give them just that information at practically no cost. We shall publish, in round numbers, some 1,500 crop items during the ensuing year. If this service was sought through private channels, the cost for postage alone on the letters would be \$30, while the total cost of getting this information from private sources would be many times \$30 for the ensuing year. Yet this is just one of the advantages offered with a subscription to the Michigan Farmer at fifty cents per year. There are many others, some of which were enumerated in the last issue. Prompt renewal by those whose subscriptions expire with this issue will insure these advantages for the ensuing year, without the loss of a single issue, just one of which might easily furnish information worth many times the cost of the paper for the entire year.

CURRENT COMMENT.

We take this last New Year Greeting, opportunity of the old year to wish each and every one of the great family of Michigan Farmer readers "A Happy and Prosperous New Year."

May the general expression of this wish on the part of our friends inspire each and every one of us to do all that within us lies to make the coming year what the wish implies. For, while circumstances over which we have no control may affect our temporal prosperity and personal happiness to some extent, yet in a great measure our next year will be largely what we make it. If we are industrious and frugal and studious in the conduct of our business, we are quite certain to be reasonably prosperous, even though our accumulated wealth may not measure up to our hopes, and if we improve our social opportunities and remain ever mindful of the Golden Rule, we can hardly be wholly unhappy, even though some unwelcome burden of sadness may be ours to bear.

But an attitude of hopeful anticipation, coupled with healthful work and a measure of carefree enjoyment will make the

New Year a prosperous and happy season for each of us. In our cover design the artist has represented the New Year as a well-fed youngster, coming with his suit-case and prepared to stay the full span of his allotment, when he is admitted at the door of time, upon which he is about to knock. With him he brings snow shovel and skates, the seasonable implements of work and recreation. The departing year is typified by the aged man, leaning upon his staff as he marks another milestone in the passage of time into eternity. On his arm, he carries the emblem of his closing feast, the ever present Christmas holly wreath.

May every member of the Michigan Farmer family welcome the New Year for its opportunity for the enjoyment of earnest work as well as refreshing recreation, and may each one in bidding adieu to the Old Year, remember its pleasures rather than its disappointments—thus taking the first step toward the enjoyment of a "Prosperous and Happy New Year."

Secretary Houston's Report.

The first annual report of Secretary of Agriculture Houston, is widely different in character from those made by his predecessor. Instead of a comprehensive review of the activities of the Department, and of the country's agricultural production, the Secretary has undertaken the discussion of a number of economic problems and made some suggestions by which his own and other departments may be able to aid in their solution. In touching upon the problem of production, comment is made upon the increase of farm tenancy, depletion of soils, inadequate business methods, etc., and reference to suggestions of dependence upon foreign countries for food supply as a warning of our shortcomings, which should incite us to greater efforts to increase production. Last this he construed as a pessimistic outlook, however, he places emphasis on the statement that there is no ground for thinking that we have yet approximated the limit of our output from the soil. He believes rather that we have just begun to attack this problem of production, and that we have unmistakably reached the period when we must think and plan. Various plans are advanced for the re-organization of the work of the Department; among his proposals are a number in which the individual farmer should be not a little interested. One of these proposed innovations is co-operation with the post office department for the purpose of taking an annual census of crop acreage and live stock, by the rural carriers, which plan will be tried out during the coming year. A committee on co-operation composed of representatives of various branches of the Department and other federal departments, will be created for the purpose of eliminating duplication of work and improving the character of statistical results. Another proposal is the districting of the country for the purpose of better enforcing the food and drug act.

The question of marketing is given consideration in his report, in which projects are outlined in this field for marketing surveys, study of methods, of cost of marketing, including available supplies in production areas, demand at consuming centers, methods of storage, marketing systems and prices, cost of wholesale and retail distribution of farm products, investigation of transportation problems, study of city marketing and distribution, and finally, co-operation, production and marketing. Special emphasis is placed on the necessity of standardizing agricultural products, as a prerequisite to proper marketing.

Rural credits is another subject discussed in the report. A result of the Department's investigation along this line is interpreted as showing that rural communities are not as sufficiently served as they should be by existing financial arrangements. The conclusion is indicated that better facilities for the securing of long time loans such as will enable purchasers to make necessary payments on interest and principal from the returns of the land itself will promote resident ownership and check the growth of the renting system to a considerable extent. The matter of short time loans is also briefly discussed, the conclusion reached being that farmers require no special legislation which will not apply to other members of society having similar credit foundations.

Other rural organization problems are briefly discussed, the farm women being given a paragraph in the report in which

is outlined the plan for the future study by the Department of domestic conditions and especially the question of practical sanitation and hygienic protection for the farm family.

On the matter of federal road policies, the co-operative principle between federal and state governments is advocated, and the practical position is taken that preference should be given to the improvement of roads over which the products of the farm can be taken to the nearest railroad station.

The crop outlook is very briefly discussed, emphasis being laid upon the fact that figures quoted are estimates. From the estimates at hand it appears that the production of crops for 1913 was materially below the average, the yield per acre of all crops combined being lower than any year in the past decade, with the exception of 1911. The corn crop is estimated at 2,500,000,000 bushels, which is smaller than any crop since 1903, while wheat production with an estimated total of 753,000,000 bushels, is the largest ever recorded in the country. Special features of this report will be commented upon in a future issue.

The Currency Bill and the Banks.

Before this reaches the reader, the enactment of the administration currency bill into law will have become a matter of history. It will then remain for the banks of the country to demonstrate its practicability and wisdom. Early this week the Senate passed the bill after having amended it in several particulars, and at this writing it but remains for a conference committee to reconcile the differences between the two houses of Congress and for the signature of the President to be attached. Just what concessions will be made on each side cannot be foretold, but the main features of the law will remain substantially as outlined in previous comments.

With the coming of definite assurance that the bill would be passed by the Senate, discussions involving the merits of the legislation have held an added interest. With this certainty fewer criticisms have seemed to emanate from banking circles, which may reflect the real sentiment of the financiers interested or be simply the result of a general realization of the fact that further opposition would be useless. Economists of note seem very generally to approve the bill as finally passed, but the practical test of the next 12 months will determine whether the opinion that the law will bring about a decided improvement over present conditions, which seems to be very generally held by the business men of the country, is well founded or not.

One thing, however, would appear to be fairly certain, and that is that any ill effects which might possibly result have been discounted by the banks, as reflected in the marked financial stringency of the past few months and that the new law will have a fair field in which to demonstrate the wisdom of its makers during the ensuing year.

The Year's Work.

In summing up his year's campaign, which would be profitable work for the long winter evenings, the mistakes and failures, as well as the successes should be dwelt upon, in order that we may utilize the lessons of the year to the best advantage. And while we are thinking about next year's campaign, it would be profitable to plan on some system of keeping a record of costs of production, in order that we may know a little more accurately where the mistakes have been made and the successes scored when we begin to review the season's work one year from now. While we may know in a general way where we have made, or lost, in the work of the past year, most of us have not as accurate information as we should have on this point. It is something of a task to determine the cost of any agricultural product, but if we can determine relative costs as between the different products produced on our farms we shall have accomplished much in the way of locating our mistakes, from which our most valuable lessons are to be learned.

THEY SAID THE FARMER WOULD NOT BUY.

A few years ago advertising in the farm papers was confined almost entirely to the announcements of implement manufacturers and other lines strictly agricultural in character.

Advertisers of things to wear, things to eat, things to improve the home, and

things for enjoyment, seemed to think the farmer was not like other people.

Then, gradually, one by one, they discovered the farmer and his family were human and were interested broadly in all phases of our very complex civilization.

Now, as you will see by inspecting the advertisements, there is quite a variety of merchandise advertised in the Michigan Farmer.

HAPPENINGS OF THE WEEK.

National.

An effort will be made to hold a state-wide convention of labor men at Lansing in the near future, looking toward a means of ending the copper strike of the upper peninsula. It is intimated that the leaders will advocate compulsory arbitration as an effective solution of the present difficulty.

A petition is being circulated in Shiawassee county, demanding an investigation of the prosecutor's and sheriff's offices. The charges intimate that the officials have failed to punish violators of the local option law.

The reorganization of the lighthouse service of the United States under the provisions of the act approved by Congress in 1910 was completed this year. Navigation aids are now provided by the government over coast lines measuring 46,828 miles. The service demands the employment of 5,536 persons.

The amount of grain passing through Buffalo during the season of 1913 was 192,000,000 bushels. This is 25,000,000 bushels more than the total of 1912. The high record is held by 1898, when 221,000,000 bushels were handled.

The Senate has finally passed the Currency Bill. It is expected that conference committees between the Senate and House will agree as regards the changes made in the bill by the Senate, and that the measure will probably go to the President for his signature this week.

During the month of November there were 5,000 applicants to join the United States army. This is 2,000 more than was ever before recorded in time of peace. It is presumed that probable intervention in Mexican affairs is responsible for this increase.

A fire at Worcester, Mass., destroyed a seven-story building, and damaged several adjoining business structures. The loss is estimated at between \$300,000 and \$500,000.

Postmaster-General Burleson has presented the annual report of the post office department to Congress, in which he makes a sweeping declaration in favor of the principle of government ownership of telephone and telegraph lines. The report also states that the postal service is now self-supporting for the first time since 1883.

Mr. E. W. Edwards, of the Edwards Mfg. Co., has been elected president of the Business Men's Club, of Cincinnati. Mr. Edwards is the originator of the steel shingle idea, and was among the first to see the economy and safety in the use of steel in farm buildings.

Dr. Henry Lorenz Obets, who for several years was Dean of the Homeopathic Medical College, Ann Arbor, died at his home in that city last Saturday night. He was 62 years of age.

Foreign.

Nothing has transpired during the past week to make the Mexican situation look more likely of immediate settlement. At the present time the financial condition of the country is reported in an almost helpless state. The people are suspicious of the notes being issued by the present administration, banks are finding it impossible to comply with the statutes, and credit is not being extended. No important engagements of federal and rebel forces have been reported. It appears, however, that a clash will occur at Tampico soon. The federalists were victorious in two small engagements between Tampico and Atamira and Gen. Inex Salazar has defeated the rebels in a small battle near Conejos to the north of Torreon.

Much interest has been taken in the reported addresses of former President Roosevelt and Dr. Martinez, former Chilean minister to the United States in Santiago de Chile. Col. Roosevelt maintained that the Monroe doctrine was by no means lifeless, while the Chilean contended that it should no longer be given consideration, because of its being a dead issue. In spite of the controversy, however, it appears that the former president was warmly received by the populace of the South American country.

The Italian government is discouraging the emigration of workers to the United States. During the past year fully 500,000 have come to this country. It is hoped that warnings stating that there is no demand for unskilled laborers in American will stay the tide of emigrants hither.

Anarchy reigns in the territory of Arizona, Venezuela, according to advices just received here. A rebel force organized under General Gonzales is said to be largely responsible for the wholesale murdering and plundering of the district.

News by way of New South Wales states that a volcanic eruption on the island of Ambim in the New Hebrides group resulted in 500 natives losing their lives.

Since the introduction of reindeer into Alaska in 1892, the industry has increased until now 38,476 animals distributed among 54 herds are reported in our northern possessions. Of this number the United States government owns 3,776. The report also states that the introduction of the reindeer has done much toward elevating the standard of living among the Eskimos.

A British expedition is being organized to explore sections of the Antarctic region this coming year.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

Making a Scientific Study of the Sun.

By EARLE W. GAGE.

MAN possesses those characteristics which demand that he reach forth unto the as yet unconquered forces of nature, and the natural instinct would be for the normal person to put forth as much energy as possible that they might return from the strife victorious. A few years ago \$60,000 was donated by Thomas C. Nelson for the establishment of a solar physics observatory in New Zealand. Some weeks ago a newspaper dispatch was read with interest by millions of people to the effect that Miss Mary Proctor had finally succeeded in linking the solar observatories throughout the world into a co-ordinate and co-operative group. This is the final goal of the ventures inaugurated as the result of the \$60,000 donation.

From this date henceforth, to each of the great solar observatories of the world a special field of work will be assigned, and the various results will be compiled in such a manner as to place the findings of the scientists in a more complete and comprehensive form. Heretofore these men and women, in their study of the solar spheres, have been working individually. With the united effort of hundreds of clear thinkers, who are fully aware of their individual tasks, we shall look forward for immediate results which shall place the people of the present generation in newer and more complete knowledge of the other worlds and systems hanging in the sky, of which, to date, little has been known.

In this worthy work the United States is to have an important and interesting part, for one of the world's best equipped solar observatories is that maintained by the Carnegie Institute of Washington on one of the twin peaks of Mount Wilson, California. From Los Angeles by trolley

car and burro back, up through the pine forest groves, one may reach this observatory. There is no vast dome or gigantic telescope to greet the visitor as he nears the summit. A huge Noah's Ark of canvas destroys all preconceived ideas of what an observatory should really look like, and, within, three wonderful mirrors take the place of the great tubular telescope of the other observatories.

The building which forms the observatory proper is constructed of canvas, the sides being set in the form of tiers of steep overlapping eaves. This arrangement is calculated to allow for perfect ventilation and is reinforced by a vertical wall of canvas which may be lowered or raised that an even temperature may be obtained. The peculiar arrangement of the mirrors that replace the old familiar telescope in the observatory revolves. These mirrors were constructed at the Yerkes Observatory, and are the finest products of the optical world, demanding the utmost skill of the optician who manufactured them. The enlarging mirror is supported by a pier of stone at the farther end of the canvas structure, and is of concave glass, four inches in thickness, having a 24-inch aperture by 60-foot focus. This glass is highly polished, very often with fine jewelers' rouge upon pads of chamois skin, and is burnished each week or ten days in order that all dust may be removed. In addition, a galvanized cover is kept over the face of the glass when not in use.

The mirrors at the observatory are mechanically arranged, being weighted so that they may be set in the required position and held absolutely rigid. The mechanism which carries them is so ar-

ranged that it may be readily moved forward or backward to obtain the proper focus and to catch the reflection of the heavenly bodies in which the astronomers may be interested for the time being. The reflection of the sun to be studied, for instance, strikes the first mirror, primarily, this being tilted to the desired and proper angle. Just as the schoolboy will flash a mirror at a friend across the street, so this mirror flashes that image to the second mirror, a flat, circular mirror, standing on its massive iron column just beyond. The second mirror, while normally upright, may be racked back and forward, so as to set the reflection received in any direction desired. It therefore sends the rays on to the third mirror, the concave one, which does the work of enlarging, and so acts as does the lens in the ordinary tubular telescope. The principle is similar to that of the "bulging" or sunken mirrors in the city summer resorts which cause the fattest man to seem lean, and the leanest man to seem the fattest. Incidentally, though, it seems that the astronomers are not able to reflect from the first mirror to the third with direct advantage, since they cannot hold the reflection so well and would be obliged to change their stations every so often.

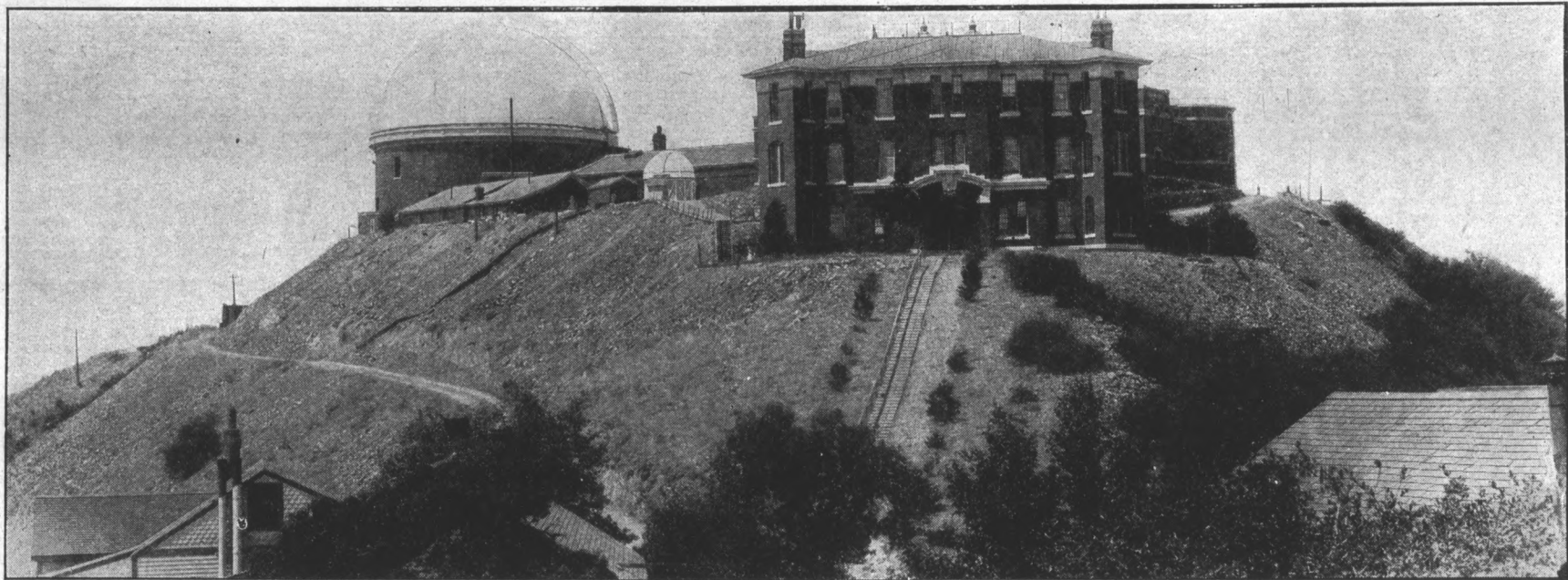
By peeping into the enlarging mirror we may see there the enlarged image of part of the flaming orb of day, sharp and distinct, revealing new secrets to mankind. To look more closely still, a pocket magnifying glass may be brought out, and with this somewhat unique arrangement the secrets of space are bared.

The main telescope building is reserved for these mirrors—a structure which is 235 feet long by 35 in width, with the

height of roof given as ten feet. The floor here possesses secrets as does the sun itself. The tented portion, in which the third mirror is installed, rests on a track so arranged that the entire outfit may be slid still nearer to or farther from the remainder of the great building containing the other two mirrors. Behind this is a small dark-room, just inside the canvas superstructure, which is used for star work and the spectrum instruments. Still farther to the rear, yet separated from the main observatory building, is another stone pier carrying a rotating mirror similar to the second of the series. This is known technically as the coelostat. This revolves on an axis that points due north, and has a glass surface thirty inches in diameter.

One stands watching the setting sun gild the mirrors, inviting to inspection and observation, but that must be for the morrow, for it's now too late in the day for a good view. Yet, a view of the great instruments causes us to stand in awe as we consider for the time the wonders of the earth on which we live, and, still more, the stupendous wonder of the bodies floating about in the skies.

The Lick Observatory, near San Jose Cal., has performed some wonderful observations within recent years, extending the knowledge of man regarding the solar system. Mr. Lick, the donor and original astronomer of this observatory, was a far-famed man in the scientific reach of his observations, gaining renown in European courts of science for his attainments. A visit to this observatory, while of the old type, will surely repay any thoughtful man desirous of obtaining all the possible knowledge of the newer thoughts and facts regarding the spectrum and solar bodies.



The far-famed Lick Observatory located on Mt. Hamilton, near San Jose, Cal. Its Elevation above Sea Level is 4,209 feet.

ONCE again Father Time has turned the slate, and handed us a fresh, clean side on which to write our record for the coming year.

We have no choice about it. We cannot lay it aside at pleasure. Inevitably, it must be filled. Yet it is clean today. The manner of the writing, and the text, rests with us. But, once written, it is unchangeable—a part of life which, traced by our own hand, will confront us in unalterable judgment one day; for the records we make, written by our own hands, are the records by which we shall be judged; chapters, in our Book of Life.

Last year is sealed—gone into the keeping of God. That chapter we can never

A Clean Slate for 1914.

By LOU D. STEARNS.

change. We have no more to do with it. It is past. But the page lying white and clean before us now is ours. If the other shows failures, mistakes, worse than failures, even—we have a chance to redeem it in the one that lies, open, in our hand.

That past, whether we might have made it different or not, has gone. Regrets won't avail. If tears helped, it might be sensible to cry; but you and I, my friend, know they but give us red

eyes and a headache, and waste time which might better have been used to some purpose.

Get a grip on yourself, first of all. Let your "Happy New Year" to the world ring out glad, and strong, and free. Hold out both hands to Life, full of honest determination and good will, and she will give you no uncertain greeting in return.

If you want to make good resolutions, go ahead. If you don't want to, don't.

Just look into the face of Life with the will in your soul to make the record clean, effective in the things that count, and then start out for the best year you have ever known.

What if the path does lead up hill? There's something worth gaining at the top. You'll be able to make a longer stretch next week than you can today, and you'll not be winded so easily either. We gain by doing. A few years back if I had to go half a mile I thought I must ride. But one day I made up my mind I was going to practice walking, and now I take a two or three mile walk every morning for fun.

I watched a dear little woman, not long

ago, trying to take her first step after a severe illness. The step was impossible; she could not bear even her own weight. Her limbs crippled, her face turned a grayish white and she would have fallen had not the nurse and another had their arms beneath her; but, after getting her upon the bed again and resting a bit, she began moving her feet and limbs about keeping it up until the nurse bent over her, saying anxiously, "You will tire yourself out, dear."

She looked up with a little trembling smile. "Ah," she replied, "but how will

I ever stand if I don't begin to move! I am going to take a step tomorrow!" And, despite the assertions of both doctor and nurse that it would be an impossibility, the step was taken.

Friend, if you simply sit and wait you will never get anywhere. But if you begin, taking a step today and another one tomorrow, before you know it you will be swinging off with a free, easy stride that will bring you not only to the goal for which you aim, but you will gather in, along the way, much besides the one prize that is beautiful, and rich, and rare.

The Impervious Imp.

By MANTHEI HOWE.

"There is no use talking about it, Sencie," exclaimed Ralph Deering impatiently. "I'll send you on a visit to New Orleans or Timbuctoo; I'll get you all the books and dresses you want, but I will not send you to college."

Sencie, during her eighteen years on this earth, had acquired a rather healthy will power herself, but now she only eyed her father in speechless surprise—this new stubborn father who could so determinedly refuse her the very dearest wish of her high-school life. Mr. Deering seemed to feel his daughter's silent criticism. He hastened to explain his attitude.

"It would be different if you had to earn your living and so took a business course, but if you went to college you would cram on a lot of mental frills and flummies that wouldn't do you any good and wouldn't make you a bit better wife for the man you'll marry. You don't need to work, I have enough to take care of you until some lucky chap gets the job, and why in the world can't you be content to stay home with mother and me? I don't see what has gotten into the girls nowadays. Your mother never went to college and she has made a mighty fine wife and mother."

Mr. Deering paused expectantly, but Sencie kept her tearful eyes fixed on her plate.

"My goodness, Sencie, just think a minute. As soon as I can close out the business we are going to move out to the old farm. Will you tell me what in heaven's name a farmer's daughter can want of a college education?"

"That's just it," retorted his daughter with pretty eagerness. "I don't want to go to college and learn a lot of useless junk. I want to go to an agricultural college and learn something about scientific farming. If I am going to live on a farm I want to be able to take an active interest in the work. It isn't as though there was work for me to do at home just now. Mother agrees with me, too."

At this unexpected desertion of his usual ally, father was visibly perturbed. He gave an impatient glance at his wife's calm face.

"Scientific farming!—huh!" he snorted. The hall clock struck eight. Mr. Deering welcomed the convenient interruption and, rising hastily from the breakfast table, stalked into the hall. He paused to call a conciliating message from the porch.

"It's going to be a scorching day, Sencie. You must get that college nonsense out of your head and begin looking out for mother and planning where you would like to go for a visit. Don't either of you work too hard today."

"We'll be all right," replied Mrs. Deering. "If we get too warm we'll take to the cellar; it's always cool down there. You take care of yourself, dear."

And as he went down the path he heard Sencie's forgiving, "Good-bye dad," and the warm glow at his heart had nothing whatever to do with the scorching hot day.

"I'm the lucky man," he reflected; "the best wife ever, cement business coming fine, and Sencie, well, I guess any man would be proud of her. If only she would get that intellectual bee out of her mind. It'll suit me if she just keeps well and looks pretty. I'll have to try to make it up to her for getting turned down this morning."

The office was hot and stifling, even at such an early hour. His stenographer was already using that feminine hot-weather remedy, a small square of chamois.

"It's going to be a scorcher," reiterated Deering as he passed into the private office. He subconsciously exulted that he had been able to provide well for Sencie and her mother. He was glad that they were out in the suburbs where it was

cooler. Chicago, on a day like this, was enough to make any man want to go back to the farm. Thank heaven, Sencie didn't have to bang a typewriter and slave in a hot office, and she would never get a chance to learn how if he had his way.

Ten o'clock found much of the morning's mail attended to and things began to run smoothly in the working order of the day. There was a momentary stir on the surface of affairs when he found a college year-book among his letters.

"Great Giffander," he grunted, "is the world college crazy?" And then he laughed tolerantly, all his good temper restored. It was too hot to get one's temper ruffled. He settled down to the grind of dictating a batch of business letters that had to be posted before lunch. If he finished the lot he had a good mind to cut work this afternoon and run down to Winnetka with Bangs. He could kill two birds with one stone—have a comfortable afternoon and land a big cement order. His weary mind visioned the cool of the little town, and then the freckle-faced runt of an office boy appeared. His forehead was shiny with sweat and he moved listlessly as he handed Mr. Deering a card.

Mrs. James Nesbit. He held the card in his hand, scrutinizing it and trying to place the name that sounded vaguely familiar. Mrs. James Nesbit?

"By jove!" he exclaimed, slapping his knee and turning on the round-eyed office boy. "Must be Jimmy Nesbit's wife. Show the lady in. Haven't heard of Jimmie in years. Not since he settled out west. He nearly did me out of Sencie's mother." He grinned reminiscently. "Jim was always a popular boy with the ladies. Bet his wife is a beauty, or mighty good looking anyhow. Jim wouldn't want her if she wasn't. Can't beat Sencie and her mother," he finished proudly.

He turned expectantly to the door. A pale, golden-haired woman entered. She had been a beauty, but her prettiness was the kind that becomes blurred and deadened by work and poverty. She showed plainly enough that she hadn't been hardened to it. Her eyes were heavy, sunk. Her pale lips and bloodless cheeks told of a fight against illness and worry. The stuffy black skirt, one patched shoe that she sometimes forgot to hide beneath her skirt, and the seazy out-of-date hat spoke eloquently of a very flat purse.

"What can she want," thought Deering as his eyes scanned the pitiful figure. "She certainly isn't Jim's wife."

Aloud he was all kindly courtesy. "Won't you have this chair? It is cooler near the fan. What can I do for you?"

The woman sank wearily into the proffered chair.

"Do you remember my husband?" she began abruptly. "He used to speak of you. You went to school together."

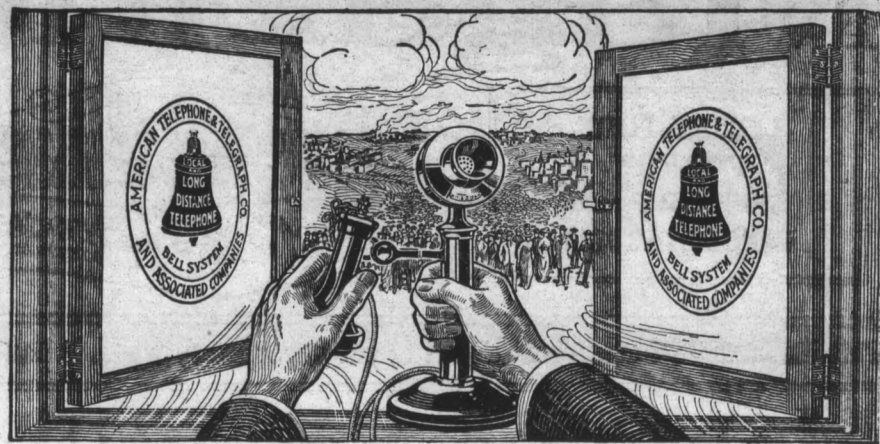
"Yes, of course. How slow I am getting to be," exclaimed Deering, trying desperately to keep the surprise out of his face and voice.

Mrs. Nesbit smiled wanly. "You are quite excusable. You couldn't have known. I might as well come to the reason of this errand. I know that you are busy and I am truly grateful for this interview. I came to ask you if you had need of a stenographer or if you knew of a place that I might get. I—I should hesitate to bother you only that my need is imperative."

"Surely you don't need to—" began Mr. Deering and then stopped, embarrassed at his brutal thoughtlessness. But Mrs. Nesbit did not seem to mind.

She stated her case apathetically. Every emotion, except urgent need of work, seemed burnt out. "Father always had money. Jim always had plenty. As you

(Continued on page 588).



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Billy's Happy New Year

By M. PELTON WHITE.

BILLY GLENN was eight years old and lived on a big, big cattle ranch way out on a western prairie. There wasn't another little boy, or even a little girl, for Billy to play with, but he was never the least bit lonesome. How could he be when he had Queenie, a round dumpling of a Shetland pony, to ride, and Sandy, the wisest, friskiest Scotch collie that ever barked (according to Billy) to romp with the livelong day?

Nothing about the place was afraid of the jolly red-cheeked lad. The chickens flew to his shoulders and pecked wheat from his hands; the cows put their heads through the bars to have him rub their noses and the pigs grunted contentedly whenever he scratched their fat, bristly backs with a stick. Indeed, every creature loved Billy and Billy loved every creature and everybody, and was as happy as happy could be from the minute he became wide awake until he was fast asleep.

Then something dreadful happened. Something went wrong with one of Billy's hips. A wise doctor was brought from the nearest town. He was very gentle and kind to Billy, just the way doctors always are to little boys who are trying to be brave and cheerful when they are suffering a lot of pain.

The doctor told Mr. and Mrs. Glenn that Billy must lie quiet in bed for a long, long time with a heavy weight hung to his foot. That was the only thing that would do the hip any good and keep their little boy from being a cripple for life.

Oh, how sorry everyone was for poor Billy! His parents read him all the stories they could find and told him all the stories they could think of. The hired men contrived all sorts of games for him to play with his hands, made puzzles for him and brought in all the things from out of doors that they thought would interest him, even to one of the little pigs.

At first Sandy couldn't understand why

"I'm so sorry, dear. The mice have gotten into the box and spoiled every bit of it."

Poor Billy! A big lump came in his throat and he turned his face to the wall real quick so that his mother should not see how watery his eyes were. But mothers can guess a lot of things. Mrs. Glenn went out and told Mr. Glenn. While they were talking one of the hired men came up and said something that made them both look glad; then he jumped on a horse and went down the road lickity-split. Mrs. Glenn went back to Billy and told him about Ali Baba and the forty thieves and other stories that he liked.

"Happy New Year," boomed a big voice early the next morning before Billy was scarcely awake. The big voice belonged to the hired man. He was covered with snow and had icicles in his whiskers, but the inside of the basket that hung from his arm was comfy and warm and held two fluffy kittens fast asleep.

"Mew," squeaked one little kit.

"Mew," squeaked the other. Then they both began to purr. Billy said they were wishing him a "Happy New Year," and that he was going to name one Ali Baba. "Perhaps he'll find the forty thieves' that stole my pop corn. I'll call the other one Flittermouse."

The kittens grew into fine big cats, and they must have done their duty, for the next year Billy had all the corn he wanted to pop.

YOUR CAT AND ITS CARE.

By FRANK H. SWEET.

Many people think that a cat has no intelligence, and resists, or rather does not understand, any efforts made to control it. Fidelity is also a trait not attributed to cats. Those who hold this view are the ones who turn their cats out in all winds and weathers, allow them to forage for food, take no pains to train

At the end of three or four weeks kittens have usually reached the stage where even a person unaccustomed to cats is able to make a good choice. Choose a kitten with a wide, flat nose, eyes far apart, and a wide forehead and jaw, the muzzle not too long. This will prove to be an intelligent cat.

As soon as kittens have learned to lap milk they can be taken from the mother. The early feeding of a kitten is very important. Many half-grown cats are troubled with fits. Because of this some people say that they cannot raise a cat, and it is a prevalent notion that fits are caused by raw meat. They are more often caused by over-feeding and wrong foods. Raw food—particularly meat—is the natural diet of the cat tribe. Do not give a cat three heavy meals a day. A young kitten should be fed a little warm milk every few hours, and as it grows bigger, and eats more at a time, the intervals between the feedings should be lengthened. When the kitten is eating about four times a day, begin to introduce solids into its diet, at the night feeding. An animal always sleeps after a heavy meal, so that night is the time to give this meal, and then the cat is livelier during the day. Begin with cereals or cooked vegetables. Cats like such vegetables as sweet corn, asparagus, cold potatoes, squash and spinach. Then gradually lead up to raw fish and meat. A full grown cat should have as much warm milk in the morning as it wants, and no other food until night, when it should be fed all the raw fish or meat that it will eat, and before going to bed it should be given a drink of milk. A kitten brought up on this diet should make a fine healthy cat with a luxuriant coat. Some cats are very fond of liver, lobster, shell-fish, canned salmon and sardines, though the two latter should be given sparingly, as they are very rich. Some cats, however, cannot eat shell-fish, as it produces nausea, and also sometimes an eruption around the head and neck akin to mange.

One must remember that cats differ in their tastes just as people do. I know of one cat that will never touch water, while some cats require it constantly. In very hot weather if you find your cat lying under a bush in the yard, panting like a dog, with his tongue dripping, he is not mad; he is simply sweating, and will probably be glad of a drink of water.

A cat's dish should be kept clean and sweet, and he should not be expected to drink milk that has stood a long time in the dish. Some cats will go hungry rather than touch sour milk. Then, too, care must be taken to prevent your cat from eating tainted meat. For a few cents any butcher will send, with the daily order, scraps of fresh meat for the cat. Keep catnip on hand, and give a little once or twice a week. When one cannot procure fresh catnip, packages especially for cats are kept at bird stores.

Have a warm, sheltered place for the cat to sleep in at night. Cats greatly enjoy beds of hay, though some persistently refuse to sleep in a bed which has been prepared for them. They prefer to crawl away and hide.

In winter, when cats are not out of doors much, they often lie for hours under a stove or in front of a radiator. It is well to prevent this if possible, as it makes them very dull, and sometimes causes illness. Sometimes in winter cats have coughs and asthma, but these seldom amount to much.

In summer, when a cat is out in the grass a great deal it occasionally gets fleas. If it seems to be really suffering, go over it with a fine tooth comb and catch and kill the fleas. All bug powders are dangerous with cats, as they healthy cat is constantly washing, and

ALMOST NEW YEAR.

By RUTH RAYMOND.

Chillun it am almost New Year—
Solemn fact fo' one laik me
Who may nebber see annudder,
Fo' I'se almost eighty-three.
An' dese years I's been a learnin'
How to plan, an' work, an' pray;
Now it's time to close de records
Fo' tomorrow's New Year's Day.

If dars debts, go out an' pay dem;
If its kindness dat yo' owe
Do some deed to make de balance
Dat Ol' Year am gwine to show.
Ebbery man am sure yo' brudder,
Whedder rich, or poor, or gray;
Make de fambly 'lations stronger,
Fo' tomorrow's New Year's Day.

Ebbery debt yo' owe am reckoned
Wid de interest added in;
Ebbery debt yo' pay am canceled
As de good blots out de sin;
Praise de Lawd fo' all His blessin's;
He hab scattered long yo' way;
Close de 'counts in dis year's ledger,
Fo' tomorrow's New Year's Day.

400,000 Settlers a Year

Immigration figures show that the population of Canada increased during 1913, by the addition of 400,000 new settlers from the United States and Europe. Most of these have gone on farms in Manitoba, Saskatchewan and Alberta.

Lord William Percy, an English Nobleman says: "The possibilities and opportunities offered by the Canadian West are so infinitely greater than those which exist in England, that it seems absurd to think that people should be impeded from coming to the country where they can most easily and certainly improve their position."

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At the annual meeting to be held in the city of Hastings on January 13, 1914, to commence at ten o'clock A. M., the members of the Michigan Mutual Tornado, Cyclone and Windstorm Insurance Company will vote on amendments of sections 5 and 7 of the charter of the said company.

Dated at Hastings, Mich., Dec. 9, 1913.

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Billy's New Year Present—Ali Baba and Flittermouse.

his little master stayed in bed and wouldn't play with him. He would wag his tail and lick Billy's hands as much as to say, "Come on for a run." But after awhile he seemed to know something was wrong, and would lie on the floor watching with his big sorrowful eyes.

Sometimes Mr. Glenn led Queenie to the window. When Billie called to her she would whinny, and he wondered if she missed him as much as he missed her, and whether the cows and the chickens had forgotten him.

Winter came, and the holidays, and all the sick boy could see from the window were banks and banks of white, white snow.

"Did father bring in my pop corn that he planted for me last spring?" asked Billy one morning.

"Indeed, he did," answered his mother. "It's a wonder I didn't think of it before. As soon as the dishes are washed I'll pop some for you."

Billy's eyes sparkled. How much fun it would be watching the brown kernels hop and dance and split their jackets and turn outside in, all fluffy and crisp. It would be very nice to eat, too. If there was any left he was sure his mother would make popcorn balls.

Mrs. Glenn got out the popper and went up to the garret for the corn. She came back with a very long face.

"Where is the pop corn?" asked Billy.

them, leave them out all night, and cuff them under every provocation.

Now I have in mind a cat, the descendant of six generations of house cats, that has been well cared for, kindly treated, and properly fed. His coat is most luxuriant. He is five years old and very heavy for his size, but plays like a kitten. He follows the members of the family about the house and gardens, and when any of them come in at the front door he bounds to meet them. Never having been abused, he is entirely without malice, and friendly to everyone.

If you want a good house cat, bring it up from a kitten. Do not commence with a grown cat. Above all else do not take in a tramp; they are hopeless.

In choosing from a litter of kittens, look for a prettily marked cat, and one whose fur, when parted in places, grows very thick on the pelt. Be sure to choose from a fat litter—one that looks well nourished. Very thin kittens are sometimes well fed but infected with fleas, thus getting a poor start. Then, too, look at the eyes. Many kittens are sore eyed from exposure to strong light. Kittens should be kept in the dark for at least two weeks. Some eyes become all right in time, but others remain sore always. When matter accumulates on the lids, put the kittens into a dark place and frequently cleanse the eyes very gently with a soft cloth dipped in warm water.

these powders are mostly harmful or even poisonous. With a dog one can give a tar-soap bath, which is sure death to fleas; but with a cat this is different. Tar soap is sickening to a cat, even after the fur has been dried, and should always be avoided. Water is not a natural element for a cat.

A healthy kitten, well fed, ought to become a healthy cat; but if he becomes sick, a good rule to follow is to let him alone, and especially not to coax him to eat.

It is a mistake to allow children to handle a kitten too much. Often kittens become very thin from handling.

The matter of punishing a cat is very important. One must be firm with a pet, but always consistent. Do not punish a cat one day for doing something which you allowed it to do the day before; needless to say, it will not understand why it is punished. Cuffing a cat is bad. If the blow of one cat's paw, slight as it is, hurts another cat—and it evidently does—consider the effect of cuffing.

When a cat is doing wrong it can many times be made to stop by a sharp clap of the hands, shouting its name at the same time. Some cats are greatly humiliated by being forced to sit for a few minutes in some special place, choosing always the same spot, such as some particular chair, the top of a bookcase, or a mantelpiece. Another good method is to take a short whip or strap and strike the floor beside the cat, or an object of furniture near where the offender may happen to be, following him wherever he goes and repeating the blow a few times.

THE IMPERVIOUS IMP.

(Continued from page 586).

may remember, he made and spent it easily. Five year ago he made, I think, fifty thousand in that Southwest irrigation venture. We had no cares and no worry; perhaps that was the trouble. Then Jim was caught in a mining speculation and we had to learn the new lesson of practicing economy. Two years ago Jim died and I am nearly penniless.

"But," interjected Deering, "wasn't there the old farm?"

"That was all my fault, too," quavered the woman. "I had never lived on a farm. I didn't know anything about it. Farms are not run nowadays as they used to be. I rented the farm to a man who didn't know anything more about it than I did. It has gone to rack and ruin. I cannot sell it. It is mortgaged to the hilt, but I am going to try to win it back and when I do I'll know something about farming it as I should."

The first note of bitterness crept into her voice and fixed the words in Deering's mind. "The whole trouble with me," she explained miserably, "is that I've been too carefully sheltered; I've stagnated. Now at thirty-five I have to earn my living and I am an untrained worker. If I had been trained in any one thing I could take care of myself. As it is, I don't know farming, I don't know business, and all the stenography I know has been obtained at night school during the past six months. It was doubly hard because I had even forgotten how to apply myself to mental work. But I'll get my life straightened out if I can just get work enough to keep me until I can become a proficient worker in some one line."

"Sure you will—surely," Deering comforted, rousing himself from a reverie and twisting his pen between nervous fingers. "I'm going to get you a place. I think I know one that you will like. Will you give me until tomorrow?"

"I didn't mean to make you so much trouble," exclaimed the woman. "I'll go and see for myself if you will give me the name."

But Deering silenced her gently and it was some consolation to see that when she left the office she did not seem quite so hopeless.

Deering had lost all appetite for work. He wanted to go home and see with his own eyes that Sencie and her mother were all right. "I'm an untrained worker," Sencie was of a frail delicate loveliness and had golden hair. That weary woman Jim Nesbit's wife!

All the way home the words beat in upon him. "The whole trouble with me is that I've been too carefully sheltered. I'm an untrained worker."

"What's the matter, dear?" queried his wife in gentle worryment. He was not as appreciative as usual of the dainty lunch awaiting him.

"I wish you would stay home from the office this afternoon. I'm afraid this heat is too much for you."

"I'm all right!" He tried to laugh

FOR "1914."

BY ALICE J. CLEATOR.

Our "big" resolutions
Are apt to be broken
And fall like a bubble
As soon as they're spoken.

But here are some small ones,
So helpful and dear,
To brighten the pathway
Each day of the year.

I'll try to be happy
And make others so.
A smile that is sunny
Is "catching," you know!

I'll cultivate humor,
And easily laugh.
By laughter our troubles
Diminish one half.

When tempted to "say things,"
With criticism free.
I'll think, "Would I like it
If said about me?"

I'll try not to worry,
That "home-folks" may find
I'm pleasant to live with
And loving and kind.

I'll look for the "bright side"
When dark is the day.
We find what we look for
Each step of the way.

I'll think, when the storm clouds
Are hiding the blue,
"The bright sun is shining,
Just hidden from view!"

Life's moments unpleasant
Far from me I'll cast,
And cherish the sunshine
Which brightens the past.

These things, if remembered
And heeded aright,
Will make "1914"
A year of delight!

jauntily. "I'm bothered by an imp, that's all."

"A puny, insistent devil," grinned Sencie. "That's the definition, mother, you needn't look so shocked."

"It fits my state of mind," agreed her father.

"Good-bye, mother. Good-bye, Sencie," he called, and then came back to kiss them good-bye.

"What is the matter with your father?" cried Mrs. Deering. "Something is worrying him dreadfully."

And at Deering's side stalked the imp—suppose it was Sencie! Suppose it was Sencie, an untrained worker.

He hurried back to the office and plunged into the correspondence left over from the morning. But from every type-written sheet grinned the message of the imp—too carefully sheltered, an untrained worker—Sencie?

And then it began to elaborate. Suppose Sencie married a fellow like Jim. Suppose he and Sencie's mother and Sencie's husband died and left Sencie alone. Would she be hungry and helpless like Jim Nesbit's wife?

At last he surrendered. His mind was made up. He knocked off work early and started for home. In an excess of impulsiveness the whole office force was sent out an hour early.

Sencie and her mother were awaiting him on the porch. Mrs. Deering shot one look at her husband and then laughed happily. "Well," she whispered, as he drew her to his side, "you look more like yourself."

"Yes, ma'am," he chuckled. "I got rid of that impervious imp." Then he straightened with conscious rectitude and tweaked Sencie's love-lock.

"Daughter," he grinned, "I've stolen one of your virtues—I've changed my mind. I think you may go to that agricultural college if you want to."

Sencie gave a happy gasp of surprise. "Why—dad—really?"

"Reeeeally!" he mocked. And then he grew thoughtful. "Times are changing, Sencie. A woman as well as a man has to be able to do at least one thing well. She ought to have some special training aside from the old occupation of housework. If scientific farming is to be your specialty, why, all right. But I hope you won't forget the good old knack of making beaten biscuit and chicken."

"Don't you worry," chirped Sencie. "I'll work in diet and scientific cooking in my course, you see if I don't."

Wild Duck—"Now, then, fellers, make a noise like a gasoline motor, and those fool hunters will think we're aeroplanes!"

"You talk about men!" exclaimed the suffragette. "What has man ever done for woman?"

"He invented the ballot box," came timidly from the rear of the hall.

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Woman and Her Needs

At Home and Elsewhere



Where are the Ideals of Yesterday?

SOMEWHERE recently I read the topic, "Changing Ideals in America." I do not know what the writer brought out under that heading, but I wish I did. "Changing Ideals in America" is a theme which has appealed to me with great force the past few years. Indeed, they seem to have changed so greatly that I much mistrust the rising generation has no ideals at all.

Now I know it is the fashion for most of us when we have outlived our youth to tell how much better they did it when we were young; to vow that everything is going to the "demition bow-bows," as our friend Mr. Mantalini put it. I know I am departing from my solemn vow to believe always that the present age is the best. But a mental comparison of the girls of today with the girls of 20 years ago, compels me to say that as regards what we called ideals, the girls who are living today are minus.

Perhaps it is because when I was a girl I lived in the country and hadn't anything much to think about but ideals. There were not even telephones and rural routes then to bring outside distractions to our door, and our wildest excitement was a church sociable or evening party occasionally. Perhaps if these same girls I decry now were placed as I was they might perk up and think about some of the real things of life. And perhaps if we of the past generation were to be surrounded with luxury and excitement as these girls are, we might lose sight of the verities. God knows.

Be that as it may, the ideas of sacrifice, devotion to duty and service for others seem entirely missing. In their place are the love of clothes, ease and pleasure. The old idea that we were put into the world to develop character, not to pursue pleasure, has never even been heard of by the girls who are to be the mothers of our grandchildren. In fact, character is a word which has become obsolete and there seems to be no effort on the part of either daughters or mothers to direct the lives which are forming. There is a lack of moral backbone, of fineness of soul fibre, which is distressing. Girls are not taught that some things which are hard to do must be done anyway because it is right. If the thing is disagreeable or interferes with the great god, pleasure, away with it. It is better to do wrong than to be uncomfortable. Is the motto of the hour, rather than that one on which we were fed, "I had rather be right than be president."

The girls, of course, aren't to blame. They but carry out the mode of life suggested by teachers and moral sponsors. The schools set the pace with the idea that everything must be made pleasant for the children. No longer do we hear, "There is no royal road to learning." The new cry is, make the tasks so easy and pleasant the children will not know they are working. Mothers follow out the idea at home when they excuse the daughters from all housework so that they may be free to dress and parade the streets. And who can blame the girls? If you are brought up from babyhood to think that life must be made a bed of roses for you, that real work is a thing to be shunned as something too sordid for so fine a creature as you are, and that the one thing in life for you is to catch pleasure as it flies, can you be blamed if by the time you are sixteen or seventeen years old you have learned your lesson? I throw not.

Of course, mothers make the excuse that life at its best is hard enough and that they want to make the young lives as easy as possible. Granted that life is hard, a battlefield if you will, are you training your daughter for the best sort of soldier when you teach her to loaf and to shirk? When you give her no hint of the terrific fight ahead of her, until all of a sudden it is thrust upon her?

Most of us are agreed that sometime or

other in life we get our bumps. If we succeed in dodging them for awhile they come to us later as the accumulation of years. Isn't it better to bring up the children entrusted to us with the idea of getting just a few disagreeable things as they go along? Isn't it better to let them have a few good bumps while you are around to explain things, rather than to ward everything off while they are with

Some Remarks on Sunday Housekeeping

By CHARLOTTE BIRD.

It has been declared by competent authority that humanity needs to rest one day in seven, that with this rest one may do fully as much work and do it more efficiently on the remaining six days than on seven, and that without it he will suffer in various ways. It is surely true that if Sunday is properly spent, as a day of rest, one will be the stronger all the remainder of the week. And what one, who properly honors the day, owes to Sunday in mental and spiritual refreshment, only God himself can measure. And so our Puritanical foremothers who would not even grind coffee on Sunday, were not so far in the wrong.

But what is rest to one woman may be anything else in the world to another. So much depends on the individual viewpoint and the degree of mental development. Who has not again and again seen the young mother down town in the midst of the crowd on circus day with her baby in its cab! On the minds of nine witnesses out of ten the question thrusts itself, "How can she enjoy it?" And yet she is seeking her relaxation, and seeking it logically, in a change of physical energy.

In the same way many a housekeeper feels the need of a change from her own work, afforded by going on a visit and eating a good dinner cooked by some other housekeeper. This is mainly because her degree of culture has never given her a need for reading books and magazines. Her best day for this visit is Sunday, because then the whole family can go and they can make a day of it.

Another housekeeper, not having been brought up with the habit of Sunday visiting, looks forward to Sunday as the one day when, besides going to church, she may spend several delightful hours writing letters, but especially reading some helpful and enjoyable book. Her week is so full that she positively has no other time for the development of her mind and soul and yet she is heart hungry for this development. Suppose that, just when she has got herself nicely settled at her improving recreation, the other woman with her whole family drops down on her for a Sunday visit and dinner. She sighs regretfully over her lost day. But she must bear it patiently because these visitors are, perhaps, her husband's people and she must not offend them. But that does not remove the irreparable wrong done her.

The question of Sunday visiting remains to many a housekeeper a vexatious one, because to no housekeeper can the cooking of a big dinner for a host of visitors be a rest in any sense. All week she has cooked; for years she has cooked till, however good it may be, she is tired of the sight and taste of her own cooking. But this fact is ignored. She must either risk offending this crowd of visitors, so selfish because so thoughtless, or spend her Sunday in a way which will cause her to meet Monday morning all fagged out and ill-prepared for the coming week's work.

Now there appears no adequate reason why people of congenial tastes should not enjoy a social call on Sunday, either in the making or receiving. But why should the call not be made in the afternoon after the dinner hour, and end before the

you and send them out unprepared for the world to beat them into shape?

I repeat, the girls of today have no ideals, and because they have none they are growing into cold, selfish, unlovely women; women who will shun the real duties of wifehood and motherhood, who, in fact, are in no way fitted to be the mothers of men and women. If service could only be the watchword instead of pleasure! But service and sacrifice seem to be as entirely out of date as the garments of 1911.

DEBORAH.

waffles or pancakes to prepare. And the supper might with a few additions and changes consist mainly of what was left from dinner. Or there might be a cosy, delightful chafing dish supper and this meal be made the most attractive of the whole week.

There is no reason why all the meals should not be served daintily, just as when there is an outlay of more energy. This will depend more on the refined instincts of the housekeeper than anything else.

Thus in the average home Sunday can be made a day of rest and of growing intimacy with life's sweetest and best things, an uplifting influence which will cheer the hours of labor throughout the rest of the week. And Sunday can be made such a very beautiful day.

READING FOR THE CHILDREN.

BY MRS. F. NSEWANGER.

THERE comes a time when children must be promoted from the verbal story world to the world of his own story getting—reading; and this is a time of greater importance than is sometimes realized.

One of the most regrettable things of which I know is to hear boys or girls say, "I do not like to read," for it means that, unless their inclinations change, the doors leading to many beautiful and needful things will be closed to the minds of these young people.

Of course, different people differ somewhat in their natural liking for reading, but if properly encouraged and furnished suitable material, young folks will like to read sufficiently well to insure the necessary development along that line, and furnish that source of individual entertainment without which a boy or a girl is often restless, tired of companions, and dissatisfied with everything around without realizing what they are missing and why.

One's best mature judgment is required to direct reading inclinations for it is fully as wrong, and perhaps even more harmful, to allow indiscriminate selecting which may easily lead to injurious reading, as not to encourage the good. But the child who "does not like to read" and is not encouraged to like it, is growing into a life that will be narrow, and greatly handicapped by the tendency. Home and school should work hand in hand to bring about the desired result.

Homes should be supplied with regular weekly and monthly literature of the proper sort, youthful, inspiring and educational papers and magazines, also books of history, and proper fiction, and illustrated books of the true stories of the natural world of birds, trees, and elementary science that are so entertainingly presented as to be more fascinating than fiction to a healthy mind.

Schools should have just as complete libraries as they can possibly secure, and have them so classified and graded that pupils will read those books suitable for their age. A school of which I know is handling this matter in an ideally practical and satisfactory way. Its library is more complete than is that of many schools, but no more so than could be the case if pupils, parents and teachers were sufficiently interested. There is a carefully selected shelf of books for each grade in the school above first. The little first-graders have their stories told to them, but beginning with the second grade, each child in the school is required to read, or to have read to him at home so that he can report upon it, at least one book a month from the shelf belonging to his grade. These range in style and length from the myths, fables, nursery classics and farmyard and nature stories of the second and third grades, to "Uncle Remus," "Hoosier School Boy," "Little Women," "Wonder Books," etc., of the sixth grade, with still more advanced reading for seventh and eighth grades when there are such.

This library belongs to the school and

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Now being caught in large quantities daily. Our price list is free. It will cost you just 1c. to send a postal card asking for it. You can't make a better investment.

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from any kerosene lamp or lantern than from electricity or gas. WHITE FLAME BURNERS give a soft white light equal to three ordinary lamps. NO MANTLE TO BREAK. Safe and Reliable. Delights every user. \$5 to \$15 daily. Everybody buys. Write quick for particulars and territory. Complete sample postpaid 35c., stamps or coin, 3 for \$1. Money back if not satisfactory. White Flame Light Co. 39 Clark Bldg., Grand Rapids, Mich.

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

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WANTED.

At once a few men, who are hustlers, for soliciting. No experience necessary. The work is dignified, healthful and instructive. In writing give references and also state whether you have a horse and buggy of your own. Address BOX J. F., Care Michigan Farmer Detroit

WANTED—Men and women for Government positions. Examinations soon. I conducted Government Examinations. Trial examination free. Write, OZMENT, 17 R. St. Louis.

Simple Crochet Edging of the Long Ago.

By ELLA L. LAMB.

Here are some edging which are so simple and dainty that almost anyone, no matter how busy, will find relaxation in trying them. Especially is this true of



No. 1.

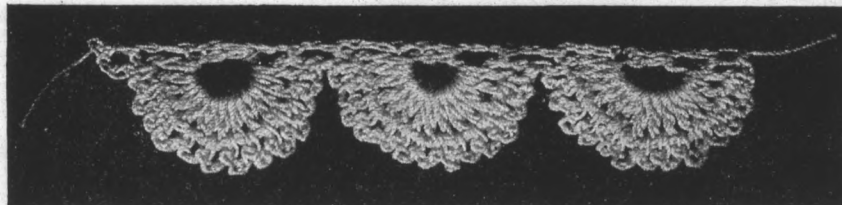
the first, which is very dainty, indeed, when made of fine thread, and always pretty for towel-ends and various uses when made of coarse. It grows so rapidly we call it the "Mile-a-minute" lace.

Mile-a-minute Lace.

Chain 6, turn.

First row—1 tr in 6th st of ch, ch 3, 1 tr in same st of ch, ch 3, 1 tr in same st, ch 3, 1 tr in same st, turn.

Second row—ch 6, 1 tr caught in chain between 2d and 3d tr of 1st row, 3 ch, 1 tr in same ch, 3 ch, 1 tr in same ch, 3 ch, 1 tr in same ch, 1 tr in 1 st tr of 1st row, 3 ch, turn and repeat from 1st row.



No. 2.

in scallop, ch 3, 1 tr under ch at beginning of 3rd row, turn and repeat from second row.

The edge of the garment to be trimmed may be rolled and the scallop applied di-

rectly to the material. It has the effect of a hand-worked edge, especially on flannels, where woolen yarn matching the material is used, and edged with silk or sansilk of the same shade or in dainty contrast.

First row—ch 4, 1 tr in 1st st of ch, turn.

community, but another school, not so well equipped, still furnishes a variety of good reading to its pupils through the traveling libraries loaned by the state to any reputable group of people, for transportation charges only. The progressive teacher who began this arrangement paid the transportation charges of the first library herself, but since then the district had been glad to attend to the matter itself.

These traveling libraries, as many of you know, are composed of 50 or more miscellaneous volumes that may be kept for three months, renewed upon application, or exchanged for a new one whenever desired. Thus a community, if so disposed, may have the use of several hundred books during the year, for a very small sum of money paid out in freight charges. So wherever we are, there is but little excuse for a lack of good reading for our young people.

LETTER BOX.

A Really Busy Childless Woman.

Household Editor:—The reading of Deborah's "How the Childless Housewife Keeps Busy," aroused my ire as I happen to be a childless mother. My little one of two and one-half years left me a little over two years ago, to blossom in "God's Garden."

I want to say that, although I, like lots of other women, have no babies, I am busy all of the time, but not in the way she says. If she should chance to step in my house, a big one, too, I think she would find the air as sweet, fresh, and pure as in her own home. I, too, always draw a thread, as she says, to cut towels and tablecloths by, for it takes very little longer and I do like to see things neat and straight.

Now as to how I fill in my spare time. We work 220 acres of land and I ride all of the riding tools, binder, mower and plow, as well as several others. I have my butter customers and make butter the whole year and I do most of the churning. I make porridge for the calves, always make my own garden, care for the hired man's clothes and do his washing, do all my own sewing, raise lots of chickens, and, last but not least, have lots of company. I still have time to do fancy work, learn lots of good recitations, read, and visit and have a general good time. And I weigh less than 100 pounds, too.

Deborah says she knows now how the

Second row—ch 3, shell 7 tr in loop formed in 1st row, turn.

Third row—ch 5, skip 1, 1 tr, ch 2, skip 1, 1 tr, ch 2, skip 2, 1 tr caught under chain at beginning of 2d row, ch 1, 1 tr in same place, turn and repeat from 2d row.

No. 3.—First row—ch 4, 1 tr in 1st st of ch, turn.

Second row—ch 4, 2 tr in look formed by 1st row, turn.

Third row—ch 4, shell 14 tr under ch of 2d row, 1 slip st in 1st st of 1st row, turn.

Fourth row—ch 3, 1 d st between last two tr st of 3rd row, repeat between tr



No. 3.

rectly to the material. It has the effect of a hand-worked edge, especially on flannels, where woolen yarn matching the material is used, and edged with silk or sansilk of the same shade or in dainty contrast.

childless woman keeps busy—it is with pattering with the non-essentials. Now, my dear Deborah, don't get mixed as to the ways of the whole of the kind known as childless women, or of a part, for I'll wager, to take the land through, you are badly fooled.—A Young Childless Mother.

Too Much Hard Work.

Dear Deborah:—We wish to thank you for your article in the Michigan Farmer, in the Woman and Her Needs Department, of November 22, on "Individualism Gone Mad." We enjoy your writings from week to week, you bring out so many helpful ideas for parents and the home.

You certainly have struck the keynote on individualism. We can not help but fear for some of our grandchildren, that we so much love, and hope for their welfare so much, you surely had a vision then. And that article a few weeks ago, in regard to so many giving up the faith of our fathers, especially among our college students and their teachers. We see so much of leaving Christ out, not as one of the Trinity. Some of our Baptists, Presbyterian and Methodist brought-up boys and girls become unbelievers. You seemed to understand that perfectly.

May I make a suggestion? We see plenty of writings on how we, as men and women, should do our work well and thoroughly, and anything worth doing at all should be done the best we know how. But there is a small class of women, and men, too, who are so particular, painstaking and thorough in their work that they work from early to late and then never get their work done. It may not be that they have so much to do, but seem to have no time for anything else but work. We believe in doing work well, but a few of us are slaves to ourselves.

I hope to see an article along those lines some day. Believe it would be a help to many.—E. P. M.

HOME QUERIES.

Household Editor:—Will you kindly tell me if I could dye tan silk poplin, blue? Or would it shrink? I do not care for the color it is, and what kind of dyes would be best to use?—Ethel.

You could dye the tan blue, but I suppose it would shrink, as most goods shrink when dyed. I can not recommend any dye.

Household Editor:—How do you carve a leg of lamb?—Mere Man.

The meat should be placed on the platter, skin side down. Then carve from the

hip bone across the leg. Meat should always be cut across the grain.

Household Editor:—Can any of the readers give me a recipe for plum pudding?—Subscriber.

One pound of raisins, one pound of currants, one pound of suet, one-fourth pound of flour or fine bread crumbs, three ounces of sugar, one and one-half ounces grated lemon peel, a bit of mace, half a small nutmeg, grated, one teaspoon of ginger, half a dozen eggs well beaten. Chop the suet finely, and add to the raisins and currants which are left unchopped. Then add the other ingredients in the order given. Work well together and tie in a cloth which has been dipped in boiling water, squeezed dry and floured. Boil slowly four or five hours. When done dip quickly in and out of a pan of cold water to prevent the pudding adhering to the cloth. Serve with any good pudding sauce.

FREE PUBLICATIONS OF SPECIAL INTEREST TO FARM WOMEN.

The Division of Publications U. S. Department of Agriculture, Washington, D. C., has the following free bulletins: The care of milk and its use in the home; copy milk and cream; bitter milk; clean milk; milk supply of cities; the covered milk pail; cost of market milk; lacto, a new and healthful frozen dairy product. Bulletins on the subject, "Drugs," are entitled: Harmfulness of headache mixtures; habit-forming agents; their indiscriminate sale and use a menace to the public welfare.

Particular attention is given to poultry under the following heads: Poultry accounting; poultry diseases and pests; ducks and geese; eggs; poultry feeding; guinea fowl; incubation; poultry marketing; pheasants; squabs; turkeys.

Farm conveniences in general have one set of bulletins to describe them, and Farmers' Institutes another. There are 12 bulletins devoted to canning and preserving. Fruits and flowers each receive their merited share of attention. The housewife who wishes to know about helpful organizations for boys and girls, such as the corn, poultry and canning clubs, may learn about them by sending for the list of pamphlets included under the heading, "Agricultural Clubs."

Because of the limited supply, applicants are urgently requested to ask only for those bulletins in which they are particularly interested.

FASHIONS BY MAY MANTON.

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



No. 8072—Fancy blouse, 34 to 42 bust. With or without chemisette, with long or short sleeves.

No. 8078—Blouse in kimono style, 34 to 42 bust. With long or three-quarter sleeves.

No. 7592—Semi-Princesse gown, 34 to 42 bust. With two-piece skirt having inverted plaits at the sides, with or without chemisette and peplum, with set-in sleeves in three-quarter or full length.

No. 8066—Two-piece skirt, 22 to 32 waist. With high or natural waist line.

No. 8086—Two-piece skirt, 24 to 34 waist. With high or natural waist line.

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

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—Jas. N. McBride, Burton.
Vice-president—J. F. Rieman, Flint.
Secretary-Treasurer—Mrs. C. P. Johnson, Metamora.

Directors—Wm. T. Hill, Carson City; Jerry Spaulding, Belding; R. J. Robb, Mason; Joseph Harmon, Battle Creek; C. B. Scully, Almont; C. T. Hamline, Alma.

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."

SIDE LIGHTS ON FARM LIFE.

Paper read at the annual meeting of the State Association of Farmers' Clubs, by Mrs. W. H. Taylor, of the Ingham County Farmers' Club.

About two years ago there appeared an article in the Michigan Farmer signed "A Disillusioned Mother," that was so disparaging to country life and country people, that my indignation was thoroughly aroused.

When asked by a member of the committee of this association to prepare something for this meeting I thought, perhaps I can say something on the bright side of country life that may counteract that article on the other side. To me, preaching without practice doesn't make much of an impression; and in reading any article where the writer doesn't tell anything he has done, but gives his remarks all in a general way, I always think he is doing the telling how and letting someone else do the work.

The person who tells what he has really done is very generally a safe person to follow.

I believe the reason why Mr. Lillie's articles in The Farmer are so widely read and discussed by the every day farmers of Michigan is because he tells what he is doing, and not what can be done.

So before I try to mention some of the good things of the country, I want you to know that I have tried both city and country life and know whereof I speak.

I am now a real farmer's wife, doing the work that all other farmers' wives are doing, and caring for a family of children too large to be fashionable. But we spent two-thirds of our married life in one of our large cities, and can truly say that for real living the time spent on the farm, though only half as long in years, has more than doubled in enjoyment.

The farmer in his work is at home all the time and has his family with him; while the city man is away from home nearly the whole time. We smile at the story of the little boy who resented being punished by the man that staid at their house on Sundays. But I know a family where the father, when his children were small, only saw his little ones awake on Sunday.

If you mothers will try living in the city and caring for your children, keeping them out from under the street cars and automobiles, or your neighbors' cisterns, almost entirely alone without the help of the father, because he must work to earn the daily bread, you will find that it is much harder than keeping the chickens out of the garden. We hear so much about the drudgery of farm life, that the farmer is led to think he is the only one in the great army of bread winners that really works.

Let me describe to you two pen pictures. A farmer entered the business office of a city man and found him sitting on a high stool, with an electric light burning before him, a shade over his eyes, poring over his books, with columns of figures to make balance and an electric fan trying to make the atmosphere endurable. After gazing a few moments the farmer says, "and he calls that work."

In the other picture the scene is changed to the country. The city man passes along the road and in a field nearby he sees a man sitting on a machine, driving a team; over him is the clear sunshine, all around is the beautiful clover blossoms; the sweet smell of the new-mown hay is in the air, and the breeze is try-

ing to make him comfortable. The city man says, "and he calls that work."

Don't think for an instant that I do not know there is good, hard, wholesome work, and plenty of it, on a farm. But did you ever stop to think it was easier to do work when you can be out in the pure air and free sunshine that we enjoy, than if you were shut up in a factory, an office or behind the counter? But why is our work called drudgery? Webster says, drudgery is mean, servile work, hard and ignoble labor.

If our work is drudgery then the farmer and his family are drudges, and Webster also says, a drudge is one employed in menial work, who toils hard in mean offices, with little reward or return; a slave. Are we, the great army of workers, who are helping the Great Creator to feed the world, willing to call ourselves drudges? Is our work menial and ignoble? Are we slaves? working for little returns. The greatest slave is the man who hates his work. And if the farmer does not love his work he had better leave it and try to find something to his liking. Sometimes we do not appreciate our blessings until they are taken from us. Work is not drudgery unless we make it so.

If you think there is an easier way of earning your living by really working in the city than in the country, just try it.

I really believe if the farmers would stop talking of the hard work they have to do and more about the good things of the country, the first and greatest step toward keeping the boys on the farm would be taken.

(Continued next week.)

CLUB DISCUSSIONS.

Hear Report of State Meeting.—The Grosse Ile Farmers' Club met the evening of December 13 at the home of the president. The meeting was called to order by the president and the usual form of business transacted. A paper prepared and read by Mrs. O. N. Webb, upon the meetings of the Michigan Farmers' Club Association, which met at Lansing, Dec. 2-3, 1913, and a letter by Mary Groh, giving a description of Lansing's state institutions, furnished the entertainment for one of the most enjoyable meetings ever held by our Club.

Will Celebrate Tenth Anniversary.—The North Marshall Farmers' Club is still flourishing and the attendance is good. At the November meeting about 80 people were present and a profitable time was spent at the home of Mr. and Mrs. Fred Randall. The program consisted of music, readings, recitations, etc. The gentlemen's topic discussed was "The best time to use fertilizer from the barnyard." The Club sent two delegates to Lansing. The annual election of officers will take place in January, when we celebrate the first decade of the Club's organization. It is hoping to have a special program at this time.—Nettie J. Thomas, Sec.

Will Hold Institute.—Washington Center Farmers' Club held an interesting meeting with Mr. and Mrs. John Tobey, at Pompeii, Dec. 11. After the usual routine of business in the forenoon, dinner was served to about 40 people. The afternoon was taken up listening to an excellent report of the delegate to the State Association of Farmers' Clubs, Mr. L. C. Curren. An election of officers was held. W. C. Long was elected president; Mrs. O. J. Campbell, recording secretary; Mrs. B. S. Gillman, corresponding secretary. The Club took action favoring a one-day institute and voted to assist if such an institute is held at Pompeii this winter. Next meeting will be held at Elmwood, with Mr. and Mrs. S. N. French, Jan. 8. All are cordially invited.

Hold Annual Meeting.—The annual meeting of the Genoa Farmers' Club was held at the pleasant home of Mr. and Mrs. Herbert Lawson, Saturday, Dec. 6. About 45 enjoyed the sumptuous dinner, consisting of chicken-pie and all that goes with it. The meeting was opened by singing; prayer; reading of minutes of last meeting. The election of officers resulted as follows: President, Jas. G. Hays; vice-president, H. M. Haller; secretary-treasurer, Miss Edith Lawson. A very fine paper on "The first original Thanksgiving," was given by Miss Buckelen. "Are we thankful?" was the topic of a splendid paper by L. R. Richards. Rev. C. A. Wilkie then gave a talk on "The debt of gratitude we owe to God as individuals and as a nation for the prosperity and blessings enjoyed." After the question box, the meeting adjourned to meet with Mr. and Mrs. Geo. Latson, Saturday, Jan. 10, 1914.

BOOK NOTICES.

John Bunyan's Dream Story. By James Baldwin. The Pilgrim's Progress is here retold for children in a form adapted to school reading. Cloth, 12mo, 198 pages, illustrated. Price, 35c. American Book Co., Chicago.

Die Seben Reisen Sinbads des Seemanns. Edited with notes, exercises, and vocabulary by K. C. H. Drechsel, A. M., Master of German, Episcopal Academy, Philadelphia, Pa. The Sinbad stories from the Arabian Nights have a perennial interest. Cloth, 16mo, 180 pages, illustrated. Price, 40c. American Book Co., Chicago.

Your Grandfather Read It
Your Father Read It
Are YOU Reading It?



Which Bull's-Eye Are You-Aiming At?

Field Crops?

10,000 Bushels From 100 Acres tells you how one man has made a fortune from a run-down farm. Starting from less than you have, very likely, he has made his farm a wonder in the production of corn. Think what his methods—we'll tell you what they are—might do for you!

Doctoring Sick Soils is a lesson that will give you a physician's degree to diagnose the ailments of your land and prescribe for its cure. You can't expect soil that is sick to work for you successfully any more than a horse that is off his feed or a hired man who has a fever. You must give it the proper medicine and nurse it—we'll tell you how.

Better Breeds of Corn mean better yields of corn and better yields mean more money. The champion corn breeder of the country will tell you how he does it, and you have only to follow his example.

Beef Cattle?

Replanning the Stock Farm is one answer to your question. As it stands today your farm may not be planned for success with livestock. Why not make it over? Other men have made old farms new—we have the experience of a man who replanned a place that didn't pay \$450 a year so that it now returns him more than \$2500 a year. You can do it, too.

Cheaper Money—Cheaper Beef is another story you want to read. Interest charges amount to 42 per cent of the total cost of carrying a four-year-old steer to market in the Southwest. If money could be had at 4 per cent the producer would make more profit and meat would cost less to the consumer. One of the biggest beef raisers in the country tells you why.

Chickens?

The Little Farm Hen is the series of articles you must read. No farm is complete without its chickens, but many a farm would be better off without the mongrels that it keeps. Here's a complete course in poultry raising for profit—read it and make the little farm hen fill the family purse.

Orcharding?

Apples Without Plowing, by the sod-mulch system, is a way of growing big apples that you might adopt. You may be too busy to pay much attention to the orchard, but trees on rough land will help to take care of themselves if you follow this method.

Farm Management?

The Best Farm I Know is a series of articles from the West, the Northwest, the South, the Corn Belt, the Fruit Regions, written by experts who point out why certain farms are better than the general run. It will tell you how to manage your own place so it can get into the "best" class.

Better Marketing?

Advertising Farm Products is only one of the solutions of the problem of marketing that we shall give you. The manufacturer and the merchant advertise; why shouldn't the farmer? This valuable series of articles means better prices for your products.

Better Home Comforts?

The Woman's Department is a weekly magazine in itself for the wife and mother. If you want new recipes we have them. If you want new ideas in fancy work we have them. If you want the latest styles in dress we have them. If you are interested in short cuts in housework we'll explain them to you.

If farming
is your



Business
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THE CURTIS PUBLISHING COMPANY
Independence Square, Philadelphia, Pennsylvania

Farm Commerce.

The Requisites of Agricultural Co-operation.

THE requisites for agricultural co-operation was the theme of a lecture recently given by Professor B. H. Hibbard, before the class in agricultural economics at the Michigan Agricultural College. Professor Hibbard is Professor of Agricultural Co-operation of the economics department of the University of Wisconsin. The subject of co-operation is the live topic of discussion these days, and his remarks are very timely indeed, inasmuch as he has studied this phase of agricultural activity in its innermost details, both in this country and abroad. Co-operative societies are being formed all over the country and many of these become failures through lack of the proper requisites for co-operation.

Prof. Hibbard prefaced his remarks by saying that it has been assumed in the past that co-operation will work in all cases, but this is not the observation of experience. Many institutions and promoters are going out into the country and trying to promote these organizations, but the University of Wisconsin does not follow this plan. They do not try to propagate co-operative societies but rather try to repress them because the outgrowth of their observation is that these organizations have done an immense amount of injury in the past and thus injured the cause of the betterment of the agricultural population of the country. The problem then before any community or people who wish to organize a co-operative association, is: In what sort of an atmosphere can we expect a co-operative organization to flourish? The prerequisites for the formation of such a company are many, of which seven are the most important.

1. There Must Be Adequate Business.

"There must be enough business," says the professor, "to compete with other companies of like interests." The lack of enough business has caused many co-operative establishments to fail; they do not have enough work to keep them going and soon interest in the enterprise wanes and failure is the inevitable result. There must be enough business to keep the employees of the concern busy. From about 1880 up until the present time, more than one-half of the co-operative creameries formed have failed and this may be traced in many cases to the lack of business; that is, not enough products were brought in to insure a paying business.

Men who have studied the situation and realize that the formation of such companies are not conducive to the welfare of the farmers, are trying to discourage the co-operative attempts at organization. A leading railway of the south has hired a man whose business it is to help agricultural pursuits. The end desired, of course, being that these people will grow more products to ship over the railroad of the company. This agent then sees to it that the material prosperity of the farmers along the route is increased. In doing this, they are now trying to discourage the formation of co-operative creameries among farmers where the situations are such that such a company cannot flourish.

Dr. Hibbard explained that many creameries are organized by promoters who are hired by unscrupulous creamery companies in Chicago and given big wages, sometimes four hundred dollars a month. These men must be good mixers and good talkers and they go out among the farmers and talk upon the benefits of this sort of organization and the ease by which it may be accomplished and then finally spring a plan for organization. Their argument is that if a creamery is put into a town, the farmers around about will buy more cows and thus the dairy business will grow into large proportions; but such does not seem to be the case, and the ultimate result of such procedure is failure. One can readily understand why such schemes are foisted upon the people; the creamery company builds the creamery, equips it, and secures a large payment on it. This is what they are after and when once this payment is made, if the organization fails, all right, the plant is torn down and it, together with the machinery, is shipped to another town where it is again installed at a slight discount. This, in a measure, accounts for the many co-operative companies which have failed. This also

accounts for the fact that the publicity agent of the railroad tries to head off such co-operative results. On the other hand, if a co-operative creamery were established where there are a great many cows and it were likely to remain, the railway is only too glad to help them, because this really means more business. The railroad is really looking out for number one, but in this way, they are helping the farmers.

2. The Business Must Be Comparatively Simple.

In the mind of Prof. Hibbard, this is one of the most imperative conditions making for the success of a farmers' company. A simple process is one that it does not take days and months to complete, such as the manufacture of fancy dress goods, etc. Such a process could not well be carried on by a farmers' organization, not because the farmer does not have ability for business but because he, in the capacity of a farmer, cannot devote his time to other things also. He is the producer of the product and that is his main interest. If he tries to manage the business, either the farming or the business must suffer. It is not to be inferred, however, that the process may

well known fact that these people "think in terms of apples" and that all of them raise apples. This, in a large measure, accounts for the success of their co-operative efforts. It will be noticed in this connection that nearly all of the co-operative creameries in Iowa (and Iowa is first in number) are located in the eastern and northeastern part of the state. It is also well known that there are many other sections of Iowa where dairying is carried on in a very extensive scale but still there are no co-operative concerns because these areas are not compact enough to make it profitable. There are only three or four co-operative creameries in Nebraska. The reason for this is that the people have more diversified interests.

Most of the beef cattle of the west are fed in the southwestern corner of Iowa and in adjacent portion of Kansas, Nebraska, and Missouri, and still we do not find any co-operative associations for the handling of these cattle. On the other hand, the cattle feeders of Wisconsin have this phase of cattle feeding pretty well planned and they use it quite extensively. The cause for this difference may be found in the quality of the cattle produced in these different sections. In those portions of Iowa, Kansas, Nebraska, and Missouri mentioned above, the most of the prime beef of the country is produced and these men cannot wait for mail to carry the prices to them. Their cattle is of such quality that buyers want the animals badly. Each man has a carload of his own steers and there is, therefore, no object in co-operation. If, however, a speckled lot of poor quality cattle come

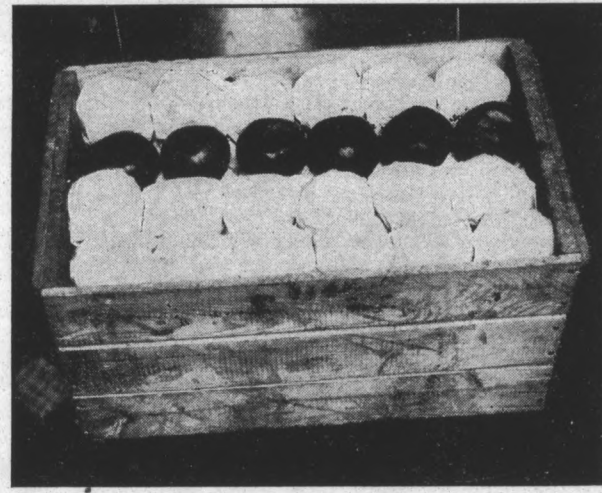
that it was customary to do this." These grain farmers also complained of the price they were receiving but not to such an extent as they did of the other things mentioned above. Now what did these men do?

They went to work and organized co-operative grain elevators and there are now about two thousand of them in the United States, located in the special grain districts and very, very few of them have failed. There are no other businesses which show so few failures as does the co-operative elevator in the grain sections of the west.

5. Adequate Capital Necessary.

A co-operative concern in order to be successful must have adequate capital or know where it is forthcoming, is the conclusion of the specialist. There is nothing more disheartening than to try to do business on insufficient funds. Still it does not seem that this should be a very serious handicap for farmers' concerns, for quite often, not much capital is required to start with.

The most successful mutual benefit associations that can be found in the world are in Denmark. The Danes seem to have this phase of agricultural activity down to a science and a failure of one such company is a very rare incident. Their plan for the work is this: Since the people live so near together one company may have a thousand or more members and when the organization is formed, each member pays on the average \$6.25 which gives him a membership card. Further than that, he does not get anything. He never gets his money back nor any interest for it but the extent of



These Wagener apples, from a consignment of 150 carloads consisting of Wagener, Balwin and Mann varieties, were recently sold by a Detroit commission concern for \$6.75 per barrel. The apples were grown by E. H. Wilce, of Leelanau county, and he was offered \$3.80 per barrel by his local dealer. This sale illustrates what Michigan's progressive orchardists are doing and hints of the possibilities before our apple growers.

not involve some intricate and painstaking details such as testing milk, packing apples, or grading grain. Since the whole of the supervision of the work depends upon a manager and because the board of directors are often scattered hit and miss about the community, few farmers' co-operative organizations have succeeded when the business was very complex. A further argument for the simplicity of the business is that the farmer as an individual usually grows such crops as he chooses, and markets them where he chooses, and since farming itself is not likely to become co-operative, all cannot give their attention to a single project at one time. So the board of directors are not able to superintend the work of the manager and it is usually left to his discretion, and good men who can carry on a complicated process in its every detail are hard to find.

3. The Business Must Be Carried on in a Small Area.

"The product which is handled through the organization must be one which is of vital interest to the producers," is the statement of Prof. Hibbard. In a community where a few of the people are engaged in horticulture, another few are in dairying and still others are feeding beef cattle, it is impossible to have a successful co-operative organization; for to be a success, such a company cannot handle more than one line of product as it takes all the attention of a manager to tend to one thing and do that well. In short, the area covered by the members of the company must be small, and it is quite essential that they all be engaged in the same pursuit. The members must live close enough so that they may become acquainted, for without a common interest, no people will unite and stay united. A well-known example of successful co-operation is the Hood River Valley Apple Association, and it is a

in from the west, they are called Wisconsin cattle, and since the cattle feeders in Wisconsin do not produce the best quality of beef, the competition is not so keen for the product, and smaller numbers to ship makes it quite important that they co-operate. So we are again confronted with the evidence that co-operation cannot be successful where the product is not of vital interest to all the members, and these interests should be centered in a comparatively small community.

4. There Should Be Chance for Gain.

In the words of Prof. Hibbard, "There must be some chance for gain in the co-operation." For when the chance for gain is removed, the excuse for the existence of the company is removed. If one can do just as well by selling his product to some store or town nearby, what is the use of joining some co-operative association? There is none whatever.

A few years ago the farmers in the extensive grain growing regions of the west became dissatisfied with the methods of the elevator men and there were certain things about which they complained. The first of these was that they were beaten on the grade. For instance, they would take their wheat or barley to the elevator and the dealer would grade it as number two, but when they saw the notices of the receipts in Chicago or the other market to which the grain was sent, there would be no receipts of number two grain, all would be number one. Then another cause of complaint was the dockage which the dealers always took and considered it a custom to do so. "No matter how clean my barley was," said the Professor, "many times I have driven up with it so clean that it would make pure pearl barley without any other process, and still they took 50 pounds for a bushel when the law says there are 48 pounds in a bushel of barley. When asked why they did this, I was always told

his benefits from sales and buying are so much that he can well afford to make this slight expenditure. This constitutes their working capital and in a time of need, they have found that the organization can borrow money more satisfactorily and at a lower rate of interest than can an individual, so the corporation borrows money. They keep an account at the bank and the bank is glad to make them loans at five per cent when it would cost private individuals a higher rate of interest and the money would not be so readily forthcoming. The banker is safe for, when the papers are signed by the secretary and president, it becomes binding upon the members. This furnishes a method by which money can be had without taxing the individuals. This is the way the Danes make it possible to co-operate so successfully.

6. Co-operative Spirit Must Prevail.

By the co-operative spirit, we mean that before co-operation can be a successful venture, the members of the company must know the benefits of co-operation. In the past we have assumed that such men are rare, but in the mind of Prof. Hibbard, this is not the case. There are few men who will not co-operate when they see that it gets results. Others contend that you cannot have a successful enterprise when patrons are of different politics, nationalities, religions, or races, but this has proven a wrong assertion for in many of the communities of the country where such organizations have proven a success, the patrons are very cosmopolitan as to nationality, the religions are many and it is quite often that blacks and whites are congenial. If there is something to be gained, we need have no fear that the co-operative spirit will not abide.

There is another phase of this question, however, and that is a "co-operative man." It is nearly always the case that

where such an organization is a success, it has been largely due to the efforts of a single man or a group of men. This man or men has done much work without receiving ample remuneration, has sacrificed his work, and in extreme cases has borrowed money and loaned the concern when they were in straightened circumstances. It is almost impossible to cite a single case where co-operation has been successful without finding that a single individual or group of individuals has been in a large measure, responsible for the success.

7. Competent Manager is Necessary.

Usually with such an enterprise it is more a case of co-operation between the various members and the manager than between the members. It is important that such a prospect have a manager who is a good business head, is a good mixer and who understands the details of the special business which he is to manage. A frequent cause of failure in the past has been the lack of good management. The farmer feels that he works just about as hard as any other man on earth and he thinks that if he pays his representative in town twice as much as he pays his farm hands, he is paying him a fine sum. Now if the farmer pays his hired man \$25 a month, he thinks he should not pay the manager of the creamery or fruit-selling organization more than \$50 a month. As a consequence, good managers are soon gobbled up by some private concern who can see the real worth of the man and a raw recruit is placed at the head of the co-operative organization. Usually three such changes are sufficient to bankrupt any organization. It, however, gives us some satisfaction to see that this tendency is fast being overcome by the more progressive farmers.

To sum up, a successful farmers' mutual benefit organization must have enough business to keep running, the business must be comparatively simple, it must be held within a small area, there must be some chance for gain in the organization, adequate capital must be forthcoming, co-operative men must be had and last, but not least, a competent manager must be hired. Many communities in Michigan who are contemplating the organization of co-operative organizations would do well to study these requisites and regulate their actions accordingly.

Ingham Co.

I. J. M.

Note.—In next week's issue Professor Hibbard's reasons will be given why a co-operative company must control its membership, together with an example of how 43 concerns amalgamated into one great concern under conditions quite similar to those prevailing in Michigan, what the status of the community was before organization, and what it now is.

Crop and Market Notes.

Michigan.

Ottawa Co., Dec. 15.—There has hardly been a day this fall, and so far in December, that the ground has been frozen so that farmers could not plow. And there has not been so much fall plowing done in many years as there has been this season. Many farmers have nearly all their ground plowed for corn and oats, and for this reason there will be a larger acreage of spring crops put in than usual. Wheat is looking fine, and pastures have kept green so that stock are running out in many fields. The weather has been so warm that the buds have swollen on some fruit and other trees. Whether this will prove an injury, cannot be told at present. Farmers are marketing considerable wheat, as the price is very near the dollar mark in the local market. The price of pork is a little on the decline, and poultry is quite dull. Poultry in this section is getting to be quite an industry, and a number of carloads have been shipped from the vicinity this fall. But little hay is being shipped as the crop was rather short and there has not been so much call for feed.

Sanilac Co., Dec. 12.—Frozen weather arrived Dec. 7. Up to date the weather was mild and rather warm. Clay roads are very bad now, being frozen and rough. Farmers are marketing hay, some oats and a small per cent of beans. Crops were not any too good, excepting oats. Prices are fair, taking everything into consideration; farmers will come out about even. Wheat 88c; oats 37c; beans \$1.75; hay \$12.

Cass Co., Dec. 18.—Fine weather for the past two weeks has improved the wheat and timothy fields. Very little clover and seeding lived through this season's drought. Corn is all husked, giving a light yield, though the ears are solid and of good quality. Potatoes, corn and wheat, our staple crops, are all lighter than for many years. There has been a lot of hogs die with cholera, some whole herds being wiped out. Wheat 92c; potatoes 55c; corn 55c; butter 32c; eggs 33c; apples were a very light crop. Some alfalfa was sown by quite a few

farmers in this county and was nearly destroyed by small green worms.

New York.

Columbia Co.—The year 1913 has not been a good year for farmers. Too dry. Rye is the principal crop. Hay did not cut more than half a ton to the acre. Farmers buy much of their grain feed and dealers say they will have to carry them until next year. Hay \$16; rye straw \$14; corn 95c; potatoes \$1; butter 35c; eggs 45c.

Pennsylvania.

Lancaster Co.—General mild weather continues. Some fall plowing is being done by a few farmers. Potatoes about all sold. Because of the scarcity and high price of hay, many farmers are induced to shred their corn fodder. Veal calves are selling at 10¢/lb; fat hogs for the market are scarce, pigs and shoats in demand. Good cows selling for about \$100. Wheat 85c; hay \$15; corn \$1 per cwt; butter-fat 36c.

Ohio.

Warren Co., Dec. 17.—Corn husking and shredding finished and farmers ready for winter; very little cold weather yet. Stock of all kinds in good condition for winter; wheat and rye look fine. This year has been rather an unsuccessful one for the farmers of this section. Corn only half a crop; oats and potatoes quarter of an average yield; wheat and hay was an average crop and clover seed the best for many years. Fruit about half a crop and of poor quality. Hog cholera caused much loss in many districts. Farmers are now laying new tile drains and some have begun plowing. Local prices: Corn 60c bu; wheat 93c; oats 52c; alfalfa \$20; mixed hay \$14; fodder 10c shock; hogs \$7.20; beef \$7; veal calves \$11; milch cows \$80 each.

Clermont Co.—The dry weather this past summer caused a big loss to some yet the most of the farmers of this county have reason to call this a successful year, for the loss on some crops has been more than over-balanced by the profit on others. The majority of the farmers are well prepared for the winter. Hog killing is occupying the attention of many this cold weather, and many hogs are being shipped to market. Corn husking is over, except with the laggards. Some have begun stripping tobacco. Tobacco is going slow at 15¢/lb. Corn in the field at 75c per bu; wheat 90c; baled straw \$8 ton; timothy hay \$16/18; red clover \$14; alfalfa \$12; apples \$2.75/4 per bu; hogs 7¢/lb; chickens 15c; old hens 10c; eggs 30c; butter 30c.

Crawford Co., Dec. 15.—The mild fall and early winter put the new wheat and new seeding fields in good condition to go under the snow. Speaking generally the farmers of this locality had a very successful year, crops yielding well and being of good quality with the single exception of potatoes which were no more than half a crop. Hog cholera is forcing farmers to butcher their hogs prematurely. The chief products marketed at this time are cattle, hay, hogs and poultry. Grain is being held for higher prices. Local markets are: Wheat 92c; corn 50c; oats 36c; hay \$13; hogs \$7.50; turkeys 17¢/19c; geese 12c; hens 12c; butter 28c; butter-fat 34c; eggs 32c.

Madison Co., Dec. 11.—The month of December has been very warm and much fog, which was very dense, occurred during the first week. However, at present we are having brisk clear days. Many farmers are done husking corn and the most of the hogs have been marketed. Much fall plowing has been done; in fact, more than usual. Farmers have generally had a very successful year as the high price of corn and stock will about offset the loss by drought and disease, although much hog cholera still prevails. Horses are not so high as the demand will rather cease until early spring. Farmers are generally busy caring for their breeding stock and improving their winter quarters for more severe weather. Prices to date are: Cattle 7¢/8c; horses \$175/250; hogs 7¢/8c; sheep 5¢/6c; turkeys 18¢/19c; chickens 11¢/15c; eggs 40c; butter 32c; lard 15c; wheat 92c; corn 62c; oats 37c; rye 55c.

Wisconsin.

Clark Co., Dec. 11.—In general, 1913 has been a successful year for the farmers in this section of the country; small grain has been the best for many years and prices are considered good. Hay is selling at \$12; potatoes 50c; poultry 11c; eggs 28c; butter 32c; hogs selling in the local market for 9c dressed. Farmers are busy baling hay, sawing wood and delivering their cattle and hogs to market. Have not had any snow yet, but a lot of rain. This fall so far has been the warmest in many years. We have all got our work done and things are ready for the winter.

Waushara Co.—The finest weather one could wish for now prevails here. This has helped farmers with their work; they have been able to shred their corn fodder under ideal conditions, get many jobs done as well as considerable fall plowing. On the whole, the past season has been a very successful one for the agriculturists of this section. The crops have not only been good, but the prices are very satisfactory, with the single exception of rye, which has not fallen below 70c per bushel for many years. It is now only 54c per bu. Potatoes are down 10c since November, now ruling at 50c. Eggs 30c; hogs \$6.50; cattle \$4/6.

Illinois.

Marion Co., Dec. 15.—We have had an immense amount of rain in this section during the early days of winter; however, the past week has been ideal. Wheat has the best outlook it has had at this season for years. We have had so much fall rains that the corn fodder was damaged for feeding purposes and many horses and cattle have died from the effects of eating the damaged fodder. It is not considered that the year 1913 was a successful one for the farmers of this

(Continued on page 594).



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Markets.

GRAINS AND SEEDS.

December 23, 1913.

Wheat.—The past week has encouraged buyers, since values rule lower than those of the previous week. There seemed to be an unwillingness to take hold of the trade and this lack of support together with a heavy increase in the amount in sight in this country and in the cargoes going abroad, as well as a freer movement from Russia and the Danube district, gave buyers courage and influenced prices downward. The distraction of holiday interest was also a bearish feature. The trade is not without bullish news, however. The rains in Argentina and unfavorable weather in Australia were foreign items helping the bulls, while the exposed condition of the wheat in this country makes possible much crop damage should the weather become suddenly cold. Receipts at primary points are about equal to those of a year ago. The price for No. 2 red wheat for this date in 1912 was \$1.10 per bu. Quotations for the past week are:

	No. 2	No. 1	Dec.	May.
Wednesday	99½	99½	99½	1.05
Thursday	99½	99½	99½	1.05
Friday	99	98¾	99	1.04½
Saturday	99	98¾	99	1.04½
Monday	98¾	98¾	98¾	1.04½
Tuesday	98¾	98¾	98¾	1.03¾

Chicago, (Dec. 23).—No. 2 red wheat, 95½c; Dec., 88½c; May, 90½c per bu.

Corn.—Substantial increases in the amount of corn on track for shipment to the marketing centers has been a decidedly bullish feature of the corn trade the past week. Omaha reports 2,000,000 bu. ready to move forward. A cargo from Argentina also served as a talking point for buyers, but in spite of these facts the position of the grain is so strong that they did not "smash" prices as would have happened under weaker marketing conditions. Active buying was a warning to "shorts" to proceed slowly in bearing the market. One year ago the price for No. 3 corn was 49½c per bu. Quotations for the past week are:

	No. 2	No. 2	Yellow.
Wednesday	68½	70½	70½
Thursday	68½	70½	70½
Friday	68	70	70
Saturday	68	70	70
Monday	66½	68½	68½
Tuesday	66	68	68

Chicago, (Dec. 23).—No. 2 corn, 69½c; Dec., 69½c; May, 69½c per bu.

Oats.—Prices have suffered in sympathy with those for wheat and corn but the buying orders in the hands of dealers has had the effect of rescuing the deal from any heavy cut in quotations. The volume of trade is not large just now. One year ago standard oats were quoted at 35c per bu. During the past week prices were:

	Standard.	No. 3	White.
Wednesday	43½	43	43
Thursday	43½	43	43
Friday	43	42½	42½
Saturday	43	42½	42½
Monday	42½	41¾	41¾
Tuesday	42	41½	41½

Chicago, (Dec. 23).—No. 3 white oats, 39½c; Dec., 39c; May, 41½c per bu.

Beans.—No change, and dealing at country elevators is rather slow. The local board of trade quotes immediate and November shipments at \$1.75; January \$1.80 per bu. Chicago reports a small trade at steady prices. Pea beans, hand-picked, choice, are quoted at \$2.15; common \$1.75@2; red kidneys, choice, \$2.80 per bu.

Rye.—This cereal rules steady. No. 2 is quoted at 57c per bu.

Barley.—At Chicago barley is quoted at 50½c per bu., while Milwaukee quotes the malting grades at from 56@76c.

Cloverseed.—A brisk demand for seed holds prices on a firm basis. Prime spot is quoted at Detroit at \$9.40 per bu; Dec., \$9.40; March, \$9.50. Prime alsike steady at \$11.25 per bu. At Toledo, December is quoted at \$9.52½ and prime alsike at \$11.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$4.80; straight, \$4.50; spring patent, \$5.15; rye flour, \$4.60 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$22; coarse middlings, \$27; fine middlings, \$27; cracked corn, \$31; coarse corn meal \$30; corn and oat chop \$25.50 per ton.

Hay.—All grades are lower. Prices: Carlots on the track at Detroit are: No. 1 timothy, \$15@16; standard \$14@15; No. 3, \$12@14; light mixed \$14@14.50; No. 1 mixed \$13@13.50.

Chicago.—Choice timothy is quoted at \$18.50@19.50 per ton; No. 1 \$17@18; No. 2 \$14@15.

Straw.—Detroit.—Oat and wheat straw is higher. Rye \$8@9; oat straw \$7.50@8; wheat straw \$7@8 per ton.

Chicago.—Quotable as follows: Rye, \$7@7.50; oat \$7@7.50; wheat \$6.50@7.

DAIRY AND POULTRY PRODUCTS.

Butter.—The local market continues firm for better grades which are scarce. Prices are steady. Quotations are: Extra creamery 34c per lb; firsts 31c; dairy 21c; packing stock 18c per lb.

Chicago.—The butter market is reflecting the usual quiet holiday trade. There are few changes in prices from those of last week; good stock is still in

demand but poor stuff goes begging. Quotations are: Extra creamery 35½@36c; extra firsts 34@34½c; firsts 26@30c; seconds 22c; ladles 20@21c; packing stock 18@20c per lb.

Elgin.—Market firm at 34c per lb. New York.—Market remains firm with prices unchanged. Quotations: Creamery extras 36@37c; firsts 28@34c; seconds 24@27c; packing stock 19@19½c as to quality.

Eggs.—The local egg market is steady. Prices 1c less than last week. Current receipts of fresh stock is, quotable at 31c per dozen.

Chicago.—The market is firm, colder weather in some of the egg-producing centers giving it a stronger undertone. Demand is good for both fresh and storage stock. Prices are ¼@½c higher. Quotations: Miscellaneous lots, cases included 26½@31½c according to quality; ordinary firsts 28½@29½c; firsts 31½c; refrigerator stock steady at 27@27½c for April firsts.

New York.—Although prices remain the same, the market is gaining tone. There is a better demand for all kinds of stock. Quotations: Fresh gathered extras 35@36c; extra firsts 34@34½c; firsts 33@33½c per dozen.

Poultry.—The local poultry market is active and prices on everything but old hens are higher. Turkeys have advanced 3c. Supply and demand are both good. Quotations: Live.—Springs 15@15½c; hens 14@14½c; turkeys 23@26c; geese 16@16½c; ducks 18@20c.

Chicago.—Trade good at steady prices. Cool weather for handling has made the market firmer. All prices have advanced with chickens and turkeys making the largest gains. Quotations on live are: Turkeys, selected young, 22c; others 14c; fowls, choice 22c; spring chickens, 13½c; ducks, choice 15@16c; geese, choice 14@15c per lb.

Cheese.—Market is steady with values slightly lower. Wholesale lots, Michigan flats 15@15½c; New York flats 17@17½c; brick cream 17@17½c; limburger 14½@15c per lb.

Veal.—Market is steady. Prices are unchanged. Quotations: Fancy 13½@14c per lb; common 10@11c.

Chicago.—Market firm. Demand good and supply only moderate. Prices are slightly higher. Quoted as follows: Good to choice, 90@110 lbs., 14@14½c; fair to good, 60@90 lbs., 12½@14c.

FRUITS AND VEGETABLES.

Apples.—Prices firm and market active. Quotations. No. 1, \$4@4.50; No. 2, \$2.25@3.50 per bbl. At Chicago the prices rule firm under a moderate demand. Values for country packed range from \$3.50@5.50 per bbl. No. 1 Jonathan's are selling best; Spies are \$3.75@4.25; Baldwins are \$4@4.25.

Potatoes.—The local market is steady. Demand is fair. Quotations: In bulk 60@65c per bu; in sacks 70@75c per bu for carlots. At Chicago prices are without important change. Trade quiet but market is steady. The less desirable potatoes are moving more freely. Michigan stock is held at 50@60c.

Cabbage.—Steady at last week's figures. Good quality quoted at \$2@2.25 per bbl. The demand is fair at Chicago with steady prices. Prices on white are higher. Quotations rule at \$1.75@1.85 per bbl. for Holland, and \$2@2.50 for red.

Onions.—On the local market prices are steady. Quoted at \$1.15 per bu. for yellow and \$1.50 per crate for Spanish. At Chicago domestic stock is meeting with fair sale. Sacks 65@70 lbs., Michigan grown, sell at \$1.40@1.50.

GRAND RAPIDS.

The egg market opens this week at 29@31c, with outlook for higher prices if the weather turns colder. The butter market is firm, with No. 1 dairy worth 25@26c. In poultry live fowls are worth 10@11c; ducks 12@14c; turkeys 15@16c; dressed hogs are worth 9@9½c. No special change is noted in the potato market, the local price being around 60c while the outside market is around 45c. Large quantities of potatoes are held in storage for higher prices. Grain prices as quoted by the mills are as follows: Wheat 94c; oats 40c; corn 77c; rye 58c; white beans, hand-picked \$1.60@1.70. Hay is somewhat lower on account of increased offerings, the price paid on the market ranging from \$16@19.

THE LIVE STOCK MARKETS.

December 22, 1913.

Buffalo.

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

Cattle.—Receipts 130 cars; market opened slow, closed weak; 10 cars unsold; best, 1350 to 1450-lb. steers, \$8.35@8.65; best 1200 to 1300-lb. steers, \$8@8.25; best 1100 to 1200-lb. steers, \$8@8.25; coarse and plain weighty fat steers, natives, \$7.25@7.50; best Canada steers, 1350 to 1450 lbs., \$7.75@8; best 1150 to 1250 lbs., \$7.25@7.50; fancy yearlings, \$8@8.25; medium to good, \$7.25@7.50; choice handy steers, 1000 to 1100 lbs., \$7.75@8; fair to good steers, 1000 to 1100 lbs., \$7.25@7.50; best cows, \$6.25@6.50; butcher cows, \$5.25@5.50; cutters, \$4.25@4.50; trimmers, \$3.25@3.75; best heifers, \$7.25@7.75; medium butcher heifers, \$6.40@6.60; light butcher heifers, \$6@6.25; stock heifers, \$5.25@5.50; common cull heifers, \$4@4.25; best feeding steers, \$7.25@7.50; fair to good, \$6.25@6.50; fancy stock steers, \$6.50; best do, \$5.75@6.25; common light stock steers, \$5.25@5.75; best heavy bulls, \$6.75@7.25; best butcher bulls, \$6.25@6.75; bologna bulls, \$5.75@6.25; stock bulls, \$5@6; best milkers and springers, \$75@100; medium to good, \$50@70.

Hogs.—Receipts, 100 cars; market ac-

tive; heavy and mixed, \$8; yorkers and pigs, \$8@8.10.

Sheep and Lambs.—Receipts 70 cars; market strong; top lambs, \$8.15@8.25; yearlings, \$6.25@6.75; wethers, \$4.75@5; ewes \$4@4.50. Calves steady; tops, \$12; fair to good, \$10.50@11; grassers, \$4@4.75.

Chicago.

December 22, 1913.

Cattle. Hogs. Sheep. Receipts today17,500 32,000 21,000 Same day last year...10,025 29,121 21,203 Receipts last week...66,557 228,830 125,707 Same week last year...67,248 132,038 126,243

Christmas week opens with a very small cattle supply and a consequent good demand for desirable offerings, and while some sellers can discover no advance in prices for their offerings, others quote the market largely a dime higher for butcher stock and the general run of steers. Hogs are a good dime higher, with a strong early demand at \$7.45@7.85, but later trading lacks spirit at easier values. Hogs received last week averaged 215 lbs., comparing with 219 lbs. one year ago, 213 lbs. two years ago, 224 lbs. three years ago and 218 lbs. four years ago. Because of the moderate run sheep and lambs are selling more readily than usual, and prices are largely 15c higher, the best lambs selling around \$8, best yearlings at \$6.75, best wethers at \$5.60 and best ewes around \$4.75@5.

Cattle were marketed with too much liberality for these times during the past week, for beef is largely supplanted by poultry during the Christmas holidays, and aside from high-grade little yearlings, which were in large demand at firm values, the market averaged 25@35c lower. The bulk of the beef steers went at \$7.75@8.85, the common lots of light-weight steers bringing \$6.50@7.75 and the better class of heavy steers \$8.65@9.10, with some selling up to \$9.30 early in the week. Yearlings brought \$9.70@9.85 for common to prime, and a few carloads of fancy Christmas yearling steers and heifers went at \$10@10.25. Medium grade steers sold at \$7.80 and upward, with a pretty good kind selling at \$8.25 and over, while butchering cows and heifers found purchasers at \$4.65@8.50, with scattering sales of prime heifers at \$8.60 and upward. The worst feature of the market of late has been the tendency to hurry in too many cattle that should have been kept much longer on feed, but this is a matter of yearly occurrence, and it is likely to be kept up for the next 60 or 90 days. The best long-fed cattle have been marketed to a large extent, and much smaller supplies may be expected from now on, but ordinary cattle promise to be plentiful and rather low in price as compared with better offerings. Canners sold at \$3.25@4.15, cutters at \$4.20@4.60 and bulls at \$4.75@7.75. There was a moderate trade in stockers and feeders, the former going at \$5@7.25 and the latter at \$6@7.50, while stock and feeding cows and heifers found buyers at \$4.85@6.50. Calves sold freely, the better class of light vealers bringing \$10@11.25 per 100 lbs. and heavy calves selling at \$4.50 and upward, according to quality. Milch cows brought \$60@90 each, with a slow trade and common cows selling for beef. The governor of Illinois has issued a proclamation forbidding bringing into the state any dairy cows from quarantined states unless they bring a certificate of health. The best veal calves closed at \$10.25.

Hogs came to market with such a rush last week, with a Monday run of 55,340 head and Wednesday receipts of 48,516 head, that it was impossible to avert declines in prices, notwithstanding a good general demand most of the time. Rallies in prices took place, as usual, but the undertone lacked firmness, and on the lowest days average values were the lowest since last January. The spread in prices was very much smaller than earlier in the season, but choice heavy hogs continued to bring a big premium over light hogs, which had to be disposed of at a decided discount. But, even at the reduced prices, hogs still hold much higher than at corresponding dates in most former years, 1909 and 1910 excepted. So many stockmen were letting their under-weights and mere pigs come to market to avoid feed bills that there was but a small percentage of matured hogs of good weight among the daily receipts. Packers are making good profits. At the week's close hogs sold at \$7.35@7.75, comparing with \$7.50@7.92½ a week earlier, while pigs closed at \$6@7.50, throwout packing sows at \$7@7.40, boars at \$2@3.50 and stags at \$7.75@8.10. The best light shipping hogs closed around \$7.60.

Extremely large sheep and lamb supplies were offered early last week, the Monday run footing up 55,340 head and causing a break of about 25c in lambs, the best included, but sheep were steady under moderate offerings. On subsequent days sheep showed comparative steadiness, but lambs suffered further declines, notwithstanding receipts became much smaller, the general demand becoming very limited, as is usual on the approach of the Christmas holidays. Early sales of lambs took place at \$8, a decline of 25c, and later the market was in bad shape, with many lambs that were not fat, owners wanting to save on feed. At the close lambs were salable at \$5.50@7.80 for culls to prime, yearlings at \$5.50@6.60, wethers at \$4.50@5.50, ewes at \$3@4.85 and bucks at \$3.25@3.75. Feeding lambs brought \$6.25@7, and best heavy yearlings sold at \$6.25. Sheep showed declines for the week of 15@40c.

Horses are usually in poor demand near the close of the year, and such was the case last week, but moderate offerings tended to prevent a bad break in prices. Sales were mainly between \$125 and \$275 per head, with the inferior class selling slowly around \$75@100, while the choicest heavy drafters, such as bring around \$300@350 were scarce.

CROP AND MARKET NOTES.

(Continued from page 593).

county, very few having any stock for sale. Prices about as follows: Horses \$120@160; mules \$100@140; hogs 7c on foot; dressed 9@10c; chickens 9c; eggs 35c; butter 30@35c; corn shipped in cost 70@80c, depending on quality.

Missouri.

Phelps Co., Dec. 15.—We are having a beautiful fall, the snow in October hurt nothing except sweet potatoes. Farmers are feeding very little yet as there are good pastures. There has been a number of silos built this year. Corn is about all husked. Nearly all corn fodder was taken care of this year. Cattle very scarce and high. Very few hogs, but a good crop of acorns. Farmers have had very little surplus products except eggs, chickens, turkeys, sheep and goats. Calves are worth from \$15@25; yearlings \$30@33; wheat 78c; hogs \$7; eggs 30c; hens 7½c; springers 9c; geese 8c; ducks 10c; turkeys, old 13c; first-class wool 18½c. This has not been a year of great success for the farmers, but it has not been a failure. The crops in Phelps averaged over half a crop, and this late fall is a great help to tillers of the soil.

Warren Co., Dec. 10.—The year 1913 has not been a successful one for the farmers in this vicinity. Wheat was a good crop but the drought cut the corn crop so short that many farmers are buying a part of their feed. No corn is being sold except by those renters who must sell a part of the crop to pay rent. Corn stover is being sold at 30c per shock and is of poor quality. Mild weather and abundant rains have made the fall pastures very good. There are some fatalities among horses from the cornstalk disease. Farmers around here are building up dairy herds so that there is more butter-fat being shipped all the time. Butter-fat 33c; butter 30c; eggs have gone down from 38c to 32c.

St. Louis Co., Dec. 16.—I drove across this county on the 14th and observed that wheat is going into winter quarters in excellent shape. The past season was a successful one for the farmers on the bottom lands but for those on the highlands the year will not be remembered with as much favor. At the present writing fruit trees are budding and dandelions are out in abundance. Prices are: Timothy hay \$16@20c; Irish potatoes 80@90c per bu; sweet potatoes 70c; eggs 45c for strictly fresh.

Polk Co.—There are not enough potatoes for home consumption. Old meadows injured by drouth, but more new seeding than for years, and it is in better condition than was ever known. Wheat and rye will furnish abundance of early winter pasture. Pasture doing well. Warm fall and plenty of bluegrass and clover pasture for stock. Not enough feed raised to take stock through winter. None sold so far, but farmers will buy as much as they raised. Cattle and hogs fed with view to rushing on the market. Hogs selling for 7½c; cattle ¾c below Kansas City market; eggs 27c; butter 20c.

Barton Co., Dec. 6.—Wheat looks fine; the weather has been ideal, warm and just enough rain to supply the necessary moisture. Wheat fields are furnishing an abundance of good pasture for stock. Hay is cheaper than it was a month ago. Some corn selling for 75c. Stock looks well. Some who have silos have not opened them yet but will do so soon. Lots of fall breaking has been done here, some farmers have all of their corn ground plowed. Prairie hay \$12; tame hay \$15; wheat 80c; potatoes \$1.10; sweet potatoes \$1.25; butter 28c; eggs 27c.

McDonald Co., Dec. 9.—This month has been very wet so far. Fair weather at present. Wheat is looking fine. Not all of the farmers have their corn out of the field yet. This year has not been a very satisfactory one for the farmers in this section but still there was lots of feed raised. Horses are cheap but cows are high, selling from \$50@85. Corn 60c; butter-fat 32c; fresh eggs 27@28c; hens 8@9c; turkeys 11@12c; geese 7@8c.

Cass Co.—While the season here has not been a complete failure it has by no means been a successful one. The farmers have no grain whatever to sell, and are buying considerable shelled corn. Some poultry, fat cattle and fat hogs are being shipped out. Hogs are selling at \$7.50 and cattle at \$7 per cwt. Chickens are averaging about 10c per lb. Considerable building and fencing is going forward.

Kansas.

Trego Co., Dec. 15.—We are having unusually mild weather so far this fall and winter. No snow but plenty of rain. From Nov. 29 to Dec. 6 we had a little more than six inches of rain. The prospects for a big wheat crop next year could not be better. The year 1913 was a poor crop year in this and surrounding counties. The dry weather and grasshoppers together made it impossible to raise anything except a little rough feed, consequently no grain is being marketed here, but is being shipped in and sold at the following prices: Corn 80c; oats 50c. The following prices are being received by farmers: Hogs \$6.50@7; chickens 7@12c; turkeys 13c; eggs 30c; butter-fat 28c.

Nehama Co., Dec. 11.—Continuous rains fell from Dec. 1 to 5, amounting to over eight inches since last report. Ground well soaked. Wheat, rye, bluegrass and pastures are green and growing; weather is warm; cattle out yet in pastures. Some wheat early planted is good enough to pasture; wheat is in splendid condition to go through the winter. Land sales are slow and prices somewhat lower. Farmers' Institutes here well attended. No grain being shipped out, none to spare. Farmers are buying wheat, oats, corn, oil meal, bran, etc., for feed. Potatoes are also being shipped in in carload lots. Cattle, with an occasional car of horses

(Continued on page 595).

THIS IS THE FIRST 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.

December 18, 1913.

Cattle.

Receipts, 1317. Market very dull at Wednesday's prices; 10@15c lower than last week. No market here Christmas.

We quote: Best steers and heifers, \$3.50@8.75; steers and heifers, 1000 to 1200, \$7@7.50; do 800 to 1000, \$6.50@7; do that are fat, 600 to 800, \$6@6.40; do 500 to 700, \$5.75@6; choice fat cows, \$5.75; good do, \$5.25@5.50; common cows, \$4.50@5; canners, \$3@4; choice heavy bulls, \$6.25; fair to good booginas, bulls, \$5.50@5.75; stock bulls, \$5@5.50; choice feeding steers, 800 to 1000, \$6.75@7.25; fair do, 800 to 1000, \$6@6.50; choice stockers, 500 to 700, \$6.50@6.75; fair stockers, 500 to 700, \$5.75@6.25; stock heifers, \$5@6; milkers, large, young, medium age, \$7@8.5; common milkers, \$4@5.00.

Boe Com. Co. sold Hammond, S. & Co. 2 heifers av 735 at \$6.25, 1 cow wgh 850 at \$4, 1 do wgh 920 at \$5.75, 4 butchers av 655 at \$6, 7 do av 680 at \$6; to Goose 4 cows av 925 at \$4.65, 10 do av 1108 at \$4.65; to Kamman B. Co. 1 do wgh 1030 at \$5.50, 3 steers av 990 at \$7.35, 4 butchers av 837 at \$6.50, 3 do av 921 at \$6.10, 2 do av 1040 at \$7, 1 steer wgh 1010 at \$7.75; to Taylor 12 stockers av 820 at \$5.75, 5 do av 538 at \$6, 2 do av 785 at \$6; to Sullivan P. Co. 8 cows av 925 at \$4.25; to Newton B. Co. 1 do wgh 1330 at \$5.75; to Mich. B. Co. 4 butchers av 787 at \$6, 3 do av 810 at \$6, 7 do av 744 at \$6; to Billmore 9 stockers av 642 at \$6.50; to Peck 3 steers av 783 at \$7; to Jones 4 stockers av 495 at \$5.50; to Beardsley 3 do av 490 at \$5.50.

Haley & M. sold Applebaum 3 cows av 1017 at \$4.85, 1 heifer wgh 450 at \$5, 1 bull wgh 660 at \$5.25, 1 cow wgh 1110 at \$5.35; to Hammond, S. & Co. 3 do av 853 at \$3.85, 2 do av 925 at \$3.75; to Heinrich 1 steer wgh 1060 at \$8.50, 1 do wgh 700 at \$6.75, 1 do wgh 930 at \$7.75; to Mason B. Co. 7 butchers av 974 at \$5.15; to Rattkowsky 3 cows av 977 at \$5.10; to Sullivan P. Co. 3 do av 1086 at \$5.50, 2 steers av 695 at \$6.50, 2 do av 1065 at \$7.10, 1 cow wgh 1060 at \$5.50, 1 steer wgh 1080 at \$7.25, 4 butchers av 822 at \$6.35; to Renick 2 cows av 1005 at \$5; to Goose 3 do av 770 at \$4.75, 2 do av 1002 at \$4.75, 2 do av 1080 at \$4.10, 1 do wgh 750 at \$4.10; to Mich. B. Co. 1 bull wgh 1480 at \$6.10, 1 heifer wgh 620 at \$6.25, 5 do av 770 at \$6.25; to Marx 5 butchers av 1012 at \$6.85, 1 cow wgh 1370 at \$6.50; to LaBoe 4 stockers av 700 at \$6.50, 2 do av 770 at \$5.50, 5 do av 750 at \$6.40; to Hammond, S. & Co. 1 bull wgh 1500 at \$5.90; to Reardon 8 stockers av 764 at \$6.50.

Spicer & R. sold Sullivan P. Co. 1 cow wgh 1150 at \$5.50, 3 do av 983 at \$4.25, 2 steers av 1035 at \$7.40, 4 butchers av 802 at \$6.25, 3 cows av 1013 at \$4.75; to Mich. B. Co. 4 bulls av 1185 at \$6, 10 cows av 1050 at \$5.25, 2 do av 930 at \$4.25, 1 do wgh 800 at \$4, 5 butchers av 696 at \$6.25; to Parker, W. & Co. 2 steers av 1415 at \$8.25; to Hammond, S. & Co. 1 bull wgh 1310 at \$6.25, 1 do wgh 1500 at \$6.25, 1 do wgh 880 at \$5.50, 1 do wgh 1060 at \$5.75, 1 steer wgh 1070 at \$6.50; to Mason B. Co. 8 butchers av 736 at \$6.60; to Bresnahan 4 do av 607 at \$5.50; to Rattkowsky 7 cows av 1041 at \$4.75.

Veal Calves.

Receipts, 367. Market steady. Best \$11; others \$8@10.50.

Bishop, B. & H. sold Sullivan P. Co. 2 av 210 at \$11, 1 wgh 160 at \$11, 5 av 150 at \$11, 2 av 130 at \$11; to Parker, W. & Co. 8 av 155 at \$11, 3 av 220 at \$10.50, 6 av 145 at \$11; to Ratner 6 av 115 at \$10.50; to Thompson Bros. 2 av 155 at \$11, 1 wgh 150 at \$11.50, 1 wgh 110 at \$10.50; to Ratner 8 av 140 at \$10.75; to Parker, W. & Co. 7 av 150 at \$11; to Goose 6 av 130 at \$9, 2 av 205 at \$7, 1 wgh 260 at \$6; to Nagle P. Co. 11 av 150 at \$10.50.

Spicer & R. sold Parker, W. & Co. 4 av 140 at \$10.50, 1 wgh 130 at \$8, 5 av 150 at \$11, 2 av 230 at \$7.55, 10 av 145 at \$11, 3 av 140 at \$11, 3 av 150 at \$10.50.

Sheep and Lambs.

Receipts, 6390. Market steady. Best lambs, \$7.50; fair to good lambs, \$7.25@7.40; light to common lambs, \$5.50@6.75; fair to good sheep, \$4@4.40; culls and common, \$2.50@3.

Haley & M. sold Nagle P. Co. 117 lambs av 75 at \$7.35, 22 sheep av 110 at \$4, 91 do av 115 at \$4.25, 51 lambs av 75 at \$7.50, 25 do av 75 at \$7.40, 37 do av 78 at \$7.50, 26 do av 80 at \$7.40.

Spicer & R. sold Chapman 45 lambs av 65 at \$6.75, 81 do av 60 at \$7; to Breitenbeck 58 sheep av 80 at \$2.75, 23 do av 85 at \$2.50, 111 lambs av 67 at \$7.25; to Thompson Bros. 18 do av 65 at \$7, 12 sheep av 100 at \$4.25.

Roe Com. Co. sold Bray 195 lambs av 85 at \$7.50; to Barlage 27 do av 85 at \$7.25, 25 sheep av 80 at \$4, 23 do av 115 at \$4.10, 36 lambs av 65 at \$7.25, 19 do av 78 at \$7.50.

Hogs.

Receipts, 6563. None sold up to noon; prospects as follows:

Range of prices: Light to good butchers, \$7.60; pigs, \$7.60; mixed, \$7.55@7.60; heavy, \$7.55@7.60.

Bishop, B. & H. sold Hammond, S. & Co. 4070 av 190 at \$7.60.

Haley & M. sold same 1040 av 200 at \$7.60.

Spicer & R. sold same 660 av 200 at \$7.60.

CROP AND MARKET NOTES.

(Continued from page 594).

and mules, are all the farmers are selling. Quite a number of new barns and sheds being erected. I should not call this a successful year here, as money is very scarce on account of the failure of the corn crop, which is our main crop. Corn 77c; wheat 75c; oats 47c; fat cattle \$6.50@7.50; hogs 7c; pigs 6c.

Cloud Co., Dec. 9.—The general rains for the past week were fine for wheat but rather bad for stock in feed lot on account of mud. Hay \$12@14; corn 75c; oats 50c; wheat 74c. For the first time since this part of the country was settled corn is being shipped in by the grain companies, coming from Nebraska. Wheat farmers and stockmen made good this year, but the corn raisers lost money, most of them heavily. There was a good demand for fodder by the cattlemen, and this has furnished many corn men a little money to pay taxes and then have some to live over on, but the renter is in a tight place financially. More cows are being milked than usual this winter, and butter is selling at 17@18c; butter-fat 24@26c. For 90 per cent of the farmers in this county farming has not been a success this year.

Marion Co., Dec. 8.—Excessive rains have made the ground too soft for any field work or pasturing of stock. Roads muddy and bad. Much feed has been spoiled and lost on account of rain and the warm weather. Everything is still growing. Wheat growers did well here this year. All other branches of the farm except dairying have been most unprofitable. Nearly all the farmers must buy their grain, seed, provisions, etc., from elevator and store; no profit in feeding stock, but there is quite a quantity here to be disposed of some way. Prices: Hay \$13; hogs \$4.50@7.25; corn 80c; wheat 85c; oats 46c; bran \$1.20; hens 9c; eggs 37c; butter 26c; potatoes \$1; apples \$1.50.

Nebraska.

Antelope Co., Dec. 15.—The soil in this part of the county is rather sandy, but stands dry weather well. The timber is nearly all what has been set out and there are a good many nice groves. There is about roughage enough to carry the stock through the winter. Corn all gathered and not a good crop. Small grain is a fair crop and of a good quality and brings a good price. Farmers are doing fairly well. But little cholera among the hogs through here. Weather is fine so far. Not very much small grain planted, but what there is looks fine.

Dodge Co., Dec. 14.—We have had two weeks of rainy, foggy weather, which is fine for fall wheat; 1913 has been a successful season for farmers in this section. They are selling corn at 65c per bu., a good price for this time of year. The Co-operative and Educational Farmers' Association of Nebraska was organized this week.

Dawson Co., Dec. 15.—December was ushered in with four and a half inches of rain, which broke the longest and severest drought since 1894. All of the moisture soaked into the ground, putting the wheat in fine condition to go through the winter. After a series of poor years in this section, this unusual rain causes us to look forward for a good year. At this time we are having the proverbial "California" weather. Land sales are slow and below the ordinary, and public sales are few. Stock and fat cattle are very scarce. Only enough grain is going to market to meet current expenses, hay being the chief crop that is marketed. Prices: Hay \$10@12; wheat 70c; corn 78c; hogs \$6.75; eggs 30c; butter 26c.

Cass Co.—Warm and foggy weather continued the first part of the month, together with a rainfall of over five inches which was greatly needed and appreciated. The weather is now bright and warm. This has not been a prosperous year for farmers here but about the same as the three preceding years. Wheat and oats were a good crop but corn was poor; however, it was better than was promised earlier in the season. Most of the farmers have feed enough to winter their stock on, while some will have a little to market. Prices: Wheat 75c; corn 65c; oats 38c; horses lower in price and cattle higher. Hogs sell at 6@7c per lb; poultry 10@12c; hay \$8@10; apples \$1 per bu; potatoes \$1; butter 25c; eggs 30c.

South Dakota.

Charles Wix Co., Dec. 14.—Weather is fine. Stock doing well; feed scarce and high in price. Farmers have not much to sell on account of the poor crop and results from very dry season. Swine plague has hit many farmers hard, some lost herds of 140 with one or two staying healthy. Prices are: Hogs \$7; wheat 73c; corn 65c; oats 40c; flax \$1.10; barley 45c; butter 25c; eggs 25c; cream 27c. Milk cows high and not many for sale; horses plentiful and cheap. Past season has not been very successful for farmers on account of drought and also swine plague, still everybody gets around nicely, and automobiles are plentiful.

Meade Co.—This season has been a fair one for the farmers here, some, of course, faring better than others. Corn is now selling at 65@75c; seed corn \$2; potatoes \$1 per cwt; alfalfa seed 12c per lb; flax \$1.20 per bu; hay \$6@7. Fall plowing was done as late as Dec. 3. We now have about three inches of wet snow on the level, which is going off rapidly. Stock on the open range is all looking fine.

North Dakota.

Foster Co., Dec. 8.—As the holiday season approaches, we all begin to feel as if we were going to cast off our summer cares and enjoy things immensely, as this season has been a very profitable one to our immediate county, for some places were dried out badly. We are feeding more stock than ever. The winter so far has been open, and we have been making good gains at small cost.

Veterinary.

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

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

Hide-bound—Out of Condition.—I have a mare that is out of condition, losing flesh and when worked perspires very freely, and she also perspires when standing in stable. E. S. S., Fremont, Mich.—Her teeth may need floating, she should be clipped; increase her food supply and give her a dessertspoonful of Fowler's solution, a teaspoonful of fluid extract of gentian and tablespoonful of fluid extract of cinchona at a dose three times a day.

Inflamed Hock.—The hock of my seven-year-old horse is swollen, but does not cause lameness. I have been applying wormwood and vinegar, but it fails to reduce swelling. T. F., Port Huron, Mich.—Apply equal parts tincture iodine and spirits of camphor to hock every day or two and if it does not get well, blister joint, using one part red iodine mercury and ten parts tincture cantharides every week or ten days.

Stocking.—I have a healthy appearing four-year-old colt whose hind legs stock whenever he stands in stable a day or two. Most of this swelling leaves after working him for a few hours. W. C. W., Milford, Mich.—Give him a dessertspoonful of powdered nitrate of potash, a teaspoonful powdered sulphate iron and a tablespoonful bicarbonate soda at a dose in feed three times a day.

Barren Cow.—I have a cow that keeps in heat most of time, but does not get with calf. Our local Vet. advises me to fatten her. A. S., Lansing, Mich.—I am inclined to believe your Vet. gave you good advice. She will not get with calf; however, you might try change of bull.

Lumpjaw.—What do you advise me to do for cow that has lumpjaw which started to grow some months ago? B. N., Ypsilanti, Mich.—Apply one part red iodine mercury and four parts lard every few days and give her 2 drs. potassium iodide at a dose three times a day.

Impaction—Vertigo.—A seven-weeks-old bull calf had a sick spell this morning. He ran in a circle, bawling, and with protruding eyes; within half an hour he laid down and in five minutes died. He bloated a little and seemed to die without pain. W. E. W., Devils Lake, Mich.—Your calf suffered from impaction; perhaps some indigestion, and finally died the result of hemorrhage. If you have another case of the same kind, give full doses of sulphate of magnesia and bromide of potash.

Barren Twelve-year-old Cow.—I have a 12-year-old cow which fails to come in heat, but has been giving milk for the past 18 months. F. C. S., Onsted, Mich.—You might as well fatten the cow for I believe her ovaries are now functionless.

You may try giving her 1 dr. fluid extract damiana, 1 dr. fluid extract nuxvomica and a dessertspoonful of powdered capicum at a dose in feed twice a day.

Hard-milking Cow.—I recently purchased a hard-milking cow and I find in the two fore teats a hard bunch about the size of a walnut, located at upper part of teat. R. G. S., Portland, Mich.—In my practice I find it necessary to remove these bunches by a surgical operation, for drugs will not always absorb them. Give her 1 dr. potassium iodide at a dose in feed two or three times a day and apply one part iodine and 15 parts lard to the bunches every day or two. In some cases this medicine will absorb them.

Weak Heart.—Our local Vet. tells me that my cow has heart trouble and her pulse beats 104 times a minute, but this cow is quite thin and has been in low flesh all summer. F. R., LaSalle, Mich.—Increase her grain supply and give her 1 dr. ground nuxvomica and 1 oz. ground gentian and 1 oz. of ginger and 1 oz. of charcoal at a dose in feed three times a day.

Contagious Abortion.—What is cause of my cows losing their calves? J. B., Oxford, Mich.—Your cows suffer from contagious abortion. Inject them daily with a tepid solution made by dissolving 1 dr. permanganate potash in a gallon of water and give them each 30 drops of carbolic acid highly diluted with water mixed with feed or as a drench once a day. Clean and disinfect their stables and remember that there is no sure preventative or remedy for this ailment.

Indigestion—Articular Rheumatism.—I have a brood sow 18 months old that is not thriving, but has a good appetite. I also have a five-year-old cow that has become stiff and sore since I commenced stabling her. J. C. O., Grand Rapids, Mich.—Give your sow a tablespoonful of bicarbonate soda, a teaspoonful of ground gentian and a teaspoonful of ginger at a dose in feed three times a day. Give your cow 1 dr. sodium salicylate at a dose three times a day.

Chronic Nasal Catarrh.—I have a Percheron mare six years old that has had a nasal discharge since the early part of 1912. She first had a discharge from the right nostril which had a very bad odor, then she has some discharge from the other. Vet. treated her for months and has lately given her bacterin treatment, but it has failed to help her. L. E. S.,

Ypsilanti, Mich.—Are you sure that his grinder teeth are sound? If so, ask your Vet. to continue the bacterin treatment and he will doubtless succeed in effecting a cure.

Hog has Rheumatism.—Have a six-months-old hog raised in small pen, fed corn until lately, now fed rye, oats and beans. This hog seems to have soreness in one hind leg, causing him to raise it off ground. F. M., White Cloud, Mich.—Give your hog ten grains sodium salicylate at a dose in feed three times a day, and if his bowels are constive give castor oil or epsom salts.

Rheumatism.—Have a brood sow that is lame in right fore leg and I am not sure what causes it. A. H., Redford, Mich.—Give your sow ten grains of sodium salicylate at a dose three times a day and apply spirits of camphor to shoulder and fore leg twice a day.

Indigestion.—I have four pigs that seem to have lost their appetite and are losing flesh. I have been told that they had black teet, but am pretty sure they were mistaken, for I have failed to find any. W. B., Redford, Mich.—The teeth of some young pigs are dark colored, but they do not affect the pigs' health. Mix together equal parts ground gentian, ginger, bicarbonate soda, fenugreek and salt, and give each hog that weighs 100 lbs. or more a teaspoonful at a dose three times a day.

Sow Fails to Come in Heat.—I have a 12-month-old sow that fails to come in heat. J. N., Carsonville, Mich.—Give her 15 drops fluid extract of damiana at a dose in feed twice a day and let her run with boar.

Congestion of Udder.—I have a cow due to come fresh Jan. 17, that has an inflamed udder. J. P., Grand Rapids, Mich.—Foment her udder with warm water and apply one part alcohol and two parts warm water three times a day. Cut down her grain supply and avoid keeping her out doors if weather is stormy or cold; besides, you had better keep her well bedded. If her bowels are constive, give ½ lb. epsom salts daily until they move fairly free.

Chronic Vaginitis—Cough.—What can be done for a mare that has the whites, and I would like to know what to give my horses that are coughing? They are stabled in a warm basement barn. S. C., Marion, Mich.—See treatment for leucorrhea this column. Let in fresh air, and foul air out of your basement stable and give your horses each ½ oz. ginger, ½ oz. powdered licorice at a dose in feed twice a day.

Nasal Catarrh.—I have a nine-year-old mare that has nasal discharge and I believe she will soon have the heaves. She breathes with difficulty part of time only. L. F. L., Fostoria, Mich.—Give your mare ½ oz. Fowler's solution and 1 dr. tincture lobelia at a dose in feed three times a day and feed no clover, or musty, dusty badly cured fodder, and exercise her daily.

Nasal Gleet—Diseased Molar Tooth.—For the past two years my horse has had nasal discharge from one nostril. Our local Vet. extracted a tooth some time ago, but this failed to effect a cure. J. J. S., Copemish, Mich.—In order to effect a cure, the bone of face should be trephined, then antiseptic astringents can be applied to diseased portion of the nasal chambers. A weak salt solution, a saturated solution of boracic acid, or borax and water are proper remedies to use. Are you sure that the diseased tooth was extracted?

Barren Cow.—An eight-year-old cow that fails to come in heat, but seems to be in perfect health. F. C., Howell, Mich.—Give her 1 dr. ground nuxvomica and ½ oz. powdered capicum at a dose in feed three times a day.

Forage Poisoning.—J. R. H., Port Huron, Mich.—Your calf died the result of forage poisoning.

Rheumatism—Indigestion.—Some three weeks ago one of my cows became stiff and lame, seemingly affected all over. Our local Vet. treated her for indigestion, but she refuses to eat and is no better. W. C., Dansville, Mich.—Give your cow 2 drs. sodium salicylate, 1 dr. iodide of potassium and ½ oz. powdered nitrate of potash at a dose three times a day.

Subscriber, Ludington, Michigan.—See treatment for cough, this column.

Cow Gives Bloody Milk.—I have a cow that gives bloody milk from one teat. H. O., Grand Rapids, Mich.—Your cow has perhaps bruised udder and will be benefited by applying one part tincture arnica and eight parts water three times a day. She should be well bedded.

B. M. H., Fowlerville, Mich.—Dissolve 3 ozs. sugar of lead in a gallon of water and apply to bruised parts three times a day.

Leg Weakness.—My chickens are troubled with leg weakness. Mrs. J. S., Jenison, Mich.—Leg weakness is not a disease, but a result of other ailments and you had better clean their roost, disinfect it, increase their food supply and make your chickens work. They may be given too much food and not enough exercise; also mix together equal parts of ground gentian, ground cinchona, bicarbonate soda and charcoal—give a teaspoonful to every four chickens at a dose twice a day.

Spasmodic Cough.—We have a three-year-old filly that had a severe attack of what our Vet. calls colic, which appeared to last for about 12 hours, and her appetite did not return for three days. She eats plenty now, but remains weak, and every time she coughs some urine is discharged. N. T., Marston, Mich.—Spasmodic colic is a painful affection of the bowels, without inflammation; but, if it lasts, there is always more or less irritation of the mucus lining of the bowel. This irritation frequently extends and involves the muscular coat of the bowel and of course this contraction is generally

(Continued on page 597).

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Everything that is grown on the farm seen on the table only on Sundays and has its proper place. What this is is determined by its relative importance in the general working system of each

farm. For instance, on one farm the hog may hold the most important position because it is a specialty on the farm, and the dairy cow may be just a side line which furnishes milk for home consumption. On another farm the dairy cow may be the main source of profit and the hog just be kept to eat up refuse and to furnish the family's winter pork. However, if poultry is made a specialty it is generally done to the exclusion of other lines of farming and the man who carries on the business is not called a poultry farmer but rather a poultry raiser or keeper. Though other lines of farming are usually excluded when the poultry raising is a specialty, poultry is by no means left out when other lines are the main ones, and Mr. and Mrs. Chicken are in evidence on most every farm regardless of size.

While great credit must be given the fanciers and breeders of pure-bred poultry for the beneficial effect they have on the poultry business, the farm hen is the one which is supplying the American breakfast table with eggs. When she takes a rest eggs are sold at so much apiece; when she gets down to business the housewife does not care for expenses and uses two eggs where she used only one before. Biddy can break a fixed egg market quicker than any boycott ever did.

While the hen is found on most every farm she is not generally given the attention due her. The farmer is very liable to think that the hen business is too small a consideration for a normal, well developed man, and therefore he leaves their care to the women of the house, the children, or someone incapacitated for general work.

While the care of the farm flock is pleasant work for those who can not pitch hay and do other heavy farm work, the farmer should not belittle the chicken business, as he often does. How much of the national \$306,688,960 egg basket has gone to buy farm implements, food for the table, or even feed to winter other stock? How much of it goes to pay the interest on the mortgage? Answers to these questions would undoubtedly enlighten us as to the real value of the hen on the farm. If things are judged from the financial standpoint, and they usually are, the wife's flock of chickens would come pretty close to the top of the list on most every farm. Even if the total amount she brings in may not be large, the fact that the hen's product is bringing in cash when other crops are spending money for the farmer makes the hen a financial factor on the farm.

Aside from its financial value the hen plays an important part in the general working system of the farm. She is busy from daylight to dark, looking for bits of food which would otherwise be waste. She picks up a little corn dropped in one place, and a little feed left by other animals in another, and for her meat she digs after the worms of the earth. She really enjoys the work which she is unconscious of doing, the converting of waste to wealth. Biddy is also a valuable assistant to the farmer in keeping the insect pests in control. Numerous worms and bugs which are detrimental to crops she has a strong appetite for. To the plum grower she is a special friend, because she scratches around to find the cocoons of the curculio which are just beneath the surface of the soil.

Another factor of importance which should not be overlooked is what the hen supplies for the home table. She is an assistant in the fighting of the high cost of living which is even invading the farm. Eggs can be used in numerous ways as a substitute for meat, and when the housewife can not think of anything to prepare for a meal, or if she has not had time to prepare anything else, she can run out to the chicken coop for eggs. When the preacher or some other notable company comes, it is just a matter of a short time to run out and decapitate a chicken to grace the table. Chicken is not an everyday meat. It is considered somewhat of a delicacy and is therefore

seen on the table only on Sundays and days of special occasions. As a really source of food the chicken undoubtedly stands foremost on the farm.

Judging from the way Mr. and Mrs. Chicken strut about the farm, one would think that they occupied about the most important position on it. After going over the facts of their value, one must come to the conclusion that their apparent self-importance is not a matter of much egotism. In fact, they have an entire right to assume the attitude of self-importance.

This being a fact, it behoves Mr. Farmer to give this important branch of his business more attention. Even if he wishes to leave the pleasure of taking care of the chickens to others of the household, he should co-operate with the care-takers in the betterment of the flock. It is not necessary to do this for sentimental purposes, but rather for cold cash and appetite appeasing reasons, for the hen caters to the two most vital parts of the modern man, the pocketbook and the stomach.

The best way that most farmers can help in the chicken business is to furnish a better henhouse. Very often the hen's place on the farm is hardly no place at all. An old shed which is either too full of holes or not full enough, often serves for the hen who is expected to lay eggs in the winter, and the porter of the henhouse usually gets around about twice a year to clean out the accumulation of months.

Cleaning out the coop more often, putting roofing paper on the top and sides of the shed to cover the excessive number of ventilation holes, or, if the crop is too tight, knocking out some of the windows on the south side of the coop and covering the space with muslin will do wonders toward helping the farm hen business. A few changes inside the coop will be appreciated by your wife and the hens. Nests more convenient for the hens to lay in and for the children to gather eggs from, and roosts more substantial and sanitary, are improvements easily made. A little work on improving the floor of the coop will do wonders toward making the coop a more respectable place for the hens. During the winter, when the hens can not get out, they need some place to keep busy. The common earth floor is not generally an inviting place to scratch around in. It is generally damp and if litter is thrown on it, it soon mixes with the earth and becomes damp. A cheap board floor raised a little from the ground and then well covered with litter will make a pleasant scratching place for the hens.

Such few improvements will pay a large profit. The most costly henhouse does not appeal to the hen any more than the shed, if it has a few things arranged for her comfort.

The hen's place on the farm should not be a housewives' proposition, but rather, a farm proposition. The farmer should plan for them when he lays the outlines of his farm management. Little things often bring big results and the hen may be one of the neglected opportunities of the farm.

(Continued from last week).

Mr. J. Pomeroy Munson, president of the State Horticultural Society, gave a talk on the relation of the fruit grower and the beekeeper. He stated that there were many things regarding the relation of these two industries on which there was considerable dispute. From the beekeeper's standpoint, the matter of spraying when the trees were in blossom was a cause of complaint. Mr. Munson stated, however, that it was not necessary to spray at that time. One of the bee men stated that if the dilute lime-sulphur was used for the sprayings close to the blossoming time, the bees would not go near the blossoms on account of the odor. The matter as to whether the bees punctured the fruit brought out considerable discussion. The final conclusions of the matter were that they did not, but if there was a small hole in the fruit the bees would enlarge it in their endeavor to get the fruit juice.

The matter of foul brood, which always brings a spirited discussion, was very

ably handled by Prof. F. E. Millen, the State Inspector of Apiaries. He clearly explained the symptoms and treatment of American and European foul brood. As we are promised articles from his pen on this subject, detailed mention of his talk will not be given. Mr. Millen has recently been appointed to his present position, which was created by the new foul brood law. The way he handled his subject made it easily apparent that the right man has been appointed for the big bee job of this state.

An address on Apicultural Education, by Prof. Morley Pettit, of the Agricultural College of Guelph, Ont., opened the Thursday morning session. The matter of what education is was first dwelt upon. It is not only a matter of acquiring knowledge, but also of putting it into practice. Science must come before practice; if a man does not know the science of cow milking he can not milk a cow; you must know how to rear queen bees before you can raise them. One of the most valuable and probably most neglected branches of apiculture is the study of bee psychology or behavior. For the beginner the study of a good bee text book was first essential, then the reading of the bee journals and the attending of bee meetings. The value of beekeepers' societies as an educational factor was strongly impressed and the methods of making such societies of practical value to the beekeeper were suggested. Selling queens to members and the co-operative selling of honey were hints given to accomplish this aim. Prof. Pettit, in answer to a question stated that the low price of honey was due to the lack of advertising, and the lack of distribution. There is no food stuff, food value considered, that is as low priced as honey.

The paper on the outdoor wintering of bees, by Ira D. Bartlett, of East Jordan, gave many valuable hints on this subject. His method was to winter the bees in four colony winter hives in which there was plenty of room for chaff and other packing material. When there was snow on the ground he packed it around the hives. He stated that there need be no fear of smothering the bees with the snow as it contained enough air for the bees use. As Mr. Bartlett is one of the most successful in outdoor wintering, his paper was listened to with interest.

Mr. David Running, of Filion, Mich., spoke of wintering bees in the cellar. His chief point was that the cellar should be dry. His cellar was such that a match could be scratched anywhere in it at any time. He is wintering annually in the cellar about 300 colonies, and he stated that if he had to resort to outdoor wintering there would be one less beekeeper in the state. He emphasized the importance of having the colonies well supplied with stores.

The management of 500 colonies for extracted honey, with the least labor, was the subject of C. P. Dadant, of Hamilton, Ill. He spoke of tons of honey as a fruit grower would of bushels of apples. His bees were kept in apiaries of about 100 colonies. An automobile was used to get from one apiary to another. A horse and wagon was used in gathering the honey, and everything was done to save time and work. The frames were put back into the same supers they came from so as to prevent the spread of disease. After being extracted, the honey was put in barrels for shipment.

After short talks on the sale and production of honey, by A. G. Woodman, of Grand Rapids, and E. D. Townsend, who is the editor of the Beekeepers' Review, a paper by H. C. Ahlers, on 'Migratory Beekeeping, was read. Mr. Ahlers makes a practice of moving his bees south in the winter. He often moves a carload at a time. In this way he gets results from his bees in the winter when ordinarily they are non-productive, and the colonies are strong and in good shape when moved back north for the apple bloom.

The election of officers occupied the rest of the time of this, the final session of the convention. All of the present officers were re-elected. They are as follows: Jenner E. Morse, Saginaw, president; David Running, Fillion, vice-president; O. H. Schmidt, Bay City, secretary-treasurer. Mr. Morse was elected as delegate to the annual convention of the National Association. After considerable discussion the next meeting place of the state society was decided to be held at the Ag-
ricultural College, East Lansing.

The Hen and the Substitute Sitter, an article on incubation, will be the feature of the poultry columns next week. This will be the second of the series of articles on Farm Poultry, started this week.

VETERINARY.

(Continued from page 595).

violent, being an effort of nature to increase bowel action to push the irritant or obstruction along, and if dislodged, pain usually ceases. Colic usually comes from errors in diet, producing indigestion. Feed food of a laxative nature, exercise your filly daily, but slowly until she regains her normal strength. Give her 1 dr. ground nux vomica, 1 oz. of ground ginger and 1/2 oz. bicarbonate soda at a dose in feed three times a day. She should be fed a good quality of food and not too much bulky fodder.

Indigestion—Colic.—I have a black mare 16 years old, in foal, that has recently had colic once a week and occasionally perspires while standing in the stable. T. O'R., Gaylord, Mich.—You had better change her feed and give her a tablespoonful of ginger, a teaspoonful of salicylic acid and a dessertspoonful of salt at a dose in feed twice a day. Also give her a teaspoonful of nitrate of potash at a dose in feed or water once a day when she is in need of a kidney stimulant.

Leucorrhoea.—I have a 12-year-old mare which I think of breeding next spring, but she is troubled with a white slimy discharge from vagina and I am told she will not get with foal until cured of this ailment. J. H. A., Rockford, Mich.—Give her a teaspoonful of powdered sulphate iron, and a tablespoonful of cooking soda at a dose in feed three times a day. Dissolve 1 dr. permanganate potash in a gallon of tepid water and wash out vagina thoroughly once a day. It is needless to say that she should be well fed, for this ailment is difficult to cure in a debilitated animal.

Thrush.—I have found much valuable advice in your veterinary column, but have failed to notice your treatment for thrush. I recently purchased a mare that had thrush in hind feet. B. B., Reading, Mich.—Keep the feet dry and clean. Apply peroxide of hydrogen slowly to clean off pus, then apply calomel twice a day, filling in cleft of frog with oakum to keep dirt out.

Pin Worms.—I have a four-year-old mare that is troubled with pin worms and I have given her different worm remedies without results. H. F., Azalia, Mich.—Mix together equal parts of ground gentian, ginger, wormseed and salt and give her a tablespoonful or two at a dose in feed twice a day. Put one-half pound of quassia chips in a gallon of boiling water, let it simmer for a few hours, strain, then inject this solution into rectum every two or three days for two weeks.

Partial Paralysis of Hind Quarter.—I have a two-year-old filly that staggered and wobbled on hind legs some four weeks ago; has not been right since; she laid down last Thursday night and since then has been unable to stand, but when in sling eats heartily and her bowels and kidneys act in a normal manner. Our local Vet. thought she had hurt her back. R. K., Capac, Mich.—She either suffers from an injury or a diseased condition of spinal cord. It is most likely to be the result of an injury. Give her two scruples of ground nux vomica and 1/2 dr. of potassium iodide at a dose in feed three times a day. The bowels should be kept open and the kidneys active. If the kidneys do not act free enough, give her 2 drs. acetate of potash at a dose occasionally.

Indigestion—Impaction.—Have a 12-year-old gelding who thrives well on pasture, but as soon as he is put in barn and fed timothy hay or straw he has what a local Vet. pronounces impaction of bowels and acts as though in agony, turning head and stamping feet; kidneys refuse to act till impaction is relieved. This horse always eats rapidly and ravenously and usually keeps in good condition. D. L. M., Pittsford, Mich.—A horse of this kind should be fed food of a laxative nature; he should not be allowed to eat large quantities of roughage. His food should be well salted in order to increase his thirst, for by drinking plenty of water his bowels will act more freely; besides, he should never be allowed to stand a whole day without exercise, for the bowels of an exercised horse usually act four or five times as often as one that is not exercised. Give him 1 dr. ground nux vomica, a tablespoonful of ground ginger and 1/2 pint of oil meal at a dose in feed two or three times a day. Horse of this kind should be fed some silage or roots during the winter season.

Foot-rot—(Thrush).—I have an old horse that is troubled with foot-rot in left fore foot and I would like to know what will cure him. J. L., Fowler, Mich.—Unless you keep him from standing in wet and filth, you will find it difficult to effect a cure. Keep the foot dry and clean; also apply equal parts powdered calomel and powdered alum to frog twice a day.

Periodic Ophthalmia.—Have a three-year-old colt that in summer had one eye that began to discharge, soon became cloudy and blind. I applied silver nitrate solution and it soon cleared up. Some time later had a second attack; I applied sugar of lead lotion—eye cleared up, but lately the opposite eye is sore and very cloudy. O. M. Y., Millington, Mich.—Kindly understand periodic ophthalmia is an incurable ailment and the best you can do is to postpone loss of vision by palliative remedies such as you have been using.

Foot Soreness.—Some time ago I bought a six-year-old mare that is lame in right fore leg. I blistered shoulder and back tendons and gave her rest. She appeared some better after this treatment, but is now as bad as ever. I am told that she was foundered last spring, caused by eating too much wheat. Her right foot is feverish and hard. M. A., Walkerville, Mich.—Stand her in wet clay for two hours a day and blister coronet with one part powdered cantharides and six parts lard every week.



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When writing to advertisers please mention The Michigan Farmer.

Grange.

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

THE STATE GRANGE MEETING.

Perhaps most important and gratifying among reports of the various officers was that of Treasurer Coward. Printed copies of this report were distributed among the delegates, making it possible for Granges in every county to examine this detailed statement of the year's finances at their leisure. It shows that the Order's finances were never in better condition, the total resources of the State Grange at the close of the fiscal year on December 1 being nearly \$1,000 greater than at the corresponding date last year and fell only a few hundred dollars short of the \$50,000 mark. That portion of the report dealing with the invested funds and securities, together with the classified statement of the year's receipts and disbursements, is presented below, omitting only the somewhat lengthy itemized statement of disbursements from the general fund:

Invested Securities.	
Bonds and securities on hand	
Dec. 1, 1912.....	\$45,500.00
Bonds and securities paid.....	3,000.00
Bonds and securities on hand	
Dec. 1, 1913.....	\$42,500.00
Cash on hand Dec. 1, 1913.....	5,173.05
Total invested funds.....	\$47,673.05
Cash on hand in general fund.....	2,117.35
Total resources of Michigan State	
Grange Dec. 1, 1913.....	\$49,790.40
Invested Funds, Cash Balance.	
Cash on hand Dec. 1, 1912.....	\$ 1,979.31
Interest received.....	2,173.05
Bonds and securities paid.....	3,000.00
Total.....	\$ 7,152.36
Transferred to general fund.....	1,979.31
Cash on hand Dec. 1, 1913.....	\$ 5,173.05
Classification of Receipts.	
On hand Dec. 1, 1912.....	\$ 1,404.16
From co-operation.....	6,159.48
Fifth and sixth degree fees at	
State Grange.....	202.50
Transferred from invested funds	1,979.31
Dues.....	11,547.19
Supplies sold.....	510.62
From National Grange extension	
fund.....	215.00
Pomona Grange organization	
fees.....	30.00
From Lecturer—receipts from bul-	
letin.....	48.82
Balance from sale of suffrage	
supplies.....	.48
From Grange Fire Insurance Co.	
—Percentage on Rods.....	2.50
Total receipts.....	\$22,100.06
Classification of Disbursements.	
Session State Grange, 1912.....	\$ 8,176.28
Expenses executive committee.....	892.10
National Grange—sixth degree	
fees.....	73.50
National Grange—dues.....	2,394.15
Fifth degree fees returned to	
Pomona Granges.....	38.50
Woman's Work committee.....	294.15
Supplies purchased.....	381.43
Printing and stationery.....	727.15
Salaries State Grange officers.....	1,680.00
Co-operation.....	1,202.21
Organization.....	335.81
Supervision.....	1,545.88
Rallies.....	785.90
Lecturer's department.....	339.07
Secretary's office expenses.....	368.72
Equal Suffrage campaign, spring	
1912.....	200.00
Advertising Grange contracts in	
Michigan Patron.....	197.85
Miscellaneous items.....	349.01
Total disbursements.....	\$19,982.71
Balance, cash on hand, Dec. 1,	
1913.....	2,117.35
	\$22,100.06

Report of State Secretary.

Secretary Hutchins opened his report with a corroboration of the foregoing statement of receipts and disbursements. Dues were paid during the year by 819 subordinate Granges, these subordinates reporting an aggregate membership of 49,929. Only 13 counties lived up to the slogan of "One new Grange in every county," and only one county added more than one subordinate to the roster, that honor belonging to Gogebic which organized three. The counties contributing the remainder of the 15 new subordinates organized during the year are: Chippewa, Osceola, Mecosta, Cass, Van Buren, Baraga, Hillsdale, Menominee, Houghton, Delta, Midland and Washtenaw. Two Pomonas were organized—one in Livingston and one in Gogebic county. The remainder of the Secretary's report consisted of a well considered statement of the rapidly changing agricultural conditions in which he named education, conservation and co-operation as the three great essentials to the further progress of this great industry. As sponsor for

the present state law providing for the organization of co-operative associations his conclusions touching this vexed, but very live, question are entitled to careful consideration and we present this part of the report practically in full:

The statements of receipts and disbursements indicate in some degree the activities of our Order in the year just closed. In connection with what we know of its past history, it gives us a basis for computing the possibilities of the coming year.

But conditions are constantly changing. New fields must be developed, new forces must be mastered, new problems must be solved. Though they are the old in new form, our task is none the less real, our duty none the less imperative. It may be well for us to realize that we are turning a new mile post in agricultural progress. The present is a transition period. More than that, it is the crisis of American agriculture. Two paths are before the farmers of this country. We may keep on as we have been doing without general organization, our business on the small, individualistic plan as in the past, and ourselves, the victims of forces with which we can not cope, much less control, helpless between the upper and nether millstones of merciless competition. Or we may now at this opportune time, when all are recognizing the farmer's value to society and the importance of agriculture to national prosperity, take the first steps in the new twentieth century highway of agricultural opportunity thrown up for us by the force of circumstances and opened to our advancing feet by the approval of a nation facing a condition of increasing demand for the necessities of life and an acreage yield of the staple grain crops less than that of any civilized country except Russia, to say nothing of our diminishing meat supply.

Let me here say, parenthetically, that this is no criticism of the American farmer of the past. His has been largely a pioneer work. With new lands constantly being opened to tillage and coming into competition with the older portions of the country, his course has been the only and inevitable one of soil exhaustion and diminished production. Henceforth the farmer's work must be rejuvenating and constructive, or disaster, national and world-wide, will be the ultimate result.

But this is a new day. Consumption of food stuffs has overtaken production. The people must be fed. The possibilities of soil and climate are here. The farmer of tomorrow must make a better use of these splendid opportunities than his predecessor has done. But this will only be realized when a larger share of that which is produced goes into the pockets of farmers. When the farmer receives from his labor as great rewards as the same effort will bring him elsewhere, then science will be applied to the production of every crop; then the highest skill of agricultural art will find its reward in this most necessary employment. This does not necessarily mean higher prices nor an increase in the cost of living. It does mean a broader and more practical knowledge, on the part of the farmer, of the factors and forces with which he has to deal. It does mean the careful husbanding of much that today is wasted through neglect, through ignorance or through imperfect business methods. Millions could be fed on what, at present, is lost through wasteful methods of distribution. When the consumer's dollar reaches the farmer's pocketbook with only reasonable shrinkage from intermediate agencies there will be an incentive to better farming that will drive out ignorance, abolish waste and make farming in the highest degree profitable.

There are three steps which will lead us toward this much desired result—education, conservation and co-operation. First, better education, for the farm boy and girl, an education that fits them for life in the open country, that gives the knowledge to understand and the skill to control the agencies that bring success on the farm. Along this line we are making progress. The teaching of agriculture in the common schools and the interesting of the young people in the everyday affairs of life, are bringing results. The Grange as a school for the men and women of the farm is aiding to this end.

Second, conservation. Making the world a better place in which to live, looking toward a definite goal in handling and using the resources which a beneficent Creator has placed in our hands, and that goal, the motto of the conservation leader, "The greatest good of the greatest number and for the longest time."

Third, co-operation. This is the day of big business; of great aggregations of capital. The farmer has the capital, but it is controlled by thousands of individuals instead of a dozen, or perhaps only one. Under present conditions he can not compete with the vast organizations about him. This proves the necessity of the re-organization of the farmer's business. It means co-operation—getting together. In the words of Governor Eberhart, "Snuggle up a little closer." The same union of effort that characterizes other lines of business must be adopted by farmers, not to hinder or restrain trade but to lessen the expense connected therewith. The Grange is doing some fine work along co-operative lines. It has preached this beneficent gospel for forty years. The results have been most valuable. We can not afford to stop here. Let us profit by past experience and go on to greater victories and successes.

But not all that has passed for co-operation has been worthy of the name. May I not indicate to you, briefly, the principles recognized as essential to every true co-operative movement where investment must be made? These principles are: First, one vote for every

person owning stock in any such co-operative association, and no more; second, no vote by proxy; third, the division of net profits, after a reasonable interest on investment has been made, among those doing business in the association, according to the amount of business done.

These are today admitted as necessary to success in any truly co-operative movement which requires the investment of money to carry it on. Michigan now has a law providing for the organization of such associations. But this is only one step. Co-operation must be based on confidence of people in each other. It must begin with the few who know each other and have similar interests. There must first be local organization for a definite purpose. The seed has been planted; it must have time to sprout and grow into blossom and fruitage.

I am told that the past is strewn with wrecks of co-operative enterprises. Examine them closely and you will find that they were built on the monopolistic plan of profits on money invested rather than on business done—with money, and not

manhood, casting the votes of the association.

I would not be misunderstood. The realization of this is not today. It can not be done for the farmer, he must do this work for himself. It can not be done by government assistance, it must be on his own initiative. It can not begin with state-wide enterprises, but in small neighborhood associations for definite purposes.

In all these lines the Grange may and should be the leader. Wise, sane and conscientious leadership is the great need of the hour. If the Grange has one function higher than another, it is the education and development of such leaders among the farmers of America.

This concludes the reports of important officers except that of the State Lecturer whose excellent model subordinate Grange program will be made a feature of a future issue. The action of the Grange touching the recommendations of the committees will be given next week.

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