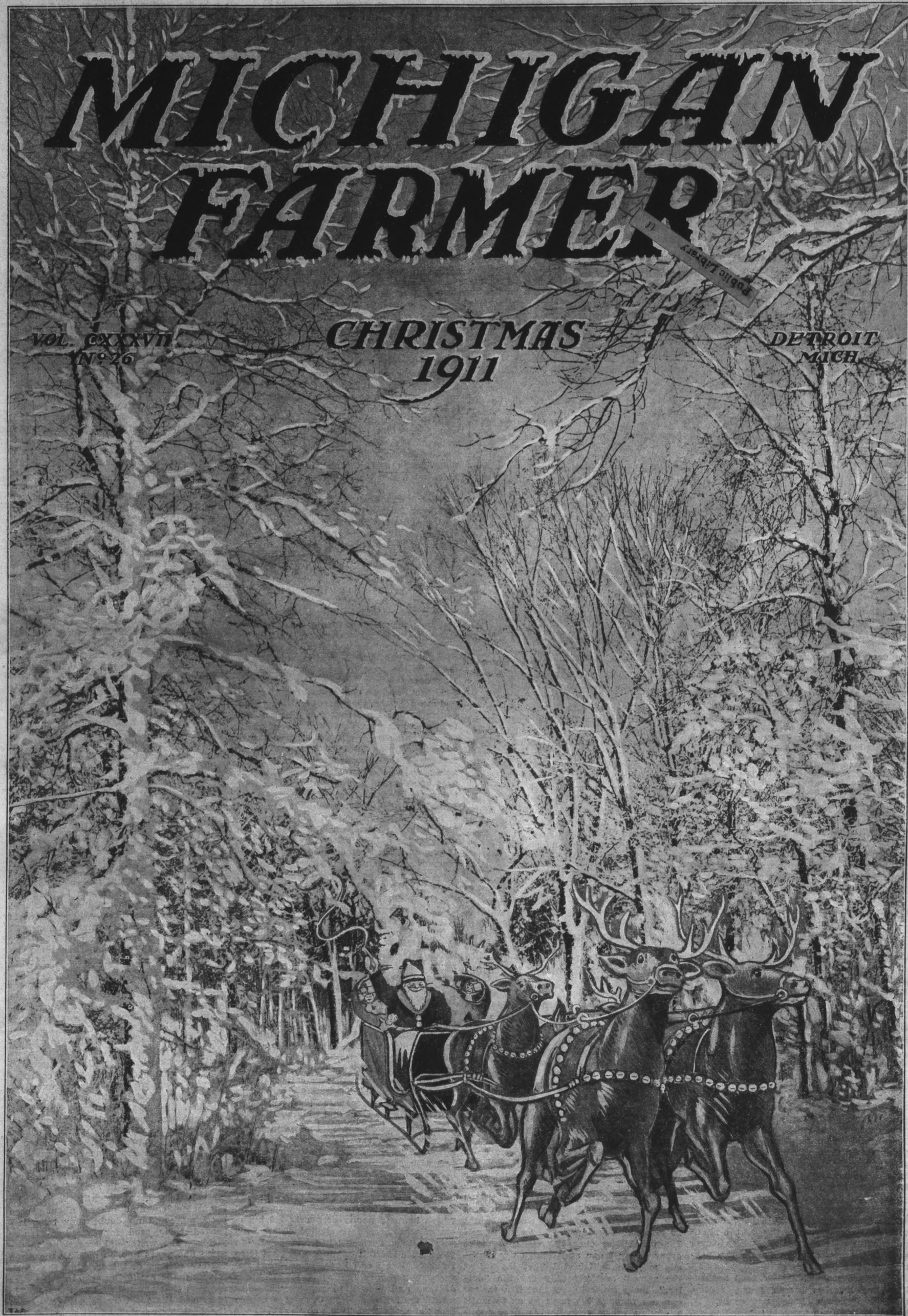


MICHIGAN FARMER

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DETROIT
MICH.



FARM NOTES.

Alfalfa Questions.

Having top-dressed one acre of ground that was thoroughly cultivated to potatoes this season, on which I applied 19 loads of barnyard manure and wishing to sow to alfalfa, which would be best, to disk and harrow and sow the first of June, or sow to oats and Canada field peas for hay then disk and harrow after cutting the hay and sow the first of August? Soil is one-third sand and three-fourths clay loam, well drained, lying quite high. Where can I get a good ground lime by the car load, the cheapest for our shipping station?

Allegan Co.

F. L.

All factors considered, a stand of alfalfa would be probably more certain if the field were disked early, worked well until June as suggested, and the alfalfa sown without a nurse crop. In a normal season the alfalfa seeded after oats and peas cut for hay would get sufficient growth before winter to make it fairly certain to live through, if the weather were at all favorable. But the difficulty is, no one can tell when a midsummer drouth will come, and where such a drouth prevails as visited us last summer, there would not be sufficient moisture to insure the germination of the alfalfa seed and the quick growth of the plants.

As experience in growing alfalfa accumulates in this state, more farmers are becoming of the opinion that it is better to sow it early in the spring with a nurse crop, using a light seeding of oats or barley. If the oats or beardless barley are sown this nurse crop can be cut for hay, after it has served its purpose in keeping the weeds in check, or, under favorable weather conditions, it can be harvested as a grain crop without danger of material injury to the stand of alfalfa.

This soil should be well adapted to alfalfa, but the addition of lime as is evidently proposed, is a proper precaution, since it has been demonstrated that lime is needed on many Michigan soils for the success of the alfalfa crop. The soil should also be inoculated to insure the presence of the nitrogen-fixing bacteria peculiar to the alfalfa plant, and without which it will not thrive, even on a fertile soil. Agricultural lime will be found advertised in season in the Michigan Farmer by a number of firms from whom prices and freight rates can be secured upon application.

A Poor Stand of Grain.

My wheat was quite smutty the past harvest, but I used some of it for seed this fall. I dipped it in a solution of formaldehyde, double the strength given in the directions, and soaked it for 20 minutes and dried it with lime and sowed it on land that has not raised wheat for 10 years. Can I expect my next crop to be free from smut? I am grinding the wheat and feeding it. Will the smut in the manure from grain and straw affect future crops? If so, how can I prevent it.

Sanilac Co.

L. S.

It is difficult for one to express an opinion with regard to the trouble with this grain without more knowledge of the facts. The season has been a very bad one for fall sown grain, the ground having been so exceedingly wet as to have the effect of drowning out the grain. In the writer's opinion this grain is most likely to have decayed or rotted off next the kernel than to have been eaten off, on account of the exceedingly wet weather which kept the ground saturated and excluded the air from the growing plants. Regardless of the cause, however, if the stand is poor, the only thing to do will be to plow it up as suggested and put to some other crop, and it cannot be determined until spring whether this will be advisable or not.

Grasses for Permanent Pasture.

What would be the best kind of grass to sow in an orchard, to make permanent pasture? I have about five acres of orchard, now in corn stubble, that I would like to have for pasture. The land was heavy timbered, a part of the field is heavy soil, and part of it on the sandy order, all high ground.

Lenawee Co.

H. H. P.

Undoubtedly the most valuable permanent pasture grass for upland pasture is June grass or blue grass, since it endures better than any of the other available grasses. In a great many localities it is not necessary to sow this grass as it will run in on good land as the other grasses get thinner. A good mixture for permanent pasture on fairly fertile land of the kind described would be June clover, alsike clover, timothy and orchard grass with possibly a little white clover seed if that is not common in the pastures of this section.

Other grasses advised by good authorities are Russian brome grass, redtop, meadow fescue and tall oat grass. If, however, the June grass is inclined to establish itself within a few years a mixture of the grasses above advised, sown

liberally, should prove as satisfactory as a mixture containing a larger number of grasses.

Controlling Wheat Smut.

I have some wheat and rye that was sown late and had only nicely gotten up before the freeze-up. There are spots over these fields where the grain is dead, it apparently having been cut off under the ground close to the grain. It is so bad that I think it will have to be plowed up. Any information through the Michigan Farmer will be appreciated.

Eaton Co.

C. F. J.

In the use of a formula of this kind, it is much better to follow the directions laid down as a result of successful experience. In the writer's opinion, the destruction of smut spores would be much more certain had the ordinary strength of the solution been used and allowed a longer time before drying the wheat, although this treatment may be entirely successful. There is little danger of perpetuating the fungus by the feeding or use of smutted grain or straw where a crop rotation of ordinary length is employed, the smut spores have been known to live in the ground for as long as two years, but in the ordinary crop rotation wheat will not be grown frequently enough to make any considerable loss probable from this cause.

SAVING TIME AND LABOR ON THE FARM.

It is said that he who tilleth the soil to a profit must "hold the plow or drive." There is an endless amount of truth in these lines. I wonder if all the readers of this valuable journal have ever thought of lessening their expenses in doing their required work on their farms. Time is money, and unless we try and save time and expense we are liable to work the greater part of our lives for naught. I know of hundreds of men who are financially the same as they were ten years ago—and still they work day in and day out. Why is this? There is truly something wrong. Some claim that it costs all they make to support large families. This is a mighty poor excuse, as I know of people who have a dozen children, yet they prosper nicely. Others have none, and poverty stares them in the face. Every man is working (or should be) for the "almighty dollar." Some may claim that they work for their health, but this is nonsense. Money is an absolute necessity and we must be able to get it in some honorable way. A man is not supposed to be blamed for what he doesn't know or how he has been brought up, but when he reaches his majority he should have his eyes wide open to grasp any opportunity that may be of value to him in future life and try and elevate himself to the highest possible standard no matter whether it be in the interests of agriculture or anything else.

Of course, practical experience is the very best teacher and usually is quite expensive, although we can learn much from those around us, especially from those who have made a success in life. I am a western man and was taught the western methods of farming. I have acquired much knowledge in doing farm work on a large scale that did I not now know I would be practically swamped on this big farm. My letters to this journal may sound a little "fishy" to many Michigan farmers, especially to those who have not been outside of their immediate locality, but I can back up every statement I make with facts and figures.

I have been told by dozens of Michigan farmers that the western methods will not work here. But I can prove the fact that they will, and that there is an endless amount of useless work done here for the lack of knowledge of how to save time and labor. I am in love with this state and the great advantages it affords, but I am very thankful that I grew up in Illinois and learned the methods of farming there. Now, as I understand them thoroughly I will try to explain in the columns of this paper how I manage my work and what success I have had in Michigan. However, I do not want any of our farmers here to think that I am trying to dictate their methods, as we all ought to know our own business best. Of course, conditions and circumstances have much to do with our welfare, and what we can do might be impossible for another. As for myself I am hobbling over the clouds to make every dollar I can and though my methods may be criticized I "get there just the same," and generally get the "dollar." I am frank to say that if a farmer can not manage his farm so as to make a saving every year he is poor manager and something is wrong. We are all apt to suffer losses and I, for one, have

had my share, but it is useless to get discouraged. If the sun don't shine today it will tomorrow, and we will surely win the victory if we forge ahead. If a man goes into a fight and figures on getting whipped, he will always get it, or vice versa.

It has been my experience that it is foolish for us to stand around and wait for unseen things to happen. I know of many men who could have been worth a comfortable fortune today had they but had a little nerve and resolution. But they were always waiting for panics or the tail of some comet to swipe everything out of existence. Do not cross a bridge until you get to it. Roll up your sleeves and get to work and you will be greatly surprised what you can accomplish.

Many ideas have come to my notice since I came to Michigan nine years ago, with which I was not familiar that have been amusing to me. I am a crank on improvements about the farm to save time and labor, especially in the line of farm machinery, and I never stop at the expense, if I am convinced that it is a money saver. I have over \$1,000 invested in the latest improved farm machines. My first years, or year especially, in farming here in Michigan, was very slow and discouraging. I often thought of what my friends had told me, "that I was very foolish to plant myself down in the sands of Michigan." But I came here with the determination of staying and it was "root hog or die" with me. But some of the wise people who have predicted Washburne's failure are hauling in their horns and it's my turn to laugh now, as those "who laugh last laugh best."

When I was ready to plant my corn the first year I came here I went to my local dealer and wanted to buy a horse planter, but to my surprise he told me that he never saw one and that they were not used here at all. As he was rather a smooth talker he convinced me that I could get along with a hand planter (or a stabber, as I called it). Of course, in planting with this "famous" machine your ground must be in excellent shape and be marked both ways. As I had no marker, (in fact never saw one), I borrowed my neighbor's and as there was occasionally a stump in the row it did not take me long to smash this marker. I held my temper fairly well and after a day or two I was done marking 16 acres and was ready to start planting. The dealer had told me that I could plant six to ten acres per day, but when night came I had only about three acres planted and was as tired as a "government mule." I shall never forget how I felt going up and down those rows in that field of solitude, humping along with that thing they called a corn planter. After I had faithfully worked about six days I had finished the job and was congratulating myself on the fact, when along came a Michigander and asked me if my corn was all covered. I told him of course. I was through planting and it certainly must be covered. This aroused my curiosity and I went out to that field the next day and to my surprise (and sorrow), nearly half of that corn was on top of the ground. Then I cut loose and I think I used some sort of an adjective every time I stepped in going to the house after the hoe. Well, in a few days more I had it covered—all but what the crows got, and that was the end of my efforts in using a hand corn planter, as the next season I bought a new check row planter which I had been accustomed to using all my life and, strange to say, my neighbors used to come and almost pray for me to plant their corn after they saw how nicely it would do the work. I can plant 15 to 25 acres per day—do it easily and better than you can by hand. My advice to all Michigan farmers is to have one of these machine planters, which will save them time and money.

In the western states the grain is all delivered to market loose in tight wagon boxes. The elevators there are all equipped with self-dumps and when you drive in with your load of grain you can unload a hundred bushels, or all you can haul, in five minutes. When I came here I brought with me a western wagon box which has a capacity of nearly 100 bushels of wheat, oats or shelled corn. This was quite a curiosity here, especially to see me load it full of grain and haul it to market. But I can honestly say that the farmers here are fooling away all kinds of time and very hard work by bagging up all their grain. You can get a double box for much less than you can 100 bags and the rats will not chew this up either. There is nothing harder on a man's back

than to handle these heavy bags of grain. Many of the bins that you have here are elevated enough so as to let the grain run directly in the wagon box by making some sort of a chute. Even though you have to shovel it from the level you can do it much easier and quicker than to bag it up and then lift the bags onto the wagon. The farmers never bag anything in the west, unless they have an over supply of cats and want to divide up with their neighbors and they generally do this after dark. I have a bin in one of the barns here that holds about 2,000 bushels. When I was ready to haul my wheat last year I connected a chute to this bin and could fill my big box with 90 bushels of wheat in a few minutes. I usually made two trips per day and delivered 180 bushels about five miles. I could shovel off my load much quicker at the elevator than you could dump the bags, and much easier.

As the principal crop in Illinois is corn and I have had a wide experience in producing same, in my next letter I will describe how it is possible for one man to produce, harvest and feed 100 acres of corn.

Washtenaw Co. B. F. WASHBURN.

A GREAT DEAL OF "KING CORN" IS RAISED AT A LOSS.

From what I have seen in our own neighborhood, and in my autumnal travels in the eastern, and middle states, I have observed that corn is raised on all the farms, and on half of them, evidently at a loss. I have seen many fields that I would not have husked if given all the ears for husking.

On the alluvial flats along the rivers and creeks, as good corn is raised as can be produced anywhere, but back from these, on the hills, the soil is thinner and colder, and unless the land is well manured, corn gives but a poor yield of grain or stalks, and it takes just as much labor to raise an acre of poor corn as an acre of good. On thousands of farms in the United States, corn, instead of being "king," is the boss pauper.

The average production of corn per acre in the United States for the last ten years, was 25 bushels per acre. As many farmers raise 40 and 50 bushels per acre, it is plain to be seen that many others (more than half), do not raise more than 12 or 15. The average value of corn per acre in the United States for the last ten years was \$12.

The average farm value of wheat per acre in the United States during the last ten years was \$10.87. The difference in value per acre between corn and wheat, on a ten-year average, was only \$1.13, which would not begin to pay for the extra labor that must be given to the cultivation of corn and is not required for the wheat. It costs just as much to prepare the ground for corn, as for wheat. It costs as much to plant the corn, as to drill the wheat when planted by a machine, and if planted by hand considerably more. It costs as much to cut up the corn with a machine as to cut the wheat with a reaper, and a good deal more when cut by hand, as is generally practiced. It costs more to husk and shell corn than to thresh wheat. It costs a little less for seed corn than for seed wheat; but think of the cost of three, four or five cultivations that must be given to the corn, whereas the wheat requires none.

It may be said that if many farmers were raising corn at a loss, they would be apt to find it out as quickly as anybody, and abandon the practice. The answer is, some farmers do not keep accounts with their crops, and others do not seem to value their own time as worth anything unless they happen to work for somebody else. They continue to raise corn because it is an excellent food for man and beast. Corn is in their rotation, and if they suspect that corn does not pay, they think the other crops in their course will make up for the loss.

Corn, to be profitable, must have a rich soil, or an abundance of manure, a warm climate and a good yielding variety or "pure-bred" seed. It is a hearty feeder, and delights in heat.

Much has been recently written by Prof. Holden and others about "corn breeding," and no doubt they have improved their seed for making larger yields. The writer did something in the same line years ago, in making the same variety earlier, and increasing the yield. It was made earlier by selecting the ears for seed that ripened first in the fall. He increased the yield by selecting for seed the best ear on stalks that produced two good ears.

Pennsylvania.

J. W. INGHAM.

CORN HUSKING AGAIN.

I have been very much interested in the articles appearing in The Farmer on hand and machine husking. The old saying that "circumstances alter cases," may well apply to the subject, for there are undoubtedly times and circumstances when hand husking may be preferable to the machine work, though I want to say right here that I believe in machine husking, and think it is not only better under most conditions, but as cheap, or cheaper, than husking by hand.

Three farmers here, two of them my brothers, own a six-roll husker and a 12-horse-power traction engine. They do not do outside work, but husk their own corn when it is in condition. It was slow this year about getting in condition to husk, and the ground in the field was so soft it was difficult to get about on it with a team, but it would have been just as difficult to draw the corn fodder if it had been husked by hand. The husking here was done last week. Quite a bit had been husked by hand as it was needed for feeding, so there was about a thousand bushels left, and it took nearly two days, the small machine husking 500 to 600 bushels a day. The corn was cut with a harvester, so was all bound, and had it not been frozen to the ground some one man in the field would have been enough. As it was, two did the pitching on the wagons. The haul was about 80 to 120 rods and three teams did the work, and also drew the husked corn to the crib. Two teams could have done the work by changing from one wagon to the other. The extra man in the field made 10 men for the work, and they were paid \$1.25 to \$1.50 per day.

A. G. C. speaks of paying men \$2 per day, which seems like a big price for the short days at this season, especially when he can get men to husk at three cents per bushel. Farmers right here paid five cents per bushel for husking this year, the corn being thrown on the ground, the stalks bound and set up over the pile of corn. Some farmers paid four cents a bushel, and the husker got his dinner and supper in addition. There must have been something wrong with the machine which A. G. C. speaks of as husking 200 bushels of corn and 100 bushels of shelled corn. There were 825 bushels of ears put in the cribs here, and there is about 100 bushels of shelled corn, which is on the barn floor, and will be fed out first. We haven't any fear of its spoiling. Again, there is certainly more feeding value in the shredded fodder than in the whole stalk. Corn fodder which is not shredded, unless it is a very small stalk variety, is not eaten closely by stock unless forced to it by hunger. They eat the leaves, husks and the small top part, and reject the coarse stalk, and we all know what a nuisance that stalk is in the manure, while with the shredded fodder that left by the stock not only makes a good absorbent but also works into the manure all right. I cannot see how any reasonable man could prefer to handle the heavy bundles of stalks, and get them in the mangers, to handling the shredded fodder with a fork. The latter can be handled not only easier but quicker. How about storing 20 acres of unshredded corn fodder in the barn? How many farmers have room for it, and would A. G. C. like the job of pitching the heavy bundles up to the top of the barn? I know what kind of work that is, I have tried it. If there is not barn room the fodder must be stacked, or left in the field in shocks and drawn as it is needed. It's lots of fun to dig it out of the snow, or climb up on a stack and pull the snowy, frozen bundles loose, and take them to the stock. The shredded fodder is all in the barn, and the hay is full to the roof, and it can be thrown right down in front of the stock.

The machine charges three cents a bushel for husking, which is cheaper than it can be hired done by hand, and the price includes the shredding of the fodder and blowing it into the bay. Now, if the corn is husked by hand the husked corn must be drawn, and the stalks also. It requires men and teams to draw it, whether hand or machine husking is practiced. When the work is hired done by hand, the corn is thrown on the ground, and often lies there for several days, absorbing moisture. The stalks are put in shocks, and much of what was on the inside of the shock before husking is then exposed to the weather, often for weeks, when the husking is done early. With the machine the work is all done in a day or two, the corn and fodder go right from the shocks to the crib and barn, and is not exposed at all. It is all

out of the way, and the farmer can go about other things. If A. G. C., will add up the time he spends husking by hand, cribbing corn, hauling fodder, etc., and charge it at \$2 per day, he will find he has spent quite a sum, and his fodder is not in as good shape as it would be if he had used a machine. I know people who husk by hand, and later have the fodder shredded, and do it year after year, because they are convinced that it pays to shred, and would undoubtedly husk with a machine if they could get it when they wanted it.

Eaton Co.

APOLLOS LONG.

FAVORABLE EXPERIENCE WITH THE POWER HUSKER.

In reply to A. G. C. on hand or power husking, in your issue of December 9, will say that his experience in power husking must be very limited. I note he says in husking 200 bushels of ears there was 100 bushels of shelled corn. Now that must have been very poor corn. I have used the power husker more or less for 12 years and would not go back to hand husking if I could get it done for nothing. In the first place, I consider the fodder is worth enough more than the whole stalks to pay the husking bill. I have always hired my husking done until three years ago, when myself and a neighbor bought a small rig of our own, and can say from long experience that I have never had over 10 per cent of shelled corn. We have a four-roll husker and with seven men and two or three teams, according to distance we have to haul the corn, I can put 400 bushels of ears into the crib and the stover in the barn in one day. That is what we call a

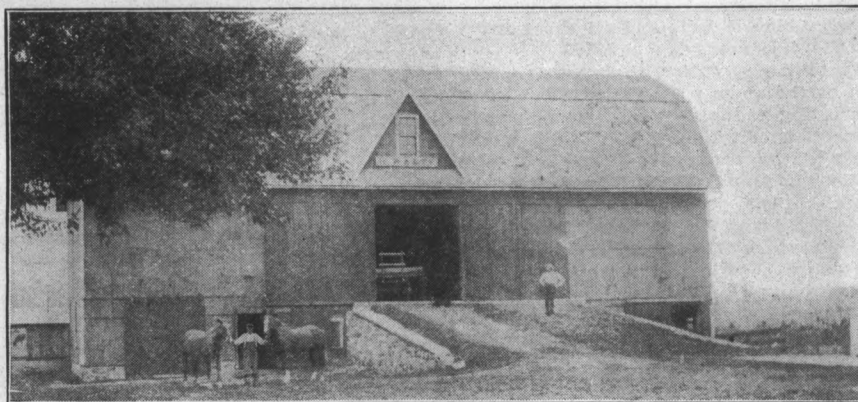
passed away in farming and all methods have become new, and farming must be studied and all the short ends kept up close in work and feed to succeed, as the cost of producing is larger. As the prices of lands increase an acre must produce more, so the old methods must pass out. Shiawassee Co. GEO. BIGNALL.

I am very glad to get this idea of G. B.'s about shredding fodder. There is some good ideas in it. Ordinarily, I don't believe that a farmer today can afford to husk corn by hand. As a matter of fact, it isn't a question whether he can afford it or not, because ordinarily you can't get men to husk by hand anyway and if you don't husk with a machine, why you can't get the husking done at all. But, his idea is right about husking early. Putting shredded corn fodder into a mow is a good deal like putting clover hay in. If it doesn't contain any external moisture you can put it in with quite a little bit of the natural juice of the plant and not have any material damage. But if the corn is left out until late in the fall and is saturated with moisture, either snow or rain, and then it is shredded and put in, look out! Part of it will spoil.

COLON C. LILLIE.

HUSKING CORN.

Perhaps this question of husking corn by hand or by power has been sufficiently discussed. So far as my observation goes, it is cheaper for the small or average farmer to plant his corn by hand, cut it up by hand, and husk it in the same manner. The reason for this is because he can do a large part of this work him-



Main Barn on the Farm of H. Waltz, of Barry County.

fair day's work. Have done better some days, nearly up to the 500 mark.

As to seed corn, I have always saved my seed from the machine husked corn and at present have 10 bushels of ears saved from machine that I doubt whether A. G. C. could tell from his hand husked corn. A. G. C. says he would like to see one man tend to the blower and corn from a power husker. One man always has put my corn in the crib and looked after the blower. All he has to do with the blower is to keep the hood turned in whatever direction he wants the fodder to go.

In A. G. C.'s article he says whole stover is of more value than the shredded. I would contradict that, for with whole stover, it is as much work to clean out mangers and carry out the refuse as it is to feed the shredded stover, besides the additional value for bedding, and in my experience stock will eat it a great deal closer than the whole stalks. Every thing considered, I think there is a big difference in favor of power husking. Grand Traverse Co. G. W. A.

FAVORS NEW METHODS.

We take issue with the mode of hand husking, especially such a catchy fall as this, when the fodder is at stake. We husked this fall with a machine and every one predicted our fodder would rot, but we are just opening it up now and it is in very good shape. My experience of five or six years is that if you salt well when shredding and don't tramp too much you will be more scared than hurt about the fodder keeping in the mow. But don't wait until it comes freezing weather. Shred just as soon as the sap is out of the fodder and you will have the most value in your corn fodder and perhaps avoid an attack of rheumatism in the fall by not sitting out in the cold, and save trying your temper in the winter and spring by not having to pull cornstalks off your fork tines. The old times have

self. Where a power husker is used the cost for extra help and teams, makes the job a rather expensive one, and if the corn is not in the right condition the shredded fodder is very apt to spoil, as I have seen it do many times. This fall I had nearly one thousand bushels of corn and besides my own work, it cost me less than \$15 to get this corn husked and cribbed and stalks drawn into the barn. Had I hired a power husker to do this work the cash outlay would have been more than double. Ottawa Co. JOHN JACKSON.

THE CONSTRUCTION OF GOOD HIGHWAYS.

Much has been written, and more said, about the present highway law and upon the road situation in general. But still our American highways remain 1,800,000 miles of bumps and holes with frequent steep grades and long stretches of deep sand. It is true there are a few miles of good roads scattered here and there, but mostly between our large cities, oases in the desert of our numerous trails. The fact remains, however, that the American highways have not kept pace with the advance made in other means of transportation. They are, if you please, of the stage-coach age. This is especially true of Michigan's highways and Michigan's people are just beginning to realize that the roads of Michigan are not what they should be, and not as good as those of bordering states. Already various plans are being tried with greater or less success. But the object of this article is not to discuss the respective merits of various systems. Whether convict labor should be used or other forms of state and national assistance secured for road construction; or the advisability of a higher highway tax; or a special road tax upon automobiles, but rather the object of this article is to suggest a few points whereby the best results may be obtained in road construction and

maintenance with the money secured from the present highway tax.

Although the management of the rural roads has been shifted during the last few years, yet the farmers still have a large amount of influence in determining the course to be pursued. It is only by their co-operation with themselves and the city good road men that the best and most permanent results can be secured with the present inadequate highway fund.

One of the most important things in a rolling country is the cutting down of steep grades. Our fore-fathers have climbed heavy grades only to shoot down the opposite side and we are contented to climb the same old hills in many instances. If anything is tiresome, it is to laboriously climb a steep pitch only to have the horse start the descent before the rear wheels reach the top. The rapidity that a force of half a dozen men and four or five teams with wheel-scrappers can move the dirt from the hill top and dump it at its foot is surprising. By dropping the dirt at the base of the hill the grade is decreased twice as fast as the hill is lowered. A few days' work on many of our steep pitches with the ordinary drag scraper, for hauls up to fifty yards, will reduce them to nearly the requirement of the state highway law. For longer hauls and up to 200 yards the wheel scrapers are more economical. As one of the first essentials of the building of state reward roads is a certain grade, the money expended for the cutting down of steep hills and the reducing of heavy grades is well spent.

Another important point is the building of graveled roads. The writer has in mind a strip of road which has been graveled in recent years that is a pleasure to ride over and another mile that is clay and sand by spots. Muddy, sticky clay during the spring to wade through, and deep sand to drag through during the dry summer months. All within a mile on many roads are found these clay knolls—hard in summer as a pavement, when dry, but slippery when wet, a gravel knoll to climb over, and a long stretch of deep shifting sand to pull through. Now, if the clay was spread over the sand it would give an ideal bottom for a coating of gravel from the gravel knoll, and at the same time both clay and gravel knolls would be cut down—two birds killed with one stone. When it is possible to secure it clay gravel is excellent for sandy soils, while for clay and loamy soils a sand gravel is much better. Where it is not possible to secure a clay gravel a coating of clay prior to the layer of gravel gives the desired result. Frequently a half load deep will be sufficient to secure the result—a well packed road bed. However, in the selection of gravel the quality must not be overlooked. The point that makes a gravel road superior to an earth road is pebbles—real stones—that it contains and not altogether upon its immediate packing qualities as has been thought by many township commissioners and farmers. In the spreading of the gravel care must be taken not to spread it too wide as it works wider rapidly. Where the road bed is crowning, shoulders should be formed of firm earth on either side to prevent the gravel from spreading wider than it is necessary. With the completion of a stretch of gravel road that has the proper grading and drainage, the township has a road that has the proper essentials for a road that can be reggraded at small expense at some future time for the purpose of securing the state reward.

Another point that should be mentioned is the use of the road grader as it is used in many sections of the state. This much used, and frequently mis-used, tool is very efficient as a road grader in skillful hands, especially to turnpike prior to graveling. Gravel roads that have become dishd may be recrowned by careful use of the grader, care being taken not to run too deep or wide. However, the grader has frequently been mis-used by the scraping of sod and turf into the center of the road for the American farmer and the city automobilist to bump over.

In conclusion, the best plan to improve the 70,000 miles of Michigan roads with the present tax is first to plan to cut down the high hills and lessen the heavy grades, and, secondly, to grade and gravel each year as much as possible. Care must be taken to use the proper quality of gravel. Thus will a start be made toward what will be the great twentieth century achievement—the replacing of our present inferior roads for improved graded, graveled and macadamized roads.

Oakland Co.

E. S. C.

LIVE STOCK

THE INTERNATIONAL—ITS LESSON FOR THE FARMER.

The 1911 International is history; and to all connected therewith it should be interesting and satisfactory reading. In all sections, except sheep car lots and feeder cattle, exhibits were more numerous than ever, and withal the quality was maintained and in nearly all cases improvement was noted. Especially was the general condition of all exhibits better, exhibitors having awakened to the fact that only the best animals in the best condition are licensed to appear at this, the greatest annual live stock show held anywhere in the world.

In the car lot classes out in the yards the distinctive feature was the display of fat cattle, which showed superlative merit. Again the black Angus were winners and the butcher judges declared by their decision, as did also the buyers by their bids, that yearlings of the requisite quality were preferable to older, more ripened beasts of greater weight. Light, young beef is what the market demands.

The feeder cattle show was not as large as heretofore, due in no small measure, to the fact that feeders as well as growers recognize the Denver show held in January, as the great show for feeder cattle, and it would not be surprising if this part of the International were eventually eliminated, at least to a great extent. The grand champions in this section were Hereford yearlings from Texas.

Over in the sheep barn we had the unusual opportunity of seeing a car of aged wethers win the grand championship for the first time in the history of the show. The strongest contenders were the load of clipped blackface lambs shown by Ben Conley, of Marshall, Mich. An exhibit that attracted our attention was a load of fat lambs direct from Idaho, which we learned had been fattened on alfalfa hay and what grain they could pick up in oat and wheat stubble fields. They looked as good as most corn fed lambs and showed what may be expected from this western country as it develops its grain growing and supplements it by fattening its own stock.

In the individual fat animals we find a show of superior quality. In the steer classes a committee culled out any inferior animals so that only creditable specimens of the breeders' and feeders' skill came before the judges. Of these classes most interesting are always the classes for grades and cross-breeds, for here the much advertised foreign judge displays his ability. This year this official was J. J. Criddle, an Aberdeen-Angus breeder of high repute on the other side, who has fitted and shown winners in the best shows over there, as well as officiating in picking them. So far as we could learn his work here was very creditable and satisfactory to the exhibitors. Under his eye also came the champions by ages, from the various breeds, and from these are ultimately sifted the grand champion of the show. This year this contest was between the two-year-old grade Angus steer Victor, shown by Iowa college, the yearling pure-bred Angus steer shown by Nebraska college and the grade Hereford calf shown by Missouri college. It was all between the two blacks, and the older, heavier, more matured animal won, just the opposite of the result in the car lots out in the yards. Both these steers were shown here last year, Victor being champion of grades and cross-breeds, while the Nebraska steer was reserve champion, the same as this year. Both came back, a noteworthy occurrence. We also note that these winners were all shown by colleges, instead of private individuals.

In the wether classes we found an abundance of good lamb and mutton, and here it was a Shropshire grade wether shown by Lloyd-Jones, of Canada, that claimed the purple, with a Southdown from the University of Wisconsin as reserve. In the selection of the best animals here it is not so much a question of sight as of touch. True it is that the hand must aid the eye in selecting the choicest beef, but with mutton it is nearly all hand; for the expert shepherd, like the modern expert tailor, so trims and fits the coat of his charge that the eye can tell but little of the actual form beneath the coat. It takes an expert touch to carry to the brain the knowledge which it finds.

In the hog classes, a Chester White was individual grand champion barrow, while a pen of Poland-Chinas were cham-

pion group. If memory serves us right this is the first time that a hog with other than black bristles has won the championship.

In the International show of individual animals, we found a wonderful show of horses of all the draft breeds, especially of Percherons and Belgians. When one goes through the buildings and observes the high average quality of these animals; when he considers the growth and size of these horses, he can hardly realize that it has been attained in so short a time, two and three-year-old stallions weighing over a ton; and then when he considers the amount of capital, labor and expense required to handle this business he is almost staggered by its immensity. Another striking fact is that nearly all these horses are produced and developed across the water, and it was the enterprising importers who made this great show instead of American breeders. In horses and mutton breeds of sheep the old country breeders can send the winners over here, but in nearly all other breeds of live stock American breeders have demonstrated their ability as breeders and fitters of the best of the world produces. For instance, over in the cattle barn we found American-bred stock the winners; notably, in Shorthorns, where Ringmaster, the undefeated champion of 1910, repeated this year and defeated the imported entry.

In all the breeding classes it was the same old story of superlative merit. It mattered not what the breed nor what the class, it required the judgment of an expert to determine the winner, and then the experts often disagreed. Frequently it was a question of personal preference as to the value of certain characteristics. In fact, competition is so keen and the difference between the ribbon winners so small that it seems as if all were worthy to wear blue ribbons and an equal share of the prize money.

As to the spectator, there was no section of the show more valuable nor more interesting than another. It was simply a question of the class of stock in which you were interested. If it was Shorthorn cattle you found the best animals of the breed with a judge from London who evidently knew his business and did it with reasonable dispatch. If it was Shropshire sheep you found a show of the best from both England and America, with two college professors placing the ribbons and no man competent to disagree with them unless he could handle the entries, which is practically impossible. And so on all along the line; it is the best and the most of it, to be found anywhere. It is the highest expression of the breeders' skill and the fitters' art in concrete animal form.

Any farmer or grower of live stock who fails to see this show loses much in his education for his own business; he fails by that much of realizing and attaining the greatest possibilities in it. Not that he may ever be able to produce such specimens nor to place them in such condition, but that it is possible because other men have done it and the ambitious man is spurred on by what other men have done. Again, the sight of such specimens of animal perfection gives the average man a definite idea as to the character in many and all respects of the various breeds and the ideals of the breeders so far as they have been able to mold them into concrete form. When Mr. Farmer goes home from the International he carries new ideas, new thoughts, new ambitions, new knowledge. It matters not the kind of meat he is producing, he has gained new knowledge as to what is the most desired and most valuable form in which that meat shall go to market and as to how it can be most economically produced.

Washtenaw Co. Roscoe Wood.

EXPERIENCE IN FEEDING FROZEN BEETS.

I have read several articles in your paper in regard to frozen sugar beets being poisonous to live stock. Here is my experience:

Some years ago I had 40 shoats of from 80 to 100 lbs. weight that I fed boiled sugar beets, about half of them frozen and half unfrozen. I have a tank over an arch and put in a barrel of water and two bushels of beets and cooked them thoroughly. I then scooped them out with beet scoop, letting water remain and continued cooking every morning in same water.

All went well for two days. The third morning some of the hogs did not act just right. Would cramp, lie down, get up, cramp again and go down, but there

were no bad results. The next morning or about five days after I commenced to feed beets, one of them left the trough after eating and began to cramp and drop down, get up and cramp again, and died in 10 or 15 minutes, and in less than one hour three were dead.

I concluded there was something wrong with the feed, but what was it? At that time I had never read or heard that frozen sugar beets were poisonous to stock, consequently began an investigation myself. I opened the tank (the water then boiling). I thought I detected a sour odor from the steam. I cut a beet open and tasted it and found I was feeding a very sour kind of sweet pickle. Continued boiling of the beets in the same water had converted it into vinegar. I removed all the water and beets and used fresh water every morning and continued to feed same beets with good results, and have fed beets in same way several years since with no bad results. Consequently I am somewhat skeptical in regard to the fact that the beets being frozen was the cause of the stock dying as others report. Perhaps if, at the time I had the trouble I had read what I have since on the subject, I would not have investigated, but charged it up to frozen beets. But from my experience I believe the acid generated from continued boiling in the same water was the whole trouble.

Ingham Co. W. W. HEALD.

KEEP THE PIGS GROWING.

The shrinkage in prices for fat hogs is again repeated with the approach of the holiday season. There is this year the additional reason of the high-priced grain which prevents many farmers making their hogs as heavy as they would otherwise do. However, farmers should not forget that one extreme usually follows another, and that this rushing of hogs to market, together with the inroads made upon the pig crop by hog cholera in many states, will materially affect the price in future months. For this reason it will pay to keep the pigs growing to the limit of their capacity, even at the present high price of grain feeds, since there will undoubtedly be an improvement of the prices due to the free marketing at this season of the year and other causes above mentioned.

GOVERNMENT MEAT INSPECTION.

Interesting information about the federal meat inspection is contained in the annual report made to Secretary Wilson by Dr. A. D. Melvin, Chief of the Bureau of Animal Industry of the United States Department of Agriculture. During the fiscal year ending June 30, the inspection was conducted at 936 establishments in 255 cities and towns, both of these numbers being the highest in the history of the service. The number of animals inspected before slaughter was 53,002,304, comprising 7,807,712 cattle, 2,214,127 calves, 29,920,261 hogs, 13,005,822 sheep, and 54,382 goats. There were inspected after slaughter 7,781,030 cattle, 2,219,908 calves, 29,916,363 hogs, 13,005,502 sheep, and 54,145 goats a total of 52,976,948 animals. Of these there were condemned for disease or other unwholesome condition, 117,383 entire carcasses and 1,009,672 parts of carcasses, making a total of 1,127,055 carcasses and parts condemned. Tuberculosis was the cause of by far the greater part of these condemnations.

The meats and meat food products canned, cured, or otherwise prepared under official inspection amounted to nearly seven billion pounds, of which there were condemned on inspection subsequent to the inspection at time of slaughter over 21 million pounds.

Inspection certificates were issued for export of meats and meat food products aggregating 975,066,006 pounds, this being an increase of over 150 million pounds compared with 1910.

Laboratory examinations were made of 25,818 samples with a view to detecting prohibited preservatives, prohibited coloring matter, adulterants, or other unwholesomeness, and to determine the quality of salt, spices, condiments, etc., and the sanitary condition of water supplies. It was found that the use of prohibited preservatives and coloring matter was not practiced at inspected establishments.

The federal inspection is applied only to meats and meat food products prepared at establishments that do an interstate or export business, but the government inspects the entire product of such establishments regardless of whether it is intended for local, interstate, or export trade.



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FEEDERS' PROBLEMS.

A Ration for Fattening Steers.

Would corn meal at \$30 per ton, or wheat and oats ground together, equal parts by weight, be the better feed for yearling steers, prices being equal, the same to be fed with corn silage made from matured corn? Or would middlings at \$25 per ton and a little cottonseed meal at \$31 per ton be a more economic feed. I want to fatten the steers, and in addition to the ensilage which is fed night and morning, they get a little oat straw for roughage and a liberal feed of mixed hay at noon. Cattle are in a warm barn with access to water. Would the same ration be an economic one for lambs which I am feeding?

Sanilac Co.

J. C. R.

The question of the amount of ensilage to feed to fattening steers, and the kind and amount of grain ration to be fed with it is a matter upon which practical feeders do not wholly agree. Until recent years many expert cattle feeders, as well as experimenters, have maintained that there was little economy in the use of ensilage for fattening steers. In recent years, however, it has been well demonstrated that silage is a very economic feed to use in fattening steers, particularly when roughage is high in price as is the case this year. It is not considered the best economy, however, to feed ensilage as heavily to fattening steers as to dairy cows, although in many cases as high as 30 to 40 pounds of ensilage is fed per day throughout the entire feeding period with excellent results.

The kind and amount of the grain ration which should be fed with the ensilage depends not a little on the amount of grain in the ensilage and the

While some oats in the ration will prove beneficial, and if home-grown oats are available they can be added with profit, it would hardly be good economy to feed equal parts of corn and oats by weight, and the needed protein can be more cheaply secured in the cottonseed meal at the price above named than in most any other available concentrate, although the source from which the protein is derived should be determined by its cost and, unless clover hay is available, it will be profitable to add some protein concentrate to the grain ration.

The same ration will answer very well for fattening lambs, although ensilage should not be fed quite as heavily to them and oil meal is a little more palatable to them than cottonseed meal. However, at present prices, corn should be made the base of the ration for both sheep and cattle as it is the cheapest available grain for the purpose.

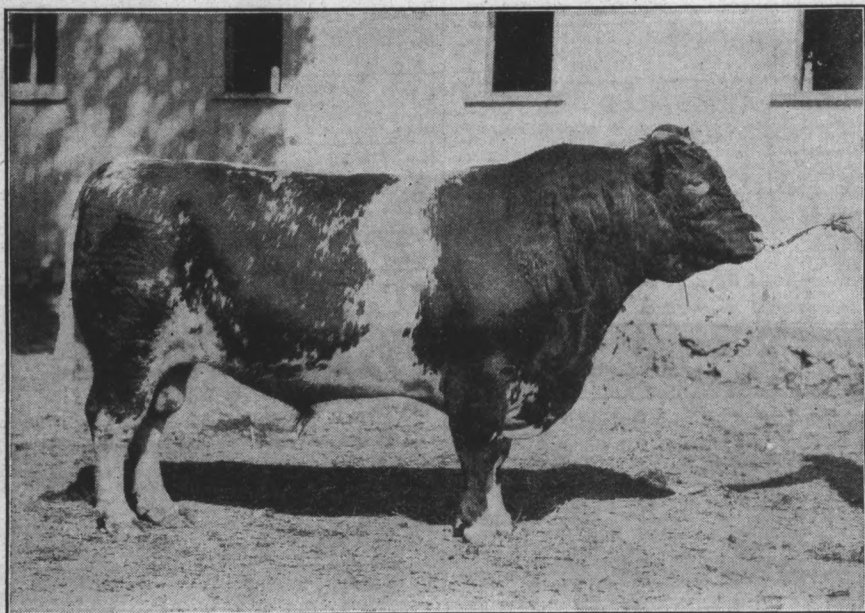
COOKING FOOD FOR HOGS.

What is the relative value of cooked food for hogs, compared to feed in the raw state? We have just installed a steam cooker to keep the ice out of our water tanks and wash our dairy utensils, which we think is what every dairyman should do, as we can sterilize all of our milking utensils with steam.

Livingston Co.

G. B.

Quite a number of years ago I became very much interested in the cooking of food for hogs. At that time it was necessary for me to have what is known as the feed cooker or small agricultural boiler, because we wanted to warm the milk that came back from the creamery



Ringmaster, Champion Shorthorn Bull at the International.

kind of hay fed with it. Where good clover or alfalfa hay is available, and corn is not too high in price, it has been found that gains could be produced cheaper on this combination than by adding feed richer in protein to balance up the ration properly. With corn as high priced as at present, however, this would not be true, and particularly where mixed hay and oat straw is to be fed in combination with the ensilage, as in this case. If 30 lbs. of ensilage per day is fed with the mixed hay, as described in this case, an economic feed would be composed of corn meal and cottonseed meal or oil meal mixed in a proportion of 10 parts to three by weight, beginning with a small feed and gradually increasing until on full feed, which with this amount of ensilage would not require more than one pound per day of this mixture of grain in each hundred pounds of live weight of the animals fed.

Unless the corn is ground cob and all, to lighten up the ration, it would be well to use some bran in connection with this grain ration as the feeding period progresses, or add some ground oats to the ration, particularly if the grain ration is fed by itself instead of being spread on the ensilage and eaten with it.

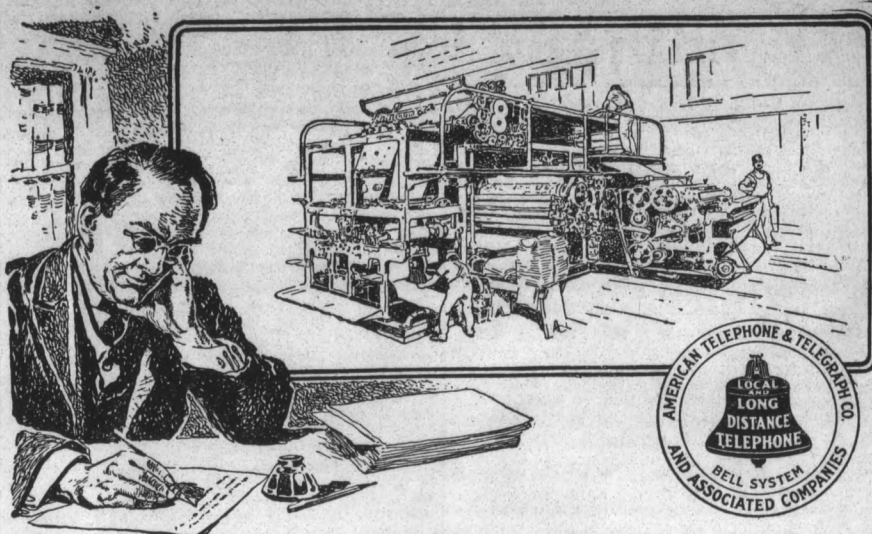
Corn meal at \$30 per ton would still be cheaper than ground wheat as the base for the ration at the present price, but one who expects to make a profit feeding steers should not feed \$30 corn meal. While the current quotation on corn meal is at \$30 per ton, this is on meal made from old corn, since new corn meal will not keep sufficiently well to be handled in a commercial way at this season of the year. It would be better to buy the corn needed and have same ground, or even feed without grinding and allow some hogs to run with the cattle, than to feed such an expensive grain ration.

for the calves, then we had lots of dairy utensils to wash and it was very convenient to have this boiler, and I tried out quite thoroughly the proposition of cooking feed for hogs. I couldn't see that it paid, so I gave it up.

I certainly believe it pays to warm the swill for hogs in cold weather if it gets ice-cold. I don't believe in putting pieces of ice into the troughs for hogs in the winter time. But that is an entirely different proposition from cooking the feed. Now, the hog's stomach is adapted by nature to digest raw feed. It never was intended that a hog's feed should be cooked. This is not only my own experience but since then it has been tried carefully at several experiment stations and in every instance, so far as I know, one could not get paid for the fuel for cooking feed for either growing pigs or fattening hogs. But, if it does not pay to cook feed for hogs, G. B. will find his feed cooker a good investment if he can use it to keep the ice out of his water tanks and if he can use it to sterilize dairy utensils. Really, dairy utensils are not real clean until after they are washed and sterilized, and they want to be heated so hot in sterilizing that they need no wiping. A great many people wash milk cans and milk pails and then wipe them out with a dirty old cloth and smear them all over with bacteria which makes them almost as bad as they were before they attempted to wash them.

COLON C. LILLIE.

Corned Beef.—F. K., of Tuscola Co., asks for a tested recipe for putting down corned beef. Mix 4 qts. of salt, 4 lbs. of brown sugar and 4 ozs. of saltpeter for each 100 lbs. of beef. Rub mixture on beef and pack with it tightly in a large crock, weighting it down. It will soon form a brine to cover the meat.



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VETERINARY

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

Bursal Swelling.—My 16-year-old horse has in some way injured his stifle and is some lame; the cap is in proper position, but there is a soft bunch below joint that was quite painful, but it is now less so. D. M. R., Stockbridge, Mich.—Apply equal parts spirits of camphor and tincture iodine to bunch once a day.

Ringbone.—For the past three months my eight-year-old horse has been lame and so far as I can tell it is the result of ringbone. O. E. F., Hesperia, Mich.—If your horse has ringbone situated low down, it will be difficult to cure him; however, the best results are obtained by giving him absolute rest and either firing or blistering. Firing is, of course, the most heroic treatment; however, you might try blistering with one part red iodine mercury and eight parts cerate of cantharides; these applications should be made every week or ten days. What is meant by rest, is keeping the horse perfectly quiet, without exercise.

Splint.—I have a six-year-old horse that has been lame for the past ten months. There is a small, hard bunch on shin just below knee; this is the only blemish on him. He points his foot out in front of body part of the time. H. W. S., Eaton Rapids, Mich.—Pointing the foot is usually an indication of foot lameness, but if he has a splint causing lameness, he will walk almost sound and trot very lame. Examine him carefully before commencing treatment. Apply one part red iodine mercury and eight parts lard to splint once a week and if you believe he is lame in foot, blister coronet with cerate of cantharides.

Stocking.—When my horse stands in stable over night his legs stock, but when driven an hour the swelling goes down. Am feeding corn, oats and wheat straw. A. J. B., Hastings, Mich.—Stocking is a result of other ailments and not a disease. Increase his feed and give a teaspoonful of powdered sulphate iron, two tablespoonfuls of ground gentian, 1 dr. ground nux vomica and two tablespoonfuls powdered charcoal at a dose in feed three times a day.

Shoulder Slip.—I have a two-year-old colt that must have sprained his shoulder for when he steps forward his shoulder rolls out of position and I am told it is sweeny. R. J., Deckerville, Mich.—Clip hair off shoulder and apply a light blister. Use cerate of cantharides and if you will make an application every week or ten days, I fully believe you will obtain good results. Kindly understand cases of this kind are slow in getting well.

Weak Heart.—I purchased a horse last April that was quite thin in flesh, he has been thin ever since; acts tired and dull and when urged to trot he falls back to a walk whenever allowed to do so. Our local Vet. has treated him all summer. He has purged him twice a month, flet his teeth, gave him condition powder and he has had good care. His hind legs stock and he has had sore heels. He is only five years old, weighs 1,300 lbs., and is fed corn and mixed hay. W. W., Hopkins, Mich.—Your horse may not digest food properly, or he may have a weak heart. Give 1 dr. ground nux vomica, 1 oz. ground gentian, ½ oz. ground quassia, ¼ oz. ground ginger and 2 drs. Fowler's solution at a dose in ground feed three times a day. Feed equal parts by weight of ground corn, oats and wheat bran. Be sure and salt him well.

Indigestion.—Have a four-year-old mare nursing a colt, but she is not thriving and is swollen under belly. She is fed corn, oats and some bran mash with oat straw and hay for roughage. Have given her buchu leaves and nitrate of potash three times a week. O. G. W., Bloomingdale, Mich.—Your mare may need a little dental work as the permanent teeth are taking the place of temporary ones and are doubtless causing her some trouble. The caps of grinders should perhaps be removed; however, you can tell by making an examination of mouth. Feeding her ground grain and cut hay will help her. Also give her two tablespoonfuls of ground gentian, and 1 dr. ground nux vomica at a dose in feed three times a day.

Partial Dislocation of Patella.—I have a two-year-old colt unusually large and seemingly over-grown for his age, that has weak stifle. The cap seems to slip out of place easily and it is not difficult for it to return, but it bothers him starting. A. W., White Pigeon, Mich.—The ligaments that hold stifle bone in place are weak and if you will place the colt with hind feet three inches higher than fore and blister stifle with one part powdered cantharides and six parts lard every ten days, he will get well. The object in keeping hind feet higher than fore is to keep joint in socket, for it usually slips out of place when hind foot is back and down.

Sluggish Action of Glands.—Ten days ago one hind leg of my five-year-old mare commenced to swell; a few days later all four were stocked and I would like to know what can be done for an ailment of this kind. C. E. C., Merrill, Mich.—Apply one part alcohol and two parts warm water to swollen legs twice

a day and bandage lightly over cotton. Give 2 drs. iodine potassium and ¼ oz. fluid extract of buchu at a dose in feed three times a day. She should have walking exercise daily.

Bog Spavin and Thoroughpin.—We have a two-year-old colt that has soft bunches on fore part, inside and outside of hock joints. I have been told they were wind puffs and would leave him at four years of age, but they are no better. I might add that this colt is very large for his age and I have another colt same age that perspires while standing in stable. C. J. L., Palms, Mich.—Many colts come honestly by puffy joints, for whole families of draft horses are inclined to have joints of this kind from birth and if the hocks are clean they seem to be predisposed to weakness and are easily sprained. Blister joint with one part red iodine mercury and eight parts cerate of cantharides three times a month and you will obtain fairly good results. It is well to understand that such joints are not easily made sound.

Obstructed Teat.—Last summer a small lump formed in upper part of teat, obstructing milk flow and to pass a milking tube seemed to hurt her. I also have another heifer that has a similar ailment. J. McG., Hudson, Mich.—In my practice I frequently cut through teat and remove bunch, then stitch wound, leaving a milking tube or sound in teat until wound heals. You will obtain fairly good results by applying iodine ointment.

Ringworm.—I have a cow that has sore spots all over body; these spots vary in size and range from a half inch to 1½ inches in diameter. I have applied coal tar dip, but it fails to effect a cure. I have also applied strong salt water without results. F. W. W., Monroe, Mich.—Apply tincture iodine three times a week and you will have little trouble in killing the ringworm parasites.

Garret.—One quarter of my cow's bag is caked and I have applied hot water and hot lard without results. I would also like to know if badly cured corn that has mould on it will injure live stock, especially hogs, if fed to them moderately. A. C. K., Montague, Mich.—Apply one part iodine and eight parts lard to caked udder once a day or as often as you believe it necessary and it will reduce bunch in udder. Cooking the corn will prevent it harming your hogs and if fed to horses soak it for 12 hours in salt water.

Barren Sow.—I have seen many useful remedies prescribed for ailments of live stock in your paper, but have not noticed a prescription to bring sows in season. I have two sows that fail to come in heat. W. G. S., Shelby, Mich.—Give 5 grs. of powdered cantharides, 10 grs. ground nux vomica and a teaspoonful powdered capsicum at a dose in feed two or three times a day.

Rheumatism.—I have a brood sow that is lame, caused from having rheumatism. S. P., Bailey, Mich.—Give your sow 20 grs. salicylate of soda at a dose three times a day. Discontinue feeding her corn for her ration may not have been balanced properly. Add some air-slaked lime and roots to her food supply. Apply equal parts aqua ammonia, turpentine and sweet oil to sore parts three or four times a week.

Gout.—Our three-months-old Collie puppy has a large bunch in neck which appears to me like gout. A. G. D., Brighton, Mich.—Apply tincture iodine two or three times a week.

Imported and pure bred Stallions. We make a speciality of quality of Quarters, Bays and Weights. G. & H. LOCHER, Bluffton, Ohio.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS.

Herd, consisting of Trojan, Ericas, Blackbirds and Prides, only, is headed by Egon W. a Trojan Ericas, by Black Woodlawn, sire of the Grand Champion steer and bull at the International in Chicago, Dec., 1910. A few choice bred young bulls for sale.

WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES.—One of foremost dairy and bull calves for sale. Berkshire swine. All pure bred. Michigan School for Deaf, Flint, Mich.

For Sale.—3 Registered Guernsey Bulls; 5 registered large Yorks; 10 registered small Yorks. For prices write John Ehlers, R. No. 10, Holland, Mich.

HEREFORDS.—7 bulls from 2 mos. to 2 years old, all reg. and of the very best breeding. Also big boned Poland China hogs. ALLEN BROS., Paw Paw, Mich.

"Top-Notch" HOLSTEINS.

A fine young bull from an Advanced Registry dam, Sire Cornucopia Bos Pieterje No. 7862, born Jan. 27, 1911. Sire—Willowbridge Bos, who is a grandson of Beauty Pieterje who has an official record of 30.55 in 7 days and was the 1st 30-lb. cow of the breed to produce a 30-lb. daughter. Dam—La Cornucopia Pauline, who has an official record at 2 years, 1 mo., 18 days old as follows: Milk, 1 day, 48.1 lbs.; milk, 7 days, 319.7 lbs.; butter, 7 days, 13.35 lbs. Her dam has an official record at 4 years old of 17.75 lbs. butter in 7 days and her granddam has an official record of 17.72 lbs. butter in 7 days at 4 years, 7 mo., 19 days old, and gave 149.75 lbs. in 318 days. His dam was sired by Sir Aggie Cornucopia Posch, whose dam has an official record of 20.13 lbs. butter in 7 days at 3 years old, and was a sister of Aggie Cornucopia Pauline, who old, and has an official record of 34.32 lbs. butter in 7 days at 4½ years old, world's senior 4-year-old record. He comes from large producers on both sides, is a fine individual, nicely marked with more white than black. Price \$100.

MCPHERSON FARMS CO., Howell, Mich.

Holstein Bulls 1 month to 1 year old. Their sire is Holstein Bull of the present most popular advertised breeding. ROBIN CARR, Fowlerville, Mich.

I Did Not Sell 20 Holstein Bulls in Nov. I Want to Finish the Job in December.

Send for my Dec. Announcement. Select a bull from it, order him QUICK. Several from A. R. O. dams, and sired by Johanna Concordia Champion, the only bull in service whose grand dams average 34.06 lbs. butter in 7 days. Also yearling heifers bred to him.

L. E. CONNELL, - Fayette, Ohio.

Who wants this one?

Long Beach Segis Beets

He is 10 months old, 60% white, straight, large. His sire, Oakland Paul Beets Burke is a promising young son of

PAUL BEETS DE KOL

with 98 A. R. O. daughters and one of the greatest sires of the breed.

His dam Segis Veman is one of the most promising young daughters of

KING SEGIS

She made a record of 14.4 lbs. butter as a two-year-old and we expect she will make a 25 record this winter.

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

Younger ones from \$50 up.

HOLSTEIN BULLS

FOR SALE

Registered bulls from four to ten months old for sale that are closely related to Hengerveld De Kol, De Kols 2nd Butter Boy Srd, and Colantha 4th's Johanna. The dams are heavy milkers and mostly in the A. R. O. Prices reasonable. Send for list. Bigelow's Holstein Farm, Breedsville, Mich.

Thirteen High Grade Holstein Cows.

They are young and right in every way and heavy milkers. They tested 4½ for October. Four are fresh. The others bred to registered bull and due soon. Price \$900.00. C. C. COREY, New Haven, Mich.

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

Holstein-Friesian Cattle—Special Prices on young bulls about ready for service. W. B. JONES, Oak Grove, Mich.

Purebred Registered **HOLSTEIN CATTLE** The Greatest Dairy Breed Send for FREE Illustrated Booklets. Holstein-Friesian, Assoc., Box 164, Brattleboro, Vt.

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

LILLIE FARMSTEAD JERSEYS.

Cows all in yearly test. Four Bulls old enough for service. Several splendid Bull Calves. A few Heifers and Heifer Calves. I guarantee satisfaction or money refunded. COLON C. LILLIE, Coopersville, Michigan.

Jersey Bull, born Nov. 29, 1910, good breeding, for sale at a bargain. For particulars and price address C. A. TAGGETT, R. No. 1, Caro, Mich.

FOR SALE.—3 yearling Holstein-Friesian bulls, also 3 bred heifers \$150 to \$200 each. Bull calves \$40 to \$60. 33 years a breeder. Photos and pedigrees on application. W. O. JACKSON, South Bend, Ind., 719 Rex St.

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

Jersey Bull Calf for Sale.—Sire, Register of Merit, Raleigh-St. Lambert bull. Dam, Register of Merit, one full sister and eight half sisters Register of Merit animals. WATERMAN & WATERMAN, Ann Arbor, Mich.

JERSEY BULLS FOR SALE

Sired by Temisla's Interested Prince 71648, whose dam made 733 lbs. butter in one year, authenticated test. Choice individuals. Prices Reasonable. BROOKWATER FARM, ANN ARBOR, MICH., R. F. D. 7.

Jersey Heifer

Dropped July 12, 1911. Sire is a son of Marston's Interested Prince out of a Register of Merit Cow, whose sire has 20 daughters in the R. of M.

Marston's Interested Prince has 5 daughters in the R. of M. and his sire has 13 in the R. of M. Dam of heifer is a fine dairy cow but not tested. Price \$50.

T. F. MARSTON, - Bay City, Mich.

Red Polled Bull Calves

6 to 7 months old, \$40 to \$50. Cows \$50 to \$75. Also Percheron Stallion 3 years old, fine style, a big bargain at \$250. E. BRAKETT & SON, Allegan, Mich.

FOR SALE.—2 Yearling Red Polled Bulls, price \$60 each if taken now. J. M. CHASE & SONS, Ionia, Mich.

Dairy Bred Shorthorns.—A few bred heifers for cash or good note. J. B. HUMMEL, Mason, Mich.

For Sale.—Choice registered Shorthorn Bull, Aldons 343127, calved July 10th, 1910. Color, roan. Nine of his dams bred by A. Cruikshank. Write for particulars to T. A. Saylor, Saginaw, Mich.

Choice Yearling Shorthorn Bull for sale. For particulars write to Meyer Bros., R. No. 7, Howell, Mich.

SHEEP.

CHOICE DELAINE RAMS AT HALF PRICE TO CLOSE OUT. Also bred ewes. S. H. SANDERS, Ashtabula, Ohio.

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

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

Oxford Ewes.—Registered and bred to imported rams for sale at farmers' prices. Address B. F. Miller or GEO. L. Spillane, Flint, Michigan.

Rambouillet Rams.—Good ones at farmers' prices. Also ewes and ewe lambs. A. E. GREEN, Orchard Lake, Mich. Bell phone.

Reg. Rambouillets.—Wish to close out both sexes. All ages, low price. Farm—2¼ miles E. Morris, on G. T. R. R. and M. U. R. J. Q. A. COOK.

SHROPSHIRE. Fifty registered ewes, bred to choice imported rams, for sale at farmers' prices. Must reduce flock. J. E. OTTAWAY & CO., Flushing, Mich.

SHROPSHIRE registered ram lambs \$12 each. Also a few O. I. C. Boars for sale. C. J. THOMPSON, Rockford, Michigan.

SHROPSHIRE yearling Rams and O. I. C. Spring Boars & Sows. One yearling Boar, Shropshire ewe lambs later. E. E. BEACH & SON, Brighton, Mich.

HOGS.

Durocs and Victorias.—Elegant spring pigs, either sex, as good as the breed produces at living prices. M. T. STORY, R. F. D. 43, Lowell, Mich.

Berkshires.—Bred sows, bred gilts and boars ready for service. The best of breeding, splendid individuals with fancy heads, at reasonable prices. C. C. COREY, New Haven, Michigan.

Thoroughbred Berkshire Brood Sows for Sale. two years old, magnificent specimens. To farrow January and February to high quality boar. Very prolific. About 300 lbs. Only \$45. ROUGEMONT FARMS, Detroit, Michigan.

ENGLISH Berkshire hogs and Oxford Down sheep of both sexes and all ages, priced away down for quick sale. Stock guaranteed. B. B. REAVEY, Akron, Mich.

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

Berkshires.—Buy a service Boar now, cheap. Other stock also for sale. C. S. BARTLETT, Pontiac, Mich.

PURE O. I. C's.—Bred from prize-winners and large type. Both sexes, not akin, this spring farrow. Call or write. F. A. C. Schweitzer, Montezuma, O.

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

O. I. C. SWINE.—My herd is chiefly descent of the Royal strain both males and females. Write for Live and Let Live price on pairs and trios, not akin. A. J. GORDON, R. No. 2, Dorr, Michigan.

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

O. I. C's.—Boars all sold. Choice young sows weighing 150, also 60 pig. & Sept. pigs, also sex, pairs, no akin. Order early. Fred Nickel, Monroe, Mich., R. 1.

O. I. C.—Spring boars all sold. A few lengthy gilts to be bred for April farrow. Choice Aug. & Sept. pigs, cheap. A. NEWMAN, R. No. 1, Marietta, Mich.

O. I. C.—Choice Boars and Gilts. April, Aug. and Sept. farrows. Registered free in purchaser's name. Glenwood Stock Farm, Zeeland, Mich. Phone 94.

OUR Imp. Chester Whites and Tamworth swine won 25¢ 1st at Fairs in 1911. Service boars, also sows bred for spring farrow of either breed that will please you in quality and price, Adams Bros., Litchfield, Mich.

Improved Chesters.—Young breeders of March, April and May farrow, either sex. A few tried sows for sale when bred. Also Holstein cattle. W. O. WILSON, Okemos, Mich. Both phones.

Registered Duroc Jerseys for sale—2 spring sows, also a few gilts. J. A. Mittee, Stockbridge, Mich.

DUROC JERSEYS. CAREY U. EDMONDS, Hastings, Mich.

DUROC JERSEYS FOR SALE.—Special prices for December. JOHN MCNICOLL, R. No. 1, North Star, Mich.

DUROC-JERSEY BOARS of the large, heavy boned type and good in quality, also gilts and fall pigs for sale. M. A. BRAX, Okemos, (Ingham Co.) Mich.

FOR SALE.—DUROC-JERSEY bred sows, pigs and Shepherd Pups. Express prepaid. J. H. BANGHART, Lansing, Mich.

30 High Class Boars ready for service. Special prices for 30 days. Plenty of growth, style and finish. Satisfaction guaranteed. Come or write. J. C. BARNEY, Coldwater, Mich.

LARGE TYPE P. C.—Largest in Michigan. Pigs from mammoth sires and sows. Weigh 160 to 175 lbs. at 4 months. My motto—“Not how cheap but how good.” Will pay expenses of those who come and do not find what I advertise. W. E. LIVINGSTON, Parma, Mich.

BUTLER'S BIG TYPE POLAND-CHINAS.—size, bone, quality. 50 big fall boars at \$25; 100 spring pigs \$10 to \$15; 50 fall pigs \$5 each; 50 registered Shrop bucks at \$10 to \$15; 6 reg. Jersey bulls at \$15 to \$25; 50 reg. Shrop ewes at \$10. We are the farmer's friend. J. C. Butler, Portland, Mich.

Poland Chinas.—Spring and fall pigs of large and medium style, at right prices, either sex. E. D. BISHOP, Route 38, Lake Odessa, Mich.

For Sale.—Thoroughbred Poland China Swine. Prize winners at State and County Fairs. W. F. QUIRK, Big Rapids, Michigan.

Poland Chinas.—Extra good spring and fall pigs either sex. L. W. BARNES & SON, Byron, Shiawassee Co., Mich.

POLAND CHINAS.—Either sex, all ages. Something good at a low price. P. D. LONG, R. No. 8, Grand Rapids, Mich.

FOR SALE.—Poland China boars and sows, Holstein bulls, White Holland Turkeys, Barred Plymouth Rocks, Collie Pups. L. Birkenstock, Fall River, Wis.

Poland Chinas.—Bred from large type. Stock all ages, both sexes, at Farmers' prices. W. J. HAGELSHAW, Augusta, Michigan.

POLAND CHINAS.—Sows bred for April or May farrow, fall pigs, both sexes, Poland not akin. R. J. LANE, R. 7, Clare, Michigan.

SPECIAL SALE on Poland China Boars, Sows Bred and fall pigs. Also Dairy bred Shorthorn Bull Calves. ROBERT NEVE, Pierson, Mich.

Big Type P. C. Boars and Sows sired by Expansion. A. A. WOOD & SON, Salline, Michigan.

Three Extra Good Fall P. C. Boars

By Next In Line. 32 spring male pigs ready to ship. I ship O. O. D. and furnish pedigree promptly. If you want good as the best, write me for prices.

WM. WAFFLE, Coldwater, Michigan.

Mulefoot Hogs.—Stock of all ages for sale. Price right. Best quality. Bred sow Sale Feb. 1, at Lima. G. C. KREGLOW, Ada, Hardin Co., Ohio.

PURE bred large IMPROVED YORKSHIRES. Both sexes, all ages. Gilts bred for March, April and May to be shipped in Jan., Feb. and March, \$20 while they last. M. O. WILSON, Morley, Mich.

Lillie Farmstead Yorkshires.

Boars old enough for service. A few bred Sows. Fall Pigs, pairs and trios. I will sell you fall pigs at prices that will surprise you. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

Large Improved Yorkshires.—5 boars for sale. Farrowed July 11. Price reasonable. Address W. H. Parker, Grand Blanc, Mich.

Anaemic-Indigestion-Weakness.—We have been aided very much by using your advice and prescriptions taken from Michigan Farmer and have tried giving horse nux vomica, ginger, gentian and soda, but he does not gain much. He is 13 years old, fed corn, oats, wheat bran and mixed hay and some roots, but he does not thrive. His bowels are constive, his appetite for water is irregular, he leans head against manger and stands cross-legged as if weak or tired. C. D. W., Ewart, Mich.—Give your horse ½ oz. of Fowler's solution, a tablespoonful or two of salt and two tablespoonfuls of powdered charcoal at a dose in ground feed three times a day. His liver is perhaps not acting very well, therefore if you will give 30 grs. of calomel and 1 oz. bicarbonate soda at a dose three times a week for two weeks, it will help him.

Teething-Worms.—I purchased a pair of three-year-old fillies that seemed to be in good health, but they are not thriving. L. K., Hesperia, Mich.—Some of the caps of grinder teeth may be interfering with mastication and require extracting. This is easily done as they are the milk or temporary teeth. Give a teaspoonful powdered sulphate iron, two tablespoonfuls ground gentian and one dram ground nux vomica at a dose in feed to each colt three times a day.

Cracked Heel-Scratches.—I am deeply interested in reading the veterinary department of the Michigan Farmer and would like to know more about the treatment for scratches. E. M. C., Sterling, Mich.—Cracked heels is an inflammation of the glands of skin, both oil and sweat glands. When the skin is inflamed the oily discharge thrown out by nature ceases, consequently the skin is not lubricated and it cracks. Later these sores become infested with bacteria or microbic or parasitic life; these parasites multiply and keep up irritation. When the animal moves the wounds open and, of course, are slow to heal. Many prescriptions for the treatment of scratches are altogether too irritating and caustic in their effect. Feed less grain, more bran mashes and roots. Dissolve ¼ lb. sugar of lead, 3 ozs. sulphate of zinc and 2 ozs. carbolic acid in a gallon of water and apply to sore heels two or three times a day. It is needless for me to say that wet and filth are the two principal exciting causes of cracked heels.

Chronic Cracked Heels.—My horse had cracked heels last spring and I thought he had been cured, but his heels are again sore. C. M., Ewart, Mich.—Apply one part sulphur, one part oxide of zinc and five parts vaseline to sore heels twice a day.

Open Joint-Fractured Hock.—Eight weeks ago my mare was kicked, making two wounds in hock which have not healed. She has held her foot off floor ever since and a stringy fluid runs from the wounds. D. D., Prescott, Mich.—The bones may be fractured and the joint is no doubt open. This is a case that requires the attention of a veterinarian, for I am inclined to believe that she is incurable.

Hide-bound-Knuckling-Enlarged Shin.—Indigestion.—Have a mare that is hide-bound and out of condition, but she does not suffer pain. Have a six-months-old colt that knuckles on fetlock and has a bunch on shin. I also have a four-year-old colt that our Vet. says has indigestion, also trouble with his grinder teeth. J. Z., Byron Center, Mich.—Have your mare's teeth examined and perhaps floated. Give her two tablespoonfuls of ground gentian, one of ground fenugreek and two of bicarbonate of soda at a dose in each feed. Increase her food supply and feed some roots. Apply equal parts tincture iodine and spirits of camphor to bunch and cocked joint. These applications should be made daily for a few days, then two or three times a week. Feed your four-year-old ground grain, some roots and cut fodder until his permanent teeth have grown in.

Acidity of Stomach.—Have two colts eight months old that seem to be too fond of gnawing wood. D. C. H., Milan, Mich.—Give them each two tablespoonfuls powdered charcoal, a tablespoonful of ground gentian and a tablespoonful of powdered quassia at a dose in feed two or three times a day.

Mange.—The hair seems to be coming off around eyes of all my cattle. I believe this is a contagious ailment, for nearly all my cattle are affected. J. W. S., Hudsonville, Mich.—Apply one part chinosol and 250 parts water to mangy parts of cattle twice a day.

Looseness of Bowels.—We have an old mare that is in foal which is troubled with looseness of bowels. We feed her ground corn and oats and timothy hay. I had our druggist fill a prescription taken from the Michigan Farmer, where you prescribed ginger, catechu and sulphate of iron; this helped her, but she is bad again. J. F., West Olive, Mich.—Give two tablespoonfuls ground ginger, a dessertspoonful of powdered sulphate of iron, a teaspoonful of salicylic acid and a tablespoonful cooking soda at a dose in feed two or three times a day.

About Infectious Abortion.—Will cows contract the disease abortion by mating with male that has the disease? Will cows get with calf and carry the young to maturity if they have the disease? Can it be cured in male or female after they have contracted it? J. T. S., Hudsonville, Mich.—Contagious abortion is spread by mating well cows to a diseased bull, also one diseased cow may infect several others. A cow when first diseased usually aborts between four and seven months after she is bred. The second year she may carry calf longer and the third year she may carry calf full time. It is needless for me to say that the diseased and well should be kept apart. Disinfectants should be used freely. The infection is destroyed by applying one part bichloride mercury and 1,000 parts water, or one part carbolic acid and 50 parts water, or one part coal tar disinfectant and 30 parts water. By dissolving 1 dr. permanganate potash in a

gallon of water and washing out cow daily, will kill the germ. Give 40 drops of carbolic acid well diluted in either feed or water once a day. The bull should be treated much the same as cows. If you have contagious abortion in your herd, you will find it troublesome to get rid of.

Chronic Garget-Infected Udder.—In The Farmer of Nov. 25, S. H., of Ludington, Mich., described a case of garget exactly similar to one of our own. Some years ago a valuable Jersey cow lost the use of one quarter of the udder; soon after freshening an obstruction appeared in one teat which our best Vets. failed to remove, but the next time she freshened this quarter came all right. A year ago last season, she was troubled all summer as S. H. describes and was treated by applying hot salt and water to the inflamed part of udder after each milking. This spring soon after she came fresh she was given a teaspoonful of the fluid extract of poke root three mornings in succession, then none given for three mornings, until nine portions were given. About two weeks after this was repeated, she began giving a heavy flow of milk, has kept it up all season and has not once shown a symptom of garget. Let me say it is not best to give large doses of poke root at this season of the year, but in the spring and summer it will do to give fairly large doses. In the meantime when any part of the udder is inflamed, I advise dairymen to use a strong salt solution and rub well in; furthermore, be sure and secure the poke root from a reliable druggist, for much of it is not reliable. J. F. C., Cressey, Mich. Phytolacca (poke) is a cardiac and respiratory depressant, producing often a bad effect upon the spinal cord. It is also somewhat narcotic and alterative in its effect, but it promotes the absorption of fatty tissue. Its chief use is in the treatment of mammitis (garget) in arresting the inflammation and preventing suppuration. It should be applied locally and given inwardly. I have used it in my practice for more than 30 years in the treatment of inflamed bags and believe it is one of the best known remedies for this ailment. I have obtained best results by giving large doses and soon discontinue its use. I thank you kindly for your interesting letter.—Ed.

Eczema.—My hogs must itch for they rub themselves almost constantly, but I fail to find any lice. The skin appears rough and scurvy like wherever they rub. C. K., Bay City, Mich.—Apply one part subnitrate of bismuth and eight parts vaseline to itchy parts of body two or three times a week.

Catarrh-Worms.—I have 128 two-year-old Idaho ewes that have a discharge from nose, cough some and are not thriving. I opened one that died and found quite a few worms in stomach and bowels. These seem to be quite weak. D. E. E., Bellevue, Mich.—Mix together equal parts ground ginger, gentian, cinchona, powdered sulphate iron and salt and give each sheep one-third of a teaspoonful at a dose in ground feed twice a day. They should be well fed and have good care.

Piles.—I have a dog that is troubled with bleeding piles and our local Vet fails to help him. L. T. S., Portland, Mich.—Dissolve ¼ lb. acetate of lead and 2 ozs. of tannic acid in a gallon of water and apply to sores twice a day.

Obstructed Teat.—The Michigan Farmer has been a welcome visitor to my home for many years and we could hardly get along without it. Have a valuable Holstein cow that came fresh a few weeks ago and she has a small bunch in one teat which obstructs milk flow. Can anything be done to remove it. W. R., Howell, Mich.—Apply one part iodine and ten parts lard to bunch two or three times a week. In some cases I find it necessary to do some surgical work on such cases; however, if this is necessary you had better have it done by a Vet.

Indigestion-Acidity of Stomach.—My three-months-old colt has chronic disposition to chew wood, he has eaten the greater portion of stall manger and I have been wondering if it will prove injurious to him. U. R., Rapid City, Mich.—Your colt suffers from indigestion and acidity of stomach which should be easily corrected by giving him 20 grs. bicarbonate of soda, a teaspoonful of powdered charcoal and a teaspoonful of fluid extract of gentian at a dose three times a day. Salt him well, change food and furnish him a few roots.

LIVE STOCK NOTES.

Reports from South Dakota state that the cattle on the ranges are looking exceptionally well when the shortness of grass is taken into consideration, the grass being of good quality. A good many cattle in the Black Hills region are fed on nothing but hay every winter and bring extremely good prices by the time they are marketed at Chicago. For the last two seasons it has been a very dry time in that part of the country.

Because of the discriminating buying that has grown up in the wool market where manufacturers purchase raw materials for the production of certain specified products, the honest packing and bundling of wool becomes an important feature and instructions are now being sent out by a wool trade association urging that these faults be mended for the general good of the trade, as buyers are now suspicious of offerings and are bidding for them upon the ground that fleeces are not what they appear to be.

David Gelvin, of Missouri, who marketed a consignment of ten car loads of cattle at Chicago on a recent Monday, is one of the largest farmers and stock feeders in the state, having fed at one time 1,000 cattle a year, and usually feeding from 600 to 800 annually. He remarked that there are fewer cattle feeding in northwestern Missouri than at any time during his thirty-five years' resi-

dence there. Mr. Gelvin is president of one of the best banks in that part of the country, and is owner of 5,000 acres of valuable land. He said: "Chief reasons for the decreased feeding are high cost of feeders, prospectively dear cost of corn and hay and fatal diseases thinning the ranks of hogs as not seen in that country in years. The scourge is sweeping whole herds out of existence. The cattle I had here today would not have been shipped for several weeks had not disease wiped out the hogs that were following them."

Most farmers are retaining their good cattle on the farm and confining their shipments in the stocker and feeder line to the poorer kinds, so that country buyers of either good stock steers or good feeders find it no easy matter to obtain such cattle, while such as are taken command pretty stiff prices. Most buyers in the Chicago market show a marked preference for well-bred weighty feeders, but these are apt to be held at higher prices than buyers care to pay.

Edward Merritt, of Kansas, knows of no cattle that will be fed this winter in his section of the country, whereas a year ago some 20 loads were fed in a district covering about five miles square. Hay is scarce and high, while the corn crop was a poor one, running only 20 to 30 bushels to the acre. Hog cholera made a clean sweep in the southwestern corner of Brown county, and the western half of the county does not have one-twentieth as many hogs as were fed a year ago.

Clay, Robinson & Company's Live Stock report has the following: "There are fewer sheep and lambs in Idaho than any time during the past ten years," remarked Mr. Bicknell of the well-known sheep firm of Bicknell & Gemmell, Idaho. There is also a decrease of 40 per cent in the Wyoming and Montana flocks, as compared with four years ago. Liquidation in the Dakotas has also been very heavy. Several causes for the big reduction in the northwest range flocks have been at work for the past four years. Severe losses in the winter and spring months, contraction of the range incidental to the encroachment of settlers, the higher cost of ranging, an unstable wool market and refusal on the part of many bankers to renew sheep paper are among the most potent reasons for the big decrease in western range sheep holdings. I have just received word from a well-posted flockmaster in the southwest to the effect that there is an unusually big number of fat yearlings and sheep in Arizona, New Mexico, and Texas due to exceptionally favorable range conditions for some time of late. Owners are in no mood to send their stock to market with prices on the prevailing low level. Unless there is quite a boost in rates, the great bulk of the stock will be held over this winter and sheared."

The feeder of Shamrock II. and Victor, the two grand champions from the Iowa State college at the last two Internationals, was born in Scotland about 30 years ago. His father was neither a feeder nor breeder, contrary to one's usual ideas of a Scotch feeder. At the age of twelve, however, young "Jack" went to work for McIntosh Bros., one of the largest firms of cattle feeders in the north of Scotland. The winner of the herdsman's medal has been herdsman at the Iowa station for the last four years, and it is not at all likely that he will change jobs soon if the Ames people have any say in the matter.

Fifty-eight loads of International carlot show steers sold in the twelfth annual auction at an average of \$11.05 per cwt., against \$7.77 last year, an advance of \$3.28 in face of current market basis of practically \$2.00 advance over this time a year ago. The 1911 average stands 39c lower than the record average of \$11.44 established two years ago, but in all was a phenomenal sale and the hundreds of cattle feeders, traders and packers' representatives who stood about the sale ring from the opening to the close of the performance agreed that the prices were entirely satisfactory to all hands concerned.

The hog market is showing its usual December weakness, which fact should impress upon breeders and feeders the desirability of the better distribution of marketing throughout the year.

BREEDERS' MEETINGS.

The seventh annual meeting of the American Milch Goat Record Association was held in the Pure-Bred Live Stock Record building on Exchange avenue, Union Stock Yards, Chicago, Illinois, Tuesday, Dec. 5, 1911, at 2 p. m.

After the usual preliminary work the secretary and treasurer's report was read and submitted, showing that the secretary had taken the matter up of importing milch goats from a number of countries of Europe, but after repeated efforts had failed to receive the necessary permits to import, both from United States government and the Canadian government on account of reports of the prevalence of foot and mouth disease in Switzerland, other countries of Continental Europe and England. And at this present time no importations will be permitted.

There were 94 new registrations of milch goats. Twelve new members were added to the roster. The industry with all the handicaps, is flourishing nicely.

A discussion of the rules was taken up which resulted in an amendment to Rule 6 by adding: "A buck that is from a sire and dam eligible to registry may be registered when satisfactory proof is presented to the secretary that such animals are worthy."

All members and others interested are urged to notify the secretary of all cases where breeders have acted dishonestly.

The following officers were elected for the ensuing year: President, W. A. Shafer, Hamilton, O.; vice-president, Prof. Francis King Cook, Winnetka, Ill.; secretary-treasurer, J. C. Darst, Dayton, Ohio.

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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

GROWING A BALANCED RATION ON THE DAIRY FARM.

At the present price of dairy products, especially butter, the dairyman could, if he did not have to buy feed, save some money to buy Christmas presents with, or pay his taxes in time to save the collector's fee. But when one has to take the check which he gets at the creamery and go to the elevator and pay his feed bill he has not very much left. That is, he has not as much left as he ought to have. Feed is too high. If we could grow all our feed on our own farms we dairymen would be more independent and would have larger bank accounts. Of course, when we consider the added fertility which we bring to our farms by purchasing outside feed, the disadvantage of securing feeds from elsewhere is lessened. One way to bring up a run-down farm is to stock it with dairy cows, raise roughage and buy grain. By buying the grain to feed the cows, carefully saving the manure and putting it back onto the soil, you can increase the available plant food and the plant producing power of the land. But it takes capital to do this and one must have some money at hand, or credit. But when his land is again in fairly good condition he hates to go over to the elevator every time he gets his creamery check and pay a big feed bill. What he needs more than any other thing to increase his independence is to raise crops that contain a larger per cent of protein than do the crops grown on the ordinary dairy farm. When he grows good crops of common red clover or alfalfa he will add protein to his roughage. Now we want corn silage in the ration because it is our cheapest food and it adds succulency to the ration. But clover or alfalfa hay and corn silage are bulky. Besides, these legumes are not rich enough in protein to balance up the carbohydrates of the corn silage; and also cows will not do well upon these bulky foods alone but must have in connection therewith a concentrated food. This concentrated food must be richer in protein than either corn or oats, the principal grains which farmers raise in this part of the country. If you feed clover hay, corn silage and ground corn and oats you are feeding an extravagant ration because you feed more grain than it is necessary to get the amount of protein required by the cow; consequently we have to buy cottonseed meal, linseed meal or wheat bran; and there has been so many people buying these supplementary feeds lately that the price is advancing year after year. They are getting so high that it takes about all of the dairy proceeds to buy them.

Now there is one crop that the dairyman can raise in Michigan which helps out in this respect, and that is common Canada field peas and oats. We are not after the oats so much because they are not especially rich in protein although they are a good dairy food. But we mix in the oats to help hold the peas up so that we could cut them with a self-binder. If we undertake to grow peas alone they will lodge and lay flat upon the ground and it is almost impossible to harvest them, but if we mix peas and oats together in equal parts by measure and sow them at the rate of about two bushels, or two and one-half bushels per acre, we can raise a crop that will stand up, providing a good variety of oats with a stiff straw is used. Then we can harvest them with a self-binder just as cheaply as we can an oat or wheat crop. And we have the machinery at hand to do it with. What we want to secure is the pea meal. Pea meal contains over 20 per cent of digestible protein. If we grow a crop where the seed is mixed equal parts of peas and oats by measure, allow this crop to mature, then harvest, thresh, and grind it, and feed as a grain ration, giving each animal as many pounds per day as she produces pounds of butter-fat in a week we will have just about as good a ration as a man can provide for a dairy cow and it will be a fairly well balanced ration. The cows will have sufficient protein so that they can do their best and the bulky and concentrated parts of the ration will be mixed in just about the right proportion. We can grow all of such a ration on our own farm, and will not have to go to the elevator every day to pay a big feed bill. But, the trouble is to get sufficient land to grow enough peas and oats and clover hay and

corn for silage to feed a good-sized commercial herd. I never have been able to do it. I buy commercial fertilizer and feed the land well to get big crops, but I have never yet succeeded in growing enough to make it unnecessary to buy outside feed. It takes a wonderful lot of clover hay and corn silage and peas and oats to feed a herd of fifty cows and the necessary young stock. Sometimes I think it would pay better to cut down the herd to suit the grain ration which can be produced upon the farm, but if you do that you have some waste roughage products, like pea and oats straw, and perhaps some shredded corn fodder to get rid of. If I could only find a way of increasing the yield of peas and oats it would solve the problem.

"ADULTERATED BUTTER" ACT MAY BE REPEALED.

The Chicago Butter and Egg Board and the National Creamery Buttermakers' Association have passed resolutions in favor of amending the moisture tax law. If these movements are given the proper support of the dairy interests it will result in an elimination of much of the present injustice in the administration of the so-called "Adulterated Butter Act."

The Chicago Butter and Egg Board, whose representatives had a conference recently with the Commissioner of Internal Revenue at Washington, D. C., has requested that the moisture law be amended by repealing that portion of the law which imposes heavy fines on grocers, wholesale merchants, and others found to have sold butter containing an abnormal quantity of moisture. This amendment means more to the small dairyman than at first glance appears to be the case.

Dairyman who have been unfortunate enough to have their butter seized by revenue officers and declared adulterated, unite in testifying that their troubles did not end when they had satisfied the demands of the government. The grocers, in whose possession the butter was found, quite naturally blacklisted the butter in question and the dairyman found his markets about ruined.

Of course, the large creameries who contract their entire output to wholesalers do not have much difficulty in re-establishing their trade. But the small dairyman and farmers who sell direct to the retailers have felt keenly the injustice of that part of the law.

No one has ever come forward to defend the practice of assessing a tax on dealers who have sold butter containing too much water. There is no defense. No grocer ever did so knowingly. It is impossible for him to test every lot of butter received. In fact, the government practically admitted it was wrong when, in the fall of 1910, the Commissioner of Internal Revenue issued confidential instructions to his agents that dealers were to be overlooked. The law was not repealed, but it has not been so severely enforced of late.

If the law is amended so as to exempt dealers, then the grocers will never have occasion to boycott the butter of any dairy that has offended the government by incorporating too much water in its product.

The National Creamery Buttermakers' Association, in addition to asking the repeal of that portion of the law placing a tax on dealers, has also placed itself on record as favoring the repeal of the ten cent tax on the product of a dairy when occasional lots are found to exceed the limit of 16 per cent moisture.

This is something that should also be given the support of the small dairyman. The injustice of the ten-cent tax is apparent to anyone. The man who makes beer, or whiskey, or oleomargarine, knows he is making a taxable product and he willingly pays his taxes. But no one is engaged in the business of making "adulterated butter." When it is made it is either through error, ignorance, or a deliberate attempt to defraud, and should, therefore, come under the pure food department.

The butter inspection work should be placed with the proper department. The Internal Revenue Bureau exists for the purpose of collecting taxes on businesses. There is no such business as "Manufacturer of Adulterated Butter." Butter inspection clearly comes under the pure food department.

L. L. DE BRA.

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THE BEST COW.

It seems to me that the cow contests being made in several of our sister states are not operated on the right basis. The prizes and awards are all given to the cow producing the most milk or butter-fat in a week, a month, or in a year. Now is that cow that will produce the largest amount of butter-fat or butter or milk in a given time the best cow? Is not the cow that makes the greatest profit the best cow rather than the one that produces the largest yield. It might be possible that the cow that produces the largest yield would also make the greatest profit, but this we do not know. Where simply the yield is taken into consideration the owner of the cow crowds her to the limit to make the maximum yield and does not take into consideration the profit. He is not after the widest margin between the receipts and cost of production. He is out to win the prize. I do not believe that a test conducted along this line is for the best interests of the dairy industry. Of what does it suffice if a man has a cow that will produce 1,000 lbs. of butter in a year but she makes no profit in doing so. We practical, every-day dairymen are interested in the profit which we get out of feeding the food produced upon our farms, to our cows. Then again, a cow can be fed too much grain which may stimulate her to an abnormal flow of milk for a given length of time, and one is liable to do that where he is simply feeding for yield. But where he takes into consideration the profit, a different question presents itself. Economical production is the basis of all dairy improvements, and I think that the cow tests ought to be carried on along the lines of the modern co-operative cow testing associations rather than for yield alone. The cow that will take a dollar's worth of food and make the most out of it is the one that the practical dairyman is interested in, not the cow that will produce a big yield on an abnormal ration.

Ordinarily, dairymen do not find it profitable to feed over a pound of grain for every three or four pounds of milk which a cow produces, or a pound of grain per day for every pound of butter-fat which she produces in a week. A cow, for instance, that produces 14 lbs. of butter-fat in a week would have 14 lbs. of grain a day, if she only produced 10 lbs. of butter-fat in a week she would only get 10 lbs. of grain each day. That is about as high as you can go with a grain ration if you want to make the greatest profit, but where these cows are put in a test with but the purpose of high production considered, they are fed abnormally. Some of them are fed as high as 20, 30, 35 and 40 lbs. of grain a day, and they are pampered and encouraged to eat grain to the exclusion of roughage in order to produce an abnormal amount of milk. Now this, I think, all will agree is not good for the cow. I don't believe it is good for her progeny. I would hesitate about buying a bull calf from a cow that had been fed in this way for any considerable length of time because I don't believe that that bull calf would be as vigorous or reliable a breeder, and I would hesitate also about buying a heifer calf from a cow that had been fed in this way. It's the cow that can produce, in a normal way, the largest amount of profit, and that can repeat year after year, that is the cow for the dairyman, and I think we ought to work for this rather than for excessive yields without taking into consideration the welfare of the cow or the economy of production.

A SUCCESS IN RAISING COWS.

The raising of good dairy cows for supplying dairymen who are living near the large cities and cannot afford to raise their calves to maturity, is a promising line of work for one occupying cheap land.

A young man of my acquaintance who has lived on a rented farm for the past six years has furnished a good example of what business sense, combined with thrift, can accomplish by raising the right kind of stock. He began farming on a 200 acre farm, for which he paid \$350 a year rent, with an equipment consisting of eighteen rather inferior dairy cows, six brood mares and barely enough tools to do good work. He managed to pay his rent promptly, hire what help he needed, meet his running expenses and accumulate quite a bunch of stock during the six years time of his lease. This month he bought a farm in an adjoining county and put all of his stock, tools and crops up at auction sale. The results of

this sale ought to dispel the illusions of some of the doubting Thomases who claim that this kind of farming don't pay here in the east. The results of his sale prove that stock raising on cheap lands in the east can be made profitable if the right man is behind the business. At his sale 10 horses and seven yearling and six-months-old colts sold for \$1,964. Forty-four dairy cows sold for \$2,192. Twelve young heifers sold for \$254 and a flock of ewes and lambs, about 60 head all told, for \$380. The farm implements, wagons and equipment about \$450, and in addition to all this he sold 60 tons of hay in the mow for \$14 a ton, or \$840, and expects his potato crop will bring \$1,625 at the car. In addition to all this he reserved one team, 12 head of pure-bred swine and a flock of about 100 fowls. Six thousand dollars worth of stock and crops from a rented farm in six years from a beginning of about \$1,500 does not show up very bad for stock raising in the east. Of course, it is only fair to admit that the growing of from 10 to 20 acres of potatoes was an important factor in this man's success, however, the cash returns from the potato crop were used to buy grain to feed to the stock on the farm and met the expenses of the business. This proved to me that stock raising is one of the best means any young farmer can practice to get a start towards buying a farm. A good bunch of stock put up at auction sale gives a man a bunch of money at one time. It beats the savings bank forty ways.

New York. W. MILTON KELLY.

UNHUSKED SWEET CORN IN RATION.

Would you please tell me how to make the best and cheapest ration for dairy cows, giving about 20 lbs. of milk per day, from the following feeds: Shredded corn fodder, oat straw, clover hay and a quantity of sweet corn cut before fully matured, which I have put in the barn without husking. For grain I have corn and oats and can purchase beans at \$1.40, middlings at \$1.50, and oil meal, cottonseed meal and dried beet pulp. The last three I do not know the price of but understand that oil meal is higher than usual.

Branch Co.

H. S. S.

Dry shocked sweet corn is a good feed for dairy cows. It is better than ordinary field corn when fed dry because sweet corn does not get as hard, it will be more thoroughly masticated and consequently better digested so there will not be as large a loss as there is in feeding shocked field corn. Then sweet corn stalks are sweeter, more palatable, and the cattle like them better, which goes a good ways. With a good feed of this unhusked sweet corn a day and a feed of clover hay I would not think it would be hardly necessary to feed corn meal in the ration. I should prefer to feed ground oats and wheat bran, or ground oats and oil meal, or ground oats and any feed that is rich in protein to help balance the ration. When you feed shredded corn fodder or oat straw in the place of either the clover hay or the unhusked sweet corn you will have to allow a different grain ration in order to have a well balanced one. For instance, if you feed shredded corn fodder and oat straw in place of the clover hay then you would want a larger proportion of cottonseed meal, or linseed meal mixed with your ground oats in order to keep up the amount of protein in the ration, and if your sweet corn does not hold out and you feed clover hay once a day and this shredded fodder and oat straw takes the place of the unhusked sweet corn then it would be best to add ground corn in the ration. If you would mix 200 lbs. of corn meal with 200 lbs. of ground oats and 100 lbs. of either cottonseed meal or linseed meal it would probably add sufficient protein to make a good profitable ration. Cottonseed meal and linseed meal are always high compared with some other foods, but when we want these foods to help balance up a ration and look at them from the standpoint of the digestible protein which they contain they are not so dear. For instance, what bran contains about 12 per cent or 13 per cent of digestible protein while cottonseed meal contains 35 per cent or 36 per cent. Therefore, to feed in connection with timothy hay and shredded corn fodder a ton of cottonseed meal would be worth as much as three tons of bran to help balance the ration. That is, one pound of cottonseed meal in the grain ration would be equivalent to three pounds of bran. Thus considered, the price does not seem so high.

I believe the best rule for feeding dairy cows a grain ration is to mix the grains to properly supplement the roughage to give a balanced ration, and then feed each cow as many pounds of this grain

per day as she produces pounds of butter fat in a week. I do not believe that we can find any more rational rule than this to guide us in feeding dairy cows.

As you have no succulent food in this ration I think it would be a good plan to feed dried beet pulp. Moisten it a few hours before feeding, and mix it with the other grain at the time of feeding. Or you could feed each cow the same amount of moistened beet pulp, using it as a kind of basic ration, say feed about four pounds to each cow and then feed the balance of the grain ration corn meal, oats and cottonseed meal upon it. Beet pulp used in this way will give excellent results on account of its succulency.

TOO LITTLE PROTEIN IN RATION.—CEMENT GUTTERS.

I would like to ask Colon C. Lillie what is the matter with my cows. I am feeding them shredded cornstalks in the morning and at noon timothy hay, at night cornstalks again for roughage. The grain ration is sugar beets, oats and corn grown with the cob, in the morning and also at night; they seem to be falling off with the milk. I have a new cow barn and made my gutter too small. It is six inches deep and one foot wide. Do you think I could cut four inches off from the side and not hurt the gutter or cement? I could sell my timothy hay and buy clover but can not buy clover very well. Bay Co. S. W.

With only shredded corn fodder and timothy hay for roughage and corn and oats for a grain ration, I think the cows are not getting a sufficient amount of protein to produce the maximum flow of milk. Sugar beets are an excellent addition to the ration for their succulency, but they, too, are deficient in protein, which makes the whole ration an unbalanced one. I would recommend that you add either cottonseed meal, oil meal, or gluten feed to this ration. I would say, mix the ration in the proportion of 200 lbs. of corn and cob meal, 200 lbs. of ground oats and 100 lbs. of either cottonseed meal or linseed meal. Feed the cows as many pounds of grain per day as they produce pounds of butter-fat in a week. Or you could feed a pound of grain for every three pounds of milk which they produce a day.

With a gutter six inches deep and one foot wide, I hardly think it would pay to go to work and chisel off six inches more of a good cement floor. Of course, it can be done by taking the time and you can make a good floor, although I don't think quite so good a one as you have now; but it seems to me that a gutter a foot wide and six inches deep is a fair sized gutter. I know of a great many dairymen who would consider this gutter amply large enough.

If you can buy clover hay I think you could make money by selling your timothy hay at the present market price and buying clover, but as you say, there is little opportunity to get clover hay, consequently you will probably have to feed the timothy and you can make a good ration if you will only add a feed rich in protein in the grain ration to balance it up.

WILL IT PAY TO FEED COTTONSEED MEAL?

In dairy farming, does cottonseed meal added to corn and oats ground together, produce a larger flow of milk than corn and oats alone?

Livingston Co.

G. B.

Whether it will pay to feed cottonseed meal in connection with ground corn and oats depends entirely upon the roughage part of the ration. If you have got clover hay or alfalfa for the roughage then I should say that you would not need cottonseed meal, or only a very little of it anyway. But if you have timothy hay and corn fodder and straw then I believe it would pay to mix cottonseed meal with the ground corn and oats. In other words, if your cows are not getting sufficient protein now to balance up the carbohydrates of the ration then they should have cottonseed meal or linseed oil meal or some other feed rich in protein to balance up this ration. But whether or not they are getting sufficient protein all depends upon the roughage that you are feeding. In order to get a balanced ration with ground corn and oats you would have to have a roughage of almost entirely clover hay or alfalfa hay, otherwise it would pay to feed cottonseed meal.

Searchlight on Some American Industries, by James C. Mills. This book is pre-eminently a Michigan book as it deals with the sugar industry, also the lumber, salt, leather, rubber and paper industries, about which everyone is more or less concerned. It is fully illustrated, contains 300 pages, is bound in cloth and can be secured through the Michigan Farmer offices at \$1.50 per volume. Published by McClurg & Co., Chicago.

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POULTRY

VITALITY IN BREEDING STOCK.

Haphazard selection of the breeding stock is often directly responsible for poor results in hatching. Unless the breeders have vitality we cannot expect them to produce chicks which will live and thrive.

Inbreeding should never be practiced whenever possible to avoid doing so. By inbreeding we lower the vitality of the offspring and make them easily susceptible to disease. Line breeding, if systematically carried on, will produce good results, but one must exercise extreme caution. Unless one has had considerable experience in mating fowls line breeding should not be attempted. Outcrossing will produce better results, especially for beginners. New blood can more easily be introduced through the male side. By procuring a cockerel or cock-bird the farmer can get good results from mating with his own females. One must have the assurance, however, that the male bird procured from outside possesses health and vigor, and that he has at no time been infected with disease. Fowls that have had rump have a tendency to transmit the disease to their offspring.

Under no consideration select fowls for breeding purposes that have had a setback at some time or other during their growing period—that have failed to develop naturally and steadily from the time of hatching until full maturity has been reached. It often happens that chicks will stand still for a few weeks but, by forcing them later with extra feed, they sometimes develop into full-sized fowls. Such are all right for the production of market eggs but must not be used in the breeding pen. They are lacking in vitality to some extent, and this is apt to show in the offspring. Chicks that fail to develop steadily should be punch marked so they can easily be distinguished when the time for selecting breeding stock arrives.

Breeding stock must have the best of care but must not be pampered. Roughing it to a certain extent will do them no harm as it all makes for health and vigor, and this we must have if we expect them to produce hatchable eggs—eggs that will hatch vigorous, livable chicks.

Keep the breeders busy. Make them exercise. Idleness is not conducive to a high percentage of fertile eggs. Throw all whole grain in the litter and make them work for it. Do not overfeed but, at the same time, give them enough. They should be hungry enough to be on the lookout for food when feeding time arrives. If they seem disinclined to scratch in the litter the greater part of the day, scatter coarse beef scrap on the floor. This will induce exercise when nothing else will.

Indiana. O. E. HACHMAN.

THE INCUBATOR AS AN AID IN INCREASING PRODUCTION.

Many poultry farmers do not attempt winter hatching, but if you have the proper facilities raising chickens in winter is a very profitable branch of the work and one subject to little competition. After the hens are through moulting and have begun the next season's egg campaign, their eggs are at their highest vitality. With forcing, the winter hatched chicks can be brought to a marketable size in a remarkably short time and will secure for you the prices that an undersupplied market always makes.

While there are few farms equipped with such facilities, it might furnish good employment and profit to the farmer during the months of comparative idleness, and the expense need not run into the thousands or hundreds either. Remember when securing your equipment that you don't market it, so be economical and reap the larger profit.

If you start hatching in the spring, let it be early, March 1 being none too early to pull off a hatch. In all my incubator experience my March hatches have been the winners. Another thing, you usually have more time than later in the season, and if the weather is cold the chicks become so hardy that you can hardly kill them with a club.

Loss Through Remissness.

I cannot help feeling strongly on this subject. With the natural advantages that the farm presents for egg and fowl production, I feel that the farmer is losing a big bunch of easy money every year through lack of sufficient flocks. In

a majority of cases it is caused by the remissness of the old hen in providing the families. It is a sort of limited "race suicide," which can only be remedied by the incubator route.

To those who don't employ them and yet wish to raise chicks, I would say, get one and give it a fair trial. It is easy to condemn what we don't understand, to say that we don't believe in it, and to find apparent proof of our belief, which reminds me of something I witnessed in a local "picture show" not a thousand years ago.

In a seat ahead of me sat a very opinionated old gentleman who contended that there was no such thing as a moving picture, and that the things were real: that it was all done to fool gullible people and, incidentally, get their money. This evening his family had gotten him, by hook or by crook, to come to a performance. The old fellow watched the moving pictures without committing himself, up to the vaudeville act. This happened to be an act in which one of the actors, or rather "acters," threw his headpiece into the crowd, which headpiece, in this instance, hit the old man. He turned in triumph to his mistaken (?) family with a "Huh, didn't I tell you That hat a picture, eh! Didn't I tell you they were real folks?" Now this man will never be convinced that he didn't "show up" moving pictures. In like manner the incubator has been knocked, ridiculed, sometimes, I fear, cursed, but it has kept right on hatching chickens.

A Word to Beginners.

A few suggestions to those who contemplate trying an incubator for the first time this winter may not be out of place here. In the first place, be sure to get a good incubator. If you know someone who has had success with one, buy one like it. Learn all you can about running it, that is, all he will tell you and that will be considerable, as these poultry keepers are a garrulous lot. Get your machine and put it together. Study it until you learn it by heart. Try it out while empty, putting your thermometer in different places on the trays to see if there is any variation.

When you get things right, make sure that your thermometer is correct. It may have been recommended as tested and correct, and probably is, but make sure of it; test it by the side of your successful neighbor's. An unreliable thermometer has spoiled many a good tray of eggs.



The Incubator Affords the only Means of Materially Increasing the Output of Poultry and Poultry Products at any Season of the Year.

This is something that incubator makers ought to be very careful about, and they usually are, but one gets broken somewhat and then we are sometimes tempted to buy a cheap one.

The location of the machine is another very important factor in the successful operation of the incubator. The cellar is used by many. As a whole, I do not think the average cellar suitable; yours may be, but how about the other fellow's? A cellar is usually too damp and poorly ventilated. The latter point must always be considered, for poor ventilation spells poor hatches. The spare room, preferably a north one, makes a good location. Isabella Co. WM. J. COOPER.

FEEDING CULL BEANS TO HENS.

In the December 9 issue of the Michigan Farmer W. J. L. of Sanilac county, asks for suggestions regarding the use of cull beans upon the farm. I have found that cull beans make a very desirable addition to the ration that I feed to laying hens. The method followed in pre-

paring the ration is that of cooking the beans thoroughly and mixing them with corn meal. The beans are cooked to a thick soup and then is stirred in all the corn meal that can be gotten into it.

I seem to get best results from feeding this ration once a day and giving, twice a day, a ration of whole grain, consisting of wheat, oats, corn and buckwheat well mixed.

Ottawa Co.

N. B. SPENCER.

FEEDING FOR EGGS.

Unless all the elements for the formation of eggs are put into the hen's body she cannot be expected to lay well. If the supply is stunted, or if unsuitable foods are given, eggs probably will be conspicuous by their absence. It is my practice to give a warm mash the first thing in the morning, while in the afternoon hard grain is better. When the crops and intestines are empty, an easily and quickly assimilated food is needed, while in the afternoon food that requires a longer time to digest may be given. A suitable ration for morning use consists of the following: Three parts barley meal, two parts toppings (also known as middlings, pollard, sharps, seconds and thirds, two parts bran, one part pea or bran meal, one part corn meal, and half a part of meat. A simpler mixture consists of one part toppings and two parts barley meal, but I think it is worth while going to the extra labor of preparing a rather more elaborate ration. For afternoon feeding wheat and barley are the most suitable grains, with the addition of a very little corn during severe weather.

Other Items in the Diet.

Green food is naturally scarce during the winter months, but, whether the fowls are kept in confinement or are allowed their liberty, it is very beneficial to supply them with this necessary item. Unless the hens receive a liberal quantity of green stuff they are unlikely to lay well, and they are much more liable to become unhealthy. The effect of green food is to keep the blood cool and the internal organs in good working order. If ordinary green food is scarce a substitute should be provided, and I know of nothing better than steamed clover chaff. It should be steamed for several hours and then mixed with the morning mash. A mangold or turnip, cut in halves and



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HORTICULTURE

ANNUAL MEETING OF THE STATE
HORTICULTURAL SOCIETY.

(Continued from last week).

Wednesday morning the program was resumed by the presentation of a paper on the

Controlling of Fruit Diseases,"

by Edward Hutchins, of Allegan county. Mr. Hutchins prefaced his treatment of the diseases of yellows and little peach by the statement that if we did not have to work for what we get we would not appreciate it. Mr. Hutchins stated that although the yellows had been very virulent in his locality for twenty years, peach growing has continued to thrive. The little peach has been worse lately than the yellows, and is not so readily detected, as other causes may also produce a similar appearance. Its first symptoms are a sickly, dryish appearance of the foliage and the leaves become flattish with some smaller ones on the inside of the tree. Symptoms of root aphid may be quite similar. When detected the little peach trees are cut out, the stumps dug the following fall and another tree set in the spring. In Saugatuck township where the peach yellows were eradicated very thoroughly several years ago, the disease has not been very troublesome since, but is getting in again. The danger of infection from nursery stock is not presumed to be great, as the disease seldom develops in less than three years from planting. Infection from pests is questionable but trees may become infected in the nursery row. Trees may be replanted the next spring after removing affected trees, with little danger. In controlling yellows and little peach there must be a healthy public sentiment, as well as careful commissioners. In discussing the subject Mr. Hutchins gave an opinion that he did not believe the disease was contagious at the time the very first symptoms appeared in the tree, or that there was likely to be a contamination from trees cut and left in the orchard for a short time after the leaves have dried down. Just when the disease spreads is not known. Mr. Crane thought the yellows law should be so amended as to allow the digging and burning of the trees to follow later after the cutting, as the grower could get time. Mr. Farrand stated that the law would not allow inspectors to cut trees for scale unless they were practically worthless. Mr. Hale remarked that he had seen two-year-old peach orchards wiped out with the yellows. On sandy soils the root aphid is likely to cause considerable trouble. Mr. Morrill stated that if the aphid tree is dug up, the hole filled with stable manure, and this covered with soil and left until spring, that further trouble will be prevented.

Five-minute talks by the senior class in horticulture of the M. A. C. were given under the direction of Prof. Eustace. These talks are in competition for prizes of \$15, \$10 and \$5, offered by the society.

Mr. Bancroft, of Lansing, in his talk on "Western Methods," described the handling of the apple business in the Yakima, Hood River, and Grand Junction districts. He spoke of the disadvantage of fighting frosts, of irrigation, and of high freight rates—75 cents against our 25 cents. Thorough culture is given, alfalfa being a common cover crop. The trees are opened up to admit light and ladders. They thin heavily, prune heavily, and spray thoroughly. The box is used almost entirely. One man, after traveling 23,000 miles looking for orchard propositions invested in Michigan.

Mr. Branch's talk was along the line of supplementary employment that can be combined with fruit-growing to advantage and profit. He suggested poultry and bee keeping as adjuncts to the fruit business. Poultry work comes when the fruit work eases up, they destroy curculio, and furnish fertilizer. The importance of bees to fruit growing is well known.

Mr. Chrysler spoke of the apple scab, explaining it from a diagram. It was shown to be a minute plant which works upon both leaf and apple. It first causes raised spots on the lower side of the leaves, which later turn darker. It may crack the epidermis and allow rot spores to enter. A cool, moist season is most favorable for the development of scab.

Mr. De Graf gave the history and description of the San Jose scale, stating that it originated in New Jersey in 1893. There are about four generations per year and if there were none destroyed

one scale would breed several million in a year. Lime-sulphur is the chief remedy used.

Mr. Edson, in speaking of the pear blight, told of the three forms the disease takes, namely, twig or fire blight, limb canker, and body canker. About one-third of these live during winter. Bees get in the sticky liquid exuded and infect other trees through the blossoms. This causes the twigs to die back, causing the twig blight form. This should be cut back a foot below the infection, and the stub disinfected with a one to one thousand solution of corrosive sublimate, and covered with tar or paint.

Mr. Gardner spoke of the life history of the codling moth. It is a native of Asia, and spends its winters in the larval stage beneath scales of bark or rubbish. Cocoons are one-half inch long. They change and produce caterpillars that lay eggs in May or early June. These hatch in about two weeks, and 80 per cent go in at the calyx end of the apple, and later eat through the side, and go to the ground. Of the second brood 80 per cent enter at the side mostly, where two apples or an apple and a leaf touch. Arsenate of lead is the best poison for the larvae of the codling moth.

Mr. Kirby spoke of the "Organization of Fruit Growers," giving something of the manner of conducting the co-operative fruit organization of the west and telling of their success in securing good packing, good markets, good prices and a good reputation. He states that thus far they had not been very successful in Michigan, principally because the growers were too distrustful of each other and did not wish to pay a price which would enable them to secure a competent manager. If co-operation can be successfully worked out in this state it will enable growers to secure cars and storage facilities, help orchard inspection and prevent gluts in markets.

Mr. McDermid spoke of the brown rot of cherry, plum, and peach, illustrating the growth of this fungus and the method of reproduction by means of spores. These spores, or seeds, are carried over winter in dried, or mummy, fruits, and begin their work in the spring. It may destroy twigs as well as fruit and the spores may live over in either. Self-boiled lime-sulphur, eight pounds lime and eight pounds of sulphur to fifty gallons of water is the best spray known.

"Cover Crops" was the subject chosen by Mr. Munn, who laid stress on the importance of a good mechanical condition of the soil due to humus aided by cover crops, this being as important as the addition of chemical fertilizer. After reciting the uses of cover crops, such as holding snow, preventing excessive freezing and thawing, washing, etc., the speaker stated that an ideal cover crop should make a good growth in the fall and stand the abuse of picking and should grow in the spring also. The legumes are generally preferred, the one now in most favor being winter vetch, of which 18 to 30 pounds of seed should be sown to the acre.

Mr. Shoensner explained "How Lime-Sulphur Kills the Scale." He stated that growers hadn't concerned themselves so much about how it killed them so long as they were "sure dead." Some have believed that it is a caustic action upon the scale, others that the breathing pores are clogged and the scale suffocated. Neither belief is fully right. Dr. Shaffer has worked out the theory that since the lime-sulphur is continually changing by taking on oxygen, that this action from the little ring of lime-sulphur surrounding the scale slowly draws the oxygen from beneath the scale cover and smothers the louse, or scale, beneath the shell. He was led to this belief by experiments such as saturating blotting paper with lime-sulphur and placing it beneath a bell jar and found that the oxygen was removed from the air beneath it. Then he tried to see if the scale would live in nitrogen alone and found it would not. From these and other experiments he concluded that the death of the scale was due to the absorption of oxygen from the air it breathes by the lime-sulphur.

Mr. Smith was well fitted to handle his subject, "Orchard Conditions in New York," by having spent some time in New York orchards. Baldwin and Greening are the varieties most grown. Cold storage plants are numerous. Hilton, N. Y., ships more apples than Washington and Oregon combined. There is little danger of over production as the production per tree has decreased to one-sixth its former amount, while consumption has increased in a corresponding or greater ratio. Co-

operation has not proved a decided success as there is too much poor fruit marketed.

Mr. Taft's subject was "The Peach Tree Borer." He called attention to the fact that the insect also works in the plum and the cherry. The eggs hatch in June and the little larvae enter the bark near the ground and begin work. They work until cold weather, are quiet during winter, and work again in the spring. They should be dug out in fall and spring.

Three judges were appointed, who conferred the prizes of \$15, 15 and \$5, donated by the society, upon Mr. Shoensner, Mr. McDermid, and Mr. Gardner respectively.

Business Session.

At the business meeting of the society which followed, Treasurer Garfield of the Lyon Memorial Fund, reported the total assets in this fund to be \$9,257.12.

Treasurer Satterlee reported balance on hand, December 8, 1910, of \$342.53.

Secretary C. E. Bassett reported that the society now numbered, counting the members of the auxiliary societies, nearly 2,000, that four local societies had been organized during the year and several trips made to other states. The plan of the monthly bulletin was explained.

T. A. Farrand, of Eaton Rapids, was re-elected president; C. E. Bassett, of Fennville, secretary; Jas. A. Satterlee, of Lansing, treasurer, and Chas. F. Hale, of Grand Rapids, and H. J. Eustace, of East Lansing, were re-elected members of the executive board.

Wednesday afternoon's session began with a paper by S. B. Hartman, of Athens, on "Renting Orchards as a Business," followed by considerable discussion. If space permits we will give this topic later.

Packing and Selling Michigan Apples in Boxes,

was the topic discussed by A. M. Bullock, of Lapeer. Mr. Bullock stated that the worst thing about the barrel as a package is its reputation as a convenient container of poor fruit. Customers have become afraid to buy fruit in barrels unless they know the packer. The box is not presumed to be used for poor fruit, and inspection is more easily made. The commission firms and buyers discourage the box as a package for Michigan fruit, and storage companies charge the same for storing a box as a barrel. They claim that they can sell a barrel as readily as a box and hence discourage the smaller package. The method of making the common box packs was illustrated and described, including the manner of placing the tiers, using thinner apples at the ends to give the bulge, putting some layers on the side if necessary, use of labels, stencils, etc. The speaker sells considerable fruit to private customers but thinks the cost of so doing nearly equal to that of handling through a commission firm. He believed that the same grade of fruit packed in barrels and sold through commission firms would bring about the same as if packed in boxes. This was also the experience of several growers present.

The discussion of the box vs. the barrel as a package for Michigan apples, was very spirited, and many interesting points were brought out. Mr. Rowe suggested that at the next meeting of the society a western packer be secured to demonstrate packing in boxes. It was suggested that it was Michigan apples we want packed and not western apples. Several growers suggested that the expense of packing in boxes was greater and that the box was more likely to be injured in transit than the barrel, and that the commission men and buyers did not want them in boxes and would not give any more for them packed in this way. Mr. Rowe stated that he knows positively that a number of Chicago buyers buy Michigan and New York apples in barrels and during the winter repack these in their basements, putting the best in boxes and selling for western fruit, and that they do not want growers to pack in boxes as they want this work for their men during slack times. Mr. Friday said he knew of the opposite being done also. Mr. Fraley wished to know why commission men don't pack our apples in boxes when they buy them if they sell better this way. In general, the packing and not the package was considered at fault. Mr. Bullock used boxes 11 1/4 x 11 1/4 inches. Some families preferred boxes, as they could keep them in the attic. Good packers were difficult to secure.

Fruit Farm Cold Storage Buildings was the subject of a paper by Prof. Eustace, of the M. A. C. Prof. Eustace stated (Continued on page 572).



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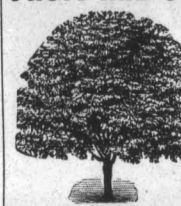
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WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit, brought against any subscriber to The Michigan Farmer by the publisher of any farm paper, which has been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

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The Lawrence Publishing Co.,
Detroit, Mich.

DETROIT, DEC. 23, 1911.

THE MICHIGAN FARMER FOR 1912.

The character of the Michigan Farmer is too well established and too well known among the farmers of Michigan to make an elaborate outline of our detailed plans for the ensuing year necessary or of interest. It is sufficient to say that the plans contemplate not only the maintenance of the paper on the high plane of excellence which has so firmly established it in a territory in which it is practically without a competitor, but as well to continue the unvarying policy of improvement which has been followed by its publishers from year to year.

A New Department.

Perhaps the most important of the initial improvements which have been inaugurated in the present fiscal year is a new Practical Science Department, through which a practical short course in scientific agriculture is presented to our readers in short lectures which will appear in each issue during the season intervening between now and next spring. Coupled with this educational work of undoubted value, we have established a Farm Laboratory in which chemical analyses will be made, where such analyses are necessary to the rendering of intelligent answers to scientific questions. Interesting laboratory reports will be published from time to time and in addition the principles of economic feeding will be elaborated upon from a scientific standpoint in the columns of this department, which is under the supervision of Dr. Floyd W. Robison, well-known to Michigan farmers as a former Experiment Station Chemist, former State Analyst and Attache of the Bureau of Chemistry of the United States Department of Agriculture. There is no other man in the country so well equipped to conduct such a department, which is an entirely new department for any agricultural paper and a feature for which we hope much in the way of beneficial results to our readers during the ensuing year. Science is now being applied to agriculture as never before and it is our hope that every reader of the paper, and particularly every young man and young woman of the farm home, will interest themselves in this department, since we know that it will contain much which will be valuable and helpful to them in their after lives.

A Year for Progressive Work.

Not alone in this new department of the Michigan Farmer have we planned

on a campaign of progressive work, but as well in every other department of the paper. A special topic which will be given greater prominence than ever before is that of Economical Marketing. The high cost of living is a problem which is demanding the attention of our statesmen and economists, as well as that of the great majority of the consuming public. Heretofore, the ultimate consumers in our centres of population have very generally blamed the high cost of living to an unreasonable profit on the part of the producers. They are, however, becoming educated to the fact that the difficulty lies not with the producer but with the distributor of food stuffs. Nothing is more essential today to the increased welfare of the producer and consumer alike than a more economic method of distribution between the farm and the consumer, and it will be our aim during the coming year to specialize upon every phase of this subject in a manner which will prove of the greatest possible benefit to the farmers of Michigan. This does not mean that other important industrial and civic problems will be neglected, but simply that a special effort will be made to elucidate this problem in a manner which will be especially helpful to our readers.

Specialized and Diversified Agriculture.

In no state of the Union has specialized agriculture along certain lines made more rapid advances than in Michigan. Michigan is first in the production of a number of important crops, second in several others which are leading staples in the country, but is second to no other state in the Union in the diversity of its agricultural products or the adaptability of its soil and climate to diversified farming. For this reason the numerous departments maintained in our paper will be so conducted as to be of value, not alone to the specialist but to the general farmer as well. No matter in what line of agriculture he may be specializing or no matter how great a diversity of products he may grow, something of special interest will be found in each number of the Michigan Farmer for everyone who follows the profession of agriculture in any section of Michigan.

Special Service.

Not only in a general way does the Michigan Farmer stand ready to be helpful to its readers, but offers special service along various lines absolutely free of cost, such as the answering of questions relating to any department of practical agriculture, to scientific problems, questions with regard to economic feeding, and the veterinary questions which may be submitted by any reader. Aside from this, our crop reporting service is of special value and our market feature is alone worth more to any Michigan farmer than the subscription price of the paper.

Our Correspondents.

These are too numerous to make it practicable to give a list of them here, nor would such a list prove interesting to those who are acquainted with the paper or instructive to those who are not familiar with its pages. We have several hundred correspondents, men who are leaders in the special lines of agriculture which they follow. They are located in every section of the state and include many agricultural experts from outside the state. This list is constantly being increased as new authorities develop and will continue to include in the future, as in the past, the best available writers in the various lines of agricultural endeavor.

Our Aim and Purpose.

Our aim and purpose for the ensuing year will be to not only continue to make the Michigan Farmer a practical clearing house of ideas and experiments for its subscribers, but an educational factor which will be second to no other influence in the betterment of Michigan agriculture. In addition to the special features above outlined, timely topics will be handled in season, or a little ahead of the season so as to make the subject matter contained of greater economic value to our readers. In addition to the educational features above noted, the Magazine Section and our special Women's Department will be continued during the coming year along similar lines to those followed since the establishment of these features, with the betterment experience has made possible. Thus there will be not only instruction but profitable entertainment for every member of the family, within the pages of the Michigan Farmer during 1912, and those pages will not only be greater in number, but more instructive and interesting than ever before since the establishment of the paper in 1843.

CURRENT COMMENT.

Our first page cover "Merry Christmas." was designed with a view to its suggestion of Christmas cheer, to which purpose no theme lends itself more readily than the time-honored fable of "Santa Claus" journeying about with his reindeer and a sleigh laden with gifts for expectant children. Christmas giving, as thus typified, brings to others an unmeasured cheer, making the Christmas season a merry one to all. The custom of Christmas giving is indeed a happy one, well suited to the event which the day commemorates. So let us one and all enter into the spirit of Christmas giving, to the end that all with whom we come in contact may have a very merry Christmas, which time-honored greeting we sincerely extend to every Michigan Farmer reader.

A Lesson in Co-operation.

In another column of this issue will be found an account of how a number of Antrim county farmers co-operated in the sale of their turkey crop for the present year, thereby eliminating at least one middleman's profits in the process of distribution, and adding very materially to the proportion of the consumer's dollar which they, as producers, received. This is a most striking illustration of the benefits it is possible to derive from co-operation along lines of community production.

In this case, the local Grange took the initiative and was joined in the movement by the other local farmers' organizations and individuals who were progressive enough to foresee the advantages in this kind of co-operation. The local farmers' organizations throughout the state can very profitably be made the unit of organization for co-operative purposes, especially in any community where special cash crops are grown on a considerable scale.

The labor of arranging details in co-operative enterprises, such as the one described in this issue, can be very materially reduced where a local Grange or some local farmers' organization takes the initiative in the movement. However, with the present development of rural telephones it would not be difficult to secure co-operation among a very considerable number of producers along any special line for the joint sale of their products, if some interested producer would but take the initiative in a movement of this kind.

Co-operation along lines of community production has been most successful in foreign countries and in this country wherever it has been tried, and work of this kind is growing rapidly throughout the United States. The problem of the high cost of living is exercising the consumers in our centers of population as never before. Various efforts have been made to shift the responsibility, but public opinion, as usual, is centering upon the true cause for present conditions, which is the excessive cost of the distribution of food products under present methods.

Organizations are being formed in various cities by consumers for the purpose of securing cheaper food products. In the city of Detroit an organization known as the Consumers' League is making some experimental efforts along this line. This movement is in line with good economy from the consumers' standpoint, but not more so than co-operative organization for the joint selling of products on the part of producers. It is well that such organizations be effected at both ends of the line in order that the greatest possible reduction be made in the cost of distributing food products, thereby cheapening the cost of living to the consumer and increasing the proportion of the consumers' dollar, which is secured by producers, to the profit of both.

This is a good season of the year to think and act along these lines. There is room for thousands of co-operative enterprises among the farmers of the state and in any case where such an enterprise was successfully conducted, as was the one described in this issue, it is certain that such efforts will not be abandoned, but that they will progress along the same and other lines to the great benefit of our agriculture.

In another column of this issue will be found an expression from a substantial and thinking farmer living in one of the most fertile farming sections of central Michigan. He notes with apprehension that large numbers of foreigners, particularly Bohemians, who are brought to the sugar beet

producing sections of the state to help in caring for the crop, are, through their industry and frugality, purchasing sugar beet lands on contract with a small payment down and, by the united work of all of the members of the family in the field, paying for them without the lapse of a single contract.

Apparently, his fears for the future have been aroused by the fact that these foreigners are colonizing certain neighborhoods and organizing their own societies and establishing their own churches. It would appear, however, that there is less occasion for fear of the future in such colonization of rural communities than in the amalgamating of foreign settlements in our large cities, which has been the inevitable result in the trend of foreign immigration to the large centers of population where the immigrants are needed and employed in the performing of menial labor in connection with the development of public utilities, for which American born labor is not available.

So long as our laws for compulsory attendance of schools are enforced, a most potent influence will be in operation for the complete Americanization of the children of these immigrant workers. There are so many examples of the potency of this influence that we can hardly doubt its effective operation in all rural districts. Ordinarily, and strangely as the second or third generation of the descendants of these European immigrants are found to have neglected the acquirement of even the language of their fathers and to have become substantial and desirable citizens, differing perhaps in their social customs and religious affiliations from the native-born Americans of the same community, yet possessed of many sterling qualities which make for a desirable type of American citizenship. The gradual growth of these rural colonies makes this process of Americanization possible and is the saving factor of the problem.

So far as their competition is concerned it should not be considered a serious problem. True, the American farmer will not follow the laborious methods of these immigrant settlers, but his superior intelligence will aid him in the battle for economic supremacy. There is little danger, in our opinion, of the American-born farmer losing his place as the leader in the larger agriculture of the country. It is but natural that the bringing in of these agricultural laborers, who have come from the agricultural sections of Europe, for the solution of the labor problem in the growing of a special crop like sugar beets should result in many of them taking economic advantage of the opportunities offered to profit by their industry and frugality by going into the business on their own account. There would appear to be no other solution for the social problem involved, than to do everything within our power to make our new neighbors the best possible American citizens in the shortest possible space of time.

Economic Results of agitation and the Cold Storage.

As a result of the pending legislation affecting the cold storage business, exhaustive investigations have been made by the United States Department of Agriculture during the past year, the results of which were incorporated in Secretary Wilson's annual report recently made public. Information from which the deductions contained in the secretary's report were made, was obtained from schedules which cold storage warehousemen were asked to fill out by the department. These schedules included statistics with regard to quantities of the different kinds of food stuffs received into cold storage and the quantities of deliveries to owners, month by month, covering a period of years, the first quoted price of each month being taken as far as October, 1880.

These investigations covered the commodities of fresh beef, mutton and pork, dressed poultry, butter, eggs and fish. The two years completely covered by the investigation began with March, 1909, for dressed poultry, eggs and fish, and with May, 1909, for fresh beef, mutton, pork and butter. Secretary Wilson's report on the result of this inquiry shows that the principal months when fresh beef is placed in cold storage are September, October, and November; mutton, August, September, and October; butter, June, July, and August, and sometimes May; eggs, April, May, and June. Pork is quite well distributed throughout the year. Poultry is made up of divers elements; broilers go into storage early in the spring and roasters in the early autumn; November, December, and January, and

sometimes October are the heaviest storage months. With regard to fish there seems to be no regularity in the heavy cold-storage months; most of the fish is received fresh and is frozen, and after the lapse of some time is sent to warehouses at places of consumption, where it is stored again. These two periods of storage are combined in this investigation.

During the three heavier cold-storage months of 1910-11, 47 per cent of the fresh beef placed in cold storage during the whole year was received into the warehouse; 59.3 per cent of the fresh mutton, 59.2 per cent of the dressed poultry, 70 per cent of the butter, and 79.4 per cent of the eggs.

It is established by this investigation that 71.2 per cent of the fresh beef received into cold storage in the year 1909-10 was delivered within three months; 28.8 per cent of the fresh mutton, 95.2 per cent of the fresh pork, 75.7 per cent of the poultry, 40.2 per cent of the butter, 14.3 per cent of the eggs, and 35.5 per cent of the fish.

The percentage of receipts delivered in seven months is 99 for fresh beef, 99.3 per cent for fresh mutton, 99.9 per cent for fresh pork, 96.1 per cent for poultry, 88.4 per cent for butter, 75.8 per cent for eggs, and 64.9 per cent for fish.

The fresh beef received into cold storage during the year beginning with May, 1909, was kept there on the average for 2.3 months; the fresh mutton, 4.4 months; the fresh pork, 0.9 of a month, and the butter, 4.4 months. The poultry received during the year beginning with March, 1909, was kept on the average 2.4 months; the eggs, 5.9 months; and the fish, 6.7 months.

The important fact brought out by the results of this investigation is that cold storage products are practically all exhausted within eight or ten months of the period of storing, while by far the larger percentage is distributed within from four to five months from the date of storage, instead of being held for exceedingly long periods as has been charged by some agitators who have sought to influence legislation placing rigorous restrictions upon the cold storage business.

In establishing this fact, the Department of Agriculture has made it clear that by storing a portion of these perishable products in the flush season and distributing them during the season of scant production, there has been established a tendency toward uniformity of prices throughout the year in the products of butter, eggs, mutton and poultry and a tendency away from uniformity in the prices in fresh beef and fresh pork. These conclusions, Secretary Wilson declares, are substantiated by the price compilations made possible through the results of this investigation.

The saving factor in this situation, so far as a "corner" of these food stuffs is concerned, is the fact that the charges against the food products in cold storage accumulate quite rapidly as the period of storage lengthens. For example, the report shows that if stored for a period of 15 months the cost per pound in the cost of butter will be over 8½ cents and for eggs nearly nine cents per dozen, a charge which would be prohibitive, so far as holding the products of one season over to another is concerned. The Secretary states that his investigation supports the belief that there has been considerable speculation in some years by men who have kept these commodities in cold storage, sometimes with profit and sometimes with disastrous results to themselves, as they may have made a good or a bad guess as to the available supply and the demand for these products at the high range of price.

For some years the average price of commodities kept in cold storage has been increased by the gradual distribution process throughout the year and the addition of the cost of storage does to some extent, perhaps, increase the cost of living, but at the same time affords an available supply of these commodities throughout the year.

In concluding this feature of his report, Secretary Wilson says:

"This is no indictment of the men who keep foods in cold storage, except in so far as they sometimes speculate, nor need they be indicted for offenses in order that the public economic interest in their business may be made to appear. The foregoing matter, it may be supposed, establishes that. The man who places food in cold storage is somewhat in the situation of the man who forestalls the market. He may not attempt to do, but the power may be a temptation.

"The affairs of such a business as this

should have publicity. The public ought to know how much goods are in storage from month to month and what the movements of receipts and deliveries are.

"The food warehousemen should be required to send to Washington monthly reports containing the desired information. Here these reports could be promptly aggregated and the results could be given to the public on a previously announced day of the month, somewhat as the crop reports are."

A COMMUNITY DEAL IN TURKEYS.

A co-operative sale of 585 turkeys, net weight amounting to 6,359 pounds, by 32 farmers, led by the Grange and ably seconded by other farm organizations and individuals, recently occurred at Central Lake, Antrim county, which netted them over and above the price offered them individually, before they decided to sell together, the sum of \$190.

While this deal is of minor importance in itself, it demonstrates certain points that should commend themselves to the careful consideration of every progressive farmer. The advantages of community production, co-operative selling, value of organization for farmers, eliminating unnecessary middlemen, and friendly interest and support between farm organizations.

By community production of produce, live stock, or poultry in sufficient quantities it is easier to interest buyers or reach an outside market economically. Then, if we will add uniformity of good quality and appearance we will score another point of interest to buyers, and to the securing of as high a price as the markets will warrant.

By co-operative selling, the business can all be done through one party, which will attract buyers, where the necessity of having to deal with each individual at livery and time expense discourages them.

By organization we become acquainted and gain confidence in one another, which makes success possible in a co-operative way.

This sale was made direct to a retail merchant, thus eliminating unnecessary middlemen's profit, and it is due largely to the rates charged by this class, which makes the consumer pay one dollar for the product that the producer receives but thirty-five cents for, which is according to statistics.

It also demonstrates that different farm organizations can work shoulder to shoulder for the common good of the whole community; surely it were well if every farmer belonged to some good farmers' organization, for in working together to accomplish definite ends we become inspired with the spirit of the Grange maxim that "The welfare of each is bound up in the good of all."

Antrim Co.

G. M.

WHAT ABOUT OUR NEW NEIGHBORS?

The beet sugar industry has brought upon us a class of people speaking a foreign tongue. At first, like the robin, they were migratory, dropping down upon the fields at the proper time in spring and departing in the fall. We knew not from whence they came nor where they went, but during the last few years they have swarmed down upon us. They are a sturdy, robust people, largely Bohemians. They are purchasing all the land available suitable for beet culture. They buy first on contract and we have yet to learn of the first contract being forfeited. During thinning time we have seen whole families go into the field at early morn, even drawing the babe in a cab made of a grocery box fastened on a pair of picked up wheels.

As these people do the whole labor with themselves, when the check comes there is no deduction for labor in thinning and topping, as with us Americans. A very conservative crop with us is ten tons per acre at five dollars per ton with no deductions except for seed. They easily meet these obligations. They are organizing their social and religious societies. When we see these people with their habits of frugality and industry in comparison with those of our Americans, we are led to exclaim, "What will the outcome be?"

Genesee Co.

S. C. GOODYEAR.

HAPPENINGS OF THE WEEK.

National.

A resolution was passed by the house of representatives last Wednesday, by a vote of 300 to 1, calling for an abrogation of the treaty of 1832 between Russia and the United States. The measure will

come before the senate this week. President Taft made known his opposition to the resolution and has declared that if it comes before him he will veto the measure upon the ground that such action would place the two countries in an embarrassing position. The President and senate have full power to abrogate treaties and on Monday it was reported that he had taken the initiative and notified the Russian government that the pact would be abrogated January 1, 1913, according to the terms and conditions thereof, and that in the meantime this government desired to enter into a new agreement that would be more responsible to present commercial conditions.

The number of victims removed from the Briceville, Tenn., mine where an explosion occurred some ten days ago, number 77. It is believed that seven or eight more bodies are still in the mine.

The price of gasoline and benzine has been advanced a quarter of a cent per gallon by the Standard Oil Co.

The jury considering the evidence brought to light by the raising of the old battleship Maine in the Havana Harbor, declared it as their opinion that the vessel had been blown up by a mine located in the harbor. The remains of several of the sailors of the battleship at the time of its destruction have been removed. President Taft issued a letter commending that the bodies be brought to this country under proper military ceremonies.

The federal employers' liability and the workmen's compensation commission in their tentative bill, which they are about to present to congress, are providing that the common law and statutory liabilities as provided for at the present time, be abolished and that a certain specified scale of compensation be substituted for the settlement of the claims by employers who are injured while on duty. This measure, of course, relates to all railroads doing interstate commerce business.

The foreign commerce of the United States for the year now drawing to a close will amount to more than \$200,000,000 above that of the preceding year, making 1911 the banner year in the history of the country. The experts will aggregate over two billion and the imports over one and a half billion dollars. More than one-half of the imports entered this country free of duty.

The Sherwood bill, which will add to the pension roll if it becomes law about 400,000 eligible veterans of Mexican and Civil Wars, was passed by the house of representatives last week by a vote of 229 to 92. The bill will add to the pension roll about \$75,000,000, as estimated by Secretary of Interior Fisher.

Control of the Elgin board of trade passed into the hands of Chicago and Wisconsin creamerymen at the annual meeting and election Monday. The new board declares they will abolish the quotation committee which is held by some to be a scheme of dictating values that is in direct violation of the Sherman anti-trust law.

The earnings of railway trunk lines for the month of October shows a decided increase over previous months. Running expenses, however, were comparatively reduced over a large number of systems.

The offering of beet sugar upon the general markets of the country has resulted in a depression of sugar prices, much to the satisfaction of the consuming public. The reaction in price has also been influenced by the smaller demand at this season of the year, which is usual, but which has been more apparent this year because of the high price at which sugar has been retailing.

Foreign.

A plot has been discovered by the Mexican authorities for the assassination of President Madero. It is claimed that the conspirators consisted of a number of prominent men who are favorable to the Reysta movement. A special message has been forwarded to General Diaz, former president of Mexico who now lives in Spain, asking him to return to his country. The message was sent by President Madero who assures the aged ruler every possible guarantee of protection at the hands of the country.

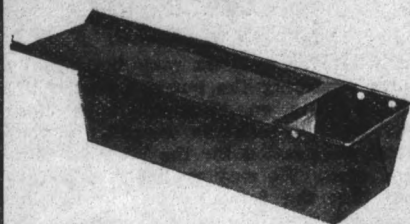
It is unofficially stated that Japan and Great Britain will offer to mediate between the Chinese government and the rebels. The continued rains over the central provinces of China have brought about conditions which are forcing upon the parties to the present uprising the necessity of bringing hostilities to a close. Representatives are met at Shanghai to consider tentative grounds for agreement. The offer of Japan and Great Britain is given that this movement may assure a settlement since the offer is accompanied with a provision that, should it not be agreed to by the parties, other steps will be taken to end the present war. This movement has been expected for some time.

The Cuban government is being asked by patriots of the island to enact a measure limiting the holding of public offices to persons that have shown their patriotism to the government and who have not been hostile to free Cuba. To accomplish this a measure is being considered to suspend the act providing for civil service for six months that the executive may discharge those public employees who are considered dangerous in the positions they occupy.

King George, of England, was proclaimed Emperor of India. In his address to the officers on the occasion of the elaborate ceremonies, he declared that a revolution would be made in the policy of England toward India. The conservative element of England stand aghast at the plan while the liberals are delighted. The present ministry believes that because of present discontent the time has come when the situation must be met in a statesman-like manner. They contend that the old policy of ruling with an iron hand has cost the British Empire the

(Continued on page 571).

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SOILS AND PLANTS.

BY FLOYD W. ROBISON.

In whatever way we may individually believe regarding the purpose of the life manifestations on this planet, a close study of the universe reveals a very careful preparation for the later on-coming of man. We may probably safely assume that the fundamental purpose for which soil was originally formed by the gradual reduction of rock was to make it suitable for plant life. It was not absolutely necessary for the appearance of plant life that soil should first be formed. It is perhaps true that plant life appeared before soil was actually formed. It is, however, very evident that the present high state of perfection of plant life could have been, by no means, reached without the appearance of soil. It may sound strange to say that soil is not absolutely necessary for the growth of plants but when we recall that some of our plants are propagated throughout their entire life in water solution we will realize more clearly the aptness of the above statement. Instead, it has been clearly demonstrated that there are no plants which can not be, alone and without the intervention of soil, grown through the nourishment derived from water solution, but there are various physical or mechanical matters, such as the holding, or anchoring in place, of some of the heavier and larger plants which make it absolutely necessary that the soil exist even for a mechanical purpose. We have mentioned before that in various parts of our country we may see great trees growing on bare rocks without the intervention of scarcely a particle of soil. Their rootlets reach down into the running water which carries in solution enough so-called plant food to furnish to the tree a life of luxury.

We would by no means lead our readers to understand that we consider the soil a merely mechanical factor in plant life. It is a mechanical factor but it is in reality besides an actual physiological laboratory where destructive and synthetic changes are continually going on with the ultimate purpose, no doubt, of building a more complex plant organism.

There is enough evidence at hand to make us reasonably certain that the development of plants has been a process of evolution from the simple, single-celled bodies. There is ample reason for thinking that the earliest forms of plant life on this planet were these single-cell bodies, which now are typified by what we may call bacteria, moulds, or various fungi, etc.

There is no more interesting study to our mind than the study of the adaptation of the various forms of plant life to the general conditions of soil, and climate, and other surroundings to which they are subjected, and their part in turn in contributing to the evolution of higher plant life. We say there is no more interesting study, and we may say in addition, except it be the study of the development and evolution of animal life which, however, is almost exactly similar to the evolution of plant life, except that it has lent to it the effect of a greater variety of movement and intellect than is exhibited in plant life.

It seems that the prime purpose of the life of the plant is centered in its effort at reproduction. It is very clear that this must necessarily be so for in order that the original purpose to which all living matter seems directing itself may be fulfilled, it is necessary that provision be made at the outset for the reproduction of the species.

Each plant seems vested with an inherent instinct regarding itself, first of all, to its own preservation and secondly, to the reproduction of its species.

The earliest form of reproduction in plants was by simple division. The factor which seems to govern and regulate the size of single-cell bodies we may call the point of most favorable (optimum) development of that cell. For instance, a cell body will grow and develop to the point of maximum efficiency, which includes perhaps the ease of locomotion and general efficiency of its various life manifestations. Beyond this point the forces of the universe will no doubt prevail to encourage the division of the cell body into two individuals which two may exercise a greater efficiency than did the one parent. As a matter of fact, we do find single-celled bodies growing and developing to a certain more or less definite

proportion and then, due to some provision of nature which seems very carefully adjusted, we find these cell bodies dividing and two individuals continuing the work performed previously by the one. Just what this force is that limits the operations and size of the single-celled organism and causes a division, thereby reproducing the species, we do not know. It may be, differently directed, the same impulse which directs that when a drop of water reaches a certain size it becomes two instead of one. In other words, it may be the action of the force of gravity, perhaps, which exercises an all potent influence on every manifestation in the universe.

Some organisms remain attached to each other after this division. For example, certain of the cocci (small microscopic organisms), instead of being separated completely by themselves at the point of division remain attached together, forming long strings of cells or perhaps, as in the case of the yeast plant, they exercise the phenomenon commonly known as "budding" which is simply the development of new cells upon the parent stock.

Application.

In a study of the various ways of feeding the plant it is the application of our knowledge gained through the study of the single cell that has given us the most satisfactory results. Soils are most intimately associated with plant growth and it is through this ability to furnish a proper nutrient soil solution that one soil perhaps is more peculiarly adapted to the growing of certain crops.

Certain crops cannot be grown on some soils because the mechanical character of that soil will not hold the crop in place and this condition alone prompts us to direct the energies of that soil in another direction. It is this factor that has assisted in proclaiming the rich muck soils especially efficient in truck farming and which has made the heavily timbered lands adapted to a still different style of agriculture. The great lesson to be gained by an understanding in this way of the manner in which plants have gained the ascendancy is that certain soils, because of their composition are peculiarly adapted to certain specific treatment and it is working against nature to ignore this point.

In our chart given a few weeks ago we recommended a division of the farm according to the different soil characteristics. The desirability of this is strongly emphasized.

When the plant reaches a point where its maximum efficiency is impaired, it begins to adapt itself differently to its new conditions. This encourages development of new species, but at the expense of the qualities for which the parent plant was previously famous.

Sandy soil or gravelly loam for this reason is not suitable for celery culture. Neither is heavy muck the most desirable for wheat and grain farming. It is decidedly fallacious reasoning that prompts the farmer to compel his sand to grow celery and his muck to grow wheat.

PASTEURIZATION OF MILK.

The subject of the pasteurization of milk has been before the public now for a number of years. Attempts at various times have been made to make the pasteurization of milk compulsory in certain cities. We are aware of a condition in the last few years in Chicago whereby the department of health undertook to compel the pasteurization of all milk sold on the city milk supply. This condition has caused various persons to undertake the study as to whether the pasteurization of milk for the city milk supply is in reality desirable.

The word pasteurization derives its name from the researches of Pasteur, a French scientist. The various bacteria are more or less susceptible to the influence of heat, especially after a prolonged period of time. It has been known for some time that the great objection to the use of raw milk on the city milk supply was because of its heavy contamination, as indicated by the activity of a great variety of forms of bacteria. The ill effects from the consumption of the various end products of the life activity of different bacteria is now well known.

Recognizing that, to suddenly foist upon the producers of milk methods which would safeguard against contaminating the milk supply, would be entirely im-

practical has caused students to attempt to devise some means of treatment in itself non-injurious to health which would do away with the dangers of a polluted milk supply. It is this condition which has caused the treatment of milk known as pasteurization to come into vogue. In nearly every city in our country at the present time some of the milk sold at retail undergoes the pasteurization treatment. This treatment as generally conducted, consists in raising the temperature of the milk up to between 140 and 160 degrees F., and retaining it at this temperature for periods of about one-half hour. It has been found by the researches of Pasteur and others that this system causes the destruction of great quantities of bacteria present in the milk and it has been assumed by various health officials and others, that because of this fact the pasteurization of milk was an exceedingly desirable process.

Against this theory, it has been ascertained that milk which has been pasteurized, if kept for a considerable period of time develops along an entirely different line from that not pasteurized. Ordinary milk produced under what we may call ordinary conditions will, in the course of two or three days, become sour and unattractive for food purposes. This is due to the action, specifically, of the organisms known as the lactic acid bacteria which develops in ordinary milk in great numbers and very rapidly. The chief end product of the life activity of these bacteria is the formation of lactic acid from the sugar in the milk. It is known that this bacterium is very susceptible to the temperature of pasteurization, and consequently milk which has been well pasteurized does not readily undergo souring. If this milk is kept for a short period, however, it may become curdled, it may develop an offensive odor, and in fact, may produce very undesirable results, all of which tend to indicate that there must have been some other organism in the milk which was apparently not affected or not entirely killed by the temperature of pasteurization. It is this discovery that has called a halt somewhat on the practice of pasteurization of the milk.

One thing is certain. For purpose of human consumption unclean milk is not a suitable product to pasteurize in the ordinary way. Clean milk may be safely pasteurized but as a rule clean milk does not need to be pasteurized. The only real safe remedy in the case of unclean milk seems to be the complete sterilization.

If pasteurization is practiced by the retailers of city milk, in our judgment such milk should be again inoculated after pasteurization with a pure culture of the lactic acid bacteria so that the other forms of bacteria present may be kept under subjection by the lactic organism. If this is not feasible then the other expedient is the pasteurization of the milk in the home just immediately before use. The natural souring of milk is ordinarily quite a protection against the effects of undesirable, more or less pathogenic bacteria.

LABORATORY REPORT.

At the recent meeting of the Association of Feed Control officials of the U. S., at its recent convention in Columbus, Ohio, the following definition of the different feeding stuffs was considered and adopted.

The object of this designation of the standards, as they practically are, was to secure a uniformity in the nomenclature of different well known feeding products which are now on the market. Without doubt, many of these will be later modified by court interpretations after they have been made the subject of litigation, but the desirability of having such fixed standards for the general understanding of the feeding trade, is apparent to everyone at the outset.

Meal is the clean, sound, ground product of the entire grain, cereal or seed which it purports to represent: Provided, that the following meals, qualified by their descriptive names, are to be known as, viz: Corn germ meal is a product in the manufacture of starch, glucose and other corn products and is the germ layer from which a part of the corn oil has been extracted. Cottonseed meal is the meal obtained from the cottonseed kernel after extraction of part of the oil and contains not less than 38.50 per cent of crude protein. Linseed meal is the ground residue after extraction of part of the oil from ground flaxseed. Bolted corn meal is the entire ground product of corn, bolted.

Grits are the hard, flinty portions of Indian corn.

Hominy meal, feed or chop is the bran coating and germ of the corn kernel and may contain a part of the starchy portion of the kernel.

Corn feed meal is the sifting obtained in the manufacture of cracked corn and table meal made from the whole grain.

Gluten meal is a product obtained in the manufacture of starch and glucose from corn and is the flinty portion of the kernel which lies in its outer circumference just beneath the hull. If the meal is derived from any other cereal, the source must be designated.

Corn bran is the outer coating of the corn kernel.

Gluten feed is a product obtained in the manufacture of starch and glucose from corn and is a mixture of gluten meal and corn bran to which may be added the residue resulting from the evaporation of the so-called "steep-water." If derived from any other cereal, the source must be designated.

Wheat bran is the coarse outer coating of the wheat berry.

Shorts or standard middlings are the fine particles of the outer bran as well as the inner or "bee-wing" bran separated from the bran and white middlings.

Shipstuff or wheat mixed feed is a mixture of the by-products from the milling of the wheat berry.

White wheat middlings are that part of the offal from wheat left after separating it from the bran and the shorts or standard middlings.

Red dog is a low-grade wheat flour containing the finer particles of bran.

Oat groats are the kernels of the oat berry with the hulls removed.

Oat shorts, or oat middlings are the starchy portion of the oat groats obtained in the milling of rolled oats.

Oat hulls are the outer covering of the oat grain.

Oat clippings are the small hairs, dust and ends of oats separated from the oats in the clipping process and may contain light oats and oat hulls.

Rice bran is the inner cuticle of the rice hull.

Rice polish is the flour secured from the surface of the rice kernels in polishing.

Rice meal or flour is the clean ground rice.

Rice hulls are the outer covering of the rice grain.

Flaxseed meal is the entire flax seed ground.

Flax plant refuse is the flax shives, flax pods, inferior flaxseeds and the woody portion of the flax plant or any of the above materials.

Buckwheat shorts or middlings are that portion of the buckwheat grain immediately inside of the hull after separation from the flour.

Blood meal is finely ground dried blood.

Meat meal is finely ground beef scraps. If it bears a name descriptive of its kinds, composition or origin, it must correspond thereto.

Cracklings are the residue after extracting the fats and oils from the animal tissue. If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Digester tankage is meat scraps from edible carcasses which have been inspected and passed as satisfactory for human consumption, specially prepared for feeding purposes through tanking under live steam, drying under high heat and suitable grinding.

Distillers' dried grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors. The product shall bear a designation indicating the cereal predominating.

Brewers' dried grains are the dried residue from cereals obtained after "mashing and sparging" the malt.

Malt sprouts are the sprouts of the barley grain. If the sprouts are derived from any other malted cereal, the source must be designated.

Cottonseed feed shall be a mixture of cottonseed meal and cottonseed hulls containing less than 38.50 per cent of crude protein and shall be plainly marked "mixture of cottonseed meal and cottonseed hulls."

Alfalfa meal is the entire alfalfa hay ground and does not contain an admixture of ground alfalfa straw or other foreign materials.

Chop is a ground or chop feed composed of one or more different cereals or by-products thereof.

Screenings are the smaller imperfect grains, weed seeds and other foreign materials having feeding value, separated in cleaning the grain. They shall be designated by the name of the seed from which they are derived.

HOME AND YOUTH

WITH SANTA CLAUS AT THE NORTH POLE.

BY WILLIAM A. FREEHOFF.

It was but a few days before Christmas, still Howard had not yet written his letter to Santa Claus. But as there were a number of things he wanted very badly, he hunted a few sheets of his very best note paper and his golden tipped fountain pen, and sat down to write.

Having played very hard that day, over his task, not knowing just how to begin.

Just as his head began to nod gently over his paper a tiny object sprang upon the table with a clatter. Howard jumped up quickly and saw a beautiful fairy before him. He knew her at once; she was the fairy Fancy. It was Fancy who had taken Howard and Annabel through the Rainbow Gate into Fairyland but a short time before. There they had enjoyed a pleasant romp until the Dream Killer had chased them out again.

"Come," exclaimed Fancy, as soon as Howard had recovered somewhat from his astonishment. "I have come to take you to Santa Claus at the North Pole!"

Before he had time to say a word, Howard found himself shrinking into fairy size, a pair of fairy sandals growing on his ankles. A window blew open with a clatter; through this Howard and Fancy flew at once.

It was a bitter cold night. Snow was heaped up in huge drifts as far as the eye could see and a frightful blizzard was raging furiously. But the two travelers towards the North Pole were not cold at all, the air being as warm as on the mildest summer days where they were, high in the air, above the storm clouds and towards the stars. Through the fairy magic of Fancy, Howard could not feel the cold.

How far away the pole seemed! On, and on, they sped, for hundreds and hundreds of miles, their faces ever towards the north. But when they came to the place where the sun was going round and round without setting, Howard knew that they did not have so very far to go any more.

Suddenly Howard gave a gasp of astonishment. Far away, almost directly below him, he saw a great temple gleaming in the sunlight, its silver dome reaching into the very skies. A short distance from the temple stood a huge brick building, with thick clouds of smoke pouring from hundreds of stacks.

"That beautiful white building is the Temple of Christmas, where the Spirit of Christmas dwells," said Fancy, in answer to the questions of Howard. "You know that you mortals celebrate Christmas because the Savior was born on that splendid day. The brick building is Santa Claus' factory, where all the Christmas toys are made."

By this time the two travelers were flying through the open doors of the temple. Scarcely were they inside the beautiful building when they were met by Annabel and another fairy. Howard greeted them joyously.

"Goody!" he cried. Howard and Annabel, with Fancy and her sister fairy leading the way, continued their flight through spacious room after room until they came to the most splendid mansion of all, placed directly under the dome. Winged angels were fluttering about the doorway, as if keeping guard; other angels flitted about the chamber. In the center of the gorgeous room a kindly faced man, all dressed in white and with a halo about his head, was seated before an enormous desk reading the millions of letters that attendant angels were bringing him.

"That is the Spirit of Christmas reading the letters that children from all over the world are sending to Santa Claus, telling what they want for Christmas," explained Fancy to the awe-stricken pair.

The Spirit of Christmas was almost buried under the crush of letters, each one addressed in some childish hand to Santa Claus at the North Pole. The wonder of it all was how the saintly Spirit of Christmas ever found time to read them all.

The Spirit of Christmas looked up quickly when his visitors entered. "Good day," he said slowly, in a marvelously musical voice, as he opened another letter. "What can I do for you today, my little ones?" he asked, hardly pausing in his work.

How majestic he looked, and how kindly was his bearing! Howard and

Annabel began to understand why the Spirit of Christmas should be so beloved. "If you please, sir," and Howard might not have known what to say had not the friendly eyes beamed so encouragingly, "if you please, Annabel and I came to tell you what we wanted for Christmas. Fancy showed us the way, for we never could have found this place alone."

The Spirit of Christmas smiled at Fancy and the other fairy. It was very evident that they knew each other very well indeed.

"Hm," said the Spirit of Christmas in reply to Howard. "Are you sure you deserve anything? Annabel does, I know, but I am not so positive about you. It seems to me that my big book has some very bad things about you." He grasped a ponderous volume which was near his elbow and opened it at a place where Howard's name was written in a queer sort of handwriting.

"There is that matter of prayers," said the Spirit, apparently reading from his book. "You have said them every evening before going to bed, I suppose?"

Howard colored guiltily. His birthday had been but a few weeks before, and he remembered having forgotten his prayers that night, out of pure joy for the day. Howard sheepishly mentioned the omission.

"My book shows that you have forgotten several times," corrected the Spirit of Christmas, somewhat severely. "Then again, last Christmas evening you didn't remember to give thanks for all of your beautiful presents. That was bad, but we will let it pass this once. I am sure you will be more careful in the future. But there is another matter. I suppose you know why Santa Claus comes every Christmas to give presents to the little children."

"Of course," answered Howard promptly, "because he loves the little ones."

The Spirit of Christmas looked stern. "Not bad, but it is not enough. Did you ever hear of the Christ child?"

Howard had. He glibly told all about the birth of the Savior at Bethlehem, the wonderful star, and the three wise men.

"That is why Santa Claus comes every year with presents; because the Christ child was born on Christmas eve. I am glad you know the story anyway, and I am sure you will not forget to keep the fact in mind the next time you dance around the big Christmas tree with your father and mother."

Howard promised that he would remember. But he was beginning to feel very uncomfortable under the searching questions.

"Just one matter more, and then I am done." The Spirit of Christmas took a final peep into his book. "Of course, you always share your presents with your comrades and those less fortunate than you, do you not?"

Howard became very red in the face. He remembered only too well that the last time he had struck little Jimmy, the neighboring boy who was so poor that he had received only some clothes for Christmas, for wanting to coast with him on his new sled.

"That sled part is not the worst, by any means," declared the Spirit of Christmas, reading aloud from his book. "Although there were a hundred pennies in his Christmas stocking, he wouldn't even give that beggar in the street one of them when he asked for it in the name of the holy day, but why keep on," suddenly broke off the Spirit of Christmas. "I am sure there are some ways in which you can improve yourself so that you will receive many presents." And he smiled kindly at Howard, who was trying hard to keep back the tears.

As Howard gazed at the benignant Spirit of Christmas he was suddenly struck with the likeness of his features to the many pictures of Christ that he had seen, and he suddenly realized that the Spirit of Christmas was nothing but the Spirit of Christ.

"Well, good-by," and the Spirit waved his hand in a friendly manner. "Come again next year; I know there will be nothing but good in the book about you then. Meanwhile, Fancy, you had better take them to Santa Claus and his factory."

Instantly the travelers were wafted to the big main door of the smoking brick building. Howard noticed that his and Annabel's wings now dropped off, and that they became a plain boy and girl again as soon as a funny little guard in a red uniform had let them in.

And such a factory! Howard had never seen the like before. It is true that his father had once taken him through a place where there were hundreds of men

sawing away at boards and pounding nails, but here there were not hundreds by thousands of workmen. The things that they were making reminded him of the stores at Christmas time, for the entire factory was one vast toyshop.

As it was against the rules for visitors to be shown through the toyshop, as explained by a guard in purple uniform, they were taken directly to Santa Claus' office.

Santa Claus proved to be a dear old gentleman, fat and jolly, and having a fuzzy white head. He was seated in a splendid office, in which scores of clerks were seated, working at typewriters and big books. Angel messengers from the temple in which the Spirit of Christmas resided were bringing messages all the time, telling Santa Claus to make a doll for this girl and a sled for that boy, and other toys for still other children. Santa Claus would have his clerks put this down in his big ledgers, and then the order to manufacture the toys would be given the factory foreman, and the order to deliver the toys would be given to the keeper of the six reindeers. For, you see, with such millions and millions of toys to deliver all in one night, Santa Claus had to have very much help indeed. He is nothing but the messenger of the Spirit of Christmas, or of Christ, after all.

Howard and Annabel were very thoughtful as they sped through the clouds with the two fairies once more. Both had learned a lesson that would remain with them through after life.

GIVING WITHOUT EXPECTED RETURN.

BY L. M. THORNTON.

"Christmas comes but once a year," chanted the Post children on their way to school. "When it comes—" shouted Fred Gillis, but the song was never finished for Harry Post was quick of arm and sturdy of build, and from many past experiences he knew that if left to Fred Gillis the Christmas song might be sadly altered in the singing. His triumph was only temporary, however, for shortly after the opening of the morning session he received a note and, innocently opening it, read:

Christmas comes but once a year;
When it comes we won't be here.
The school vacation began the Friday before Christmas and lasted over New Year's, and this, even had there been no anticipation of presents, would have made the day one to rejoice over, for the teacher of the Block school ruled with a will of iron and her pupils obeyed from good wholesome fear rather than affection.

Fred Gillis was the bad boy of the school. No one accused him of dullness; he could learn his lessons in half the time required by his mates but, as the time thus saved was spent in devising mischief, the gain was not appreciated. Toward the Post children he cherished a peculiar animosity. Perhaps it was because they dressed better, perhaps on account of larger pieces of pie and lighter doughnuts in their dinner baskets. Perhaps—but who can fathom the reasons for a child's likes and dislikes?

On the Friday before Christmas matters reached a climax. Bessie Post brought with her to school a small, yet favorite, doll and six of its prettiest dresses. At noon the doll and clothes had disappeared; their timely discovery in Fred Gillis' pocket brought down upon his auburn head the wrath of all the feminine attendants of the school, and several Big Brothers volunteered to thrash him, good and plenty, as soon as the teacher had gone her destined way and interference from that quarter could be ignored.

In the excitement of putting away books and closing the doors for two weeks, the doll incident was, however, happily forgotten and all trooped away apparently in the best of spirits. But that night the Post children poured into paternal ears the story of the day's grievances. However, instead of the expected result they were astounded at the suggestion offered. This was none other than that they should keep the coming Christmas by giving to the two Gillis children some of the very nicest toys, purchased with hard-earned spending money, to be distributed among themselves.

At first the idea was not warmly welcomed, but an earnest talk on the blessedness of giving without expected return changed the current, and three little enthusiasts began the selecting of presents for the long disregarded children.

On Christmas morning a well-filled basket was borne on the sturdy arm of Harry Post to the Gillis domicile. When Fred opened the door he was surprised to see

A SONG FOR CHRISTMAS DAY.

BY MILDRED M'NEAL-SWEENEY.

Now when all thoughts are tender,
When gentle wishes start,
And dreams of happier living;
And up within each heart
The sweet old pulse of giving
Renews our fallen worth—
Oh, let me be the lender
To the weary of the earth!

For these how little pleasure!
How poor a life they found!
Hot noon—and night—and morning
For them, the long year round,
And the old, shrill, clamorous warning
For each new dawning day—
How full, Lord, is my measure!
And none I gave away!

For those pacing solitary
The joyous ways of men,
Whose fair hopes have fallen hollow,
Whose loves were loved in vain,
Whom no sweet wishes follow
Nor care of sweeter deeds,
Oh hearts! Return and tarry!
Be tender with their needs!

And for all those who loved me—
Who lingered faithfully
In every strait beside me,
And with that golden key
Of love found out and tried me—
Unlocked—so little to find,
Lord, for all those who love me,
Let me not fall behind!

But let this cold affection
Bloom up and fill my heart,
Looking ever for sweeter morrows
Than these, and bidding depart
All vain and empty sorrows.
Let joy and courage be high
Till from each far direction
They come—and touch—and try.

This is the honest spending!
No borrowed coin—nor base,
But coin of this my spirit
And of mine own true grace.
And mine own hand must share it,
With all—and at my door.
The true, the happy lending
Is this—and is no more.

the face of his old-time foe man wreathed in Christmas smiles.

"A Merry Christmas and a Happy New Year," shouted the visitor, "and this is from all of us, to all of you, with the best wishes of the season."

When Fred Gillis recovered his breath the giver had disappeared, but the basket remained.

Two very happy children removed treasure after treasure from its keeping and the hours of their Christmas Day were made bright by nuts and candies and dolls and skates, treasures they had never hoped to possess.

Just at dusk the basket was returned to the Post home, and when the children opened it they found this little note in the very bottom:

Postses:—
We're awfully glad and I'm awfully sorry. I can't keep the things, though, without telling you that I didn't take your little doll just to tease you. It was worse than that. You see, Dad's been out of work all winter and there want no money for Christmas things, but Sis she was just wild to have a doll and I thought maybe you wouldn't miss such a tiny little one so I was going to take it to her. That was stealing I s'pose, but I'm never going to feel tempted again.

Christmas comes but once a year,
When it comes it makes you dear.

GILLES.
The minister the next Sunday talked about loving your enemies and doing good to them that spitefully use you, and one little Post nodded to another little Post, and that nod meant: We know more about that than the minister does, 'cause maybe he's only talkin' theory, but we've tried it.

OUTDOOR CHRISTMAS FESTIVITIES.

BY FRANK H. SWEET.

A track athletic meet, with the contestants on skates, makes a desirable Christmas week entertainment. Mark off, with a sharp spike, the 100-yard course, and the mile-distance race. For the third event, a hurdle race will prove popular. Construct the hurdles out of Christmas greens, giving a width of seven feet, drawing the greens taut by means of two poles. This will give a festival flavor to the event. Select a regular judge of the course and have an official time-keeper. This style of outdoor games will delight all ages of boys. Prizes of a holiday nature will not give too commercial a tone to the events.

A Christmas Coasting Party.
Perhaps the girls will think they have been neglected in the outside sports. For their benefit, and for that reason not omitting the boys, a coasting party may be organized with rival bobs. Let there be a competition for distance, carried out over the level snow of the road or lake at the foot of the drop. A marking apparatus can be constructed with evergreen lines, which will be etched out in green against the white snow.

For the Laggards.
In any celebration where real skill and

energy are required, there is sure to be a number of lagards, sluggards, very small children, and persons of years who are either stout or rheumatic. It seems a pity that they should miss all the fun, and yet, in a strenuous athletic affair, they would all be hopelessly out of it.

For all such, and for them only, "back-sliders" in skating, infants in years, and cripples in action, a snow-ball race on skates is attractive. A 100-yard arrangement of snowballs, placed one for each second ward, will be found available. Some of the contestants, whose skating is mainly a study of tumbles, will make a good finish by getting down on hands and feet and crawling between the missiles. No good skaters should be allowed to enter.

THE BACHELOR UNCLE

BY EVERITT McNEIL.

Synopsis of Preceding Chapters.—John Delvin, farmer, bachelor, is suddenly informed that his niece and nephew are being sent to him for safe keeping, while their parents take a vacation trip. His consternation at this responsibility proves to be well founded as Teddy the nephew, is a young dare devil, and Ellen, his sister, is his ardent worshiper. They have never been in the country before and have some wild ideas about conditions there. This fact brings them into many unusual and amusing situations which prove very trying to Mary Jane, the Bachelor Uncle's conscientious and sedate old housekeeper. Little Ellen's innocent observation that Uncle John ought to have a wife brings out the fact that the uncle has had a serious love affair and that, for some mysterious reason, the woman whom he loved, Elsie Lamont, and who he was convinced loved him, turned from him to Harry Rodney, a wealthy man of his own age in the neighborhood, and who was known to resemble Delvin physically. Their wedding is near at hand. On an exploring trip Teddy and Ellen see a young woman, Belle Murdock, fall from a high bank into the creek. They drag her out, seriously injured. Soon Rodney and Miss Lamont happen along and assist the injured woman, later taking her to her home. As Belle Murdock's father, Red Murdock, is a worthless fellow, and she is practically the sole support and caretaker of little Joey, her crippled brother, Delvin goes over to the house in the morning to offer his assistance, taking Teddy and Ellen with him. As they approach the house they meet Rodney coming away. They find the injured girl suffering greatly and Ellen proposes to stay with Joey while Delvin and Teddy go to town to secure a doctor and nurse.

She took her arms from around Joey's neck and coming to where I stood said, "Uncle John I want to whisper to you."

I bent my head.

"Please excuse me," and she nodded to Joey and Teddy, then she placed her mouth close up to my ear and whispered: "Uncle John I did want to go to town, but I think it's too bad to leave little Joey all alone with his sick sister. I think he's hungry! and I want to stay just to see that he gets all he can eat once. I can stay, can't I, Uncle John?"

"Of course you can, if you really wish to," I answered, kissing her. "Come, Teddy, say good-bye to Miss Murdock and Joey, and we'll be going."

When we reached Plumville we found the town nearly covered with huge posters, announcing that Bell Brothers' Great Allied Shows would exhibit there next Friday afternoon and evening. Teddy became greatly excited over the pictorial representations of the wonders to be done and seen at this show; and, at last, he said: "Uncle John, if my papa was here I know he would take Ellen and me to see this show. I do wish papa was here," and he heaved a great sigh.

I smiled, and thought of the time when I was a boy, and what a circus then meant to me, and answered: "Well, Teddy, I am very glad to know that you wish to go, because I was intending to take you and Ellen. But, are you sure it will not be too dull and tiresome for you? It will last some three or four hours."

Teddy looked at me in astonishment. "Why, Uncle John!" Then he burst out laughing. "Of course, you are only joking; but I do think I could look at lions and tigers and elephants and bears and circus men forever without getting tired. And there's going to be some cowboys and real live Indians, and they are going to make believe fight—Oh, you are good, Uncle John, and when I write to mama and papa again I am going to tell them that you are the best uncle that ever lived."

At the postoffice we found letters awaiting Teddy, Ellen and myself from their father and mother. Teddy eagerly read his, and then looking up at me remarked: "I don't think mamma and papa are hav-

The snowballs are easy of construction. They are made of emptied round candy boxes—the left-overs of a wholesale candy store (or anything similar)—and are covered with cotton wool, with string attached. The effect is of a fluffy whiteness, more realistic than life.

The five or six lines of white pellets for the first five or six contestants are finished off at each starting point by a Christmas tree—a five-foot evergreen. It is the duty of each entry, as he stumbles in with his woolly snowball, to hang it on his individual tree. The final victory goes, not to the one who first succeeds in hanging all the balls, but to the first one who completes his tree artistically. The balls must be hung symmetrically, making the tree balance.

ing as much fun as we are, 'cause they don't write of their doing anything or seeing anything exciting or thrilling. I am glad I came here."

Doctor Goldthorp promised to call at Red Murdock's during the day, and to report to me the result of his visit. Widow Thorpe was willing to care for Belle Murdock, for a consideration, and accompanied us on our return.

When I drove into Red Murdock's yard I looked eagerly toward the windows, expecting to see Ellen and Joey at one of them, watching for us, but neither child was in sight, and no sounds of childish laughter or words came from the house. I hurried to the door, fearful of what had happened. "Sh-h-h!" stopped me at its threshold. On a piece of old rag carpet, spread on the floor, sat Ellen, with the head of Joey pillowed on her lap. The boy was sound asleep, and he smiled sweetly as he slept.

Ellen placed a warning finger on her lips, and said softly: "Joey is asleep, and the hurt woman is asleep, and please don't wake them up. Poor boy!" and the little mother placed her hand tenderly on the white forehead. The child smiled, as if an angel had touched him.

Very quietly Widow Thorpe and I entered the room, and I set the things I had bought in town on the table, and carefully slipped a pillow under Joey's head, and lifted Ellen to her feet; and then Teddy came in on his tiptoes and placed on the floor, where Joey would see them the moment he opened his eyes, a set of tin soldiers, a toy gun, a candy elephant, and three big yellow oranges and a bag of nuts, all of which he had bought with his own money "to make Joey laugh."

Chapter VII.—The Cat Gets the Cod-Liver Oil.

As we drove out of the yard Ellen said: "I am glad I stayed, Uncle John, 'cause I know Joey's had all he could eat for once; and the hurt woman was glad I stayed, too, 'cause she kissed me and said I was a good girl, and Joey he looked so happy and comfortable when he was eating, and I felt warm and comfortable all over, too; and then the beautiful woman came. Oh, Uncle John, she is good! She washed and combed the hurt woman, and fixed her bed and tidied up the room, and kissed me, and asked for Teddy; and I told her that he had gone to town with you, and that you would be back in a little while—And, oh, Uncle John, she isn't married, 'cause I asked her! And I told her to wait until you came back, and I would introduce her to you. And then she looked queer, and said she had to hurry home, and she kept looking down the road and kind 'o frightened like. You don't suppose she ran away from home, do you, Uncle John? And she put her things on quick, and said good-bye and went down the road, walking fast. I hope her father don't punish her. If he does he's a bad man, 'cause she was doing good to the poor. After she had gone I played Joey was my little boy, and we had lots of fun. And then the hurt woman went to sleep, and we had to keep still. And then Joey got sleepy, too, and I played he was my baby, and he went to sleep with his head on my lap, and after a long time you came. Oh, I'd like to see Joey when he wakes up and sees the tin soldiers and things! He'll be so happy and I think he is just beautiful when he smiles."

Then, Teddy had to tell Ellen all about his trip to town, and the circus, and how I had promised to take them both, and his letter from their father and mother; and then she had to have her letter, and I had to stop the horses right then and there and read it to her, 'cause mam-

ma's letters had queer crooks in them," and it might contain something "important." When I had finished there were tears in Ellen's eyes. "Oh, I wish I could see my mamma and papa," she said, choking a little over the words. "I don't believe I could live if my mamma should die. Poor sick Joey, he has no mamma!" and she began to sob.

I took the tender-hearted little girl in my arms and comforted her as best I could.

"You're 'most as good as my papa and mamma," she said, snuggling up close to me. "But I do feel awful sorry for little Joey, and I do love my mamma and papa."

That night, when Ellen was undressed and ready for bed, she came and perched herself on the arm of my chair, wearing a very sober face.

"Uncle John," she asked, "do little girls who love their papa and mamma always mind them? And are they wicked if they don't?"

"Yes, at least they always try to mind, and it is very naughty not to obey the wishes of papa and mamma," I answered. "What is troubling my little girl?"

To my surprise Ellen burst into tears. "I have been a wicked, wicked girl!" she sobbed, and, jumping down from the chair, she ran to Mary Jane. "Get me the cod-liver oil," she said.

And when Mary Jane had the bottle in her hand she ordered her to pour out a "big" spoonful, which she drank, and then, with the look of a martyr on her face, called for another spoonful.

"Bless me!" Mary Jane exclaimed, looking at Ellen in astonishment, but beginning to pour out the oil.

"Hold up!" I cried. "Give her the bottle, Mary Jane!"

Without a word Ellen took the bottle, glanced at me, and then with a white face placed the bottle to her lips, ready to drink it to the last drop.

"Bring the bottle here, Ellen," I said.

In a moment Ellen, bottle in hand, was by my side.

Very gently I lifted her up into my arms and kissed the tear-stained face. "Now, Ellen, tell Uncle why it is you think yourself a wicked girl, and what the cod-liver oil has to do with it."

"My mamma told me to take a spoonful of cod-liver oil every night, and I didn't," she sobbed. "I gave it to the cat, 'cause the cat liked it and I didn't. Do you suppose mamma will forgive me if I take a whole bottle full tonight to make up and to punish myself? I do love mamma and I will mind her."

Dear, brave little girl!

"Ellen," I answered, "Uncle is very happy to find that when you have done a wrong you are ready to do all that you can to make that wrong right, something, alas, we older ones are not always so willing to do. But, listen, I wish to read to you the letter I received from your mother today," and I took the letter out of my pocket and read:

"Dear John:—Your letter just received. I am glad you did not send that telegram; for I am sure you will like Teddy and Ellen, and I know they will not be the least bit of trouble to you. Of course that awful catastrophe you hint of will never happen. I did not know you were so fussy, or I should have sent the children to you before—to cure you. Hope they are not too late."

Yes, if you think best, Ellen need not take the cod-liver oil. Poor little girl! I did not know she thought it such "horrid stuff." Give it to the cat. But don't tell Ellen of this until after she has read my letter. I wish to see if she will not voluntarily acknowledge her fault. I shall write her a little dissertation on love and obedience that I feel sure will go to the right spot, she is such a dear loving little girl.

Fred and I are enjoying ourselves immensely.

Love to Mary Jane. Tell her to take the best of care of my babies.

Goodbye. Your loving sister,

Esther.

P. S.—I hope my little ones are not causing you any trouble. Please be careful about their eating. Teddy has the appetite of an ostrich, and needs controlling; and Ellen has always been delicate. God guard them and you.

Lovingly, Esther.

"There, Ellen, that means you have your mother's forgiveness, and that the cat has the cod-liver oil."

Ellen looked into my face wonderingly for a moment, then she threw her arms around my neck. "Oh, Uncle John, I love you! you! you! you!" and she punctuated each "you" with a kiss.

"There, there, that will do," I said, putting her down. "Now, run to bed and think no more about the cod-liver oil."

Chapter VIII.—A New Version of an Old story.

Long after all the rest in the house were in bed I sat in my easy chair, sleepless with the thoughts of Elsie's

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Woman and Her Needs

At Home and Elsewhere



The Only Happiness Is In Honest Work.

WORK of the kind you like and all of it you can do, that is the secret of happiness." So says a busy, contented school teacher who is famous for her enthusiasm and keen enjoyment of life. "Pleasure, as it is understood by the multitude, leaves no permanent satisfaction. It is only the pleasure derived from the knowledge of a good deed well done that stays by you and returns in memory to warm your heart."

And isn't it true? Think over the people of your acquaintance and pick out the happy ones. Aren't they invariably the busy ones, the ones who are working with all their heart the most of the time, with only occasional trips or picnics to vary the monotony so deadly to everybody? The happiest women I know are the mothers of large families, women with limited incomes who must plan with the utmost wisdom the expenditure of every penny, and whose days are filled from morning until night with toil and thought for others. They are perfectly happy, happy because they are so busy they haven't time to think of their own feelings.

And yet, for all their "busyness" and lack of time, they always have more time than anyone else in the neighborhood. If there is sickness in the home of a neighbor it is always the busy woman who offers her help, and who finds time to run in every day with some delicacy for the invalid. If a child is left homeless, the busy mother of a brood always finds room for one more and time to take care of the orphan. She always has time to do church work and charitable work, and her home is never neglected while she is doing it. She has time because she loves work, thinks about it and plans it so that it may be done with the least expenditure of time and energy, while the woman who doesn't like it devotes her thought to scheming to get rid of it and so have more time for pleasure.

After all, the pleasure seekers are the

most discontented, wretched women on earth. Have you ever studied the faces of the women of money who are in that enviable position of "not having to lift a hand if they don't want to?" I have often watched them carefully at public gatherings and never yet have I seen a happy face. Discontent, envy, selfishness, bad temper are the prominent characteristics. They are always wishing for something "different," something more than they now have, especially something a little better than the others in their "set" possess. They look you over, not with an eye to your innate worth, but with a coldly critical eye which appraises the value in dollars and cents of the clothes you have on. They want to know you not for what you are, but for what you can do for them. And they have developed this disposition simply because they have always been free to think only of themselves.

It sounds nice to hear about people who don't have to work, but in actual truth they are the least to be envied of all mortals. And when you think things over honestly you know it is true. Ever notice how uneasy and restless you are when you go for a week's visit with some friend? You are like a fish out of water after the first two days, unless you are constantly going somewhere to keep your mind occupied. How many times have you said, "The hardest work I can do is to go visiting?" And you are right, because the hardest work anyone can do is to stop work and keep contented.

After all, we shouldn't be harsh with the idle rich when they go wrong. It would be against nature for them to do anything else. They must do something and if there is no good honest work for them to do, of course they will do something bad.

"Satan finds some mischief still for idle hands to do," may be a rather trite expression, but there is none truer.

DEBORAH.

THE SEASON OF GOOD-WILL.

BY BERTA HART NANCE.

Some minor poet has written a little quatrain on the Christmas bells.

"Throughout the year their clangor fills the sky
With creeds of man, too oft sin defiled,
But, when at last the fields in ermine lie,
They sweetly join to praise the newborn Child."

Is it not true of people, as well as bells? Many a spirit, "out of tune and harsh," the year round, sends forth a merry chime, to continue the metaphor, on that day of days. Christmas is probably the most universal festival of all. Even in distant Asiatic countries where the story of the Christ is not believed the Christian observance has established an expression of mutual good-will, and the annual bestowal of gifts is a custom that prevails to a surprising extent.

Some of us are quite content to enjoy the Christmas tree and Christmas customs without any thought of their history, but others are worthy descendants of Paul Pry and like to get at the root of things. A puzzling business it is, when one tries to find out something about the history of the Christmas tree; for nearly every mythologist has a little different manner of explaining why the evergreen was chosen for our great festival day. The first written account we have of a Christmas tree tells us that the tree was hung by its roots and appeared to be dropping its gifts upon those for whom they were intended. No candles are mentioned.

Of course, the human family has always delighted in evergreens for decoration. In ancient Egypt there was a common custom of adorning the houses at the time of the winter solstice with branches of the date palm. This palm was the emblem of immortality. The tree puts forth a shoot every month and a branch

containing twelve shoots was a symbol of the completed year. In Greece the custom still continues of ornamenting temples and homes with mistletoe, a ceremony which many suppose is confined to the British isles. The Romans used laurel and bay because they signified triumph and consequent peace. Some prefer to believe that the common practice of decking the houses and churches at Christmas is derived from ancient Druid practices. It was an old belief that the sylvan spirits might flock to the evergreens, and remain unnipped by frost until a milder season.

An old German legend makes St. Winifred the inventor of the Christmas tree idea. Surrounded by a crowd of his converts he was cutting down an enormous oak tree which the Druids had formerly worshipped. Suddenly a whirlwind passed over the forest and tore the oak from the ground. In the vista thus left open, stood a beautiful young fir. Turning to the people, the priest said:

"This little tree, young and beautiful, shall be your holy tree tonight. It is the wood of peace, for your houses are built of fir. It is the sign of an endless life, for its leaves are ever green."

Strange, indeed, were some of the earlier Christmas practices. The custom of singing canticles called carols was suggested by the songs of the choir on that first Christmas night when the Star of Bethlehem shone over the place where the young child lay. The bishops and lower clergy often joined with the populace in the carols, and the songs were intermingled with dances. Fathers, mothers, sons and daughters mingled together in the dance, each bearing a lighted taper. During the last days preceding Christmas it is still the custom for Calabrian minstrels to descend from the mountains to Naples and Rome, saluting the shrines of the Virgin Mother with their wild music, under the poetical no-

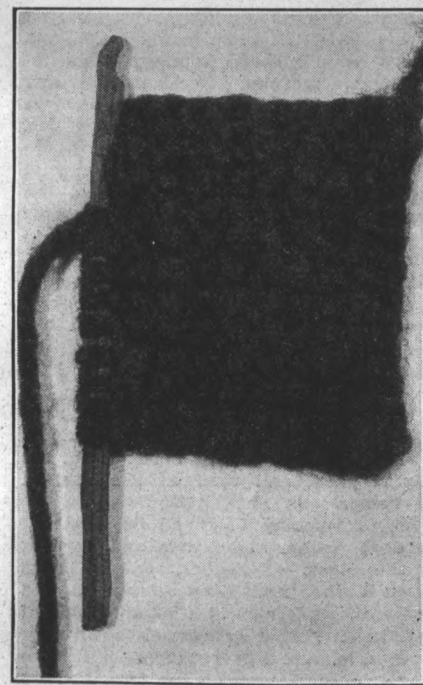
tion of cheering her until the birthday of her infant at the approaching Christmas tide.

Among the revels of the Christmas season were the so-called "feast of fools" and of asses, grotesque saturnalia, which were sometimes termed "December liberties," in which everything serious was burlesqued. In England, in the houses of the nobles a Lord of Misrule or Abbot of Unreason was often appointed, whose office was to "make rare pastimes" and whose dominion lasted from "All-Hallow Eve," which is the last day of October, to Candelmas Day. The larder was filled with the richest store and the feasting at that time must have become proverbial for the Italians have the saying: "He has more business than English ovens at Christmas."

A glowing fire, made of great logs, the largest of which was called the Yule log, kept out the severity of the weather. The Yule log, sometimes called the Christmas block, was burned until Candelmas Eve. It was carefully selected from some tree that is wholly disassociated from pagan rites. The aspen was barred because it is said to be the tree from which the cross was made. The oak, the fir, the cedar, and the larch, never the yew, were the favored trees for this occasion. The head of the household cut the Yule log, brought it in, arranged it in the fireplace, and lit it with his own hand. This ceremonial was supposed to keep evil fortune from his home for the year to come.

The first and favorite dish on Christmas day was a soused boar's head, which was carried to the place of honor with great state, upon a silver platter, while the bearer chanted a Latin rhyme. Strange that no such ceremony is ever observed with the great American bird, the turkey, which has long since supplanted the humble inhabitant of the sty.

But we must not forget our royal Santa. It is a far cry from a stately Archbishop in episcopal robes to the rotund gentleman who comes silently down the chimney once a year. Yet time and custom has wrought the change and the Saint Nicholas, to whom children once looked for toys and sweetmeats, has become the Santa Claus of modern times. For Saint Nicholas was a very real man, and it was an act of Christian charity performed while he was Archbishop of Lycia, that led to his being credited with the whole-



Plain Tunisian Croquet.

sale bestowal of gifts at Christmas. Coming in touch with many of the youthful members of his flock, he became especially interested in three beautiful young girls the daughters of an impoverished nobleman. The Saint, who had inherited a fortune, went secretly to the nobleman's home and threw into the window, at the feet of the eldest daughter, a purse of

gold, sufficient for a marriage dower, thus insuring her a happy future. Some time later he did the same kindness for the second daughter. In some way the story became known and after the death of Saint Nicholas, the nuns in the convents of the east followed his example by making secret gifts to their friends. Gradually the custom became world wide.

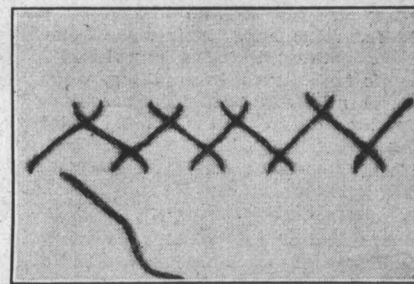
HERRING-BONE STITCH.

Editor Household Department:—Can you tell me how the tricor or Afghan stitch is made? Also herring-bone stitch?—E. D.

In herring-boning two parallel rows of stitches are formed, the thread crossing diagonally between. See sampler. A short stitch is taken toward the worker along first one edge and then the other, the thread being thrown back out of the way, so that it crosses through the center when drawn to place.

Afghan Stitch.

Plain Tunisian crochet is often called Afghan stitch. It requires a long, straight



Herring-bone Stitch.

hook, since all the stitches for a row must be on the hook at one time, much as in knitting.

Crochet as many chain stitches as width of work requires, 12 being used in the accompanying sampler. The first half of the row is called the "loop row," and is made this way: Thrust the hook through the chain stitch next to that one upon the hook and draw the thread through, retaining the loop thus made upon the hook. Repeat this process for each chain stitch remaining, when there will be an equal number of loops upon the hook. These are now crocheted off by what forms the second half of the row, thus completing it. Turn the thread round the hook and draw it through the nearest loop; turn thread round hook again and draw through two loops, one being that previously drawn through and the other the next one of the "loop row." Continue thus turning the thread round the hook and drawing through two loops until the row is finished.

Additional rows are made by thrusting the hook through each vertical stitch of previous row in turn, drawing the thread through, and retaining each loop thus formed upon the hook until end of row is reached, when they are crocheted off as before.

To decrease, crochet two stitches together. To increase thrust the hook through one of the horizontal stitches between the vertical ones, drawing the thread through to form an extra loop.

THE CHRISTMAS TABLE.

BY LALIA MITCHELL.

Never overload the table from which the Christmas dinner is to be served. Let it suggest the holiday season and depend upon the good things prepared for the feast to furnish the necessary decorations.

If the dinner be an evening one, cover the cloth with a thin layer of cotton batting covered with diamond dust. In the center have either a wreath of holly with its many red berries, or a snowbank formed of boxes covered with batting and diamond dust. If the latter is used set small evergreen trees along the summit or dot it with tiny silver leaf cornucopias filled with small fruits and nuts.

At each plate have a small candle with a shade of bright red tissue paper embellished with a very small wreath of holly.

The effect of this simple decoration under the glowing lights is much prettier than something more elaborate.

As a mirth provoker after the feast have a centerpiece of bon bons or peppermints surmounted by a small Santa Claus. Let each guest attempt to remove one, or as many as he wishes, of the bon bons, using one of the small forks which come in candy boxes. If he displaces the Santa Claus, causing him to tumble to the table, he loses whatever bonbons he may have secured and the fork is passed to his next neighbor. When all have tried their skill the Santa Claus figure becomes the property of the one who secured the greatest number of candies. The figure may be tipped in any direction but this is not counted against the one removing bonbons. Only a fall ends his efforts.

Place cards painted with holly, mistletoe and Christmas bells have been so much used that one tires of them. Try instead, small square boxes similarly embellished. Let it be understood that these are not to be opened until the after dinner coffee is served, and when that time comes let each guest find some clever but inexpensive souvenir of the day. A donkey for the auto enthusiast, a cannon for the timid, a wig for the man blessed with long and ample locks. Remember that jesting on the truth is always in bad taste, but a jest that is the opposite will be enjoyed by the recipient as well as others at the board.

If some other form of distributing gifts is desired, dress a small child in any clever masquerade costume which suggests itself and let him go from guest to guest asking each to reach in and take a package from the basket which he carries. A seasonable costume might be that of a huge Christmas bell, and using those in store windows as a pattern the suit is not difficult to make, either of cheap cotton material or tissue paper. If the guests are to remain long at the table see that their chairs are not placed too close together. Better two tables, the younger people at one and their elders at another, than uncomfortable crowding.

An excellent manner of ending the Christmas dinner is for all the guests to stand and just before leaving the room sing some well known Christmas song. Impress it upon them that there are no critics present and that each must at least "make a noise," that no voice be missed in the Christmas chorus which is to sound throughout the year.

CHRISTMAS CANDIES.

BY LALLA MITCHELL.

For the friends where no gift seems exactly adequate, try a box of Christmas candies. These boxes are easily made at home, copying after the ones seen in confectioners' windows and making them of kid-finished cardboard or celluloid.

For the candies with which to fill them try any of the following recipes:

Sunshine Drops.

In a granite saucepan place two cupfuls of granulated sugar and one-half cupful of golden syrup, add one-half cupful of water and a fourth of a teaspoonful of cream of tartar and boil until it makes a firm ball when dropped in cold water. In an earthen dish whip the whites of two eggs until very stiff, add to them a teaspoonful of vanilla and one cupful of chopped English walnut meats. Over this pour the hot syrup and beat until it begins to cool. Drop from a tablespoon upon buttered plates or oiled paper.

Fruit Caramels.

Moisten two cupfuls of brown sugar with lemon juice, add a big teaspoonful of butter and cook over a slow fire until it forms a ball when dropped in cold water. Drop in one-half cupful each of chopped dates, raisins, figs, citron and candied orange peel. Stir thoroughly, remove from the fire, as it cools press into sheets and later cut into inch squares.

Cream Fudge.

In a granite pan place two cupfuls of granulated sugar, a tablespoonful of butter, two-thirds cupful of sweet milk and a wee pinch of salt. Cook until it forms a soft ball when dropped in water, add a tablespoonful of vanilla and one cupful of chopped nut meats. Beat until creamy, pour into buttered tins and mark off in squares as it cools. If a novel fudge is desired, omit the nuts and the vanilla and substitute a teaspoonful of caraway seeds just before removing the candy from the fire.

Chocolate Fudge.

To two cupfuls of light brown sugar add one-half cupful butter, one-half cupful water and one-half cupful cocoa or grated chocolate. Cook until it makes

a soft ball when dropped in water and stir until nearly cold before pouring into buttered tins.

Fruit Hash.

Chop together one cupful English walnuts, seeded raisins, dates and puffed rice, add just enough maple syrup or molasses to hold the various ingredients together, pack in a mold and let stand for 12 hours under a heavy weight. Cut in thin slices with a sharp knife and if the hash shows a tendency to crumble, (which it should not if well chopped), wrap each slice in oiled paper before placing in the Christmas box.

Mints.

To two cupfuls of sugar add one-half cupful clear syrup and one-half cupful water and cook until it makes a ball when dropped in water. Divide into as many parts as you wish different kinds of mints, color the wintergreen with currant juice and the lemon with a very little of the yellow liquor made from pressing scraped carrots until the juice is forced out. The peppermint may be left white. Drop on paraffin paper and set in the warming oven back of the range until they harden.

STUDYING SCHOOL LESSONS AT HOME.

BY LAUREL CAMERON.

In both city and country schools, conditions are such that certain portions of school work must be done at home. It is a custom almost universally prevalent.

Now while in some instances this might not prove injurious, yet taken as a whole, especially from the family viewpoint its disadvantages outweigh the benefits.

The state says to the parent, "Your child must be sent to school." All well and good. The child goes. Father works to provide books, clothes, pay taxes, etc., that his child may have an education and be able eventually to take its place in the world. Mother works that the child may be clean and comfortable while gaining that education. Some ten or more years of the child's life is then devoted to securing an education. No pains are spared, no sacrifice too great, no toil too hard, for the parents if only their child can get an education.

Now, while the parents are willing, and the majority are, that the child shall put in six hours a day for five days in a week and for ten months in a year for the express purpose of getting an education, is it quite fair to the parents, especially to the mother, to demand that so much of the child's time out of school be put upon its studies?

Mary comes home with the plea, "My examples are so hard I can't get them alone. You will have to help me do them," or, "I have so many sentences to write I never can get them all done tomorrow." John's cry is, "Teacher says I must study my spelling at home." Or, "I have to draw a map and learn my geography lesson for tomorrow." Then comes the plea for time to study and for help with the lessons. All this means that mother must work a little harder and hurry a little faster in order that John and Mary may have time to put upon their studies.

The mother of a family works hard all day and naturally looks for some assistance from the older ones when they come home from school. This she cannot get when so much of the school work must be done at home. Many mothers need the help of their children after school hours. There are always errands to run and little tasks to do that the children can do as well as the mother and that would save her many weary steps. In order to learn so many lessons after school makes it impossible for the child to help as much as it otherwise would. Mother is obliged to do these things so the child may study. Then, when she has the little tasks done, which naturally would be done by the child if it could, her burdens are increased if she must help them with their school work. And help them she must, or dire calamity will befall them next day in the shape of "no recess," or "stay after school," or "be put back a grade."

In reality she is compelled to do the work for which another is drawing a salary. The child's father pays annually his taxes that a teacher may be paid to teach his child. He finds his wife many times doing this work—the work which ought to be done in the school room and not outside. Does he say anything? No. It is all a part of the system. A thing so common everywhere that it goes almost unnoticed. It is a mother's place to help her child—so let her. No matter if another is getting paid for work which

the mother is doing for nothing. Teacher is resting up for her arduous work next day. Mother has not the time to rest. I know whereof I speak. I have been a teacher. Am now a mother and can testify that rest times are scarcer now than when teaching school.

Then, outside of the help the parents need from the child he should have some time each day to give to the cultivation of tastes along other lines. If he has musical or literary tastes some of his time should be given to reading and music. This can hardly be done when he must needs put in so much time out of school hours upon his school studies there is little left for these other things. It is not the lazy pupils that must put in so much time studying at home. It is generally the bright, active ones—eager to keep up with the class and make their grade each year. The laggards don't care.

Would not the pupils learn their lessons easier, go at their school tasks in better condition, and accomplish more in the long run if they were not thus driven? Would they not grow healthier and stronger physically and mentally if allowed freedom from school books after school hours? Who is to blame for this study at home—the teacher who gives out the lessons, or the parents who allow it to be done?

SHORT CUTS TO HOUSEKEEPING.

To blacken stoves, mix the blacking in a baking powder can and apply with a paint brush to prevent soiling hands. For polishing an old broom will be found a great time and labor saver.—Mrs. D. L. M.

I find a good-sized piece of pumice stone kept handy, a great help in washing dishes. It scours the cooking utensils quickly and easily. Also a piece of chamois skin to wipe glassware, lamp chimneys and windows, is a time saver.—Mrs. T. C. C.

WANTS CROCHETED JACKET.

Editor Household Department:—I would like to ask through the columns of your paper if any of the subscribers can give me directions for making a crocheted jacket that is to be worn over lingerie waists or under coats? It laces under the arms and is made without sleeves. It is made of white wool yarn and has a border of light color.—Beatrice J.

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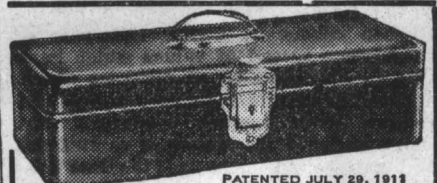
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Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

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.

THE ASSOCIATIONAL MEETING.

(Continued from last week.)

Wednesday Afternoon Session.

This session was pleasantly opened by a musical number by Miss Margaret Wright, of Washington Farmers' Club. Owing to the fact that one of the participants in the last number in the afternoon as scheduled on the program, was obliged to leave on an early train, the symposium, "How can the farmer get more than 35 per cent of the cost to the consumer," was first taken up. In opening the subject, Mr. C. B. Cook, of Maple River Farmers' Club, commented upon the wide difference in the prices received by the farmers and those paid by the ultimate consumer, giving examples of the extreme spread of values which have come to his attention at different times. In speaking of the influences which had brought about present conditions, Mr. Cook mentioned the factors of capital and combination, and emphasized the fact that it is incumbent upon the farmers of the present generation to find a solution for this problem and, to apply the remedy wisely.

Mr. Jas. N. McBride, of Burton Farmers' Club, who followed Mr. Cook in this discussion, took the radical stand that the most effective remedy for present conditions would be the fixing of the prices by the government and presented arguments in favor of the contention, which will be summarized in a future issue, as will the ideas on this important subject presented by Mr. Cook.

The last speaker on this subject was I. R. Waterbury, editor of the Michigan Farmer, who undertook to show that Mr. McBride's theory was impracticable and undesirable, and the best method of procedure for the farmers to get a fair share of the consumers' dollar is to be found in employing the same influences which Mr. Cook mentioned as being responsible for present conditions, viz., capital and combination, and referred to the remarkable progress which has been made in co-operative enterprises by the farmers of Germany, Holland and other European countries, not alone in organizing for the co-operative sale of pro-

ducts and buying of necessities along lines of community production, but as well by the organization of credit associations for the purpose of making loans, which, by this means are secured on long time and at a low rate of interest which compares favorably with the terms on which the big corporations are able to loan money through the sale of the best classes of industrial bonds.

The committee on state affairs also reported at this session, and the resolutions which they presented and which were adopted by the delegates were published in the issue of last week. Space compelled the omission of the resolutions on temperance and Club extension, which were as follows:

Temperance.

Resolved, That the Michigan State Association of Farmers' Clubs declares its appreciation of the foresighted and wise policy of the state fair management in excluding from the fair grounds the sale and use of intoxicating liquors, thus making it a more safe place for the entertainment and instruction of our people.

Resolved, That we endorse the work of the Anti-saloon League.

Whereas, The saloon literature being passed through the mail, is pernicious.

Therefore, Be it resolved, that we urge the individual members of the Clubs to do all in their power to suppress and destroy such literature.

Whereas, We believe that woman suffrage would aid in securing state wide prohibition.

Resolved, That we, the farmers of Michigan, through our Clubs and organizations utterly refuse to sanction or support any candidate for the legislature who will not pledge himself to work for its cause.

Club Extension.

Whereas, We believe that many of our Farmers' Clubs are not properly financed we recommend that some uniformity of rules be adopted whereby we would be relieved of that condition. We recommend the formation of county Farmers' Clubs Associations where such are not already formed. We recommend the affiliation of the several farm organizations of our country so far as is possible.

It was necessary to permit a part of the numbers on the afternoon program to go over until the evening meeting, for which reason the two sessions will here be reported as one meeting.

"Making the Most of One's Self," was the topic of an excellent paper by Mrs. Nettie Thomas, of Marshall Farmers' Club. This was followed by an address on "The Relation of the Farmers' Club to the Public Schools," by H. Eugene Bradley, of the Eckford Club, while the topic of a paper by Mrs. Ellen Purdy, of Indianfields Farmers' Club, was "Forward." These papers contain so many helpful ideas that we shall undertake to either publish them in full or summarize them for the benefit of the Club members of the state in future issues, as space may permit.

The program was pleasantly interspersed with music, including numbers by Mrs. Gary Sanders, of Ingham Farmers' Club and Miss Wright, of Almer Farmers' Club, while at the evening session the Industrial School choir rendered several selections which were well appreciated by the delegates present.

The treasurer's report was given by Mr. Decker, of Eckford Farmers' Club, acting for Mrs. Sackett, treasurer of the organization, who could not be present at the meeting. A recitation was rendered by Miss Maude Slocum, of Corun-

na, which received an enthusiastic encore from the delegates. "Our Girls" was the title of a well received talk by Miss Maude Gilchrist, Dean of the Women's Department at the Agricultural College.

The closing number of the program was an address on "The School Book Problem," by Hon. H. E. Straight, of Coldwater, who proved to be a highly interesting speaker, mixing fact with humor in so charming a manner as to hold the attention of the delegates even at the late hour. He is a strong advocate of the publication and free distribution of text books by the state and presented some strong arguments for this plan which are the results of his investigation of the proposition.

Thus closed the 19th annual meeting of the State Association of Farmers' Clubs, which was both well attended and enthusiastic in character from the beginning of the opening session until its close.

THE LOCAL CLUBS.

At the recent annual meeting the secretary reported that four Clubs had disbanded during the year and three new Clubs organized, with a very considerable gain in the membership of the existing Clubs, and not a little interest in Club organization, as judged by the number of requests for copies of the constitution and by-laws, including one from Ontonagon county in the upper peninsula. Many Clubs have requested information regarding song books for Club use, and in other ways great interest has been manifested in Club work. She reported three executive meetings during the past year and gave a detailed account of the work accomplished at these meetings.

The secretary has listed at present 115 active Clubs in 29 counties of the state, with several others of which she has information, but which have failed to respond to repeated letters. Three others have refused to join the State Association. The secretary states that there are still some copies of last year's printed reports on hand, which will be cheerfully forwarded to any Clubs which did not receive their full quota, upon request.

Three county associations are reported, viz: Tuscola, Clinton and Shiawassee. The lecture course which is now being promoted by the Looking-glass Valley Farmers' Club of Shiawassee county, was quoted as an example worthy of emulation.

YEARLY PROGRAMS.

The Odessa Farmers' Club.

The 1912 program of the Odessa Farmers' Club consists of three cards about 3x5 inches in size, tied together with a ribbon by means of holes punched for the purpose in one corner. The title page bears the name of the Club, the date for which the program serves, a list of the officers of the Club, the announcement of the dates of the meetings which are on the second Saturday of each month beginning at 10 o'clock a. m., from October to March, and 2 p. m. from April to September. This, with the order of the business of the meeting, completes the first "page."

Both sides of the cards are used, the

program being announced on successive "pages" as folded over. The programs are practically complete, the members who are to lead the discussions being announced in connection with the questions for each meeting and the literary numbers being announced, the musical numbers being left open to be filled in by a committee for the various meetings. There are questions for discussion by the ladies for nearly every meeting as well as a general topic for the men.

The special features are, a young peoples' meeting for February, a temperance meeting for March, children's day in June and an August picnic. In July the Club holds no meeting. The questions announced for discussion are suitably selected and of a practical and educational trend. Altogether the program is most tastily gotten up, is convenient in form and admirably adapted to the purpose which it is designed to serve.

CLUB DISCUSSIONS.

Hold Annual Meeting.—The Hamburg and Putnam Farmers' Club held their November meeting at "Brookside Farm," the pleasant home of Mr. and Mrs. H. F. Kice. After the appointment of the committees by Pres. Hendricks, the Club adjourned for dinner. This being the annual meeting the election of officers followed: President, Ray Baker; first vice-president, Myron Hendricks; second vice-president, Rule Conway; secretary, Mrs. Rule Conway; corresponding secretary, Miss Una Bennett; treasurer, S. E. Van Horn. The Club was then favored with a song by Florence Blanche Kice, of the U. of M. school of music, after which a very interesting question box followed. A rising vote was asked for by one of the members of the Club for all who favored President Taft's administration. Every member seemed to be stricken with weak knees, not one responding. The Club adjourned to meet with Mr. and Mrs. Steven Van Horn the last Saturday in December.

The Rural School.—Mr. and Mrs. Z. W. Carter entertained the members of the Odessa Farmers' Club, Saturday, Dec. 2. A goodly company was present. After opening exercises, Mr. Z. W. Carter introduced the subject, "What shall be taught in our rural schools?" He would have small schools consolidated, so there shall be at least 20 in each school. Then there should be a high school at or near the center of each township. Also an academy to fit high school graduates for the university; all branches should be taught but the proverbial "3 rs" should take first place. Civil government should be taught to enable the pupil to conduct the affairs of the township. Scientific agriculture should have a place in the curriculum. Discussion brought out some good thoughts. The pupils should be taught to do business for themselves. The highest ideal for a boy is to be a man. They should be taught to do things right, and have a practical knowledge of practical things. Do all you can to keep the boys at home. After a bountiful dinner was served, Mrs. B. F. Carter favored us with a beautiful vocal solo, and Leona Carter recited a Thanksgiving poem.

Christmas Giving.—Mrs. J. W. Brown led the discussion of the subject, "Christmas Giving." This is the most beautiful thing in life, but is sometimes carried too far. The retiring president gave a short talk, with some good advice. Mr. and Mrs. H. E. Curtis were elected members of the executive committee for two years, Mr. and Mrs. John Bower for one year. After the question box was opened and questions answered, the Club adjourned.—Lottie M. Durkee, Cor. Sec.



Delegates to the Nineteenth Annual Meeting of the State Association of Farmers' Clubs, as they were "Caught" Between Sessions by the Photographer.

GRANGE

THE STATE GRANGE OF 1911.

About 425 delegates comprised the membership of the 39th Michigan State Grange—a slight gain over the one which preceded it a year ago. Eighty of the state's 83 counties were represented, giving an average representation of better than five delegates per county for the entire state. If further evidence of the fact that the Grange has advanced to the state limits were needed, the choice of location for next year's meeting should suffice, since the delegates at Kalamazoo, in the closing hours of last week's busy meeting, voted that the organization should cross the Straits and conclude the fourth decade of Michigan Grange history with a rousing meeting at Sault Ste. Marie.

The attendance of visitors was largest during the early days of the session. This is explained by the fact that the early sessions included most of the entertainment and educational features which figure so prominently in the pleasure and satisfaction derived from these annual gatherings. The entertainment of the



The Official Badge Mutely Testified to the All-Michigan Character of the Organization.

delegates and visitors by the Western State Normal on Tuesday evening was the social event of the week. The citizens of Kalamazoo and the faculty of the Normal united in warmly welcoming their guests. A short formal program was carried out and the guests greatly appreciated the privilege of meeting the official head of the state's educational system, Hon. L. L. Wright, and of listening to his brief but strong plea for the improvement of rural school conditions. Superintendent Wright asserted that it is time that the rural schools turned their attention to the study of agriculture, and as a means of improving present conditions he suggested a larger unit or organization, either of township or county, and closer supervision of country schools by the county commissioner. The remainder of the evening was given over to social intercourse and to inspection of the equipment and work of the Normal, a state institution in which every citizen should be interested.

The most popular session of the week was that of Wednesday afternoon when the State Lecturer's program was presented, the attendance taxing the capacity of the Academy of Music in which all of the sessions were held. The able report of the State Lecturer and the pleasing and instructive numbers which followed it must, however, be accorded the space and credit which are due them in a later installment of this report.

Other innovations which relieved the routine of the proceedings and contributed to the success of the meeting were interspersed through the numerous sessions. Chief among these may be mentioned brief addresses by Gov. Osborn, Ex-Senator Dickinson, of Eaton county, Pres. J. L. Snyder, of the Agricultural College, and Master Laylin, of Ohio State Grange. Master Laylin spent two days at the meeting and addressed the delegates on several occasions, giving expression to his thorough appreciation of the need of strong, alert, business-like and harmonious farmers' organizations and his well-founded belief that the Grange more nearly meets the requirements than any other. Prominent as an agricultural leader in his state for more than fifteen years, he has been a member

of the Grange much longer than that, having been one of the organizers of his home Grange in Townsend township, Huron county. For some years previous to his election as State Master he did effective work as a farmers' institute lecturer and served several years as a member of the Board of Control of the Ohio experiment station. He became the official head of the Grange in Ohio in 1907 and, a little later, he so arranged his farming operations that he might give the major portion of his time to Grange work. As a result Ohio led all other states in the number of new Granges organized during 1911.

Officers' Reports Show Good Condition of the Order.

The satisfactory growth of the past two years and the generally prosperous condition of the order were reflected in the reports of the officers and standing committees from State Master down through the entire list. In his annual address Master Hull carefully reviewed the year's activities and forcefully urged concentration of effort upon certain reforms which the Grange has long championed and which cannot long be denied the farmers of this country. The recent reciprocity campaign demonstrated the need of more thorough and complete organization of the farming class, and the Grange's attitude with respect to that issue was made the subject of a commendatory and congratulatory tribute by the State Master. In referring to past achievements of the order in the important matter of securing popular state and national reforms, he expressed the opinion that a general and practical parcels post law will be the next great achievement for which the Grange may justly claim a large share of credit.

Among the recommendations offered was one which came as a result of the recent proposal to establish a state department of agriculture. Concerning this matter the State Master said: I am of the opinion that there should be established in Michigan an agricultural department presided over by a commissioner of agriculture. This commissioner should be both a practical and a scientific farmer, a man who is in sympathy with the farmer and who knows his needs. It should be the business of this commissioner to advertise the resources of the state, to have prepared a soil-survey map of the state, that he may be able to furnish inquirers accurate information as to the adaptability of the lands of the state. He should have charge of the collection of the agricultural statistics of the state and agricultural demonstrators should be under his charge. In short, he should stand as the official representative of the farmers and use his best efforts to aid and encourage them in every way possible.

Our request for such a commission ought in no way to be considered as a narrow or selfish request, for not only will our farmers be benefited by bettering our agricultural methods and production, but in equal measure will all other classes be benefited.

To assure greatest efficiency, such commission should be closely allied with our agricultural college and experiment station. I therefore recommend that the Michigan State Grange instruct its executive committee to use their best efforts to have an agricultural commission established in this state and that the commission shall be appointed and under the control of our state board of agriculture.

Secretary Hutchins reported a good growth in membership during the year, notwithstanding the fact that the total number of active subordinate Granges shows little increase, the 142 new Granges organized being nearly offset by those which became inactive or dormant during the year. The membership for the state, based on fees paid during the year, was shown to be 50,361, compared with 47,588 for the preceding year.

A detailed financial report was issued in pamphlet form by Treasurer Coward and distributed among the delegates. That part of this report which deals with the assets of the organization is as follows:

Invested Securities.

Bonds on hand Dec. 1, 1910.....	\$44,000.00
New Loans—	
Grange Life Insurance Co.....	1,000.00
Patron's Fire Insurance Co.....	2,500.00
Total	\$47,500.00
Bonds paid	\$ 1,500.00
Securities on hand Dec. 1, 1911..	46,000.00
Cash on hand	1,859.31
Total of invested funds	\$47,859.31
Cash on hand general fund	1,647.86
Total	\$49,507.17

Invested Funds, Cash Balance.

Cash on hand Dec. 1, 1910.....	\$ 938.31
Interest received	2,922.50
Bonds paid	1,500.00
Total	\$ 5,361.41
Expense	2.10
Loan to Life Insurance Co.....	1,000.00
Loan to Fire Insurance Co.....	2,500.00
Cash on hand Dec. 1, 1911.....	1,859.31
Total	\$5,361.41

Prominent items in the detailed statement of disbursements from the general fund are \$5,928.67 covering expenses of State Grange meeting of 1910; \$2,333.95 covering expenses of conducting the contract system, and \$2,376.65 covering fees remitted to the National Grange. Aside from this, the year's disbursements were mainly for organization, supervision and rally work, the total paid out during the year, for all purposes, being \$20,719.47. The year's receipts, including cash on hand Dec. 1, 1910, are given as follows: Cash on hand, \$3,259.81; fifth and sixth degree fees, \$202.50; from co-operation (contract system) \$6,020.47; dues, \$11,399.03; supplies sold, \$941.02; from National Grange extension fund, \$510; miscellaneous, \$35, giving a total of \$22,367.33. Deducting the year's disbursements of \$20,719.47 leaves a cash balance on hand Dec. 1, 1911, of \$1,647.86.

The statement submitted by the executive committee's sub-committee on finance, T. H. McNaughton chairman, which has charge of the organization's invested securities and funds, tallied with the above report.

Legislation and Co-operation.

The real work of the executive committee was brought out in the reports of its sub-committees, the one dealing with legislative matters being submitted by its chairman, C. S. Bartlett. It was largely a review of what was accomplished in connection with the 1911 session of the legislature. The committee championed the amendment providing for a more equitable distribution of the primary school interest fund which was passed by both houses and approved by the people of the state last spring. It was also active in securing the law which requires telephone companies to make physical connections for the convenience of their patrons, which law is now being tested in the courts. A measure which promised to affect detrimentally the farmers' mutual insurance companies and the fraternal societies of the state was vigorously opposed and its defeat accomplished, but the committee's efforts in behalf of the initiative and referendum were not successful. It was instrumental in sending to Washington a petition, bearing 30,000 names, requesting the defeat of the reciprocity pact. Parcels post also received close attention and the committee recommended that patrons throughout the state keep in close touch with their representatives in congress during the present session. And in order that this congress, as well as all legislative bodies of the future, may be kept informed as to the attitude of the Grange on questions of national or state import which, directly or indirectly, affect the farmers of the country, it was further recommended that each subordinate Grange maintain a legislative committee which shall co-operate with the legislative committee of the State Grange.

Chairman Horton of the sub-committee on co-operation explained the contract system of buying now being employed by a majority of the Granges in this state. Briefly reviewing the history of Grange co-operative effort, including the failure of the Grange stores and other co-operative enterprises, he declared the present contract system to be the cleanest, safest and best that has yet been worked out. The plan is practically original with Michigan, but there are many Granges in the state that do not reap the benefits from co-operative buying that they might. The committee recommended that each subordinate Grange have a business agent or assistant to the secretary in order that this branch of the work may have closer and more prompt attention. The problem of co-operative selling by Granges has also been earnestly considered by the committee during the year, but little has been done beyond determining the financial responsibility of parties known to be in the market for products which Granges are in position to supply in considerable quantities.

Work of the Delegates.

Of the numerous committees appointed at the opening of the meeting, the first to bring in its report was that on agricultural college. It was presented by Chairman C. T. Cook and was promptly adopted. Its main features are given in the words of the committee:

Resolved, that the Michigan State Grange approves the work of the Agricultural College and its efforts to extend agricultural education: (a) By means of introducing courses in agriculture into public high schools. (b) By organizing short courses for farmers in connection with such schools.

That we approve of a liberal appropriation by the state to be used in assisting the Michigan Agricultural College in more effectually extending its work and influence among the schools and the farmers of Michigan; and that the use of such an appropriation should be extended to include demonstrations and experiments in soil fertility, animal husbandry, farm crops, dairying and horticulture.

That we are opposed to creating the office of commissioner of agriculture, but are in favor of so extending the duties of the State Board of Agriculture that it shall have general supervision of the agricultural interests of the state.

Another report which was the subject of much favorable comment was that of the committee on education, of which Director Leo M. Geismar, of the U. P. experiment station, was chairman. We present this report in full:

To develop and cultivate the physical, mental and moral attributes of the future citizen is the mission of education. It is the preparation of the boys and girls for life.

We admit that school education does not necessarily spell success and that it is not always productive of the highest type of citizenship. There is a wide gap between the knowing of what to do and the doing of it, and it must be filled by ambition and home training.

Keeping in line with the growing needs of life, we have heretofore asked, and again ask, for those educational reforms which tend toward a better and more efficient training and preparation of the boys and girls for life, and philosophers, statesmen, socialists, educators and thoughtful men of all times have always conceded that the ideal life is the life on the farm.

To this end we re-affirm the stand of the Michigan State Grange in regard to educational questions, and particularly in the matter of text books as reported by the special committee on education at the sessions of 1907 and 1910, namely, compulsory free text books.

We believe that the time has come when the great fundamental moral principles of our race should be taught to the children in our schools; whether by reading the Bible as a work of literature, as advocated by the Governor, or otherwise, must be worked out.

Your committee believes that a course on public ethics or duties of citizenship, and co-operation should be put into our public schools. That rural social centers should be developed with the public school as the social center and, with the co-operation of the Grange and various conferences, strive to solve and work out the problems peculiar to each community.

Of the special things submitted to this committee we recommend the following:

1. A larger unit of organization for the schools of this state.
2. An amendment to the existing laws that will result in a closer and more efficient supervision, by educational experts, of the country schools.
3. The beautifying, ventilating and rendering more sanitary of school buildings and school grounds.
4. That nature study be taught in the lower grades.
5. That district school libraries contain a fair percentage of books on agriculture, bulletins and agricultural papers, and that children be encouraged to give reviews of the same.
6. That the township unit system school law be amended so that all candidates for the office of trustee shall be compelled to file their names with the secretary of the school board at least five days before the day of election, and that such election be conducted under the Australian ballot system.
7. That we approve the so-called McLaughlin bill and the movement of the National Soil Fertility Association now before congress, providing for government appropriations for the extension of agricultural investigation in agricultural colleges and experiment stations, and for the establishment of demonstration farms in every county.
8. That we favor a law along the lines of the report of the Michigan Commission on Industrial Education, as made to the Governor and the last legislature, providing for introducing into our public school system facilities for industrial and vocational education and providing a state grant, or state aid, for such purpose.
9. That we most heartily commend the work of the Department of Agricultural Education at the Michigan Agricultural College, the county normal training schools and the most excellent work of the rural school department of the Western State Normal College, to which we owe much for inspiration and suggestion at this session.

The committee on insurance in its report commended life insurance as a means of systematically saving and providing against the time of need. The committee expressed the opinion that in adopting life insurance the Grange has found an effective means of holding its younger members. The only recommendation offered was that the State Grange executive committee be instructed to loan such money to the Grange life insurance company, from time to time, as it sees fit, and the delegates concurred in the recommendation.

(Continued next week).

MARKETS

DETROIT WHOLESALE MARKETS.

December 20, 1911.
Grains and Seeds.

Wheat.—Prices ruled a little higher the past week. The world's stock for the week shows an increase of a little over one million bushels, whereas the corresponding week in 1910 showed a decrease of over two million bushels. This is largely due to the heavy receipts at primary elevators in the United States and Canada, Europe showing a heavy decrease for the period. The government crop report indicates a yield for the country slightly smaller than that of 1910. The large sales by farmers of spring wheat states, and also of Canada, give the impression that the early estimates of the spring wheat crop were possibly a little small, however. The chief bullish news of the week came from Argentina, where rain is damaging the large crop that has been maturing in that country. This damage caused anxiety in Liverpool and developed a firmer market there with slightly higher quotations ruling. It must be stated that the market is in an uncertain situation and fluctuations are to be expected. One year ago the price for No. 2 red wheat was 95c per bu. Following are the quotations:

	No. 2	No. 1	May	July
Thursday	94½	92½	98½	94½
Friday	95½	93½	1.00	95½
Saturday	95½	93½	99½	95½
Monday	96½	94½	1.00	95½
Tuesday	96½	94½	1.00½	95½
Wednesday	96	94	1.00½	94½

Corn.—Corn prices have advanced a full cent since the closing a week ago. The government crop report was slightly bullish and the improvement in the weather, as well as the better feeling in wheat circles, gave this trade good support. The improved quotations, however, have increased offerings from the corn belt and this will probably bring an easier tone into the trade soon. The receipts in the ten largest market centers last Tuesday, however, were about one-half what they were in the corresponding week-day in 1910. The price for No. 2 corn a year ago was 53c per bu. Quotations are as follows:

	No. 3	No. 3
	Corn	Yellow
Thursday	62	63
Friday	62	63
Saturday	62½	63½
Monday	63	64
Tuesday	63	64
Wednesday	63½	64½

Oats.—This grain has advanced with wheat and corn. The government raised its estimate on the 1911 yield nearly 50,000,000 bushels under the new method of figuring. This change caused buyers to be a little more cautious and resulted in an easier feeling in the oat deal than would probably have prevailed otherwise. Offerings, however, were taken up freely and the market is in a healthy condition notwithstanding. A year ago the price for standard oats was 35c per bu. Quotations are as follows:

	Standard	No. 3
		White
Thursday	50½	50
Friday	50½	50½
Saturday	51	50½
Monday	51	50½
Tuesday	51	50½
Wednesday	51	50½

Beans.—There appears to be a firmer tone to the bean deal which is partially due to the better condition of offerings, less moisture being present than for the weeks when threshing was in order. The great loss to this market from the unusually wet weather last fall, is certain to be felt from now on. In some parts of the state it is reported that from a quarter to a third of the fields were a total loss. Quotations are as follows:

	Cash	Jan.
Thursday	\$2.17	\$2.22
Friday	2.20	2.24
Saturday	2.20	2.24
Monday	2.20	2.24
Tuesday	2.22	2.26
Wednesday	2.25	2.30

Clover Seed.—Prices have been maintained at last week's closing figures; trading is limited. Alsike is nominally quoted at the old figure. Prices are as follows:

	Prime Spot	March	Alsike
Thursday	\$12.40	\$12.40	\$10.50
Friday	12.50	12.50	10.50
Saturday	12.50	12.50	10.50
Monday	12.50	12.50	10.50
Tuesday	12.50	12.50	10.50
Wednesday	12.50	12.50	10.50

Flour, Feed, Potatoes, Etc.

Flour.—There is a fair demand for flour, with prices unchanged.
Straight \$4.10
Patent Michigan 4.75
Ordinary Patent 4.50
Feed.—All grades steady with last week. Carlot prices on track are: Bran, \$27 per ton; coarse middlings, \$29; fine middlings, \$32; cracked corn, \$30; coarse corn meal, \$30; corn and oat chop, \$28 per ton.
Hay and Straw.—Timothy hay and rye straw are lower. The quotations for mixed grades are wider. Quotations are: No. 1 timothy, \$20@21; No. 2 timothy, \$19@20; clover, mixed, \$18.50@20; rye straw, \$9.50@10; wheat and oat straw, \$9 per ton.
Potatoes.—Last week's prices are sustained. About enough offerings are made to keep the trade steady. Car lots on track are quoted at \$5@90c per bushel in bulk.
Provisions.—Family pork, \$17.50@20; mess pork, \$16.50; medium clear, \$16@17.50; hams, 13½c; bacon, 12@14c; pure lard in tierces, 9½c; kettle rendered lard, 10½c per lb.

Dairy and Poultry Products.

Butter.—Butter prices are substantially the same as a week ago for both creamery and dairy offerings. While at the present time, butter is moving in little larger volume than at this date in 1909 and 1910, yet the total output to December 19 from January 1 is considerably smaller than for the corresponding periods for the two preceding years. Quotations for the week are as follows: Extra creamery, 35c; first do., 34c; dairy, 21c; packing stock, 20c.
Eggs.—The prices given last week still rule. Offerings are not as large at many of the big trading centers as they were for the two previous years. The demand is good. Regular receipts, case count, cases included, are quoted at 32c per dozen.
Poultry.—There is a liberal amount of poultry for the holiday trade and prices are not likely to reach any unusually high mark in our cities. Chickens and live ducks rule lower. Quotations are as follows: Live—Turkeys, 16@17c; geese, 11@12c; ducks, 14c; young ducks, 15c; spring chickens, 10@10½c; No. 2 chickens, 8c per lb; hens, 8½@9c. Dressed—Chickens 10@11c; hens, 8@9c; ducks, 16@17c; geese 12@13c; turkeys, 16@17c.

Cheese.—Michigan, old, 15½@17c; Michigan, late, 15½@17c; York state, new, 16@17c; Swiss, domestic block, 17@20c; cream brick, 15@16c; limburger, 14@15c.
Veal.—Market steady. Fancy, 10@11c; choice, \$8@9c per lb.
Dressed Hogs.—Light, \$7.25; medium, \$7; heavy, \$7 per cwt.
Fruits and Vegetables.
Cabbage.—Lower. Selling at \$1.25@2 per bbl. for home-grown.
Onions.—Steady at 95c@1 per bu.
Apples.—Baldwins and Greenings, \$2.75 @3; Spy, \$3@3.50; Ben Davis, \$2@2.50; Snows, \$3.50@4 per bbl.

OTHER MARKETS.

Grand Rapids.

Potatoes are quiet this week, with buying prices at loading stations around 65c. Having had a taste of higher prices the growers are not willing to sell at present quotations. Poultry men are paying the following prices for live stock: Fowls, 9c; ducks, 10c; geese, 9c; turkeys, 15c. Dressed poultry is 2c higher. Fresh candied eggs are worth 30c; dairy butter, 28c. Grain prices are as follows: No. 2 red wheat, 91c; oats, 50c; rye, 84c; corn 63c; buckwheat, 83c; hand-picked white beans, \$2; red kidneys, \$2.25.

Chicago.

Wheat.—No. 2 red, 96½@98c; May, 99½c; July, 95½c per bu.
Corn.—No. 3, 61½@62c; May, 64½c; July, 64½c per bu.
Oats.—No. 2 white, 48½@49½c; May 48½c; July, 45½c per bu.
Barley.—Malting grades, \$1.10@1.24 per bu; feeding, 80@95c.
Butter.—Creamery quotations steady with last week while dairy prices are off a cent. The market is firm. Creameries, 26@35c; dairies, 23@31c.
Eggs.—The volume of trade is limited by the light holdings. Best grades are higher while ordinary kinds rule steady. Quotations are: Firsts, grading 45 per cent fresh, 28@31c; ordinary firsts, 25@27c; at mark, cases included, 22@28c per dozen.
Potatoes.—Receipts have fallen off, but trade holds steady with lower margin slightly reduced for all except Wisconsin offerings where a small advance is noted. Michigan stock is now quoted at 82@85c per bu; Wisconsin, 76@80c; Minnesota, 82@85c.

Beans.—Prices advanced 3c for pea beans and remain steady for red kidneys. Choice hand-picked pea beans quoted at \$2.27 per bu; prime, \$2.30; red kidneys, \$2.85 per bu.
Hay and Straw.—Market steady with a week ago. Quotations: Choice timothy \$22@23 per ton; do., No. 1, \$20.50@21.50; do., No. 2 and No. 1 mixed, \$19@19.50; do., No. 3 and No. 2 mixed, \$14@18; clover, \$15@17; do., No. 2 and no grade, \$7@13; rye straw, \$10@11; oat straw, \$9@10 per ton; wheat straw, \$8@9 per ton.
Apples.—Market about steady with a week ago. The offerings are selling from \$2@4 per bbl., according to kind and quality.

New York.

Butter.—Practically all of the decline of values last week has been recovered with the trade firm at the advanced figures. Creamery specials are quoted at 38c per lb; extras, 37c; firsts, 32@35½c; seconds, 31@33c.
Eggs.—While eggs are a little unsettled, quotations are up fully 5c. Fresh gathered extras, 44@46c; extra firsts, 41@42c; seconds, 32@37c; western gathered whites, 38@45c per dozen.
Poultry.—Market steady at lower figures. Western chickens, 11@11½c; fowls, 12½@13c; turkeys, 14c. Dressed—Firm with turkeys higher. Turkeys, 13@21c; fowls, 5@16c; western chickens, 15@16c per lb.

Elgin.

Butter.—Market firm at 35c per lb., which is last week's quotation. Output for the week, 624,700 lbs., as compared with 632,000 lbs. for the previous week.

Boston.

Wool.—This market has a very firm tone and prices have a tendency upward. Fleeces are in especially good demand and buyers of these wools seem anxious to lay in their stocks. The finer grades also have a good call and large sales of washed delaine and fine territory have been made. Leading domestic quotations are as follows: Ohio and Pennsylvania fleeces—Delaine washed, 30@31c; XX, 28c; fine unmerchanted, 22@23c; ½-blood combed, 26c; ¾-blood combed, 25@25½c; ¼-blood combed, 25c; delaine

unwashed, 25c; fine unwashed, 21c. Michigan, Wisconsin and New York fleeces—Fine unwashed, 20c; delaine unwashed, 23c; ½-blood unwashed, 25@25½c. Kentucky, Indiana and Missouri—¾-blood, 24c; ¼-blood, 24c.

THE LIVE STOCK MARKETS.

Buffalo.

December 18, 1911.
(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of stock here today as follows: Cattle, 200 cars; hogs, 175 cars; sheep and lambs, 100 double decks; calves, 1,000. With 210 cars of cattle on our market here today and with soft muggy weather, and 31,000 reported in Chicago, our market was from 15@25c per cwt. lower on the common and fair grades of cattle, and on the prime heavy and good weights from 35@50c per cwt. lower, and at the close of the day, there were at least 25 cars of cattle went over unsold.

We quote: Best 1,400 to 1,600-lb. steers \$7.50@8; good prime 1,300 to 1,400-lb. do., \$7.25@7.50; do. 1,200 to 1,300-lb. do., \$6.50@7.25; best 1,100 to 1,200-lb. shipping steers, \$5.75@6.25; medium butcher steers 1,000 to 1,100, \$5@5.50; light butcher steers, \$4.25@4.75; best fat cows, \$4.50@5; fair to good do., \$3.50@4; common to medium do., \$2.75@3.25; trimmers, 1.75@2.40; best fat heifers, \$5.50@6; good do., \$4.75@5.25; fair to good do., \$4@4.50; stock heifers, \$3.25@3.50; best feeding steers, dehorned, \$4.50@4.75; common do., \$3.50@4; stockers, all grades, \$3.25@3.50; prime export bulls, \$5@5.50; best butcher bulls, \$4.25@4.75; bologna bulls, \$3.25@4; stock bulls, \$3@4; best milkers and springers, \$4.50@5.50; common to good do., \$2.50@3.00. Milkers and springers from \$3@5 per head lower and hard to sell. Late springers have to be sold by the pound, from \$2.25@2.50.

Receipts of hogs here being very heavy today, all the buyers were very bearish in their views; started out bidding 6c per lb. for the best quality and weights in the yards, and succeeded in buying quite a number of choice quality mixed and medium weights at this price. Some salesmen refused to sell at the price, and finally landed a good many best quality mixed and mediums at \$6.05, and several deals of the best heavier weights up to \$6.10. Best quality and weight yorkers sold generally at 6c per lb., and light yorkers around \$5.80@5.90, and the bulk of the choice quality best weight pigs at \$5.75. The good kind of rough sows sold mostly at \$5.50, with a few running to the packer grades up to \$5.60. The hogs are fairly well cleaned up that were yarded in time to fill and sell, but there is about 50 decks of late arrivals going over unsold.

The sheep and lamb market was active today; most of the choice lambs selling for \$6.50; few at \$6.60. Once bunch of fancy Christmas lambs at \$6.75. Look for steady to strong market the balance of the week. The sheep market was about steady; prospects about steady on sheep.

We quote: Best lambs, \$6.50@6.60; cull to common do., \$5.25@5.50; wethers, \$3.75@4; bucks, \$2.25@2.75; yearlings, \$4.25@5; handy ewes, \$3.25@3.50; heavy ewes, \$3.25@3.35; cull sheep, \$1.75@2.25; veals, choice to extra, \$8.75@9; fair to good do. \$7.50@8.50; heavy calves, \$3.50@5.

Chicago.

December 18, 1911.

Cattle. Hogs. Sheep.
Received today 31,000 60,000 38,000
Same day last year 19,031 30,378 22,092
Received last week 72,746 166,230 149,472
Same week last year 72,558 160,159 127,641

The week opens with an enormous run of hogs, lots of cattle and plenty of sheep and lambs, although prime holiday lambs are not any too abundant. Buyers are not eager to buy cattle, and while fat butcher stock is having a fair sale at unchanged prices, steers are moving slowly, with prices reported as 10@15c lower, although before the day is over the drop in prices may be considered more. No strictly fancy cattle have been sold, and it seems hardly probable that last week's best prices will be duplicated. Hogs are a good time lower, with more activity and firmness than was seen earlier in the day. Light hogs are in demand at \$5.60@6.10, while the best heavy hogs sell at \$6.20@6.25. The average weight of the hogs received last week was 213 lbs., the same as a week earlier, comparing with 224 lbs. one year ago, 218 lbs. two years ago and 210 lbs. three years ago. There was a disinclination upon the part of local packers to pay full prices for lambs, and the less attractive offerings displayed slowness and weakness, but on the whole the sheep and lamb market was not greatly changed. There was a high and active Buffalo market, and eastern shippers in the Chicago market paid \$6 for prime holiday lambs of moderate weight. Next Monday, Christmas, will be a holiday at the stock yards, and no sales of live stock will be made, but the receipts will be yarded and cared for. New Year's day is not included in the three holidays of the year, Christmas, Thanksgiving and the Fourth of July.

Cattle suffered quite a slump in prices for the great bulk of the offerings last week owing to unexpectedly liberal offerings Wednesday, following large receipts Monday. The bulk of the cattle were medium in grade, and the biggest decline was in these offerings. The decline was 25@40c, the greater part of the beef steers going at \$5.75@8, with the commoner light weights bringing \$4.50@5.75 and a very fair showing Monday of choice to fancy cattle at \$8.25@9.10, several sales of prime yearlings occurring at \$9. Good steers sold at \$7 and upward and medium lots at \$5.80 and upward. Butchering lots of cows and heifers underwent quite a moderate decline, the offerings being only moderate, and the best were as high as ever, going at \$6@7, but not many sold above \$6. Sales were made all the

way down to \$3.35, while cutters sold at \$2.50@3.30, canners at \$1.75@2.75, bulls at \$3@6 and calves at \$3@8.30 per 100 lbs. There was no great animation in the stocker and feeder trade, the greater part of the offerings undergoing moderate declines in prices, while the best cattle went considerably higher. Feeders sold at \$4.50@6 as a rule and stockers at \$3.25@5.15, while stock and feeding heifers had a fair outlet at \$3.10@4.10. Milk-ers and springers were quotable at \$30@60 per head for ordinary to choice cows, with fancy Holsteins salable at \$65@75 and not many offered. A great many thin, old cows have been arriving and sold usually to killers, as they were of no particular value for milking purposes. Looking forward, the cattle market promises well so far as well-finished kinds are concerned, and handy little fat yearlings are expected to sell particularly well. Some old-time stockmen are buying well-bred heifers in the expectation of bringing them back to market and selling at good profits. On Thursday sales were made of 101 fancy holiday cattle that weighed 1,591 and 1,639 lbs. at \$9.35.

Hogs have been shipped to this and other western markets liberally of late as a rule, the Monday runs being usually the largest, so that it is usual to see lower prices that day. The trend of prices has been in a downward direction much of the time, the character of the eastern shipping demand having much to do with this, and when outside buyers are especially good customers it is customary to see a firm market for the class of hogs taken by shippers. As for a long time, the choice class of heavy hogs is the strongest and first to advance, while the mixed packing lots usually lead the decline in values. The receipts are largely made up of rather light weights, and it is evident that a great many stockmen are letting their young hogs go rather than feed high-priced corn any longer, although the best judges believe it will pay well to make the hogs good and heavy. Little pigs are still numerous, although less so than several weeks ago, and they have to sell at extremely low figures. Fresh pork is having a large sale, and provisions are also active, with prices weakening under the heavy accumulations at western packing points. Closing prices for hogs Saturday were only a little lower than a week earlier, light lots going at \$5.65@6.20; the best heavy lots at \$6.25@6.35; coarse mixed lots at \$5.80@6; stags at \$6.30@6.50 and pigs at \$4.75@5.65.

Sheep and lambs have been marketed so irregularly in volume recently that prices have fluctuated a good deal, the biggest movements up and down being in lambs, on which the demand centers strongly. Usually the early part of the week sees extremely large supplies and lower prices, while later days are sparsely supplied, causing sharp advances, particularly for strictly prime lambs. For instance, receipts of sheep and lambs Wednesday last week aggregated 45,503 head, but later days much smaller supplies were offered. The opening sales of the week were at \$6 for prime lambs, a decline of 25c, but before the week closed they sold up again to \$6.25. Prime little yearlings on the lamb order sold next best, with wethers and ewes following at long distances, popular taste being strongly for lambs. Sheepmen should remember that killers insist upon offerings being well fattened, and they discriminate very strongly against poorly finished stock, such selling slowly at such large discounts as to afford little or no profit to their unfortunate owners. Closing prices were away down, lambs going at \$3.50@6; yearlings at \$3.50@5; wethers at \$3.25@3.85; ewes at \$2@3.25 and bucks at \$2@2.50. Feeders paid \$4.25@5.15 for lambs and \$3.50@4.10 for yearling wethers.

Horses had a very limited demand last week, and no one expects to see much animation in trade until after New Year's. The receipts were not remarkably large, but they ran too much to common and medium grades, while such demand as there was ran mainly on the better class of heavy drafters, such as sell around \$250@300 and upward. A medium to good class of lighter weights of the draft class sold at \$175@225, while wagon horses were salable at \$150@200, and inferior animals were hard to dispose of at \$65@145.

LIVE STOCK NOTES.

George P. Arnston, Minnesota, who was awarded the honor of having fed the champion car load of hogs at the International show, kept them until they averaged 246 lbs., the lot being seven and one-half months old. They were Poland-Chinas, and they were allowed the run of pasture during the summer, and in the autumn they had the range of a corn field until three weeks before shipment to the show. At that time they were placed upon full feed, consisting of corn mainly, with some oats. No milk or slop was fed, water being the only liquid given. Mr. Arnston won \$75 by getting first in the class and an additional \$100 for grand premium.

The best authorities on the subject seem to be unanimously agreed that well fattened swine will bring high enough prices this winter and next spring to well reward stockmen for the time and feed required. It is no time to market immature hogs.

At the recent combination Shorthorn sale at Chicago during the International under the auspices of the American Shorthorn Breeders' Association the Kansas Agricultural College bought a bull for \$400, the North Dakota Agricultural College bought a bull for \$430, the Colorado Agricultural College bought a bull for \$425, and one was sold to the University of Minnesota for \$330. The top of the sale was Ruberta's Choice, bought by F. W. Harding, of Wisconsin, for \$825.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

December 21, 1911.

Cattle.

Receipts, 759. Market steady at last week's prices.

We quote: Best dry-fed steers and heifers, \$6@6.50; steers and heifers, 1,000 to 1,200, \$5@5.75; steers and heifers, 800 to 1,000, \$4@4.50; do. that are fat, 500 to 700, \$3.50@4; choice fat cows, \$4@4.25; good do., \$3.50@3.75; common cows, \$2.75@3.25; canners, \$1.75@2.75; choice heavy bulls, \$3.75@4.25; fair to good bolognas, \$3@3.50; stock bulls, \$2.75@3; choice feeding steers, 800 to 1,000, \$3.50@4; choice stockers, 500 to 700, \$3.50@4.25; fair stockers, 500 to 700, \$3@3.50; stock heifers, \$2.75@3.25; milkers, large, young, medium age, \$4@5.50; common milkers, \$2@3.

Bishop, B. & H. sold Hammond, S. & Co. 1 cow weighing 930 at \$2.50, 1 do weighing 850 at \$2.50, 3 do av 1,057 at \$2.75, 6 do av 873 at \$2.50, 1 do weighing 820 at \$2.25, 6 do av 878 at \$3, 4 do av 900 at \$3.75; to Sullivan P. Co. 1 do weighing 1,400 at \$4.25, 1 bull weighing 1,300 at \$3.75, 6 steers av 873 at \$5.25, 6 do av 926 at \$4.50, 2 cows av 965 at \$3, 1 bull weighing 1,250 at \$3.50, 2 heifers av 730 at \$4.10; to Bresnahan 4 canners av 807 at \$2.50; to Parker, W. & Co. 1 steer weighing 1,230 at \$6.50; to Rattkowsky 2 cows av 1,025 at \$3.45; to Douglass 3 butchers av 783 at \$4.50, 1 cow weighing 1,050 at \$4, 3 do av 937 at \$4.25; to Goose 4 cows av 1,112 at \$3.10; to Fromm 1 cow weighing 1,150 at \$2.90; to Rattkowsky 1 bull weighing 510 at \$3, 3 cows av 1,113 at \$3.50; to Sullivan P. Co. 4 cows av 827 at \$3.50; to Bresnahan 7 canners av 888 at \$2.50; to Newton B. Co. 15 steers av 994 at \$5.50, 1 cow weighing 1,050 at \$3.50, 2 do av 1,030 at \$4, 1 do weighing 940 at \$2.75, 3 butchers av 843 at \$4, 2 cows av 965 at \$2.40, 3 do av 960 at \$3.25, 2 do av 1,030 at \$4.10, 1 ox weighing 1,950 at \$4.75, 1 do weighing 1,500 at \$3.75.

Spicer & R. sold Hammond, S. & Co. 33 butchers av 746 at \$4, 28 do av 940 at \$4.75, 27 do av 808 at \$4.50, 3 do av 853 at \$4.10; to Perrin 19 stockers av 616 at \$3.75; to Goose 5 butchers av 344 at \$2.50, 1 heifer weighing 380 at \$3, 1 bull weighing 1,050 at \$3.75, 1 cow weighing 980 at \$3; to Regan 1 heifer weighing 550 at \$3.90; to Bresnahan 1 canner weighing 900 at \$2.50, 4 do av 790 at \$2.50; to Rattkowsky 4 steers weighing 730 at \$4.75, 2 do av 780 at \$4.75, 5 cows av 1,088 at \$3.85; to Sullivan P. Co. 2 do av 1,040 at \$3.50, 1 bull weighing 1,020 at \$3.50, 1 canner weighing 970 at \$2.75; to Thompson Bros. 4 butchers av 1,100 at \$4; to Regan 4 heifers av 525 at \$3.75; to Newton B. Co. 2 cows av 775 at \$2.75; to Hammond, S. & Co. 3 canners av 700 at \$2.50; to Lucke 5 stockers av 554 at \$3.50, 14 do av 376 at \$3.25; to Perrin 8 do av 625 at \$4.25; to Hirschleman 8 butchers av 750 at \$3.40.

Haley & M. sold Hammond, S. & Co. 4 canners av 845 at \$2.75; to Bresnahan 11 butchers av 603 at \$3.55; to Sullivan P. Co. 4 do av 810 at \$4.25, 3 do av 977 at \$5.25; to Rattkowsky 1 cow weighing 940 at \$4.25, 3 butchers av 670 at \$3.50, 1 heifer weighing 430 at \$3; to Heinrich 1 do weighing 830 at \$4.25, 4 steers av 1,220 at \$6.

Sharp sold Goose 3 cows av 1,087 at \$3.50.

Weeks sold Sullivan P. Co. 3 canners av 800 at \$2.50.

Johnson sold same 9 butchers av 652 at \$4.25.

Lovewell sold same 2 canners av 800 at \$2.25.

Stephens sold same 5 do av 774 at \$2.75, 2 do av 825 at \$2.25.

Sandell & T. sold same 3 do av 900 at \$2.65.

Johnson sold Perrin 7 stockers av 590 at \$3.80.

Johnson sold Thompson 1 bull weighing 1,030 at \$3.75, 1 do weighing 1,200 at \$4.

Lovewell sold same 4 cows av 1,087 at \$3.65, 1 heifer weighing 840 at \$5.

Veal Calves.

Receipts, 582. Market steady at last week's prices. Best, \$8@8.50; others, \$4@7.75; milch cows and springers \$3@5 lower.

Bishop, B. & H. sold Parker, W. & Co. 5 av 155 at \$8.50, 40 av 140 at \$7.50, 3 av 130 at \$7.50, 9 av 150 at \$8; to Thompson Bros. 3 av 120 at \$5.50, 3 av 165 at \$8.50, 4 av 90 at \$5, 5 av 125 at \$7; to Mich. B. Co. 10 av 137 at \$8, 10 av 138 at \$7.75; to Goose 4 av 120 at \$7.50, 4 av 135 at \$7.50, 2 av 140 at \$5; to Parker, W. & Co. 3 av 130 at \$8, 6 av 130 at \$7, 8 av 130 at \$7; to Hammond, S. & Co. 3 av 150 at \$7.50, 1 weighing 120 at \$6.50, 5 av 125 at \$5.50, 4 av 155 at \$8.50, 5 av 115 at \$6, 14 av 140 at \$8, 4 av 100 at \$6.50, 16 av 145 at \$8; to Mich. B. Co. 21 av 140 at \$8, 10 av 152 at \$8.25.

Spicer & R. sold Rattkowsky 3 av 150 at \$6, 6 av 130 at \$8; to Sullivan P. Co. 2 av 120 at \$5, 4 av 130 at \$8, 3 av 120 at \$6.50, 1 weighing 100 at \$8.50; to Mich. B. Co. 4 av 155 at \$8; to Newton B. Co. 3 av 145 at \$7.50; to Thompson Bros. 9 av 140 at \$6.50; to Sullivan P. Co. 1 weighing 160 at \$8, 2 av 110 at \$5, 4 av 130 at \$7; to Burnstone 10 av 137 at \$8.

Roe Com. Co. sold Mich. B. Co. 3 av 145 at \$8, 2 av 120 at \$8.

Jede sold Newton B. Co. 6 av 150 at \$9.

Stephens sold Hammond, S. & Co. 1 weighing 80 at \$5, 2 av 135 at \$7.50.

Sheep and Lambs.

Receipts, 7,045. Good lambs 15@25c higher than last week; others steady; few choice at \$6.25. Best lambs, \$6@6.25; fair lambs, \$5@5.75; light to common lambs, \$3.50@4.50; fair to good sheep \$2.75@3; culis and common, \$1.75@2.75.

Bishop, B. & H. sold Sullivan P. Co. 19 lambs av 55 at \$5, 37 do av 70 at \$5.50, 49 do av 70 at \$5.75, 35 do av 57 at \$4.25, 52 do av 53 at \$4; to Nagle P. Co. 22 do av 70 at \$5.75, 84 do av 60 at \$5, 94 do av 75 at \$6.20; to Thompson Bros. 8 sheep av 73 at \$3, 22 lambs av 50 at \$3.50, 23 do av 67 at \$6; to Youngs 12 sheep av 110 at \$2.75, 5 do av 125 at \$3, 74 do av 90 at \$2.50, 290 lambs av 75 at \$5.75, 75 do av 73 at \$6, 63 av 83 at \$6.25, 103 av 75 at \$6.20, 79 sheep av 93 at \$2.75, 82 do av 95 at \$2.50, 16 lambs av 80 at \$5.75, 326 do av 80 at \$6, 78 sheep av 120 at \$3; to Hayes 6 lambs av 65 at \$3.25, 21 do av 60 at \$5.25; to Parker, W. & Co. 82 do av 60 at \$5.75; to Breitenbeck 62 do av 55 at \$5, 25 do av 55 at \$4.75, 19 sheep av 105 at \$2.50; to Mich. B. Co. 42 lambs av 85 at \$6.25; to Fitzpatrick Bros. 85 sheep av 95 at \$2.75, 26 do av 90 at \$2.50, 86 lambs av 60 at \$4.50; to Parker, W. & Co. 47 do av 65 at \$5.75.

Spicer & R. sold Barlage 18 lambs av 55 at \$5, 24 do av 75 at \$6, 3 sheep av 100 at \$2.50, 12 do av 125 at \$3.25; to Rattkowsky 8 do av 105 at \$3.35; to Mich. B. Co. 41 lambs av 55 at \$5.50, 25 do av 75 at \$4.25; to Parker, W. & Co. 23 do av 85 at \$6.25, 15 do av 65 at \$5, 102 do av 75 at \$6; to Newton B. Co. 11 do av 62 at \$5, 79 do av 75 at \$6.25; to Hayes 76 do av 56 at \$5; to Newton B. Co. 15 do av 73 at \$6, 2 bucks av 155 at \$2, 4 sheep av 75 at \$2, 20 do av 110 at \$3.25; to Sullivan P. Co. 10 do av 87 at \$2.25; to Thompson Bros. 3 do av 100 at \$2, 15 lambs av 55 at \$4; to Sullivan P. Co. 1 buck weighing 130 at \$3, 1 lamb weighing 80 at \$6; to Newton B. Co. 4 do av 65 at \$4.

Roe Com. Co. sold Barlage 10 lambs av 46 at \$3.50, 37 do av 55 at \$5.50, 12 sheep av 85 at \$2.50.

Haley & M. sold Hayes 11 lambs av 50 at \$4.75; to Sullivan P. Co. 64 do av 70 at \$6; to Thompson Bros. 30 sheep av 115 at \$3.

Weeks sold Sullivan P. Co. 15 sheep av 80 at \$2.50, 97 lambs av 70 at \$5.

Hogs.

Receipts, 5,675. None sold up to noon; packers bidding as follows:

Range of prices: Light to good butchers, \$6; pigs, \$5.50@5.65; light yorkers, \$5.75@5.90; stags one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 2,160 av 200 at \$6, 915 av 185 at \$5.95, 770 av 175 at \$5.90, 425 av 140 at \$5.80.

Haley & M. sold Parker, W. & Co. 540 av 210 at \$6, 435 av 185 at \$5.90.

Spicer & R. sold same 1,350 av 200 at \$6, 150 av 180 at \$5.90.

Roe Com. Co. sold Sullivan P. Co. 435 av 200 at \$6, 41 av 175 at \$5.75.

LIVE STOCK NOTES.

The beef canning trade of this country will be seriously affected by the exclusion by the British war office of bids on army meat contracts by the ten indicted Chicago packers pending the determination of the anti-trust case in the District Court at Chicago. It is conservatively estimated that this will mean a loss of \$18,000,000 per annum, and it is expected to mean the transference of such purchases by the British government to Australia and Argentina. The Armour and the Swifts have Argentine interests, but they are excluded from making bids along with the heads of the concerns in Chicago.

About the same number of sheep and lambs are fed on feed around Minneapolis and St. Paul as a year ago, or about 36,000 head. This is the first feeding, and it is stated that more flocks will come from Montana for the second feeding. Lambs lead off greatly in number, and after the first of the coming year fair shipments to market will start up. Feeding operations in that part of Minnesota are a small affair compared to what was done only a few years earlier, this being attributable to the inferior quality and the dearthness of screenings.

Provisions have been in a very weak position for some weeks because of the extremely liberal and fast increasing stocks of cured hog meats and lard held in western packing centers. Large speculative holders have been realizing, and the numerous lots thrown upon the market have greatly depressed values from time to time. Word comes from Hamburg that provisions in Germany and elsewhere in Europe are weakening and that foreign holdings of lard are so heavy that there will be a much smaller demand for American lard than last year.

Not long ago a sale was made on the Chicago market of 42 head of prime Angus heifers that averaged 975 lbs. at \$6.85 per 100 lbs. They were raised down in Texas, wintered in Oklahoma and fed later in Illinois. Since last May the heifers have been fed ground corn and a little oil meal on grass, but as soon as new corn could be had it was fed broken, and later pumpkins were given daily. They were marketed by the man who raised them, C. S. Batchelder, the widely-known farmer and stock feeder of Illinois and Oklahoma, and he was proud of the work of his two boys of ten and twelve years of age respectively in helping fatten the heifers.

For the first time in the history of the International Live Stock Exposition aged wethers won the sweepstakes this year over lambs. The bunch cost the feeder when he purchased them at South Omaha as feeders last August \$3.35 per 100 lbs., while at the time of their exhibition they tipped the scales at 165 lbs., and they brought \$7.60 per 100 lbs. They were originally from Wyoming, and were out of medium wool Merino ewes and thoroughbred Cotswold bucks. When they reached the Finley farm in Illinois, where they were prepared for the show, they

were put on bluegrass, timothy and clover pastures. At the beginning of September they were started on a small amount of ear corn, this allowance being gradually increased, and by the middle of the month a little oil meal was added. By the middle of the following month the sheep were put in a dry feed lot and given alfalfa in the place of being given the run of a pasture. Six weeks before being sent to the show the ear corn allowance was changed to shelled corn, as they would not eat enough off the cob to make the desired gains. During September and October it was the worst fall feeding the owner ever knew, being warm and wet weather.

At a recent trial of hogs by the Wisconsin experiment station it was discovered that an acre of rape produced as much gain on pigs when used as a pasture crop along with grain as 56 bushels of corn would accomplish. It was also found that the pigs gained faster after the rape feeding was discontinued than those which had been fed on grain alone.

Additional reports are received from many parts of the corn belt states that owing to the lack of hogs to follow cattle, farmers have to a great extent discontinued fattening cattle this winter. Farmers who are situated for doing so should see that their cattle are good and fat before shipping them to market.

(Continued from page 561).

American colonies, has kept Ireland agitated and prophesied disaster when the liberals brought the Boers under the constitutional provisions of England. Those who father the new idea see in the future an autonomous government for India.

Authorities report that there are 76 cases of typhoid fever of a virulent type at Sarnia, Ontario. The water supply of the city is taken from the St. Clair river where it is believed to be polluted by the sewage of Port Huron.

Persia has finally agreed to the demands of Russia by dismissing Treasurer Shuster, an American, from her service. This removes the chief obstacle to good relations between the two countries and opens the way to a settlement of differences.

Italian troops are advancing toward the interior of Tripoli. It is reported that the Turks and Arabs are short in their supply of ammunition which it will be difficult to replenish, since the only route heretofore available for getting supplies from Asia Minor has been cut off by Viscouti Kitchener, of Egypt, declaring that country to be neutral and prohibiting the importation of war supplies into Tripoli. It is also stated that Italy is encouraging another Albanian revolt to keep the attention of Turkey at home and prevent her giving further assistance to the forces in Africa.

Emperor Francis Joseph, of Austria, is reported ill and much anxiety is shown over his condition. The whereabouts of General Bernardo Reyes who was recently arrested as a fomentor of a revolution against the Mexican government are unknown. Reports stating that he is in New York city are generally believed to be unfounded.

CROP AND MARKET NOTES.

Mecosta Co., Dec. 14.—The weather has been such that many of the farmers have been plowing for the past week. The weather for December to date has been better than any period of equal length during November. All the farm work was cleaned up in good shape this fall, so that much of the plowing is being done. Potatoes are a drag on the market and have been for about three weeks. The price has been around 70c during that period, though they were worth up to 80c per bu. Hay is reported to be on the down grade, selling for \$15 to \$17 per ton, baled. Hogs, 5½c; chickens, 8c; butter-fat, 34c; eggs, 30c.

Wayne Co., Dec. 11.—The weather has been quite wintry for several days, the mercury having dropped to about eight above zero. Had quite a snow storm on Dec. 3, about eight inches of snow having fallen. Had good sleighing for several days, moderating down on the 8th with rain on the 9th and 11th and roads are quite muddy at present. Corn is not much more than half husked in this part of the county. Still some potatoes to dig. Wheat 90c per bu; oats, 40c; good timothy hay, \$19 per ton; dressed beef, 7½c per lb. by the side; pork, 7½c dressed.

Carroll Co., Dec. 11.—It is nice and warm here. The shredding of fodder is under way. The roads are bad. There is still lots of corn out in the fields. Hay is scarce. Hogs are selling at 5½c on foot and the market is dull; butter, 34c; eggs, 25c; corn, 60c; buckwheat, 85c; wheat, \$1; rye, 95c; No. 1 timothy hay, \$17 per ton.

Indiana. Laporte Co., Dec. 16.—December, up to date, has been mild, with cloudy days and no extreme storms. November was a wintry month in this section. Storms delayed farm work and shredders are still running to secure the corn crop. Generally fair yield but could not safely be placed in crib. Steady fall of snow commenced at 4 a. m. and continued until 9 o'clock. Snow packed nicely and light sleighs are out on the road. A fine covering for wheat and rye, as grain was sowed late and has made small growth. Stock is doing well, but few cattle being fed.

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105 ACRES on the electric line, one and one-half miles from Augusta, productive soil, good buildings, desirable location. Owner must sacrifice on account of ill health. Worth \$80 an acre. \$7,000 gets it. **GOULD & RICHARDSON, Augusta, Mich.**

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Own a South Carolina Farm—17,000 acres rich line Seaboard Air Line Railway at McBee, S. C. Fifteen to Twenty-Five Dollars per acre. Investigated and endorsed by Commissioner of Agriculture of South Carolina. Will divide to suit. Easy payment plan. Specially adapted for growing truck, fruit, corn and cotton. High and dry, no swamps. Ideal climate. Near famous winter resorts of Southern Pines and Camden. Three railroads through property. Eighteen hours to New York. Low freight rate. Write for literature. **SOUTHERN LAND DEVELOPMENT COMPANY, Dept. 5, LAURENS, S. C.**

Lenawee County Farm for Sale.

Because of my son and other friends residing in California, I have decided to make my future home there, and therefore am offering my farm of 180 acres lying three miles S. W. of Adrian, in the township of Madison, for sale. The farm is one of the best in Lenawee County, has a fine 20-acre wood lot, is equipped with a modern residence, a good tenant house, ample barns for dairying and stock feeding, two silos and a garage, and is one of the most desirable farm homes in Michigan.

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WRITE me at once for FREE Descriptive Literature. (9)

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For hard-milking cows or sore teats, self-retaining. Prices, 2½-inch, 25c; 3-inch, 30c, 3½-inch, 35c. Send orders to **The Michigan Farmer, Detroit, Mich.**

(Continued from page 559).

ed that a cold storage building on the farm made the grower independent of the buyer. Holding a few days may make a great difference in the market. Immediate cooling soon after picking is also quite an advantage. In the west they have pre-cooling plants for oranges, where they are cooled in the cars before shipping. Fruits must be handled carefully before storing so the skin shall be intact. Leaving open barrels in the orchard over night aids in cooling them. Prof. Eustace found that it took a week for a headed barrel of apples to cool uniformly from 80 to 33 degrees. This explains why apples do not keep as well sometimes in the center of the barrel. Fruit cools sooner in open packages but shrivels more. Good ventilation is essential.

There are several types of storage buildings. 1. Air-cooled storage. This is fairly satisfactory but will not produce as low or as even a temperature as ice-cooled storage. Mr. Smith, of Kent county has a fairly good one with a cold air duct to bring cold air to the building. Where the nights are quite cool these work very nicely. Fall is the critical period.

2. Ice-cooled storage buildings. One type of such buildings has the ice stored above the cooling room, with cold air ducts leading downward to it and warm air passages leading from the sides and top upward to the ice storage. A temperature of from 34 to 40 degrees can be maintained by using plenty of ice. Another type of ice-cooled storage is one where the ice is broken and placed in a tank above with 25 per cent of salt. From this tank vertical brine pipes lead to the storage room below. This system will produce a lower temperature and require less ice than the former method.

A third and best type of ice-cooled storage is the gravity brine system, which acts reversely to a hot water heating system. The coils which circulate to the storage room and to the cooling tank above contain a brine which does not freeze except at a very low temperature. The upper part of these coils rests in an ice tank containing ice and salt. As the brine in the pipes in the storage room warms it rises and is cooled in the coils in the ice tank. This system costs more to install but is more efficient and cheaper to operate. This system is installed at the College and works very satisfactorily. The ice tank is filled about twice per week. In Michigan it is estimated that it will require from 100 to 175 tons of ice per season for 1,000 barrels of apples.

Under the general topic, What Means Can We Employ to More Profitably Market Our Fruits?

Charles Pratt, of Benton Harbor, took up the sub-topic, "Education." Mr. Pratt stated that the grower should have a knowledge of soils, chemistry, diseases, varieties, be able to sift reading matter, and be a good business man. We should study the methods of other successful growers. Study the problems of cover crops, rotation, tillage. Have good tools. A wide light draft harrow saved the cost of another man, team and barrow. Look up the latest information on spraying, pruning, and thinning. Marketing is half of fruit growing. Prepare for it beforehand and be ready to pick at just the right time. Have a well ordered packing house, handle the fruit carefully, grade and pack honestly, and put name on the package. The California lug box was shown and described as being very handy in hauling and storing fruits before packing. The meeting then adjourned until evening.

Wednesday evening after an excellent musical program, Prof. Pettit, of M. A. C., gave an illustrated talk on "Insects Every Fruit Grower Should Know."

It is impossible to give any satisfactory report of an illustrated lecture without the illustrations, but we shall mention a few of these insects so the reader may look them up. Among those shown were the cane borer, scurfy scale, San Jose scale, oyster shell scale, European fruit scale, cottony maple scale, plant louse, woolly louse of apple, potato bug destroyer (which kills the bugs by sucking their juices), Buffalo tree hopper, pear psylla, cutworms (use bran and molasses one to 50), codlin moth in all stages, tomato stock borer, apple blossoms showing stage for spraying (as soon as stamens wilt), gooseberry fruit worm eggs, tussock moth, plum curculio, old-fashioned potato beetle and cucumber beetle (dust on powdered lime-sulphur when dew is on).

(Continued next week).

Calhoun Co.

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Think of that. Write today and get full information on the Greatest Engine Offer ever made. I will stake every dollar of my own and the company's capital and reputation on the quality of these engines. Send me your name and address now and I'll send you a proposition that will certainly open your eyes. Be on the safe side and write me now. There isn't a better engine made at any price—no higher quality possible—no better engine possible. From 1½ to 15 H. P.

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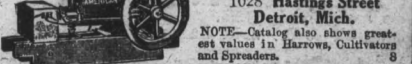
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