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The Anthracnose of Cucurbits.

IN a preceding article the author described the wilt of cucumbers and muskmelons. This is a disease which does more or less damage in Michigan. It shows up, as was fully described, as a slight affection of the leaf, which works farther and farther back until a wilting of an entire runner is produced. This disease is caused by bacteria, and is brought about by the stoppage of the water tubes by the organisms. Its effect on the fruit is purely secondary—that is, the fruit is not directly rotted or injured, the effect coming wholly from the wilting of the runner.

The disease to be discussed in this article is of a fungous nature, and it shows up in three ways: First, in its effect on the leaves; second, in its effect on the general health of the plant; and third, as a rot of the fruit.

The name of this disease, anthracnose, is the name more or less in common use, which is applied to the characteristic class of diseases produced by a related group of fungi. We have, classed under this head several of the worst fungous diseases: notably, bean anthracnose, cotton anthracnose, clover anthracnose, and apple anthracnose, or bitter rot. The general character of the diseases is quite similar, and in the main the description given here for melon anthracnose fits for the general run of these diseases.

On the cucumber and related plants, the first effect of the anthracnose is found on the leaves. The careful grower may notice yellow, brittle spots on the leaves of his plants. These show up on the plants during July or August, and are more prevalent in a wet season. When the fungus producing the dead spots is in the right stage, pink, gummy masses appear. These may be so marked in the leaf as to make a gummy exudation without definite arrangement, but more frequently the pink masses are clustered about the dead spot. As has been said, only the careful grower sees this effect, since insect work, dryness, etc., cause this trouble to be overlooked more commonly.

But though the attack on the leaves is overlooked, the fungus soon makes its presence felt. With the dashing rains and the continued wet weather the disease spreads rapidly and the effect on the general health of the plant shows up. The patch looks yellow and ragged, and with severe anthracnose and the decimation produced by wilt, the patch shows bare areas.

As every farmer and fruit grower should know, the leaves of the plant are the organs which make the food. Water and minerals are obtained from the soil, but the starches and sugars, which form the bases for the making of the foods, which nourish the plant and which go into the fruit, are made in the leaves, and unless the leaf-spread is complete and healthy, the plant suffers and the fruit is inferior.

Therefore, as a result of anthracnose, the plants are stunted and in cases of

severe attack the fruit is gnarled, off-color, and distorted. The grower calls the cucumbers so starved "nubbins," and many a crop last year was in a large part of this kind.

Then we have the direct effect on the fruit. Germs from the leaves are washed on the young fruits, and here produce the characteristic anthracnose spots—small, soft, round depressions which, when ripe, become covered with masses of pink spores. Each spot upon a cucumber, muskmelon, or watermelon, shows where a spore was washed, and each spot in turn becomes the center from which millions of spores are sent out, each capable of producing rot.

The rot starts as a very small soft spot. Soon the flesh sinks in and becomes watery, and finally the spot may become an inch in diameter and extend very deep into the flesh.

The loss caused by this fungus is enormous. The loss may be looked at from several angles. First, a shortage. This comes from the effect on the leaves and the general stunting of the plants. Frequently the farmer sees no reason for the lack of crop; he only knows that the cucumbers are not yielding. Here is where the weather is blamed. Then there

the complaints made by the farmers, as reported by managers of salting stations, this form of loss is considerable.

It may be asked why it is, if this disease is so widespread, and does such damage, that the farmers have not heard of it, or do not mention it. For the most part, all know it, but as yet no commonly adopted name exists. Growers call the effect "blight," "rot," "wilt," "rust," "leaf blight," confusing in these names many other diseases. It is because of this confusion of popular names that students of plant diseases are attempting to bring the name anthracnose into common use for this trouble. There is much in favor of the usage.

Weather.

Many growers feel that much that is written about plant diseases is unnecessary. They have an explanation for all the symptoms described above. They say the weather isn't right—too cold, too wet, too hot, too dry. It is only when we view the disease in light of the cause and consider the effect of the weather upon this cause that we can get means for fighting the disease. We can't protect our plants from the weather, but we can protect our plants from this cause of rotting when the weather threatens.

past two years, and so far no complaint has been made. Orton recommends:

First.—Planting close in the row, but with wide rows in order to allow spraying throughout the season. Keep at least a foot alley open.

Second.—Spray with Bordeaux mixture 3:6:50, when the vines begin to run. Spray thoroughly, and cover the stalks and the under side of the leaves.

Third.—Spray every ten days with a stronger Bordeaux, 4:4:50—every ten days in dry weather, more often in wet seasons.

Profits thirty times the cost of spraying have been obtained by this method.

In view of the careful trials reported by Orton, and their evident success, it seems safe to recommend his advice, but we must hold in mind the chance of effect on the blossoms. The early sprayings can, of course, be given, and thus insure the general health of the patch before the fruit begins to be formed. With the later sprayings, the grower can soon decide whether the fruit is failing to set, and thus avoid severe loss, should such loss be a common result of spraying.

To sum up this article, I have compared this disease with the wilt described some

months ago. Both are severe diseases, and I have told how the loss is brought about from each. I have mentioned the relation to the weather, and tried to point out that while a fungus causes the disease, the weather forms and aids the spread of the disease. Lastly, I have told what the government recommends as a control measure for this disease, and have mentioned the possible danger in the use of this treatment.

The pickle industry in this state involves thousands of acres and much capital is invested. To many farmers the growing of this class of plants is an important thing. The growing of cucumbers, muskmelons and watermelons, is rendered uncertain by this disease. Uncertain crops mean loss and hardship to the farmer. It is therefore urged

that farmers protect themselves by proper preparations for spraying.

Mich. Agr. College. G. H. COONS.

FARM EQUIPMENT AND THE LABOR QUESTION.

That the labor situation is a serious one no man familiar with the subject can deny. Farmers are handicapped in their operations by the lack of assistants. The output of food products is not what it would be were helpers more plentiful. In any number of cases acres are absolutely lying untillied because no one can be hired to do the work which the farmer himself is unable to perform. In such cases he tills what he can unassisted and allows the remainder of his land to lie idle.

As a rule, there is less difficulty in securing help on farms large enough to afford the best modern equipment. A man who can operate a machine is bet-



An Object Lesson which Doubtless Contributed to the Success of the Alfalfa Campaign in Grand Traverse Co. Last Month. Alfalfa Field on the Farm of Henry Brodhagen, Less than One Year after Seeding.

may be a fair crop, but the quality is inferior. It is said that the entire crop in certain sections was off-color and irregular in shape this past year. So far as the information has been obtained, these cases were due to the ravages of anthracnose—notice, not on the fruit, but due almost entirely to the work on the leaves. Just how much loss this means cannot be known until it is found how the poor colored and irregular pickles sell. Many packers put up this sort of pickles, trusting that there would be a market for them even at a reduced price. In some years any quality sells, in others only the first-class can command a price. The other form of loss comes from rotting in the field. Such loss is hard to estimate, the only definite information comes from counts made in the fields. These show that ten per cent as an average of the pickles, late in the season, are not pickled because of spots and rotting. Indirectly judging from

By all odds the weather which favors loss is the sort shown last season. A very wet and cold August added to the wet July, gave all that was necessary to bring about enormous loss. In the preceding year, when drought prevailed, little or no loss was reported. These two years when contrasted give the essential points with respect to the weather.

Control.

To control this disease two sets of experiments need be mentioned. One set by W. A. Orton, of the United States Department of Agriculture, done in 1906-07, and the other by C. D. Jarvis, of the Storrs-Connecticut Experiment Station, published last year.

Orton had great success in his treatment, while Jarvis noted some cases where spraying did not help, but rather interfered with the crop because of the effect on blossoms.

Orton's recommendations have been given to farmers in Michigan for the

ter satisfied than the one who must work all day in the old-fashioned manner when everything had to be done by the hardest way.

Men and women in every walk of life are, after all, very much alike and all seek the easiest way of securing results. So by eliminating as much as possible of the drudgery of farm life we make it more attractive not only to ourselves but to those whom we employ.

A man who has had his share of trouble in securing help has recently been enabled to install an electrical current in his farm buildings owing to his proximity to a large power plant. Not only are his barns lighted by this means but his milking machine and other dairy apparatus, including a vacuum cleaner for stable and cows, is operated by this silent but efficient force. He now finds no difficulty whatever in securing all the help he requires.

Employers everywhere are installing the last word in equipment and the farmer is fast falling into line. Old-fashioned methods won't do today. In exact proportion as we improve labor conditions, here as elsewhere, do we remove objections on the part of our employees. This means additional expense but one that must be met by increased profits of yield and marketing. Along both these lines there is considerable room for improvement, for even the most intelligent among us has yet much to learn about the possibilities of agriculture.

Genesee Co.

E. E. R.

HOW TO HAVE A GOOD HAY CROP IN A DRY SEASON.

A neighbor who moved into a new house, and made a garden in another place, seeded the old one with timothy and red-top. The second year after seeding was very dry, and the best meadows in this locality cut a very light swath. In striking contrast the grass on that old garden spot was as tall and thick as any grown in this country in a wet season, and good enough to satisfy any reasonable farmer.

Why did this old garden spot raise better grass than any meadow in the neighborhood? Why did it not suffer for moisture the same as other grass lands in the vicinity? Mainly because it was so much richer, to supply abundantly plant food—the means of growth, and was fuller of humus to absorb, and retain more of the rain water for the use of the plants. A large proportion of humus in the soil no doubt facilitated the rise of the ground water by capillary attraction. The garden had been manured with stable manure, year after year, for 50 years and plowed deeply, until it was as rich as a guano island to the depth of 18 inches or more. These were the reasons—a rich, deep soil, containing a large proportion of humus.

Of course, seeding down old gardens to raise big crops of hay would not be wise so long as they produced good vegetables, and were not polluted with cabbage club-foot, potato scab, and the numerous blights that plague the garden, and the gardener.

However, the same condition that made this old garden spot so productive in a dry season can be secured for whole meadows by the employment of the same means. The conditions are a soil made rich and deep with rotted manure. Of course, it would cost considerable, but no good thing can be obtained without the expenditure of money, or labor, by somebody; and it will be worth more by the increased crops of hay than the improvement cost.

It may be said: "Manure is all right, for grass and grain, but we never have enough of it and we keep all the stock our farms will carry." Try keeping more stock, and the additional manure will supply the grass and grain to feed them.

Meadows must be manured to raise hay profitably. It requires just as much labor to mow and rake a light yield as a heavy one. Some farmers may say: "Robbing Peter to pay Paul. Put manure on your meadows and have an empty corn crib. Corn is worth more than hay any time." Maybe not. Take the following states: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. For ten years from 1901 to 1910, the average production of hay per acre was 1.26 tons, and the average farm value per acre was \$16.53. The average value of corn per acre in those states, for the same number of years, was \$21.98—only \$5.45 more than an acre of hay. The corn ground had to be plowed, harrowed, planted, cultivated

four or five times, cut up, husked and shelled, before it was ready for market. The only expense of raising an acre of hay after the meadow is seeded, is in cutting and drying the hay. Does anybody believe that \$5.45 would pay the difference in cost between raising a crop of corn and a crop of hay?

Most farmers continue to mow their meadows until the grass begins to run out, and then put on the manure and plow them up for corn, to be followed with oats or barley and wheat, and then reseeded. Grass seed is expensive and it would save a great deal of cost if our meadows could be kept longer in grass which could be done by top-dressing with manure. The writer drew out stable manure in the fall and winter and spread it thickly on half of a ten-acre meadow. In the spring as soon as the grass started, the coarser portions of the manure were raked up with the horse rake (to prevent it from getting into the hay), and drawn back to the barn. The ground was then given a thorough harrowing with a spike-tooth harrow to pulverize the manure, scratch up the hide-bound surface, let in the air, and sweeten the soil.

The benefit of the manure and harrowing was wonderful. There was more than twice as much hay on that part of the meadow than on the other. In case wild carrot, daisies, or other noxious weeds should gain a foothold in the meadow they should be spudded out effectually.

Pennsylvania.

J. W. INGHAM.

FARM NOTES.

Permanent Pastures for High Land.

I have a hog's-back containing about six or eight acres which is covered with an old June grass sod. Now what could I sow on it to make a permanent pasture for sheep or cattle? The June grass affords but little pasture after June. Would alfalfa make a good permanent pasture? If so what time of year should it be sowed? I have a small huckleberry marsh; there is lots of marsh that has no berries. How could I start berries where there are none, and what time of year?

Ingham Co.

O. J. H.

While June grass or Kentucky blue grass is perhaps the most valuable single grass for a permanent pasture on high land, if grazed closely and not encouraged with an occasional application of manure it does not yield a satisfactory amount of forage. The best authorities on grasses for permanent pasture, however, include Kentucky blue grass for all upland pastures in this latitude.

For sowing with same, timothy, orchard grass, meadow fescue, tall oat grass and sometimes Russian brome grass is advised, together with alsike and white clover, and in some instances medium red clover and alfalfa are included in moderate amounts.

Alfalfa pasture, however, cannot be expected to endure well unless pastured lightly and the residue cut for hay, then stock kept out of the field for a time until it makes some growth. Close pasturing would be very detrimental to the stand. It makes the very best of hog pasture, however, if handled in the manner indicated.

One trouble, however, with permanent pastures of all kinds is that they are grazed too closely, especially early in the summer and late in the fall, and if satisfactory yields of grass are expected from them this practice must be abandoned. Midsummer is a good time of the year for seeding permanent pastures, providing a good seed bed is prepared, although they may be sown early in the spring with equally good success.

Propagating Huckleberries.

Very little has been done with the artificial propagating of huckleberries. Plants are grown from the seed in greenhouses, but a great deal of care is required to make this a success. They are also propagated from their underground stems which are found in many varieties, these being taken up in the autumn and cut in lengths of two or three inches and planted in boxes of sandy peat or loam, and also by layering. Perhaps the best method, however, for farm practice, would be to secure young plants developed under natural conditions and thicken the stand in the swamp by a supplementary planting of these.

Bromus Inermis as a Pasture Grass.

I have a field that is part clay the balance being sandy and some of it rather light. Could one seed it to *Bromus inermis* so as to make it a permanent pasture, or would sweet clover do better? Would it be all right to cultivate the seed in when we cultivate the beans the last time?

Mecosta Co.

C. H. O.

Bromus inermis is a comparatively new grass in this country and has not been grown here sufficiently long or generally

so that its good and bad qualities are well known upon our different soils. There is a more or less popular idea in this country that this grass is especially adapted to dry sandy soils deficient in plant food and humus. However, while it does compare favorably with other grasses in this respect, the best results with this grass cannot be gotten upon such soils. It will however, bear grazing well and with a thin seeding will take complete possession of the ground since it spreads by means of underground root stocks the same as quack grass, and like it, becomes something of a weed pest when a field is broken up for any other crop. Its chief use in this country has been in localities where grass was desired to bind loose soils, for which purpose it is admirably adapted owing to the habit of growth above mentioned. The better way, in the writer's opinion, would be to experiment with this grass on a small scale at first rather than to sow it over any considerable area.

Sweet Clover as a Pasture Crop.

Sweet clover has not been used as a forage crop, but rather regarded as a weed, in this section of the country. In some localities, however, it has been used successfully both as a pasture crop and a hay crop. The secret of pasturing it with success is said to be close pasturing in the spring and keeping it sufficiently well stocked so that it will be eaten down at all times to a point where fresh shoots are continually starting. It is considered doubtful, however, even by those who are enthusiastic regarding its merits, whether sweet clover will ever serve a more valuable place as a pasture plant than for supplementing other pastures, but its ability to grow on poor soils and build them up in fertility has made it friends in the more or less limited field of its use.

Either of the forage plants above mentioned are best sown in the spring, although they may be successfully seeded in midsummer under favorable conditions. Sweet clover is also a plant which should be grown in an experimental rather than in a wholesale way until the grower becomes familiar with its habits and limitations. On soils that will grow alfalfa well it would undoubtedly be the most profitable crop to sow. It requires a very firm seed bed for best results in seeding and, like other legumes does best on an alkaline soil. In some cases inoculation may be necessary to the getting of a good stand, as with alfalfa.

LILLIE FARMSTEAD NOTES.

I don't think I ever saw so much rain fall in one-half hour as it did this afternoon, June 25, in our particular locality. This rain was accompanied by a terrific wind. Had our wheat been as heavy as some years it certainly would have lodged it fearfully. The straw is short and stands up nicely. Practically no kind of a storm would cause it to lodge. Oats, of course, and corn are not high enough to be affected at all. Oats are heading out, many of them not over a foot high. The rain has come too late. I wish I knew just how much water fell in this terrific shower. Of course, lots of it was lost, it ran away on the surface of the ground in great rivulets, but we needed the moisture and it did an immense amount of good even though it did some harm with it. While we had a good rain only last Friday afternoon the ground was again dry. The creek in the pasture had stopped running, and only on cultivated fields that had been cultivated since the rain could you notice that we had had a recent rain at all. This heavy shower, however, will wet down and do an immense amount of good, especially to new seeding and the second crop of alfalfa and clover. The new seeding needed the moisture as much as anything and, of course, the second crop of clover also needed it. It may be that we have had sufficient rain now so that by cutting the clover as soon as possible it will get a good start for the second crop, and I am sure that it will help the alfalfa.

This severe wind raised havoc with the alfalfa which was all in cock and covered with hay caps. Hay caps are certainly no good in such a storm as this. The wind not only blew the caps off but it blew the cocks down and the alfalfa is scattered all over the field. I had my heart set on making some very choice alfalfa hay, but this is a storm that teaches a man his insignificance when he attempts to battle with nature. We have simply got to collect the scattered alfalfa and put it in cocks again and put on the hay caps and wait until it is dry, and take the quality of hay that we can get. I suppose we could be thankful that

the buildings were not blown down or the orchard rooted out, or something of that sort. At any rate, the storm did an immense amount of good as well as some harm.

In two hours time if it had not rained we would have finished planting our late potatoes. Of course, this is pretty late, June 25, but we have had pretty good luck in raising good crops of potatoes the last few years by late planting, so I was in no hurry. We could have planted these potatoes quite a little bit sooner this year, the ground was all ready, but I delayed it because we have been delayed planting until about this time for the last three or four years. We were working the ground occasionally and killing the weeds and getting it in fine condition. This rain, of course, has packed the ground so that we will have to harrow soon on that portion of the field which is planted, and the ground will have to be refitted on that portion which is not planted because it will be packed down so that I don't think the potato planter will work very good. The task of planting potatoes has been reduced almost to a minimum. Before we had a potato planter it took several men quite a while to plant what few potatoes we plant, and it is hard work. But since we purchased a potato planter two men and a team can plant the potatoes in a short time and do it better than it can be done by hand, and distribute fertilizer at the same time the seed is planted. What used to be a hard and severe task to be dreaded is now reduced to a pleasant job. The man who sees that the seed is placed in the right place is the only man that has to do any work, and he rides, and it is extremely light work, and then again, the potato planter doesn't pull very hard for the horses, and you can't have them walk very fast or else the man cannot see that the seed is properly placed, so take it all in all, it is an easy job and a rapid job to plant potatoes with a good potato planter.

When to Seed Alfalfa.

The question is often asked now days, when is the best time to seed alfalfa? Really I don't think anybody knows just when is the best time to seed alfalfa. It all depends upon conditions. If you have the right kind of land and the season is right, a good time to sow alfalfa, then, is early in the spring. You stand a chance of getting one good cutting that year. On the other hand, if your land is foul or if other conditions are not proper in spring, it is undoubtedly better to defer the seeding until this time of the year, or even until August. If the land is plowed early, or fall-plowed and harrowed occasionally until this time of the year, the last of June or first of July and then there comes a good shower like we have recently had, it would be a splendid time to sow alfalfa. It would germinate at once and this warm weather would bring it along rapidly. On the other hand, many seasons we have no such rains as this and the seeding would have to be deferred until August. Then again, I have seen seasons when it was a very poor time to seed in August. The land would be so dry that the seed would not germinate. Before we would get sufficient rain to insure proper germination it would be so late in the fall that it would be risky to sow it, and so it goes. One cannot give an exact time for anything of that sort. It depends upon the conditions. Get the land ready and seed it when conditions are right.

As I have stated before, I seeded 15 acres early this spring, the last of April and the first of May. It has been extremely dry and a very severe test, but I am going to have some alfalfa just the same. It will be remembered that part of this I seeded with winter rye as a nurse crop, part of it I used no nurse crop, and part of it with oats. Now at the present writing I am pleased with winter rye as a nurse crop. The rye doesn't grow up like the oats and shade the land and yet it seems to have dwarfed all the weeds. The alfalfa is up higher now, much of it, than the winter rye, while in the oats the oats are taller than the alfalfa and have shaded it some. Where we used the alfalfa alone the weeds are coming in so that it will certainly have to be clipped. It looks now as if winter rye was the best kind of a nurse crop to use when you sow alfalfa in the spring. Of course, when it is sown late in the summer or in August it needs no nurse crop, it can get along without it because the field has been cleaned of weeds and this is a time of the year when few weeds grow anyway, and that is the principal reason why, taking everything into consideration, it is good to sow it in late summer.

COLON C. LILLIE.

OPPORTUNITIES IN NORTHERN MICHIGAN.

Will some of your subscribers in north-eastern Michigan tell us, through your columns, of the chance for a man with not much money but plenty of grit, to make a home in that part of the state? If a man has just about money enough to buy a farm of cut-over land, besides his stock and tools, what chance has he to pay for his buildings, fences and living while clearing and subduing his land? What will it cost to clear the average cut-over land if hired by the acre and how much can a good man clear a day? I am tired of renting high-priced land in southern Michigan and am favorably impressed with Ogemaw, Gladwin and Arenac counties and think the actual experiences of settlers in that part of our state would be very interesting reading.

Hillsdale Co.

A. RENTER.

A man with such an equipment should not fear to come north and make a home of his own. Many of us about here have started with less and won out.

You can buy this cut-over land on time, put up some cheap buildings, clear your land, raise your crops and be your own boss. Then again, if the settler prefers he can buy a farm partly improved, or rent an improved farm at moderate cost. Both wild and improved property can be bought at a reasonable price. The cost of clearing varies greatly, perhaps from \$5 to \$15 per acre would be about an average.

This part of the country is developing steadily. All kinds of grain, potatoes and hay, beans, etc., do well here. Alfalfa, silos and dairying are rapidly coming to the front. Butter factories and cheese factories are locating in nearly all the towns. The country is well watered with spring creeks, and trout and other fish are abundant. Deer and bear are sometimes seen, though they are becoming scarce. We welcome settlers with 'grit.'

Ogemaw Co.

A. L. DUNLAP.

There has been considerable inquiries about land in the portion of Michigan comprising what is known as the tenth congressional district and covered by the Northeastern Development Bureau. A portion of this land lies along Saginaw Bay and going northward to the Straits of Mackinaw the timber on most of these lands has been removed years ago and they were left by the lumbermen as not suited for any purpose in which they were interested.

An inquiry for homes from people living in states where land has reached such a price they could not purchase it with their limited means, has developed the fact that much of this abandoned land is suitable for fruit growing and agricultural purposes and a portion of it has been purchased and settled upon and the owners are on the road to success. Of course, there is an expense of cutting brush and taking out the stumps but by the improved methods in removing these obstructions to farming the costs have been reduced to a minimum by use of explosives, stump machines and fire, thus rendering it quite easy to get a home and a productive farm.

Some of these lands were purchased by men who intended working in the lumber woods, and used as homes for their families and themselves when not so employed. Such men have not made a marked success except in a few instances and have drifted away to other places where lumbering was still carried on, while others are coming in and making good. Much of this land was returned for taxes and has been sold by the state for about the expense incurred. The value of land has appreciated to such an extent that it will bring from \$10 to \$20 per acre in the market.

In some cases there is enough timber, such as hemlock and hard woods, left for fuel and building purposes, but in many cases it will have to be purchased for such uses.

One serious drawback in some portions is large tracts have been purchased by companies and are being used as stock ranches, to the detriment of communities in which they are located as it retards settling and clearing up such lands, and keeps settlers out.

Some lands contiguous to the bay shore in Arenac county were formerly covered with water, which has receded and left the same dry. On these lands sugar beets, onions, and other crops grow luxuriantly and they have become valuable.

Some of the plains lands have been exploited by speculators and been sold for prices far exceeding their value. Of course, where such land will take clover and grow seed at the present prices good returns are received.

The writer came into Arenac county

nearly 30 years ago when lumbering was yet carried on. Not much interest was taken socially, mail facilities were limited, and, of course, no telephones. Then there was only one primitive stone mill, now there are two up-to-date roller mills and six elevators in the county and seven banks, all of which do a prosperous business, and I think there is a good prospect for anybody who will make the best of his opportunities should he decide to settle in this county.

Arenac Co.

PETER, GILBERT.

Gladwin county is nearly centrally located in the state, not so far north but what the earlier dent varieties of corn mature splendid crops on our new lands. Wheat, rye, oats, barley, all do well here after the ground has been cleared and subdued, and no better clover can be produced even on the older lands than on our virgin soil where we sow the seed from April any time up to September and invariably secure a good catch. Alfalfa, where tried, grows remarkably well but as it is still a new county, more of this will follow later. Our soil, unlike so many imagine, is not pine sand. While there are waste sand stretches in this county the bulk of its lands are clay, clay loam and soils varying with a mixture of black sand, gravel and clay. We have no extensive marshes nor hilly stretches of country, the land lies gently undulating, so drainage is easy. Blue clay subsoil from three or four inches to 16 inches below the surface soil is characteristic of these lands. Sugar beets do extremely well here, the writer's testing on an average of .17% per cent last season, and chickory does equally as well.

What are these lands worth? They are held at from \$10 to \$40 per acre unimproved, i. e., in the wild, cut-over state; they range from \$50 to \$125 per acre improved, up-to-date, fenced, buildings, etc. Prices depend upon nearness to good markets, whether upon good worked roads or not, nearness to schools, etc. Forty dollar land within two or three miles of a good market, schools, R. F. D., etc., is cheaper by all odds than equally as good soil eight to ten miles further removed, on poor roads, etc., at \$10 per acre. A man with but little capital can find no better bargain for his money than in farm lands in this section of the state.

Perhaps what one does all others would not, possibly could not do, but 40 acres for one man to chop, pick up and clean up in one season, without any hired help, was my stint last season and I came out victor. This was work, real old-fashioned labor. No man has any business upon any farm who could not clean up 20 to 30 acres of most of these lands in one season, one may figure out the acres per day or week to suit. But the clearing and cleaning of these lands varies so in denseness of underbrush, trees, etc., that to say how much one could clean in a day or week would be well nigh impossible. On most of these lands are green and dead trees, most of them dead, such as black ash, swamp-oak, elm, etc., which are still sound and ordinarily enough to be found upon an 80-acre tract to build a fair sized barn, house and outbuildings for the place.

A man able to work, even having capital, would eventually make and accomplish more, I believe, by doing the brunt of the clearing himself than to depend too much on the hired help that is to be had. There are here, as well as elsewhere, men who for various reasons, rent improved farms and fields every season. These are in easy distance usually of most of these unimproved lands so that the newcomer finds himself not in a wilderness after all.

Fruits of all kinds do well here, and nature has made acres of huckleberries (high land), raspberries, blackberries, etc., rivaling in size and lusciousness the tame varieties. These lands have no equal in producing peas and potatoes, the latter invariably smooth as eggs and of extra quality. Any person with grit will make himself or herself known anywhere they're staked, sooner or later, but grit, with ambition to employ it can not fail to succeed here when intelligently directed.

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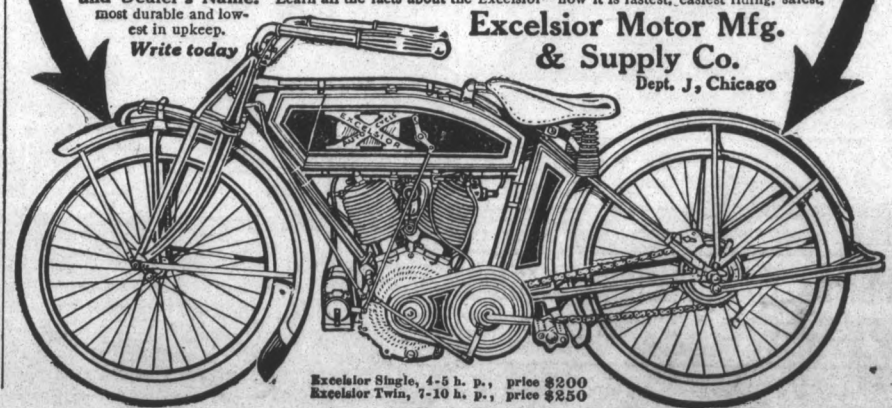
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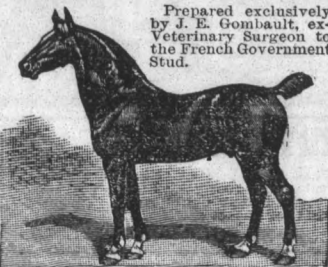
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Sheep Feeding and Agriculture.

THE sheep feeding industry in this section began on a small scale 40 years ago. By the term sheep feeding, as used in this article, is meant the feeding of lambs shipped from the west, to be reshipped later to eastern markets. From small beginnings the business has developed till it has become one of the principal industries of the county, and has spread into some of the adjoining counties where it is carried on extensively. The center of the industry may be said to be around Jonesville. It was here that the first start was made, and it is here that the business has been most largely practiced and has reached its culmination. From this station alone, upwards of 40,000 lambs have been shipped in a single season. The influence of the industry has been many-sided and important, and has played a leading part in the development and prosperity of this section, during the last quarter of a century.

In considering the changes produced on the farms of this locality, by the introduction of sheep feeding, perhaps one of the most marked is in the kind of crops grown. With the coming of the lambs from the west, corn assumed a greater prominence and was grown more and more extensively each year, while wheat took a second place. More hay and oats have been grown, since sheep feeding became extensive, although the change in the case of these products is not so marked as in the case of corn. For many years the corn crop has been considered the most important and valuable, and it is seldom that a bushel of corn is fed beyond the limits of the farm on which it was grown. In spite of the large amount of corn raised, many car loads of western corn are purchased by local feeders, the home-grown crop being insufficient to meet the demand.

In taking account of the changes wrought by sheep feeding, the effect upon the land itself is even more marked than the change in the kind of crops grown. Sheep manure is one of the best of fertilizers, and the farms in this locality on which thousands of lambs have been fed in recent years, are the most fertile and productive to be found anywhere in this section. The farmer who feeds his hay and grain on his own farm has at hand the material with which to enrich his land for future crops. The sheep feeder not only does this, but often feeds many hundreds of bushels of grain and many tons of hay that he has not grown, the waste from this extra produce also going to enrich the land. As a result of this process, the farms in communities where sheep feeding is carried on are unusually fertile and produce banner crops.

But the influence of sheep feeding does not stop with the effect upon the land and the kind and excellence of the crop grown. Another factor but little less in importance, is the erection of fine large barns. The man who feeds anywhere from 200 to 2,000 sheep must have barns adequate for the purpose, and as a result farms in a sheep feeding district are equipped with a group of fine large barns such as are seldom seen elsewhere. In addition to room for the lambs, there is room for the hay and often for straw and cornstalks. One benefit derived from the erection of so many barns, is the saving over the old method of stacking the hay. The barns grew out of the necessity of the case, but they add much to the prosperous appearance of the farm and are of practical value not only in the sheep feeding season, but all the year round. Not the least important of the benefits of sheep feeding as carried on in this section, is the spirit of enterprise which it fosters. The business has received a black eye once or twice, and feeders have lost heavily, but on the whole, good profits have been realized. Mortgages have been lifted, barns built, bank accounts made, and new farms purchased—all the direct result of the sheep feeding industry. There are farmers in this locality who have fed sheep each successive season, for a quarter of a century, and who would rather abandon any other feature of farm work. At times, the available capital of the locality is pretty well invested in western lambs. Some of the larger feeders often feed lambs which at marketing time, represent from twelve to fifteen or eighteen thousand dollars. These are the men who feed lambs year after year, never missing, no matter what the prospects may be. Many of the smaller feeders may skip a year, because of high

prices of lambs or scarcity of hay or grain. But the large feeder is in the game always, and nearly always wins. Experience and good management are requisites to success in the sheep feeding business as in everything else.

Hillsdale Co.

J. A. KAISER.

HORSE BREEDING FOR THE FARMER.

The high price of horses which has prevailed for the past 12 years has been a puzzling feature to all of us. With the many mechanical devices of travel, and even farm power for tilling the soil, one would naturally think that the price of horses would be on the downward movement instead of going higher each year. Of course, one of the principal reasons for this is, land is getting so very high in price that farmers think they can not afford much pasture land on their farms for pasturing brood mares, or any stock, in fact. Then the larger ranches, where thousands and thousands of horses were bred and raised, have been broken up into smaller farms for crop growing purposes. In view of this it is the scarcity of horses that undoubtedly figures in the present high price.

In 1898 my father and I had a sale in Illinois. We sold 25 head of good young horses, Normans and Clydesdales, ranging from two to seven years old. This fine bunch averaged us around \$50 per head, while at the present time it would have brought \$125 to \$250 per head. Think of what a difference in price. From that year until now the price of horses has steadily advanced, yet we see more automobiles and motor trucks in large cities than horses.

There is money in raising good draft horses at the present prices, but the reason most farmers do not cater to the business is that it requires too long for them to mature. In other words, a farmer in moderate circumstances can not wait so long for returns from his investment. Therefore never again will we see "cheap horse flesh."

A farmer can produce thousands of dollars worth of hogs or sheep in a year or two. But when it comes to the horse business and he has to patiently wait four or five years, taking many chances of even then having a marketable horse, it is rather slow and discouraging. Yet if a farmer can afford to go into the horse business and follow the lines of good heavy draft stock he can make as much or more money and easier than any other line of farming today. We think that we are getting an extremely high market price for cattle and pork at the present prices of \$7.50 to \$9 per cwt. But when you come to figure up that a good sound five or six-year-old horse, that weighs 1,500 lbs., brings \$250 to \$275, or around 20 cents per pound, it looks pretty profitable. As a matter of fact, we can produce a colt nearly as cheaply as a steer, and in fact cheaper when we come to figure the amount of "cash corn" the steer consumes before he will bring the highest market price. One of the greatest drawbacks to the horse business is that there are too many light weight horses bred. A light horse of 1,000 to 1,200 pounds is pretty handy, it is true, but when you come to load them down on the road or in the fields at work they can't stand up. This is what accounts for so many inferior, blemished, plug horses—they have been worked beyond their capacity. A small "engine" can not do the work of a large one—yet the large one can always fill the place of the lighter kind. Like all other stock, there is altogether too many inferior bred horses in the country today. A well-bred draft horse which weighs 1,400 to 1,600 pounds, sound and active, is the very best asset that any farmer has or can invest in.

Washtenaw Co. B. F. WASHBURN.

THE SILO AS AN ECONOMIC FACTOR IN FARM EQUIPMENT.

There is produced every year in this country sufficient forage to feed liberally all the live stock of the land, and leave a good balance. The shortage each year is due to the spoiling and wasting of forage already grown. The means of preserving this forage will solve the stock problems of the country. The principal waste is in the corn plant. It is most noticeable in the corn belt states where over 80 per cent of the stalk and leaves of this most valuable forage are wasted. As economic stock production is determined by the proper use of forage, the

silos furnish a means whereby all farm forage can be preserved in the best possible condition for feeding. The silo is too well known to require description, but its use is certainly sadly wanting. It can be safely said, on any farm where ten head or more of cattle are kept, a silo is a necessary equipment, and of great economic value.

Experiments have shown that the silo will save 10 cents on the cost of producing a pound of butter and \$2.50 on the cost of producing 100 pounds of beef. With this advantage the silo becomes the stock farmer's gold mine.

THE CATTLE SHORTAGE.

On a recent trip I was astonished to note all along the railroads pasture after pasture where it didn't look as if there had been any stock in it this summer. There is an actual scarcity of cattle. The high price of feed a year or two ago and the high price of cattle has induced farmers to sell off everything that they possible could, and now they haven't cattle enough to eat the grass that grows in their pastures. The future will certainly demonstrate to these farmers that they have made a sad mistake. They were afraid that the high prices of cattle would not continue and that the high prices of feed might. One thing that produces the high price of feed is to have plenty of cattle to eat it up, but if you sell off the cattle and increase the amount of food grown, what will be the result? Cattle will be higher and feed will be lower. A farmer ought not to be influenced by high prices of live stock or high prices, in fact, of anything that he produces upon his farm to such an extent that he goes to extremes and sells everything in sight, because the future will teach him without any question that if he does this he will lose in the long run. We should mark out a plain straight course for us to follow. Have a plan to follow. If we plan to keep so many dairy cows, keep them year after year and year after year. If we plan to have such a sized flock of sheep, keep it uniformly, and so on. If we plan to produce about so many acres of wheat, have a system to follow, and taking ten-year averages we will not make a mistake. The man who plunges and goes to extremes one way or another may make a slight temporary gain, but in the long run he is bound to lose.

COLON C. LILLIE.

FEEDING DRAFT COLTS THE SECOND WINTER.

Please give your best authority for feeding draft colts the second winter. How much grain and what kind is the best with clover hay and oat straw for roughage?

Wayne Co.

E. S. C.

The draft colt should have more roughage, in proportion to the amount of grain fed the second winter than the first. Measured in oats the colt coming two should have from four to six pounds of grain daily.

With clover hay and oat straw as roughage I would advise feeding a grain mixture made of oats three parts, corn one part, and bran one part. At the present prices of oil meal I would not advise using it with bran and clover hay. Unfortunately there is no definite standard for colts of this age, and because of their systems are so different, individual study and good judgment are of as great importance as the feeds used.

Mich. Agl. College.

R. S. HUDSON.

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Dairy.

CONDUCTED BY COLON C. LILLIE.

VITRIFIED TILE SILO.

I was induced last summer to build a vitrified clay tile silo. It proved to be not air tight between joints. Ensilage was warm, more or less, to the last, May 10. Also after every rain storm, particularly a beating one, water and moisture may be seen running down the sides—in and out—long after the storm has moved away, say for eight to 14 days after storms and not another shower between times. The silo is 10x30 ft. Can you suggest a radical remedy? If so, I would like to have you tell me of it. During the last winter you spoke once through the Michigan Farmer, about plastering stone silos from the inside. As you were not specific I am in doubt whether you meant or included in your remarks, a silo made out of vitrified clay tile. And if you did, will not, in winter time, water get behind the cement plaster from the outside and through the porous joints, and force the inside plastering off?

Jackson Co.

B. O.

A vitrified tile silo properly put up, and jointed between the ends of the tile with cement mortar, ought to be the very best kind of a silo that it would be possible to make. I cannot conceive of anyone making a silo out of any material that would endure longer and keep silage in better condition than vitrified tile. Of course, in putting it up the mason might not properly point the silo between the ends of the tile and in that way it might not be air tight, but this is no fault of the silo proper. If there is any defect of that sort it still can be remedied by going over it carefully and pointing up with a good rich cement mortar, filling up all of the cracks.

I am inclined to think that even though your ensilage did keep warm for a considerable length of time it possibly was not due to the fact that your silo is not air tight. In all the experience that I have had when a silo is not air tight the silage will rot around where the air comes in if it comes in through the outside. If there was an opening through the tile so that the air could get in you would find a rotten place in the silage. But where it keeps warm in the center of the silage, I should say it was due more to the failure to cut the corn fine enough so that it would pack close together, thus leaving enough air in to keep up a slight fermentation, which would produce heat. It may be also that your corn was pretty ripe when it was put in, or pretty dry. But I don't think a silo that was not air tight would tend to keep the silage warm in the center of the silo, but it would around the outside where the air was admitted and the silage would actually decay.

Now with regard to the moisture after a storm. Is this not due to the condensation of the moisture in the atmosphere, just the same as it would be on a glass tumbler? For instance, if you have a glass tumbler full of cold water or ice water and it stands in a warm room, the warm atmosphere coming in contact with the cold glass condenses the moisture in the atmosphere and forms in drops or runs down the side of the tumbler quite perceptibly. It can do the same thing with a vitrified tile because the vitrified tile is not impervious to the moisture just the same as glass. This would not happen on a wooden silo, nor on a cement silo because it would be absorbed. Besides, there would not be such a marked distinction between the warm wall or cold wall of the silo and the warm air. I cannot believe that this condensation of moisture even though it would condense enough so that it would run down the side of the silo would be any detriment to the ensilage or the building itself.

Providing your silo is not air tight and it cannot be made air tight by pointing it between the tiles it certainly can be plastered on the inside with cement plaster and made serviceable just as well as you could a brick silo or a stone silo, or a lath silo. There would be no trouble in getting good rich cement mortar to stick to these tile, not at all. You can put on a thin coat of mortar and it will stick to the tile so that it will be impossible to get it off. But the smooth vitrified surface of the tile ought to be smoother and therefore it ought to be better for a silo. From your letter I am inclined to think that you are misjudging your silo. It is possibly all right. As I said at first, I do not see how a

better silo could possibly be built, than a vitrified clay tile silo if properly constructed. The only possible objection that can be made is the big first cost. Cheaper silos may be made to take the place of vitrified tile silos but they can be no better.

THE KING SYSTEM OF VENTILATION —WIDTH OF COW STABLE—SEED- ING ALFALFA IN AUGUST.

I would like a little information about the King ventilating system. I have seen it explained in The Farmer and read discussions pro and con, and to my mind the statements have conflicted. From some I have understood the air chutes were outside and from others inside the building. I am rebuilding a barn and am trying to make as near as circumstances will permit, an up-to-date dairy barn. I will try to give an idea of the situation and then would like a little information as to the number and size of the air intakes needed. The old barn is 32@52 ft. with two 12-ft. divisions in the center and one 13-ft. at each end. The plan is to make a barn floor of one of the 14-ft. divisions and put the two 12-ft. and the other 14-ft. divisions into cow stables and build an 18-ft. addition at the other end for horse stable. From what I have read I am afraid the 32-ft. is a little narrow but the man that is doing the work tells me I will have plenty of room for 4-ft. alleys in front of the cows and a 10-ft. alley between. Am putting in no gutters, simply a 6-in. drop behind each row of cows; as you will notice, this makes two rows of cows 38 ft. long or room for 11 cows in each row and a small alley for conveying ensilage from the silo to the opposite row of rows. I also would like to ask a little advice about alfalfa. I have a small piece of ground I intended to seed to alfalfa but on account of bad weather the extra building work, etc., I haven't been able to get it plowed. Now would it be practical to plow it, say some time this month, work it well through July and when conditions are favorable sow it in August?

Monroe Co.

F. S.

With the King system of ventilation the pure air intakes should either be built in the wall or else on the outside of the wall, you wouldn't want them on the inside of the stable because they would be of the same temperature as the stable and might allow the warm air in the stable to go out, which is what we want to avoid. Where one is building a new stable and making a double wall for it you can build a regular chimney right in the walls of the stable itself and have this open on the inside up next to the ceiling and on the outside down next to the sill or wall of the barn. This makes a splendid pure air intake and is not in the way at all. Where one is remodeling an old barn or putting the King system into an old barn and it is not practical to make this little air passage in the wall of the stable itself it can easily be done by spiking 2x4's on the outside of the barn and then boarding over these 2x4's with matched lumber and tar paper under, then cutting into the stable up next to the ceiling and leaving the bottom of the chute open. This answers every purpose.

You will find that a 32-foot barn is just a little bit crowded, although where you use stanchions without any gutter you can get along. It will, however, be a little narrow. I dislike the idea of having a six-inch drop behind the two rows of cows with the whole center of this floor six inches below the cows. It will be difficult to take care of the liquid manure so that it will not interfere when getting around to milk the cows and care for them. In other words, you can't keep this floor as dry as you could with gutters.

In regard to the alfalfa I think it will be all right to plow the ground now and work it this summer, form a good seed bed, and then seed in August. Probably it will not be quite as good as it would if the ground was plowed earlier, but with anything like favorable conditions, with now and then a decent sort of a rain during the summer time, and the land worked after the rain, you can get a good seed bed by August and have splendid conditions for growing alfalfa. I intend to do something along this line myself. Where I have a clover meadow now I intend, as soon as we get the hay cut, to plow a portion of this field, a side hill, and work this pretty carefully all summer and then when conditions are right in August seed it to alfalfa.

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Recent reports from the northwestern range country represent grass as luxuriant, and a Wyoming firm has brought in 10,000 cattle from the Mexican republic. In parts of Wyoming cattle are replacing sheep.

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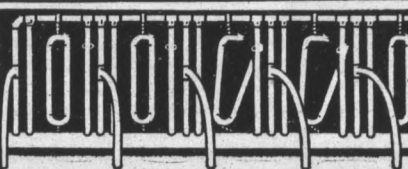
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DETROIT, JULY 5, 1913.

CURRENT COMMENT.

The Need of Currency
Reform Legislation.

In the last issue the serious consideration which has been given to the need of currency and banking reform legislation by students and statesmen alike, was commented upon and an outline of the tentative administration plan for currency reform legislation by the present Congress was given. In view of the fact that there is no great unanimity of opinion, even among those who have long studied the question, with regard to the desirable details of currency reform legislation, the subject is a particularly confusing one for the layman who has had neither the time nor the opportunity for a special study of the question. For this reason and because it is desirable that the Michigan Farmer readers should have a broad knowledge of this important question we have determined to devote some space to its study and analysis while the currency reform bill is pending in Congress.

It should be remembered in commenting upon the matter of the need for currency and banking reform legislation that there has been practically no legislation along this line since the days of the reconstruction following the Civil war. In the nearly half century which has elapsed since that time there has been a very remarkable business development and it has been necessary to transact the bulk of this greatly increased business by means of a credit system which has been developed, of necessity, but in an individualistic and undirected manner.

Based upon the credit secured by business men at the banks, their private checks have been depended upon for providing elasticity to our currency, actual currency being used only in special transactions where needed, as will be noted later.

So long as no disturbing factors entered into business, this plan has proven fairly successful, but when for any reason the unusual has occurred or seemed in prospect there has been an immediate curtailment of credit by the banks. The last striking example of this kind occurred in 1907 when there was a general hoarding of currency by the banks. Then it was difficult and sometimes impossible for even the solvent manufacturer to get currency to meet his payroll, and his banker, even though he may have had large reserve deposits in Chicago or New York, could not get funds from those sources. Credit, no matter how good, could not be converted into cash and even solvent banks practically suspended payment.

This sort of condition, which periodically occurs, is one of the best of reasons for the passage of currency reform legislation which will lessen the likelihood of recurrences of such a condition. Obviously a responsible business man who has good security to offer should always be able to get credit. A farmer who needs funds for the purchase of live stock or feed for them, or who would hold a crop already harvested for a future market, should be able to realize upon his

credit for that purpose, but under the present individualistic banking system, if system it may be called, this is impossible in time of financial stringency from whatever cause it may arise. At such times there is an immediate tying up of reserves and a curtailment of credit which hampers business.

The present threatened stringency has been commented upon and attempts have been made to analyze it in recent issues. Quite largely we believe this is due to the above mentioned cause. Some banks to our knowledge have reduced credits by 20 per cent and have attempted to advance interest rates to an amount which would prevent a loss in income from this cause. This will give them a cash reserve to guard against any future stringency and also enable them to discriminate more closely among customers. It is everybody for himself, with the banks in times of financial stringency—a sort of mob law of self-preservation instead of a co-ordinated effort to relieve the situation.

The propositions heretofore made for the centralization of reserves have been feared because of the possibility of bringing the control of credit within the power of a dictator. What is really needed is co-operation rather than centralization, a result which the tentative administration plan commented upon last week would seem to promise, although its further study may reveal defects which would counterbalance such an advantage.

Bankers Organize to Pro-
mote Agriculture.

Last week representatives of most of the banks of Shiawassee county held a meeting for the purpose of affecting an organization to promote the agricultural interests of the county. This movement is in line with the recommendations of the State Bankers' Association and the work undertaken by the bankers of some other Michigan counties, notably Allegan county, through whose efforts an agricultural expert was secured for the county and various lines of work started for the betterment of the agriculture of the county, first among which was a successful alfalfa campaign. The Ionia bankers have planned to work along similar lines to put the county abreast of others in the state in this educational work.

The general interest which is being taken by the bankers of the state and country in agricultural promotion work is a matter for general congratulation, since it is certain to prove of educational value to the bankers as well as the farmers and promote a more healthy and intimate relationship between them. The business training and experience of the bankers will doubtless aid them in teaching their farmer patrons how to get better returns from their farms. At least they can do this in a measure by proxy, which amounts to the same thing. But the most hopeful feature of this new movement is that in bringing the bankers and farmers into closer relationship the former may soon come to realize the farmers' need of better credit facilities and turn their attention to the solution of this problem, and that the latter may learn the importance of meeting all business obligations with a promptness which will make them more desirable credit customers.

A Co-operative Man-
agers' Convention.

Last week the second annual convention of the National Association of Managers of Farmers' Co-operative Companies, was held at Milwaukee, Wis., with several hundred representatives in attendance. In addition to the discussion of their common problems, those who planned this meeting made it broadly educational in character by inviting speakers to address the convention on more general agricultural topics. Among the addresses of this character was one by Prof. John J. Ferguson, formerly of Michigan, on "The Advantages of Live Stock on the Average Farm." In his address Prof. Ferguson pointed out some of the reasons why live stock production has fallen off in this country and enumerated the many advantages of live stock as a factor in our agricultural production. He also told his hearers that this proposition should interest farmers' co-operative associations for the reason that such organizations have for their first and final object the improvement of the farmer's bank account; that the farmer's prosperity immediately measures the prosperity of all other producing classes, and that co-operation can be and is being applied to the live stock industry with immediate and highly profitable results.

This feature of the program at this convention is mentioned to illustrate the comparatively new but very general appreciation by all classes of business men of the intimate relation between the general prosperity of our agriculture and the prosperity and development of business in general. All business men, including bankers as well as merchants and manufacturers, are more than ever before awakened to this fact, a fact which should be a source of satisfaction and encouragement to those of us who follow agriculture as an occupation.

The alfalfa cam-
paign which began
so auspiciously in
Kent county a few

weeks ago has spread to nearly all sections of the state. Last month such campaigns were carried on in several counties, notably in Grand Traverse and Newaygo counties in western Michigan, and in St. Clair county on the east side of the state. Reports from all sections where these campaigns have been in progress show a very general interest in the proposition by the farmers in the territory covered.

This is most encouraging for the future of Michigan agriculture which would undoubtedly be greatly benefited by the general introduction of this great forage crop. But there is a danger that many may try out the crop by midsummer or fall sowing under unfavorable conditions which would result in failure and thus tend to offset the value of the educational work which has been done in the alfalfa campaign. County Agriculturist Skinner, of Kent county, who pioneered this campaign, has recognized that danger and issued a warning to the farmers of his county in the form of some pertinent "Alfalfa Don't's." He reiterates the basic principles of successful alfalfa culture, with which every Michigan Farmer reader should be familiar and advises starting in a small way, but at once, as with a fair chance alfalfa always makes good. This is good advice which might be acted upon with profit by every farmer in the state who has not already established this valuable forage crop on his farm.

Meats and Food
Inspection.

An action of possible far-reaching importance was taken last week by the Secretaries of Agriculture, the Treasury and Commerce, upon the advice of the U. S. Attorney General in putting all meats and meat products under the provisions of the Food and Drugs Act. This action was taken by revoking a regulation adopted after the law was passed which exempted meats and meat food products and their producers from the operation of the Food and Drugs Act. This change will not interfere with the powers of the Department of Agriculture under the meat inspection law, but will bring meats under the operation of the pure food law, so-called, the same as other food products.

A committee has been appointed by the Secretary of Agriculture to provide an effective plan for co-operation between the Bureau of Chemistry and the Bureau of Animal Industry to exercise control to the full extent authorized by the law over "domestic meats and meat food products."

While the words above quoted are used in the announcement, it would appear that the same inspection would apply to imported meat products, in which case the new regulation may prove beneficial to American producers of meats if heavy importations of this class of products follow the proposed removal of all duty on same.

HAPPENINGS OF THE WEEK.

National.

On June 27 instruments recorded earthquake disturbances that had a duration of over 30 hours, somewhere in the Northern Pacific ocean.

The collapse of a tramway at Gladstone, Mich., resulted in one man being killed and two others seriously injured.

The city of Corunna is authorizing its attorney to bring mandamus proceedings against the Michigan United Traction Company to compel the latter concern to live up to the terms of its franchise.

A severe windstorm destroyed a large block of timber east of Grayling last Friday. Considerable other property was damaged by the wind.

Reports from many sections of upper Michigan indicate that unless rains come soon the districts will be in danger of extensive forest fires, which have already done considerable damage.

The commission appointed by the people of Marquette to prepare and submit to the voters of that city a revised municipal charter have decided to propose the commission form of government. All

members of the commission favored this plan of city government.

A report of the State Fire Marshal's department shows that there are 385 motion picture theaters in Michigan. The same authority states that out of 63 inspections only 12 were equipped with proper apparatus to entitle them to receive a state license.

A conference of railway commissioners from different states is in session at Chicago to formulate plans for arriving at the value of railroad property in the United States.

For a number of years past the city of Ann Arbor has been having its difficulties with the traction company occupying its streets and doing interurban business between Detroit and Jackson. In order to bring the company to time the city has now secured an injunction restraining the company from running cars through the municipality until certain conditions have been complied with. The company has also secured an injunction restraining the city from interfering with traffic. It is expected that some arrangement will be made the present week whereby the difficulties will be settled.

A movement is started at Lansing in the common council for the establishment of a municipal fuel yard.

The attorney-general has ruled that automobiles do not have to display signal lights when standing near the curb unless there is a city or village ordinance covering the matter.

No disturbance has occurred this past week in the matter of the strike of the linemen about Muskegon and Grand Rapids.

A ferry boat sank while crossing the river at Leechburg, Pa., last Sunday night and ten persons were drowned out of the 75 passengers on the boat at the time of the accident. The sinking was caused by the passengers rushing to one side of the vessel when nearing the landing place.

The semi-centennial celebration of the battle of Gettysburg began June 29, when both federal and confederate soldiers pitched camp upon the scene of the battle of 50 years ago. There are 5,000 tents on the ground. Every arrangement has been made for the comfort of the old soldiers of both the north and the south.

The disclosures made by Col. Mulhall, who claims to be a former agent of the National Manufacturers' Association, has stirred political circles in Washington, as well as other parts of the country, since they cover a decade of time and involve many prominent men. The disclosures undoubtedly mean that the senate committee, which has been probing the sugar and wool lobbies at Washington, will be empowered to investigate the so-called manufacturers' lobby which is claimed to exist, in the confession of Colonel Mulhall.

Several drownings were reported on June 29. Three persons were lost in the Detroit river, one at Manistee, one at Monroe, and one at Grand Rapids.

President Wilson has signed the sundry civil appropriation bill, but in doing so made public a protest against the section of the bill which prohibits the expenditure of any part of a \$300,000 department of justice item in the prosecution of labor unions and farmers' organizations in Sherman anti-trust violations.

Foreign.

An important movement toward the suppression of the opium traffic between nations is about to be consummated at a meeting beginning this week at The Hague. The session is one continued over from January, 1912. At that time the meeting was adjourned to give time to ascertain whether a sufficient number of powers would join in ratifying an international convention looking toward the suppression of the opium traffic. Since then all the European and American nations excepting Turkey and Peru have joined in the convention. It is believed that with this representation it will be possible to practically put an end to the general distribution of the drug which has been a troublesome question in international politics for several years past.

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(Signature of editor, publisher, business
manager, or owner).

Sworn to and subscribed before me this
twenty-sixth day of June, 1913.

THOMAS H. BEERY,

Notary Public, Wayne County, Mich.

(My commission expires Oct. 9, 1915).

(SEAL).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION



The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

The Nation's Ultimatum—By EDGAR WHITE.

NO, gentlemen, I prefer that my daughter be left off the program, if that is the part you want her to take. It's a custom that has almost degenerated into a joke—getting a girl to recite the Declaration of Independence. Why, they've been doing it ever since I was a boy."

"We thought it very appropriate for our Fourth of July celebration," returned Joseph Compton, an old merchant, who was the chairman of the committee. "Of course, there will be other features."

"I sincerely hope so!" exclaimed Philip Guthrie, division superintendent for the Midland Valley railroad, who was seated in his office in the second story of the depot at Beverly. Guthrie was slightly past middle age, large and still vigorous. He was a man of kindly disposition, but a strict disciplinarian and with a life philosophy dug out of the best school on earth—that of hard knocks and antagonistic forces. From the bottom he had climbed to the swivel chair because he had set out to do it. Naturally he had a fair share of self-confidence. He believed that every man ought to have an opinion and not be afraid to express it on any occasion. There was more than a touch of sarcasm in his rejoinder to the committeeman, who colored slightly.

"I don't understand how anyone could object to the most important document our statesmen ever gave utterance to," observed Mr. Compton.

"I'm not objecting to it," retorted the big railroad man, as he pounded his fist on the desk. "It's good stuff—patriotic and all that, but if I let Grace get up there and droon through it half the people would keep on talking and the balance would look bored and walk away. She would feel like a dunce. I don't object to the Declaration of Independence, Compton, but it's the everlasting repetition of it at Fourth of July celebrations that's made the thing seem ridiculous. 'Beyond the Alps Lies Italy,' was good a hundred years ago or so, but if my daughter would undertake to speak it now I'd think she was a goose. Let's be more up to date. Get up a good baseball game, turn the Glee Club loose, and let young Jenkins, the lawyer, spout about the Japanese situation. That'll fetch 'em!"

"Perhaps you are right," remarked Compton as the committee turned to leave. "There's a difference in people now from what there used to be."

"Sure there is!" approved Guthrie; "new things are happening all the time and we must keep up with the procession. Good-by."

The superintendent turned back to his desk and was soon absorbed in the many cares that come to a man who aids in guiding the destinies of a great railroad system. But as he was walking home that evening his interview with the Fourth of July committee recurred to him and he smiled. He was so pleased with the outcome that when he met his wife he instantly began telling her about it.

"The old fossils wanted our Grace to get up there and make a monkey out of herself by reciting the Declaration of Independence. I could imagine the crowd snoring when she started in on the old song. 'When, in the course of human events,' and so forth and so on."

Mrs. Guthrie eyed her husband curiously a moment and then handed him a letter. He took it quickly.

"From the boy?" he inquired as he eagerly opened the pages. "When did it come?"

"The postman brought it this afternoon," the wife replied. "I called you soon as I finished reading it, but your telephone was busy."

Mrs. Guthrie switched on the lights and sat near him while he read. The letter was written in New Orleans.

"Dear Mother and Father," it began. "This is the first time in six months I have had the chance to write a letter which I felt sure you would get, for we have been mighty near off the earth in more ways than one. As I wrote you last fall, Emile Le Prohon and I had accepted positions with an American syndicate that had obtained leases for mineral exploitation in Central America. Our operations were in the mountains, not far from the coast. While engaged in our work one of those periodic revolutions broke out, and the insurgents overthrew the government. The new president, a good warrior, but uneducated, thought the best way to strengthen his administration was by killing off all his enemies. Military executions occurred daily. One day a company of troopers found us at work in the mountains. The captain saw our maps and decided we were spies in the pay of the party that formerly controlled the government. We were taken to the capital city and arraigned before the president, a large, heavily whiskered man, who ruled with a despotism no king in a civilized land would dare attempt. Although Emile and I can talk the language fairly well, we could not make this half-savage man understand we were simply civil engineers, and that our maps were necessary for our people to properly locate their holdings. He insisted if we were really miners all we need do was to dig holes in the ground, or tunnels in the mountains, to find what we wanted; the maps and drawings could only mean that we were showing the way for the enemy to mass troops and fortify. Consequently we were nothing but spies, and should be treated as such."

"While the president did us the honor to summon a few officers and go through the form of a trial, he dominated the whole proceedings and indicated to his 'court' that he wanted us found guilty and sentenced to be shot. Human life is pretty cheap down there, and the execution of a dozen or so men on very flimsy grounds excites hardly any comment. Of course we demanded time until our government could be heard from. The president asked us what our government was, and when we told him of its size and importance he only laughed and said he guessed it wouldn't worry about a couple of citizens that far from home."

"It happened that at this time there was an American yacht in the harbor. On board it were Robert Bascomb of New Orleans, and some friends. I want you to remember this man's name. But for him your son would not be writing you this letter today. Before I had ever met him, Mr. Bascomb learned of our so-called trial and sentence and immediately went to President Callejas in hot protest, which was only availing in that the despotic ruler agreed to put the execution off for a week. Then Mr. Bascomb got into the prison to see us. He didn't tell us at that time that he was a big railroad and mining man, but we learned it afterwards."

"Keep a stiff upper lip, boys," he told us, "and I'll see if anything can be done. Maybe I can get a wire through to Washington, and they'll do something. In the meantime I'll see if I can't find some influential man along the coast who will help out. Just you be good and quiet, and I'll do everything I can."

"You can imagine how grateful we felt at this interest by a stranger. If you had been there yourself, Dad, you could not have taken hold any better than he did. I want you to meet him some time."

You and mother want to take your next vacation by way of New Orleans, and he will give you the time of your lives in his big yacht, and in showing you about this interesting city."

"Well, we heard not another word from our friend until the morning of the tenth day, the day that was to be our last on earth. Directly after breakfast a man in gold lace and brass buttons came into our dungeon and, by the light of a candle in the jailer's hand, read our death warrant, which recited that we were to be shot as spies, and for treason against the republic and a lot of other things. When I see you I will go into greater detail about what happened the night before, but I must hurry along with the main points or this letter will be too long."

"At nine we were marched into the court and stood against a stone wall. Then a file of soldiers came out. I thought of the pictures I had seen of executions, and how true to life they were. On one side were the officers with their swords and gold tassels, and quite a number of privates. Peering through the bars of the gloomy old dungeon were the prisoners, many of whom were also under sentence of death."

"Emile and I had shaken hands and bade each other good-by, and the officer in charge of the firing squad had given the first order to his men when a gold-laced chap rushed frantically into the court yard, waving his plumed hat and shouting as if he was crazy. The captain of the squad directed his men to ground arms and motioned us to accompany him. We trailed along behind the gold-laced chap, who kept up a torrent of talk as if something terrible had happened, or was about to happen. Our leader led us through dark corridors and all sorts of queer stone entry-ways and under ancient arches until at last we entered a big building, ascended a broad flight of stairs and were shown into a room where Callejas and several of his officers were seated at a long table. In front of the table was our loyal friend, Mr. Bascomb, and a man whom we had never seen before, and yet whom we seemed to have known always. He belonged to that stalwart breed known as the American-Irish, and looked for all the world like Tim Cadogan, who used to be boss of your wrecker crew, Dad. He was, if anything, a little bigger than Tim, and he carried such an air of authority about him that Emile and I felt relieved somehow the moment we laid our eyes on him. He didn't seem a bit afraid. On the contrary, he looked like a man who had come to chastise a lot of bad boys. And the decorations he wore would have made you laugh, if the occasion had not been so serious. He had insignias showing him to be a member of the Loyal Irish Knights and, although when the Civil war was on, he wore a rosette over a G. A. R. badge, a shield attaching a badge that showed he also belonged to the Confederate Veterans' Association, and some five or six others. I can't remember them all. His name, quite naturally, was Tom Murphy."

"Mr. Murphy didn't waste any time. In a forceful mixture of Spanish and English he informed President Callejas that he was there as the representative of the United States government, to present the ultimatum of the federal authorities at Washington concerning two prisoners unlawfully detained by the Central American republic, to wit, Senor George Guthrie and Senor Emile Le Prochon, civil engineers."

"Then he advanced until he could almost touch the president, who also wore a great bunch of badges and decorations,

and unrolling something as big as a map of our country, began in thunderous tones, and with much striking of his big fist on the table, to read—you will never guess what! It was the Declaration of Independence! I hadn't heard it read since I was a schoolboy, but it all came back to me, and in the fix we were I tell you it sounded good. It was a large fac simile of the original writing, including the signatures."

"The resourceful Mr. Murphy had added a large gold seal and an immense festoon of blue ribbon. I tell you it was a formidable-looking document, but I shook in my shoes at the audacity of this big Irishman going right into the lion's den and trying to make the boss of the republic believe that the Declaration of Independence was a peremptory order of the United States to release us."

"But Mr. Murphy knew what he was about. He played the game just right for the men he had to deal with. Sometimes he would blaze along in English, and now and then deliver a denunciatory blast in Spanish. Just a little he fudged at one place. Where it said 'and declare that these united colonies are, and of good right ought to be, free and independent states,' he read 'citizens' for 'colonies' and 'states.' You know the Declaration winds up with what is virtually a gage of war thrown at England, and Mr. Murphy ran this in so that President Callejas and his military board thought it was aimed squarely at him. And then, when our pugilistic Irish advocate came to the names of those long dead and gone heroes who had signed the immortal document, he roared them out in tones that caused one to think they might be standing on the frontiers, sword in hand, ready to execute dreadful vengeance in the event their 'ultimatum' were not obeyed."

"Today I come in the name of the United States government asking justice for these two boys who have done you no wrong," declared Mr. Murphy. "Tomorrow, unless they are released, I will come at the head of my country's battleships!"

"Long before the vehement Mr. Murphy had finished I saw we were safe. You could tell it by the agitated whispering among the officers, the troubled shaking of their heads and the way they moved their hands about their whiskers, indicating they were weakening. Even the warlike Callejas showed considerable nervousness, and was very pale."

"It was such a bold thing to do, such a consummate piece of nerve, such a marvelous piece of strategy carried out by a born actor, that the sheer audacity of it enabled the astute Mr. Murphy to get away with it. But had there been in Callejas's crowd just one man who understood what Mr. Murphy was really doing to them, our lives would not have been worth two pins. I was informed later by Mr. Bascomb that there was an officer on the president's staff who might have caused trouble had he been present, but a little entertainment was arranged for him on the yacht, and when he returned to the city the order for our release had been signed."

"Mr. Bascomb told me he had first tried to get in telegraphic communication with Washington but could not in time to do us any good. Then he had sailed from place to place along the coast hunting some man of influence, but the people who might have helped seemed to be back in the country on a visit, or out of town on business. Things began to look desperate, but Mr. Bascomb never let the steam go down on his yacht, day or night. Finally, but two days before the time appointed for us to die, Mr."

Bascomb found his old friend Thomas Murphy at Balize. At one time Mr. Murphy had been the representative of the United States to a Central American republic. While holding down that job, an official at Washington, knowing Mr. Murphy's hereditary antipathy to King George III, had sent him a large facsimile copy of the Declaration, for which Mr. Murphy would have fought with the last drop of his blood.

"Mr. Murphy, like you, Dad, was a man of resources, as you will guess by what I have already written. He had been a railroader, had bossed construction gangs all over the south, built bridges across deep mountain torrents, blasted rock and handled pile-driver crews. He reasoned that an absolutely genuine United States document of '76 would be just as effective with the sort of people he had to deal as something enacted a hundred years or so later. The decorations he wore were some he had in his trunk and others he had scraped up from friends on short notice. They were meant, of course, to give color to his official representations, and were better evidence than a whole file of letters signed by officers of the government would have been. I think when the United States comes to know Mr. Murphy right

they will give him some important diplomatic position; they need him in their business.

"President Callejas delivered a profound apology to our spokesman; said he would be only too happy to turn us loose; that it was all a mistake anyhow; he hoped it would not cause any estrangement between our country and his, and ended by inviting the entire American party to take luncheon with him.

"We came north on Mr. Bascomb's yacht. A military guard of honor accompanied us to the docks. On the way up I begged of Mr. Murphy his Declaration, and he kindly let me have it. I am sending it to you, mother, because I know you will value it for the part it played in saving your son's life."

Guthrie sat in a meditative mood for a few moments after he had finished reading the letter. Then he walked over to the desk where the telephone was.

"Is this you, Compton?" he called. "This is Guthrie. About that little matter this morning. Since thinking it over I believe you were right. No objections whatever. Sure—I will be glad to let Grace read it for you. I think it well that the people's minds should be refreshed now and then by the foundation principles of our government."

The Boy Who Was Different

By WM. A. COREY.

Phillip reached the Foulds farmhouse just as the farmer, thick-chested kindly-faced and sweaty, turned his horses into their stalls for the noon-day rest and feed.

"Well," he called out to the boy in his hearty way as he removed the bridles and, hanging them over the hames, proceeded to give each animal its measure of grain. "Well, you're on hand, eh? All right, you just hang around and sort of get the lay of the land this afternoon and tomorrow; and Monday there'll be something to do. I guess we'll get along all right. You just do the work that's to be done and then the balance of the time's your own. Brought your book of 'lectricity along, did you? All right, you can do all the experimentin' you want to. You'll find wires and bottles and jars and things lying around, I guess. And if you want anything down to Quimby I guess we can get it, eh?"

Phillip thanked his employer as he put his suitcase down and Mr. Foulds continued: "You see I believe in being reasonable with a boy as long as he's reasonable with me. Ain't that right, Sorrel?" And the farmer slapped a horse affectionately. "All I ask is that a boy is clean and square and honest. Just because he ain't made out of the same kind of pie crust that every other boy is ain't nothing against him. I reckon it's a good thing once in a while some boy is a little different from the rest. I reckon that's how the world gets ahead. Blacky, don't you get over into Sorrel's box! All right, Phillip, bring your satchel and we'll go up to the house and see what Mrs. F. and Katie have for dinner."

Phillip Silverman, it must be confessed, was not an especially prepossessing boy in personal appearance. He was large enough, and tall enough, for a boy of sixteen, but he looked "slouchy." His thick yellow hair was unkempt and his clothes looked as though they had been worn by somebody else; as, like enough, they had. Moreover, he had a dull, stammering way of speaking which made you at first doubt whether the boy was "quite right" in his mind. This impression would be very quickly corrected, however, if you got him started talking on electricity, his hobby. For Phillip Silverman, although self-taught (more credit to him), knew more about electricity than all the rest of the Mill Valley neighborhood combined, not even excepting the telegraph operator down at Quimby.

Phillip's unattractive exterior was due, mainly to two causes. First, he was an orphan and had no "folks" to speak of except an uncle and aunt who were harsh and even brutal to him. Consequently he had had no "bringing up." In the city the back alleys would have been his home and the juvenile court would have seen much of him. In the country he was like a stray dog whom nobody wanted. In the second place, Phillip's personal appearance was due to the boy's peculiar individuality. He was different from other boys. Dull at what he took no interest in he was alert enough in

science and mechanical appliances. Among the neighborhood youth he was the odd sheep in the band.

And the odd sheep meant, in the general estimation, the black sheep. His shiftless ways, his refusal to exert himself where he was not interested and his general unhappy appearance had given him a bad name in the community. He was regarded with suspicion, and evil prophecies were made as to his future.

But Farmer Foulds was a philosopher with the bark on. He saw good in Phillip Silverman where others saw only bad. So, with the consent of the boy's uncle and aunt, Foulds, having no boys of his own, agreed to give Phillip a home and a small wage in return for his labor.

At the house Phillip was warmly welcomed by Mrs. Foulds, a kind, motherly old woman, and he soon made friends with Katie, the grandchild, a beautiful girl of five.

The whole atmosphere of the Foulds home was a new one to the boy and, then and there, he resolved to merit the kindness that was being shown him.

The meal over, Phillip and the farmer left the house together. "Now," said Foulds, as he began hitching up his team for the afternoon work, "as I said, this afternoon and tomorrow you can sort of get used to the place and Monday there'll be something to do."

Phillip took the farmer at his word and made himself at home. Mrs. Foulds showed him where he was to sleep, which was to be in a small store-room built at the side of the house itself. This, the good lady informed him, was to be his room. It was provided with a comfortable single bed, a chair and a table. There was a door opening outdoors and there was one large window with a heavy board shutter. This shutter could be closed on the outside and fastened with a padlock; for the room contained farmer Foulds' chest of valuables and was always closed tightly when the family were away.

Phillip was pleased with the room, even though the floor had nothing but one home-made rug before the cot and a coal oil lamp and bare, unfinished walls. The boy had never had a room of his own before. He at once installed his few belongings there, his satchel and his few clothes and, which was his chief prize, his book on electrical science.

He looked about the room and house and premises for materials to use in experiments—wires, nails, jars, tin cans, string, etc., and his active imagination at once filled his little room with a most wonderful collection of mechanical and electrical contrivances. He thought of a telephone. He knew Mr. Filbert, who lived half a mile away and who was an attendant in the State Insane Asylum at Quimby, had a telephone and he boldly hoped that his own wages might enable him to have an instrument in his own room. More than this, he saw two long poles and he wondered whether they could be fastened to the roof of house and barn to carry wires for a possible wire-

INDEPENDENCE DAY.

BY L. M. THORNTON.

We are a free-born people
A land that has one cry—
True liberty forever.
Our banner, flung on high,
Means not a selfish glory,
But we have paved the way
Where other feet may follow
On Independence Day.

We are a free-born people,
No slaves upon our sod.
No dungeons, where the prisoned,
Cry up in vain to God.
No heritage of bondage
For those who come our way,
But Freedom's gifts and graces
On Independence Day.

less station. Under the stimulus of appreciative kindness the "queer" boy's spirit was soaring.

Monday morning came and with it came Phillip's opportunity to show Mr. Foulds that he could make substantial return for kind treatment. But it was a test of endurance. The boy had never acquired the discipline of sticking to unpleasant tasks. And the day, hoeing the long rows of sweet corn and pulling the suckers from the bottoms of the stalks, seemed an endless one. Nevertheless, he stuck it through. And as he began to find out that he could make headway at disagreeable work his recreative hours became all the more enjoyable.

Weeks followed each other and, with a few lapses, Phillip Silverman got the habit of steady application. He endured the work in the fields so that he might enjoy all the more his "play." And the play showed results as well as the work. Soon curious mechanical devices began to spring up all about the place. An electrical door bell of home manufacture made its appearance. A wire door mat was so arranged that the pressure of a visitor's foot would ring a bell in the back of the house. Little Katie was delighted with wonderful windmills and other toys evolved out of crude materials. A method of signalling from house to fields was a great help to Mrs. Foulds.

And finally, with the money which the ingenious boy had earned at the disagreeable work, a telephone was installed which soon proved itself of practical use in the household economy.

Phillip was becoming a fixture in the Foulds home. He was showing Mr. and Mrs. Foulds that he could appreciate patient consideration. And he was showing the rest of the neighborhood that he was neither a fool nor lazy.

But Phillip's star did not rise to first magnitude until after his adventure with the escaped lunatic from the Insane Asylum at Quimby. Foulds and his wife had gone on a visit to Holton that day, seven miles down the Kaw river, leaving the boy and little Katie alone. Of course they would not have left the place if they had known a dangerous lunatic was at large. But it was only that morning that the man had escaped and there had been no possibility of warning. Phillip was warned, however, by telephone message from the neighbor, Filbert, who advised him to be on his guard against any stranger who might appear.

At about twelve o'clock the man appeared at the Foulds farmhouse door. At least a man appeared and Phillip guessed him to be the lunatic though, casually observed, there was little about him out of the ordinary. He simply came quietly to the door, rang, and asked for a drink of water. But there was an inexplicable something about the visitor that pointed to mental aberration.

Phillip felt the cold chills run over him but he struggled not to show the mortal fear he felt. He realized that he was face to face with a desperate crisis. Little Katie was asleep on the bed in the middle room, taking her noon-day nap, and she was liable to awaken at any moment. The boy knew the man had committed murder and that he was afflicted with homicidal mania, a mania that was liable to change from seeming sanity to murderous fury at any moment. What was he to do. How face the situation? He crushed down his fear, his nerves turned to steel and his mind began to work like a charged battery.

"Certainly," he said to the man's request for water, trying to speak calmly, "I'll get you a drink." And, stepping back into the room, he returned with a glass of water which he passed to the stranger. Then as the man gulped down the water, Phillip motioned to a rustic chair outside the door and said, "Won't you take a seat? It's a warm day."

But the man, still holding the empty glass in his hand, said in an irritated tone, "No."

(Continued on page 10).

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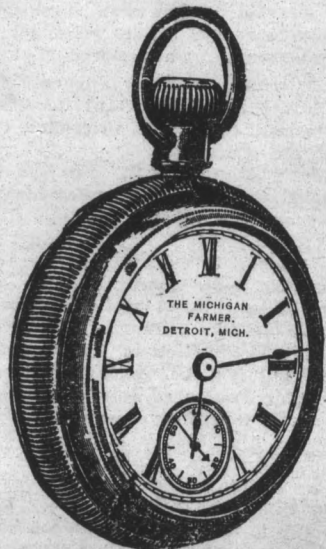
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THE MICHIGAN FARMER, Detroit, Mich.

NOT A SANE FOURTH.

BY LALIA MITCHELL.

I've a bandaged arm and a broken nose,
And I've lost some locks of hair;
My hand was torn by a cracker, and
A part of my thumb ain't there.
But Freedom ruled in our town this year,
And the council didn't try
To curb the rights of the coming man
With a sane Fourth of July.

I s'pose the marks on my cheek will stay,
But I won't be long in bed,
That is, of course, if the serum works—
If it don't, I'll just be dead.
Our fathers they don't believe in laws
That weren't in the days gone by,
So the council voted a motion down,
For a sane Fourth of July.

When Mother wept I was sorry, too,
The baby was hurt so bad;
She got in the way of a cannon that
The Middleton children had.
But it's only once in a year, you know,
That's maybe the reason why
The council didn't see fit to vote
For a sane Fourth of July.

THE FOUR-LEAVED CLOVER.

BY W. F. WILCOX.

Did you ever hunt for four-leaved clovers? Did you ever find any? I confess that I have always found them ever since I could remember, but I will not admit that they have possessed any particular lucky charm for me so far as I have been able to discover. I have never spent any time merely looking for them, but somehow or other I have always found a great many of them. They always seem to bob up when I am not thinking about them.

Whenever I drive along a road with clover growing beside it I see four-leaved clovers seemingly standing out above all the myriad of threes. I have seen them by the roadside while riding a wheel, when on horseback or walking. When driving through a recently mown hay field I have seen hundreds of them while sitting on the hay-rack going out for a load of hay. Sometimes it appears that they are most numerous just after the plant has been mowed or grazed off. I sometimes think that this calamity on the part of the plant causes it to produce more four-leaved clovers than otherwise. But this is mere conjecture.

Often I have found a dozen, or even a score, of four-leaved clovers on a single plant. This has led me to wonder why someone has not or does not get to work and propagate, after careful plant breeding and selection, a four-leaved clover plant. This would increase the forage considerably and every farmer would want to grow clover having four leaves instead of three. I have also found a great many five-leaved clovers, a few sixes, quite a number of sevens and a few eights. Fours and fives are more common, often several fives appearing on one plant.

There is something peculiarly charming about a four-leaved clover. It presents

sharp eyes. Quickness to discern will lead one to see the fours among the threes. It is this quickness, this alertness that counts in life. Some people seem to possess eagle eyes, while others do not see half the beautiful things all about them.

In life success comes from being quick to discern. It is worth while to cultivate alertness, quickness, and nimbleness of mind. The four-leaved clover, I believe, is a good luck sign, in that it betokens alertness on the part of those who discover it, which quality of mind will make, with proper application and other fundamental qualifications, for success.

O thou queer little oddity—
Nature's emblem of good luck—
Show thy place of nativity,
Fain would thy lucky stem I pluck.

Rare as Yukon's golden stream,
Sought by many a bashful lover;
Fair maidens coyly of thee dream,
Blessings on thee, four-leaved clover.

BIRDS AND THE WEATHER.

BY ORIN E. CROOKER.

The question whether birds can foretell the weather is one upon which much evidence on either side might be set forth. Ordinarily one heralds a flock of geese northward bound in February or March as a token of spring—as of course it is. Yet ducks and geese press northward at this time of year as fast as open water presents itself and without much of any concern as to local weather conditions. In the fall, however, it is much more likely to happen that cold weather will soon follow their southward flight for the reason that they remain in the north long after most birds have gone south and consequently when they do start upon their migration flight it is ordinarily not long before cold weather sets in.

The average bird, so far as migration is concerned, appears to shape its journeying with but little reference to local weather conditions, or even predictions by the weather bureau. A few years ago winter set in early in the Mississippi valley and came so suddenly as to overtake immense numbers of blackbirds, robins and kindred species which are ordinarily well south by the time snow flies. As a consequence, many of these birds perished, and others, partially overcome by the snow and cold, eked out a scant living through the winter months in sheltered spots where food of one kind or other could be found. Two robins that came under the writer's observation lived for three months on the pulp of the dried up apples which clung to a tree near his home. If they possessed an instinct by which they could foretell weather conditions it does not appear likely that they would have permitted themselves to have been overtaken in this way. Indeed, it has been shown that, irrespective of an early season or a late one, most birds pass through a given lo-

and departing for more southerly climes in a body or in a long straggling flight. The writer witnessed one of these flights—said to foretell a big storm—that took two hours to pass, a constant line of crows in two and threes and larger companies winging high overhead. A big storm did follow within a day or two, but it is to be questioned whether the immense flight of crows at just that time was any more than a coincidence.

LITTLE FARM FABLES.

BY AUNT QUILLIA.

A Reason for Not Trying to Reason.

A miserable cur who chanced to beliving on the same farmstead with a fine



"Always whittle from you, then you'll never cut you."

shepherd dog, constantly harrassed the latter by his criticisms of her methods in handling the sheep.

"You should use more severity with those thick-headed brutes," declared he. "You are spoiling them and making them more stupid than ever by your indulgent ways. Only yesterday when driving them from one lot to another I saw you gently nosing an old laggard along. I wish I had been in your place. Something would have been doing. If a round of fierce barks had failed to stir her stumps I would have got a move on her by nipping her lazy flanks with my sharp teeth."

"That old ewe," replied Bonny, "is lame, and even were she not it would go against my instincts to do otherwise than I did. I would have outraged both conscience and reason, for I would have grieved her and might have disabled her for life."

"Bosh!" exclaimed Mongrel. "Your instincts and conscience are too fine, and as for reason there is not the least glimmer of common sense in what you say, much less a rational view of the matter. You are too easy and I am looking every day to see you ousted from your position. Should this occur I hope to fill the vacancy myself, and I tell you right now I will never stop to lick a peevish, bleating lamb as I saw you do the other day when driving them to water."

"That lamb," persisted Bonny, "had strayed from its mother and was a homesick, heart-broken little thing. My tongue soothed and comforted it I am sure."

"Bosh again!" blurted out Mongrel. "I only wish I had your place. I would show those wool-heads and all of the denizens of this farmstead what a little vim would do."

Bonny was about to reply as she had done dozens of times before to Mongrel's unreasonable attacks, when an old Shetland pony from the north of Scotland spoke up. "I wouldn't waste my time, Bonny, trying to argue the case with that creature. He is not worth it. He has neither blood, breeding, nor the commonest of kindly feeling. We came from the old sod and were born to its noble

BANISHED

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"Say, but isn't he a Fine Dog, Mister?"

a more symmetrical appearance, me thinks, than the three-leaved, as the four leaves seem to make a more complete whole than the three, which suggest something lacking on the vacant side.

Some people never find any four-leaved clovers. Some boys and girls waste a good deal of valuable time hunting for them. It is really but a question of

cality on their migration flights with but slight variation from an average date.

Some people pin great faith to the call of the cuckoo or the mourning dove as an indication of rain, yet the scientific observer will affirm that these birds call quite as frequently when no rain follows. Crows have a way in certain localities of getting together in flocks in the fall

traditions and the canny sense of its people. He has never given a thought to the nature of sheep. Waste no time on trying to change his brutal instincts. Your efforts call to mind what I heard one of those boys who helped us in harvest say. One day he and his chums were discussing an obstinate classmate when this one closed the conversation by remarking, "You know, fellows, what Swift says: 'It is useless to attempt to reason a man out of a thing that he never was reasoned into.'"

THE VALUE OF THE UGLY TOAD.

BY ISAAC MOTES.

Farmers would make very little money were it not for the birds and other small animals which work for them as insect destroyers. The value of frogs in this connection is not realized by one farmer out of a hundred. Stirring out only during twilight and the early part of the night, they destroy millions of insects, spiders, bugs, worms and ants.

I have known this in a general way ever since boyhood, but recently I had an interesting proof of the fact that the more toads you have about your fields, gardens and yard the better chance you have for fine crops. They even help to protect large trees. In our front yard we have a young white oak which gave strong indications last summer that something serious was the matter with it, for it seemed about to die. The leaves dried up and began to fall off much quicker in the autumn than those on some of the other white oaks in different parts of the yard, and in my neighbors' yards. Also some of the low limbs of the tree gave unmistakable evidence that they were really dying, for they failed to leave out this spring.

We have a great many small red ants about our place, and I noticed these ants on the trunk of the tree in considerable numbers last summer. I came to the conclusion that it must be the ants that were gradually killing this tree, because I found places where they were making holes through the rough, outer bark, and were eating the tender, inner bark next to the sapwood. As the tree was a fine, graceful one I hated to see it die, so I put a circle of brick around it, about two feet distant on every side, and dug up the ground thoroughly within this circle, keeping the grass and weeds down in order that the ground might absorb all the moisture that fell upon it, and that no vegetation should appropriate the moisture. Nevertheless I had grave fears that my beautiful tree would fail to leave out this spring.

To my surprise, however, it put forth leaves as usual. In fact the buds swelled earlier than those on other white oaks growing near my place, perhaps for the reason that this tree stood on level ground, and the ground had been dug up around it all winter, thus absorbing plenty of moisture. The tree looked so fine and flourishing that I was agreeably surprised at its appearance and came to the conclusion that during the past winter the weather had been so cold the ants could not stir out and injure it and that as a result it was recovering its vitality.

In order to protect it from ants this year I hewed off the rough, outer bark smoothly all around, to a height of about three feet, without going deep enough to injure the green, inner bark at any place, then covering this surface with a rather generous application of tar to keep the ants from crawling up the trunk when the weather became warm.

One pleasant evening in early May, about twilight, I was walking in the front yard when a toad frog hopped along in front of me near this tree. I paid not much attention to it, however, except to remember that they are useful creatures about the farm and garden. I walked on to the front gate and, after being there a while, I came back towards the house, close by where I had seen the frog, and looked for it again. I didn't see it at first but, knowing it couldn't be far away, I continued to look and presently saw it at the foot of the tree. Squatting close by the tree, with its mouth almost against it, it was making short, quick rapid nabs at ants on the tree.

This excited my curiosity and, looking more closely, I saw another toad on the other side of the tree. It, too, was eating the ants crawling on the tree trunk near the ground. Walking a little farther around I saw a third frog busily nabbing the ants that came within its reach. I stood and watched these frogs perhaps fifteen minutes, and in that time they must have eaten literally thousands of the ants. There must have been a good

many ants which had started up the trunk and, upon coming to the tar, had been stopped and turned back.

How long the frogs stayed there after I left I don't know. Neither do I know how early they began eating the ants in the spring, or whether they all visited the tree every evening or not, but I have seen them there a number of times since and have stood and watched them with a great deal of interest. They snap the ants with a motion of the head that is surprisingly quick for such clumsy looking creatures. In fact I was never out there on any clear evening in May that I didn't see at least one toad, and once as many as four. During the summer, if they continue in this way, they will destroy millions of ants, so that with their help and the strip of tar around the tree it bids fair to take on a new lease of life.

This experience was a small thing in itself, but it shows how valuable to us as insect destroyers are the humble creatures to which we so seldom give credit for the good they do in ridding our fields and gardens of pests which not only destroy tender spring vegetables but large trees as well.

THE INGENIOUS MR. JOLLY.

BY W. J. SPILLBOY.

Mr. Jolly has written me a characteristic letter. He has read of the experiments of a scientist who has learned that earthworms have the endowment of memory. This professor, knowing that earthworms will quickly go from a light to a dark place if permitted, placed a worm on a plate. Through this plate were bored two holes, one on the right, and the other on the left, of the position assigned to the worm. In the bottom of the left hole was a tiny wire carrying a very small charge of electricity. When the worm crawled into this hole to secure darkness he was instantly shocked upon reaching the bottom. He was shocked literally as well as figuratively. Eventually retreating to the other hole, he finally learned that only in it could he find comfort and, when liberated from his middle position upon the plate, he uniformly entered the hole on his right. This proves that the earthworm has both reason and memory. In this he is ahead of some who consider themselves his betters.

Mr. Jolly's fertile brain conceives the project of applying this principle to the case of the scratching hen. Place her midway between the flower bed and the barnyard. Release her, and she will inevitably gravitate to the former. But, run a few wires around the bed, charged with electricity from small dry batteries. When the intruder steps upon one of these wires blisters are burned on her feet, and she jumps higher than a rail fence. After a few of these experiences she concludes that discretion is the better part of valor, and turns toward the barnyard constantly. Result, a race of educated hens, and no fences needed around the garden or the flower beds.

I am writing Mr. Jolly that his plan is ingenious, but liable to come to failure through no fault of his own. The hen has small brain capacity, for her general size. She has a retreating chin and a flat forehead. Moreover, like many other feminine beings the chief bump upon her cranium is that of curiosity. Let one step upon the electric wires around the flower bed, and two others will come running to learn the cause of the disturbance. It will be the old principle of killing one fly and having five come to the funeral. For the hen habitually inclined and constitutionally directed to the flower bed and the vegetable garden there is only one known cure. That is a surgical operation upon the neck, and it is best performed with a hatchet.

Mr. Jolly is notorious among his friends for reading the headlines of articles in the papers and jumping at conclusions before reading the articles at all. He encloses me several articles clipped from various papers. One is headed, "Sunflower Growing for Poultry." He inquires how a plant could possibly know what it is growing for. He wants to know if sunflowers think. Another article is entitled, "Outlook for Hogs." He says the outlook for hogs in his community is anything but alluring, as there is a large mortality among them this season at the hands of the butcher. Sometimes Mr. Jolly is so sly regarding these notable items in the papers that when he writes me for advice I almost fear he is not in earnest. His last query is as to whether, if one were to set a fried egg he would hatch a fried chicken. Next thing he will be wanting to know whether a double egg will hatch twins. Sometimes I fear that Mr. Jolly is making fun of me.

CAMPING WITH DADDY.

BY H. F. GRINSTEAD.

That is just what Rob and Tommy called him—not Papa or Father—just Daddy. And what fun it was to go to the woods and spend the day. Daddy, who had been a soldier in the Philippines, knew all about camp life. He would not let the boys take anything cooked, but Tommy, who was the larger, carried a small pail with some biscuit dough that Mamma had made at breakfast time, and some slices of raw bacon.

When they had loafed by the brookside, throwing pebbles in to see the ringlets, till the sun was almost overhead, Daddy picked up some dry branches and soon had a brisk fire burning on some stones near the water. When the fire had burned down to a bed of glowing coals he wrapped a part of the bread dough about the end of a slender hickory stick and held it a foot above the hot coals. Presently the dough began to brown on one side, and when he turned it, and kept turning it till a nice crisp cake of bread was ready for the hungry boys.

Tommy had cut another hickory stick, leaving two little branches at the end. Following Daddy's directions, he sharpened the fork and thrust on the end a slice of bacon, which he held over the coals as Daddy had the bread. The meat began to sizzle, and the drops of grease falling on the fire made bright little spurts of flame. When the slice was done Tommy laid it on a clean rock beside the piece of bread and put another on, for they must have three.

Roy was not large enough to help much with the camp lunch, but he dipped a bucket of water from the spring near by and set it beside the big rock.

Presently the meal was ready and they all fell to with a zest. And oh, such bread and meat. The little boys thought they had never tasted anything quite so good, not even Mamma's doughnuts. At home they would not touch bacon, but to them this tasted different.

"Oh, Mamma!" exclaimed Tommy and Rob in a breath, when they returned home late in the afternoon, "Daddy cooks such good bread that we want to camp every day—every day but Sunday."

"See," said Roy, holding up a bit of crust, "I brought you a piece so you could see how good roasted bread is."

THE BOY WHO WAS DIFFERENT.

(Continued from page 8).

Then to add to Phillip's horror, their voices awoke Katie and the child got down from the bed and came outside the door. Here, passing between the stranger and himself, she climbed up into the rustic seat and sat down. The man turned and looked at the child and poor Phillip, still trying to talk calmly of irrelevant things, imagined he saw a look of malignant hate come into the lunatic's eyes. Was the insane man going to throw the empty glass at the child, or pick her up and dash her against the stone flagging?

The strange man's glance then wandered to an axe that leaned against the house near Phillip's room door and new horrors suggested themselves to the boy's tortured mind. Was the fellow going to spring for the axe and brain them both? Still struggling to control nerves and voice, Phillip stepped between the visitor and the axe.

"Have you heard from Quimby this morning?" suddenly asked the man as though he had been paying no attention to Phillip's remarks.

Just then the telephone bell rang inside the boy's room and Phillip, with a flash of heaven-sent inspiration, said: "That's Quimby now. Do you want to talk with Quimby?"

A cunning look came into the stranger's eyes. He had a scheme for throwing his pursuers off his track. "Yes," he said, stepping toward the sound of the bell.

And then as the man entered the room, quick as a flash of his own "lightning," Phillip slammed the big oaken door with the spring lock, threw the heavy window shutter and snapped the padlock. Then, snatching up little Katie, he fled down the road toward the Filbert place as an insane yell came from inside the improvised prison and a body hurled itself against the door like a catapult.

An hour later officers from the asylum at Quimby arrived at the Foulds farmhouse, overpowered the lunatic and returned him to the institution. And from that day the boy whose nerve and presence of mind had saved two lives and captured a dangerous lunatic was universally respected. He was no longer the epitome of all that was worthless. He was only different.

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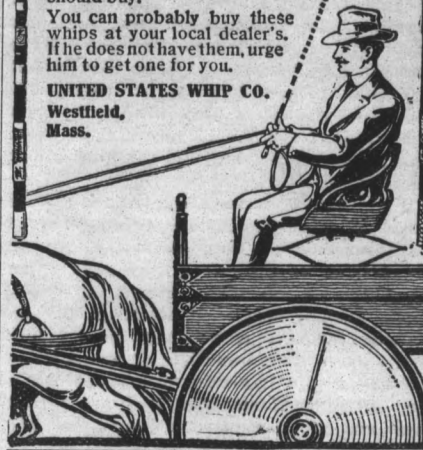
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Woman and Her Needs

At Home and Elsewhere



Are You a "Street Saint?"

"Street saint and home devil" used to be the expressive phrase applied to the man or woman who kept all the smiles and sweet words for strangers and the scowls for the family. I heard the term frequently during childhood, but of late years it has fallen into innocuous desuetude. I should like to think it is because such abnormalities have ceased to exist, but facts compel me to the opinion that it is only because it is no longer good form to refer to the gentleman last mentioned, he having passed out along with other old-fashioned conceptions.

But if the name has died out the breed has flourished. Indeed I am afraid the majority of us have at least a drop of the blood in our veins, though we may be far from meriting the old term.

It is so much easier to put on our company manners for people who are really nothing to us at all, while the folks at home get the benefit of our headaches and plain grouches. In this hurried age, when the average American man and woman is a little below par in health and away down in nerve control there is a constant feeling of irritation, of chafing over little things which would not exist if the individual were in perfect health and leading a well-ordered, normal life. We make an effort to control ourselves when strangers are about, but when alone with the family we feel that they should realize how tired we are or how our head aches and make excuses for our surly ways and snappy words.

"They know I don't mean anything by it, they understand it is just because I am worn out," is the excuse we offer ourselves.

But unkind words hurt just as much whether they are said because a man has a headache or because he has a devil. And the other fellow doesn't always make the excuses for you that you think he will. Children never stop to analyze the feelings of their elders, and all too often it is the small people who get all the benefit of the aches and pains. A scolding is a scolding to a child, and the parents who are constantly working their ill-feelings off on the children and excusing it with the thought that they work early and late to care for the brood are laying up a store of future sorrow.

"My father hates the sight of me," I overheard an eight-year-old tell my boy. "He never speaks to me except to find fault with me. As soon as I'm 15 I'm going to run away."

That father would be struck dumb if he knew his child harbored such thoughts. As a matter of fact his whole heart is bound up in that boy and he is working himself to death to provide for the lad's future. He is working too hard, and that is where the trouble arises. He comes home at night exhausted, nerves a quiver and head aching, too tired to be jolly and keenly sensitive to unnecessary noises. All day he has forced himself to be smiling, now he wants to relax.

The boy, a healthy, noisy lad, sprawls around over everything, talks in a loud tone, like all real boys, falls over furniture, drops his food and does all the other soul-trying things that a small boy does if he is well. The knowledge that he is annoying his father only makes him more awkward and in his wild attempts to make himself obscure he only becomes more of a trial to his father. Sharp reprimands follow, the boy sulks or cries, mother tries to pacify, and everyone is glad when dinner is over and laddie can go to bed.

As a matter of fact, that father never does speak to his boy except to scold him, but he doesn't know it. He is too worn and tired when he gets home to want to talk and the only time he speaks is to scold the boy. But he wouldn't believe you if you told him so.

I like to think he is an exception. But there are still too many parents who let

ill-health excuse ill-temper. Of course, it is far easier to be good natured when you are well, but the old-fashioned brand of religion and the newest cult as well, both teach the necessity of controlling the spirit, no matter what the outside or inside provocations. The great apostle said, "I keep my body under," long before a modern teacher began the cry, "Matter is nothing."

If we must be cross sometimes, why not be cross to the folks who don't have to live with us? They might stand it occasionally, but the ones who are in our home surely deserve something better than an atmosphere of scowls.

DEBORAH.

FRESH AIR CHILDREN ARE AGAIN READY FOR VACATION.

The summer season is at hand and The Michigan Fresh Air Society is again ready to begin its work. The society was late in starting its work last year, but the ready response, in reply to the appeal in the Michigan Farmer, made it possible to accomplish much good. The children all enjoyed the happiness of real farm life and returned with renewed health and spirits.

If the friends could only know how much good these glimpses of farm life and home life mean to so many of the children sent out by the Society, they would feel many times repaid. There are many to go this season, and offers from nearby points are most helpful. Points within 100 or 150 miles from Detroit are best.

The class of children to be sent is not always welcomed by the average family sending in offers to take a child or two. They usually want "attractive" children. These children are typical foreigners, Syrians, Belgians and Slavs, frequently with very dark skin and clumsy clothing but they are good children and live in such crowded districts that they are sadly in need of fresh air and wholesome food.

Headquarters this season will be in Associated Charities Building, 69 Lafayette Boulevard, Detroit.

ROSE-TIME IN JUNE AND DECEMBER.

There is probably no flower so universally loved as the rose, "the queen of flowers." This admiration is so much a part of feminine nature, that woman has experimented along the lines of retaining, not only the odor, the soul of the flower, but the rose itself throughout the year. You can with a little work, and care, preserve some of your June roses, and have them fresh for Christmas, or New Year. This is the way this seeming miracle, may be accomplished.

When the roses are at their best, select a number of buds that are just ready to blow, and cut them from the bush with long stems, being careful not to touch the buds or the stems close to them. Before you cut them from the bush, tie pieces of cotton thread tightly around the stems, about three inches from the buds. Carry the buds right to the house, cut off the stems just below the thread and apply to the stems some sealing wax, previously warmed. It must not be hot, but just warm enough to be ductile, so the flower may not be injured by the heat.

Then roll a piece of paper into a cone-like shape, place the rose-bud in it and screw it up. Do this with each bud, then place them in a box, and seal the edges of the box so as to exclude the air. This insures the success of the operation.

Lay the box away where it will be undisturbed until the roses are wanted. Open the box, cut off the ends of the stems and place them in lukewarm water. In two or three hours the buds will open and retain the freshness and fragrance of summer.

The making of rose or pot-pourri jars is redolent with the romance of past ages. This custom was handed down to us from our grandmothers, and is probably the best known, and simplest way of imprisoning the spirit of rose-time all the year.

To make these much is left to the individual taste, but the foundation of rose leaves and salt is the same throughout. Place the dried petals in a closed jar, sprinkling each thin layer of leaves with a thinner layer of the table salt; not quite a pint of salt to each quart of rose petals. Other flowers and various spices may be added, but many rose lovers prefer the rose alone. When all are in pour over the whole one ounce of the best rose perfume, the alcohol in which will tend to prevent the decay among the leaves. Keep the jar tightly closed except when perfume is desired, when it may be opened for a short time.

Many uses will suggest themselves for these dainty jars. Handkerchiefs and stationery may be perfumed by placing them above the open jar, and shutting the whole in a tight box.

Making rose pillows is another simple way of preserving roses throughout the year. Dry quantities of roses in the sun quickly, and thoroughly to prevent mustiness. Use these to fill pillows, either alone or in conjunction with other material. If other filler is used it is well to add to the rose leaves rose sachet powder to make the scent distinct enough.

For the economically inclined, it may be said that white cotton scraps of any kind, cut into the smallest pieces, make a good filler for pillows. It is superior to cotton batting because it is not inclined to become lumpy.

Though much has been written about the making of rose-beds, during the past year, these are perhaps the least known of the rose novelties.

It is often claimed that rose beads were first made by the nuns of California, when the convents and monasteries flourished in that country during the time of Spanish possession. The same romantic authority states that it was with rose beads that these good Sisters made their beautiful rosaries. Whether this be true or mere tradition, we know that rose beads are as fascinating in the making as in the using, possessing not only fragrance, but a quaint, appealing beauty.

To make these gather the roses while the dew is still on them; cut off the tips or hard portion of each petal, rejecting any grain of the yellow substance, and pound them to a pulp in a mortar, as was the old way, or lacking this, the ever useful food cutter may be used, putting them through with the smallest knife. Spread this paste out evenly to dry, some on china, and some on sheet iron dripping pans. This is necessary to make black beads and those of a lighter color, that dried on iron making the black beads.

Turn the petals every day, particularly those in the dripping pan, so that every petal comes in contact with the iron, this to insure evenness of color. Keep in the sunlight about three days, at the end of which time roll a piece between the thumb and finger, when it feels elastic to the touch it is ready to mold.

Spread the paste on a marble slab, or a large platter, and roll and knead as though you were making bread; when perfectly smooth roll between the palms into balls as thick as the thumbs. They should be larger than wanted when done, as they will shrink in drying. Let stand a few hours, or until they have hardened just enough to receive and hold impressions. If allowed to become too hard, they may be softened by dampening the fingers slightly before beginning to mold them.

The beads may be decorated in any manner preferred. Little circles may be made on them with a clock key, or crosses, diamonds or squares, with a knife blade. But the smooth ones are just as attractive. To make the hole, run a wire, or a very large hat pin through the exact center of each bead

and impale it on a board to hold it firm until dry.

When dry they are ready to be made into beads, bracelets, etc. They may be strung, either alternately light and dark, or all of one color. Linen thread, fine cord or a chain are suitable for stringing.

Perfume balls are made the same way as the beads, but the reddest of rose petals are preferred for these. A few drops of attar of roses must be added just before they are molded. The balls are made much larger than the beads, and are decorated or not as desired. These balls are used in the place of sachet bags, and molded in elongated shapes are serviceable as weights in the bottom of tunics, etc., instead of lead pellets. They not only serve the purpose of holding down draperies, but give the garments a delightful perfume as well.

Roses have their place in the kitchen also. They are delightful as flavoring for cakes, pastry, etc. To make rose conserve pick fresh rose leaves, spread out on a tray until you have a sufficient quantity. Be sure to examine carefully for insects. Put petals in a sound granite basin, or better still, in an aluminum kettle with just enough water to cover; put lid on, and let cook very slowly until tender. Then add almost equal proportion of sugar and boil to a syrup; pour into small jars and seal. A little of this in cakes, creams, puddings, sauces, and pies gives a flavor superior to anything that can be purchased.

These rose novelties make delightful holiday gifts, and the association of sentiment and personal thought of the maker give an added charm.

HOME QUERIES.

Household Editor:—How do you remove mildew?—L. M.

If the stains are old they can not be removed. If fresh, wet in a strong soda and cover thickly with a paste of soap and chalk and put in a strong sunlight for several hours. Repeat the process until the stains disappear.

Household Editor:—What will remove grass stains?—Reader.

Alcohol.

Household Editor:—Can you suggest a pretty salad for a luncheon to be given early in July?

Select large firm cherries, pit them and stuff each one with a blanched hazelnut. Line a salad bowl with crisp lettuce leaves, arrange the cherries in the green nest, sprinkle with sugar and pour over them a dressing thinned with orange juice. Decorate the bowl with a cluster or two of ripe cherries—with the green leaves. Of course, have the salad thoroughly chilled.

Household Editor:—Can someone give me a recipe for raspberry jam?—Beginner.

Allow half as much sugar as you have berries by weight. Press the berries through a sieve, add the sugar and cook slowly about an hour, stirring occasionally to prevent scorching. This may be poured into glasses like jelly and covered with paraffine.

N. S., Cedar Point.—Try burning a formaldehyde candle in the room. Full directions for using will come with the candle which may be bought at any drug store.

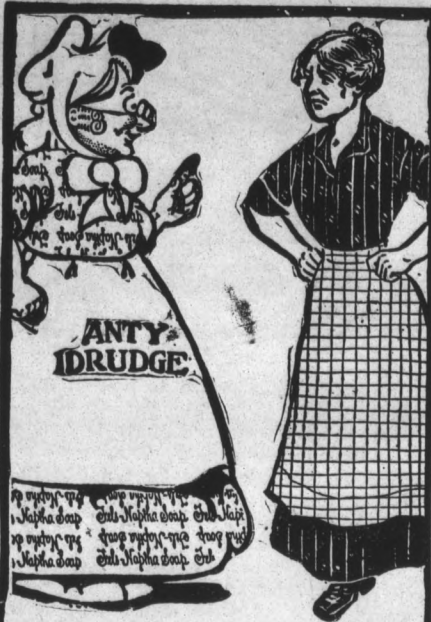
Household Editor:—Could you give me a recipe to make rose perfume of rose petals?—Mrs. F. J. C.

Household Editor:—Will someone tell me how to use overcoat material in making a rug?—A Reader.

Household Editor:—Would like to know what will kill corn lilies and graveyard moss. Barrel salt will kill myrtle.—J. E. R.

Household Editor:—Will someone please give a recipe for apple conserve?—Mrs. L. A. G.

Household Editor:—I am a reader of the Michigan Farmer and find many helpful hints among Home Queries. Mrs. M. E. H. wishes to know how to color cotton goods with sumac berries and what color it will be, so I send in the following: Simply boil them up and put in the rags. They will be a lovely drab. Nothing is needed to set the color. Another



Mrs. Countrywoman — "Well, people talk about the beauties of farm-life, but I can't see 'em. It's work all the time and no rest! I hate the country!"

Anty Drudge—"No rest indeed! Just let me show you how to do your work with Fels-Naptha Soap and you'll sing a different tune."

Fels-Naptha helps every woman to do her work quickly, easily and better than it was ever done before.

Fels-Naptha Soap dissolves grease. Makes dirt disappear in cool or lukewarm water.

If you don't use a washing machine you know how hard it is to rub, rub, rub your clothes up and down on the washboard! With Fels-Naptha you just use your hands to give the clothes an easy rub or two. Don't boil! They're ready for the line in a jiffy.

Easy directions are on the Red and Green Wrapper.

Fels & Co., Philadelphia.



drab which I think better and cheaper is as follows: For five pounds of goods take a half pound of cheapest green tea and two tablespoons of copperas. Tie the tea in a cloth and steep in a brass kettle, then add the copperas and skim thoroughly. Put in the goods, stir and air till colored enough, which should be in a few minutes. If not dark enough add more tea.—Mrs. M. F. S.

KEEPING COOL.

BY BESSIE L. PUTNAM.

Some northern people who went to a southern city to live finally appealed to the natives for a recipe to enable them to keep cool enough to sleep at night, and found that the best way was to take a cold bath just before retiring and to refrain from any further exercise. While most of us do not meet the extreme temperature, there are many days and nights when the house is uncomfortable because of some thoughtlessness on our part.

While sunshine is the best renovator, it is not necessary to include it in our homes during the hottest part of the day. If the rooms are thoroughly aired morning and evening and the blinds or shades drawn during the middle of the day the rooms will be kept in a much more comfortable manner. If for some special reason a lower temperature is wanted, as in case of sickness, and dampness is not to be feared, wringing sheets out of ice water and hanging them before an open window will soon make a hot room comfortable.

This same principle of evaporation is sometimes applied in keeping butter or milk cool without ice or a refrigerator. A porous jug wrapped in a cloth kept wet will keep the milk delightfully cool. If the cellar is kept well aired at night and during the cool hours of the day and closed during the heated period it will be found in good condition at all times. By using the spray pump, if you have not the water power for attaching the hose, the air may be quickly cooled around the house and yard every evening. The sleeping porch is another comfort which farmers can easily improvise. Heat producing foods are being more and more eliminated, and the simpler salads and fruits substituted.

ABOUT LEMONS.

BY SUSAN M. KANE.

Fresh fruits rank high in food and medicinal values and none higher than lemons. During the warm days refreshing lemonade is a favorite drink but their juice can be used in all departments of the home every day all the year round with benefit and satisfaction.

The use of lemon juice in the culinary department in place of vinegar would make for better health in the family and for the preparation of fruit and vegetable salads it should altogether replace vinegar. For the sick room it is a powerful germicide. On the dressing table it is indispensable. In the laundry it lightens labor. For cleaning in many ways lemons are a necessity.

As examples of the uses of lemons the following are suggestive and the few recipes given are excellent.

Culinary.

Use pieces of lemon to garnish the dish and add flavor to meat, fish and game.

Add one teaspoonful of juice to tough boiling meats or a fowl of doubtful age to make tender.

One slice of lemon in a cup of tea makes a delightful drink.

One teaspoonful of juice added to boiling rice or sago whitens the kernels and imparts a delicate flavor.

Equal parts of olive oil and lemon juice make a superior salad dressing. Make the dressing in the usual way, letting the lemon juice replace the vinegar.

Improve the flavor of all dried fruits by adding a few slices of lemon while stewing.

Slices of lemon in canned cherries and many other fruits greatly improve them.

Even insipid apples make a delicious sauce if the juice of one lemon is used for each pound of fruit.

The juice of one lemon and one-half teaspoonful of baking soda will take the place of two heaping teaspoonfuls of baking powder. Sift the flour and soda together and add lemon juice as last ingredient to the mixture.

Lemon Catsup.

Mix one tablespoonful of grated horseradish with grated rind of four lemons. Add a teaspoonful of salt, the juice of the lemons, a dessertspoonful each of white mustard seed and celery seed, a few blades of mace, four cloves and a dash of red pepper. Boil 35 minutes then

bottle white hot. In five or six weeks this will be ready to serve with fish and meat.

Lemon Ice.

Three pints of milk.
One pint of sour cream in which a level teaspoonful of baking soda has been well mixed. Stir cream and milk together and chill thoroughly.

Grate the yellow part from five lemons. Take their juice and mix with two cups of granulated sugar. Mix well and add the grated lemon. Add all to the chilled cream (it will curd if the cream is not chilled), and freeze.

Serving Receptacles.

After the pulp is removed, the skins of lemons make dainty receptacles for serving salads, ices, etc.

The juice of lemons boiled down to half its bulk will keep indefinitely. A tablespoonful of the concentrated juice is used to one glass of water.

Lemons for Health.

The cooling beneficial effect of drinks containing lemon juice is well known. It is an important and pleasant remedy for all fevers and colds.

Flaxseed lemonade if taken at the beginning of an attack of la grippe will generally break it up. To make, pour one quart of boiling water over four tablespoonfuls of whole flaxseed. Add the juice of three lemons and sweeten to taste. Strain and use as warm drink before retiring.

Slippery elm bark tea is excellent for bowel trouble. Pour one quart of boiling water over two ounces of slippery elm bark. Let stand until cool, add the juice of three lemons, strain and sweeten. Drink a small glassful several times a day. Used as a warm drink before retiring relieves a cough or cold.

One tablespoonful of equal parts of strained honey and lemon juice taken every hour will cure a cold.

Use pure lemon juice as a gargle for sore throat.

Lemon juice one part and boiling water two parts, will cure sick headache. Sip a teacupful as hot as possible every two hours.

For a felon, cut off the end of a lemon, stick the finger into the hole and bind it on. Let it stay for a day or two when it will be ready to lance.

Moisten the lips and tongue of a fever patient with a bit of absorbent cotton dipped in equal parts of glycerine and lemon juice. Add lemon juice to the bathing water of the patient and it will reduce the fever.

A slice of lemon dipped in salt and rubbed on chilblains gives almost instant relief from itching and will heal them if the macerated pulp with a little salt added is bound on the affected parts for a few nights. Many school children will be glad to know this when they recall chilblain torture they have endured, especially when the room was a little too warm in the middle of the afternoon.

Remove a wart or corn by binding lemon on it a few times.

A few drops of lemon juice will relieve bee and other insect stings.

Prevent and cure dandruff by using a tonic for the hair twice a week made of one part lemon juice and three parts water. Rub into the scalp with the finger tips.

Shampoo Mixture.

Put over the fire two ounces of pure toilet soap and one pint of rain water. Stir until soap is melted. Beat the yolk of one egg and the juice of one lemon together and pour soap and water over it. Stir with egg beater until nearly cold, then bottle. Keeps indefinitely and is excellent for the hair.

Miscellaneous Uses.

Lemon juice softens water and makes washing less difficult. It should be used only on white clothes. If soaked in water to which the juice of one or two lemons has been added they will require little rubbing.

Ink, rust and fruit stains are easily removed with lemon juice. Moisten the stained goods with cold water. Lay in the sun and squeeze a few drops of lemon on the spot. Dry and repeat until the stain is removed. Do not rub. Add salt to the stain if it be iron rust.

Rub discolorations on unvarnished wood with a slice of lemon, dipped in salt.

Grind lemon peel, dry and use to sprinkle over coals to kill disagreeable odors. Use lemon peel to take the grease off pots, pans, dishes, sinks and bath tubs.

Clean brass or other metal with a slice of lemon dipped in salt.

Rub silver first with lemon, then clean in the usual way with alcohol and whitening. The high lustre of new silver is thus obtained.

Make glassware sparkle by washing in cold water with lemon juice added.

For mildew, make a paste of equal parts of soap and fine starch, using a knife blade as for putty. Moisten the goods where mildewed, with lemon juice, then spread the paste on both sides of the cloth and expose to the sun. When the paste dries soften with more lemon juice.

Lemons for the Dressing Table.

Soiled grimy hands, nails or face are quickly cleaned with a slice of lemon.

One part lemon juice and four parts water will remove freckles, sunburn, and blackheads. Never use lemon juice pure on the face or neck.

Clear the complexion with a milk lotion made of one quart of milk and the juice of one lemon. Use morning and night.

Rub the hands with a piece of lemon before and after doing the dishes or the weekly wash. Moisten the hands before applying. This prevents chapping and makes the hands soft and white.

Use a slice of lemon for the finger nails to loosen the cuticle instead of a sharp instrument.

Whiten the teeth with pure lemon juice. Moisten bits of absorbent cotton with the lemon and rub the teeth up and down. Use bits on the end of a tooth pick between the teeth. Rinse the teeth thoroughly.

ECONOMY.

The front of a pretty shirt waist that has been worn out may be made into a dainty apron. The embroidered front makes the body of the apron, which may be circular at the bottom if so desired. A flounce of half-worn embroidery or lace that is not available for any other purpose may be used for trimming it. I have one, rescued from the rag bag, that has been in almost constant use for over a year.—M.

Household Editor:—In the May 17 issue Mrs. C. asks how to use cold baked beans. I think she will like this way for a change. When baking do not let them bake dry or do not let brown very much. Take out some of them and put into a granite bread tin and press down firmly with your spoon. Set aside and at night you can slice off and place neatly on a platter. Your family will relish them as well as something new. Garnish with lettuce or parsley if desired.—Mrs. E. S.

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Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of 10 cents.



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Poultry.

A NEW WAY OF BATTLING MITES.

To rid hens of the common lice that infest them is not at all difficult if they are supplied with a good dry dust bath, a little slacked lime and a clean place to roost. However, it is a more difficult task to exterminate the little red mites, and they are the ones that do the most damage. I tried many remedies, with so little effect, that I almost became discouraged. As a last resort, after white-washing the interior of the henhouse and washing the roosting poles with one of the coal-tar preparations, I gathered up a lot of old socks and stockings and tied them, one at a place, about the roost poles, choosing points at which the poles rested upon their supports or any place at which the mites seemed inclined to gather. Every morning I carefully removed those rags and burned them, putting fresh ones in their stead. Often I would find hundreds of the pests in one of these rags and their bright red color showed them to be full of blood. As it is their habit to hide in daytime after spending the night on the fowls, they readily fell into these cloth traps, and by burning these I was able to destroy thousands of them. In fact I completely cleaned them out and was soon able to see a gratifying change not only in the plumage and vigor of the hens themselves but in the number of eggs yielded.

Wayne Co.

J. P.

THE MOULTING OF FOWLS.

Once every twelve months birds of every representation cast their feathers, and our domestic poultry is no exception to this natural rule. During the time this moulting takes place, and while the new feathers are being formed, the fowls cannot be said to be actually sick, but they are, nevertheless, passing through a somewhat critical stage. When neglected at this stage disastrous results occur, not only in retarding the natural process, but it does permanent injury to the fowls. This is a time in the life of a fowl when close observation is necessary.

We often hear it stated that, since the moult is natural, the fowls will recover naturally without extra care. The first part of this statement is probably true, and under fair conditions the fowls can get through the period without the least harm to their health, but we must remember that domestic care has altered the fowl in size, habits and fruitfulness. It is quite often claimed by poultrymen that in their management they are following nature. This is very well, and the old statement that we cannot "better nature" is sound in some cases perhaps, but it cannot be made to apply to a saving in poultry culture. It is usually the most careless poultry keepers who carry out this idea, and it will always be noticed that the people who carry it out do so because it entails less trouble to themselves.

To secure best results from our poultry we must house and feed right, so that their reserve force may be turned to an increased egg yield. When fowls are allowed to run at will, roosting in trees, etc., this is hard to accomplish and they show a tendency to revert, and return to their wild nature; then we lose money from our poultry when eggs are at the best price. It is very important, therefore, that our hens receive special care and attention at this critical time.

To get a hen to moult early is of the utmost importance, and everything that assists her is worthy of being put into practice. It is through the mode of feeding that the moult may be hastened, so that the new feathers may be fully formed before cold weather sets in, and in recent years much has been said and printed about the advisability of attempting to force fowls to shed their feathers early in the season, in the hope of inducing them to lay earlier in the winter than they would if allowed to follow their natural habit. The way in which this early moult can be secured is by starving the fowls for a few days; this causes egg production to cease and the feathers to loosen through lack of nourishing food. Then the starvation period is followed by liberal feeding of rich, feather-making and egg-producing rations, which is supposed to force a uniform, rapid and early moult, to be followed by heavy, early-winter laying.

Some of us who have tried "forcing

the moult" favor it; others are condemning it. My opinion as to what causes this wide difference of opinion is that the experiment has been tried on different aged fowls. From my own experience, which is all I can present here, I advise letting nature alone but assisting your fowls in attention.

The temperature of a hen when moulting is high, and it is better if cooling foods be given in order to allay her feverish condition. Green food and plenty of clean, cool water fulfills this purpose, and she can consume large quantities of this food without becoming too fat. A hen that is fat hangs in the moult much longer than one that is rather lean.

Now this food must not be reduced in quantity to secure a reduction of fat, for the fowl's strength must be sustained to carry her through this trying period. Foods strong in the formation of feathers and strengthening to the body are essential, while all fattening foods must be avoided. If possible allow free range during the moulting period. Where this is possible they can balance their own ration much better than we can for them.

A good plan is to have a dry mash of bran and linseed meal before them at all times. Add some beef scrap, unless bugs are plentiful. Another food that will take the place of beef scrap is sour milk or buttermilk for either makes long, glossy feathers and keeps fowls healthy. I have found buttermilk to be the best health restorative you can produce.

I also wish to say that a lousy hen cannot moult rapidly and perfectly. I dip my poultry four times each year at least and more if needed; it keeps the skin healthy, the legs free from scale, and also aids moulting. I use any stock dip advertised in this paper, and have the water warm, putting enough dip in the water to make it almost milk-white. I then take the fowl by the wings with my right hand and hold the head in my left hand; by so doing she cannot struggle much. Hold in the liquid until the feathers are soaked, let loose of wings and, with right hand, loosen the feathers while under the liquid so it can get to all parts of the body except the head. In about two weeks repeat this operation and you can rest assured you have the lice conquered for some time. Don't think such work useless, for your next winter's show fowls and eggs will more than repay you for the trouble.

Livingston Co.

W. B. OPDYCKE.

UNTHRESHED GRAIN FOR POULTRY.

Almos. everyone who has tried to keep poultry profitably knows that it pays well for time and trouble spent to store away a small amount of unthreshed grain for winter use. It is well known by all poultry keepers that it is the busy hen that lays the eggs, hence they should always be made to work for at least a part of their food in winter as well as in summer. Wheat, rye and oats are all excellent for poultry. Oats are probably the best for feeding in the unthreshed form, as the fowls will have to work the oats out of the straw, and they are not liable to glut themselves on the coarse sharp oat-hull. As oats have a stimulating effect on egg production, they are especially useful in the winter ration.

At least enough unthreshed grain should be stored away to furnish the poultry with one good-sized bundle daily for each 30 to 40 hens kept. The unthreshed grain should be kept under cover, so as not to get wet, as disease may attack the hens if compelled to scratch in the damp and wet straw. In the absence of a suitable shed for keeping the unthreshed grain, it may be piled up in a small stack out of doors and covered well with canvas, fodder or marsh hay.

Minnesota.

L. O.

CARE OF LATE-HATCHED CHICKS.

Most all of us have a few, or many, late-hatched chicks which must have exacting care if they are to amount to anything. They should be kept separate from the mature stock and early chicks; also free from vermin of any kind. Water, grit and plenty of wholesome food are, of course, required. Disinfect their coops twice a week and clean them just as often or oftener. Allow them free range if possible, in an orchard or corn field, preferably the former. Feed liberally of some kind of animal food to induce quicker growth. I have found the four most essential factors in successful rearing of late chicks to be shade, cleanliness, range and water.

New York.

F. W. KAZMEIER.



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Markets.

GRAINS AND SEEDS.

Wheat.—The direction of wheat prices continue downward, while the condition of the market and the growing crop are substantially the same as they were one week ago. Additional rains in the sections where they are likely to do the most good, have fallen and the effect has been to cause dealers to act a little more cautiously on the buying side. It is probable that the total of the winter wheat crop will not be changed materially by weather conditions unless it be to affect harvesting and threshing, but the spring wheat is at a critical period of its growth and should ample rains fail to overcome the drouthy conditions that have prevailed the yield will be improved considerably. To a small degree this has been the situation the past week. European conditions are also bearish. Favorable weather has prevailed over practically all of the wheat producing sections of that continent. Roumania alone is the complaining country and she has too much moisture to successfully mature a maximum crop. Millers report a good demand for flour and they have been buying a fair volume of wheat. One year the price of No. 2 red wheat on the local market was \$1.12 per bu. Quotations for the past week are as follows:

	No. 2	No. 1	Red.	White.	July.	Sept.
Thursday	1.03	1.02	91½	92½		
Friday	1.03	1.02	92	92½		
Saturday	1.02½	1.01½	91½	92½		
Monday	1.02½	1.01½	90½	91½		
Tuesday	1.01	1.00	90	91½		
Wednesday	1.00	99	90½	92½		

Chicago, (July 1).—No. 2 red wheat, 93¢@96¢; No. 3 red, 90¢@93¢; July, 89½¢; Sept., 89½¢; Dec., 92½¢ per bu.

Corn.—The tone of this deal has continued steady to a fraction higher with the closing figures given in last week's issue. At present there is a very liberal use of this cereal which is acting to prevent the reduction of prices and is actually keeping them steady to higher under the pressure of improved crop conditions. Rains have occurred in many of the principal corn districts which, together with the warm weather prevailing, has benefited the crop wonderfully the past week or ten days. Large deliveries to fill July contracts have also militated against the bullish influence of a large consumption. One year ago the price on the Detroit market was 76½¢ per bu. for No. 3 corn. Quotations for the past week are as follows:

	No. 3	Yellow.
Thursday	60½	62½
Friday	61½	63½
Saturday	61½	63½
Monday	61½	62½
Tuesday	60½	62½
Wednesday	61½	63½

Chicago, (July 1).—No. 2 corn, 60½¢@61½¢; No. 2 white, 62¢@63½¢; July, 60½¢; Sept., 61½¢; Dec., 58½¢ per bu.

Oats.—While quotations for oats have fluctuated the values on Tuesday were the same as two weeks ago and showed that the decline of last week has been fully recovered. Moisture has improved the crop but a liberal use of grain has overcome the influence of the better crop prospect and added strength to the trade. One year ago the price at Detroit was 55½¢ for standard oats. Quotations for the past week are:

	Standard.	No. 3	White.
Thursday	43	42	
Friday	44	43	
Saturday	44½	43½	
Monday	44½	43½	
Tuesday	44	43	
Wednesday	44	43	

Chicago, (July 1).—No. 2 oats, 33½¢@38½¢; standard oats, 41½¢@42¢; July, 40½¢; Sept., 42½¢; Dec., 43½¢ per bu.

Beans.—Dealers on the local market have accomplished nothing in the way of contracting for beans the past week. The bearish sentiment still pervades the trade, with supplies ample and demand ordinary. From crop reports over Michigan it appears that the acreage planted this spring will be about the same as that of a year ago. The nominal quotation for immediate and prompt shipment is \$2.05 and for August \$2.10 per bu.

Chicago, (July 1).—Values remain unchanged and trading is practically at a standstill. Pea beans, hand-picked, fancy are \$2.35; choice, \$2.50; prime, \$2.20; red kidneys, \$2; white kidneys, \$2.50 per bu.

Rye.—This market is very slow with quotations unchanged. Cash No. 2 is quoted at 64¢ per bu. The Chicago trade is practically the same with No. 2 quoted at 61¢@62½¢ per bu.

Barley.—There is a slight reduction in barley values at both Chicago and Milwaukee, the range at the former point being 50¢@55¢ and at Milwaukee 57¢@55¢, according to grade.

Clover Seed.—A small advance is noted in the Toledo market over the quotations of last week. Detroit seed is now quoted at \$8.20 and Dec. at \$8.20. Alsike also shows improvement with Oct. quoted at \$8.95 and Dec. \$9.

Timothy Seed.—Both cash and September seed are lower, the former being \$2.35 and the latter \$2.45 per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.70; sec-

ond, \$5.20; straight, \$5; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$21; coarse middlings, \$21; fine middlings, \$27; cracked corn, \$26; coarse corn meal, \$22.50; corn and oat chop, \$21 per ton.

Hay.—Values for old hay are still lower with dealing draggy. Carlots on the track at Detroit are: No. 1 timothy, \$14@14.50; No. 2, \$11@12; light mixed, \$12.50@13; No. 1 mixed, \$11@12.

Chicago.—Market firm at lower values. Movement is rather slow. Choice timothy, \$15.50@16 per ton, No. 1, \$13.50@14.50; No. 2, \$11@12; No. 3 and clover mixed, \$8@11; clover, \$8@12; alfalfa, \$14@17.

Straw.—Steady. Carlot prices on wheat and oat straw on Detroit market are \$8.50 per ton, rye straw, \$9@10 per ton.

Chicago.—Steady. Rye straw, \$8@9; oat \$6@7; wheat, \$5.50@6 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Values are materially lower everywhere, liberal offerings and an indifferent demand being factors. Elgin followed up last week's fractional loss with a drop of a full cent on Monday. Locally all kinds have declined, creameries going off 1½¢, while dairy and packing goods are 1¢ lower. Detroit jobbing prices as follows: Fancy creamery, 26¢; firsts, 24½¢; dairy, 21¢; packing stock, 19¢ per lb.

Elgin.—Market steady at 26½¢. Chicago.—All kinds in ample supply except extra qualities, the hot weather causing many of the receipts to miss the top grade. The unsettled, indifferent feeling which pervades this market is sending a portion of each day's receipts into storage and giving the market an undertone of weakness. Quotations are: Extra creamery, 26¢; extra firsts, 25¢@25½¢; firsts, 24½¢; seconds, 23¢@23½¢; dairy extras, 25¢; firsts, 24¢; seconds, 22¢; packing stock, 12¢@21¢ as to quality.

New York.—The decline here has been fully as marked as at other points but the market is reported firm at the lower range. Quotations: Creamery extras, 26½¢; firsts, 25½¢@26¢; seconds, 24½¢@25¢; state dairy, finest, 25½¢@26¢; good to prime, 24¢@25¢; common to fair, 22¢@23½¢; packing, 19¢@21¢ as to quality.

Eggs.—Prices in the local market show another loss, due largely to the extremely variable quality of offerings at this season. Current offerings, candled, being quoted at 17½¢ per dozen.

Chicago.—A slight widening of quotations on some grades is about the only change in this market. Quality is the ruling consideration at this season and receipts that pass muster sell readily at outside figures. Miscellaneous receipts, cases included, are quoted at 15½¢@17¢; do., cases returned, 15¢@16½¢; ordinary firsts, 16¢@16½¢; firsts, 17½¢@17¢; storage packed, firsts, 18¢@18½¢ per dozen.

New York.—Receipts here are running considerably ahead of this time last year and the market continues unsettled and irregular. Fresh gathered extras, 22¢@24¢; western gathered, whites, 20¢@24¢ per dozen.

Poultry.—Offerings continue liberal but the demand has held the market steady, a 1¢ drop in broilers being the only change. Quotations are: Live.—Broilers, 24¢@25¢; hens, 15¢@16¢; No. 2 hens, 12¢@13¢; old roosters, 11¢@12¢; turkeys, 17¢@18¢; geese, 12¢@13¢; ducks, 15¢@16¢ per lb.

Chicago.—Fowls and spring chickens quoted lower, due to increasing receipts of mediocre quality. Selected, uniform stock commands some premium over the quoted prices. Quotations on live are: Turkeys, good weight, 17¢; others, 12¢; fowls, good, 14¢; spring chickens, 25¢; ducks, 11¢@12¢; geese, 7¢@9¢; guinea hens \$4 per dozen.

Cheese.—Steady. Wholesale lots, Michigan flats, 14¼¢@14½¢; New York flats, 15¢@16¢; brick cream, 14¼¢@15¢; limburger, 14¼¢@15½¢.

Veal.—Little doing; quotations largely nominal. Fancy, 13½¢@14¢; common, 10¢@11¢.

Chicago.—Receipts so badly out of condition on arrival that not enough business is being done to establish a market.

FRUITS AND VEGETABLES.

Apples.—Supplies are scarce and values firm. Old apples are practically gone. Detroit quotations are: Fancy, \$5@6; ordinary, \$3@4 per bbl.

Raspberries.—Firm with offerings light. Red, \$6.50 per 24-qt. case.

Strawberries.—Market about over, with remnant of crop going at \$4@4.50 per bu.

Cherries.—Fair supply at \$3.25@3.50 per bushel.

Potatoes.—The cleaning up of the old crop was a disastrous one to those having tubers on hand. The new crop is now taking the place of the 1912 harvest with values at about \$2.50@2.60 per bbl.

WOOL.

Boston.—Increased sales have given the wool trade added impetus this past week and while the present contracts do not show a large volume of business for the season, they seem to point to further improvement. Producers in Michigan and Ohio who still have their wool on hand are holding for 20¢ for mediums with the outlook favorable for getting it. In the west growers are advancing their prices and dealers are also asking more from brokers and manufacturers. The sales at Boston amounted to 1,117,000 lbs. for last week, against a total of 940,000 lbs. for the previous week and 3,710,000 lbs. for the corresponding period a year ago.

GRAND RAPIDS.

Jobbers are paying the country trade 22¢ for No. 1 dairy butter, and 17¢ for fresh eggs, delivered in Grand Rapids. In

live poultry, broilers are quoted at 18¢@22¢; fowls and springs at 12¢@13¢. Veal is worth 8¢@10¢. The city market reports 300 loads of produce Tuesday morning, including 75 loads of strawberries, which sold at \$1.75@2.65 per crate, and 50 loads of cherries, sour cherries \$1 and sweet \$1.75@2. Red raspberries are coming, first offerings selling at \$2.75 per crate, gooseberries \$1. First summer squash of the season was brought in by K. DeHaan, of Paris township, and sold at 2¢ per lb. Peas are worth \$1.75 per bu. Grain prices are as follows: Wheat, 97¢; oats, 43¢; corn, 65¢; beans, \$1.60.

DETROIT RETAIL QUOTATIONS.

Eastern Market.—There was a brisk market Tuesday so long as the produce lasted, but that was unusually short since buyers were plentiful and supplies comparatively few. With the exception of potatoes the offerings were disposed of at fairly satisfactory values. Strawberries are nearly gone and the quality of those now on the market is very inferior; but they are going at \$2.25@2.75 per 24-qt. crate. Potatoes are draggy at 40¢ per bu. for the best. Lettuce is bringing 25¢ per bu; peas, \$1.25; radishes plentiful at 3 bunches for 10¢; beets 3 bunches 25¢; carrots, do., 25¢; currants, \$3 per 24-qt. case. Loose hay \$13@16 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

June 30, 1913.

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

Receipts of stock here today as follows: Cattle, 175 loads; hogs, 70 double decks; sheep and lambs, 7 double decks; calves, 1400 head.

With 175 loads of cattle on our market here today, and Chicago reporting 19,000 and lower, with excessively hot weather and a dull beef trade, the dry-fed cattle all sold from 10¢@15¢ per cwt. lower than last week, quality considered. Of course, we sold quite a number of loads of cattle today for \$9 per cwt., but they were fully 10¢@15¢ per cwt. better than the cattle that brought the same price here last week. Cattle weighing from 1200 down sold fully 15¢@25¢ per cwt. lower than last week, as did cows, heifers, bulls and in many instances the common grassy kinds sold fully 50¢ per cwt. lower and very draggy, and at the close of the market there is at least 30 loads of cattle unsold.

We quote: Best 1350 to 1500-lb. steers, dry-fed, 18.75¢@19; good to prime 1200 to 1300-lb. do., \$8.40@8.65; good to prime 1100 to 1200-lb. do., \$8.15@8.40; coarse and plain heavy steers, dry-fed, \$7.65@7.90; good to choice heavy dry-fed steers \$8@8.25; good to choice heavy steers, grassy kind, \$7.40@7.60; medium butcher steers, grassy kind, \$7@7.25; dry-fed steers and heifers, mixed, \$7.80@8; light common grassy steers and heifer, \$6.50@6.75; best fat cows, dry-fed, \$6.50@7; do. grassy, \$5.50@6; good butcher cows, \$5.50@6; light butcher cows, \$4.50@5; trimmers, \$4@4.25; best fat heifers, dry-fed, \$7.75@8; medium butcher heifers, grassy \$6.50@7; light and common grassy heifers, \$6@6.25; stock heifers, \$5@5.50; best feeding steers, dehorned, \$7@7.25; light and common stockers, \$6@6.50; best butcher bulls, \$6.25@7; bologna bulls, \$6@6.50; stock bulls, \$5.25@5.50; best milkers and springs, \$5@70; common kind do., \$3.50@4.5.

Receipts of hogs today 70 double decks. Demand was fairly good and the prices 5¢@10¢ higher on the best grades, while pigs and lights sold from 10¢@20¢ higher. Yorkers, mixed and medium selling at 9.15 generally; pigs and lights, \$9.15@9.25; roughs, \$7.50@8; stags, \$6.50@7.25; market closed about steady, everything sold.

Sheep and lambs market active today; prices about steady on sheep, and half higher on lambs; choice handy yearling lambs selling \$6@6.50; spring lambs, \$8@8.50; look for about steady prices the balance of week.

We quote: Choice spring lambs, \$8@8.50; cull to fair do., \$6@7.75; yearling lambs, \$6@6.50; bucks, \$3@3.50; wethers, \$5@5.25; handy ewes, \$4@4.50; heavy do. \$3.75@4; cull sheep, \$2.50@3.25; veals, choice to extra, \$9.75@10; fair to good, \$7@9.50; heavy calves, \$4.50@6.

Chicago.

June 30, 1913.

Cattle. Hogs. Sheep.
Received today 19,000 40,000 24,000
Same day last year. 20,661 42,429 21,310
Received last week. 39,960 142,407 62,923
Same week last year. 46,444 137,248 100,693

Although this week opens with a small supply of cattle for Monday, the general demand is so poor that up to a late hour scarcely anything had been done in disposing of the steers, and the market was called weak to lower, largely on a guess. Hogs were active at steady prices, and there was a reported sale of part of a car load of prime hogs at \$8.85. Hogs marketed last week averaged 242 lbs., compared with 248 lbs. a fortnight ago, 238 lbs. one year ago, 235 lbs. two years ago and 240 lbs. three years ago. The market was overstocked with live muttons, including some 5,000 head of range spring lambs from Idaho and yearlings from Oregon. The lambs were not first-class, though good for the opening of the season, and up to a late hour they were unsold. The general market was materially lower, with the best spring lambs selling at \$7.25, compared with \$7.50 last Saturday, and everything else in the sheep and fed lamb line showing similar reductions.

Cattle were slow to advance last week, as the packers had taken advantage during the previous week of the slump in prices resulting from the exceptionally large receipts to store away plenty of cheapened beef in their coolers. Conse-

quently the greatly lessened offerings failed to sell much higher, and even the light runs on Monday and Wednesday sold only a little higher, plenty of the Monday offerings failing to show any advance. The bulk of the beef steers sold during the week at a range of \$7.80@8.80, the receipts running more largely to grassy lots than heretofore, and the commoner light-weight steers going at \$7.10@8, while the best heavy beefs brought \$8.65@9, the top comparing with \$9.20 for the preceding week. Medium steers brought \$8.10@8.35 and good lots \$8.40@8.60, with medium to prime little yearling steers taken at \$8@8.85. As usual, fat butcher cattle were apt to show the most animation and firmness, and cows and heifers found buyers at \$5@8.60, while cutters brought \$4.40@4.95, canners \$3.50@4.35, and bulls \$5.25@7.60. In addition to the dearthness of beef, the demand for cattle had to contend against the extreme heat, and it is well known that in hot weather people eat less meats and more vegetables, berries and fruits, as well as eggs, now abundant and low in price. After the recent increased animation in the stocker and feeder branch of the market, the movement in these cattle looked meager last week, this being due altogether to the limited receipts and the stiff advance in prices for desirable kinds, for the desire to buy was not perceptibly diminished. For stockers buyers paid \$5.50@8, but very few went near the top, while weighty feeders brought \$6.75@8.10. Calves advanced under the moderate offerings, selling at \$5@9.50, according to weight and quality. Milch cows sold only fairly at \$50@100 each. Late in the week beef cattle weakened and closed 10¢@20¢ lower than a week ago.

Hogs developed a firm undertone last week under the influence of an excellent demand, and rallies followed breaks in prices, with speculators taking a hand on several days. Every hog was wanted, but the best demand was for choice butcher weights, these selling largely higher than the best light weights, while rough, heavy packing hogs sold lowest of all. Hogs are the most profitable of all farm products still, selling far higher than in other summers, 1910 excepted, and there are no indications that they will cease to command high figures for months to come. The packers are in control of the provision market, and predictions have been made that hogs will go much higher and that provisions will also move decidedly higher during the last half of the year. Patrick Cudahy, the Milwaukee packer, has placed himself on record as predicting that hogs will bring \$10 per 100 lbs. by August. Hot weather always lessens the consumption of fresh pork, and it also tends to check the cash sales of cured hog products, but stocks in western warehouses remain much below normal. Hogs average well in quality, and they also average heavier than at corresponding dates one and two years ago. In spite of the increased receipts of hogs last week, prices closed Saturday at \$8.30@8.80, or about the same as a week earlier, with stags selling at \$8.80@9.20, boars at \$3.50@4.75 and pigs at \$7.25@8.70, while throwout packing sows brought \$7.85@8.25.

Sheep and lambs had such a tremendous collapse in prices week before last that it was a foregone conclusion that supplies would immediately undergo a marked falling off. Very much smaller numbers were shipped in from all directions, and prices experienced as pronounced advances all along the line as the previous declines. Spring lambs made up an extremely large proportion of the offerings, and the big packing plants received a liberal share of the springs, these being consigned direct from their Louisville buyers. Last year's fed lambs, as well as ewes, were in moderate supply and shared in the advances. During the first four days last week spring lambs advanced from \$1 to \$1.50 per 100 lbs. and sheep 50¢@75¢, with the best lambs going at \$8.75@9, but the following day buyers smashed prices, spring lambs going at \$5.25@8, fed lambs at \$5.25@7.25, wethers at \$5@5.75, ewes at \$5@5 and bucks at \$3@4, while prices were still lower Saturday.

Horses were in the usual light mid-summer demand last week, with no large attendance of buyers from other places, and sales were mainly restricted to horses showing harness marks and offered around \$200@250 per head, a few selling around \$275. The best class of extra heavy drafters ruled largely nominal at \$300@350 in the absence of offerings. The commoner horses were quoted slow at \$85@125.

LIVE STOCK NEWS.

There is a growing demand in the Chicago market for feeding lambs, many farmers in Michigan wanting lambs for grazing, and the moderate offerings sell readily for \$5@5.50 per 100 lbs. The inquiry for breeding ewes is not yet very large, a few lots having changed ownership within a short time at \$3@3.50 per 100 lbs.

There is a variable demand in the Chicago market for stocker and feeder cattle, depending upon whether prices happen to be up or down. The country demand comes largely from Indiana and Ohio, with a fair demand from Michigan farmer-stockmen for well-bred light steers. Intending buyers will find that time and frequently money are saved by placing orders with some high-class commission firm, stating the kind of cattle wanted and the price limit, for the frequent changes in the market cannot be closely followed except by men on the spot all the time. Besides, the stocker and feeder business is largely in the hands of speculators, and a country buyer has to be mighty sharp to make as good terms as can be made by a commission firm that knows every trader and understands the business thoroughly.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
July 3, 1913.

Cattle.

Receipts, 785. Market active at Wednesday's and last week's prices on all grades.

We quote: Best dry-fed steers and heifers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.50@7.75; do. 800 to 1000, \$7@7.25; grass steers and heifers that are fat, 800 to 1000, \$6@7; do. 500 to 700, \$5@6; choice fat cows, \$6.25@6.50; good fat cows, \$5.75@6; common cows, \$4.75@5; canners, \$3.75@4.25; choice heavy bulls, \$6.50; fair to good bolognas, bulls, \$6@6.25; choice feeding steers, 800 to 1000, \$6.75@7; fair do., 800 to 1000, \$6@6.50; choice stockers, 500 to 700, \$6.50@7; fair do., 500 to 700, \$5.50@6; milkers, large, young, medium age, \$5@70; common milkers, \$35@45.

Haley & M. sold Newton B. Co. 8 heifers av 810 at \$7; to Boyer 5 stockers av 500 at \$7; to Bresnahan 1 cow weighing 1070 at \$5.50, 1 do weighing 1140 at \$5.25, 7 heifers av 667 at \$5.70; to Breitenbeck 5 cows av 1012 at \$4.85; to Bower 23 stockers av 475 at \$5.75; to Schuman 3 butchers av 920 at \$6.75, 8 cows av 1046 at \$5.20; to Breitenbeck 11 butchers av 922 at \$7.35; to Stahlem 2 do av 895 at \$5.60, 1 bull weighing 620 at \$5.50; to Rattkowsky 1 do weighing 1000 at \$5.50, 1 do weighing 560 at \$5, 2 cows av 980 at \$5.10; to Bresnahan 4 heifers av 735 at \$6; to Land 11 feeders av 710 at \$6.50; to Mich. B. Co. 8 heifers av 715 at \$6; to Bresnahan 6 butchers av 1120 at \$5.85, 6 do av 970 at \$7.35; to Mason B. Co. 2 cows av 950 at \$6, 2 do av 1040 at \$6.25, 2 do av 775 at \$5.50, 2 do av 860 at \$5, 2 heifers av 525 at \$6.25, 3 steers av 887 at \$7.35, 5 do av 790 at \$5.50, 1 bull weighing 650 at \$5.80, 5 steers av 926 at \$7.15, 2 do av 690 at \$6.10.

Sandall sold Kendall 18 stockers av 535 at \$6.25.

Same sold Kull 8 butchers av 794 at \$6.75.

Bishop, B. & H. sold Hammond, S. & Co. 3 cows av 917 at \$6, 1 bull weighing 1250 at \$6.25, 4 do av 1100 at \$6.35; to Parker, W. & Co. 5 do av 1200 at \$6.25, 3 do av 1050 at \$6.25, 2 cows av 1065 at \$5, 2 do av 1000 at \$5.50, 2 do av 1095 at \$5.50, 1 do weighing 1120 at \$6, 1 bull weighing 730 at \$5.50, 2 canners av 825 at \$4.25, 1 cow weighing 1000 at \$5, 8 cows av 962 at \$5; to Bresnahan 2 bulls av 470 at \$4.50, 7 butchers av 644 at \$5.50; to Boyer 1 heifer weighing 480 at \$5.50, 3 bulls av 457 at \$5; to Kull 2 butchers av 660 at \$6, 9 do av 820 at \$6.75; to Norey 13 cows av 740 at \$5.50; to Parker, W. & Co. 2 bulls av 870 at \$6; to Kamman B. Co. 13 steers av 905 at \$7.50; to Hammond, S. & Co. 1 bull weighing 1150 at \$6.25; to Schumaker 5 stockers av 740 at \$6.10, 1 bull weighing 680 at \$5; to Kamman B. Co. 3 butchers av 971 at \$7, 3 cows av 1150 at \$6; to Cooke 10 steers av 954 at \$7.25; to Kamman B. Co. 7 butchers av 764 at \$6.50; to Parker, W. & Co. 2 cows av 960 at \$4; to Marx 1 steer weighing 880 at \$6.50, 3 do av 777 at \$6; to Breitenbeck 3 steers av 853 at \$5; to Bresnahan 3 heifers av 647 at \$5.50; to Mich. B. Co. 1 cow weighing 1180 at \$5, 1 do weighing 1220 at \$6, 4 do av 1087 at \$5.50; to Sullivan P. Co. 3 cows av 1227 at \$6; to Hammond, S. & Co. 4 heifers av 810 at \$7.

Roe Com. Co. sold Kull 1 cow weighing 740 at \$4.75, 2 do av 800 at \$5.50, 5 do av 888 at \$5.35, 2 heifers av 685 at \$6.50, 2 cows av 900 at \$6; to Kendall 7 stockers av 671 at \$6.25; to Goodwin 3 cows av 943 at \$5, 1 do weighing 1000 at \$4.25; to Newton B. Co. 4 heifers av 760 at \$6.50; to Goose 9 butchers av 501 at \$5.25; to Nancy 3 cows av 863 at \$4.25; to Kamman B. Co. 21 steers av 828 at \$6.60, 1 do weighing 840 at \$7.25; to Bresnahan 2 canners av 870 at \$5.50, 4 do av 705 at \$4, 9 butchers av 566 at \$5.75; to Sullivan P. Co. 3 do av 740 at \$5.75, 1 cow weighing 1180 at \$4.25; to Mich. B. Co. 11 steers av 1275 at \$8, 1 bull weighing 1700 at \$6.75, 10 steers av 1146 at \$8, 2 do av 915 at \$7; to Nancy 7 bulls av 601 at \$5.25; to Newton B. Co. 2 cows av 875 at \$4, 4 do av 990 at \$6.25; to Sullivan P. Co. 1 bull weighing 1020 at \$6.25, 1 cow weighing 960 at \$5, 2 steers av 940 at \$7.25, 2 cows av 1245 at \$6.10.

Spicer & R. sold Boyer 5 stockers av 454 at \$5.75; to Kull 2 cows av 910 at \$5.50; to Hammond, S. & Co. 3 butchers av 710 at \$6.60, 1 bull weighing 1120 at \$6.60, 4 butchers av 1005 at \$7, 1 heifer weighing 730 at \$6, 3 steers av 970 at \$7, 2 do av 570 at \$6; to Bray 1 do weighing 660 at \$6; to Nancy 6 cows av 861 at \$4.25; to Sullivan P. Co. 7 butchers av 764 at \$6, 3 cows av 880 at \$4.75, 6 do av 970 at \$5.25; to Boyer 7 stockers av 367 at \$5.75, 1 bull weighing 750 at \$5.50.

Veal Calves.

Receipts, 856. Market 25c lower than Wednesday. Best, \$10; others, \$6@9.50.

Spicer & R. sold Ronick 11 av 145 at \$9.15; to Goose 21 av 150 at \$9.30; to Burnstine 1 weighing 110 at \$8, 3 av 160 at \$10, 4 av 150 at \$10, 15 av 155 at \$10; to Applebaum 7 av 250 at \$6.50, 10 av 138 at \$9; to Parker, W. & Co. 1 weighing 270 at \$7, 8 av 160 at \$10; to Mich. B. Co. 3 av 160 at \$7, 14 av 150 at \$9;

to Sullivan P. Co. 10 av 175 at \$5, 15 av 145 at \$7.25.

Roe Com. Co. sold Sullivan P. Co. 11 av 160 at \$9.50, 14 av 150 at \$9.50, 5 av 165 at \$7, 5 av 165 at \$10; to Mich. B. Co. 6 av 120 at \$9; to Barlage 3 av 140 at \$8, 9 av 145 at \$10; to Mich. B. Co. 6 av 155 at \$10, 13 av 160 at \$10.

Sandall sold Parker, W. & Co. 24 av 185 at \$7.75.

Sandall sold Kull 7 av 145 at \$9.50.

Haley & M. sold Goose 2 av 200 at \$7.25, 8 av 155 at \$10; to Parker, W. & Co. 10 av 162 at \$9.75, 15 av 150 at \$9.50, 18 av 140 at \$10; to Newton B. Co. 13 av 160 at \$10, 9 av 150 at \$9.50; to McGuire 6 av 160 at \$9.75.

Waterman sold Newton B. Co. 13 av 175 at \$9.75.

Weeks sold Rattkowsky 10 av 150 at \$9.75.

Bishop, B. & H. sold Burnstine 7 av 165 at \$10.25, 6 av 160 at \$10; to Parker, W. & Co. 16 av 155 at \$10, 19 av 160 at \$10, 20 av 145 at \$9.25, 18 av 150 at \$8.50, 6 av 190 at \$7; to Goose 4 av 140 at \$10.25; to Applebaum 17 av 145 at \$8.50; to Thompson Bros. 17 av 150 at \$10, 3 av 125 at \$8.50, 3 av 165 at \$9.50, 2 av 250 av \$7.50; to McGuire 6 av 175 at \$9.50, 3 av 130 at \$8, 14 av 160 at \$10; to Mich. B. Co. 11 av 145 at \$9.75.

Sheep and Lambs.

Receipts, 887. Market strong at Wednesday's or last week's prices; quality very common. Best lambs, \$7.50@8; fair lambs, \$5.50@6; light to common lambs, \$4.50@5; yearlings, \$4@6; fair to good sheep, \$3.50@4; culs and common, \$2@2.50; heavy fat ewes, \$3.25@3.50.

Bishop, B. & H. sold Varso 18 lambs av 68 at \$8; to Sullivan P. Co. 30 do av 67 at \$7.75, 4 sheep av 130 at \$3.50, 6 do av 88 at \$5, 5 do av 155 at \$2.75, 11 do av 70 at \$4; to Thompson Bros. 22 lambs av 70 at \$7.25; to Hammond, S. & Co. 14 do av 67 at \$7.75, 28 do av 70 at \$7.75.

Haley & M. sold Hammond, S. & Co. 11 lambs av 70 at \$7.75; to Sullivan P. Co. 12 yearlings av 85 at \$6, 50 lambs av 58 at \$7.25; to Newton B. Co. 17 do av 55 at \$7.50, 16 yearlings av 90 at \$5.

Sandall sold Sullivan P. Co. 12 sheep av 90 at \$4.

Spicer & R. sold Newton B. Co. 6 yearlings av 105 at \$5, 38 lambs av 70 at \$7.50, 4 do av 50 at \$7; to Sullivan P. Co. 41 do av 65 at \$7.25; to Mich. B. Co. 42 do av 68 at \$7.50.

Hogs.

Receipts, 3108. None sold up to noon; prospects 15c higher than on Wednesday. Range of prices: Light to good butchers, \$9; pigs, \$9; light yorkers, \$9; stags one-third off.

Friday's Market.

Cattle.

June 27, 1913.

Receipts this week, 2022; last week, 1904; market dull at Thursday's prices.

We quote: Best steers and heifers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.50@7.75; do. 800 to 1000, \$7.50@7.75; grass steers and heifers that are fat, 800 to 1000, \$6.75@7.50; do. 500 to 700, \$5.75@6.75; choice fat cows, \$6@6.50; good do., \$5.25@5.75; common cows, \$4.75@5; canners, \$3.50@4.25; choice heavy bulls, \$6.50; fair to good bolognas, \$6@6.25; 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, \$5.50@6.25; milkers, large, young, medium age, \$6@70; common do., \$35@50.

Veal Calves.

Receipts this week, 1228; last week, 1303. Market 50c lower than on Thursday. Best, \$9.50; others, \$6@9. Milch cows and springers dull.

Sheep and Lambs.

Receipts this week, 1913; last week, 2456. Market dull at Thursday's prices. Best lambs, \$7@7.50; fair do., \$6@7; light to common lambs, \$5.50@6.50; yearlings, \$5@6; fair to good sheep, \$3@3.50; culs and common, \$2@2.75.

Hogs.

Receipts this week, 5357; last week, 6371; market steady to 5c lower. Range of prices: Light to good butchers, \$8.75; pigs, \$8.75; light yorkers, \$8.75; stags one-third off.

Many cattle have been marketed recently from regions where the hot, dry weather during June burned up the pastures, and some of these cattle were purchased and returned to the country as feeders. On the declines some rare bargains were picked up. Yearlings that were not fat enough suffered big declines in prices, rallying later on reduced receipts. The break in prices resulted in shifting many cattle from dry sections to regions where feed is plentiful.

Cattle values in Argentina are advancing rapidly, and in Buenos Aires the owners of freezers are paying around \$95 for good grass cattle, the highest price on record. A drought that lasted two years caused wholesale slaughter of cows and calves in that country, and five years must elapse before beef production can be restored to normal proportions.

Horses were in fairly active demand last week, but there was not the large call for farm horses seen a few weeks ago, these selling on a basis of \$140@225 per head, with desirable farm mares adapted for breeding salable at \$230@285. The cheaper class of horses sold around \$85@125, with lively horses wanted at \$150@200. Drafters were fairly active at \$225@325, and an eastern buyer paid \$600 for a nice pair of bay Belgian grades.

Country shippers of hogs are generally exercising a good deal of care in making up shipments and in seeing that the hogs have sufficient space in the car, but this care is sometimes lacking, and dead hogs were taken from cars arriving in the Chicago stock yards in considerable numbers on recent hot days. Naturally, the big, heavy swine are the ones most likely to succumb to the heat.

CROP AND MARKET NOTES.

Emmet Co., June 26.—The short, but severe June drouth now broken by copious local showers, a boon to the farmers of those sections covered by them. However, the hay crop will not be helped by these rains to any great extent, and will therefore be light. Corn, though late, is doing well. Eggs, 22c; butter, 20c.

Isabella and Southern Clare Co.'s, June 19.—It has been very dry but we have now had a good rain. A very light crop of hay will be harvested. Old meadows hardly worth cutting. Oats looking very poorly from the effect of the dry weather and the frost. On June 7 and 8 there were heavy frosts that did a lot of damage to potatoes, corn and early sown beans. Not many beets sown in this part of the country but a large acreage of beans. A lot of farmers lost beans, it being so wet they moulded in the bins. Corn looks very poor where it escaped the frost, as the weather has been so cold.

Mecosta Co., June 23.—Wheat fair, oats fair, corn late but doing well, beans good, rye rather poor, hay rather light. Strawberries and currants hurt by frost; raspberries and blackberry prospects good; apples, peaches and plums light; cherries fair. All kinds of stock sold off very close, especially hogs and sheep; less being raised than common.

Ohio.

Carroll Co., June 26.—It has been very hot, but we got a nice rain yesterday. The alfalfa is cut but the crop was rather light. Some farmers planting their late potatoes this week. Nearly all the corn has been worked twice already. Wool buyers are offering 22c for washed wool but the farmers are still holding it.

LIVE STOCK NEWS.

Two car loads of steers that were bought in St. Paul last September and shipped to Minnesota were returned to the St. Paul market the first week of June and sold for a good profit to the feeder. The cattle were kept on grass only about three weeks, when they were turned into a seven-acre potato field and allowed to eat their fill. Up to the middle of November, when they were taken off the potato diet, about 700 bushels of potatoes were eaten by the steers, and an average daily gain of more than two and one-thirds pounds a day per head was made during this period. The potatoes had been dug and left upturned in the rows. From the middle of November to the middle of January bundle corn was thrown to the stock twice a day. For a month and a half the feeding was continued, with corn on the cob as the main article of diet, and late in April shelled corn was substituted with hay as a roughage. This was followed by a ration of ground corn, oats and oil meal. The last week the cattle were on feed whole oats and hay were given. Last autumn when bought the steers averaged 823 lbs. and cost \$6 per 100 lbs. When matured they averaged 1,228 lbs. and brought \$7.70.

No large supplies of western range cattle adapted for feeding purposes are expected to be marketed this year, unless owners should be obliged from lack of grass later on to let them go. The range is narrowing rapidly in the northwest, settlers occupying the land very largely, and only 185,000 western range cattle reached the Chicago market last year, compared with 430,500 in 1895, the year when receipts were the largest on record. Range cattlemen are paying unprecedentedly high prices for stock for replenishing northern pastures, and recently deliveries were made of Arizona cattle in central Montana at a cost of \$33 per head for yearling heifers and \$24 for yearling steers, while twice as many were wanted as could be furnished.

Murdo Mackenzie, general manager of the Brazil Land, Cattle and Packing Co., in a letter to Charles O. Robinson, of Chicago, says his greatest objection to free cattle for the United States is that it might be the means of transferring the raising of cattle from this country to Mexico. If Mexico can produce a considerable surplus of cattle, they can have scarcely any other outlet except this country, and with the expensive lands on this side of the boundary line, it would be impossible for the American raiser to compete with the Mexican cattle raiser. As is generally known, Mexico produces a very inferior kind of cattle. The writer places much stress upon the local combinations of retail butchers all over the country by which high prices of beef are maintained.

Several days ago the first cargo of Argentine beef ever landed in New York arrived and was sold on the market. The shipment was made by British speculators, who saw a way of making some money as a result of the recent movements of a clique of Chicago packers in South America. It is reported that the Armour-Swift group is engaged in an effort to control the cattle and sheep slaughtering and export business of Argentina and Uruguay and that an attempt is being made to force the independent dealers in South American meats out of business. The price of South American meats were accordingly lowered in London and Liverpool by the clique, and this opened a way for English speculators to ship this meat from London to New York after it had been sent to England from South America at about two cents a pound less than it costs to get plains-grown cattle from the west to the Atlantic seaboard.

Stock and feeder cattle have been selling extremely high of late in the Chicago market, prices paid being relatively higher than prices for matured beef cattle. Recently beef steers sold at \$7.50@9.20 while stockers and feeders went at \$6.50@8.25, well-bred little yearlings going the highest. In June last year beef steers brought \$6.35@9.60, while stockers and feeders sold for \$3.75@7. The last

six months of 1912 saw rising prices for beef cattle, culminating in a boom that carried the best steers to \$11.10 per 100 pounds.

A recent hipment was made from Mexico of 25 car loads of thin steers to the Sand Hills of Nebraska for grazing and putting on feed next winter.

The distillery-fed cattle are being marketed steadily in Chicago, and recent sales have been made largely at \$8.10@8.75 per cwt. They will continue to come through July.

Lambing is reported as backward in Montana and Wyoming, but Idaho sheepmen are having good luck. Wool dealers are scouring the range country and offering from 15@16c per pound for the spring clip. Some of the Montana stockmen are going into raising hogs, having found this more profitable than the sheep industry. They state that a hog can be made to weigh about 150 lbs. at a cost of from \$1.50@2.

Most of the long-fed heavy steers coming to Chicago are shipped from western Iowa, South Dakota, Kansas and Nebraska.

There is going to be a large demand for feeding lambs this year, and there is not much probability that the supply will come up to requirements, owners preferring in many cases to do the fattening themselves. Already a demand for grazing stock is starting up in various quarters, with demand especially good from Michigan.

Grassy cattle form a large and rapidly increasing proportion of the receipts in western markets, the long-fed beeves having been mostly slaughtered. As the season advances a widening out of prices for cattle may be expected, although it seems doubtful whether there is to be a repetition of the extraordinary range of values of a year ago, when beef steers sold on the Chicago market for \$6.20@9.50. Of late the hot weather and the dearthness of beef have combined to lessen its general consumption everywhere.

Patrick Cudahy, the well-known Milwaukee packer, is as bullish as ever on the outlook for hogs and provisions. In a recent interview he said: "I can see nothing but great scarcity and very high prices for product between now and the first of November. I believe hogs will sell at \$10 per 100 lbs. in August. We have been selling cash ribs right along through June at a cent a pound higher than what September has been selling for, and everybody in the trade knows that between July 1 and November 1 there is three times as much product consumed as what there is produced. We also know that lard was very fully reported on the first of June, yet there was only one-third as much in this country as there was a year earlier. There is something strange about lard. It seems to bubble out of the ground during May, June and July and melt away like snow before the sun in August, September, October and November. The world's lard supply decreased 306,000 tierces during those months last year, or more than the world's entire stocks at the present time. Cash lard sold in September last year around 12c per lb. The statistical showing is so much stronger this year that lard is likely to sell at from 13@14c. The speculators who have been selling another man's product short this year are likely to learn that when an article is actually scarce it takes more than sentiment to break the price."

The University of Illinois has sold the wool from a flock of sheep. The prices were: Twenty-one cents per pound, delivered, for the Downs wools, and 19 cents per pound, delivered, for the fine wools.

Export of live animals from the United States for the fiscal year ending with June aggregated only about \$9,000,000 in value, against \$52,000,000 in 1901, the high record year. Meat and dairy products exported approximated \$150,000,000, compared with \$211,000,000 for 1906, the high record year.

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Farm Commerce.

Begin Co-operative Society in Small Way

In reply to an inquiry in last week's number of *The Farmer* we pointed out why it is necessary for a member to be legally bound to patronize his co-operative society. In our talk this week we wish to go back a little and point out the advantages that accrue where an enterprise of this character is started in a small way but with the purpose of extending the work as the officary and the machinery of the institution become skilled in accomplishing its variety of tasks.

And in the first place it must be noted that to begin in any other manner is altogether out of harmony with the natural order of things. Even the child is brought into the world and permitted to learn its duties one by one. Great businesses were once small. The famous oil corporation which is at once condemned as a great incubus to our economical comfort and admired as a monument to American industrial genius, was once an inconspicuous concern competing with others of seemingly equal capacity to grow. The chief of successful co-operative enterprise in this country, the California Fruit Exchange, which now handles an aggregate of \$20,000,000 worth of citrus fruit annually, was launched with a capital stock of \$1,700. In reviewing the efforts of men in the New England and North Central states to work together, the greatest successes have attended those born of modest proportions and not the pompous. It would be possible to add a list of the names of co-operative associations that have risen from obscure beginnings to places of power, sufficient to convince the skeptical and those who would upturn our whole social organization upon learning that they pay middlemen a heavy tax for whatever they handle. But for the lack of space we must leave this phase of the matter to the better judgment of our readers.

To those who most need to co-operate, the business problems involved are, at least at the beginning, complex. The members, with but few exceptions, have never been trained in the requirements of ordinary business and commercial transactions, and almost every step of the way needs to be pointed out, or understood by experience. The habit of working together in an organized scheme where the independence of the individual must yield to the convenience of the whole concern, is not so readily acquired as it may seem possible; however, the habit is more likely to become a reality if it can be nurtured with lesser properties at stake. And so, beginning with the sale of one product and later including others, appears to be the better and most economical method of getting the members and officials acquainted with their duties.

Therefore, education is needed and this is more necessary among the members of the going concern than among prospective members of an association to be organized. There is an opinion which is not far short of universal, that when an organization has once been effected no further need of instruction and persuasion is required. But the school has just been arranged and the real work of gaining knowledge on how the undertaking is to be carried forward, is but started and not ended. As the philosopher has told us, it is easy to begin but hard to finish our tasks. Necessarily we must, if we are true leaders in the great co-operative movement that is now taking firm hold of the American people both as a corrective of our economical disorder and as a saving anchor to political excesses, see that every member of every society is given ample opportunity to know and to develop those business and social talents which might be incapacitated by non-use. While we have every confidence in the usefulness of these societies to secure for their members a greater revenue than would naturally be received through individual efforts, we are equally convinced that the money saving, or making, side is the least of the benefits—that the social advantages and the opportunities for development accruing to the members, will outweigh manifold the financial gains.

Now the lessons suggested are learned in a small concern quite as thoroughly as in a large one and that danger of the whole school being broken up through the operation of a clever manager who is at-

tracted by a large capitalization and credit to embezzle, or otherwise misuse the funds to his own ends, is absent. There is little question that the enterprise will go safer if its members are informed, and they certainly can have a better understanding of the needs of the work if they grow up with it. Therefore we believe that co-operative enterprises should not be launched on too large a scale.

OBSERVATIONS ON CAR-LOT SHIPMENTS.

In farming on a large scale, the unit of quantity for shipment is regularly a carload. The advantage of a car lot over a smaller quantity is so great that the smaller shipments competes at a disadvantage, except in near-by markets. Not only are the freight rates for carloads lower, but the time of transit is shorter and the risk of injuring the produce in transit is less. A car lot may be sent to any one of a large number of cities and towns, while the smaller shipment is limited, by the higher freight rates and by delays in transit, to fewer markets.

Since car-lot shipments form such a large proportion of the total supply, conditions which affect their marketing influence also the marketing of the smaller lots of highly perishable fruits and vegetables. Home-grown produce is more apt to bring good prices in the neighboring city or town under conditions which tend to reduce the danger of an oversupply from distant regions. Hence, changes affecting the movement of carloads, as discussed in this article, affect the entire truck-growing industry.

There are a number of plans by which small shippers join in making up a carload. This is regularly done by farmers co-operative associations. Country buyers also gather produce from various farmers, arranging their purchases so as to have carloads for shipment. Of the other plans for combining smaller lots in carloads, two of the more noteworthy are the local "pick-up" service of some railroads and the system employed by some forwarding agents.

There are forwarding agents whose business it is to collect small consignments at various points and to ship them to market. The forwarding agent gathers enough produce to make a full carload at a given station, consigns it to himself at the destination, and delivers the contents to various consignees. By this system a small shipment by a producer is carried as promptly as a full carload. The forwarder, being responsible to the shippers, makes it his business to check the contents of the car as they are taken out, to note their condition, and to report to the shipper any irregularities as to the condition or number of packages. The car manifest of the forwarder shows the names of the shippers and of the consignees, the number and contents of packages. The manifests frequently contained each a long list of separate items; the manifest for one car contained a list of packages for no less than 32 different consignees.

Inquiries have been made by the bureau of statistics of the department of agriculture, as to the different kinds of highly perishable fruits and vegetables which were received in car lots for local use in cities having a population of not less than 25,000. Of the 103 cities for which reports were made, peaches were sold by the carload in at least 87; watermelons, in 86; cantaloupes, 77; bananas, 72; strawberries, 71; tomatoes, 66; oranges, 65; grapes, 53; lemons, 39; pears, 32; pineapples, 28; plums, 24; celery, 18; cherries 13; cucumbers, 11; green beans, 11; apricots, 11; and each of about 25 other commodities of this class were reported to have car-lot markets in from one to ten different cities. The reports on which these figures are based are probably incomplete to a greater or less degree; some products are no doubt omitted which should have been included. If it had been possible to secure complete lists of all such products for each of these cities, the figures just given would probably have been larger. As they stand, these incomplete figures show a wide range of markets where car-lot

shipments of fresh fruits and vegetables may be sold. The producer has many good outlets for his crops; if market conditions in one place are not satisfactory, there may be other places where fair prices may be obtained. The cities which absorb these products by the carload include many whose population is less than 50,000. Of the 87 car-lot markets for peaches for which returns were made in this investigation, 30 were cities of less than 50,000 inhabitants; 23 of these smaller cities took cantaloupes by the carload, 19 received grapes and strawberries, and 17 received tomatoes. Other products of this class also found sale in car lots among these smaller cities.

The number of car-lot markets for fruits and vegetables has increased greatly during the past decade. This is indicated by reports made by railroad freight agents and produce dealers in various cities as to the year in which the first carloads of certain products were received for local use. The products for which the fullest reports were made were peaches, strawberries, cantaloupes, tomatoes, and grapes. Of the 42 markets which reported the year when the first carload of peaches was received for local use, 13 had become carlot markets within the past decade; the markets whose first carload sale of strawberries was made since 1900 numbered 15 out of a total of 35 reported; for cantaloupes, 21 out of 40; tomatoes, 19 out of 32; and for grapes the car-lot markets, which were opened within the past 10 years, numbered 13 out of a total of 24 for which reports were received. Taking account of the minor products of this trade, as well as the five leading ones just mentioned, the average rate of increase in the number of car-lot markets for highly perishable fruits and vegetables was over 40 per cent in the decade beginning with 1901 as compared with the ten years just before.

CONSUMERS BENEFIT BY NOMID SYSTEM.

Thinking that a statement from a buyer through the Nomid System of distributing farm products as described in *The Michigan Farmer* last winter, would be interesting to the readers I wish to go on record as saying that we are pleased with the plan. Although our buying is not extensive, having but a small family, yet we save an average of over 50 cents a week most of the year and much more when poultry, fruits and meats are delivered. I think we can safely say that we are \$50.00 ahead each year by getting our goods direct from the farm. But this is only a part of the advantage secured. What we get in this way is much superior to what we get from the stores. The eggs and butter are hardly to be compared—they have been so satisfactory that we are spoiled for going back and buying these products at the city retailer's again, which fact we believe is a strong factor in keeping one buying direct whenever it is possible. Since both the producer and the consumer benefit by the Nomid System it appears that ultimately the plan ought to be very generally used.

Wayne Co.

A CONSUMER.

PROFITS ON FARM PRODUCE TO BE INVESTIGATED.

It is announced that the Department of Agriculture, through its Office of Markets, will shortly begin a thorough study of what happens to produce from the time it leaves the producer until it reaches the consumer. A specialist on marketing perishable produce will investigate prices received by producers, cost of transportation and storage, change of ownership, accumulated charges, profits, and other elements. This specialist will then study conditions in various sections to determine the feasibility of a market news service dealing with perishable products, and also the best method of making statistics of supply and demand useful to the farmer or truck gardener.

Other specialists will give attention to studying co-operative organizations of producers and consumers, including co-operative marketing associations of farmers and buyers, co-operative stores, etc. They will make intensive studies of typical communities dealing with special products, and will assist in the formation of new co-operative enterprises. An expert in co-operative accounting will assist such organizations to keep their books and records effectively, establish cost systems, and follow up methods of handling goods en route and on sale.

Co-operating with the other investigat-

ors will be specialists in transportation—men who have had as much railroad shipping experience as division freight agents—who will assist producers in securing proper freight rates, and will discuss questions of extending facilities, determination of rates, routing, and other matters concerned with the speedy and cheap moving of produce to centers of wholesale and retail demand.

Especially attention is to be given to the milling, marketing and utilization of cottonseed. A specialist in this line will gather full information necessary for the successful organization and operation of oil mills by co-operating producers. He will also endeavor to find new uses and new applications for cotton seed and its manufactured products.

Other specialists thoroughly familiar with the marketing of cotton in Texas, Arkansas, and Oklahoma, and other cotton states will devote their attention to improving trade in cotton and devising improved methods of handling and selling cotton and seed cotton.

CO-OPERATION IS RECOGNIZED BY LEADING ECONOMIC STUDENTS.

The National Economic League, an organization representing every state in the union, and having about 1,600 members, recently took a vote as to what constitutes the most important questions before the nation. Of over 60 matters that have from time to time been raised as important national issues, the following 14, arranged in the order of their importance, were given leading honors:

1. Efficiency in the administration of justice.
2. The tariff.
3. The monetary system.
4. Conservation of national resources.
5. Efficiency and economy in government.
6. Child labor.
7. Government regulation and control of dominant industrial corporations.
8. Direct primary nominations.
9. Co-operation vs. competition as a social and industrial principle.
10. Employers' liability.
11. The short ballot.
12. Good roads.
13. Relations between capital and labor.
14. The liquor problem.

LIVE STOCK MARKET NEWS.

The recent extremely hot weather played havoc with fat hogs on the way to market, great numbers of dead hogs being taken from stock trains arriving in the Chicago market. In several cars nearly all the hogs were dead, and quite a number died after being unloaded from cars. The losses were by far the greatest ever suffered by country shippers, heavy lard hogs catching it the worst. Owners who marketed their matured hogs while the weather was cool hit it right, and doubtless in many cases they prevented large losses. After warm weather sets in too much care in selecting favorable weather for shipment is impossible, and carelessness in such matters is costly. The worst losses were suffered on Monday last week, and the market had a big break in prices, buyers being afraid to operate freely, as they did not care to assume the risk of hogs dying on their hands.

The recent advances in cattle prices were a surprise to many stock feeders, as they had not looked for such an event after their previous experience, but stockmen had marketed most of their cattle they were not going to graze, and consequently the receipts fell off in the Chicago market to such moderate proportions that buyers were compelled to hustle in order to secure their quotas. The summer opened early, enabling the farmers to get their cattle pastured much sooner than usual.

The Bureau of Animal Industry of the Department of Agriculture has issued a warning to farmers of the southern states to hold on to their cattle, as the shortage in the United States is sure to result in still higher prices. Thousands of southern cattle have been purchased in recent months by northern stockmen for breeding purposes. Meanwhile the southern farmers are reported to be selling off their scrub cattle in the hope of getting better breeds by next fall and getting rid of the cattle tick at the same time, but it is probable that when they go into the market they will find no cattle for sale, at least on reasonable terms. Traders in the cattle markets of the country are calling attention to the fact that farmers are holding their female cattle for breeding purposes.

The Idaho crop of spring lambs is reported to be a fine large one, and they are beginning to move to market. Southern spring lambs are moving liberally and are expected to continue to come to market throughout July.

The federal authorities have announced that meat and meat products in interstate or foreign commerce, which hitherto have been exempted from the provisions of the pure food law, may be seized if misbranded or adulterated. Beginning at once, manufacturers of meat foods will be required to comply strictly with the food and drugs act as well as with the meat inspection law.

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.

Retention of Urine—Diarrhea.—I have a mare that is troubled with retention of urine and I also have two horses that occasionally cough, but appear to be healthy. I would like to know what to do for my spring pigs that are troubled with diarrhea. They are fed separator milk, some ground oats, wheat bran and grass; also have plenty of shade. P. H. H., Six Lakes, Mich.—Give your mare a teaspoonful of powdered nitrate of potash at a dose in feed three times a day until her kidneys act free, then give her an occasional dose to keep kidneys acting. Give your horses that cough 1 oz. of ground licorice and 1 dr. of ground nuxvomica at a dose in feed two or three times a day. Give each pig a half teaspoonful of cooking soda and 15 grains of powdered cinnamon bark at a dose three times a day. If this does not check their bowel trouble, give them from 3 to 5 grs. of salol at a dose in feed three times a day.

Punctured Eye—Scours—Bog Spavin.—I have gained much valuable information through your veterinary department and would like to know about a colt that was dropped June 6, which, when trying to get up fell against a partition, a nail punctured eye and I have been washing it with lukewarm water and witch hazel. The colt also has scours and I am afraid it will have blood poison. I keep her stabled day and night. R. W. H., Holly, Mich.—Give your colt 5 grs. of salol and 2 grs. of quinine at a dose three or four times a day. Apply one part iodoform and ten parts boracic acid to wound twice a day.

Strangles—Chronic Cough.—I have a nine-year-old mare that had distemper four months ago, seemingly recovered, but there is a rattling in head at times, especially when she breathes fast and I would like to know if there is danger of her coming down with the heaves. W. S. B., Trenton, Mich.—Her throat is now normal and she will do her work without blowing much if you will put an overcheck and independent bit on him. Apply equal parts tincture iodine and camphorated oil to throat every two or three days. Give her a dessertspoonful of glyco-heroin (Smith) at a dose in feed three times a day. She is in no danger of taking heaves.

Injured Udder.—I have a heifer 21 mos. old that has had her udder injured by older animals and calves sucking her. A. L. B., Fremont, Mich.—Apply equal parts extract witch-hazel and camphorated oil to diseased and injured teats every day.

Scours in Calves.—I have six calves and all of them have trouble with scours. H. J. F., Davisburg, Mich.—Give each calf 15 grs. of salicylic acid and 5 grs. of salol at a dose in milk three times a day. It might be well to add one-half a teaspoonful of baking soda to their milk once or twice a day.

Bruised Udder.—About a month ago my cow's udder commenced to swell, mostly on right side, and she gave some bloody milk from one or two quarters. K. M. Y., Reese, Mich.—Your cow must bruise her udder when stepping out of ditches or when traveling in lot where there are logs and low fences. Dissolve 4 ozs. of powdered alum and ½ pt. tincture arnica in a gallon of water and apply to udder three or four times a day. Try and ascertain the cause of her trouble and remove it.

Acidity of Stomach.—My cows have a sort of craving for bones and are inclined to chew leather and I have thought that they could not be right with this abnormal appetite. H. J. E., Goodell's Mich.—Give each of them a tablespoonful of ground gentian, a teaspoonful of ground nuxvomica and 1 oz. of hypophosphite soda at a dose in feed twice a day. You had better discontinue feeding wood ashes. A change of pasture and feed is usually good practice.

Inflammation of Skin Glands.—I have 18 spring pigs that are not thriving; their backs are scaly, also hind quarters itch, and the skin on different parts of body cracks open. These pigs are running on oats and rape and they dig at themselves constantly. N. L. H., Grand Blanc, Mich.—Apply one part oxide of zinc and four parts vasoline to sore parts of skin every day or two. You should avoid keeping them in a filthy place.

Bruised Leg.—I have an eight-year-old mare that is in the habit of kicking stall partition, bruising leg badly, causing soreness and lameness, the result being a sweetened condition of hip. Our local Vet. thought it a case of hip sweeney, but her lameness does not lessen and I have been told that her hip was fractured. She also appears to have some soreness of stifle and I have been using strong liniment. I forgot to say that she holds up foot when resting, and carries her leg stiff. W. H. H., Marcellus, Mich.—I am inclined to believe that both hip and stifle are affected. You had better apply one part turpentine, one part aqua ammonia and three parts camphorated oil every day. It is possible that she fractured hip and instead of a bony union taking place a fibrous union and ends of broken

bone slipped past, making an imperfect union, which will result in permanent lameness.

Chronic Cough—Incipient Heaves.—I have a seven-year-old mare that has had a cough for the past year and she breathes much like a horse that has heaves. She also has a discharge of mucus from nostril. O. S., Unionville, Mich.—Feed no clover or musty, dusty, badly cured fodder of any kind and give her a tablespoonful of glyco-heroin (Smith) and a tablespoonful of Donovan's solution at a dose three times a day. Grain and grass is the best feed for her and all the hay you feed her should be free from dust and moistened.

Partial Loss of Power.—About a week ago my two-year-old colt commenced to show loss of action in hind quarters and he now seems to have poor control of his hind parts. This is a nice large draft colt, therefore I wish you would tell me what to do for him. B. C., Ionia, Mich.—Your colt has met with an injury or possibly wrenched back enough to cause spinal pressure, giving rise to partial loss of motion. Give him 1 dr. ground nuxvomica, 1 dr. potassium iodide and 30 grains of quinine at a dose in feed three times a day. If he recovers at all, recovery will be slow.

Stocking.—At this season of the year we give our horses a little fresh June grass or orchard grass. Perhaps one-fourth of the roughage being grass. We have a six-year-old gelding that stocks if standing in barn over night, especially in hind leg, but goes down with exercise. He never stocked until we commenced feeding green grass. R. W., Rushton, Mich.—The green grass has a tendency to increase the fluids of body, consequently it is not uncommon for hind legs to stock a little until the animal is accustomed to this change of food. Give him a teaspoonful of powdered nitrate of potash at a dose in feed night and morning.

Knee-sprung.—I read with interest the veterinary column of the Michigan Farmer, but have failed to notice a remedy for knee-sprung horses. I have a three-year-old colt that is badly knee-sprung and would like to know what to do for him. Have been applying angleworm oil on tendons, but it fails to help him. This colt seems to be growing in body and light in limbs. H. L. H., Ithaca, Mich.—Some colts from conformation are, of course, predisposed to tipping over in knees and when one of this kind is growing, they always become knee-sprung and are difficult cases to help. Showering his legs with cold water in summer two or three times a day for 15 or 20 minutes at a time will prevent him from growing any worse, then when fall comes or winter, blister back tendons with one part powdered cantharides and five parts lard three times a month. Remember, hard work and fast driving is one of the causes of weak knees.

Ringbone.—I have a two-year-old colt that is troubled with ringbone in both hind legs. I applied an advertised sure cure remedy, which blistered it severely without effecting a cure. The bunches are as large as ever and colt is very lame. J. H., Scotts, Mich.—When ringbone is situated low down, affecting pastern joint, it is very often incurable. Firing is the most heroic treatment, but fairly good results follow giving horse absolute rest and applying one part red iodide of mercury and four parts fresh lard once a week will usually subdue lameness and somewhat reduce bunch.

Bone Spavin.—I have a six-year-old mare that is troubled with bone spavin, have applied two bottles of medicine which cost me \$4, but I fail to notice any improvement. P. E., Elk Rapids, Mich.—Give her rest and apply one part red iodide mercury and four parts fresh lard to bunch once a week.

Navel Infection.—I have a mare colt three weeks old that has a sore navel and udder. When the colt was four days old the navel and udder swelled, was painful, soon broke and discharged pus from both teats. When she was foaled I cut off navel cord but applied no healing remedies and thought perhaps I made a mistake in not giving the navel better care. W. S., Elberta, Mich.—Apply one part iodine and 20 parts vasoline to navel and udder once or twice a day. You should have tied navel, painted end of cord with tincture iodine or applied one part carbolic acid and ten parts water for a day, then applied one part carbolic acid and 20 parts water twice a day.

Poll-evil.—I have a roan mare 13 years old that has a running sore from each side of neck just back of ear which I would like to know how to treat. About 48 years ago, when a boy, my father had one in same condition and they called it poll-evil; since then I have owned many horses, but have never had a case like this. G. P. R., Trufant, Mich.—Inject a small quantity of tincture iodine into abscess once a day for a few days, then drop a small gelatine capsule filled with one part iodoform and eight parts boracic acid to bottom of tumor and let it remain there. These applications should be made every day.

Acidity of Stomach.—I have a Jersey cow which I bought last summer that for the past month has been eating pieces of wood and sticks. I am unable to account for her conduct. G. E. McG., Williamston, Mich.—Give your cow two tablespoonfuls of cooking soda, two tablespoonfuls of ginger and a teaspoonful of powdered charcoal at a dose in feed two or three times a day.

Rheumatism—Diarrhea.—My chickens seem to be taken with a soreness and lameness, refuse to eat, are very loose in bowels, tremble a great deal, then die. Have tried different kinds of poultry food and given alum in their drinking water, but they fail to show any improvement. H. B., Morrice, Mich.—Give ¼ gr. sodium salicylate and ¼ gr. salol at a dose three or four times a day. Disinfect their coop.

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Have for sale several fine young bulls out of cows with high official butter and milk records.

Send for circular.

HOLSTEIN COWS FOR SALE

Bred to a bull that is more than a half brother to the World record cow Benostine Belle De Kol. This is an opportunity for some one to start in Registered stock at a moderate cost.
ED. S. LEWIS, Marshall, Michigan.

THIS HOLSTEIN BULL

was sired by best son of PONTIAC BUTTERBOY. Dam has official record of 24 lbs. as 4-yr.-old, 90 lbs. milk a day. Price \$100. C. D. WOODBURY, Lansing, Mich.

REGISTERED HOLSTEINS. HOBART W. FAY, right in the city, only few minutes from Jackson or Lansing. Electric cars from both cities every hour.

HOLSTEIN BULLS.

3 to 8 months old, \$75 to \$300. Don't buy until you get our pedigrees and prices. LONG BEACH FARMS, Augusta, Kalamazoo Co., Mich.

For Sale—2-yr.-old Jersey Bull—Dam's 5-yr.-old record 10551 lbs. milk, 513 lbs. fat, 604 lbs. butter. Sires dam's record—12997 lbs. milk; 600 lbs. fat, 706 lbs. butter. 2-yr.-old full sister's record—8810 lbs. milk, 435 lbs. fat, 513 lbs. butter. All authenticated, kind, sound, sure. Waterman & Waterman, Ann Arbor, Mich.

Notten Farm, Grass Lake, Mich. A few young Jersey bulls of Sylvan 56¼ the blood of Jubilee of Bois d'Arc.

Lillie Farmstead Jerseys

(Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed.
COLON C. LILLIE, Coopersville, Mich.

Jerseys—Bulls ready for service, bred for production. Also cows and heifers. Brookwater Farm. R. F. D. No. 7, Ann Arbor, Mich.

FOR SALE—Hope Farm Jersey Bulls, from prize winning stock.
GEO. C. BORCK, Grand Haven, Michigan.

For Sale—Registered Jersey Cattle, tuberculin tested; bulls and bull calves; heifer and heifer calves; cows with Register of Merit and Cow Testing Association records. IRVIN FOX, Allegan, Mich.

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

DAIRY BRED SHORTHORNS—Bates bred bull 7-mo. old for sale. Price \$100.
J. B. HUMMEL, Mason, Michigan.

Dairy Shorthorns—Large Cattle—Heavy Milkers. Milk Records of all cows kept. No stock for sale at present.
W. W. KNAPP, R. No. 4, Watervliet, Mich.

SHEEP.

IT PAYS TO BUY THOROUGHbred SHEEP OF PARSONS, "the sheep man of the east." I sell and ship everywhere and pay express charges. I will start one man in each twp. Write for club offer and descriptive price list. Shropshires, Rambouillet, Polled-Delaines and PARSONS OXFORDS. R. 1.
Grand Ledge, Michigan.

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

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2½ miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

SHROPSHIRE & DUROCS
KOPE-KON FARM, Kinderhook, Michigan.

HOGS.

Durocs & Victorias—A Desirable Bunch of Sows of Either Breed due April and May.
M. T. Story, R. R. 48 Lowell, Mich. City Phone 55.

BERKSHIRE PIGS FOR SALE—With or without mothers.
Ternee Stock Farm, 1730 Michigan Ave., Detroit, Mich.

Quick Maturing Berkshires—Best breeding; best type. Satisfaction guaranteed or money refunded. O. S. BARTLETT, Pontiac, Mich.

A Yearling Sow—bred for July farrowing, also a choice lot of Spring Pigs for sale. Either sex. A. A. PATTULLO, R. No. 1, Deckererville, Mich.

O. I. C. Big growthy type, last fall gilts and this Spring farrow to offer. Very good stock. Scott No. 1 head of herd. Farm ¼ mile west of depot, OTTO B. SCHULZE, Nashville, Mich.

O. I. C.'s—A FEW BRED SOWS FOR SEPTEMBER FARROW.
GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

O. I. C. SWINE Write me for price on Spring Pigs, pairs and trios, not akin. Have a number of service males of good type. Write me describing of your wants. A. J. GORDEN, R. No. 2, Dor, Mich.

THIS O. I. C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD
IONIA GIRL
I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10, Portland, Mich.

O. I. C.'s—all sold. Orders booked for April and May pigs of the choicest breeding.
C. J. THOMPSON, Rockford, Michigan

O. I. C.'s—Bred sows, March pigs pairs and trios. Built for plenty of milk and good per 15. FRED NICKEL R. 1, Monroe, Michigan.

O. I. C.'s—All ages, growthy and large. Males on young stock. H. H. JUMP, Munith, Mich.

O. I. C.—March pigs ready to ship, the long growthy kind with plenty of milk and good at farmers prices. A. NEWMAN, R. 1, Mariette, Mich.

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. SPECIAL BARGAIN in summer pigs. Brookwater Farm. R. F. D. No. 7, Ann Arbor, Mich.

DUROC JERSEYS—Fall Gilts bred or open. Spring pigs pairs not akin.
F. J. DRODT, R. No. 1, Monroe, Michigan.

Duroc Jerseys For Sale—Three fall boars, also spring pigs, either sex; of finest breeding and individual quality. John McNicoll, Station A, R. 4, Bay City, Mich.

Duroc Jerseys—Nothing But Spring Pigs For Sale.
CAREY U. EDMONDS, Hastings, Michigan.

DUROC JERSEY SPRING PIGS of either sex for sale. Pairs not akin, also 2 Reg. Percheron mares, 2 years old, both grays. M. A. BRAY, Okemos, Mich.

POLAND CHINAS—Both Western and Home Bred. Either sex, all ages. Prices right. W. J. HAGELSHAW, Augusta, Mich.

Butler's Big Bone Poland Chinas

We have a few nice fall boars, also some big sows bred for fall farrow. Our hogs are all cholera proof.
J. C. BUTLER, Portland, Michigan.

Big Type Poland China Pigs at close prices. Eggs from big business B. P. Rocks, \$1 per 15. ROBERT NEVE, Pierson, Mich.

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. FALL PIGS all sold. Have the greatest bunch of spring pigs I ever raised. Eight sows farrowed 86. Come or write. Expenses paid if not satisfied. Free livery from Parma. W. E. Livingston, Parma, Mich.

P. C. BOARS AND SOWS—large type, sired by Expansion.
A. A. WOOD & SON, Saline, Michigan.

350 BIG TYPE MULE FOOT HOGS—All ages for sale. Prolific and Hardy, also Poles Best breed for Michigan. J. DUNLAP, Box M, Williamsport, Ohio.

LARGE Yorkshires—Choice breeding stock, all ages, not akin, from State Fair prize-winners. Pedigrees furnished. W. C. COOK, R. 42 Box 22, Ada, Mich.

YORKSHIRE SWINE—We have some nice spring pigs now ready for sale. Write for description and prices. OSTRANDER BROS, Morley, Mich.

Lillie Farmstead YORKSHIRES

Spring bred gilts all sold. Gilts bred for next August farrow. September pigs either sex, pairs and trios not akin. Orders booked for spring pigs.
COLON C. LILLIE, Coopersville, Mich

Mention the Michigan Farmer when writing to advertisers.

Horticulture.

SUMMER PRUNING.

The summer pruning of fruit trees is greatly a matter of theory here and is not extensively practiced anywhere. There are, however, some beneficial effects from its practice which the orchardist should know so as he may use it should necessity require.

It is generally conceded that early spring or winter pruning is rather stimulative to wood growth, especially if done too severe. Summer pruning, however, does not have that effect but rather, encourages the tree to mature its wood early and to form fruit buds.

It is necessary to prune at the proper time to get the desired results. Pruning too early will cause the starting of new growth while late pruning will give no definite results. The proper time is about when the upward growth ceases and the terminal bud forms. This is about the first part of July or very late in June.

Summer pruning should never be done to trees which are bearing well as it may cause overbearing, but should be used as a corrective means to bring trees which make excessive growth and lacking productiveness, into bearing. It is one of the means of bringing unproductive trees into bearing. Others are root pruning, ceasing cultivation and girdling.

Some varieties have the habit of forming their fruit buds on the ends of the limbs and in such cases the spring pruning is done at the sacrifice of a large percentage of the crop. A light heading back early in June will tend to cause the formation of fruit buds lower down and will also check the heavy upward growth, and then the spring pruning will not have the effect on the productiveness of the tree.

Summer pruning should always be light as a heavy pruning will decrease the leaf surface too much and the tree will send out new growths in the endeavor to bring it up to normal. These growths will rarely ripen up properly before the winter sets in and as a result the tree will be very liable to winter injury.

A light summer pruning of the denser and heavier growing trees of apples, pears, plums and peaches will be beneficial to the tree and will save considerable work at the time of the spring pruning. This pruning should consist of cutting out or nipping back growths which are starting out in the wrong direction and those which will interfere with or crowd others when they are full grown, and a slight heading back if necessary.

Summer pruning is decidedly beneficial to the raspberries and blackberries. The natural tendency of these fruits is to produce long and willowy canes with small weak laterals. A slight clipping back when they are about two and a half to three feet high will check the upward growth of the canes and will cause them to thicken up and send out strong laterals. Such short stout canes will stand up better and be more convenient to pick. Cultivation and other operations necessary in the patch will also be facilitated.

The cutting out of the old canes in the summer shortly after the fruiting season has almost become a necessity with raspberries and blackberries on account of the anthracnose. This disease, sometimes called raspberry scab, can not be controlled except by good care of the patch. Spraying has no effect on it at all. Cultivation to keep the moisture in the ground, and pruning out the old canes as soon as they are through fruiting so as to check the spreading of the disease from them to the younger canes are the only effective measures to be used against the trouble.

Occasionally grape vines, when the new shoots get so long as to reach from row to row or lay on the ground, will need cutting back some during the summer. Care must be taken, however, to not make the pruning too severe as it may hinder the fruit from ripening up properly. Anything which reduces the leaf surface of the vine to any extent will prevent proper ripening and the grapes will remain red and hard. Fungus diseases on the foliage will have the same effect and for the purposes alone of keeping the foliage in good condition spraying would be profitable. The cause

of the prevalence of what was called the red grape last year was the injury of the foliage by fungus trouble.

Van Buren Co. FRANK A. WILKEN.

THE DAIRY COW ON THE FRUIT FARM.

The dairy cow on the fruit farm will be a paying proposition if only a small area of the land can be used for the production of feed. On the majority of the farms in the fruit belt there is some land that is not desirable for the raising of orchards, and this can be easily fenced off and used for pasturing stock. The point is not to try the dairy business on a large scale as the land is unsuited for the production of sufficient feed, and the fruit farmer cannot hope to compete with the grain farmer in the raising of live stock. The orchard requires considerable fertilizer and the stable manure is almost a necessity in maintaining and building up the fertility of the soil. If the only profit derived from the stock is represented by the value of the manure, it will well repay the cost of the extra labor necessary in caring for a small herd.

In the fruit country there are few dairy cattle and there is always a good demand for butter and milk. A certain farmer in Van Buren county has said, "If the milk and butter produced from my herd will pay the cost of their keep, the valuable fertilizer will be all the profit that I ask." It saves him a great deal of money that would be spent for commercial fertilizers and stockyard manure, and there is no expensive hauling from the railroad station to the farm. This farmer also raises enough corn to put up a quantity of silage every year, and without injuring the fertility of his orchards, he is able to raise enough good feed to keep the stock in first-class condition. He cannot compete with the grain farmer in raising milk, butter, or beef and it is simply a proposition of maintaining the fertility of the orchard in the most efficient and inexpensive manner.

The dairy cow is profitable on the general farm, but has never been appreciated in the fruit belt. Specialization seems to be the watch-word of American industry, but the beef trust, for example, has become enormously rich because every available product has contributed its share to the profit machine. The farmer who makes one part of his business aid in the development of another has solved the problem of the business man and the manufacturer.

The fruit farmer who has believed too thoroughly in specialization should try the experiment of keeping a few dairy cows. They will give him something to do during the winter and help to keep the hired man busy during the dull times. They will be a source of satisfaction and profit to the fruit farmers who have entirely disregarded stock raising, and will aid in solving the problem of building up and maintaining the fertility of the soil without the extensive use of so much costly fertilizers.

Ingham Co.

R. G. KIRBY.

THOROUGH CULTIVATION NEEDED IN JULY.

This is the kind of season and time of year that reveal the advantages of wise cultivation. July is always a trying period to most crops and in seasons when the preceding month does not supply its usual quota of rain and the temperature averages above normal as during the present year, the situation is augmented. What the growing plants need to assist them in their battle with the elements is a liberal supply of moisture supplied under conditions that do not retard growth.

The only feasible way this can be done is by cultivation. In the group of states in which Michigan numbers there is ample waterfall to develop our crops to a maximum growth if the water is judiciously conserved. The constant stirring of the surface soil prevents the evaporation of this water to a large degree. In the writer's garden he has found it unnecessary to irrigate, although some neighbors have been compelled to do so, because of the practice of keeping the land stirred regularly and that generally with nothing more than a garden rake. But to be effective this working must be systematically followed up so that a dust

may be over the spaces between the rows continuously. If the work is allowed to lapse for a time, its renewal may not result advantageously to the crops. All corn growers have noted the wilting effect of cultivation on the corn during a hot day when the soil has not been worked for a couple of weeks or so; but that no such result follows where the work has been regular. So in the garden, the greatest advantage follows the systematic program of culture.

Moisture does plants the greatest good when air penetrates the soil. The presence of air in the surface soil enables helpful bacteria to perform their functions and thus assist nature in feeding the plants. This is why working the garden is followed by more rapid growth of the plants, and furnishes a sufficient reason for keeping the surface loose and well stirred.

CULTURE OF TURNIP-ROOTED CELERY, OR CELERIAC.

Can you give me some information about how to grow and raise turnip-rooted celery? I got the seeds sowed in a seed bed just like celery seeds are sown. I don't know how to take care of them farther.

Allegan Co.

J. V.

Turnip-rooted celery, or celeriac, is a plant closely related to celery and is cultivated much in the same manner. Although like the celery in many regards it has a turnip-like root which constitutes the edible part of the plant. The difference in culture is almost entirely due to this difference in the plant—there being no need of blanching the leaves, the rows are planted closer together, as near as will admit of easy cultivation. The seed are usually started in a seed bed or under glass and then transplanted, like celery, in the field about six or eight inches apart in the rows. The roots are harvested much the same as other root vegetables and may be kept in winter by packing in moss or sand.

In many European countries the vegetable is popular, but Americans have not gotten accustomed to it yet. It is worthy of a place, however, and because of its merits it will in all probability gain a wider appreciation on this side of the Atlantic.

SQUASH BUGS.

The squash bug is not a beetle. It is a bug, which is something quite different. This particular bug is not pretty. It is not even as good looking as the cucumber beetle. It has a rusty-black color and a disagreeable odor. Its long legs and rather flat body give it an ungainly appearance.

Squash bugs, like others of their kind, never bite anything. Therein they differ from the beetle. Bugs insert their bills into the succulent leaf or stalk and drink the juice from the plant. For this reason the arsenates do not affect them.

In the early summer the bug appears. In a few days the amber-colored eggs are to be found on the leaves and vines of squashes, melons and kindred plants, usually on the under side. There may be three or four or there may be 20 or 30 together. Soon there will be colonies of spider-like creatures. These are the young bugs or nymphs. Little time is lost. They at once put in their bills and drink the sap from the leaf.

As the nymphs grow older they disperse over the plant. They pass from this stage to that of pupa and adult without interruption. In this they differ from beetles, who take a vacation during the pupal stage.

Leaves attacked become yellow. If the beetles are numerous the whole plant may be killed.

On the approach of cold weather the bug finds a refuge beneath a board, in a pile of leaves or under some other rubbish. Here it remains dormant till spring when it comes forth at about the time the squashes are well started.

The old bug has a hard shell which protects it against such caustic sprays as can safely be used on tender vines. The nymphs, however, are not so fortunate. An application of kerosene emulsion plays havoc with them and is perhaps the best remedy for the young bugs. It may be that a weak solution of lime-sulphur will do as well.

Unlike the cucumber beetle, the squash bug is not driven away by vile odors, perhaps because it is accustomed to something about as bad as well can be.

Hand-picking is a practical remedy. The bugs are gathered in a dish containing water and enough of kerosene to form a film over the top. They will swim in

water alone. But when they come to the kerosene there is an end to them.

Traps of boards or shingles are made by placing them on the ground about the vines, one end being raised a little so the bugs can crawl under. In the afternoon the bugs will leave the vines and collect on the under side of these traps. In the morning they will be sluggish, when it is easy to gather them by scraping into a pan, or they may be crushed.

Planting the squashes among potatoes is a preventive. The bugs seem to find it difficult to locate the vines among the dark green foliage of potatoes. Sometimes such vines will escape the depredations of the bug throughout the season.

The insect is named from the squash, but is nearly as bad on the pumpkin and cucumber. It will not refuse a melon, though it chooses the others in preference.

Cucumber beetles are often erroneously called squash bugs, but this should not be. They are not bugs at all and as the treatment for the two insects is quite different the mistake in the name leads to confusion. If they must be called bugs, which is wrong, then call them "striped bugs," or any other name that will not be misunderstood.

F. D. WELLS.

SUMMER AMONG THE BERRIES.

We are prone to let the berry patch go as soon as the berries are picked, without any attention till mulching time in early winter. A few days spent in working strawberries through the summer will be well repaid. If the strawberry bed has produced two crops it should be gone through with a plow tearing up the old row, and leaving a strip of young plants near the center to form a new row. These will be all but covered with dirt from the plow, but the harrow run over the ground will rake off enough dirt to leave a good stand of plants. We will thus have a new row occupying a strip of less than a foot wide, while all the intervening space may be cultivated several times through the summer. A little fertilizer scattered along the rows in August will stimulate the formation of fruit buds for the succeeding crop.

Too often the strawberry bed is allowed to grow up in weeds. If the rows are not to be renewed by plowing, at least the weeds should be cut before they seed. After the mower is run over the patch set fire to the dried leaves and weeds in a few days while the wind is blowing so as to carry the flames over quickly without injuring the plants.

Missouri.

H. F. GRINSTEAD.

(The advisability of burning over the strawberry patch has been questioned by progressive growers, the effect of the heat being to destroy many of the plants, even when the burning is done on windy days.—Eds.)

EXPERIMENTS WITH MUSKMELONS.

According to experiments reported by the Illinois station, there may be wide differences in the relative effects of different fertilizers for Gem cantaloupes in different seasons. Under the conditions of the experiments, however, it was found that manuring in the hill proved far superior to broadcast manuring, except where a very large amount of manure can be broadcasted. A large amount of manure used in the hills is conducive to the production of a large yield of early melons. Owing to the expense of the manure, however, from two and one-fourth to three tons of manure per acre carefully applied to the hills may produce a greater net profit than four and a half to 12 tons per acre applied to the hills or from 16 to 20 tons applied broadcast. The addition of raw rock phosphate to a moderate amount of manure in the hills may increase the yield of early melons, the total yield, and the net profits in the field planted crop. The use of a complete fertilizer consisting of steamed bone, dried blood, and potassium sulphate, applied broadcast in addition to manuring in the hill may increase the total yield. The application of the chemical fertilizer to the hills in place of manure is attended with some danger, especially to the field planted crop, where the yield may be greatly reduced as compared with no fertilizer treatment.

KANSAS FRUIT PROSPECTS.

The condition of fruit in Kansas for 1913 compared with that of 1912 and 1911 respectively, are as follows: Apples, 53, 71, 33; pears, 40, 66, 27; peaches, 26, 53, 10; plums, 41, 60, 36; cherries, 64, 70, 63; grapes, 79, 73, 69; strawberries, 70, 68, 37; raspberries, 70, 54, 46, and blackberries, 69, 46, 54.

Grange.

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

THE JULY PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Song, "Hail to the Harvest," No. 124, Grange Melodies.
A new machine that interests me.
Recitation.
Common inconveniences about farm homes.
Song, "Lightly Laugh and Gaily Sing," No. 180, Grange Melodies.
A rural co-operative laundry.
Reading, "Consumer-Producer."
What qualifications should a rural school teacher have? Discussion.
Roll call responded to by each member giving his experience with or observation of parcel post, or suggestion on its improvement.

Suggestions for Second Meeting.

Song, selected by Ceres.
Review of one number of National Grange Monthly, by Secretary.
Reading or declamation, "The country boy's creed."
We have contests for blue ribbon corn, pigs and cattle—why not for "better babies?"
Song, selected by Flora.
What could the authorities of our nearest town or village do to make the town more attractive, or more convenient, or of more financial advantage to country people who trade there? Discussion.
Are the town people or the farmers to blame for the late hours the stores are kept open on Saturday nights?
"Chip basket," prepared by Woman's Work committee.
Song, selected by Lady Assistant Steward.

"IT CAN'T BE DONE."

Of all fallacious notions to hug to oneself, about the most weakening is that which whines, "It can't be done, because it never has been done." One meets this sort of sentiment in regard to Grange work every little while. Not that it is peculiar to the Grange as a whole, for it isn't, but it seems to be a state peculiar to certain individuals and to certain Granges.

Many a weak Grange would grow strong and vigorous if it would cut loose from this deadening weight. Many an officer would walk into sturdy leadership if he would say, "Behind me, Satan," to every temptation to think that new plans won't succeed in his Grange simply because they have never been tried there.

Not all new plans are wise plans for everyone, by any means. The point is, none should be rejected just on account of its being new.

There are some little verses deservedly popular at present which express this valuable precept most aptly. Every Grange officer may well pin this fragment of them in his hat—or on her mirror:

"Somebody said that it couldn't be done,
But he, with a chuckle, replied
That 'Maybe it couldn't,' but he would be one

Who wouldn't say so 'till he'd tried.
So he buckled right in, with the trace of a grin

On his face. If he worried, he hid it.
He started to sing as he tackled the thing
That couldn't be done, and he did it."

JENNIE BUELL.

WASHINGTON STATE GRANGE.

The patrons of far-off Washington concluded a busy four-days' meeting on June 6, it being the 25th annual session of their State Grange. One of the most noteworthy actions taken by the delegates was the endorsement of the commission form of government for the state. The proposition provoked a spirited discussion but a large majority of the delegates favored it. The proposed measure provides for the abolishment of all state offices except governor, secretary of state and auditor, and for the election of three commissioners from each congressional district to serve the year around as advisory to the governor and to take the place of the legislature as the law making body.

A resolution favoring the removal of the tariff on all farm products, and the raising of revenue by income, inheritance tax and increased internal revenue funds instead was passed almost unanimously. The attitude of the Grange on this matter was an endorsement of State Master Kegley's idea of "free trade for one, free trade for all. Let us stand steadfast to this and appeal to farmers everywhere to join with us and wipe every tariff privilege off the books now and forever."

The issuance of local bonds to be used as a basis for currency issues by the government and to be legal tender was also favored, while another resolution urged that the United States government

issue a daily report of market conditions, as is now done by the weather bureau.

State-wide co-operation in buying and marketing, and a boycott on all newspapers carrying advertisements of whiskey, tobacco and drugs were favored.

The legislative committee submitted a resolution favoring an alien land ownership law substantially the same as that passed by the California Legislature, and this was adopted by an overwhelming majority and with applause. The Grange declared against fees required of candidates for office before the primary, but advocated a law requiring all lobbyists before the Legislature to register, pay a fee and file a statement of authority to act and by whom employed.

Memorial services for deceased members were held, with special services for "Father" O. H. Kelly. It was decided to hold the next annual meeting of the Grange at North Yakima.

AMONG THE LIVE GRANGES.

Eaton Pomona was entertained by Northwest Walton Grange on Saturday, June 21. More than 100 were in attendance, taxing the capacity of the host's small hall to such an extent that the meeting was largely held out of doors. The business meeting was short and very few matters came before it. F. C. Curtis reported the amount received and disbursed by the committee having in charge the year book, and this report showed a net profit of about \$125, for which the Grange extended a vote of thanks to the merchants who patronized the book. The resignation of Mrs. Quantrell as treasurer was accepted and Mr. Burroughs, of Hoytville, was elected in her stead. After several excellent musical numbers Mrs. Dora Stockman, of Lansing, a splendid speaker and prime favorite with Eaton county patrons, gave a splendid talk on the subject of "Better Babies for Michigan," illustrating her talk with charts. At Mrs. Stockman's suggestion a vote was taken and carried unanimously asking the Eaton County Fair Association to include in its program this year a prize for the most physically perfect baby in Eaton county. An excellent oration was then given by Miss Winifred Wells, her subject being "The Conservation of the Family." Miss Wells, without notes or reference of any kind went into her subject in a most thorough and comprehensive manner and presented her arguments and illustrations to prove her points with the ease and grace of a finished orator. Mrs. Chauncey Jewett, of Marshall, a member of Olivet Grange, closed the program with a paper entitled "Girls of the Future."

Keswick Patrons held a good meeting Friday evening, June 20, in their town hall. A fine program was carried out, and a good time had by the many who attended. An abundance of music was furnished by the Keswick Cornet band, both before the program began and at intervals throughout the evening. The refreshments consisted of ice cream and cake and as soon as these were disposed of the toastmaster, Dr. A. W. Mebert, took charge. The formal address was made by Hon. Frank Hamilton, who told of pioneer days and of pioneer roads through Leelanau county. He followed with information regarding the present need of better highways and explained how these could be obtained. R. H. Elsworth, of Grand Traverse Grange, spoke briefly of the work of the Grange and urged that this institution be used to its fullest extent, as it is the best piece of machinery in existence for giving expression to the desires of those who live in the rural sections. Excellent recitations and readings, a boxing match and a wrestling match were other features of the program.

Charlevoix Pomona met with Marion Center Grange on June 12, with a very good attendance. Bro. E. H. Clark, the new lecturer, had a very interesting program prepared. In the afternoon, C. H. Bramble, secretary of the Grange, Life Insurance Company, gave a talk on life insurance and explained many things that the members have not understood before. Hon. R. W. Paddock, of Charlevoix, gave a very interesting talk on "Sanitation on a Dairy Farm." The different breeds of cattle were discussed by the following: Wm. Withers (Holsteins); Wm. Mears, (Shorthorns); Walter Black (Jerseys); E. S. Stacks (Ayrshires). After this John Knudsen gave a short talk on "Beauties of Farm Life." In the evening E. S. Stacks, of Charlevoix, and C. H. Bramble gave addresses on "Alfalfa" and "Farm Credits" respectively.—L. D. Willson, Sec.

Clinton Pomona held an interesting and instructive meeting with South Riley Grange, Wednesday, June 18. It will hold the next regular meeting with Ovid Grange, July 16. The annual picnic will occur on the fair grounds at St. Johns, Wednesday, August 20, with John C. Ketcham, Master of State Grange, as speaker.—Cora Sowle, Sec.

Nunica Grange, of Ottawa county, held a meeting on the evening of Flag day, Master Libbey giving an appropriate talk on the desirability and necessity of having a flag in every American home. After a short business session the members retired to the lower hall where strawberry shortcake was served.

COMING EVENTS.

Pomona Meetings.

Clinton Co., with Ovid Grange, Wednesday, July 16.

Picnics and Rallies.

Montcalm-Gratiot farmers' rally and picnic, at Sumner, Wednesday, July 23. State Master Ketcham, speaker.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—Jas. N. McBride, Burton.
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. Reiman, Flint.

Associational Motto:

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

Associational Sentiment:

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

THE TORRENS SYSTEM OF LAND TRANSFERS.

Some years ago the State Association of Farmers' Clubs actively interested itself in the proposition of promoting sentiment favorable to the adoption of the Torrens system of land transfers in Michigan. For a number of years this question was discussed and resolutions favoring the adoption of the system were passed at the annual meetings of the State Association. As a result of this consideration of the subject a bill was first introduced in the Michigan Legislature providing for the establishment of the Torrens system of land transfers in this state by ex-associational President Kimmis, then a member of the Legislature. Although considerable support was gained for the proposition it failed of passage, as it did in future sessions where it was introduced, largely, the friends of the measure believed, because of the active opposition of those who were interested in the abstract business in the various counties of the state, whose business would gradually become smaller under the operation of a law providing for the establishment of the Torrens system, although the proposed bill made it optional rather than compulsory for property owners to come under the law.

Finally, becoming discouraged by the outlook, or attracted to the consideration of other public questions, the matter was dropped by the State Association of Farmers' Clubs. We believe, however, that the time has come when this important proposition could again be taken up with profit by the organization. With nearly all the important foreign countries and something like ten of the states of the Union having this system in successful operation, there is no legitimate reason why the people of Michigan should not profit by its very apparent advantages.

One of the most recent states to adopt this system is Ohio, where a campaign has for many years been in progress to that end and many difficulties were encountered including constitutional objections which made the first law passed invalid. The objections were later removed by the submission of a constitutional amendment proposed by the constitutional convention in 1912, which at last fall's election was ratified by a very large majority, the second largest given for any of more than 40 amendments submitted. Last winter the Ohio Legislature again passed a law providing for the adoption of the system in Ohio.

Inasmuch as such general and long continued interest has been shown in this proposition by the Farmers' Clubs of Michigan, we shall in future issues publish a leading Ohio attorney's opinion with regard to the comparative advantages of the two systems, which will reveal many salient features of the Ohio law.

THE FARMERS' CLUB AS A CO-OPERATIVE UNIT.

In a recent issue it was pointed out that the Farmers' Club might very properly be made the unit for business organizations in a great many Club communities of the state. A recent Minnesota bulletin states that in that state at least one Farmers' Club has met with success along this line. This bulletin deals with egg marketing and typical cases of successful co-operative marketing are mentioned, one case being where the local creamery was made the unit of organization for this purpose and the other where an organization known as the Dassel Farmers' Club was made the unit for successful business organization along this line.

As pointed out in a previous comment, it is probable that, as organized and conducted in Michigan, the Farmers' Club as such would not be adapted to commercial enterprises of this kind, but the Club membership could well be made the unit for the beginning of an organization of this kind in any community along any particular line which might seem desirable, and there could be no better place than the Farmers' Club to take up the preliminary discussion of such a problem, which is essential to a successful organization of this kind.

To a very limited extent this has been shown to be practical in some Michigan Club communities, but the opportunities for successful work along this line are so great that more Club communities should avail themselves of their organization for at least the discussion of the possibilities of community business organization for the marketing of commonly produced products. This is the beginning of an era of this kind of organization and probably the Farmers' Clubs of the state could do no more beneficial work at this time than to take up the discussion of this line of work in their monthly meetings.

CLUB DISCUSSIONS.

Club Ladies Have Organization.—The June meeting of the Indianfields Farmers' Club was entertained by Mr. and Mrs. Charles W. Smith at their pleasant home on West Burnside street, which proved to be a very interesting meeting. One question for general discussion was "In which is the most profit, buttermaking or poultry raising?" Leaders, Mrs. S. G. Ross and Mrs. James Paul. Both ladies read excellent papers and were decided a draw. "Is gardening worth while?" Leader Mr. Anger. Several of the members took an active part in the discussion in favor of farmers having a garden. Reading, Rev. T. D. Denman. "Flower game," by Mrs. T. D. Denman. Mrs. Ellen Purdy received the prize for guessing the greatest number of flowers. The question box contained a large number of questions which were thoroughly discussed. At the close of the meeting all assembled on the beautiful lawn where refreshments were served by Mrs. Ina Smith. The ladies of the Club have an organized embroidery club, with president, vice-president and secretary. They sew or embroider, just as they prefer, before and during the meeting. Last year they had a booth at the county fair filled with beautiful fancy work and received first premium, which was \$20.00. This money is used to procure flowers for any member who may be ill.—Mrs. Margaret Arnold, Cor. Sec.

Will Celebrate the Fourth.—The Wixom Farmers' Club was entertained in June by Mr. and Mrs. B. A. Holden. A large crowd was present and great interest was manifested. New members were received. A federated committee was arranged, consisting of one member from the church, one from the Grange, one from the school, and one from the Farmers' Club, to work together to promote the best interest of the community. Arrangements were made for our annual picnic which will occur July 4 at Wixom.—Mrs. R. D. Stephens, Cor. Sec.

Small But Enthusiastic Meeting.—The Ceresco Farmers' Club was very pleasantly entertained June 25, by Mrs. Jos. Cunningham at her home in Marshall. A small number of members were present but a very good time was had by all present. After dinner the meeting was called to order by President Crosby, and all joined in singing "America." The Lord's Prayer was then repeated by all. Mrs. Mary Hall, the secretary, reported the last meeting, which was approved. A piano solo by Alice Cunningham gave great pleasure and the conundrum, "How many apples did Eve eat?" by Mrs. King caused much laughter and guessing. Two instrumental pieces by Miss Markham were much enjoyed. Hazel Crosby surpassed herself in two readings, and Miss Markaret Powell's songs were fine. J. H. Brown, of the Battle Creek Inquirer, told us all about the home-coming to be held in Battle Creek August 19 to 25. Some committees were appointed. Mrs. King sang an old song and the meeting closed by singing "God be with You Till we Meet Again." The Club was invited to help in the "old time exhibits" at the home-coming, by Mr. Brown.—Mrs. P. M. King, Cor. Sec.

BOOK NOTICE.

"Farm Management," by Prof. G. F. Warren, of New York State Agricultural College at Cornell University. In this volume Prof. Warren gives the details of a very careful study of the business principles of farming, which he presents under the following chapter heads: Shall I be a Farmer; Types of Farming; Diversified and Specialized Farming; Intensive and Extensive Farming; Maintaining Fertility; The Farm Management Point of View on some Live Stock Problems; Size of Farms; Size of Farms and Other Factors in Different Regions of the United States; Population; Method of Renting Lands; Farm Labor; Equipment; Layout; Cropping Systems; Marketing Farm Products; Farm Records and Accounts; Cost Accounts; Choice of a Region; Choosing and Buying a Farm; and Some Successful Farms. The volume is illustrated, contains nearly 60 pages, is bound in cloth and can be secured through the Michigan Farmer office at \$1.75 net per volume. Published by the MacMillan Co.

Practical Science.

HOW A HERD IS INFECTED WITH TUBERCULOSIS.

BY FLOYD W. ROBISON.

Tuberculosis may be introduced into a healthy herd in a number of ways:

1. By the purchase of a bull or other animal that is infected with the disease. This animal may be apparently healthy at the time of purchase, but if it contains the germs, the disease may develop and spread to other cattle. New animals should be bought only from a herd that is known to be healthy.
2. By feeding calves with milk, butter-milk, or whey that has come from tuberculous cows. A farmer may have a healthy herd, but if he brings home skim-milk from a creamery and feeds it to his calves he may give them the disease. Such milk should be rendered safe by boiling or pasteurizing it.
3. By showing cattle at fairs and exhibitions where no proper care is taken to keep out diseased stock or to disinfect the stables.
4. By shipping animals in cars that have not been disinfected, as these may have recently carried diseased cattle.
5. By allowing cattle to graze with diseased ones, or to come in contact with them over fences.

The Tuberculin Test.

Tuberculosis develops so slowly that in many cases it is months and sometimes years before any symptoms are shown. During this period the infected animals can not be distinguished from the healthy in any ordinary way. There is a test, however, which does no harm to the healthy yet detects the diseased practically without fail. This is known as the tuberculin test, because the substance used in making it is called tuberculin.

Tuberculin is a fluid containing the products of the tubercle germ without the germs themselves. As it contains no living germs, it can not convey the disease. Great skill is required in its preparation. A special fluid (or culture medium) is prepared and the tubercle bacilli planted in it, great care being taken to keep all other germs out. The fluid is then placed in a special kind of incubator and kept at the temperature of the animal body. Under these conditions the germs grow and multiply. Gradually the fluid becomes filled with the product of the germs. When the right point is reached the fluid is heated sufficiently to kill the germs, which are then strained out. The remaining fluid is tuberculin.

Tuberculin does not harm healthy cattle, even in large doses, but on diseased animals it produced a marked effect. This is shown by a feverish attack which comes on about eight to 12 hours after the tuberculin is administered, lasts a few hours, and then subsides. This temporary fever is called the reaction, and the animals which show it are called reactors. The value of the test lies in the fact that diseased animals react or show fever and other symptoms, while healthy ones do not.

Reliability of The Test.

The tuberculin test in the hands of a competent and experienced man is much more accurate than any other method of detecting tuberculosis. The records of large numbers of tests made by government officials show that with certain precautions it is accurate in 98 per cent of the reactions obtained. This gives a margin of a possible two per cent of error, and this small number may be still further lessened by care in making the test. For practical purposes any animal that reacts must be considered tuberculous.

Limitations of the Test.

The test should not be applied to cows that have just calved or are about to calve, as the temperature at this time is very apt to vary considerably from the normal. For this reason it should not be applied to any animal that is in feverish condition from any cause.

The test fails to detect the presence of the disease in the animal that is very recently infected. The disease has made a little progress before the test reveals its presence, and in the beginning of each case there is a period between the entrance of the germs into the body and the time when they have multiplied sufficiently for the test to reveal their presence. This is called the period of incubation and lasts from ten days to two months.

When the disease is far advanced and

the animal is wasting, the test sometimes fails to detect it. This is not of much practical importance, as such cases can generally be recognized without the aid of tuberculin.

A NEW POTATO DISEASE.

Attention was recently called by Pathologist I. E. Melhus of the Department of Agriculture, to a disease of the potato which, though little known, is becoming wide-spread in the United States. This is the silver scurf, which attacks and destroys the outer skin and causes discoloration and loss of moisture. Silver scurf in its early stages of infection under moist conditions causes blackish olive patches on the surface of the potato. Later the potato is covered with depressed patches of greater or less extent and as the disease progresses the infected areas increase in diameter and the fungus penetrates deeper into the tuber. As a result it is not uncommon to find the whole surface of a potato discolored, shrunk, and shriveled. Mr. Melhus first found diseased specimens in the fall of 1912 in two barrels of potatoes shipped to Washington, D. C., from western New York. Later it was found on Irish Cobblers bought in the Washington market in December, 1912. These potatoes were raised in Maryland about 15 miles from the capital. More recently the disease has been found in potatoes from Virginia, Vermont, Maine, Kansas, West Virginia, New York, Florida, and Wisconsin, which tends to show that it may be quite generally distributed throughout the eastern half of the United States.

In order to gain some idea as to the amount of silver scurf present on potatoes being used for seed purposes this spring several days were spent examining seed stock being planted in the vicinity of Norfolk, Va. In 10 of the 500 barrels examined the amount of silver scurf ranged from 25 to 90 per cent, and in another 10 it varied from about one to 25 per cent. Another collection, consisting of 25 barrels that had arrived from Aroostock county, Maine, showed about 25 per cent of silver scurf. Still another collection from Maine needs mention. It consisted of 15 barrels grown in the south-central part of the state. The collection showed 25 per cent of silver scurf.

Experiments have been made with the use of formalin solution similar in strength to that used for scab. One test showed that this treatment—0.8 per cent formalin solution—either killed or materially inhibited the growth of the fungus, while another test conducted by the officials of the Department of Agriculture did not produce so satisfactory results. Experiments are now in progress to determine further the value of formalin as a means of controlling this disease.

CATALOG NOTICES.

"Learn How to Protect your Buildings from Lightning." Just how the system should be erected, why joints and sharp angles should be avoided, where and how deep the groundings should be, why points should extend above each prominent feature of the buildings—these and all questions relating to the protection of buildings from lightning are clearly answered in an interesting booklet issued by the J. A. Scott Co., Department J, Detroit, Mich. If your buildings are not protected drop a postal card to the above address and get a free copy of this booklet.

Witte Engines, sold only direct from factory to users, are fully illustrated in a large size 32-page catalog sent by Witte Iron Works Co., Kansas City, Mo. The many types of gas engines manufactured by this concern, with details of construction, are fully illustrated. Write for catalog No. 43, mentioning the Michigan Farmer.

Marlin repeating rifles and shot guns, manufactured by the Marlin Fire Arms Co., New Haven, Conn., are illustrated and described in detail in their new 128-page catalog, published by this well-known company.

BOOK NOTICE.

"Making the Farm Pay," by C. C. Bowsfield, is a treatise on many phases of farming, including general and special crops, live stock, fruit, etc. Also a number of chapters on related agricultural topics. 192 pages, 5x7 inches. Price, \$1. Published by Forbes & Co., Chicago, Ill.

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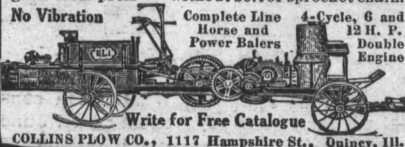
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