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Lime and Inoculation for Alfalfa.

SOME twenty odd years ago when alfalfa was first introduced into Michigan, the writer tried it out with such indifferent success that attempts to grow it were abandoned with the one experiment. Other attempts to grow it successfully in the same community ended in a similar manner. Data collected by the Michigan station at about that time or a little later indicated that quite similar results followed most attempts to grow alfalfa in other sections of the state, although here and there considerably better results were reported. Some years later, in driving through the country in an adjoining county, the writer saw a very fine stand of alfalfa growing on a poor, sandy hillside, which had been sown at about the same time. Here, apparently, conditions were more favorable for the establishment of the plant, which gave good crops on the same piece for many years, in fact, it is still being cut, although recent winters and the encroachment of June grass have thinned the stand considerably. In other localities, an occasional profitable stand of alfalfa was observed, one in particular which was cut for something like 15 years, yielding quite uniformly good crops.

This seemed a problem difficult of solution, but when the theory of artificial inoculation was developed, that seemed to furnish the answer, and again, the writer tried out alfalfa, furnishing the best possible conditions so far as his knowledge extended, but with very little better results than in the first case. Determined to find the difficulty and overcome it if possible, knowledge was sought from every available source, and the writer became impressed with the reasonableness of the theory advanced by some of the best authorities that the reason why alfalfa flourished so generally in the west and was so uncertain in the northern and eastern states, was to be found in the fact that the western soils were alkaline in character, while many, if not most, of our soils in the more humid regions which had been farmed for a long series of years were acid rather than alkaline in their reaction to the ordinary tests. This theory was backed up by the experience of the most successful alfalfa growers east of the Mississippi river. Consequently the writer determined to try once more, making a liberal application of lime before sowing the alfalfa seed. This apparently brought about more congenial soil conditions for the development of the nitrogen-fixing bacteria peculiar to the alfalfa plant and necessary for its permanent and profitable growth. Other conditions, however, interfered with getting a good stand on the first piece sown to which lime had been applied, although good inoculation was secured in the scattering stand, which has been mowed for two years. At the same time this lime was applied, an application was made to small test strips on three or four other fields to determine future results, if any, and in one field a plot of three acres was limed, which some two years later was seeded to alfalfa in standing corn. This was sown about the middle of July last year, and a perfect stand was secured with perfect inoculation. This stand of alfalfa is at this writing too thick, if anything, and although but two cuttings were secured from it this season, owing to dry weather and grasshoppers, it appears to be in perfect condition to withstand the winter, and we expect it to produce far better next season.

Believing that the application of a liberal amount of lime had solved the problem of securing a good stand of alfalfa,

the writer applied lime to 35 acres last spring and sowed same in midsummer; after giving the land thorough preparation. An excellent stand was secured. The seed was inoculated with a pure culture before sowing. Much to our disappointment, however, we have not found any nodules on the roots as yet. The plants, however, have made a wonderful root development, as will be noted from the specimen which Mr. Cole, under whose supervision this work has been conducted, is holding up in the illustration. A large number of plants were examined for the presence of nodules, opportunity for which was given in the running of furrows through the level portions of the field to provide surface drainage, and prevent as far as possible, an accumulation of ice during the winter or spring.

A peculiar fact, however, which is worthy of special mention, is that at one end of the field in which this scene was taken

roots next season, as this has been the case in previous experience and observation. In any event, however, we shall undertake to save this stand of alfalfa until it becomes well inoculated, and if there is not sufficient evidence of inoculation to insure a crop next spring after the growth starts, nitrates will be applied to enable the plants to make a vigorous growth, in the hope that they will later become inoculated with the nitrifying bacteria.

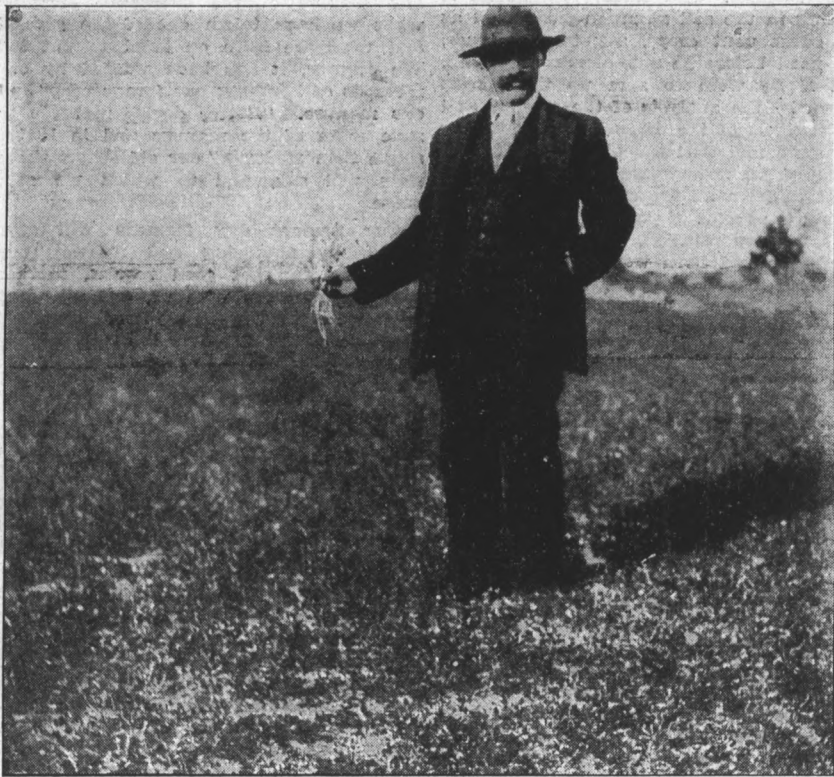
From the experience described, there would be no question that lime is a necessity for success with alfalfa in our soil, which is a rather dry, gravelly and sandy loam. In some sections of the state, and particularly upon newer land, lime does not seem to be necessary, but the writer would impress upon every man who tries alfalfa, as every farmer in Michigan should in a limited way, at least, with the desirability of liming at least a portion of the soil where the alfalfa

artificial inoculation was not used. This field made a good stand, and on the portions of the field where lime was applied, two fairly good cuttings were harvested during the past summer. On portions of the field where lime had not been applied the alfalfa made little growth, and the color of the plants indicated a decided lack of inoculation.

As further evidence toward the conclusion that natural inoculation will occur in cases where the soil is in a condition which favors the development of the bacteria, the writer recently dug numerous alfalfa plants from two different fields in which alfalfa seed was mixed with clover seed when the fields were seeded in the spring of 1912. Every plant which has survived to the present time, so far as examined, shows the presence of nodules on the roots. The two fields which were thus seeded with a mixture of clover and alfalfa were both limed just previous to the time the seed was sown. Only scattering plants of alfalfa are present, but this is due to weather conditions, in the writer's judgment, rather than to lack of inoculation, since the plants seem to be quite as plentiful now as was the case last fall when the seeding went into the winter. This seed was not inoculated and alfalfa had not been previously grown on this ground. The fact that the plants now found growing in these fields have become inoculated by natural means, makes us the more hopeful that the summer seeding, like that shown in the illustration, will develop the nodules another season.

These experiences, as well as the fact that in localities where lime does not seem to be needed to get a good stand of alfalfa inoculation does not seem to be as necessary as it is where lime is an essential factor in the preparation of the soil for alfalfa, would make it appear that inoculation is not as essential a factor in the success of this plant as many have believed. Numerous experiences, however, do indicate that in many cases, inoculation is much more quickly secured by artificial means, and it will probably pay as an additional insurance for success with the crop to use artificial inoculation, preferably by the application of soil from a successful alfalfa field, or if this is not readily available by the use of a pure culture on the seed, or by a combination of these methods in which particles of soil are glued to the seed on the theory that the bacteria will be carried with them to the young plants. It is however, undoubtedly true that local conditions must be taken into consideration in the successful culture of this great forage crop, and this fact makes it the more important that every farmer in the state experiment with it on a small scale at least, in order to determine at the earliest practicable date the local factors which enter into the successful cultivation of the crop. By this we do not mean that alfalfa should be made to substitute the other clovers entirely, but that it should be made to supplement them upon the average farm.

Alfalfa this year saved farmers of the middle west a repetition of the disasters which have overtaken them in former years of scant rainfall, and alfalfa will unquestionably make forage production more stable and abundant upon Michigan farms. The factors of its production above discussed are only two of the many which should be better understood by every farmer in the state, and these have been emphasized because of their seeming importance in many localities, and the desirability of every farmer determining whether or not they are among

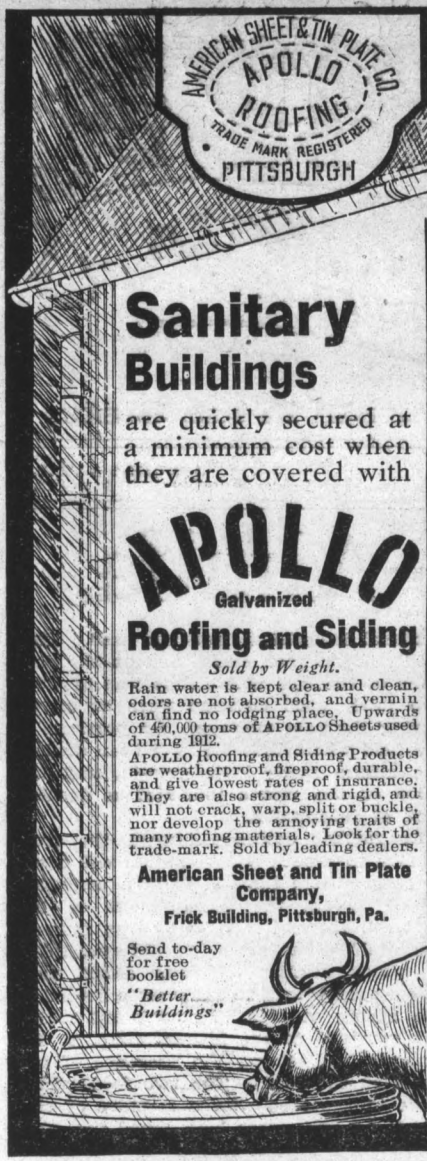


Summer Sown Alfalfa on Land where Lime is an Essential to Success.

where lime was applied on a small experimental strip some five years ago, the nodules are present on every plant examined; this same phenomena is also apparent in an adjacent field which was in corn this year and on which alfalfa was sown over a limited area in the standing corn for experimental purposes. Here, again, there is a perfect stand where lime was applied several years ago, and nodules are to be found on every plant, while on that portion of the field sown without the application of lime, there are very few plants and no nodules on those which have survived. This indicates that where the soil needs lime as a preparation for alfalfa, it is better to apply it some time before the alfalfa is sown, since it does not seem to act at once to its full capacity as a soil corrective, or if it does so act, some time is required for the development of the nitrifying bacteria which may be in the soil, so that they will be sufficiently numerous to produce perfect inoculation in the newly sown alfalfa. We are quite confident that in case this newly sown alfalfa survives the winter, the nodules will make their appearance on the

is sown; and the sooner the application is made or the longer before the alfalfa is sown, the better will be the results if the observations above cited are taken as an indication of the general behavior of the alfalfa plant under similar conditions.

This brings us to a consideration of the point of the necessity for and effectiveness of artificial inoculation of the seed or soil with the bacteria peculiar to the alfalfa plant. As above noted, the writer did not succeed in getting anything like effective inoculation by either the application of soil from successful fields or the use of pure culture on the seed where the soil had not been previously limed. There also seems to be considerable evidence that where the soil has been made a suitable medium for the development of this bacteria, natural inoculation seems to occur without supplying the germs from any outside source. As a case in point, Mr. A. D. DeGarmo, Oakland county, sowed a field to alfalfa in the summer of 1912, which had not been previously devoted to this crop. Lime was applied to the larger portion of the field previous to the sowing of the seed, but



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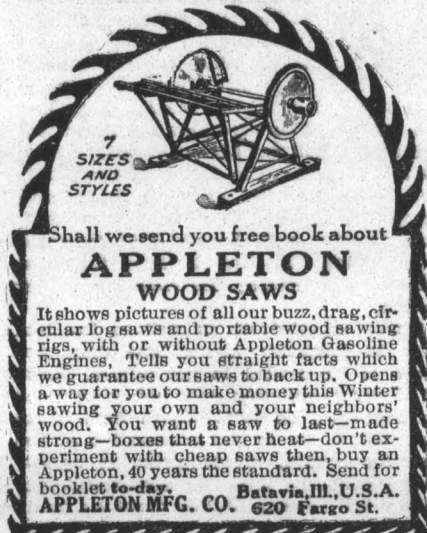
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the local conditions or factors upon which success with this plant depends upon his farm.

Another point which it might not be out of place to consider briefly in this connection, is the relation of alfalfa to soil improvement. Inasmuch as alfalfa is a legume of more than ordinary permanence it has been everywhere heralded as most valuable for increasing the fertility of the soil; this idea perhaps needs qualifying to some extent. On a soil good enough to promote a good stand of alfalfa and produce good crops, it unquestionably adds to the fertility, not only

through the nitrogen secured from the air, but as well because of the humus added to the soil, and perhaps also by the tapping of the sources of the mineral elements of fertility which are too deep in the soil for ordinary crops to reach. But it is quite essential that the soil be in a good state of fertility to secure a good stand and profitable growth of alfalfa, so very thin land should first be improved by adding to its content of available plant food and vegetable matter, before sowing to alfalfa, if the best results are desired from this plant, either as a forage crop or soil improver.

I. R. W.

Why We Should Rotate Crops.

I AM aware that there are many who talk much about rotating crops, and the beauties and benefits of the practice, who are not aware of the real reasons why it is absolutely essential to rotate in order to secure desired results in crop raising. Most of us have heard people say that a crop, like that of wheat, for instance, has taken up all the plant food that there is in the soil at the time for that particular crop, and it is necessary to change to something else and let that crop drain the soil, and so on, until the round of the series has been accomplished, and sow wheat again and see it grow and do as well as before. The reasons why it is so have not occurred to them.

It has been the practice to rotate crops in all the advanced civilized countries for thousands of years. The results that can be obtained, are what the growers are after, and not the reasons why.

Keeping live stock in connection with general grain raising, is considered the highest type of farming. Utilizing the manure to maintain the fertility of the soil, is generally considered good practice. As a matter of necessity, then, the manure is applied to the ground and plowed under. The farmer thinks he is putting in the soil as much plant food as the subsequent crops, say two or three, will need before he applies manure again. But if he were to sum up the results shown by the analysis of the manure and the analysis of the crops he is harvesting he would find that the plant foods in the loads of manure would be small beside the sum from all the crops he has raised during the series of years constituting the term of crop rotation. According to the theory he had been working on, that he must put into the bank, the soil, as much as he takes out, he would find he had overdrawn his deposits, and must be in debt to the soil.

In order to make the matter plain we will say that we ordinarily apply ten tons of partially rotted manure to the acre. According to Roberts in his Fertility of Land, there would be 100 pounds of nitrogen, 50 pounds of phosphoric acid and 121 pounds of potash. Those figures show the amount you have placed in the bank, the soil, from which to draw during the series of years included in the rotation.

The first crop we plant is corn. If it is a fair crop we get 50 bushels which contains 54.6 pounds of nitrogen, 21 pounds of phosphoric acid and 17 pounds of potash. The cobs have taken 3.5 pounds of nitrogen, four pounds of phosphoric acid and four pounds of potash. Two tons of corn fodder have taken 20.5 pounds of nitrogen, 5.8 pounds of phosphoric acid and 28 pounds of potash. A total for the crop of 78.6 pounds of nitrogen, 30.8 pounds of phosphoric acid and 59 pounds of potash.

Our next crop in the series would be oats. If we get 50 bushels to the acre we take out 33 pounds of nitrogen, 12 pounds of phosphoric acid and 10 pounds of potash. From half a ton of straw we get five pounds of nitrogen, 1.5 pounds of phosphoric acid and four pounds of potash, a total of 38 pounds of nitrogen, 13.5 pounds of phosphoric acid and 14 pounds of potash, we are taught that oats is a soil robber crop. It may be possible that we can find some other reason why oats, as a crop, does not succeed itself with satisfactory results.

The next crop in the rotation is wheat. If we get 25 bushels per acre we take out of the soil 35.4 pounds of nitrogen, 11.8 pounds of phosphoric acid, and 7.5 pounds of potash. One ton of the wheat straw would take out of the soil 11.8 pounds of nitrogen, 2.4 pounds of phosphoric acid and 10.2 pounds of potash. A total for the crop of 47.2 pounds of nitrogen, 14.2 pounds of phosphoric acid and 17.7 pounds of potash.

The next crop in the rotation would be clover hay. Two crops can be cut in a season, one in June and another in August. If it is but a fair crop there will be three tons at both cuttings, which would aggregate 124.2 pounds of nitrogen, 22.8 pounds of phosphoric acid and 132 pounds of potash.

Having raised four different crops, it is time to manure and plow again, and it is the proper time to figure up and see what we have taken out of the ground during four years. According to the figures we have taken 288 pounds of nitrogen, 81.3 pounds of phosphoric acid and 222 pounds of potash, which is in excess of what we put in, 188 pounds of nitrogen, 31.3 pounds of phosphoric acid and 98 pounds of potash.

According to the rules of banking we have overdrawn our account. What must we do? We do not want to continue on to bankruptcy, and yet according to the old theories taught that we can not take out of the bank any more than we put in, we have started in that direction. We make another deposit and start again. If we have been careful in managing the manure we may have a little more to deposit than we had before, but what has become of the difference between what we have taken out of the ground and what we have on hand to put in? We answer, it has been wasted by our methods of handling our forage crops and our manure. "Better devise methods to save more of the manure and in better shape than we have," our old school theorists will say, and to which we say, amen.

Our present day farmers will say, "Well, by manuring and rotating our crops we can get good results, mother earth is generous with us, and we want what we can get while we live, so we will continue and rejoice over the fact that we are living on the fat of the land. If the plant foods had not been in the soil the crops would not have brought out so much. We will plow the ground, make a good seed bed, put in the seed, and try our luck again."

Such has been the manner of farming in some parts of the world for thousands of years and the process of plowing and sowing is still going on.

The fertility of the land does not depend entirely on what is in the first foot of soil. There is, on an average, over the bed rocks some 50 feet of ground rock which we call dirt, and there are deposits of mineral elements all the way down. If we can open up connections with the dirt a little below that in the first foot at the surface by the use of deep rooting plants, we can coax some of the plant foods up to the depth at which we plow and draw on them for some time to come. There is also the capillary water that is working for us all summer, coming up from below, bringing food for our crops. It is up to us to devise means by which we can catch those plant foods.

The manure we apply to the soil serves a double purpose. It carries some plant foods back to the soil. During the processes of decay some of the plant foods already in the soil become available for the planted crops, and they take them up. It is nature's way to stuff the surface of the ground with vegetable matter and let it decay there. Let us imitate nature by putting all the manure into the soil that we have, and stand ready to abide by the results.

We have probably but hinted at one reason why we should rotate crops—because we can get excellent results. In a subsequent article we will try to give other and probably more important reasons. It is an important subject, full of interesting facts that should be considered.

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SOIL AND FERTILIZER QUESTIONS.

Applying Commercial Fertilizer by Hand.

Will you have Colon C. Lillie state his experience in using commercial fertilizer without a manure spreader or fertilizer attachment on seeder. It is something new up here. Some of the farmers tried it around here this year, and a lot more would use fertilizer if they could apply it without going to the expense of getting a new drill or seeder. How would be the best way to apply it to potatoes?

Delta Co. I. C.

Considerable commercial fertilizer is applied by hand, not only in this country but in Europe as well. Very often when one first starts to use fertilizer he only uses a small amount as an experiment and he applies it by hand. After he becomes convinced that fertilizer is a profitable investment he uses more of it then he usually purchases some tool which will apply it without the slow and laborious process of applying by hand. The American is prone to do everything by machinery that he possibly can. Sometimes it costs more to do certain work by machinery than it would if it was done by hand, yet the American is sure to do it by machinery, because it is the American way. You can't get out of the notion.

About the first fertilizer that I ever used was on corn, which was applied by hand. After we had planted the corn with a common hand corn planter, the field was marked both ways, then we went over and carried the fertilizer and dropped something like a tablespoonful right on each hill. After doing this it would be a splendid plan to harrow the field and work it into the soil. Now you could see where we put that fertilizer; all summer long the corn grew up ranker and taller you could tell just to the row. We would put the fertilizer on a number of rows and then leave a few rows and then put it on some more, and you could tell every one of them where we put the fertilizer. Whether the corn yielded many more bushels per acre where we put the fertilizer, or not, I do not know, because we did not go to the trouble of husking it separately, as we ought to have done, as everybody should do if they want to make an experiment, but certainly there was a better growth of stalks and the plants looked healthier and thrifter. Then many people have applied fertilizer by hand on portions of a field for different crops, oats, wheat, potatoes, sugar beets, and almost every crop because they only wanted to use a small amount to try it and they did not have any fertilizer tool to apply it with. You can sow fertilizer by hand just as well as you can sow plaster. Years ago my father used to sow ten acres, for instance, every year to plaster and it was sown in very much the same way as you sow wheat, by taking a bag and tying two corners together and slinging it over your shoulder and then sowing the plaster by hand. You can do the same thing with fertilizer, and a man who gets a little used to hand sowing can get quite even distribution.

I know where one of the leading sugar beet men of the state applied fertilizer broadcast directly from the wagon. He emptied several sacks of fertilizer into the wagon box, had one man to drive and three men to sow fertilizer, one on each side of the wagon, and one at the rear end. The team walked along across the field and these three men sowed the fertilizer. Then the field was harrowed. He could do it this way rapidly and he got a very even distribution of the fertilizer, and probably it didn't cost much more to distribute the fertilizer than it would if he had a regular fertilizer distributor.

Very often fertilizer is applied to potatoes by hand. It used to be the practice to make a furrow with a shovel plow or a common walking plow, drop the seed potatoes in this furrow, and then either cover them with a plow or harrow, or sometimes they were lightly covered with a hoe and then the ground harrowed afterwards to fill up the furrow, and it was a very common practice, before we had potato planters with fertilizer attachment, to go along and strew fertilizer in this furrow either before the potatoes were planted or after they were dropped and lightly covered with a hoe. Then the balance of the earth was filled in with the harrow or some other implement on top of the fertilizer and left the fertilizer thoroughly mixed with the soil. Very much of the fertilizer used now in gardens is applied by hand, and it is no difficult task. For instance, in applying fertilizer to melons or cucumbers it is a more common way to drop a tablespoonful or a small handful in the hill and work it in with a hoe or a rake and then plant the seed. Care must be taken to not get too much in a place. If a tablespoonful

is used for a hill it ought to be distributed over a square foot or something of that sort, and thoroughly mixed with the soil, otherwise it will injure, or is liable to injure, the germinating power of the seed, because it is a concentrated food.

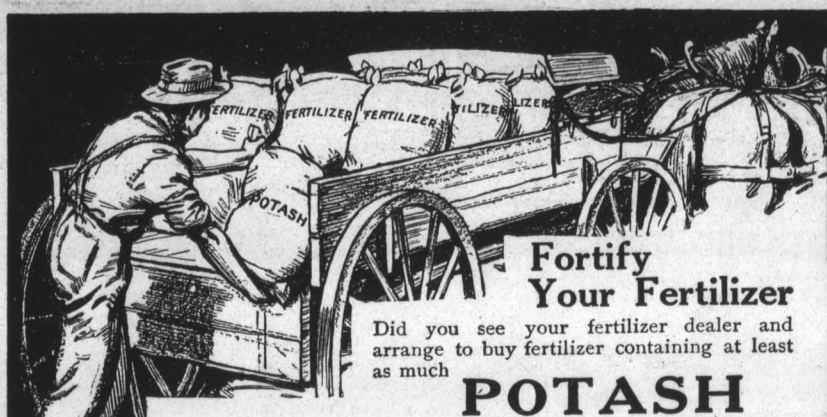
The manure spreader is not a proper implement to apply commercial fertilizer. One had better do it by hand, because you cannot gauge the amount. Commercial fertilizer being a very concentrated plant food you want to know something about how much you are putting on to the acre or else you will get beyond the proper limit. Where one is applying raw rock phosphate to land with manure and will fill the manure spreader full of manure and then pour some rock phosphate all along on top so that this is distributed with the manure, it is a very good way. But raw rock phosphate and commercial fertilizers are two different propositions. The raw rock phosphate is not soluble, it must be plowed down into the ground with some organic matter, and when this organic matter decays it makes some of the rock phosphate available, while on the other hand, commercial fertilizers are available at once and we don't want to plow them down, we want to mix them with the surface soil where the feeding roots are so that they will be used immediately. Of course, some people use acid phosphate, which is soluble in water, in cow stables as a trap for the ammonia. Then this becomes mixed with the manure and is plowed down and the crops will get it, but in the main we do not intend to use commercial fertilizer only in modest amounts and this should be mixed with the surface soil so that it is readily obtained by the plants when they need it.

Tools for the special application of fertilizers are now abundant and cheap. Of course, I understand that, in new countries people, when they first buy drills, don't feel the need of commercial fertilizer and they buy plain drills because they can buy them cheaper than they can one with the fertilizer attachment, which is really a double-headed drill and costs more money. Then they begin to feel the need of commercial fertilizer before their drill wears out and they don't like to lay aside the old drill to buy a new one, but the best way, the most economical way, to apply fertilizer to oats and wheat and rye, and any kind of a cereal, is with the fertilizer drill at the same time the seed is sown. We have now fertilizer distributors which can be used also for the application of lime, and in the near future more people are going to be interested in lime than they are at the present time and they will want a distributor to sow it. You can get a good fertilizer distributor or lime sower for about \$35, and one can go over the field before he puts in the oats, or wheat, or rye, and distribute the fertilizer evenly and harrow it in and then sow the rye with the common drill. This is a good way. One fertilizer distributor or lime sower would answer for three or four farmers and fill the bill completely.

COLON C. LILLIE.

A POSSIBLE NEW CROP FOR MICHIGAN.

Mr. S. S. Boyce, a chemical and textile expert of long standing, has spent most of the past summer on the low lands of the Saginaw Valley, studying the milk weed as a fiber crop. The species which it seems, is most promising as a fiber crop, is not the common milk weed, but the swamp milk weed, *Asclepias incarnata* L., which is more or less common on the low swampy lands of central and southern Michigan. Mr. Boyce exhibited plants which he had grown from the seed and others which he had grown from the roots. He also exhibited the milkweed fiber in the various stages of preparation for the market. These would appear, at least to the man who is not a textile expert, to be very satisfactory, good enough for the manufacture of high-grade twines if not some of the grades of cloth. The particular point which seems to be most in doubt in regard to this industry is that of the value of the fiber in relation to the cost of production. Mr. Boyce is planning on sending a quantity of the fiber to one of the larger textile mills of the country for further determination of its value for manufacturing purposes. Until this point is determined no encouragement can be offered in the growing of this crop. If the fiber is found to have a sufficient value so that the crop may be grown with a fair profit, this may open up a new agricultural industry of considerable importance, due to the large acreage of swampy, or poorly drained land in the state.—V. M. S.



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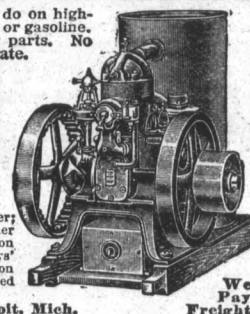
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Horticulture.

PEAR BLIGHT.

Passing through the country this summer one could notice that something was wrong with most of the pear trees. The leaves wilted in different parts of the tree and finally turned black in color and ceased to grow. In the course of a few months the whole tree was affected. This blackening of the leaves was thought by a great many farmers to be due to an early frost but this was not the case.

The wilting and blackening of the pear leaves is due to a specific organism known as *Bacillus Amylovorus*. This particular disease is of great economic importance since it is becoming common all over the United States. The bacteria are microscopical in size. The infections of the pear tree occurs at the time of pollination. The bacillus grow very rapidly and multiply in great numbers in a short time in the nectar of the flower. They are rapidly spread to thousands of other blossoms all over the orchard in a short time, by bees or insects gathering the honey. The bacteria later gain entrance to the softer tissue of the bark. Biting or piercing insects play an important part in the spreading of this disease. The young growing twigs are affected in this way. Injuries of the bark may be a seat for infection to take place.

The bacillus winter over in the affected branches where plenty of moisture is present. This organism is not very resistant to conditions. It is killed by very brief exposure to sunlight and by a period of drying. Very cold weather is injurious to the bacteria, especially if no moisture is present.

Pears are not the only trees affected with the disease. It affects the apple trees as well. Trees making rapid growth of new soft tissue are more susceptible to the disease than others. It varies greatly in the severity and manner in which it attacks the trees. In severe cases it reaches from 2-5 inches in a day. When the inner bark and cambium layer are killed the whole limb soon dies.

This particular disease cannot be controlled as some of the fungus diseases are checked. Spraying does not have any effect on the bacteria. They are too far within the bark to be affected by sprays. The only way to rid an orchard of this disease consists in pruning out the blight in situations where it may winter over. This is the only time that its growth can be checked. After it once gets a start in the spring there is no way in which to kill the disease. In pruning out the blight during the winter it is not a very easy task. Great care must be used in pruning. The instruments used must be thoroughly disinfected so that no more infection will take place. After pruning paint the surface of the wound with a dilution of corrosive sublimate, one tablet to one pint of water, or a solution of copper sulphate one ounce to two gallons of water. Some farmers practice pruning during the growing season, but this is not very reliable since infection may be constantly taking place. It is difficult to determine the extent of the region affected. Carelessness in pruning may result in the spreading of this disease to all of the young nursery stock. The greatest anti-septic precautions must be taken. We are dealing with bacteria in this case and not a fungus.

The farmers are asking themselves, will this blight occur on my trees again next summer. If pruning is not practiced this winter it will sure come back stronger than ever. This is the only way of preventing the disease and now is the time, get after it before it gets the best of your orchard.

J. C. KLINE.

A PARASITE TO CONTROL THE SCALE.

Ever since the scale has become a serious fruit pest, scientists have been working and fruit growers have been hoping for some natural enemy of the scale. Up until the present time the lady bug was the only one which gave much promise. This insect, however, could not be bred in large enough numbers to have any serious effect on the scale.

Recently Prof. H. A. Surface, entomologist of the Pennsylvania Experiment Station, has issued a statement that a parasite has been discovered in his state and is being bred in large enough numbers to effectively control the scale. Dr. James

S. Grim, of the Normal School at Kutztown, has the honor of being the discoverer of this apparently useful insect. It is claimed that the orchards and nurseries in the southeastern part of Pennsylvania, which were thoroughly infested a few years ago are now sending forth new growth, and that it is difficult to find live scale on trees which have been unsprayed for several years.

The parasite is a minute wasplike insect, which bores through the scale covering and feeds on the soft body of the San Jose scale. It is hoped that Prof. Surface's enthusiasm regarding this insect is not unfounded, and that his department will do all they can to encourage its growth and reproduction, so that fruit districts throughout the country may soon enjoy the benefits of this apparently useful parasite.

We would advise that fruit growers welcome a trial of the parasite if they have the opportunity, but that they continue thorough spraying until the value of the insect has been thoroughly tested in their own vicinity.

Recent reports from various sources justify the words of caution above. The assistant entomologist of an eastern state argues that the undue publicity given this "important horticultural event" is harmful because it will cause many growers to rely upon this new "bug" and to neglect effective measures of control. In short, he says that there has been a big noise over a little thing which is more likely to work harm than good.

A prominent grower of Pennsylvania states that he has not met the "gentlemen" yet, but that he wished they would visit him, as he could gorge them with scale. He thinks little of the artificial breeding method, and believes that the parasites will not be a success "until nature fetches them around." In conclusion he says that they will continue to spray thoroughly with lime-sulphur, using it stronger than ever.

NORTHERN SPY.

There is no Michigan grown apple which the buyers are so eager to get than the Northern Spy. There is no variety the grower is so anxious to set but still, on which he hesitates so long when he is making out his nursery order as this variety. This paradoxical condition of affairs is due to the fact that the variety is long in coming into bearing and that we hesitate long when the future gets all of the benefit. This is an age of immediate results and because of this the Spy is put to disadvantage.

Few varieties grow trees which are as hardy and vigorous as the Spy. The tree is a vigorous, willowy grower in which the top tends to become dense. It should therefore be pruned regularly so as to admit sunlight and air. The pruning should consist of the cutting out of the larger cross limbs and laterals, taking care to leave all the twigs and spurs on which the fruit buds are developed. This will tend to bring the tree into bearing comparatively early. On the other hand, improper pruning may keep the tree from bearing at its usual time. No pruning will in time cause the fruit to be improperly matured and poorly colored.

The Spy does well in any part of the lower peninsula, but on account of its vigorous growth and slowness of coming bearing it is advisable to set it on the lighter apple soils. Soils of a sandy or gravelly nature are good. On such soils its growth will be kept in check and the formation of fruit buds for early production encouraged. The kind of soil the Spy is set on may influence its coming into bearing four to five years one way or the other.

Both the foliage and fruit are quite susceptible to the scab fungus, and thorough spraying is required to prevent loss from this source. Proper pruning and setting the trees where there is plenty of air circulation are important assistants in keeping the fruit clean.

The fruit is variable in its keeping qualities. Poorly colored and matured specimens do not keep very well. When the fruit is bruised it is quite susceptible to blue mold. On account of its late blossoming the buds often escape frost injury which affects other fruits. Because the fruit buds are quite hidden by foliage the actual crop is often better than at first estimated.

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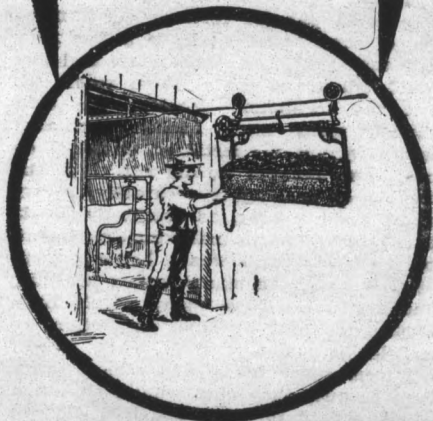
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A HOUSE FOR BUTCHERING HOGS.

Farmers' hog killing for home consumption is not usually done until quite cold weather, and sometimes not much before Christmas. It is generally done out of doors, and it frequently happens that the day appointed is cold, windy, snow squally, but as the helpers are engaged, and preparations made, the farmer goes through with it, and may be catches cold. Butchering is disagreeable, disgusting work when the weather is ever so good, and in cold weather the butchering day is dreaded by all. I am of the opinion that on every farm where much butchering is to be done, there should be a building erected on purpose for it. It should stand as near the water supply as possible, and could be cheaply built. My father had such a house built on purpose in which we could heat the water, scald, dress, and cut up our hogs and be comfortable in the coldest weather. At one end there was a chimney, with a big fireplace and a crane that would hold two large kettles for heating water. One end of a big scalding barrel was put down through a hole in the floor to the ground, made to stand firmly, at an angle of about 45 degrees with the platform against which the top leaned, and on which the hogs were dressed. There was a rope and pulleys attached to a rafter overhead for hanging up the hogs, and could also be used in scalding very heavy hogs.

The building was used for cutting up the hogs, trying out the lard, boiling cider, washing clothes, and making soap.
Pennsylvania. J. W. INGHAM.

STARTING BREEDING EWES ON ENSILAGE.

On account of the increased number of silos built in this state the past year there undoubtedly will be a large number of flock owners attempting to feed ensilage to their breeding ewes the coming winter. A word of precaution just at the proper moment, if heeded, may save many a flock owner limitless worry and possibly heavy loss as there is some danger in feeding ensilage to pregnant ewes, especially if fed carelessly and without exercising judgment. Ensilage, as has been proven after years of carefully conducted trials, both by experiment stations and practical sheep raisers, is a safe, palatable, succulent and nutritious food for sheep during the growing, fattening and breeding stages of flock management.

In the feeding of ensilage to sheep at any age there are a few vital items concerning the feed itself and its effect upon the digestive system that should be well understood and constantly kept under thoughtful consideration. Ensilage is a mild laxative, and acts in this way very similarly to green fodders. It is the unanimous testimony of good authorities that well preserved silage has a beneficial effect on the digestion and general health of domestic animals when fed in moderate amount along with other kinds of dry roughage. Ensilage, however, contains a much higher per cent of acid than roots and must be fed conservatively. Very harmful and even fatal results may occur from feeding an excessive amount of silage to sheep of all ages. It should never be relied upon as a full ration on account of its high acid content and laxative effect.

Sheep are great lovers of succulent food and seem to demand a reasonable amount to regulate the bowels and assist assimilation during the winter months. Pregnant ewes especially need some form of laxative while confined to dry feed, and for the purpose ensilage is not only excellent but relatively economical when compared with the cost of root production. Silage containing a great deal of corn must be fed to pregnant ewes with a great amount of precaution as it is not only a highly nutritious feed, but tends to keep the digestive tract too loose. Then, too, ensilage containing a high percentage of corn is too fattening for pregnant ewes, especially during the period when carrying their unborn young. Too much fat-forming food during this period tends to weaken the development of the foetus and cause increased difficulty at lambing time.

Ensilage should not, under any condition, be fed more than twice daily to

pregnant ewes. It should not be depended upon to serve as a full roughage ration. If ensilage is fed in the morning and evening it should be supplemented with some form of dry roughage, such as clover hay, bean pods, corn stover or oat and pea hay. The amount to feed will vary somewhat, but it is better to keep on the safe side than to be running a great risk. About two pounds per head daily is a good ration for the fine wool breeds. The larger breeds of sheep may take a little more, perhaps four or five pounds, but never feed more than this amount. I know that some flock owners have fed, and do feed, as high as eight and ten pounds of silage with good results, but after 24 years' experience on our farm we have found that it is much better all around to be cautious.

I have had some trouble in this way in feeding ensilage to breeding ewes and producing that undesirable sluggish condition that causes weak, puny lambs at birth. On account of its peculiar odor some members of the flock are very slow in eating the ensilage and sometimes it takes two or three weeks before they can be induced to eat. This fact should be kept in mind and never overfed as the sheep that take to the feed readily are very apt to overeat.

Feed the ensilage in tight bottom racks that can be easily cleaned before each feeding. Never attempt to force sheep to eat ensilage by leaving it in the trough for two or three days. It will soon sour and ferment, thus making it more injurious. It is advisable to have the troughs used for feeding ensilage under cover where they can be kept dry and sweet. I have found a trough 18 inches wide and 14 feet long, with a smooth tight bottom, with six-inch side pieces, a very handy trough for feeding ensilage to sheep. With a shovel or broom this trough can be quickly cleaned before each feeding, and kept in a sweet, sanitary condition.

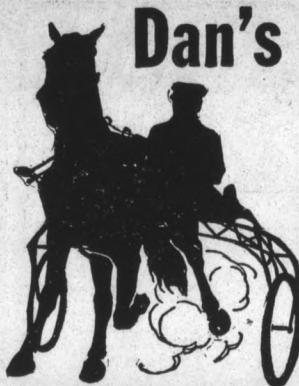
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LIVE STOCK NEWS.

The great slump in prices for cattle of most kinds, the best lots of fat beefs excepted, that was brought about by the heavy marketing of cattle that owners did not care to carry through the winter season, was followed by decreased receipts and rallies in prices. The demand has been especially strong for good fat beefs and stockers and feeders have been in good request in the Chicago market whenever prices favored buyers. The broadest demand for these cattle has come from Ohio, Indiana, Michigan and Illinois, with a fair demand from Wisconsin and Iowa. The demand for weighty feeders to short feed has developed a good deal of late. Reports from eastern Pennsylvania are that at least 25 per cent more cattle are going to be fed this winter than last, as farmers were favored with fine crops of corn and have been buying lots of steers weighing from 700 to 1000 lbs. from various states and Canada. It is stated that something like 60 per cent of the cattle are horned steers, but they are being dehorned.

The recent course of the hog market has been a good deal of a puzzle to most stockmen and dealers in swine. At first it was hinted pretty strongly that the Chicago packers intended to place prices on a \$7@7.50 basis for hogs, but subsequent advances in prices caused a more hopeful feeling in the breasts of stock feeders. It is a matter of absolute certainty, however, that the slumps of prices from time to time have vastly stimulated shipments of pigs and underweights from various feeding districts, and the average weight of the hogs brought to Chicago has fallen to 205 lbs. Three years ago, when the country was unusually free from hog cholera and hogs were in strong demand, the Chicago receipts averaged 233 lbs., and four years ago they averaged 225 lbs. Part of the recent low average weight must be set down as due to ravages of swine plague in Iowa, but much is due to sacrifices of young hogs by their owners, who, between fears of further declines in prices and the high price of corn, are disposed to let their holdings go at once, regardless of the practical certainty that this decimation of young hogs and little pigs at the present time means just so many less matured hogs in the course of a few more months.

From various parts of the middle western states come reports of purchases of old corn by stock feeders, this applying to such states as Illinois, Indiana and Iowa. Old corn is bringing unusually high prices. Conflicting views are held by farmers regarding the advisability of converting the high-priced corn into pork, beef and mutton, and some of them are arranging to sell their corn and remain out of live stock feeding, but apparently a majority think otherwise and are filling their feed lots and barns.



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FINISHING OFF A COW STABLE.

In your issue of November 1 I note inquiry by F. H. as to best method of finishing off a cow stable, and I also note that Mr. Lillie advises the use of a gutter but fails to give distance from stanchions to gutter, "because cows are not all the same length."

Quite a number of years ago when the dehorning craze first swept over the country, I was not slow to see the advantage of dehorning as it was not an uncommon thing to see cattle and horses gored by hooking cows, even under careful management.

Soon after dehorning my cows I conceived the idea of allowing them to run loose in the stable after having had their grain and had been milked, and have never had any trouble in any way in the handling of them.

Years ago my father built what was then considered to be a modern cow stable, building the platform for the cows a little wider at one end nearest the entrance and gradually narrowed toward the back end very carefully fixing the distance of the trench from the stanchions to accommodate the lot of cows he then owned.

It worked very nicely for a time until circumstances over which no man could have control brought about changes in his herd, some cows being disposed of, others were bought or grown, until in a few years the trench did not fit the cows.

Any man who builds a concrete trench and manger must know that they cannot for very long be expected to fit his cows. I thought Mr. Lillie was "playing safe" when he declined to give the width of platform for any strange lot of cows.

If there were no other objects in view in the breeding of cows than the maintenance of a certain size, possibly it might be done.

In breeding cows for productiveness, the modern idea in dairying, the question of size is soon lost sight of, with the inevitable result that the trench is too near or too far which, of course, cannot be remedied in a concrete trench.

There are dairymen in this county who practice giving their cows the run of the stable at all times except when milking and none of them could be hired to go back to the old practice of confining them.

If I were situated as F. H. states, I should not hesitate for a moment to construct a cow stable in the space he has, 16x23 ft., building along one side a combined feed alley and manger, with the feed alley or walk about a foot higher than the bottom of manger, with a slope of about 45 degrees from walk down to bottom of the manger, which should be about 20 inches in width. I would then make the inner side of manger next to cows, four inches thick by six inches high above bottom of manger, and putting manger and walk all as high as possible above the floor the cows stand on so they can just eat from the manger: when the stable is cleaned out. This will allow for an accumulation of manure and bedding some two feet in depth, if necessary, before cleaning out is necessary.

The walk should be about two feet in width, making 11 feet by 23 feet for the cows and as each cow should have from 36 to 40 square feet of floor space, varying with size of cows, the distance apart from center to center of stanchions can easily be determined; for instance, allowing 40 square feet per cow, dividing total area of stable 308 feet by 40 gives seven and nearly three-fourths. Keeping Jerseys, as I do, I would provide for eight cows in the 23 foot space, making the stanchions three feet six inches center to center.

Sixteen feet width of stable is little enough width, to be sure, and would be better 18 feet, giving a little more room in the walk as well as wider space for the cows, then the stanchions could be a little closer together.

By all means arrange to drive through the stable to make convenient cleaning out and haul direct to the field and spread.

I know how it sounds to the average farmer and his wife to write of keeping cows on manure two feet in depth, as I have heard the idea ridiculed to a finish at our farmers' institutes by state lecturers who really did not know what

they were talking about. Yet I have yet to hear of anyone who, having tried this method, has ever gone back to the old practice.

On February 26 last I put in 30 head of feeding cattle in one stable in which they were confined until about the middle of June, were fed ensilage all that time, were bedded on an average perhaps twice a week, the stable not being cleaned out during the entire time, with the manure from one to two feet deep and about as hard as a plank floor, yet when the cattle were shipped, I do not think it possible that there was a pound of filth on the whole bunch and they had not been curried or cleaned in any way.

These cattle were fed ensilage, corn meal and cottonseed meal well mixed twice per day with what clover hay they would clean up given once per day, requiring from 15 to 30 minutes twice per day by one man in caring for them. They made a gain of two and three-fourths pounds per day during the whole time, or one-fourth pound per day more than the best bunch fed at the Purdue Experiment Station, fed exactly the same except that they did not grind the corn. The ensilage fed these cattle was preserved in that cheap silo described in the issue of November 1, so you can see it was not all poor.

I never handle a forkful of manure until it is hauled to the field, except occasionally to level off some before bedding down.

Yes, I turn my horses loose, too, and have for the past seven years, keeping as high as 14 horses in a space 24x40 feet, including mangers, stalls and water tank; have had 20 colts foaled in that time and have never had any losses in any way from giving the horses their liberty.

Cass Co.

F. M. SMITH.

A SUBSTITUTE FOR COTTONSEED MEAL—FLAXSEED MEAL FOR CALVES.

Upon weighing the ingredients in the grain ration I have been feeding my cows I found I was feeding from 4 1/2 to 5 lbs. of cottonseed meal. When I reduced the amount the cows shrank in their milk flow, and I have wondered what I could feed in place of so much cottonseed meal and still get desirable results. I have corn and oats but have to buy other grains. Bran is \$1.30 per cwt., oil meal \$1.35, and gluten meal \$1.10 on the local market. We bought a carload of cottonseed meal and got it much cheaper than we could purchase it on the local market. Is it necessary to cook the flaxseed meal for calves, and is it better than oat meal?

Allegan Co.

F. W. K.

Cottonseed meal is undoubtedly the cheapest source of protein that we have to balance up a ration of home-grown feed for our cows. Nevertheless my experience and observation lead me to recommend no more than two pounds of cottonseed meal per day be fed to each cow, and this only after they have freshened. I would not feed it at all for six months before they freshened. Now if you cut your cottonseed meal down about one-half and substitute gluten feed or oil meal I think you will get just as good, or better, immediate results and I am sure that it will be better for your cows in the long run. It is barely possible that ground oats would take the place of the withdrawn cottonseed meal, because there may be enough protein without this, and if you could use ground oats it would be cheaper than the gluten feed or the oil meal. Oil meal is a splendid food for dairy cows but it is usually pretty high-priced to be economical.

In feeding calves flaxseed meal is better than oatmeal as a substitute for the butter-fat taken out of the milk by the cream separator. The flaxseed is much richer in fat, and it is fat that we want in the milk because fat has been removed. It is better to cook flaxseed. Use one gill, we will say, of flaxseed meal and six gills of water. Put it in a kettle and let it come to a boil. That is all that is necessary. The calf ought also to have oat meal, or ground oats, corn, and in fact, almost any grain. This flaxseed meal jelly is simply a substitute for the butter-fat which is taken out of the milk. So, as soon as the calf drinks its milk he should have some ground oats, or some shelled corn, or you could feed him oats without grinding them. Get him to eating grain just as soon as you possibly can, and also roughage. Give the calf a little choice clover or alfalfa hay. He will only eat just a little bit of it at first but he will gradually increase the amount until he gets so he eats quite a ration, and this is just what we want to do. As the calf grows furnish him additional food by giving him grain and roughage—don't increase the amount of skim-milk.

WHAT GRAIN TO FEED WITH ALFALFA.

What grain ration had I better feed to milch cows, with alfalfa? I may get some corn stover for a noon feed, otherwise I have only alfalfa. Oil meal \$40; cottonseed meal \$34; bran \$25; middlings \$26 per ton; corn 68c per bu; buckwheat bran \$20 per ton, hulls included.

Alfalfa is rich in protein. In fact, it contains too large a per cent of protein in proportion to the carbohydrates to have a balanced ration. Therefore it would pay to feed some other food in connection with it. If you fed shredded corn fodder that would balance it up so far as the roughage is concerned but you would have too bulky a ration if you fed nothing else. So if you had to pay a good price for corn fodder I don't believe I would purchase any at all if I had plenty of alfalfa; but I would feed alfalfa and balance up the ration with proper grains. Now since your alfalfa is richer in protein than is necessary for a balanced ration you can feed the old-fashioned corn and oat chop to good advantage. Grind corn and oats in equal parts and it will balance up your ration. Where you feed clover hay and corn silage, corn and oats will not balance the ration, because they are not rich enough in protein. You could mix in 100 pounds of bran to 300 or 400 pounds of corn and oat chop, probably with good results. I am quite positive that it would pay you to feed a small grain ration anyway, in connection with this alfalfa, and I don't believe you could get anything better than corn and oats. Of course, these grains are pretty high this year but on the other hand all other grains are high, and they probably would give you as much for the money as anything you could purchase.

GRAIN TO FEED WITH CLOVER HAY AND CORN FODDER.

Kindly give balanced ration for grade Jersey milch cows. Will feed corn fodder and mammoth clover for roughage.

Cass Co. SUBSCRIBER.
Since corn fodder and mammoth clover combined in equal parts would make a roughage having a nutritive ratio of about 1:9 it would be necessary to have a grain ration somewhat rich in protein as we desire a ration of about 1:6. In this case I would advise either cottonseed meal, gluten feed, or oil meal. If you use cottonseed meal feed it separate and not over two pounds per day per cow. Then you can feed corn and oats ground together as the balance of the grain ration. If you don't want to feed cottonseed meal and use gluten feed you could mix corn meal and ground oats and gluten feed equal parts by weight, which would make a nice ration to balance the roughage of clover hay and corn fodder.

Many rations can be criticized for not having enough variety in the roughage. Cows get tired of one feed day after day, even though it is well compounded. Really I would rather have clover hay and corn fodder so as to get a variety, than to have just one kind of roughage alone. I think the cows would do fully as well. Of course I would modify my grain ration as suggested and give more protein where corn fodder was fed, but I believe a variety would make a better ration than where the alfalfa, or clover, is fed alone. Cows get so that they don't relish it. It is like eating at a boarding house where you have the same food three times a day. One gets tired of it.

THE BEST BREED OF COWS.

Some people are arguing all the while that this breed of cows is better than that breed, and if you would sell your herd of cows and buy another breed you would make some money. Don't believe them. There is nothing to it. There is more in the individual cows of any given breed than there is between the breeds themselves.

It is a foolish business proposition for a man to keep changing from one breed to another. Get a good breed, stick to it and try to improve it. There is where your opportunity comes. The Holstein breeder finds that he has splendid cows and mighty poor ones in the same breed. Not all of them are good. Some of them are not worth milking, they are only fit for bologna sausage. It is the same way with Jerseys, it is the same way with Guernseys, it is the same way with Ayrshires. The better individuals of the breed are noble animals and will turn the farmer's feed into profit, and a good big profit, too. But now if a man has a herd of Holsteins it would be absolutely foolish to sell them and buy Guernseys. On the other hand, if he has a herd of Guernsey cows it would be absolutely foolish from

a business standpoint to sell those Guernseys and buy any other breed.

The farmer must realize that all of these breeds have been, by proper selection and care, developed so that some of the individuals are exceedingly excellent producers. Not only that but their characteristics and type have been so fixed that in a majority of instances they will be transmitted to the offspring. Now if you haven't got a good herd of Guernsey cows so breed and handle them that they will be improved and make a good herd of Guernseys, and then you have got just as good a herd of cows as any man can have. So believe me, when I say that there is no best breed.

And again, the profit from the dairy herd, no matter what breed it is, depends largely upon the man handling them. The right kind of a man will make a profit out of any breed of cows and the wrong kind of a man will allow them to deteriorate in such a manner that they are nothing but scrubs so far as production is concerned.

THE TEMPERATURE OF THE COW STABLE.

Several things must be taken into consideration to determine the proper temperature for a cow stable in the winter time. Seventy-five degrees is too high. The cows, of course, can keep comfortable in this temperature the same as we can. But cows perspire at a temperature of 75 degrees, and it costs more for feed for maintenance where cattle perspire than it does where this is reduced to at least a minimum. Then again, it is absolutely impossible to keep the temperature of the cow stable at 75 degrees during the coldest weather. You can't do this without artificial heat, and artificial heat in a cow stable is not practical. It wouldn't pay you.

On the other hand, if you let the temperature run down to freezing, to 32 degrees, the cows are uncomfortable, and it takes too much feed for fuel in the animal's body to keep up the proper temperature of the animal so that they can do business. Cows can get used to a temperature of 32 degrees so that they will do well, provided it is very uniform, but the farmer has to furnish feed to generate heat sufficient to keep the temperature of the animal up to about 98 degrees, and he can't afford to do this.

Then again, at as low a temperature as 32 degrees it is almost impossible to properly ventilate a stable. You have got to have the air in the stable warmer than it is out doors if you are to get a circulation of air and good artificial ventilation. If you could keep the stable at 75 degrees when the air outside was at freezing or below, then you could get a splendid circulation of air and consequently almost perfect ventilation; but you can't do this when the temperature of the stable is at 32 degrees. The usual systems of ventilation employed depend upon the principle that the lighter warm air will rise and allow cooler air to flow in and take its place. This causes a circulation of the air in the barn the same as a difference of temperature of the air produces winds on the face of the earth. The air becomes heated in one locality and rises and cold air from colder portions of the earth rush in to fill the place. It is no more than the simple principle involved in the ventilation of a cow stable.

Then the proper temperature of the cow stable, taking everything into consideration, is somewhere between the freezing point and the summer temperature, or 75 degrees. Experiments have been made, wherein, besides the above factors, the cost of maintenance and the yield of milk produced at different temperatures were considered, and the conclusions were that 40 degrees is about an ideal temperature. This will furnish fair ventilation, in fact, good ventilation, especially in cold weather when we need it most. The cows are fairly comfortable at 40 degrees, they consume only a fair amount of feed for a maintenance ration and to keep up the temperature of the body. Neither is it difficult to build barns that will maintain temperature at this point. So, taking everything into consideration, a temperature in the neighborhood of 40 degrees is about right.

The warmth should be as uniform as possible. It is impossible, of course, to keep it at 40 degrees because, when the temperature outside is way above 40 degrees, as it frequently becomes on warm days in the winter time, you can't keep the temperature inside below that. But when the weather is severe don't let the temperature get below 40 degrees if you can help it, and keep it as near 40 degrees as you can at all other times.



Drawn by Gordon Grant.

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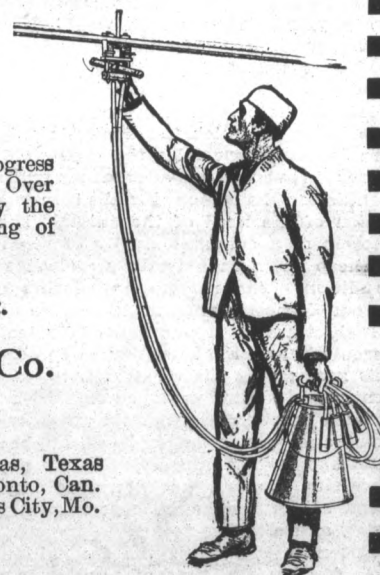
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DETROIT, DEC. 6, 1913.

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In giving Christmas gifts to our relatives and friends we like to give them something that will be useful, that will be appreciated and the price of which is within our means. What will answer these requirements better than a subscription to a good and appropriate publication? A good publication will be a source of pleasure and profit for an entire year and as each copy is received it will recall the giver.

If a friend or relative is interested in farming, what better gift could you give him than a subscription to the Michigan Farmer? He will receive it every week for a year and the cost to you will be only 50 cents.

On page 515 of this issue we publish our clubbing list and also some special combinations. Each publication of a combination can be sent to a different address so that you can divide the combination into Christmas gifts for two or more persons. Take Combination No. 8, you could send The Michigan Farmer to Uncle John or renew your own subscription—Collier's Weekly could be sent to Cousin Jim in the city—The Ladies' World would be fine for Sister Kate, and Nephew Henry would be delighted with The American Boy. Thus you are able to get gifts the value of which is \$5.00, for only \$2.85. It means a big saving in money, and no better gift could you find.

CURRENT COMMENT.

It would, at first thought, seem wholly unnecessary and out of place to

preach the gospel of fresh air and systematic out door exercise to country people, who are surrounded with such an abundance of pure, fresh air and whose very occupation not only keeps them out of doors a great deal, but entails a degree of physical labor which would seem to leave nothing lacking from the standpoint of exercise. It is, however, undoubtedly true that the average country home is more lacking in ventilation than the barns in which the domestic animals are housed, especially the modern dairy barns in which an adequate system of ventilation has been installed in recognition of the need of the animals housed therein of a constant supply of fresh air to keep them in a healthy and vigorous condition. The recognition of this need of our domestic animals has come about largely through the spread of bovine tuberculosis and the necessity of combating this scourge by the application of a preventive rather than a cure. With increased knowledge regarding the treatment and prevention of human tuberculosis has come a like appreciation of the necessity for and benefits of plenty of fresh air in the home, especially in the living and sleeping rooms.

But notwithstanding the recognition of this fact on the part of physicians and

many laymen, there is still an unaccountable fear of the effects of fresh air in the living and sleeping rooms of many homes during the winter season. Many people fear the coming of colds and pneumonia from the effect of a draught of air, and for this reason the fresh air which is so much needed is carefully excluded from the living and sleeping rooms, with the result that the very effect which was sought to be avoided by this means is brought about. The natural result is that the idea that great care must be exercised to prevent the taking of colds by the victims of such an experience is all the more firmly fixed. But, notwithstanding this fact, the gospel of fresh air is being rapidly spread among thinking people, and with it should go the gospel of out door exercise for those members of the family whose work is indoors. In recognition of the public need along this line, Governor Ferris recently issued a proclamation setting aside Sunday, December 7, as "Tuberculosis Day" for the general teaching of this gospel of fresh air as a means of warding off not only this great "White Plague," but other human ills as well. His proclamation follows:

Good health is an asset. The laws of health are as much God's laws as are the ten commandments. The ravages of the White Plague surpass the ravages of war. Intelligent concerted effort on the part of the American people would in a few generations exterminate this plague. It is humane to use all possible means to relieve the afflicted and protect those who are constitutionally weak.

If, however, it is imperative that tuberculosis patients have an abundance of pure air and sunshine, systematic "out door" exercise, nourishing food and pleasant surroundings, how immensely important is it that all who are afflicted have the benefit of these agencies in order that we may eventually have a people who are immune.

The truth of the matter is, there exists a superstitious fear in relation to pure air, especially in living and sleeping rooms, a fear of disastrous consequences from "outdoor" living. Let the evangelists of rational living not relax their efforts in teaching the people how to avoid the contagion of tuberculosis but at the same time let them teach "well people" how to acquire the physical vigor that resists tuberculosis and at the same time resists all other diseases.

Therefore, I, Woodbridge N. Ferris, Governor of the State of Michigan, urge the observance of Sunday, December 7th, as Tuberculosis Day.

May we not hope that every reader will make this plea a matter of special thought and effort, to the end that the country people of Michigan may keep in the front ranks of progress in the matter of rational living all along the line, and especially so far as the full enjoyment of the free blessing of fresh air is concerned.

Expenditures for Public Roads.

Now that the good roads propaganda looms so large in the public eye, some statistics relating to the total of expenditures on public roads in the United States, recently made public by the Office of Information of the U. S. Department of Agriculture will be of general interest. According to these statistics the total expenditure on all public roads in the United States in 1904 was \$79,771,417, while in 1912 the expenditures for this purpose amounted to \$164,232,365. The expenditure per mile of public roads in the United States for 1904 was \$37.07, but the expenditure per mile for the year 1912 had doubled, amounting to \$74.65. The expenditure per inhabitant in 1904 was \$1.05, but in 1912 it amounted to \$1.78.

In this information the statement is made that the greatest progress in road building has been made in the states which contribute from the state treasuries toward the construction of state-aid or trunk-line roads. In 1904 there were 13 states that contributed out of the general fund \$2,607,000, but in 1912 there were 35 states, which contributed \$48,757,438.

From these figures it will appear that while the aggregate sum expended for road improvement is large, the per capita expenditure is not a great burden on the people of the country. The point of greatest interest, however, is whether the greatest possible value in better roads is secured from the money invested in their betterment. It is the general consensus of opinion among students of the problem that this is not the case, hence it will be profitable for every public spirited citizen and especially every farmer, to make a careful study of the question. By far the larger part of the total expenditure on public roads doubtless is, and certainly should be, expended in the betterment of the common earth roads. This means the roads which are under the direct supervision and care of the various townships, with which the taxpayers are familiar and which they can have improved or maintained about as they like if they will

give the matter a little attention. This is a good season of the year to give this important matter needed consideration and attention, to the end that the public may become better educated in the matter of economic road improvement and the money which they contribute to local road purposes more wisely expended.

The Quarantine Against Potatoes.

As has been previously noted in these columns, a rigid quarantine has been in force against the importation of potatoes from certain countries in which the black wart and powdery scab are prevalent, including the British Isles and Germany. The present embargo does not apply to Belgium and Holland, however, and it is contended by some close students of the situation that infected potatoes are likely to find their way to our shores via the ports of these countries. Apparently mindful of this danger, as well as the possible danger of the disease finding its way into our northern potato fields from Canada, it has been proposed by the department officials to establish a quarantine, to be effective on January 1, 1914, against the importation of potatoes, not only from those countries against which an embargo already exists, but including all parts of Europe and Canada as well. The Secretary of Agriculture has called a public hearing to be held at Washington on December 18, 1913, to give interested parties an opportunity to be heard.

Almost simultaneously with this announcement, Mr. T. P. Gill, Secretary of the Irish Board of Agriculture, has appealed to the Department for a removal of the embargo on potatoes from his country, on the ground that the wart disease is under such excellent control as to obviate any danger to the potato industry by permitting Irish potatoes to come in. Department officials have hastened to explain that the call for the hearing has no bearing on Mr. Gill's representations, which are purely incidental. It is also explained that the Federal Horticultural Board, which is the official body ordering the quarantine, have considered it necessary to prevent the introduction of the powdery scab and other fungous potato diseases which would seriously affect the potato production of the United States in future years.

In view of the economic importance of these diseases, we shall describe and illustrate them in a future issue of the Michigan Farmer.

THE ADVERTISER HELPS.

We wonder how many of our readers realize that the subscription price of our paper would need to be increased if there were no advertising.

The publishers of the Michigan Farmer have always believed in charging a fair subscription price and insisting that the subscriber pay it, if he wishes the paper. We do not give the paper away to increase our circulation.

Even so, however, it would never be possible to sell a paper of the editorial expense we put into this one, for the subscription price, were it not for our revenue from advertisements.

Realizing, then, that the advertiser is lowering the cost of the paper to you, is it not due to him that you choose advertised goods in making your purchases?

HAPPENINGS OF THE WEEK.

National.

Confessing to an inability to maintain order in the copper district in northern Michigan, officials have made an appeal to Governor Ferris to again send troops into Keweenaw county. A number of crimes have recently been committed, and it is believed that the presence of troops will have a moral effect upon those who might otherwise persist in disorderly conduct.

The deer season of 1913 claims the usual number of victims. In the states of Michigan and Wisconsin 30 persons were killed and 35 wounded, while in the state of Maine 11 hunters were killed and 60 others injured.

The Health Board of Detroit and a member of the staff of the United States Board of Health are working strenuously to check a threatened epidemic of diphtheria in the city. There are now reported 288 cases of the disease under inspection. Thus far this year 264 deaths have occurred from this cause alone. The demand for anti-toxin exceeds the supply.

For the first time in many years, the saloons of Cincinnati were closed Sunday. This was brought about in obedience to the new license law now on the Ohio statute books.

Saginaw's first election under the new city charter was held Monday. In all, there were 96 candidates for nominations as follows: Three for mayor, 49 for commissioners, and 44 for supervisors.

The National American Women's Suffrage Association has started a week's campaign with the hopes of securing the adoption of a constitutional amendment

providing for the enfranchisement of women.

Announcement has been made by Secretary McAdoo that in the event of the passage of the currency bill, the United States Treasury will help any of the banks which show that the requirements of the new law are working a hardship. By placing the funds of the treasury at the disposal of these banks, there will be no necessity of bankers curtailing accommodations to their regular customers.

Custom inspectors at the New York harbor have seized ten thousand rounds of ammunition aboard the steamer Seminole, which was about to sail for Haiti and San Domingo.

The Detroit Automobile Show will this year be held in the new Ford Branch building at Woodward avenue and the Boulevard. No building could have been constructed which would better serve the needs of this great auto show, which annually sets the pace for the shows of the country. Three floors of this great building, each 200 feet in length by approximately 100 feet in width, will be used, and present great possibilities from a decorative standpoint as well as from that of exhibition space. The D. A. D. A., under whose auspices the show is held, were unable to again secure the Wayne pavilion for the show and but for the offer of three floors of this building by the Ford Motor Co., would have had no alternative but to erect a building at large expense in some less favorable and accessible location. The three floors of this building will afford 9,000 feet more floor space than the previous quarters in which the show has been held, with the advantage that all of the exhibition space will be equally good. Stairways will be built between the floors, and other alterations made which will facilitate the holding of a show that will easily eclipse any similar event since the inception of the show 14 years ago.

Foreign.

Rioting occurred in Dublin, Ireland, last week, when representatives of the unionist party attempted to make addresses against the home rule policy.

The shipment of grain from Ft. William, Ont., has been heavy this season. During November, 250 vessels loaded with grain cleared from that harbor. On November 30, 25 freighters left with eight million bushels of grain aboard, and during the last week of November, 30 vessels carrying something like sixty million bushels of grain left for the east.

Affairs in Mexico have not changed during the past week. At the present time it seems that the financial situation of the administrative party is the most perplexing, it being impossible to secure funds from abroad making it necessary to resort to enforced loans and a dependence upon revenues from special taxes. Consistent with taxing methods largely employed by Latin countries, gambling is now flourishing in the Mexican country under an extensive license system. The officials are awaiting with some concern the message of President Wilson to the new Congress which convened Monday. The opinion prevails however, that President Wilson's attitude will not be harsh.

Foreign countries are complaining against the quarantine on potatoes coming into this country. The Secretary of the Irish Board of Agriculture is now at Washington, asking that the present quarantine be raised. He insists that the disease found on potatoes imported from Ireland is no cause for restricting shipments from that country, because a similar blight is already common in the United States. He declares further that the marketable potatoes in this country are largely under the control of a few persons who hope to advance prices when they have a sufficient quantity of potatoes to do so. Secretary Gill believes that for this reason the quarantine should be raised in order to defeat the ambition of these men.

MICHIGAN FARMERS' INSTITUTES.

Farmers' Institutes will be held at the following points during the month of December:

County Institutes.

Montmorency Co., Atlanta, Dec. 9-10; Otsego Co., Gaylord, Dec. 11-12; Wexford Co., Manton, Dec. 16-17; Missaukee Co., McBain, Dec. 19-20; Cheboygan Co., Wolverine, Dec. 19-20.

One-day Institutes.

Montmorency Co., Lewiston, Dec. 6; Big Rock, Dec. 8.

Antrim Co., Kewadin, Dec. 8; Ellsworth, Dec. 9; Jordan Twp., Dec. 10; Alba, Dec. 11; Mancelona, Dec. 12; Custer Twp., Dec. 13; Alden, Dec. 14.

Muskegon Co., Casnovia, Dec. 8; Trent, Dec. 9; Ravenna, Dec. 10; Fruitport, Dec. 11; Dalton, Dec. 12.

Otsego Co., Johannesburg, Dec. 10; Vanderbilt, Dec. 13; Elmira, Dec. 15; Missaukee Co., Shippy, Dec. 15; Morey, Dec. 16; Lake City, Dec. 17; Falmouth, Dec. 18.

Mason Co., Logan, Dec. 16; Free-oil, Dec. 17; Victory, Dec. 18; Amber, Dec. 19; Custer, Dec. 20.

Cheboygan Co., Weadock, Dec. 16; Cheboygan, Dec. 17; Afton, Dec. 18.

Kalkaska Co., Rapid City, Dec. 16; Cold Spring, Dec. 17; Excelsior, Dec. 18; Kalkaska Twp., Dec. 19; North Springfield, Dec. 20.

Wexford Co., Buckley, Dec. 16-17; Cadillac, Dec. 18-19.

One-day Institutes will also be held in Kalamazoo county, Dec. 8-20.

The State Round-up Institute, which this year will take the form of a "Farmers' Week," will be held at the Agricultural College, March 2-7. The exercises will, for the most part, take the form of special short courses lasting five days and will consist of lectures, demonstrations and laboratory work in dairying, live stock husbandry, soils and crops, poultry raising, horticulture, farm mechanics, with special courses in domestic science and domestic art for the ladies.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
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The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

Man and Beast in Russia.

By W. R. GILBERT.

THE relations existing between men and their horses in different countries have undeniable fascination for the traveler, who likes to compare the lot of the "poor relations" with those of his own country. The first impulse of the American or Englishman, on witnessing the brutality of the Spanish muleteers or

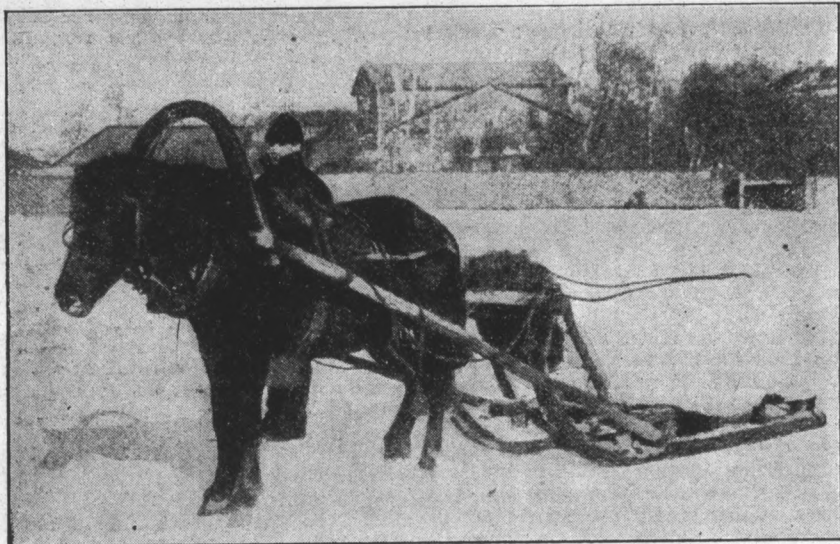
between the shafts of a "troika," with another great horse galloping on either side, is something exhilarating that is worth the journey alone. "Troikas" are not seen in the capital until the snow has set in for the winter, but I found them in the streets of Tiflis in August.

Horses that do their work in the streets

Mongol teamsters make quite a harvest out of citizens anxious to enjoy the novel experience of flying over the ice behind the dogs or deer. Even in Russia, where the simple life is anathema to the rich man and "de rigueur" for the poor, a new sensation will always bring its price.

I made inquiries about the way these Asiatics treat their beasts, but could learn little. Outwardly, at any rate, they are on the best of terms, and the dogs, though sometimes savage towards strangers, display an affection for their owners that can hardly be the result of fear. They are said to be vindictive, cherishing their revenge until the psychological moment for reprisal, much as the malevolent mule of the Pope, of which Daudet tells us in one of the delightful letters from the Mill. The reindeer are probably

treated more kindly than the dogs. They are not without intelligence. At the time of year when, in the far northern summer, midges and botflies madden man and beast alike, they know enough, at any rate, to crouch in the open doorways of the owners' huts, where the acrid fumes from the peat fires may be trusted to keep their winged tormentors at bay. This argues, at least, a greater share of common sense than is to be found in some people, who, as Americans say, have not sense enough to come in out of the rain.



The Single Sledge is a very Common Rig in Russia.

Moorish camelmen, is, in the case of the first named, to forcibly express an opinion then and there, while in that of the second it is to unrein his indignation through the medium of the public prints. In the dominions of the Czar, however, or in such of his cities as I have lately seen, happily no excuse for rushing into print can be found. The "isvostchik" (cabby) of St. Petersburg, whom I should call a lucky rather than a skillful driver, never whips his horse. Indeed, his miserable little whip would never reach further than its tail. He abuses it and curses it, but never a blow. It is perfectly amazing to watch the swift little ponies of the single "droschkes" (which are much faster than those of the pair) speeding up and down the Nevski Prospekt, or along the better pavement of the English or Admiralty quays, with no other inducement than the caustic tongue of the man on the box. It was in her famous memoirs that Lady Craven declared that the docility of the unwhipped horses of St. Petersburg streets was achieved only by unmerciful flogging in the secrecy of the stable. Not all of Lady Craven's statements bear very searching inquiry, and I failed to find any corroboration whatever of this ingenious libel.

As a matter of fact, the cab horses are better off, and more looked after, than the coachman. Padded to the dimensions of a Daniel Lambert, he has to be lifted on and off the box at the beginning and ending of his long day, and he sits uncomplainingly in the falling snow far into the night. Sometimes, when the stablemen go to lift a coachman off his box they find him frozen dead at his post. While his employers were watching the opera or ballet, the poor fellow slept himself into eternity, not even the long beard, which he commonly wears to protect his throat, having saved his life.

The number and quality of the horses in the streets of the Russian capital cannot fail to impress those who come from cities that have come under the sway of oil. Only on festive occasions should we see so many horses together in the streets of modern cities, and the majority of these would be woefully inferior to the gallant little animals which race up and down the Nevski. I do not suggest that they are all of the pure Orloff breed with which America and England are familiar, but the sight of a good trotter

of St. Petersburg have little to complain of in the pavement. Those of Moscow have a hard life of it. It is, however, in the open country that the so-called "roads" are, figuratively, paths of thorns. Only in the depth of winter does the snow, like the cloak of charity, cover the multitude of their sins. One night, in order to reach a place some distance from the railway, I had to cover several miles of such "roads" on a springless country cart which must have been the invention of the evil one. It was freezing hard, but the snow lay thin on the ground, and a good-sized man could have hidden in the ruts. On this tumbler, a kind hand had hurriedly thrown a bit of straw, out of regard for our comfort and, indeed, my companion in distress, a secretary of one of the embassies, called it luxurious. But his country, also, as I know to my cost, breeds such four-wheeled crimes, so I forgave him. Gallantly the little stocky Tartar horse struggled over those ruts and through thin ice, but the going was not much more than two miles an hour.

Horses are not the only draught animals in the empire. Each winter, when the majestic Neva is frozen solid and navigation is suspended until the return of spring, down come the Samoyedes with their dogs and reindeer, and the quaint

an active curiosity as to the exact height of the hedge and the distance of the attic window from the ground. When he had stared his fill he crossed the street to the



Reindeer Teamsters who Reap a Winter Harvest from the Novelty-loving Public.



The Lonely Miss Biggs

By F. RONEY WEIR

A PEDDLER, waiting on the stoop of the brown house, gazed intently at the house on the opposite corner. It was little, and yellow, and half hidden by a high hedge. He noted how the ivy straggled through the wire meshes of the gate on the hinge side, as if it were rarely disturbed. He also satisfied

gray house on the opposite corner. From this point of vantage he could see that the back door of the yellow cottage was reached through another little wooden gate opening on the side street.

It was a shut-in sort of place, and bore out the information which had sifted down to the "gang" that it was occupied



Samoyedes and their Dog-sleds are Winter Attractions on the Neva.

by a woman known in the neighborhood as "the lonely Miss Biggs." The truth of the rumor that Miss Biggs was wealthy, with a horror of banks, and often kept large sums of money in the house, would be verified later. The peddler's business was to ascertain by outward and visible signs the extent of Miss Biggs' inward unprotectedness.

He saw the postman leave a letter at the brown house, and a paper at the gray, but pass the wooden gate of Miss Biggs without entering. The vegetable wagon, grocery cart, and butcher boy, each in turn ignored the little yellow house. No school children, ravenous for lunch, no hungry man coming for six-o'clock dinner there; by the signs, not even a servant to feed. There was not much doubt as to the loneliness of Miss Biggs.

As the beady black eyes of the peddler rested on the kitchen door, Miss Biggs, herself, appeared with a little blue plate of bread crumbs to feed the birds. The man saw that her hands were thin and slender and helpless-looking, her head grizzled over with coming age.

When she went up the steps again he crossed the street and, as soon as she

was within, knocked upon the door. He hardly expected her to open it to him, but she did, and he stepped into the kitchen.

At first Miss Biggs waveringly protested that she did not need silver polish; then, with a glance of pity at his battered derby and seedy coat, thought better of it and went into the sitting-room for her purse.

During her brief absence the peddler's eyes fairly galloped over the place, taking note of the tiny teakettle on the cook-stove, the cloth and tray on one end of the kitchen table, bearing dishes for one, the anemic condition of the larder of the woman who lives by herself and merely goes through the motions of eating three meals a day, visible through the pantry door.

In the sitting-room the peddler heard the dull chuck of silver. He could tell by the sound that Miss Biggs was searching among dollars for the quarter with which to make her purchase.

Presently she came back and put the money into his hand. She wore a little jet ring with a diamond setting and, although it was still in the forenoon, her dress was black silk, and her white lace collar fastened with a golden brooch.

The peddler thanked his customer sullenly and went his way, not bothering any more of her neighbors. His mission was accomplished.

Down at headquarters he handed in a very satisfactory report. "She's it, all right," he assured the "boss;" she's got a crust over her a foot thick. A kid could work that graft. She's got a hedge and gates, but they open easy, and there's no bow-wow. I shouldn't wonder if she spilled out a hundred bones or so, and whatever stuff there is in the cupboard has the word 'Sterling' on the bottom—take it from me."

"You'd better take Stim with you, and leave Curly for the Fourteenth Avenue graft," suggested the boss.

"Not on yer wishbone!" remonstrated Curly. "It's about time to put Stim next some of the really-truly jobs. He's had a hunch that he's no slouch of a yegg, and fur why? All he's ever done is children and deaf-and-dumb asylums. Let him take his turn leanin' up against apartment houses, where hubby is just home from the road with a whole arsenal under his pillow. Or let him work a saloon or two with a hair-trigger bartender seein' to the cash-drawer. It's about time you let me in on some of the granny jobs like this here Biggs one. By the royal hatband, I've earned a little easy work, and if I don't git it I'm goin' to fly de coop! I'll beat it back to old Chi. where things is evened up better'n they are out here in the west!"

"Awh, hold yur face," replied the boss, "and git next the job if yuh must have an easy one. There are three or four five-o'clocks in that neighborhood. You better leave the old woman till the last; there ain't any danger of a guy puttin' in for dinner—"

"We do the old woman first, if I'm captain of the expedition!" declared Curly, chestily. "We'll finish her up in the edge of the dark before we'd dare to tackle the other numbers. We'll be at the 'fence' with the hull load before feedin'-time, which suits me, fur I've got a date fur this evenin'."

It was just ten minutes to five when Miss Biggs laid aside her sewing and went out the back door, down the side steps and around to her little basement for a potato. On these cold, rainy winter evenings she enjoyed a hot baked potato with her tea.

Somewhat tonight her loneliness pressed heavily upon her. She was thinking of the days when she was not "the lonely Miss Biggs;" when she had parents, and brothers and sisters, and chums—all gone now. Brother Henry's wife and son Arnold, and a sister-in-law and nephew who lived three thousand miles away, hardly counted.

Arnold was in college now; a great, strapping fellow—an athlete, so his mother wrote. Miss Biggs remembered the clasp of his dimpled baby arms about her neck, and the feel of his little hot, red cheek against her own.

As she emerged from the low basement door, her mind filled with thoughts of her nephew, and her hands full of potatoes, she was confronted by two men who had just entered the back gate.

Although not essentially a timid woman, her heart gave a thump of fear.

"Excuse me, ma'm," said one of the men, "we've come to fix that hot-water faucet you 'phoned us about."

"Oh, yes," returned Miss Biggs, "it's the one in the bath tub. I shall be glad to have it fixed; the dripping sound is so

annoying. Walk right in and I'll get a light."

"Never mind," said the plumber, "we have a lantern, and it won't take but a minute."

He and his helper preceded Miss Biggs up the back steps, where she opened the kitchen door for them to enter.

She was about to follow when she noticed a dark figure crouching in the shadow between the ivy hedge and the house. She stood rooted to the steps staring down at the intruder who rustled close to the ivy, then stood erect, and Miss Biggs distinctly saw the glint of steel.

She did not dare advance or recede until a voice from the shadow reassured her: "Don't be frightened, Miss Biggs, it is I—Mr. Andrews. I am clipping ivy sprigs for our decorations. It is Adelaide's party tonight, you remember, and you told us to help ourselves."

Miss Biggs remembered, and was so relieved she was almost over-effusive in her protestations that she was not in the least startled.

"But I had forgotten that your wife's party was tonight. I will run in for my scissors and come out and help you in a moment."

"No need, no need," Mr. Andrews assured her. "I'm doing very well, thank you. I have nearly enough now. An armful will be plenty."

Miss Biggs hurried into the house. As she did so the front doorbell rang. She dropped her potatoes upon the kitchen table and ran down the length of the little hall, fully expecting to find Mrs. Andrews waiting to borrow spoons, or a couple of dining-room chairs to help out at the party, this being the friendly custom in the neighborhood. Instead, as she peered through the glass in the front door her little porch seemed to be literally filled with men.

There were only three, but such sizable ones that to a woman like Miss Biggs whose front gate so seldom opened to callers, the number seemed appalling. For the first time she regretted the spirit of economy which had moved her to deny herself the luxury of electricity in her house. If she could only turn on a light and discover whether this delegation was composed of friends or foes!

She opened the door and then gave a joyful little hoot of recognition.

"Why, it's Brother Townsend!"

"How do you do, Sister Biggs," greeted the young minister. "It is rather late to make a pastoral call, but I was passing and just stopped to shake hands. I found these two gentlemen waiting on your steps to be admitted—"

Without further ado one of the waiting gentlemen grasped her about her waist and hugged her as she had not been hugged for years, pressing a hot cheek against her own.

"You dear old budget, don't you know me? It's no wonder; it's as dark as a pocket here! Where's your electric light switch? I'll have to give you a password and be taken on trust. Didn't you get mother's letter?"

"Is it—it can't be—Arnold?"

"But it is, and this is my best friend, Jimmy Bixon. Jimmie, I'm presenting you to my dear Aunt Huldah, and I expect you to live up to the honor. Jimmie's a mutt in Greek and higher mathematics but you pipe his shape and you'd know what he'd be able to do in a hundred yard dash. He's a sprinter—"

"Hush, hush," warned Miss Biggs, as her little cold fingers were enveloped in Jimmy Bixon's big palm, while her eyes traveled up and up to the shining row of boyish teeth far above her head. "Let me present you to my pastor, the Reverend Mr. Townsend. Walk right into the parlor, please, and take chairs."

She had not understood much of what her nephew had been saying. She did not know what a "sprinter" was. Perhaps it was not altogether—respectable. Who knew what a college boy might tumble into; and she was determined the young minister should not get a false impression at the very first of her dear, dear nephew Arnold.

The boys shook hands with the minister in a subdued and respectful manner, and fumbled in the semi-darkness for chairs, while Miss Biggs, in a tremor of pleasurable excitement, hurried to the kitchen for matches with which to light the parlor lamp.

She was not a bit surprised to hear the back gate click, nor frightened when the kitchen door opened to admit a burly individual. She took it for another plumber, or a neighbor, or—could it be she had another big nephew whom she had forgotten?

The next instant a brutal hand clutch-

ed her windpipe, cutting short a little squawk of terror.

"Dry up or I'll kill yuh!" hissed Curly, the burglar.

Miss Biggs thought she heard the sound of a rush and a tumble and yells outside. There was a sudden shrill whistle, and at the sound the burglar let go his hold on his victim and rushed for the back door, as the plumbers came from the bathroom with their lantern.

In the doorway Curly came in violent contact with a big man who was wishing to enter as he was wanting to exit. It was Mr. Andrews, ivy-covered, and panting violently. Before the burglar could recover from the impact with the ivy contingent, the reserve force from the parlor came pouring into the kitchen and Miss Biggs was obliged to make some very rapid explanations in order to save the lives of the plumber and the plumber's assistant. There are times when it is almost impossible to distinguish between a plumber and a burglar.

"Burglars! Burglars! That's what they are!" yelled the ivy-draped Mr. Andrews. "I suspected it when I saw 'em come creeping up the steps. I tackled the one who stayed outside, but he broke loose and made down the avenue! Can't you hear him going it? Oh, if only there was somebody here who could run!"

"Run? Run?" demanded Arnold Biggs, "Why, Jimmie here—"

He stopped suddenly to leave a blanket injunction to everybody to look after his aunt and the other burglar, and then plunged after his friend, who was already under way.

It was like a moving picture show: A heavy burly robber running for life, followed by a long boy who didn't stop to open the gate but took the hedge like an English hunter, this one in turn followed by another lad, not quite so good a runner, perhaps, but even more in earnest, and an ever-increasing crowd of excited pedestrians.

But Miss Biggs had never seen a picture show in her life, and she did not know how like it was. And such awful things were happening in her kitchen, and she couldn't find the matches, and when the plumber's assistant, who smoked, furnished one, she could not for the life of her remember where she kept her lamps. Consequently the scene was il-

luminated only by the feeble rays of the plumber's lantern.

"Cheer up, ma'm," said the plumber, "we've got this one all right, and I wouldn't wonder if they fetched back the other one."

With his hands and feet tied securely with dish-towels, Curly, the burglar, listened savagely while Mr. Andrews, standing in a wreath of ivy and entirely forgetful of the fact that this was the night of Adelaide's party, detailed for the third time the particulars of the scrimmage at the gate.

"I tackled him and gave him a smart blow in the head, but he escaped, and I knew I was no good on the run—but I'll go and telephone for the patrol. We've got this one safe enough."

Long before the patrol wagon arrived the college boys brought in their quarry.

"I gave him a run for his money!" chirruped Jimmy Bixon. "I'll warrant his lungs feel as if they needed greasing. They squeaked like a rusty hinge before he finally lay down."

"I floored this feller with a punch in the jaw," boasted the plumber's assistant. "And I popped him one in the eye with my wrench," said the plumber.

"And I sat on his chest, almost completely shutting off his respiration while they bound him with the towels," witnessed the minister.

"I didn't get any particular crack at them," owned Arnold Biggs regretfully, "not that I shouldn't have liked to, the cowards! To plan to attack an unprotected woman—"

Curly, the burglar, gazed about the kitchen, at the plumber holding his lantern aloft in a Liberty-enlightening-the-world attitude, at Jimmie Bixon oozing satisfaction at the outcome of the chase, at Arnold Biggs comforting his weeping aunt, at the plumber's assistant sitting on the drain-board of the sink for want of room to stand, at Mr. Andrews, still surrounded by ivy and still forgetful of Adelaide's party, at the young minister, distressed, yet victorious, and at the two policemen just coming in at the door; then he looked over at his partner and sneered.

"What yuh grinnin' at, you lout?" demanded the peddler.

"At a guy who sized this job up as a snap. The lonely Miss Biggs! Huh!"

The High Cost of Living. A Comparison with the "Good Old Days."

By G. A. RANDALL.

In these hustling, up-to-the-minute times it seems strange to be brought face to face, as it were, with actual farm transactions made in our own state away back in 1847 and before. I will chronicle a few, word for word as they were recorded by my grandfather, John Saunders, at that time a farmer near Burlington, Mich. Here are extracts from one of his diaries:

May 10, 1847. To 2½ yards of tweed, (how many of our young ladies know what tweed is?), 80 cts. To one gallon "lintseed" oil, \$1. To one yard of calico, 13½ cts. (Think of calico at that price when very nice dress patterns now may be had for only a few cents more per yard. To 8 lbs. hand-wrought nails, "six penny," 64 cts. (In those days our bright new wire nails of today were unknown and only in places could the now, old-fashioned iron machine-made nails be had. Think of being obliged to make by hand nails to do our present building, or at least a good share of it!) To 7 "iron buttons" (pants) 7 cts. (Pretty expensive to lose buttons those days, and common iron ones at that). To 1½ yards of cotton cloth, at 11 pence, 20 cts. To 3 fatty bed screws, 9 cts. (Who knows what they are? I don't). To 3 hoes, at 59 cts each, \$1.87. (Here is a mistake in figuring, but only think of paying 59 cts. for a hand hoe; now, 'twould almost purchase three).

Let's jump three years, and here's another short store bill of (I don't know who he was) T Mosely, Dr.: To ½ lbs. tea, 47½ cts; ½ lb. alum, 6 cts; ¼ lb. powder (gunpowder for muzzle-loading guns), 12½ cts; 1 spool thread, 7 cts; 1 lb. tobacco, 25 cts.

Now look here, sheepmen. Oct. 27th, 1847, H. P. Jones, Cr. To five fine sheep, \$5; ½ bu. buckwheat, 50 cts. (Think of a bushel of buckwheat buying a fine ewe sheep today).

Space is limited and we'll jump again. July 7th, 1853—Robt. Barrington, Cr. To ox-work, ¾ day—breaking new ground—

37 cts. (Talk about the high cost of living! Say, you young ducks, how would you like such wages today?) Then look at this: July 4th, 1853—Polly French Cr. To "breaking oxen" 3 days and 1 hour, \$1.62½. (Pretty good wages, those!) April 2nd, 1852—two loads, 1,900 hoops, (doesn't say what hoops were worth) got 1 bbl. "fine" flour, \$3.10; 60 lbs. "super-fine" flour, \$1.35; 1 bu. meal, 31 cts. Nov. 1st, 1852—H. French, Cr. To one big load pumpkins \$1. (This was crossed out and made 75 cts.) July 3rd, 1849—H. French, Cr. To 27 lbs. salt pork at 7 cts per lb., \$1.89. (This sounds old-fashioned).

Jan. 3rd, 1853—H. French, Dr. To six days' carpenter work on house, \$6. (Grandfather was considered a No. 1 carpenter in his time and got \$1 per day for expert work!) Aug. 21st, 1853—H. French, Dr. To "two large wagon boxes" 50 cts. (French furnished the lumber and grandfather made them at this price). D. Dyer, Dr. Mar. 18th, 1851—to 1½ tons hay at \$4.50 per ton, \$6.62½.

One will notice that every half cent is reckoned in. And these were the good old days (?) when life was one continual round of joy and unalloyed pleasure. I think, from reading these faithful old diaries which grandfather wrote so many years ago, that Michigan today, with its better tools to work with, better stock, better roads and better seed, its telephones and R. F. D.'s, and this, that and the other, not to mention a thousand more blessings our forebears never knew, is good enough for me. The "high cost of living," so far as a comparative test with actual conditions as they once existed, is certainly a myth. Our present American ambition to attain the impossible creates a false standard by which many of the methods and necessities of existence are erroneously measured, and this creates unrest, and a general social uneasiness that precipitates panics and consequent hard times (by spells) when really things should be moving along in a regular progressive manner.

RAPPING THE MINK AND WEASEL.

BY GEO. J. THIESSEN.

THE mink and weasel are animals whose habits are very much alike. They are found all over America. However, the skins of the latter are not much sought by the trapper of the south, owing to the fact that very few furs taken in that section are prime. A stained or brown pelt has no market.

Generally speaking, the mink, and especially the male, is a wanderer. The female usually stays within a half mile of her den. But not so with the male. Often he will travel five or six miles in a night.

Before giving methods of taking either the mink or the weasel, I wish to say that they are both very hard to trap. All sets, whenever it is possible, should be made in water for the mink. The weasel, not so cunning, may be trapped with a fair degree of success on land. I would, however, caution any pelt hunter against handling traps with his naked hands unless the sets are placed in water. Gloves should be used. It is a good plan to dip the traps in blood as often as possible.

The mink is found most frequently along small, meandering creeks, the weeds, driftwood, etc., offering them protection. Under old bridges, near tiles, around trees which overhang the water, etc., are excellent places to look for signs of the animals.

Before it gets very cold, dig small excavations in the banks of streams, near the water, where there are indications of the animals. These artificial dens should be about 18 inches deep. Surprising as the fact may seem, before the season is over many of the holes will be occupied. Traps placed at the entrances of these dens, in a few inches of water, always give good results.

If two small streams join each other at sharp angles, dig a small tunnel from one to the other so that the water will flow through it. In this excavation place two traps, sinking them slightly. A mink passing up or down the stream will not fail to try to go through the tunnel. This set is one of the best which can be made for taking these animals.

Build a small pen of rocks in shallow water, not far from the shore. Leave one entrance, guarded by a trap. In the back part place the carcass of a muskrat.

Remember, water will destroy human scent, therefore, it should be dashed over every set made if possible.

Traps set at the mouths of tiles usually bring good results. No bait of any kind is needed. In shallow water stake a dead chicken in the water and around this arrange several traps. This method is considered one of the best by many professional pelt hunters.

Land sets may be made, too. Extreme care must be taken with every one, however, else they will be failures. The covering—not too much nor too little—should be natural to the place. By this I mean that brown leaves should not be used to conceal a trap on green grass, etc. The secret of success in all trapping, and it is especially applicable to making land sets for such animals as the mink, is to have everything look as natural after as before the set was made.

The weasel is peculiar in its habits. It may be taken in corn fields, weed patches, meadows, along dried creek bottoms and similar places. Meat baits of all kinds will attract it. Make sets like those already described.

Both animals should be cased when they are skinned, that is, not cut down the belly. With the exception of fine dark northern skins, all mink pelts should be stretched flesh side out, but most dealers prefer the weasel dried with the fur side out.

INFLUENCE OF CIVILIZATION ON BIRDS.

BY ORIN E. CROOKER.

It is, of course, a matter of common observation that many of our song birds have become more or less domesticated in their habits and seem in certain cases to seek rather than shun the companionship of man. It is not so generally known, however, that in other instances the nesting habits and frequently the breeding range of certain species have undergone a decided change with the development and settlement of the country.

One of the more familiar of such instances is the rapidity with which the common swift appropriated the chimneys of civilization as a building site. When the country was first settled these birds were known to breed only in the hollow trunks of forest trees. As the develop-

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ment of the country progressed the swift accepted the chimney as an improvement upon his accustomed nesting place. The change in this respect is now practically complete and is a good illustration of the readiness with which a bird may take advantage of a favoring change in its environment.

The purple martin is another bird whose natural resort for nesting purposes in a wild state was hollow trees and rock crevices. Nowadays the martin looks about for a modern little bird house mounted on a pole—one being preferred in which he may enjoy the company of others of his kind. It is seldom—and only when no better provision may be found—that he will now nest in a hollow tree.

The cliff swallow originally glued its nest against the side of a wall of rock and then built a projecting canopy over it of the same material by which the young were sheltered both from enemies and inclement weather. With the coming of the settlers and the erection of barns and outbuildings the cliff swallow soon became accustomed to glue his semi-saucerlike nest to the side of the barn, but as he chose to place it high up near the eaves he discovered that he no longer needed the canopy and accordingly discarded it. The change in nesting site has been responsible for his change in name—he being known now in most localities as the eave swallow.

When the blue jay was first met with in the unexplored regions of our country he appears to have been more than ordinarily shy and suspicious, which is quite the reverse of many birds on first acquaintance with man. The blue jay, however, was found to be curious to an unus-

ual degree, following the first intruder into his domain and watching his movements closely. If he was unmolested he soon became quite tame and friendly, hopping about the camp and investigating every portion of it as though to satisfy his curiosity. If, however, any sign of hostility was shown he resented it by annoying the intruder in every way possible, particularly by his harsh, alarming cries when the woodsman was stalking game. With the settlement of the country this distrust of man seems to have disappeared and the blue jay evidently prefers to nest in the proximity of human habitations.

The prairie horned lark is one of the birds whose breeding range has been altered and extended with the development of the country. When the first settlers pushed their way into the Mississippi valley they found the bird inhabiting the prairies and open barrens to which its range seemed limited. But with the clearing away of the once continuous forests of the older states it has made its appearance in the east and is now found quite generally wherever the country is more or less open.

The Baltimore oriole, which hangs a pear-shaped nest at the extremity of some long drooping elm or maple bough has come to show a fondness for the finery of civilization and will appropriate strings and strips of cloth for nesting material whenever it can find them. Some years ago an oriole's nest was found in the neighborhood of a millinery shop in which were woven bits of lace and bright-colored ribbons, giving it quite a gay effect. A threaded needle was also one of the unusual articles which had been incorporated in this nest.

A LITTLE LAD'S PLEA.

BY LALIA MITCHELL.

Will you please to make a lap for me,
Not just a kind of place on your knee
Where a little boy, if he likes, may perch

Most like a steeple sat on a church,
But a comfy, cuddly, kind of a lap
That seems to whisper, "come take a nap."

Safe as a bird in a leaf-roofed nest—
The very best place in the world to rest.

Will you please to make a lap for me,
Not just a kind of a space that's free
From silks and laces, and jet and frills
That a boy can cling to until he spills.
But a cozy, comfy kind of a lap
Where there isn't a danger of least mishap.

But just a haven that's snug and sweet
For crown of head and for soles of feet.

Will you please to make a lap for me,
Not like a stool or a chair, maybe,
Where a boy may sit, if he must, just so

As loth to stay as afraid to go.
But a place for a restless little chap,
Just a comfy, cuddly, motherly lap,
Not bought with jewels or silvered purse,
But the one best place in the universe.

DOCTOR BUCK.

BY MRS. JEFF. DAVIS.

Little Irwin Crosby had been sick for a long time. One morning the doctor called and gravely shook his head: "You must take him south for the winter," he said to Mrs. Crosby. "You must arrange

play with him. Then he grieved because he did not have his little pony and cart to ride in.

"If I had Bob to drive," he would say, "I could go anywhere, and have such good times."

One morning an old colored man stopped at the gate to sell vegetables. He had a nice little wagon, but instead of a horse, a pretty red steer was hitched to it. Irwin had never seen such a sight before, and called to his mother. "Oh, Mother, come see! This man is driving a cow!"

The old man laughed, and explained: "This ain't no cow, little boy. This is my ox. He ain't grown yet, but he is strong, and as gentle as a lamb."

"May I drive him a short distance?" begged Irwin.

"Jump right in," said the colored man, and Irwin went with him around the block.

"Oh, Mother," said Irwin when he returned, "that little ox is called Buck, and he is almost as fine as Bob. If I had him to drive I don't think I would ever get lonely."

"I wonder if we can rent him for the time we are here? I'll try to make some arrangement with the colored man for you to have him part of every fair day," his mother replied, hoping that plan would keep her little boy more in the open air.

Irwin was greatly delighted when he learned that Buck was to be at his com-



"He always invited some little boy or girl to go with him—"

to go at once, and be sure to keep him out of doors as much as possible. Let him walk and ride in the sunshine, and he will return to Michigan next summer as sound as a silver dollar."

That was why Irwin and his mother were spending the winter in a little country village, away down in southern Georgia.

mand as long as he remained in Georgia. He did not have to be coaxed to stay in the sunshine any more. Soon he and Buck were the most popular couple in the village, for he always invited some little boy or girl to go with him when he drove around the town.

Mrs. Crosby called the little ox "Doctor Buck," for she said he did more to bring



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back the roses to Irwin's cheeks than all the medicine he had taken.

When the time arrived to say goodbye to Buck, Irwin had to struggle manfully to keep back the tears.

"I know I'll be glad to see Bob again," he said, "But I don't like to leave Doctor Buck behind."

THE LIVING LIFE LINE.

BY N. MANTHEI HOWE.

Old Lake Superior was frozen over. As far as the eye could see the choppy, storm-tossed lake of the past weeks lay motionless under a thick sheet of ice, the first skating-ice of the season.

Jack Norky who lived near the lake's shore was the first of the boys to discover that skating would be good for Saturday. It was only seven o'clock in the morning, barely light enough to see by, and fifteen below zero, but Jack put on his sweater and pulled his toboggan cap down over his ears. He dashed out of the house and up the street. At the top of the hill he paused and, putting his thumb and finger in his mouth, blew a shrill, shrieking whistle. The effect was immediate. From right and left, boys came running. Some were only half in their sweaters. Others had forgotten their mittens and slapped their hands against their sides to keep warm. But not one of the boys failed to obey the call of their leader.

"What's the matter, Jack?" shouted the boys.

"You made me leave a whole plate of steaming buckwheat cakes and syrup," said Anton, digging Jack in the ribs. All the boys wondered why he had called the gang, and showered Jack with questions. He only grinned and kept silent. Every minute it was growing lighter. When the whole gang had gathered Jack pointed to the lake.

"Look," he cried, "Old Lake Superior is frozen over."

"Wow!" shouted the boys. "Skating ice! Jack, you old scamp!"

For you must know that on the shores of Lake Superior the winter sports do not begin in earnest until the first skating ice has put in an appearance. How they do yell and shout when they first see it.

"Hurry home, and get your chores done," Jack ordered, "and we'll all meet at the boat house at ten o'clock. Two good hours' skating before dinner."

"We'll be there," agreed the boys. "See you later." And like rabbits in the woods, they disappeared into their houses to finish hot pancakes and fill wood-boxes and empty the ash cans and go to the grocery store, and peddle papers, and do the hundred and one things grown-ups find for boys to do, even when it's fine skating. The grown-ups must have been surprised that morning, for chores were done in a hurry. At a quarter to ten every boy was at the boat house, ready to start.

They formed in a long line. Big Jack Norky was at the head of the ten boys; Little Tommy Quinn, their newest member, brought up the rear. In fact, his ninth birthday was two weeks ago and they had just taken him in.

Anyone would know that Jack would be chosen leader. He could run faster and skate better than any other fellow in the school. He held the record for scholarship, wrestling, and football. Naturally he was elected leader of the gang.

Every boy carried a pole about two inches thick and three feet long. The line stood braced, waiting for the signal. "Get ready," called Jack. "Go!" "Zip-zip!" the bright blades came down and the long line sped down the bay.

Gradually Jack's stroke lengthened and he pulled away. The boys slackened pace to watch him. Jack certainly could skate. Suddenly they heard a scream. Jack spun round and lay flat on the ice.

"Stop, boys, stop!" he shouted.

The boys halted, too surprised to know what to do. They crowded about Anton. He made a trumpet of his hands and called to Jack.

"What's the matter? Are you hurt?" "Will you do just as I tell you?" called Jack.

"Sure," screamed the boys, waiting to get orders from their leader.

"I'm on thin ice. It's cracking," called Jack, lying flat on the ice and carefully stripping off his sweater. "It won't bear my weight to skate back. You'll sure break through if you skate over it to help me."

The boys were speechless with fright. They knew that many skaters had drowned in Lake Superior because they struck

a patch of thin ice at this bend in the bay. Jack saw that they were frightened and called cheerily.

"I'll be all right, boys. Do as I say. I'll tie my sweater to the end of my stick. Stretched out flat I'll be able to reach at least 10 feet. Put little Tommy at the head of the line, because he is light. Put Will next, and Anton third. You three get in line, and crawl out carefully on your hands and knees. You other fellows keep five feet back of them. I'll slide my stick along the ice to Tommy. As soon as he gets hold, see if you can pull me back to you."

Before he had finished speaking the boys were in line. Slowly, carefully, Tommy began creeping out over the ice. Will and Anton followed close at his heels. Inch by inch Jack wriggled along, showing the red sweater on the stick before him. It seemed as though their hearts were beating like sixty-horse-power engines. Suppose Jack broke through that thin sheet of ice! They shivered as they thought of the icy blue water beneath. But not a boy was coward enough to turn back. It seemed hours before little Tommy Quinn cried, "I've got it, boys."

"Don't hurry fellows," begged Jack. "Take your time." Slowly the living life line grew taut, and they began to pull. Back, back. One foot, two feet, five feet the three dragged him—and the waiting line seized Anton's heels and dragged the four to safety.

"Good old Jack," shouted the boys, thumping him on the back.

"It's good old Tommy," shouted Jack, throwing his arm around the small boy who, now that the danger was over, was trembling and sobbing.

"That's all right, Tommy," whispered Anton, "you've earned the right to cry. If you had been a coward we might not have been able to save Jack."

"How did you happen to think of lying on the ice?" said Will. He wanted to give Tommy a chance to swallow that lump in his throat.

"Why," said Jack, "Old Bill, the trapper told me about how he saved a fellow from drowning. He says half the skaters that drown could be saved if they would just keep their wits and crawl on the ice. You can not skate to help a person who is on thin ice. If you do you will break through."

"That's right," agreed the boys thoughtfully as they started back home.

If you go to that town you will find a little log cabin built on the lake shore. Over the wood door is a sign. These letters are carved deep in the wood—L. L. L. Club. Anybody in town can tell you that it means the Living Life Line Club. In winter, Old Bill attends the meetings and tells the boys how to trap, skate and the best things to do in case of accidents. In summer, he teaches them camp-lore. For you see, Mr. Norky gave the little log cabin to the boys, because they made the living life line that saved Jack Norky.

An ounce of hustle is better than a pound of theory.

He who builds no castles in the air has no castles anywhere.

The world moves; don't forget it. Unless you move with it, you are left behind.

TROUBLES.

BY WALTER G. DOTY.

I really suppose, if you counted your woes, You would find they were few and quite piffing each one; But still I must say that a woe has a way Of outweighing a joy by a generous ton.

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Fels & Co., Philadelphia.



Where the Family Might Help Mother.

A WOMAN who tried to keep help, I say "tried," because keeping help in the kitchen these days is only a trial, once complained bitterly of the then-maid, that she never could see anything to be done about the house between mealtimes. To that girl getting three meals a day and washing the dishes was the sum total of housework. Now, while we housekeepers realize to the fullest the mistakenness of her idea, it yet remains true that getting the meals promptly and satisfyingly is one of the most important tasks that confront us. Breakfast, dinner and supper await us daily, and the greatest of these is breakfast.

I wonder if there lives a woman, no matter how fine a cook and housekeeper, who on these frosty mornings does not secretly wish in her heart of hearts, that someone else would get up and get breakfast. It isn't so bad to go on with the rest of the work, after you are fortified with a warm meal, but to be the first one to enter the cold kitchen, to have to coax along the unwilling fire, boil the kettle, cook the cereal, fry the chops, or the sausage or the salt pork, warm up the potatoes, make the coffee, set the table, and then stand over the hot griddle and bake cakes for a hungry brood who never have enough hot cakes and syrup is not a task to be greeted with unmixed pleasure. I know women who declare they don't mind it a bit, but I believe their attitude is one of hopeless resignation.

I read in a paper recently of one farm home with the breakfast the year round consisted of bread, butter, milk and apples. Perhaps there was once such a family, but if so there was no woman in the house to cook the breakfast. Men might sit down to such a meal if they had to act as cooks themselves, but if there was a woman in the house, she would be firmly requested to bring on some real food. The idea of a little more simplicity in the breakfast, though, is a good one. For, while it is foolish to expect men to go out to manual labor satisfied only with bread and milk, the nutritive value of apples is too slight to count for much, it does seem as though some of the things might be omitted from the daily meal.

Pancakes and hot muffins, for instance, make so much extra work, and eaten every morning do so much harm. Once in awhile as a treat they are all right, but so much consumption of hot flour products can only hurt the digestive organs. How many families there are where the tired mother stands morning after morning from the last of September until the first of May, baking griddle cakes for hearty men, griddle cakes which they eat swimming in pork gravy and syrup. Then, after the men have sallied forth, the poor woman drops into her chair, too tired to do more than drink a cup of strong coffee and nibble at one of the cold cakes the family left. Doesn't it seem that if the husband cared two pins for his wife, he would be willing to eat cold bread six mornings out of the week, reserving hot cakes for a treat one day in seven?

Then, instead of the eternal fried sausage, bacon, salt pork, ham, or fried eggs each morning, why not plain boiled eggs three or four mornings a week? They would take only a quarter of the time to put over and the mother would be spared standing over a greasy skillet turning the meat or dipping sizzling fat over the frying eggs. Besides, the soft-boiled eggs are so much more digestible than the meat cooked in fat. And all too often the fried stuffs are cooked until all the substance is gone from them before they reach the table. The family fill their stomachs with food which has lost its nourishing properties.

Of course, no hard and fast rules can be laid down that will do for every household. There are some who can not eat eggs without becoming bilious. The sulphur in the yolk upsets the digestive apparatus. But this can in many cases be gotten around by mixing yolks and whites as in omelets and scrambled eggs. A certain amount of fat is needed, too, in

cold weather, more than in hot. It does not follow, however, that fat pork should be the rule every morning. Instead of fried meat and greasy potatoes the house-mother might substitute baked beans and pork, which may be kept cooking slowly in the oven all night if you burn coal in the kitchen range. Or if not, they may be baked in the small oven which comes on so many base-burners, or in the front of the furnace, if you are fortunate enough to have one. Cooked slowly all

night they are just right for breakfast, and save time in the morning.

There are countless ways in which the housemother can save herself if she has the co-operation of the family. All too often, however, her unselfishness has made her brood so selfish they are not willing to give up their favorite dish for the sake of mother. It is a mistaken sense of duty which prompts the wife and mother to give all and ask for nothing in return. The family should be a place where all play at give and take, and the morning meal is a good place to begin.

DEBORAH.

Instructions on Making Xmas Candies.

By MRS. JEFF DAVIS.

IT is quite possible to make just as delicious Christmas candies at home as can be bought of the high-class candy manufacturers, and at much less expense. None but the best boughten candies are fit to eat, and often these are beyond one's purse. By making our own Christmas candies we know that they are pure, and besides there is the added attraction that we are getting the best, at the rate we would pay for the cheap grades at the shops.

A pretty box of home-made candies always makes an acceptable present for a friend, so this is a good way to solve a part of the problem of Christmas giving. I know of several ladies who carry the idea farther, and make money selling their home-made candies to buy all their other Christmas gifts.

Fondant, which is the basis of many candies, is not hard to make if directions are carefully followed, and it can be made several weeks before the candy is made.

Fondant.

Place in a sauce-pan one pound of sugar, and half a pint of water, and one-quarter teaspoonful of cream-of-tartar. Stir until it begins to boil, then boil without stirring until it forms into a soft ball when dropped into ice cold water. When large bubbles begin to rise it is time to test it. The ball should be so soft it merely holds together when dropped into the water. When it begins to boil remove all scum, and if crystals form around the edge of the pan, wipe off with a damp cloth, being careful not to touch the boiling syrup. When done, just before removing from the stove, add the desired flavoring.

In making these home-made candies one should lay in quite a variety of flavorings and colorings. In this way you can have variety in the candy. Have ready a large platter, slightly oiled, or a marbled covered stand, and pour the hot candy over it. As soon as it can be touched with the back of the hand without burning it, work with a small wooden spoon or spatula, from the sides of the platter to the middle until it is firm and white; then gather the sugar in the hands and work until a creamy paste. If instead of becoming creamy it grains, put it back in the pan with one or two tablespoonfuls of water and boil over again. Chocolate fondant is made in the same manner, except that four ounces of unsweetened chocolate is added to each pound of sugar.

Coloring.—To make a variety, divide the fondant and color pink, yellow, green, violet and mode. This coloring can be purchased at any drug store, or first-class grocery. Pack the fondant down, in glass jars or bowls, keeping each color and each flavor separate. Put the lids on the jars or greased or paraffin paper over the bowls, and set in a cool place until ready to be used.

Chocolate Creams.

This fondant can be used in making quite a variety of candies, and perhaps the chocolate creams are the favorite of many. Take the fondant and work in the hands until soft enough to form into cones and balls. Place these on a greased paper and let stand until they become hard on the outside, which will take an hour or more. Grate into a bowl some unsweetened chocolate, set the bowl in

a saucepan containing boiling water and let remain over the fire until the chocolate becomes entirely melted. Drop the balls into the melted chocolate and roll around to cover all sides, or, better still, place on a two-tined fork, and dip in. Lift out and hold a moment until all the extra chocolate drops off, then place on greased papers and set aside in a cool place to harden.

Fruit and Nut Candies.

Fruit and nut mixtures can be placed between two sheets of the fondant, and then cut as desired. Fondant can be worked up into quite a number of delicious ways in connection with nuts and fruits. Creamed dates are always nice. Free one pound of dates from their seeds and fill them with fondant of different colors; then dip them into melted fondant or roll in sugar. Form some of the fondant into round balls and place the half of a nut on top, and press into the cream, or place one on each side and press so that the meats will remain firm to the cream.

Without Fondant.

Many delicious candies can be made without the use of fondant, and some of them require very little time to make. The following are the most popular:

Divinity Fudge.

Probably there is no other home-made candy so universally liked as divinity fudge. The process of making is very simple. To three cups of sugar add three-fourths cup of corn syrup, and three-fourths cup of water. Cook sugar, syrup and water until it forms into a hard ball when dropped into cold water. Have ready the whites of three eggs, beaten until they stand alone, and one and a half cups finely chopped nuts. When syrup is ready pour half of mixture into the whites a little at a time, beating while pouring. Cook the remaining syrup a few minutes longer, then pour into mixture, beating all the time. Add nuts and flavoring. Beat until creamy, pour on buttered tin and cut in squares before it is entirely cold. Much of the success of this depends on the beating. Do not stop from the time of the first adding of syrup to eggs, until it is poured on tins for cutting.

Cocoanut Candy.

Two cups of sugar, one cup of water, one grated cocoanut. Boil sugar and water until creamy when stirred in a cup. Pour into a bowl and beat until nearly cold, then stir in cocoanut and make into balls.

Cream Candy.

Four cups sugar, two cups water, piece of butter size of an egg. Boil together until hard when dropped in water. Pour on greased marble, and pull immediately. Do not stir while cooking. This applies to all candies.

Marshmallows.

One box gelatine dissolved in 12 tablespoonfuls of water. Four cups of sugar dissolved with 16 tablespoonfuls of water. Boil sugar until it threads like sugar candy, pour on gelatine and beat 20 minutes. Flavor to taste. Let harden over night and then cut into squares.

Nut Brittle.

Three cups of sugar, one cup of water and two and one-half cups of nut meats in as large pieces as possible. Boil sugar and water until a light brown. Have nuts placed on buttered marble, and pour over

them. Leave until thoroughly cold then break into any shape desired.

Nut Caramel.

Two cups sugar, three-fourths cup of sweet milk, one cup nuts, chopped, pinch of soda and salt. Cook sugar and milk until creamy. Add other ingredients, beat, flavor with vanilla and pour on buttered marble. When nearly cold, cut into squares.

Nut Kisses.

Whites of three eggs, one cup pulverized sugar, one cup chopped nuts. Beat eggs and sugar with egg beater 45 minutes, add nuts. Drop from spoon on greased paper and bake in slow oven until a light brown.

Sea-Foam.

One cup brown sugar, one cup white sugar, one cup water, whites of two eggs, one cup chopped nuts. Cook sugar and water together until hard when dropped in cold water. Pour half of mixture into well beaten whites of eggs, beating all the time. Cook remainder until it forms a hard ball in water, then pour into mixture, beating while pouring. Add nuts and flavoring. Beat until creamy, pour on buttered tin and cut in shape desired.

CAKES FOR THE HOLIDAYS.

BY I. A. GLASSE.

Cocoanut Cake.

Two cooking cupfuls of flour in which two teaspoonfuls of baking powder have been well mixed by sifting them together two or three times. One cupful of white sugar, half a cupful of butter, one cupful of fresh grated cocoanut, four eggs, and three tablespoonfuls of milk.

Have the ingredients ready as the beating of this cake has to be continued until it is ready for the oven. Beat the sugar and butter together in a warmed dish until like thick whipped cream. The butter must be only softened, not melted, or the cake will be a failure. Then add the eggs, one by one, beating the mixture into a cream after adding each egg. The beating should be done in regular even strokes. Now stir in the flour, then the cocoanut, and last of all the milk. Pour the mixture at once into a tin lined with well-buttered paper, and bake for an hour in a moderate oven.

Caraway Seed Cake.

Sift three cups of flour with a pinch of salt, into a large bowl and with the tips of the fingers rub in two-thirds of a cupful of butter until the whole has the appearance of bread crumbs. Shake over this a tablespoonful of caraway seeds, mix them lightly in, then add a teaspoonful of baking powder, one cup of sugar, half a cupful of candied peel. Stir all together with a wooden spoon, make a hollow in the center, pour in the three well-beaten eggs and about half a cupful of cream, or as much as will make the mixture thick enough for the spoon to stand up in it. After mixing well pour the mixture into a buttered tin and bake for an hour and a half. Stand the cake in a hot part of the oven for the first quarter of an hour and then remove it to a cooler part for the rest of the time.

Curl'd Coffee Cakes.

Take five cups of flour, four tablespoonfuls of butter, four tablespoonfuls of sugar, two eggs, and a quarter of a pint of milk, or half a cupful. Rub the butter and flour together with the fingers, make a hollow in the center into which pour the two well-beaten eggs, the milk, the sugar, and mix all together. Now knead and beat it out on the board with a rolling pin, fold it up and beat out again several times until the outer surface of the dough is quite smooth. Cover the dough with a breadcloth and put it in a cool place for an hour. When the dough is brought into a mellow condition, cut it in two and roll each piece out very thin. When thin enough cut with a sharp knife, into strips an inch wide and three inches long and with a fork prick each cake eight times through, then put them upon tins that have been lightly dusted with ground rice and not buttered. Bake them in a hot oven that will draw or curl them up, cover them with brown blisters, and give them a nice appearance. Ten minutes or a quarter of an hour will be long enough if the oven be in the right condition. These cakes are excellent when eaten with a piece of cheese and the after-dinner cup of coffee.

MOIRE IN DRESSER SCARFS.

BY ESTHER A. COSSE.

A novelty which is popular this year is a dresser scarf of moire to correspond with the decorations of your room. For instance, one of the new colors is old rose, used considerably in the rooms

which are being redecorated. Secure a piece of rose colored moire one and one-quarter yards long and make your corners of cretonne. Sometimes print silk is used, but that is expensive and cretonne is more to be desired for its durability. The corners are stitched on and lace edging, preferably cream cluny, is sewed all around the cover.

Bed spreads are made in the same way, but the moire being too narrow it is joined by a piece of lace insertion, one row crossing each way. This also has the cretonne corners and edging of lace.

A pillow used either in a large chair or for a couch is made same as the scarf with the lace used as a ruffle.

Old chairs are very often repainted to correspond with the room, and covered with the same colored cretonne. These things make a beautiful soft effect for a chamber. It would add much to the tone if one would sew a narrow strip of the cretonne on voile two yards long for curtains for the window. You will need four yards of voile for a window without the narrow piece which stretches plain across the top. This last piece is not a necessity, but it is an improvement to the plain ones. This top piece also has a band of the cretonne like the rest of the pieces.

The newest color for a room decoration is lavender, and the draperies are equally as pretty in lavender as in rose color.

PIE WORRIES.

What is more trying than to bake pies and have them "run over?" So much has been said on this subject in the past few weeks and so many answers to the question have been given, but as I have not seen "my way" published, think it my duty to tell you about it. Line the pie tin with the crust and fill in the usual way. Roll out the upper crust, put in plenty of perforations, place on top of pie and trim about one-half inch larger than the tin, then tuck upper crust under lower one, "punch" edges neatly and securely together against tin and put to bake in a hot oven. Think this will put an end to your "pie worries," as it did mine after years of trouble.—Gertrude.

Household Editor:—Can you tell me where I can buy the knitted tubing that is used on top of men's canvas gloves?—Mrs. W. D. E.

I have been unable to find the tubing in Detroit.

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Farm Commerce.

How Maine Farmers Sell Potatoes.

THE Maine potato grower is thoroughly sure that his successful growing of potatoes entitles him to a front rank as a producer, but he is restless under his conditions of selling. Indeed he is sure that there is not enough of the consumer's dollars percolating through the filter of trade and transportation back to him. In a later article I will give some of the details of the work he is doing slowly, and having done for him earnestly, to change present conditions.

I have mentioned that the large potato growers are using about one ton of a 4:8:7 commercial fertilizer per acre at a cost of about \$40. It is true here as elsewhere, that the average farmer, despite all that is claimed to have been done for him by state and federal agencies, is not a student of fertilizer values, is not well posted upon the needs of his lands and how he shall most efficiently and economically supply those needs. In Maine the fertilizer agents have commercialized this uneconomic quality of the farmer and have reaped their harvest.

I will not say that the Maine potato grower is using in the main too much commercial manure, for he is an intelligent man and says he can't use less and get as many potatoes, and since it is the potatoes he is after and is getting them, it is only logical for the outsider to conclude that the man on the ground knows his business. But all except the seller of fertilizers agree that the Maine Farmers' purchased plant food is costing too much, and as I have said, the farmer thinks he is squeezed in from the other side, also, and is not getting enough for the crops he pays so much to produce.

The large potato growers have capacious potato houses or cellars on their farms, and it is the rule to store in these the potatoes as fast as dug, except of course, such as are at once hauled to the cars as dug, and sold or shipped.

These farm potato storages are well built and arranged for safely carrying the potatoes, if need be, through the severe weather of winter, although it is the general practice of the growers to get their stock to market as rapidly as possible during the fall and early winter season. But the well equipped farm houses enable the growers to hold stock against a low or a disorganized market.

Occasionally one will meet a grower who loads his own cars and ships to the city dealer on his own account, but the general practice is to sell to the local dealers, who often have chains of great storehouses located in the heaviest producing centers. These concerns always offer a market for the grower who is ready or is obliged to sell. Some of these dealers carry immense stocks of potatoes in their various warehouses, which are equipped for protection against freezing, and from which winter shipments are made in heated cars during the freezing seasons.

These large dealers have extensive connections in the heavy consuming markets of the country and are thus able in a measure at least, to protect themselves against temporary market dullness. They are all competitors of each other, in both buying and selling, and are therefore obliged when buying in a bidding market to meet the current prices—and to take their chances also in selling.

These men are of course under the present day ban of being middlemen, but those of us who recognize the immense questions of production and distribution in their economic relations affecting both producer and consumer, will scarcely feel like passing hasty judgment, at least until the case has been more fully argued. These great middlemen may or may not be friends of the producers, but there can scarcely be any question that the quality of the relations existing between these business agents and the farmer can be largely modified by the farmer himself, for from the farmer's standpoint the solution must be exogenous—the middleman is kept pretty busy looking out for himself and the farmer can afford to spend a lot of his best and clearest thinking time looking out for himself.

The large dealers are also extensive dealers in fertilizers and seed potatoes, and if the farmer keeps himself in a po-

sition or a condition that he must sell all his potatoes in the fall and buy back some of them for seed in the spring, plus cost of carrying, possible market advance, plus always, of course, the dealer's profit, the other plus of the transaction, the pay to come from the crop the seed is to produce, and the fertilizer that that particular dealer sells and the price at which he sells it being subject to the same conditions and time of payment, why, naturally, that farmer has one leg pulled in coming and the other one in going.

The conclusion reached by a student of the conditions of potato growing and marketing in Maine must be that the resources of the state in the production of potatoes are almost unlimited and are not being unduly exhausted. Indeed, as the farmers come to more fully understand and appreciate the fundamentals of land, fertility will be reasonably carefully conserved. The enlarged understanding of their business will in time produce larger yields at less cost and lead to more conservative methods in all directions; that the present methods of the farmers as regards buying of supplies and selling products, are, to put it mildly as possible, thoroughly crude and unbusiness-like. But the morning light shines early in Maine and the farmers are seeing it.

Immense quantities of potatoes for seed are sold from Maine all along the Atlantic coast to Texas. This is a high-class and valuable trade and is not being handled to best advantage. Far too much of the seed stock shipped from Maine is very unreliable as to variety and has come to be regarded with suspicion by the buyers to the south. This seed is largely handled by the big dealers, who, it is said, always stand ready to give a buyer any variety he would have.

So there are many paying chances for the Maine seed potato growers who will produce seed of quality and hunt and protect discriminating buyers.

Editor's Note.—In a former article Mr. McSparran stated that Maine potato growers used a high-grade fertilizer analyzing about 4:8:7, for which as indicated in this article the user pays about \$40 per ton. This same grade of fertilizer can be purchased from local dealers in Michigan at \$35@36 per ton, put up in sacks. The Maine farmer buys his fertilizer in barrels, as he uses the barrels in shipping his potatoes, and the cost of the fertilizer is about \$2.50 per ton greater in barrels than in sacks. Also, owing to the location of the Maine potato grower, in relation to the source of manufactured goods, the freight rate on his fertilizer is somewhat higher than is the case in Michigan. When these factors are taken into consideration it would appear that Maine growers might save about 10 per cent in the cost of their fertilizers by a more direct method of buying, instead of their usual method of making a contract with the agent under the terms of which the latter takes the value of the fertilizer in potatoes in settlement when the crop is harvested, which method involves a speculative feature of the success of the crop that is capitalized by the fertilizer agent. It is always better to buy needed goods for cash or its equivalent in the open market where goods can be bought cheapest and sell one's product on the same basis where it will bring the highest cash return.

"NOMID" SUGGESTIONS.

An Allegan county man, formerly an express agent and familiar with shipping matters, gives some valuable suggestions on the direct marketing of produce, in a recent issue of the Allegan News. He says in part: If you should stand in the Paddington railroad station, London, England, in the early morning you would see a long express train pull in from the south and a few minutes later thousands of square willow baskets, called hampers, would be unloaded and hauled away. These hampers contain the vegetables consumed by one family in a week, and usually hold in addition a pair of dressed chickens, or a brace of rabbits, a roll of butter, and frequently a pot of Devonshire clotted cream, a delicacy that will tickle

the palate of an epicure. These hampers come direct from the farms, are delivered at the consumer's door, and no middleman gets his fingers on any of the profits of this business.

As Allegan expects to get a street car line direct to Detroit next summer it is up to the people to get all benefits possible. We all know that there are thousands of dollars worth of vegetables and fruit wasted in this country every year because there is no market for it. The farmers eat what they need and throw the rest away. In Detroit there are thousands waiting for these products. It is a simple problem of bringing buyer and seller together.

We would need in Allegan a storehouse on the street car line and an enterprising young business man with a little capital, who would not expect to get rich the first year, and presto—a new industry for Allegan. Get your hampers made to fit the dimensions of the express cars so there will be no waste room, and in a little while you will see a train of cars leave here every night and be in Detroit in the early morning. Before long city consumers will be slipping little notes into the empty hampers enquiring for other things not easily procured in the city and you will soon be sending them barrels of apples, crabs for pickling and jelly, cucumbers, honey and dozens of other things. A bulletin sent to the city every night stating that strawberries or blackberries may be had in Allegan for \$1.25 per case will bring orders at a surprising rate. It was demonstrated at the Allegan fair that this country can raise vegetables and fruit equal to any county in Michigan and this article is intended to show how a profitable market could easily be obtained for all the products grown here.

If the farmer who lives near a lake and takes summer boarders is onto his job he will have a photograph taken of his house and grounds and neatly framed. The railroad company will hang it up in the city waiting room, with the notice attached that Mr. Smith takes boarders at so much per week. There is no end to the possible benefits of this direct railroad line if properly applied.

WAS IT RIGHT?

The first of July, 1912, a friend took three bushels of early potatoes to his local merchant and sold them for \$1.25 per bushel. Potatoes were then very high. The grower carried the potatoes into the store and placed them among other vegetables. Before leaving the store he had the pleasure (?) of seeing the same potatoes sold to an acquaintance for 50 cents more per bushel than was paid in the first instance and the third party carried the baskets out. The only service rendered by the merchant was to furnish storage for perhaps ten minutes, pay the farmer and receive the price from the consumer.

Wayne Co.

A. H.

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LIVE STOCK NEWS.

Wisconsin farmers have been marketing their hogs freely of late, and according to D. D. Cutler, the general live stock agent of the Chicago & Northwestern Railroad, that state has a record crop to dispose of.

Because of the great shortage in the corn crops of the southwest, large numbers of hogs have been arriving in the Kansas City and Omaha markets. Many farmers are out of feed and unable to buy corn at the high ruling prices everywhere.

Iowa comes to the front this winter as a feeding state in the sheep and lamb industry, great numbers having been shipped in from the ranges direct, as well as from Omaha. Cattle feeding is smaller than usual, Iowa farmers having learned from their experience of the last ten years that handling western range sheep and lambs pays well and that the sheep can gather the corn much more cheaply than can human beings, for labor is dear. The one unsatisfactory feature is the lack of sheep sheds in most parts of Iowa, this rendering sheep owners slaves to the weather, so that bad wet and cold spells compel quick marketings of partly fattened flocks.

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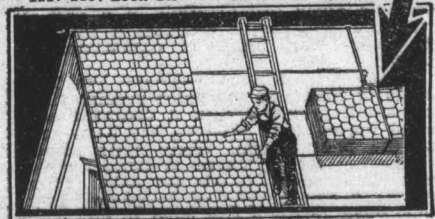
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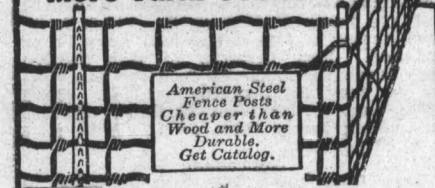
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Crop and Market Notes.

Michigan.

Shiawassee Co., Nov. 24.—Weather very favorable for fall plowing and doing farm work. No frost in the ground. Farmers who have potatoes in the pits are loading onto cars and shipping. Wheat is in fine condition, the ground being saturated with water and the crop has a very good top growth. Rye is also looking fine. A large amount of corn is still standing in the field unharvested. New seeding is going into the winter in fine condition. No hay is being marketed at the present time, on account of the low market. A few beans being sold. There is very little wheat in farmers' hands. Stock has not been taken off pasture. A large number of cars of feeding lambs have been received by sheep feeders and business is beginning in winter mutton production. No cattle as yet arrived for feeding. Most feeders think that cattle are too high for much profit. Not a great many marketable hogs in the hands of the farmers. Not many farmers raising sugar beets having found them unprofitable at the present price. Much interest is being taken in road making and a considerable state reward road will be built in this locality the coming season.

Livingston Co., Nov. 22.—The weather this fall has been almost continuously stormy. It is almost impossible to get anything done on the farm. The continuous wet weather is having a bad effect on corn in the shock. It is beginning to mold some. Not much fall plowing done on account of the wet weather. There is still some cloverseed to get up, of which there has been an unusually acreage acreage harvested. It is also fairly well filled. Bean threshing is about completed, with the yield averaging about 15 bu. per acre, but of very good quality. They have been marketed quite freely at about \$1.75 per bu. Nearly everyone is feeding their lambs this winter. Hay is fairly plentiful this fall and is selling at about \$12 per ton.

Kalkaska Co., Nov. 19.—Are having warm, growing weather. The fall work on farms is about wound up. Some plowing to be done yet if conditions admit. Stock in healthy condition. Cattle and hogs are selling at unusually high prices at auctions. Over 60 per cent of potatoes have been marketed. Price at loading points 45c; beans \$1.65; butter-fat 32c; cows \$50@75; hogs 7c; calves \$12@18. Roads are very muddy.

New York.

Chautauqua Co., Nov. 22.—Potatoes are all dug; crop one-fourth of the acreage on account of blight. Old meadows are looking good. New seeded ones rather thin. About the usual acreage of wheat sown, and looking fine. Not enough rye sown to speak of. Plenty of hay, most farmers can spare a few loads. The grain crop was not heavy. Some farmers will have to buy, excepting corn which was a good crop. About the same amount of stock being fed, which consist mostly of dairy cows and poultry. Corn husking and fall plowing mostly all done. Hay, No. 1 \$18; corn 70c bu; oats 44c; wheat \$1.25 per bu; common 90c@91; eggs 50c; butter 36c; onions \$1.25 per bu; Marrow beans \$3.80 per bu; buttermilk 5c qt; poultry, live weight 11c; ducks 16@18c; geese 18c; turkeys 20c; hogs, dressed 9½c; veals 11c; cows, milkers \$75@80; eggs are very scarce.

Pennsylvania.

Perry Co., Nov. 24.—Owing to drought farmers here are having corn, oats and potatoes shipped in. Dry feed for stock is plentiful, but stock is high in price, except mules and horses, which seem some lower than at this season in some previous years. Past week very warm; some who had butchered lost their meat on account of the unseasonable weather. Wheat and rye presents a fine appearance for this time of year; indications for a good grass crop next summer. Big turkey crop this fall, but fowls are marketed before they are fat. Wheat 86c; rye 70c; corn, out in field 80c; potatoes \$1; eggs 42c.

Tioga Co., Nov. 26.—Good weather for farm work has prevailed here all fall. Most farmers have completed their fall plowing. Not much wheat nor rye grown here, but what there is looks well. Meadows have made a good growth, but as many cows are kept here for dairy purposes most meadows have been pastured. The mild weather conditions thus far prevailing have greatly assisted the feeding problem. Silage will be of an inferior quality here owing to the fact that practically all corn was killed by the frost before put in the silo. Cows are high. Many 80 to 100-lb. pigs being marketed. Young chickens 10c per lb, which is low for this locality. Eggs 38c; creameries giving 47c per lb. for butter-fat; buckwheat \$1.65 per cwt; potatoes 60c per bu. The prevailing opinion is that potatoes will be much higher in price by spring. Some potatoes are showing indications of dry rot. The immediate local demand for potatoes has been supplied and as a consequence potatoes have dropped from 10@15c per bushel, due to dealers bearing down prices. Buckwheat is a light crop, and practically all will be consumed locally. White oats were a fair crop here. None will be shipped out as the feeding of a great number of dairy cows consumes all grain grown locally. Large quantities of dairy feeds are being constantly shipped into this county, farmers being unable to secure help to grow the needed grain for dairy cows. Large quantities of hay are grown here as a money crop and the value of hay shipped out probably almost balances that paid out for dairy foods shipped in.

Ohio.

Clermont Co., Nov. 26.—Rains this week delayed corn shucking. Some farmers are through shucking, while some have hardly made a start. Many are having the fodder shredded to get it under cover.

Wheat and rye looking fine. Turkeys, ducks and chickens sent in large numbers to Cincinnati markets. Tobacco selling from 12@18c per lb; butter 30@38c; eggs 32@38c.

Ashtabula Co., Nov. 15.—This county has been through a siege of one of the worst November storms on record since the establishment of the weather bureau 47 years ago. The snow was on an average of 22 inches deep on the level. For three days trolley service was suspended; steam traffic intermittent; factories closed, and no school or rural deliveries, and thousands of dollars loss to boat owners. Wheat is looking fine for this time of the year. Practically no rye raised in this county. Notwithstanding the severe drought of this summer new seeding is the best it has been for years. Hay is selling at \$11. Most of the potatoes in the farmers' hands sold for 68c. Dairy butter 28c; eggs 34c; pork, live 8c. No grain sold here only at sales; dairy feed high; gluten feed \$1.50; bran \$1.35; middlings \$1.55. Farmers much agitated over good roads movement now under advisement.

Hancock Co., Nov. 15.—We have had the heaviest snowfall for November ever known here. Weather has not been very favorable for corn husking. Spring seeding of clover and timothy looking fine. Wheat and rye that was sown early is looking very good. There has been a general shortage of potatoes this fall; many carloads have been shipped in here, selling at 85c per bu. Farmers are well supplied with rough feed. Most all hay has been sold at \$12 per ton. About the usual amount of turkeys and other poultry this fall. Turkeys 17c; ducks and geese 11c; chickens 12c; butter 25c; eggs 40c. Farmers marketing new corn at 75c per bu. Wheat 89c; oats 37c; rye 58c; barley 50c.

Shelby Co., Nov. 13.—Severe storm on the 8th, 9th and 10th, with all north and south roads drifted full. No rural mail deliveries for three days. Potatoes are a very scarce crop. Most farmers have to buy part for their own use. Potatoes are selling at 90c per bu. Meadows looking good for next year. Wheat looking good and fair amount sown. Hardly any rye sown in this district. Plenty of feed for stock. Very little oats in farmers' hands for sale, and wheat more than half sold. Lots of hogs fed, but being rushed to market on account of cholera coming close. Few cattle fed; milk cows \$50@90; hogs 6@7½c; wheat 87c; oats 37c; corn 92c per cwt; eggs 31c; butter-fat 28c per lb.

Indiana.

Laporte Co., Nov. 27.—Very wet this month, and corn shredding very late; could shed only one or two days in the week. Corn crop light, also potatoes—late planting is selling at 75c; butter 35@40c. Some are shipping cream to save labor. Large acreage of wheat sown. Fruit light with prices good.

Wayne Co., Nov. 24.—This section has been enjoying fine warm weather for more than a week. The corn is about all husked and is of good quality and yield was large. Much fodder is being shredded. Farmers have plenty of all kinds of feed. Many hogs are being marketed on account of cholera which is very common here. They are selling at 7½c; corn 55c, but not much being sold. The meadows are looking well and wheat is in fine shape. Many cattle, hogs and sheep will be wintered.

Daviess Co., Nov. 25.—No early potatoes here; about half crop of late spuds. Some shipped direct from Michigan at 70c per bu. Meadows damaged, 50 per cent killed. Largest acreage of wheat and grass ever sown. Both look well now. Some rye sowed for pasture; not enough feeds raised to supply the local demand. A great deal of mill feeds and oats being shipped in, also quantities of alfalfa from Kansas. Cattle and hogs on feed about half of last year. Hogs \$7.50; cattle \$7; chickens 10c; geese 8c; oats 55c; corn 60@70c; potatoes 90c; wheat 90c; timothy \$20; clover \$16; alfalfa \$25; eggs 40c; butter 30c.

Wisconsin.

Wausahara Co.—Meadows, old as well as new seeding, are in good condition. A large hay crop and also a good corn crop is being fed to hogs and cattle. The latter mostly dairy breeds. Very little interest in beef cattle nor in sheep; milk pays better. Little wheat, but some rye grown, and its condition is good. Practically no surplus grain for the elevator except rye, which is now 56c per 56-lb. bushel. There is a slow, even marketing of potatoes, but a good many are being held for higher prices. Buyers seem quite sure of a rise in price.

Missouri.

Warrenton Co., Nov. 20.—Potatoes are being shipped in from the northwest as they have been for several weeks and are being retailed at the same price as they have been, 90c per bu., by the 2½ bushel sack. Meadows, wheat and rye are looking well as we are getting plenty of rain and the weather is mild. Horses are the cheapest they have been, as feed is scarce and high. Good young horses and mares \$150.

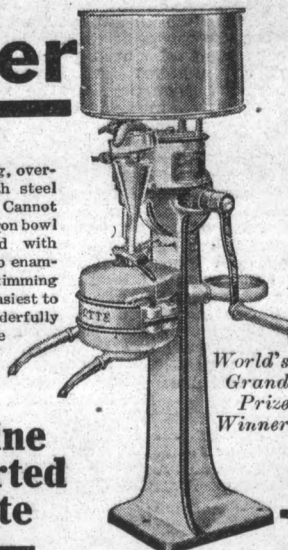
Vernon Co., Nov. 20.—We have not had very much rain her for the last two weeks although a good deal of cloudy weather. The wheat is in fine condition and the meadows are green and nice for this time of the year. There is no surplus of grain on hand here but corn is being shipped in and also some oats. There is not many cattle or hogs being

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Markets.

GRAINS AND SEEDS.

Wheat.—Notwithstanding the fact that the Argentine situation was looked upon as the factor that would largely control the making of wheat prices in this country, the market has advanced over 3c since last Saturday, in the face of news from South America that harvesting conditions are almost perfect. This strength appears to come from a sudden realization that fully 80 per cent of the spring wheat crop of both Canada and the United States has left the farmers' hands. This news was largely responsible for an advance of 2c on Monday and an additional 1 1/4c on Tuesday for cash grain. Liverpool has shown some weakness, but this is explained by the report of a number of cargoes headed for that point. On the continent, quotations are stronger. The corn situation is also a bullish factor. One year ago the price for No. 2 red wheat was \$1.05 1/2 per bu. Quotations for the week are:

	No. 2	No. 1	Dec.	May.
Wednesday	96 1/2	96 1/2	96 1/2	1.01 1/2
Thursday	96 1/2	96 1/2	96 1/2	1.01 1/2
Friday	96 1/2	96 1/2	96 1/2	1.01 1/2
Saturday	96 1/2	96 1/2	96 1/2	1.01 1/2
Monday	97 1/2	97 1/2	97 1/2	1.03
Tuesday	98 1/2	98 1/2	98 1/2	1.04

Chicago, (Dec. 2).—Red wheat 95 1/2c; Dec. 87c; May 90 1/2c per bu.

Corn.—Beginning with this week, the prices quoted will be for new corn. These values rule about 10c below those for old corn. The market is strong; this is largely due to the continued damp weather which is damaging corn still out in the fields. A number of our crop reporters state that it is quite common to find corn molding in the shock. The visible supply shows a decrease of 309,000 bushels. One year ago No. 3 corn was quoted at 49c per bu. Quotations for the past week are:

	No. 2	No. 2
	Mixed.	Yellow.
Wednesday	69	71
Thursday	69	71
Friday	69	71
Saturday	69	71
Monday	69	71
Tuesday	69	71

Chicago, (Dec. 2).—No. 3 corn, new, 66 1/2c; Dec. 70c; May, 70 1/2c per bu.

Oats.—The high price of corn has increased the demand for oats and given that market a firmer tone. While there has been a liberal call for the grain at Detroit, quotations remain unchanged with those of a week ago. The price for standard oats a year ago was 36c. Quotations for the past week are as follows:

	No. 3	Standard.	White.
Wednesday	43	42 1/2	42 1/2
Thursday	43	42 1/2	42 1/2
Friday	43	42 1/2	42 1/2
Saturday	43	42 1/2	42 1/2
Monday	43	42 1/2	42 1/2
Tuesday	43	42 1/2	42 1/2

Chicago, (Dec. 2).—No. 3 white oats, 39 1/2c; Dec. 38 1/2c; May 41 1/2c per bu.

Beans.—No changes are reported. Still many bushels in farmers' hands. Immediate and November shipments are quoted at \$1.90; January at \$1.95 per bushel. Chicago reports an easy trade at lower prices. Pea beans, hand-picked, choice, are quoted at \$2.15; common \$1.75; red kidneys, choice \$2.65; Dec. 2.75 per bu.

Rye.—This cereal rules steady. No. 2 is quoted at 66c per bu.

Barley.—At Chicago barley is quoted at 53 1/2c per bu., while Milwaukee quotes the malting grades at from 58 1/2c to 75c.

Cloverseed.—Excepting alsike, all values are higher with sentiment changing from day to day. Prime spot is quoted at Detroit at \$8.70 per bu.; December \$8.75; March \$8.80. Prime alsike is steady at \$10.50 per bu. At Toledo, December is quoted at \$8.75 and prime alsike at \$10.70.

Alfalfa Seed.—Market is nominal, with prime spot quoted at \$7.25 per bu.

Timothy Seed.—Market inactive at \$2.50 per bu. for prime spot.

FLOUR AND FEEDS.

Flour.—Jobbing lots in 1/2 paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$4.80; straight, \$4.50; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$23; coarse middlings, \$27; fine middlings, \$27; cracked corn, \$31; coarse corn meal \$30; corn and oat chop \$26.50 per ton.

Hay.—Better grades lower, ordinary kinds steady. Carlots on the track at Detroit are: No. 1 timothy \$16@16.50; standard \$15@15.50; No. 2 \$14.50@15; light mixed \$15.50@16; No. 1 mixed \$13.50@14.

Chicago.—Demand best for high grades. Market quiet. Choice timothy quoted at \$18@19 per ton; No. 1 \$16.50@17.50; No. 2 \$14.50@15.50.

Straw.—Detroit.—Easy. Rye, \$8@8.50; wheat and oat straw, \$7@7.50 per ton.

Chicago.—Quotable as follows: Rye \$8.50@9; oat \$7@7.50; wheat \$6.50@7.

DAIRY AND POULTRY PRODUCTS.

Butter.—The local market continues firm with values unchanged. Quotations are: Extra creamery 22c per lb; firsts 30c; dairy 23c; packing stock 20c per lb.

Chicago.—The better qualities of creamery are scarce and quoted higher. Business is of moderate volume, the prevalence of wintry defects in a large part of the offerings having its effect upon the demand. Quotations are: Extra creamery 32 1/2c; extra firsts 31@32c; firsts 26@29c; seconds 22 1/2c; ladles 22@22 1/2c; packing stock 20@20 1/2c per lb.

Elgin.—Market firm at 32c per lb.

New York.—This market is irregular; values generally lower except on fancy makes. Quotations are: Creamery extras 34@35c; firsts 27@32c; seconds 23 1/2c; state dairy, finest 30@32c; good to prime 26@29c; common to fair, 22@25c; packing 20@21c as to quality.

Eggs.—Eggs are still a very scarce article and values show an advance at some points. The local market remained unchanged and firm, current receipts of fresh stock being quoted at 37c per doz.

Chicago.—In the main this market is rather quiet, light trading being due to inability to secure supplies of fresh stock. Demand sufficient to take all desirable offerings at steadily increasing figures. Storage stock steady. Quotations: Miscellaneous lots, cases included, 30@36c, according to quality; ordinary firsts, 33@35c; firsts, 36@37c; refrigerator stock, steady to firm at 26 1/2c for April firsts.

New York.—Somewhat irregular; tendency of values, however, seems to be upward. Quotations are: Fresh gathered extras, 46@48c; extra firsts, 44@45c; firsts, 42@43c; western gathered whites, 40@50c.

Poultry.—Receipts locally are almost wholly of live poultry. The market is in good condition, the demand for chickens forcing a 1c advance on good stock. Turkeys and ducks are quoted a little lower than last week. Quotations are: Live—Springs, 14@14 1/2c; hens, 13@13 1/2c; No. 2 hens, 9@10c; old roosters, 9@10c; turkeys 18c; geese, 13@14c; ducks, 14c.

Chicago.—This market is in fairly good condition despite unseasonable weather. Receipts liberal; the demand has carried chickens higher but turkeys are off 2c. Quotations on live are: Turkeys, good weight, 15c; others, 12c; fowls, general run, 13c; spring chickens, 13c; ducks, 11@13c; geese, 8@12 1/2c; guinea hens \$6 per dozen.

Cheese.—Market steady with values unchanged. Wholesale lots, Michigan flats 15@15 1/2c; New York flats, 17@17 1/2c; brick cream, 17@17 1/2c; Limburger, 14 1/2@15c.

Veal.—Weather conditions unfavorable to this market but fancy are quoted 1/2c higher. Quotations are: Fancy, 12@13c per lb; common 10@11c.

Chicago.—Light offerings are meeting a good demand and values are higher. Quoted as follows: Good to choice, 90@110 lbs., 13 1/2@14c; fair to good, 60@90c lbs., 12@13 1/2c.

FRUITS AND VEGETABLES.

Apples.—Supplies scant; market steady. Quotations are: Snow \$4@4.50; Spy \$4@4.50; Greening \$3.50@4.50; King \$3.50@4.50 per bbl; No. 2, \$2.25@2.75 per bbl; bulk \$1.25@1.50 per cwt. At Chicago prices rule firm under a fair demand. Values for country packed rule from \$2.75@5.50 per bbl. No. 1 Jonathan's selling best; Spies are \$2.75@4; Baldwins \$3.25@4.

Potatoes.—Warm weather has reduced demand and made deliveries easy, thus keeping prices down. Quotations as follows: In bulk 60@65c per bu; in sacks 70@75c per bu. Although receipts at Chicago are small the trade is easy because of the moderate weather. Michigan stock is lower at 58@67c.

Cabbage.—Steady at last week's figures. Good quality quoted at \$2@2.25 per bbl. The demand is fair at Chicago with offerings light. Quotations range from \$1@1.25 per bbl. for white, and \$1.50@2 for red.

Onions.—Fair demand and trade with prices for native stock at \$2.25 per 100-lb. sack. The Chicago market is well supplied and somewhat weak with Michigan and Indiana stock quotable at \$1.25@1.40 per 65@70 lbs.

GRAND RAPIDS.

The city market season closed last week and the stalls are now free, remaining so until next April. The market master will remain at the office for some time looking after the hay and other late offerings. Hay is still selling at \$18@22. The potato market is showing weakness, the local market price being around 65c. Eggs continue firm in spite of the mild weather, with quotations to the country trade for fresh stock at 36@38c. No. 1 dairy butter is worth 25c; dressed hogs are selling at 9 1/2@10c. Grain prices are as follows: Wheat 91c; oats 40c; corn 77c; rye 58c; beans \$1.60@1.70.

PRICES ON DETROIT EASTERN MARKET.

Considering the season, there was a goodly number of teams on the market Tuesday morning, and buyers were correspondingly plentiful. Prices are being well maintained. Potatoes were offered in fair supply with the average grade selling at 85c per bu. Apples were found sparingly, and prices ranged from 90c@1.75 per bu. Celery was plentiful with the average grade changing hands at 25@30c per bunch. Onions were scarce at \$1.50 per bu; cabbage ranged at from 60@70c per bu; carrots 40@50c; beets \$1.10; turnips 30@35c. One party was asking from 60@65c for small spring chickens, while another offered dressed chickens at 19c, and dressed ducks at 22c per lb. Loose hay is still quoted at \$15@18 per ton and not many loads delivered.

THE LIVE STOCK MARKETS.

December 1, 1913.

Buffalo.

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

Receipts of stock here today: Cattle, 150 cars; hogs, 135 double decks; sheep and lambs, 75 double decks; calves 800 head.

We had 150 cars of cattle on our market here today. The market was strong, quality considered; 15@25c higher on all of the best grade. The common and low grade sold steady. At the close of the

market about everything was sold, but the market throughout the day was dull and draggy, owing to the sellers asking an advance over last week's prices. The quality of the heavy cattle was not near so good today, less than top lot last Monday.

We quote: Best heavy corn-fed cattle, \$8.50@8.75; best shipping steers \$8.25@8.50; fair to good weight shipping steers \$7.75@8; fair to good shipping steers \$7.50@7.65; choice to fancy yearlings \$8.50@9; best handy weight butcher steers \$8@8.25; common to fair \$7@7.25; heavy fancy fat cows \$6.25@6.75; choice to prime fat cows \$5.75@6.50; good butcher cows \$5.50@5.75; fair to good butcher cows \$5@5.50; canners and cutters \$3.50@4.50; heavy prime fancy heifers, \$7.50@7.75; medium to good heifers \$6.25@6.75; stock heifers \$5@5.25; good to choice heifers \$6.75@7.25; choice dehorned feeders \$7.25@7.50; stockers weighing 800 to 850 lbs., \$6.25@6.50; best yearling stockers \$5.50@6; common kind do. \$5@5.25; heavy bulls \$6.75@7; butcher bulls \$6.50@6.75; bologna bulls \$5.50@6.25; extra milkers and springers \$7.50@100; fair to good \$4@60.

Our receipts of hogs today were somewhat lighter than expected and with good demand all goods sold higher. Yorkers and mixed sold at \$8.15 generally. Roughs \$7@7.50; stags \$6@7. Market closed steady and present prices look plenty high, compared with other parts.

The lamb market was active today; prices 25c higher than the close of last week. Choice lambs selling from \$3.15@3.25. Close strong. Sheep active, prices about 10c higher than the close of last week. Look for lower prices on lambs balance of week.

We quote: Choice lambs, \$8.15@8.25; cull to fair \$5.50@8.50; yearlings \$6@6.50; bucks \$3@3.50; wethers \$5@5.25; handy ewes \$4.50@4.75; heavy ewes \$4.25@4.50; cull sheep \$3@3.50; veals, choice to extra \$11.50@12; fair to good \$10@11.25; heavy calves \$5.50@8.

Chicago.

December 1, 1913.

Cattle. Hogs. Sheep. Receipts today 23,000 38,000 45,000 Same day last year... 37,225 53,344 49,824 Received last week... 36,299 137,299 125,242 Same week last year... 48,560 152,148 131,523

Buyers of cattle are in no hurry to load up today, as there will be plenty of fat beefs from the International Live Stock Exposition to be auctioned off before the week closes, and many fat cattle intended for the show were rejected and placed on the open market. Receipts included 34 cars of fat range cattle from American and Alberta ranges. Trade dragged, and prices were largely 10@15c lower. Hogs were active and a nickel higher, selling at \$7.35@7.95, with lots averaging 135 to 155 lbs. taken at \$6.85@7.30. Hogs marketed last week averaged 212 lbs., comparing with 228 lbs. one year ago, 212 lbs. two years ago and 230 lbs. three years ago. Sheep and lambs sold freely at about steady prices, with \$7.50 top for prime lambs.

Thanksgiving Day was a holiday at the Stock Yards, and no sales were made, but stock arriving was cared for, as usual. So many country shippers refrained from sending in cattle from fear of bad markets that receipts were too small to go around, and prices were on the up-grade, with an average advance of around 25c, the bulk of the beef steers going at \$7.50@8.80. For the best class of yearlings buyers paid \$8.50@9.50, while the better class of weighty steers brought \$8.25@9.25, although very few of the latter sold anywhere near the top figures. The common to fair light-weight steers brought \$6.60@7.50, while a middling class of steers brought \$7.60@8.20. Butcher cows and heifers found an outlet at \$4.80@8.50, with cutters going at \$4.30@4.75, canners at \$3.25@4.25 and bulls at \$5@7.60. There was less trading than usual in stockers and feeders, as receipts were comparatively small, while prices were considerably higher on an average. Stock steers brought \$4.90@7.40, but sales anywhere near top consisted of prime little yearlings. Feeders carrying much weight brought \$5.95@7.60, and some fancy 917-lb. feeders sold at \$7.80. Stock and feeding cows and heifers brought \$4.65@6.65. Calves of the better class had a good advance because of light offerings, good to prime light-weight vealers going at \$10@11.25 per 100 lbs., with sales of heavy calves at \$4.50@9. Milk and springers were in light supply and demand, selling usually at \$60@80 per head. The best beefs and feeders to be found in the country were shipped in for the International Live Stock Exposition and this is also true of hogs and sheep, as well as of horses. From now on smaller supplies of prime heavy-beeves are looked for.

Hogs sold off last week to the lowest prices seen since February, buyers taking advantage of some early good receipts to break the market. As has now been the rule for a long time, light-weight hogs greatly predominated among the arrivals, many pigs of good weights showing up, and it was evident that hog cholera still prevailed extensively in Iowa. The week was broken into by the national holiday, and this tended to lessen the local and eastern shipping demand much of the time, but there was on the whole a very fair outlet for the better class of medium and heavy-weight hogs on the butcher order, shippers taking fair supplies. These offerings continued to sell the most readily, fetching the highest prices, with light hogs slower of sale at a big discount. However, the consumption of fresh pork is still large, and enormous profits are obtained in this way. There is also a good cash demand for lard and cured hog meats. The aggregate receipts for the week ran ahead of a year ago, but fell far short of the preceding week, and a late rally in prices left prices on Saturday at \$7.05@7.90, compared with \$7.10@7.85 a week earlier. Pigs closed at \$5.25@7.15 and throwout packing sows at \$6.85@7.25. The highest prices were paid for hogs that weighed 300 to 320 lbs.

Sheep and lambs met with an excellent demand last week, notwithstanding the national holiday, for the receipts were so much smaller than a short time ago that it was easy to effect sales, and prices underwent some good advances, especially on fat flocks. Lambs moved off the quickest, as usual, and there was a much greater demand for feeders than could be met, prices moving up to \$7 for the best feeder lambs. Belated buyers of feeders will have to pay stiff prices from now on, and they may get left even then. Exporters paid up to \$5.10 for 80-lb. heavy fed sheep to go to Bermuda. After lambs had brought \$7.80, prices weakened and closed as follows: Lambs \$5.75@7.70; feeder lambs \$5.50@6.90; yearlings \$5.50@6.60; wethers \$4.30@5.10; ewes \$2.75@4.60; bucks \$3.25@4.

CROP AND MARKET NOTES.

(Continued from page 521).

fed but a few of both. Some farmers are selling hay, while others are buying. The grass on the low land pastures has made fine feed for the stock this fall and in some places is quite good yet. A good many potatoes are shipped in here this fall and are selling for \$1; apples \$1; chickens 10c; butter 25c; eggs 28c; cattle \$5@6; hogs \$7.25; hay \$10; corn 84c.

Kansas.

Cloud Co., Nov. 22.—A light rain the night of Nov. 20 was the first and only one we have had this month. Wheat is looking fine, the warm weather stimulating a heavy growth. Stock of all kinds doing well. Milch cows are selling at \$75 and up. The corn crop was almost a failure here. A group of farmers have just received a charter for operating a bank in this county. They expect to complete their organization in a day or two, and will begin erecting a building at once. The bank is capitalized at \$12,500.

Marion Co., Nov. 17.—There has been plenty of moisture fall since seeding time, and small grains are in a splendid condition for winter. Pasture has been good for the past month. New sown alfalfa is growing well. There is little surplus grain in farmers' hands for sale. There will be a fair supply of roughage, however, most farmers will need to buy some mill feeds to carry them through. Potatoes are being shipped in, Colorado stock selling at 85c to \$1 per bu., while northern seed potatoes are bringing \$1.25 per bu. Apples range from \$1.35@2.40 per bu. Many cattle have been shipped out, but there remains a good many to go to market later, while some feeders are on the market looking for feeding stock. Hogs are given little attention here. Corn 79c in car lots, and retail 83c; wheat 85c; oats 46@50c; eggs 32c; butter 30c; butter-fat 28c; hogs \$7.25 per cwt; prairie hay \$10@14 per ton; alfalfa \$15 per ton.

Cowley Co., Nov. 18.—Weather continues favorable for fall sown grains. Wheat and rye pasture very good. Stock is in good shape; a few cattle and hogs being fattened. Few farmers in this section have more than enough feed for the winter as very little grain matured. Good milch cows bring from \$75@100. Horses are selling lower than usual. Milk sells at \$1.90 per cwt.

Nebraska.

Cass Co., Nov. 24.—Corn husking is about completed, with an average yield of 20 bushels per acre. Winter wheat looks well but needs rain. Ground is very dry. The past two weeks have been warm and the ground is not frozen. Farmers are still plowing. On account of the drouth but little fall seeding of any kind was done except wheat. Potato crop was poor and carloads are being shipped in from north and west, selling at \$1 per bushel. The surplus of the wheat crop has mostly been sold, not much surplus of other grain to sell. But little stock is being fed for market. Cholera is killing off the hogs. Prices: Wheat 75c; corn 65c; oats 40c; cattle 4@6c; hogs 7c; hay \$10@12; poultry 12c; butter-fat 30c; butter 25c; eggs 30c.

Dawson Co., Nov. 17.—The potato crop was so light that several cars have been shipped in from the north. Meadows have been at a standstill for several months, and new seeding is a failure. However, those who watched their chance and put in winter wheat have fair prospects this far. There is very little grain for sale, many farmers being compelled to sell a large share of their stock in order to have enough feed to last over the winter. If this nice weather continues, there will be sufficient feed available for winter. Hogs are being marketed at \$7 per cwt; alfalfa \$10@12 per ton. There is a project on foot to build an electric line up on the table land for furnishing power for pumping purposes to those who cannot irrigate. Private irrigation wells are proving successful.

South Dakota.

Meade Co., Nov. 14.—Potatoes a fair crop, good quality and size. Meadows in fine shape. This being a new country, there is not a large acreage of winter wheat or rye sown, though there is some. The soil is in fine condition. Farmers were plowing this week. Surplus grain is corn, oats, wheat and flax. Prices: Corn 70c; wheat 60c; flax \$1.20. Stock raised and fed are cattle, horses, sheep and hogs, all in fine condition. Butter-fat 38c; dairy butter 30c; potatoes \$1 per cwt; cabbage 2c per lb; onions 2c per lb. We are getting our first snow today, but it is wet snow and melting fast. Good cows are high-priced and hard to get. This county is a fine alfalfa and dairy county, and has bright prospects for its future.

INSTITUTES FOR KALAMAZOO CO.

Climax, Dec. 8; Fulton, Dec. 9; Vicksburg, Dec. 10; Schoolcraft, Dec. 11; Charleston, Dec. 12; Comstock, Dec. 13; Scotts, Dec. 15; Galesburg, Dec. 16; Portage, Dec. 17; Texas, Dec. 18; Damon Church, Dec. 19; Cooper, Dec. 20; Richland, Dec. 22; Augusta, Dec. 23.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
November 27, 1913.
Cattle.

Receipts, 715. Canners steady, all other grades strong 15¢ to 25¢ higher. We quote: Best steers and heifers, \$7.75@8.25; steers and heifers, 1000 to 1200, \$7@7.50; do 800 to 1000, \$6.75@7; do that are fat, 500 to 700, \$6@6.50; choice fat cows, \$6; good do, \$5@5.75; common cows, \$4@4.75; canners, \$3@3.85; choice heavy bulls, \$6@6.25; fair to good bolognas, bulls, \$5.50@5.75; stock bulls, \$4.75@5.25; choice feeding steers, 800 to 1000, \$6.75@7; fair do, 800 to 1000, \$6.25@6.50; choice stockers, 500 to 700, \$6.50@6.75; fair do, 500 to 700, \$5.75@6.25; stock heifers, \$5@6; milkers, large, young, medium age, \$7.50@100; common milkers, \$4@5.00.

Bishop, B. & H. sold Parker, W. & Co. 2 butchers av 905 at \$6.75, 35 Canadian butchers av 700 at \$6.34, butchers av 666 at \$6, 2 bulls av 1230 at \$6, 3 cows av 903 at \$3.75, 2 do av 1050 at \$5.75, 2 do av 1240 at \$5.50, 2 heifers av 675 at \$6, 2 cows av 900 at \$5, 2 canners av 905 at \$3.60, to Strong 2 stockers av 665 at \$6, 4 do av 660 at \$6.25, 4 cows av 987 at \$5, to Sullivan P. Co. 2 steers av 800 at \$6.25, 1 cow weighing 880 at \$5, 1 do weighing 770 at \$4, 2 do av 865 at \$4, 1 steer weighing 850 at \$6, 2 heifers av 475 at \$5; to Breitenbeck 17 cows av 975 at \$4.90; to Hirschleiman 4 butchers av 654 at \$5.25, 3 cows av 1125 at \$5.75; to Rattkowsky 2 do av 1000 at \$5; to Mich. B. Co. 6 butchers av 880 at \$6, 1 cow weighing 900 at \$4, 1 do weighing 1040 at \$5.25, 7 do av 883 at \$5.10, 1 do weighing 850 at \$4, 2 do av 925 at \$5; to Sullivan P. Co. 2 do av 895 at \$5, 1 steer weighing 910 at \$6.75, 4 do av 525 at \$5.60, 5 butchers av 1002 at \$6.25; to Austin 18 stockers av 650 at \$6; to Bresnahan 11 do av 667 at \$6.20.

Haley & M. sold Mason B. Co. 5 butchers av 754 at \$6.60, 8 do av 871 at \$6.90; to Padgett 8 stockers av 756 at \$6.75; to Sullivan P. Co. 2 cows av 1125 at \$5.25, 1 do weighing 970 at \$4.50, 1 steer weighing 890 at \$5.50; to Applebaum 2 cows av 505 at \$4.65, 1 do weighing 970 at \$4.65; to Freeman 13 feeders av 777 at \$6.40; to Rattkowsky 4 heifers av 373 at \$5, 4 cows av 950 at \$4.75; to Sullivan P. Co. 2 cows av 905 at \$4, 1 do weighing 1000 at \$5.25; to Mason B. Co. 1 bull weighing 900 at \$6, 6 steers av 831 at \$6.90; to Thompson Bros. 6 cows av 1093 at \$5.50, 2 do av 1175 at \$4, 2 oxen av 1485 at \$6.80, 2 heifers av 710 at \$6.25, 1 bull weighing 1320 at \$6; to Parker, W. & Co. 9 butchers av 632 at \$6.10, 2 do av 595 at \$6.10; to Marx 1 cow weighing 1000 at \$4.75.

Roe Com. Co. sold Mason B. Co. 7 steers av 830 at \$6.75; to Sullivan P. Co. 5 do av 824 at \$6.65, 3 cows and bulls av 930 at \$5, 3 bulls av 570 at \$4.75, 2 cows av 995 at \$4; to Kamman B. Co. 4 do av 987 at \$5.50; to Strong 16 stockers av 571 at \$6; to Mich. B. Co. 16 do av 757 at \$6.10, 1 do weighing 700 at \$4, 1 do weighing 980 at \$4.60, 1 steer weighing 750 at \$6; to Applebaum 5 butchers av 354 at \$5.50; to Jameson 12 feeders av 833 at \$6.60; to Mich. B. Co. 4 cows av 937 at \$5.50, 10 butchers av 680 at \$6, 1 steer weighing 1040 at \$8.25, 1 cow weighing 1410 at \$7, 13 heifers av 788 at \$6.75, 11 butchers av 930 at \$6.65; to Thompson Bros. 3 cows av 1033 at \$5.25, 4 do av 880 at \$4; to Strong 5 stockers av 524 at \$6.10; to Sullivan P. Co. 1 bull weighing 1560 at \$6, 1 cow weighing 1220 at \$6, 1 do weighing 1380 at \$5.50; to Kull 2 bulls av 1275 at \$6.25, 5 steers av 934 at \$7.50, 3 do av 683 at \$6.25; to Parker, W. & Co. 1 cow weighing 900 at \$4.50, 7 butchers av 716 at \$6, 1 bull weighing 1370 at \$6, 6 steers av 941 at \$7.60, 5 cows av 806 at \$5.

Spicer & R. sold Podgett 3 feeders av 743 at \$6.85; to Sullivan P. Co. 3 cows av 1117 at \$5.50, 2 heifers av 665 at \$6.25, 1 bull weighing 1370 at \$6, 2 do av 865 at \$5.50, 1 do weighing 600 at \$5, 1 do weighing 820 at \$5, 1 do weighing 1210 at \$6, 4 cows av 1030 at \$5, 1 canner weighing 780 at \$2.50, 1 cow weighing 990 at \$5, 4 canners av 825 at \$3.75, 3 heifers av 1010 at \$6, 2 canners av 750 at \$3, 4 cows av 850 at \$4, 2 do av 850 at \$5, 3 steers av 823 at \$7, 5 do av 940 at \$6.50, 6 do av 750 at \$6.60, 1 do weighing 1030 at \$6.50, 1 do weighing 1070 at \$7.50; to Rattkowsky 12 cows av 991 at \$4.75.

Veal Calves. Receipts, 416. Market steady. Best \$11; others, \$8@10.50.

Bishop, B. & H. sold Goose 10 av 142 at \$9.50, 5 av 180 at \$10.50; to Rattkowsky 3 av 130 at \$9.50; to Nagle P. Co. 20 av 165 at \$10.50, 19 av 130 at \$9.50; to Parker, W. & Co. 3 av 160 at \$10.25; to Sullivan P. Co. 1 weighing 200 at \$11.50, 2 av 160 at \$11; to Goose 3 av 175 at \$10.50, 2 av 100 at \$8, 2 av 180 at \$11; to Rattkowsky 2 av 135 at \$9.50, 1 weighing 160 at \$10; to D. Goose 5 av 180 at \$10.50, 10 av 142 at \$9.50; to J. Goose 7 av 120 at \$8.50, 4 av 125 at \$9; to Thompson Bros. 5 av 150 at \$10.50, 2 av 105 at \$8.50, 5 av 155 at \$10.50; to McGuire 25 av 150 at \$10.50; to Mich. B. Co. 6 av 155 at \$11; to Sullivan P. Co. 4 av 150 at \$11, 1 weighing 140 at \$9, 1 weighing 160 at \$8, 4 av 140 at \$10.50; to Parker, W. & Co. 116 av 175 at \$11; to Mich. B. Co. 3 av 180 at \$10.25; to Hammond, S. & Co. 4 av 150 at \$11, 11 av 140 at \$10.50; to Nagle P. Co. 4 av 140 at \$10, 3 av 107 at \$8.50, 4 av 120 at \$10.50, 3 av 160 at \$10.50, 1 weighing 220 at \$11, 6 av 155 at \$10.25; to Hammond, S. & Co. 6 av 165 at \$11, 11 av 150 at \$10, 14 av 160 at \$10.50;

Mich. B. Co. 8 av 150 at \$10. Spicer & R. sold Parker, W. & Co. 11 av 140 at \$10, 6 av 155 at \$10.25, 1 weighing 100 at \$7, 8 av 130 at \$10.50, 1 weighing 170 at \$10.50, 3 av 140 at \$10, 1 weighing 170 at \$11.

Haley & M. sold Parker, W. & Co. 2 av 160 at \$10, 3 av 165 at \$11, 4 av 155 at \$10.25; to Sullivan P. Co. 2 av 135 at \$10.50; to Rattkowsky 2 av 160 at \$9.50, 2 av 340 at \$6; to J. Rattkowsky 4 av 350 at \$5; to Mich. B. Co. 10 av 157 at \$11, 7 av 135 at \$10.75.

Roe Com. Co. sold Newton B. Co. 5 av 125 at \$10.

Sheep and Lambs. Receipts 4992. Market steady at Wednesday's prices. Best lambs, \$7.25@7.50; fair to good do, \$6.75@7; light to common lambs, \$6@6.50; yearlings, \$5.50@6; fair to good sheep, \$4@4.25; culls and common, \$2.75@3.25.

Haley & M. sold Trumbull & H. 60 lambs av 75 at \$7.25, 20 do av 65 at \$7, 32 do av 70 at \$7.25, 23 do av 70 at \$7.25, 44 do av 68 at \$7.25; to Nagle P. Co. 28 sheep av 125 at \$4, 9 do av 100 at \$3.85, 13 do av 100 at \$4.15; to Klenck 25 do av 95 at \$4.25; to Newton B. Co. 40 lambs av 70 at \$5.50, 30 do av 65 at \$6.65, 29 sheep av 90 at \$3.75, 11 do av 100 at \$4; to Sullivan P. Co. 7 do av 80 at \$3.50, 29 lambs av 60 at \$6.75; to Trumbull & H. 60 do av 70 at \$7; to Nagle P. Co. 43 sheep av 110 at \$4.25, 31 do av 120 at \$3.75, 34 do av 130 at \$4.25, 29 lambs av 75 at \$7.40, 237 do av 75 at \$7.40, 36 do av 65 at \$6.50; to Mich. B. Co. 63 do av 55 at \$6.50.

Roe Com. Co. sold Mich. B. Co. 41 sheep av 115 at \$4; to Barlage 9 do av 80 at \$4, 3 lambs av 50 at \$6, 35 do av 55 at \$6.60, 26 lambs av 70 at \$7.15, 13 sheep av 125 at \$4.25.

Bishop, B. & H. sold Young 30 sheep av 80 at \$4.75, 50 lambs av 75 at \$7.35, 31 do av 55 at \$6.25; to Swift & Co. 149 do av 80 at \$7.50, 65 do av 75 at \$7.40, 6 do av 100 at \$7.25; to Levy 30 sheep av 135 at \$4.25, 20 do av 120 at \$4.25; to Klinck 27 do av 110 at \$4.15, 13 do av 100 at \$4; to Swift & Co. 67 lambs av 78 at \$6.85; to Mich. B. Co. 10 sheep av 79 at \$3.56, lambs av 80 at \$7.35, 90 do av 60 at \$6.50, 11 do av 40 at \$5; to Nagle P. Co. 147 do av 75 at \$7, 34 sheep av 110 at \$4; to Sullivan P. Co. 14 lambs av 65 at \$6.50; to Nagle P. Co. 150 lambs av 78 at \$7.30, 74 do av 75 at \$7.30, 120 do av 73 at \$7.25, 10 sheep av 110 at \$4, 10 do av 100 at \$3.35, 25 do av 93 at \$3.50, 10 do av 120 at \$3.50; to Sullivan P. Co. 11 do av 115 at \$4.15, 27 lambs av 52 at \$6, 45 do av 55 at \$6, 47 sheep av 90 at \$3.15; to Hammond, S. & Co. 48 lambs av 75 at \$7.30; to Thompson Bros. 31 do av 73 at \$7.25, 31 sheep av 95 at \$3.50; to Nagle P. Co. 10 do av 124 at \$4.25, 15 lambs av 70 at \$7.25; to Levy 14 sheep av 125 at \$4.25; to Sullivan P. Co. 13 do av 100 at \$4.25.

Hogs. Receipts, 8522. Market 5¢ lower than on Wednesday; packers stopped dead at \$7.60 for tops.

Range of prices: Light to good butchers, \$7.60; pigs, \$7; mixed, \$7.55; heavy, \$7.55@7.60.

Roe Com. Co. sold Sullivan P. Co. 225 av 200 at \$7.60.

Haley & M. sold Hammond, S. & Co. 890 av 200 at \$7.60.

Spicer & R. sold same 315 av 180 at \$7.60.

Bishop, B. & H. sold Parker, W. & Co. 2500 av 195 at \$7.60, 510 av 180 at \$7.55, 512 av 170 at \$7.50.

Friday's Market.

November 28, 1913.

Cattle.

Receipts this week, 764; last week, 1373; market steady.

We quote: Best steers and heifers, \$7.75@8; steers and heifers, 1000 to 1200, \$7@7.50; do 800 to 1000, \$6.75@7; do that are fat, 500 to 700, \$6@6.50; choice fat cows, \$5.75@6; good do, \$5.25@5.75; common cows, \$4@4.75; canners, \$3@3.85; choice heavy bulls, \$6@6.25; fair to good bolognas, bulls, \$5.50@5.75; stock bulls, \$4.75@5.25; choice feeding steers, 800 to 1000, \$6.75@7; fair do, 800 to 1000, \$6.25@6.50; choice stockers, 500 to 700, \$6.50@6.75; fair stockers, 500 to 700, \$5.75@6.25; stock heifers, \$5@6; milkers, large, young, medium age, \$7.50@100; common milkers, \$4@5.00.

Veal Calves. Receipts this week, 426; last week, 554; market steady. Best, \$11; others \$7@10.50.

Sheep and Lambs.

Receipts this week, 5099; last week, 7203; market steady. Best lambs, \$7.25@7.40; fair to good lambs, \$6.75@7; light to common lambs, \$6@6.50; yearlings, \$5.50@6; fair to good sheep, \$4@4.25; culls and common, \$2.75@3.25.

Hogs. Receipts this week, 8601; last week, 11,300; market steady to 5¢ higher.

Range of prices: Light to good butchers, \$7.65; pigs, \$7; mixed, \$7.55@7.60; heavy, \$7.60@7.65.

ADDITIONAL VETERINARY.

Nervousness—Wormy Colt.—I have a six-year-old mare that we believe is in foal, which stamps and switches more than she did in fly season. She is in rather poor condition, has best of care, and is fed oats and hay. Her bowels are inclined to be too loose. We also have a colt six months old that is very wormy. A. D. H., Springport, Mich.—Her teeth may require floating and she may be troubled with worms. Mix together equal parts powdered sulphate iron, ground gentian, ground wormseed, ground quassia and salt. Give her a tablespoonful of a dose in feed three times a day. Give colt a teaspoonful of this mixture and a desertspoonful of salt at a dose in feed once or twice a day. The treatment should be kept up until the animal shows a glossy coat and a thrifty condition.

Out of Condition—Worms.—My 11-year-old mare has a dead, lifeless rough coat, fairly good appetite, but little life, and I would like to know how to prevent her losing flesh. C. W. H., West Branch,

Mich.—A change of feed is perhaps one of the things you should do and possibly increase her food supply. Also give her two tablespoonfuls of the following compound powder at a dose in feed three times a day: Powdered sulphate iron, gentian, ginger, ground nux vomica, fenugreek and salt.

Roarer.—I have a 15-year-old mare that has been bothered for several years with a roaring in windpipe, but has worked until a few weeks ago; then she started to wheeze so badly that it is impossible to work her. I would like to know if anything can be given her or done for her that will make her fit for farm work. T. O'N., Harbor Beach, Mich.—A surgical operation on throat performed by a competent Vet. will perhaps make her fit for work; however, giving her drugs will only be a waste of money.

Ringbone.—I have a horse that I bought about a year ago; he had at that time an enlargement on pastern which did not seem to cause any lameness. I suspected it might be the commencement of ringbone and some time ago this bunch commenced enlarging, causing a little lameness, but I do not believe the bunch is increasing in size rapidly. O. R. S., Marshall, Mich.—A ringbone situated low down where it affects action between long and short pastern bones, should be regarded as a serious ailment and not easily cured. Firing with a pointed iron, making the marks three-quarters of an inch apart gives the best results of any treatment. However, repeated blisters may effect a cure, but the horse should have rest and be kept quiet. If you blister, apply one part red iodine mercury and six parts cerate of cantharides; or apply any of the ringbone or spavin remedies that are regularly advertised in this paper.

Dog Has Sore Eyes.—I have a shepherd dog about 18 months old that has an inflamed eyelid. The sore first was noticeable the latter part of August and has continued to grow since, but it does not affect the eyeball or sight. The sore forms a complete circle around the eye. M. M. S., Shelby, Mich.—Dissolve a teaspoonful of borate of soda and a teaspoonful of boric acid in half a pint of clean boiled water and apply to eye once or twice a day. Also apply calomel to sore once a day.

BELLEVILLE SHOCKMOVER



Will load, haul and reset from one to six corn shocks, weighing from 1,600 to 2,400 pounds to the load; will take two minutes time per shock. Guaranteed to load any shock or pile of corn fodder no matter in what shape it is, whether standing or flat on the ground, we guarantee satisfaction or refund the money. Write for particulars. Costs little. Saves a lot. Belleville Shockmover Co., Dept. V, Belleville, Ill.

We Want HAY & STRAW

We get the top price on consignments, make liberal advancements and prompt remittances.

Daniel McCaffrey's Sons Co.
PITTSBURG, PA.

Reference, Washington Trust Company, or any bank in city.

FARMERS—We are paying 5 cents above the Official Detroit Market for new laid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich.

Will exchange—Fine brick three story opera house, stores underneath, in town two thousand, for farm or stock of general merchandise. What have you. Address, Greenough & Brainerd, Vassar, Michigan.

WANTED—Good farm worth \$9,000, in exchange for large ten-cent barn, livery, horses, auto. Only barn and livery in town. Good nine room living apartments in connection. \$10,000. Address, GREENOUGH & BRAINERD, Vassar, Michigan.

Fine Restaurant—Candy, ice cream business because sickness \$2500 cash balance time or trade for clear farm. H. Zander, Charlotte, Mich.

WANTED—Position as manager of large stock farm and grain farm, by married man. Can furnish references. Box D. M., cr. Michigan Farmer.

ICE PLOWS

6 sizes, prices \$10.72 to \$16.90. Every plow warranted. Sent on trial. Also tools. Catalog. W. H. PRAY, Verbank, N. Y.

If you had Your Leg Cut Off you would insist upon the wound being carefully dressed and cared for; why not give the same care to the minor injuries of daily occurrence? The danger of blood poisoning is as great in one case as in the other. Use OXALBITOL for dressing wounds, it is an antiseptic dressing that has merit and is sold by mail only. Price 35 cents. Money returned if not satisfied. OXALBITOL CO., Honesdale, Pa.

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Successful Farming Aids Successful Railroading. We assist settlers along our line to locate upon lands that will grow successful crops, so that they will help make our Railway successful. Besides the lands along the main line on the Coast, we are opening up a rich territory North of Lake Okechobee, where you have the choice of Prairie, Hammock, Muck or Pine Lands. Business opportunities, Mercantile, Professional and Manufacturing. Illustrated booklets and "Facts About Florida," free. (4) FLORIDA EAST COAST RAILWAY. J. E. INGRAM, V. Pres., or LOUIS LARSON, North Room 119, City Bldg., Western Agent, Room 1199, 109 W. Adams St., Chicago.

SAVE THE HORSE

Grant, Iowa, March 3, 1913.
Troy Chemical Co., Binghamton, N. Y.
Your excellent book pleased us so much that I am asking you to send us 8 more copies for our Agricultural class. Thanks.
A. W. PHILLIPS, Prin.
Univ. of California, Berkeley, March 11.
Troy Chemical Co., Binghamton, N. Y.:
I wish to thank you for the Save-The-Horse Book, which contains many valuable suggestions and good advice for horse owners.
Very truly yours, F. L. GRIFFIN.

WE ORIGINATED the plan of treating horses Under Signed Contract to Return Money if Remedy fails. You risk nothing by writing; it will cost you nothing for advice and there will be no string to it.

OUR LATEST Save-The-Horse BOOK is our 18 Years' Discoveries—Treating Every Kind Ringbone—Thoropin—SPAVIN—and ALL—Shoulder, Knee, Ankle, Hoof and Tendon Disease—Tells How to Test for Spavin; how to locate and treat 58 forms of LAMENESS—Illustrated.

OUR CHARGES for Treatment ARE MODERATE. But write and we will send our BOOK—Sample Contract and Advice—ALL FREE to (Horse Owners and Managers—Only).

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Druggists everywhere sell Save-The-Horse WITH CONTRACT, or we send by Parcel Post or Express paid.

FEEDING MOLASSES 12 1/2¢

Every gallon saves a bushel of grain. Guaranteed Pure Cane Molasses. Cut price \$7.00 per barrel (56 gallons) f. o. b. Pennsylvania factory. Money back if not satisfied after feeding half a barrel. Order quick.
WATLES & CO., Box 13, Litchfield, Mich.

Death to Heaves
Guaranteed or Money Back.
Coughs, Distress, Indigestion.
NEWTON'S Large for Heaves.
At druggists' or sent post paid.
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WANTED—To hear from owner who has good farm for sale. Send description and price, Northwestern Business Agency, Minneapolis, Minn.

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Will Sacrifice—Improved 200 acre farm; good buildings, easy terms, 2 miles to town. R. KLIMASEHEWSKY, St. Francis, Minn.

FOR SALE OR EXCHANGE—Farm 120 acres, Osceola County, Mich. Good size, some timber, orchard and pasture. Good house, barn, water, market, etc. Geo. McPherson, Canton, O.

BUY A FARM—In Montcalm or Kent County where it pays to farm. All farms and prices. Come and see for yourself. MICHIGAN FARM HOME COMPANY, Greenville, Michigan.

NEW YORK FARMS
Are the best anywhere, and lowest priced. We show and sell them every day, winter and summer. Ask for list. MCBURNEY & CO., Fisher Bldg., Chicago, Ill.

FARMS—608-acre dairy farm, 2 miles north of Ann Arbor, 480-acre stock farm, 4 miles from Lansing. Smaller farms near Lansing. Address J. D. TOWAR, East Lansing, Mich.

Fertile Farms and unimproved lands in Delaware, diversified farming, live stock, delicious fruits and ideal homes. For information address, State Board of Agriculture, Dover, Delaware.

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Near Saginaw and Bay City, in Gladwin and Midland Counties. Low prices. Easy terms. Clear title. Write for maps and particulars. STAFFELD BROTHERS, 15 Merrill Building, Saginaw, (W. S.), Michigan.

2500 ACRES cut over hard wood land near Rose City, Mich., on D. & M. R. R. especially adapted for stock and fruit raising. Address, JACOB SCHWARTZ, Saginaw, Michigan.

MICHIGAN FARMS and FARM LANDS

For sale or trade; reliable information furnished on any part of state. If you wish to buy, sell or trade, write us. J. D. BUTTERFIELD, 521 Hammond Bldg., Detroit

FARMS Send for our FARM CATALOGUE, 100 VIEWS OF FRUIT, POULTRY and GENERAL FARMS in or near VINELAND and the FULTON Poultry Center of New Jersey. Healthful climate, Mild Winter, Purest Water. Unexcelled Markets. Within 100 miles of TEN MILLION people. BRAY & MACGEOERGE, LARGEST FARM AGENCY in SOUTH JERSEY, 1076 Drexel Bldg., PHILADELPHIA, PA., or VINELAND, NEW JERSEY.

2160-Acre Ranch—entirely enclosed with woven buildings, fine soil, living stream of water, lots of speckled trout, sold \$10,000 worth of cattle from ranch last month. Hundred head yet to winter. BIG BARGAIN, \$25 per acre, will take another good farm in exchange for one-half value of this. GREENOUGH & BRAINERD, Vassar, Michigan

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Successors to A. J. Stevens & Co. Established 1883. Farm, Fruit and Stock Lands. We own 20,000 acres of choice unimproved lands in Gladwin and Clare counties. Sold on easy payments. Interest 5 percent. Write for information. Gladwin, Michigan.

140 ACRES

New 12 room house (cost \$3000) steam heat, electric lights, finest oak finish. 3 good barns, 1 with basement, cement floor, also. Large orchard. Rich loam soil, mostly cultivated. Never rented, changed hands once in 40 years, always a stock farm. Mile from Court house, o. main street. A beautiful home, surrounded by fine farms. Few miles from Jackson and Lansing. Steam and electric cars from both cities. Worth \$125 per acre. Will take less than \$100 for quick sale. HOBBART W. FAY, Mason, Michigan.

90 Acres—Level land, 2 acres wood and timber, balance tillable, 10000 ft. high, 10000 ft. wide, 30x55, 30x40; hen house, wagon house, all good condition. Apples, peaches, plums and pears. Insurance \$2400. Tax \$35. School, creamery, store and church adjoining farm. Included to quick buyer, 3 horses, 4 cows, heifer, grain drill, mower, rake, harrow, sulky plow, roller, corn sheller, platform scales, 2 buzzies, harnesses, a lot of small tools, hay fork, all for \$4200. \$2800 cash, balance mortgage. Hall's Farm Agency, Owego, Tioga Co., N. Y.



Let Me Help You Get

Winter Eggs

GILBERT HESS,
Dr. of Medicine,
Dr. of Veterinary
Science.

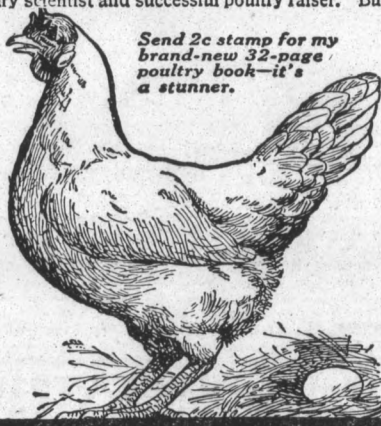
I make my biggest egg profits in the winter months, because I see to it that my own hens lay regularly then. You can make your hens lay in winter the same as mine do.

Under ordinary winter conditions hens lay poorly, because they are cooped up, deprived of green stuff and cannot get exercise. The egg organs consequently become sluggish and inactive and the hen puts on fat instead of converting her ration into eggs. Hens must have a tonic during winter to tone them up, invigorate the dormant egg organs and keep them healthy.

Dr. Hess Poultry PAN-A-CE-A

is just such a tonic. It makes hens lay. It contains ingredients for toning up the whole digestive system and enriching the blood. The U. S. Dispensary and all noted veterinarians certify each ingredient to do what I claim for it. Pan-a-ce-a is a scientific preparation—back of it is my 25 years' experience as a doctor of medicine, veterinary scientist and successful poultry raiser. But I don't want you to try my Pan-a-ce-a on anybody's claim or say so, but on a

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Maintaining Vigor in the Turkey Flock.

People who continually talk about their bad luck with turkeys, and tell you that "turkeys are hard to raise," should always take a walk in the woods at this season. Then, as they—or you—walk, ponder the fact that just the other day, figuratively speaking, the turkey was one of the clean wild woodsy creatures. Just a few generations back the turkey lived like the quail and the partridge that scamper through the dry leaves, looking here, there and everywhere for seeds of weeds and grasses, acorns, and a thousand other products of the forest.

The quail becomes healthy, sturdy and plump on this diet, but not overfat. No doubt if you fed it all the shelled grain it could eat two or three times a day, it, too, would lose its energy. Then, when it was growing lazier and lazier, if you put it in a pen and crowded the already over-burdened digestive system with cooked messes of soft feed, and coaxed it to stuff itself more and more, it, too, would become less hardy and develop liver trouble like any other lazy, overfed parasite. The succeeding generations would become weaker and weaker until, if this treatment was continued long enough, the race would die out entirely.

During such a course of domestication we would no doubt be told how delicate young quail are, how sensitive to dampness and dew, unable to endure wet grass or a summer shower, and how prone to troubles with their digestion. Bowel trouble and possibly blackhead would rage among them.

But someone hastens to remind us of the grain the quail consumes from the farmer's field. So he does—lots of it. But he gleans it for himself, giving honest work in search and threshing or husking for every dainty mouthful he takes. He eats and work and rests and scamper away from real or imaginary danger a hundred times a day, always bright, alert and in as perfect condition as any trained athlete. His varied food supply, taken with the wholesome health-giving sauce of labor, gives him no trouble, even when the harvest season crowds his world full of toothsome dainties.

Nature has provided a bountiful menu for all her feathered creatures in the fall, for many days of cold, and even famine must be endured before spring unlocks the icy covering from earth's storehouse. Nature's children must be in perfect physical condition, plump but not fat, if they are to endure the rigors of the oncoming cold season and come out in the spring strong and vigorous.

Excepting for a nibble occasionally to help them remember to come at call, my turkeys have had no feed this fall except what they garnered for themselves, until the heavy snow recently. Even then we waited 24 hours before feeding them, though they were roosting in unsheltered apple trees. I always regret delayed corn husking because of its effect on the turkey flock. They do better on scant grain rations, with a large area to forage over for weed seeds and other natural foods so necessary to their health. Except for butchering, fat turkeys are undesirable, and my aim is to get frame and vigorous growth. Raising them only for breeding purposes, I never fatten a turkey, yet my White Holland toms have made 25 lbs. by Christmas, a weight already too great for the highest market prices.

I believe that the average producer overfeeds his market fowls. Because chickens can be fattened so profitably, one is tempted to apply the same methods to the turkey flock.

I have previously, in these columns, advised turkey breeders to keep their flock entirely separated from the chickens. At this date my own flock, shifting for itself, is in fine condition. A neighboring flock, apparently equally fine a few weeks ago, is dying from bowel trouble. The only reason seems to be that they are fed with a large flock of chickens, which are being crowded heavily on grain in preparation for the holiday market.

All admit that the discouraging feature of raising turkeys is their dying off just when nearly ready to market, and that is what sends so many discouraged farmers out of the business. To avoid this loss, pen the turkeys you wish to fatten for market and do not feed them heavily more than two or three weeks. For the Thanksgiving market fatten only the early hatched birds that you intend to butcher, making sure that none of your breeders are in the fattening pen. The late ones should be reserved for the Christmas or New Year market, permitting them to make as much growth as possible the next month. This they will not

do if fattened now, and their numbers are apt to be greater if the feeding is not forced until the very last.

Now is the time to select the breeding stock and to begin the care, which, if the pen is made up of mature and healthy fowls, should insure success next year. If your new blood is to be obtained from a breeder of pure-bred stock, now is the time to get the pick of his flock at the cost of inferior birds next spring. If you are to get from a farm flock, now is the time to choose when you have a chance to judge shape and frame before the enervating fat is put on which covers defects and reduces vitality.

These are little things but they make the difference between success and failure. The turkey on every large farm should convert wild and waste products into cash. He is the best logical by-product of the business of farming. And turkey raising is no more uncertain than any other department of this variable business so dependent upon weather, seasons and markets. For the last five years the returns from turkeys on this farm have exceeded those from all other poultry, those from pork, and sometimes those from milk products. I have found the turkey crop in Michigan less variable than the bean crop, the corn crop, the wheat crop or the clover crop, and therefore continue to raise it.

Saginaw Co.

E. H. McDONAGH.

WARDING OFF ROUP.

Now is the time to be on the alert for colds, which may develop into roup. Each morning I make it a practice to study the layers carefully and note their condition. If I discover any with slight colds, they are separated at once from the rest of the flock. Even the slightest indications are noted, such as watery or what we term "big eyes," obstructive breathing, offensive breath, swelled eyes and running matter from either nose or eyes. For all such I have a special coop, the size of the same being influenced by the number of fowls on the farm. For the average farmer a small 3x6 coop is generally large enough, and for poultry farms an open-front colony house about 8x8 or larger is just the thing. I use an open-front, so-called Tolman house, 10x14 in size, for this purpose.

Individuals showing any of the above symptoms are removed to this house immediately and given ordinary care. This house, being entirely open in front, is naturally very cold, but practically all cases recover and in a short time can go back to their respective houses. It is simply wonderful what such fresh air treatment will do. They not only get over the contracted cold rapidly, but they also seem to gain in vitality.

Any kind of a coop will do for the above purpose so long as the back and ends are absolutely air tight, and the front, facing the south, is nearly or entirely open. It must provide plenty of fresh air without drafts.

December is generally more or less damp and we sometimes find it hard to keep the interior and litter dry. Nevertheless this is of such great importance that extra care and pains must be given to having the litter dry and loose, for if they need it at any time they surely do at this time. It may be necessary to replace it often, but there is no question that it pays. Provide plenty of fresh air and keep the interior of house dry if you would have few cases of roup and colds. Most farmers make a serious mistake in closing up the henhouse too tightly early in winter. Do not close all curtains, except on very severe days and nights. Aim to get the hens gradually accustomed to the cold weather that is sure to come, and try to have the temperature of the house as uniform as possible, both day and night.

New York.

F. W. KAZMEIER.

MICHIGAN POULTRY SHOWS.

Poultry organizations throughout the state have announced shows to occur during the next two months as follows, location and dates of each being given:

Battle Creek, Dec. 8-14.
Dexter, Dec. 10-14.
Vicksburg, Dec. 15-20.
Grand Haven, Dec. 16-19.
Niles, Dec. 17-22.
Marlette, Dec. 18-20.
Lansing, Dec. 27-Jan. 3.
Kalamazoo, Dec. 28-Jan. 3.
Petoskey, Dec. 30-Jan. 2.
Sheridan, Dec. 30-Jan. 2.
Grand Rapids, Jan. 6-9.
Saugatuck, Jan. 7-10.
Manistee, Jan. 11-13.
Muskegon, Jan. 13-17.
Carson City, Jan. 14-16.
Detroit, Jan. 19-25.

Veterinary.

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

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

Slavering.—I have a three-year-old filly that slavers continually whenever bit is in mouth. I am unable to understand what should cause it. A. H. Frederick, Mich.

First of all your filly may never have been properly bitted before she was broke to drive. Place in her mouth a bit and leave bridle on her when in stable, with the exception of time when she is eating. The bit you use should be a snaffle bit and not pulled too high up in mouth; also notice that her teeth are not hurting her cheeks, if so file sharp points, and make her comfortable.

Effects of Azoturia.—I have a seven-year-old horse that had an attack of azoturia about six weeks ago. He was very sick for about two weeks and then partially recovered, but remains weak in both hind legs. The muscles above the stifles are shrinking. He can raise about half way up, but that is all. We have tried to sling him up, but he is unable to help himself. He has a good appetite, his bowels are normal and his kidneys seem to act all right. Our Vet. is giving him strychnine and iron, but he does not gain strength. Can anything be done to help him? I have been advised to give him hypodermic injections of a ten per cent solution of iodine in his back and legs. J. J. M., Beulah, Mich.

As you perhaps know, azoturia is a complex affection and none too well understood; however, it is believed to be an auto-intoxication brought on by feeding idle horses too much grain, then exercising them. In the treatment of your horse, it will be well for you to keep in mind the cause of this ailment. Don't feed too much grain. Feed roots and fodder. Give 1 dr. ground nuxvomica and 1 oz. of bicarbonate soda at a dose three times a day. Hand-rub weak and atrophied muscles three or four times a day, but do not pin your faith on the good effects of severe blisters. In the treatment of such cases, I have obtained fairly good results by applying one part turpentine, one part aqua ammonia, one part tincture cantharides and five parts olive oil to atrophied muscles once a day.

Sore Throat—Cholera.—I have some sick hogs, have lost four, but don't know the cause of death. The symptoms of sickness is dullness, followed by cough and some of them act as if throat was sore, and in a day or two stop eating, and two days later they die. For a time I fed them corn on the cob, whole oats and buttermilk from the creamery, together with the slop from the kitchen. Now I am feeding them ground oats and corn mixed with buttermilk. I also give them slop from kitchen. None of them are troubled with diarrhea. C. E. B., Flushing, Mich.

It is possible that your hogs die from throat and lung trouble, or they may have cholera. You should examine one closely after death, then you could tell whether they die of throat or lung trouble. I advise you to butcher them if they are fit for market as your loss will be less now than any other time. If you care to treat them gargle throat with following lotion, which is made by dissolving 1 dr. chlorate of potash in a pint of water, using not less than one-fourth part for each hog, and their throat should be gargled two or three times a day. If their bowels are constive give them two or three ounces of castor oil or the same quantity of epsom salt to move them.

Surfeit.—I have a horse eight years old which has a disease of the skin. Little bunches come under the skin showing themselves mostly on loin and withers, causing more or less irritation and itching of body. He is worse in summer, than in cold weather; however, he is in good condition, thriving well in spite of this difficulty. W. H. W., Belding, Mich.

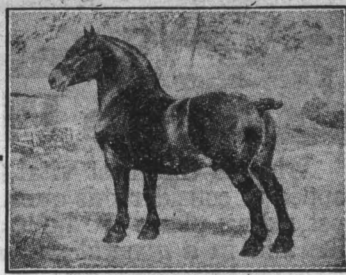
Give your horse a dessertspoonful of Donovan's solution of arsenic and a teaspoonful of sulphur at a dose in feed two or three times a day. Remember, he should be well groomed twice a day. Feed him some roots and salt him well.

Mange.—Having found much valuable advice in your veterinary column, I would like to have you tell me what to do for my eight-year-old Percheron horse that seems to have an itch. In the hollow part back of withers, also on back, rump and hips, there appears to be an itchy condition of the skin without the appearance of a pimple. The skin seems to be covered with a dusty dirt which is there in abundance. This horse seems to be in misery, but is not lousy. G. H., Fair Grove, Mich.

The quickest way to get your horse well is to clip him, then apply one part sulphur and two parts lard to itchy parts of body daily for a few days; then apply one part bichloride mercury and 500 parts water twice a day. Give him a tablespoonful of Fowler's solution at a dose three times a day.

Sow Falls to Come in Heat.—I have a four-year-old brood sow that fails to come in heat; have been feeding her boiled beans and corn on ear. R. L., Carsonville, Mich.

Give her 15 grs. fluid extract damiana, 15 drops fluid extract nuxvomica, and 30 drops fluid extract capsicum at a dose in feed two or three times a day.



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Chester Whites.—Spring and summer pigs, write us your wants. Price and quality right. **Meadow View Stock Farm, R. F. D. No. 5, Holland, Mich.**

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O. I. C.—BIG GROWTHY TYPE. Last spring stock, either sex, pairs not akin. Very good stock. Scott No. 1 head of herd. Farm 1/2 mile west of depot. **OTTO B. SCHULZE, Nashville, Mich.**

WRITE US Your Wants For Reg. Chester White Swine, Holstein Bulls, Shropshire Sheep Lamb Rams. Sept. pigs now ready for shipment. **RAY B. PARHAM, Bronson, Michigan.**

O. I. C.—Spring boars all sold. Have a fine lot of O. I. C. spring gilts. Sept. pigs, ready to ship, not akin. Longthy Prince No. 3861, head of herd. (Will weigh 1/2 ton when mature.) **A. Newman, R. 1, Mariette, Mich.**

O. I. C.—Spring Boars all sold, fall pigs ready to ship, also a few choice red polled heifers. **JOHN BERNER & SON, Grand Ledge, Mich.**

O. I. C.—Spring Boars now ready for service. Registered in buyers name. **OREN BRUCKNER, R. D. No. 1, Chelsea, Mich.**

O. I. C's.—Gilts bred for Mar. and Apr. farrow. Aug. pigs. All of right type. I pay express. **GEO. F. ANDREWS, Dansville, Ingham Co., Mich.**

O. I. C.—Swine. Holstein Bull calf. Bf. R. and O. I. C. White Leghorn Chicks. Write me your wants. **FRED NICKEL, R. No. 1, Monroe, Michigan.**

THIS O.I.C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD

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I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan. "How to Make Money from Hogs." **G. S. BENJAMIN, R. No. 10, Portland, Mich.**

Duroc Jersey Boars For Sale, of the large growthy type, also 2 Reg. Percheron Stallions 1-yr.-old. **M. A. BRAY, Okemos, Mich.**

DUROCS.—7 boars, spring farrow. Fall pigs, either sex. Prices reasonable. **S. C. STAHLMAN, CHERRY LAWN FARM, R. 2, Shepherd, Michigan.**

Fancy bred Duroc Jerseys.—Boars & Gilts of spring & summer farrow. Good individuals at reasonable prices. **John McNeill, Station A, R. 4, Bay City, Mich.**

DUROC JERSEYS.—Spring boars of the big type, a few from cherry King, the 1912 International champion, at prices that will sell them. **W. C. Taylor, Milan, Mich.**

DUROCS.—36 High Class immuned boars ready for service. Special prices for 30 days. Write or come and see. **J. C. BARNEY, Coldwater, Mich.**

BIG TYPE DUROCS.—March and April Boars, ready for service. Pairs not akin. Also Shropshire Rams for sale. **F. J. DRODT, R. No. 1, Monroe, Mich.**

Duroc Jerseys—10 Spring Boars Ready to Ship.
CAREY U. EDMONDS, Hastings, Michigan.

DUROCS, Good Enough to Ship Without the Money.
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Duroc-Jerseys.—Spring boars from prize-winning strains. Sows all ages. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

POLAND CHINAS.—Both Western and Home Bred. Pairs not akin. Either sex, all ages. Prices right. **W. J. HAGEMSHAW, Augusta, Mich.**

Poland Chinas and Single Comb White Leghorns.
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POLAND CHINA.—Spring, Summer and Fall pigs. From large prolific sows, litters up to 16. Special prices on boars. **ROBERT NEVE, Pierson, Mich.**

BUTLER'S BIG BONE Prolific Poland Chinas, the kind that keep right on growing after you get them. Big boars ready for service. Sows bred for spring farrow, fall pigs. All at farmers' prices. They don't breed them any better. A breeder for over 20 years. **J. C. BUTLER, Portland, Mich.**

P. C. MARCH AND APRIL PIGS.—The long bodied to please. **R. W. MILLS, Saline, Michigan.**

FOR SALE.—Poland China Boars. March and April farrow. Prices right. **G. W. HOLTON, R. No. 11, Kalamazoo, Mich.**

POLAND CHINAS.—Choice lot of spring pigs, either sex. Prices right. **L. W. BARNES & SON, Byron, Shiawassee Co., Mich.**

Poland Chinas.—The Large Prolific Kind. We have a nice lot of spring boars at farmers prices. **ALLEN BROS, Paw Paw, Mich.**

BIG TYPE P. C.—Boars and Sows of best breeding. Extra good individuals. **A. A. WOOD & SON, Saline, Michigan.**

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

Large Type P. C. Largest in Mich. Boars all sold. Am booking orders for Bred Cherry King and see Big Desmoines, largest Boar in U. S. of age weighs 345 lbs. at 19 months. Expenses paid if not satisfied. Free Livery from Parma. **W. E. Livingston, Parma, Mich.**

Large Yorkshires.—Pigs farrowed in August from prize winning stock. For sale. **JONES & LUTZ, Oak Grove, Michigan.**

350 BIG TYPE MULE FOOT HOGS.—All ages for sale. Prolific and hardy. Best bred for Michigan. Also Ponies. **J. DUNLAP, Box M, Williamsport, Ohio**

MULE FOOT HOGS.—Both Sexes, all ages. **C. F. BACON, Milan, Michigan.**

Mule Foot Hogs.—All ages for sale. Big growthy, prolific, profitable, healthy. Write for what you want. **G. C. KREGLOW, Ada, Ohio.**

FOR SALE YORKSHIRES

Boar pigs, Aug. farrowed, from large litters. **MEADOWLAND FARM**
Waterman & Waterman, Ann Arbor, Mich.

YORKSHIRE SWINE.—A few choice boars left. Special prices for quick sale. **OSTRANDER BROS, Morley, Mich.**

YORKSHIRE Swine.—Boars and gilts all sold. Aug. farrowed pigs, pairs not akin, for sale. Special prices on trios. **Geo. L. McMullen, Grand Ledge, Mich.**

YORKSHIRES

The large, long-bodied, heavy-boned prolific kind. Sows and gilts bred for spring farrow. 60 head of September, October and November pigs. Prices reasonable. **W. C. COOK, R. 42, Ada, Michigan.**

Lillie Farmstead Yorkshires

Spring gilts, splendid ones. Fall pigs, either sex. Gilts bred for spring farrow.

COLON C. LILLIE, Coopersville, Michigan.

Practical Science.

EGGS AS A FOOD.

BY FLOYD W. ROBISON.

The Value of the Industry.

According to Pennington, in the report of the Secretary of Agriculture, more than \$600,000,000 per year must be regarded as the value of the poultry and egg producing industry. If we compare this amount with the value of the wheat crop in the United States for any one year we will find that it is as large if not larger than the value of the total wheat crop. Quoting from the New York Mercantile Exchange, through Pennington, we find that in 1909 in the city of New York alone 4,266,320 cases of eggs were received, each case containing 30 dozen. This would therefore indicate 1,532,275,200 eggs or enough, as Pennington states, to permit of a per capita consumption per annum of 321 eggs. These figures give one some idea of the enormous extent of the egg industry in the United States, and yet there is no single industry in the country of anywhere near this importance that has so little real attention paid to it as has the egg industry. Undoubtedly a large percentage of the farmers keep chickens and produce eggs to a more or less extent, but on a great majority of these farms the hen is considered of so little importance that practically no attention is paid to her, and what egg production is received is an exceedingly incidental matter.

In the last two or three years a considerable amount of city chicken-farming is being undertaken and in these places as a rule, much more attention is paid to a study of the conditions surrounding maximum egg production and an attempt is made to place the hen in an environment which is more suited to her and which is more favorable to a greater production of eggs.

The Food Value of the Egg.

The average price paid the producer for eggs has doubled in the last few years and the consumer in the larger centers rarely gets his eggs for less than 30 cents per dozen. At the present time, and very frequently, it reaches 40, 50 and 60 or 70 cents per dozen in the especially largely populated centers. The food value of an egg as compared with other animal food products is not the measure of its commercial value. There are certain ends to which eggs are put which place its value out of all proportion to its real food value. In the first place it is an exceedingly nutritious product and because of its peculiar nature it can be used in a great many ways that other animal food products cannot. From a real food point of view eggs are expensive when they exceed one cent apiece, or 12 cents per dozen. We are basing our statements here on milk at seven and eight cents per quart. We have not seen eggs retail at this low figure in a number of years, consequently we are prepared to observe that from an economic point of view eggs are an exceedingly expensive food but, like some other food products, such as fruits, etc., in prescribing a variety of diet and in fulfilling certain other points in the dietary we are ready to go way outside of the actual food value and economic consideration to get these articles of diet which are demanded from a variety of reasons.

The Hen is Not to Blame for Bad Eggs.

One thing should be remembered regarding the food value of eggs, and that is that an egg is a well balanced protein food and when laid by the hen is in perfect condition, free from contamination and in an ideal condition for food. It is similar in this respect to milk produced by the cow. It is not due to the cow herself that the product as it reaches the consumer is unwholesome, because we may be reasonably certain that the cow has done her part in producing a more or less perfect food. Similarly with the hen. It is to the surroundings for which man is responsible that egg deterioration is due.

The Flush Time of Egg Production.

In the state of Michigan the flush time of egg production is in the early spring months, March, April and May. In certain sections where egg production is more carefully studied the period of the flush production of eggs is prolonged sometimes through the summer, but the temperature and climatic conditions of

March and April combine well with the natural instincts of the fowl to produce the greatest quantity of eggs of the highest type of perfection during these spring months.

If we will consider now for a moment the eggs as they are delivered to the consumer in the cities, we will see that, like milk, they show the evidence of careless handling throughout the entire trail from the farm to the home, and what may be produced by the hen as a perfect and ideal food product very rarely, we may say, reaches the consumer in anywhere near this condition. For this condition there are several causes. Climatic conditions of course are largely responsible for egg deterioration, careless handling of eggs, to which may be added the lack of an intelligent appreciation of how an egg should be handled to keep it at its maximum of food value, and again the lack of proper attention to the hens on the farm.

Different Grades of Eggs.

The principal grades, or divisions, into which the eggs are graded when they reach the retail merchant in the city, are No. 1, No. 2, No. 3, dirty eggs; No. 4, cracked eggs, and No. 5 the rotten eggs. According to Pennington, from 61,180 dozen of eggs examined at the New York markets in 1909, 61.17 per cent were graded as No. 1; 11.41 per cent graded as No. 2; 15.52 per cent graded as No. 3, or dirty eggs; 7.94 per cent graded as No. 4, and 3.96 per cent as No. 5, or totally unfit for food. In September of the same year 56.42 per cent were graded No. 1; in October, 59.42 per cent graded No. 1; November, 61.26 per cent, and in December, 64.21 per cent graded as No. 1.

It may therefore be seen that of 100 dozen eggs which were shipped, we may say, in perfect condition, only 60 or 61 dozen reached the market in a condition such as to be graded as No. 1. This means, of course, that the consumer must pay a sufficiently higher price for these 60 or 61 dozen to make up for the loss on the No. 2, No. 3, No. 4, and No. 5 grades. Of course, with the exception of the grade No. 5, which is the rotten eggs, the others are not a total loss but they can never be sold at their full value, and when we take into consideration as well the expense of handling and candling, and culling out these inferior eggs, it may be readily seen that the consumer must pay upwards of 100 per cent, and sometimes more, above the actual cost price of the eggs to the commission men.

What is a Fresh Egg?

This brings us to the question of what constitutes a fresh egg. If we go into the market to buy eggs the product usually demanded by the consumer is fresh eggs. There are a great variety of ideas evidently, as to what kind of an egg is a fresh egg. We think, without exception, the kind of an egg that most consumers consider to be a fresh egg is one which has not been contaminated or which has not deteriorated from the time when it was laid by the hen. There is only one real kind of fresh eggs, but if one should ask the merchant for fresh eggs and expect to get the producer's opinion of a fresh egg, he should ask for strictly fresh-laid eggs. Just how long this style of nomenclature will suffice to describe this product we do not know, but this product has passed through several stages, first, fresh eggs; next, strictly fresh eggs; then it was called new-laid eggs, and strictly newly-laid eggs. Now the term strictly newly-laid, or fresh-laid, eggs, is the one which describes the product which ordinary consumers expect to get when they ask for fresh eggs.

(Continued next week.)

BOOK NOTICES.

"A Treatise on the Horse and His Diseases," is the title of a new book published by Dr. J. B. Kendall Co., Enosburgh Falls, Vt. It contains descriptions with illustrations of symptoms of common diseases of the horse, together with the treatment of same. This book is sent free upon request by mentioning Michigan Farmer.

Little Dramas for Primary Grades. By Ada Maria Skinner, St. Agatha School, New York City; and Lillian Nixon Lawrence. The little plays in this book for the third school year are derived largely from well-known prose and poetical selections of high literary quality. Cloth, 12mo, 176 pages, with illustrations. Price, 35c. American Book Co., Chicago.

Straight Talk on Plows—No. 1

What is the most vital feature of a Plow? Have you ever stopped to consider this question? What makes a plow run light? Most riding plows are built along similar lines. They look much alike and in a general way operate alike, but there is a great difference between them.

The one vital point is the SHARE, just as the vital part of a razor is the blade. When new, all plow shares are sharp and they do good work. The real test comes after the first sharpness has worn off, and the share has been re-sharpened.

There is but one Plow Share in the world that can be successfully re-tempered after it has been re-sharpened, and that is the

ACME STEEL SHARE

An Acme Share can be re-tempered any number of times by the farmer himself. Kept as hard and sharp as new, with a positive guarantee that it will not break, that it will scour as well as any share in the world. Other shares of an equal price cannot be re-tempered and are soft and quickly become dull after the first sharpening.



Showing a Farmer sharpening and re-tempering his ACME Share at home.

Acme Shares retain their hard, sharp, keen cutting edge as well after re-tempering any number of times as other shares do when new. What does this mean to the Farmer? Sharp shares mean light draft, easy plowing, faster plowing, better plowing and less wear and tear to horse flesh.

Acme Guaranteed Shares are used on but one line of plows—Moline Plows. They can be secured from no other source.

BEST EVER Sulky and Gang Plows Have ACME Steel Shares

The Best Ever Plow is the best plow that money and skill can build. Convenient, easy to handle, light draft, with no side draft. Ask your Dealer of "Flying Dutchman" Farm Tools for the "Best Ever" and "Acme Shares."

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Insist upon "Elephant Head" Brand Rubber Boots. Made of the Best Grade of Fine Para Rubber.

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All the best dealers carry "Elephant Head" Brand Rubber Boots in all lengths and you can depend on them to carry the best of everything.

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Farmers' Clubs

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Vice-President—C. B. Scully, Almont.
Secretary-Treasurer—Mrs. C. P. Johnson, Metamora.

Corresponding Secretary—Mrs. Wm. T. McConnell, Owosso.

Directors—C. P. Johnson, Metamora; H. W. Chamberlain, White Lake; Wm. T. Hill, Carson City; Jerry Spaulding, Belding; R. J. Robb, Mason; J. F. Rie-
man, Flint.

A. Baner Meeting.—The November meeting of the Essex Farmers' Club was held at "Hill Croft," the pleasant new home of Hon. and Mrs. D. S. Morrison. In the absence of Pres. F. J. Williams, Vice-president Mrs. C. Blemaster presided. Nearly all members were present of the 20 families composing the Club, and with several guests, made a pleasant company and a good meetings resulted. Following the opening exercises delegates to the twenty-first annual meeting of the State Association of Farmers' Clubs were elected, Mrs. G. J. Jewett and J. I. Daniels being selected, with Miss Emma J. Harvey and Mrs. C. A. Matthews as alternates. The question, "How may I make the Farmers' Club better?" was next generally and helpfully discussed. Promptness in attendance at its sessions and the taking part in its discussions, having previously prepared for the same by careful forethought, was urged upon

The biennial election of officers of Charlevoix Pomona Grange occurred at the meeting held with Peninsula Grange, Nov. 13. The attendance was good and more than usual attention was given to consideration of business matters. The committee on Good of the Order submitted the following recommendations:

1. That the county fair association be asked to change the rules to require that all Grange exhibits be in place on the first day of the fair; also that more than one plate of any variety of fruit be allowed to be shown in a Grange exhibit.
2. That hereafter all members bring well filled baskets to Pomona meetings.
3. That all members who are one year or more in arrears with their dues be notified, and if dues are not paid within six months such members be suspended.
4. That the secretary be allowed \$10 per year for his services.

All of these recommendations were, upon motion, adopted. It was suggested by Master Mears that the Pomona publish a year book, and he was authorized to investigate, and report on the feasibility of the plan. Harmony Grange was declared banner Grange for the second quarter, and Peninsula Grange for the third quarter. The finance committee reported receipts of \$86.98, and disbursements of \$74.74, leaving a balance on hand of \$12.24.

The following members were elected officers for the ensuing term of two years and were installed by Bro. E. B. Ward, of Charlevoix Grange. Master, Jacob E. Chew; overseer, John Knudsen; lecturer, Earl H. Clark; steward, Frank Hammond; assistant steward, Arthur Gaunt; chaplain, Mrs. Viola Heller; treasurer, John A. Newville; secretary, Leo D. Willson; gate keeper, Fred Heller; Ceres, Miss Sadie Hammond; Pomona, Miss Esther Shepard; Flora, Mrs. Samuel Persons; lady assistant steward, Miss Fannie Knudsen; member of executive committee, Herbert L. Olney; delegates to State Grange, Mr. and Mrs. Wm. Mears.

The next meeting will be held with
Wilson Grange on Thursday, February 12,
1914.—L. D. Willson, Sec.

Partello Grange, a healthy new subordinate located near the Calhoun-Eaton line which began life with the friendly interest of the patrons of both counties, is making a record for itself, and there are few Granges in either Eaton or Calhoun counties that can show better results in so short a time. On November 1 a class of ten candidates were given the first and second degrees, and two weeks later the third and fourth degrees were given to a large class. The Grange has organized a degree team and the members are working hard to become proficient in the work. Judging by the number of new members in sight the degree team will be busy the remainder of the winter. Partello will soon have one of the strongest Granges in Calhoun county. E. H. Luff and wife will represent Partello at the coming meeting of the State Grange.

Ohio Grange Growth.—From a report recently issued by State Secretary Cranz, of Ohio, it appears that the Buckeye state has added 22 Granges to its roster during the year ending Oct. 1, now having a total of 602 subordinates in good standing. The membership now aggregates 43,933, a gain of about 2,000 for the year. That state will hold its annual State Grange meeting at Lima, Dec. 9-11.

Pomona Meetings.

Eaton Co., with Eaton Rapids Grange,
at Eaton Rapids, Friday, Dec. 5. Address
by Gov. Ferris.

A. Banner Meeting.—The November meeting of the Essex Farmers' Club was held at "Hill Croft," the pleasant new home of Hon. and Mrs. D. S. Morrison. In the absence of Pres. F. J. Williams, Vice-president Mrs. C. Blemaster presided. Nearly all members were present of the 20 families composing the Club, and with several guests, made a pleasant company and a good meetings resulted. Following the opening exercises, delegates to the twenty-first annual meeting of the State Association of Farmers' Clubs were elected, Mrs. G. J. Jewett and J. T. Daniels being selected, with Miss Emma J. Harvey and Mrs. C. A. Matthews as alternates. The question, "How may I make the Farmers' Club 'better'?" was next generally and helpfully discussed. Promptness in attendance at its sessions and the taking part in its discussions, having previously prepared for the same by careful forethought, was urged upon

all members. The taking of the part assigned, on the program, to each member, though all may not do as well in their efforts as they could wish, was earnestly advised. Adjournment for dinner and the sociability which always accompanies this "function," was next enjoyed. A song by the Club opened the afternoon program, followed by roll call, the responses being, "Some things we can get along without." Among the not absolute essentials was mentioned the income tax, the automobile and the aeroplane. "Wholesome entertainment for young people," was next presented in a carefully prepared paper by

presented in a carefully prepared paper by Miss Emma J. Harvey. Defining "wholesome" to be that which is beneficial and sanitary to both body and spirit, it was shown that all, both young and old, should be deeply interested in this important matter which, at this present time, is receiving the much needed consideration through the press and otherwise, the public dance and the card table were shown to be responsible for the loss of valuable time and for misused talents, if not chargeable with more harmful results. Among the ills of theatre attendance is the promoting of distorted views

of real life and, to that extent, it is harmful. Moving picture exhibitions, if wisely supervised, may be truly helpful, but if not so supervised, harm may result. And, although we may have escaped these harmful results, yet are we under an obligation which we cannot escape to aid our fellow beings, especially those who are weak and therefore easily tempted. This the Bible teaches, the trend of the present time towards recreation which is not only helpful, should be changed to that which is helpful and growthful to body, mind and spirit. Among recreations recommended were the following: Base ball, basket ball, horseback riding, ice skating, guessing contests, authors, reading good books and stories which inculcate high morality. The closing thought of the paper, emphasized the danger of children and to youth, from much which passes for recreation at this present time and the positive duty, thereby laid upon the older members of society to correct this evil through the instituting of safe, harmless and helpful methods and opportunities for recreation for youth. The discussion of the subject treated in

The discussion of the subject treated in the paper was considerate and helpful. A reading, "The Simple Life," by Charles Luck, was the next number, and much good counsel was therein contained. "Eat healthful food—work less and play more—don't try to outshine others," were among the suggestions offered. Following a brief recess, C. A. Matthews, in compliance with the program, told how he would "keep house" if he were a woman. He started out wisely by saying, "I'd do as my wife now does and I'd have pancakes for breakfast." He would try to keep the house tidy but would not scrub as much as some housekeepers do. Following some discussion, humorous and otherwise, of the above subject, Mrs. D. S. Morrison fulfilled her portion of the program by relating, "How I'd run a farm if I were a man." The farm should contain but 80 acres as thereby but little hired help would be required. Would sow rye on hilly ground as a fertilizer. Would have plenty of good fruit and in great variety. Would keep the fences in good and clean condition. Would have a silo and a tool house, and in the latter all farm tools should be kept, when not in use. Would do all work with complete-ness, and would try to make the home surroundings pleasant and attractive. In the discussion which followed the statement was made that in 1890 90 per cent of the population were farmers, while to-day but 30 per cent are farmers, showing that there is good reason for the cry, "Back to the farm!" The hour for ad-

journalist having arrived, the remaining numbers on the program were deferred to the December meeting, which will occur on the second Wednesday of the month at "Prairie Bell Farm," with Mr. and Mrs. Frank Bottum.—J. T. Daniels
Cor. Sec.

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"After all other remedies had failed, 'Sal-Vet' destroyed the worms in one of our horses." It surely does the business

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60 days these hogs weighed over 150 lbs., and they are the best hogs I ever owned. I will never feed any remedy other than 'Sal-Vet' hereafter."

M. JACOBS, Box 56, Moorestown, Mich.

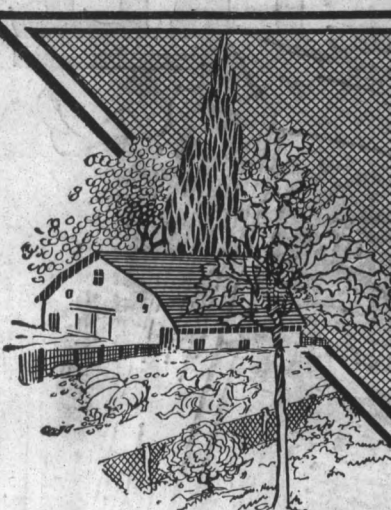
"My pigs were full of worms, and did not thrive at all. After feeding 'Sal-Vet' a short time, I was convinced that it is a wonderful worm destroyer. It was not

long before the pigs were cleaned out thoroughly, and began to grow."

BEN A. BAUGHMAN, Northville, Mich.

"There is no 'guess-so' with 'Sal-Vet.' Results are so apparent that there is no room for doubt. My cows increased one-third in milk at the end of the first week's use."

H. E. FARRAR, Spruce, Mich.



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"The Sal-Vet Man"

Registered Pharmacist, Graduate of the National Institute of Pharmacy



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is the biggest boon to stock owners ever discovered. It stops losses from worms, prevents disease, aids digestion, tones up the system, helps food do your animals more good, gives them sleek coats, bright eyes and plump bodies. It pays for itself several times over in extra profits and protection against disease. It enables you to feed new corn safely and greatly lessens the danger from hog cholera and other destructive plagues. Read these letters:

"My neighbors lost 25% of their stock from corn fodder and kaffir fodder poisoning and altho' I fed the same feed that they did, with the addition of the 'Sal-Vet' which I gave, I lost none."

—Frank Frame, Sawyer, Kansas.

"Before I started to feed 'Sal-Vet' my hogs were sick, and I had lost 6 of them; since feeding 'Sal-Vet' I have lost none. All now have good appetites and are thriving."

—Ernest Triebel, Rt. No. 2, Clearwater, Minn.

"The benefit which my horses, cattle and sheep derived from the use of 'Sal-Vet' is such as to make it almost indispensable." — A. L. Martin, Director of Institutes, Department of Agriculture, Harrisburg, Pa.

Sal-Vet is a medicated salt which expels the deadly stomach and free intestinal worms without bother to you. You place it where your animals can run to it freely and

THEY DOCTOR THEMSELVES

It requires no dosing, no drenching, no starving, no trouble at all. Surely you cannot afford to turn down this opportunity I give you of seeing for yourself on your own farm how Sal-Vet will save and make you money. Remember I don't ask you to send me a cent of money in advance—you have nothing to pay when the shipment arrives except the freight charges. At the end of 60 days report results—tell me what Sal-Vet has done for you. If it fails to do what I claim—if it don't rid your stock of the profit-eating stomach and intestinal worms, I'll cancel the charge—you won't owe me a penny. Send the coupon today.

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