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FOR many years a disease of potatoes has been known in Michigan and other states which has threatened to become of great importance to the potato growing industry. This is a wilt disease and it makes itself known by some very marked symptoms. Starting with a small percentage of the tubers affected, it increases from year to year until a large percentage of the crop may be diseased. As will be seen, the signs of the disease are, perhaps, more striking at the beginning of the attack than later.

Signs.

Probably the first evidence of the work of this fungus enemy is noted in the early dying of diseased plants. One or two plants of the row may be affected, or in cases of widespread attack of the disease, the entire field may die two or three weeks earlier than the usual time. Such a condition being general, might not serve to call attention to the disease so strongly as the dying of an occasional plant.

If weather has been favorable so that the potatoes are well advanced at the time of the year, a crop may be harvested even from diseased plants but such potatoes are small, and a general occurrence cuts the yield enormously. It is common history in the western states that soil which formerly raised crops averaging 150 to 200 bushels per acre is now raising, with the best of culture and favorable weather, only an average of 80 or 90 bushels per acre. It is the author's opinion that the greater part of this fall in yield is due to the fact that the soil in old fields is infested with this fungus from the seed which is planted in the new ground. The killing of the plants occurring as it does about two weeks before the normal ripening time, is just sufficient to injure the yield, but not enough to kill the plants outright.

If the plants which have died as described, are examined, it is found that the roots, or at least a part of them, are dry and brittle and the stem brown and water soaked. If such plants are put under moist conditions, the stem becomes covered with a white mould-like growth and frequently, this is found in the field following a period of wet weather.

The stem is affected following the attack on the roots. The stems leading to the tubers are affected still later, and it is possible by taking a number of plants, to find all stages in the advance of the fungus. One can find cases where the entire tuber stem is sound and apparently free from disease; other cases show it brown and water soaked and if the small potato is cut across at the butt, or stem end, it is found that the water tubes are not the natural color, but are stained yellow or brown. If such tubers are stored, the fungus advances further and further along until the water tubes are blackened or browned to a depth of one-half inch or more. This sign is believed to be rather constant and, as will be seen, is a basis for the control measures, which are recommended later on. The next year when such potatoes are used for seed, this diseased portion is planted and is in a most favorable location to cause the spread of the disease. It is the writer's opinion that the disease progresses from such tubers directly to

Fusarium Wilt of Potatoes.

the stem. The opinion of Dr. Smith, however, indicated that the attack might come through the roots and such is the case for some other diseases of similar nature due to this same sort of fungus.

For a long time it was thought that the dry rot in storage was also due to this fungus, but recent work in Nebraska indicates that the rotting of tubers in that state, at least, is not due to the fungus which causes the wilt, but due to another species of the same group. Much of the experience, however, in Michigan and in Nebraska as well, indicates that while there may be a specific rotting of potatoes due to a fungus different from the wilt, yet by far the greatest loss comes from the wilt fungus and this also may cause a dry rot of the tuber.

Control of the Disease.

Very early in the history of this disease, attempts were made to control it by fertilizers, but these experiments gave no definite results. Manns, in Ohio, conducted some experiments in 1910 which gave good promise in fighting the disease. First of all, it is necessary to know the disease. If one is working in the potato fields during the growing season, he should readily recognize the fact of the presence of the wilt. In examination of the harvested tubers, one can quickly determine the pres-

concerned, or to the grower in returns.

Many farmers in the state spend considerable time in selecting their seed and the writer would point out that among the things to look for in the growing plant is freedom from wilt and in the tubers freedom from bundle blackening. Manns advises, in a case of badly infested fields, to avoid growing potatoes for at least five or six years.

Probably the most acceptable of all the control measures that can be suggested is the careful inspection of seed previous to planting. When the potatoes are being cut, and this should be done by hand, cases where the tubes are diseased with bundle blackening should be discarded. Manns had considerable success in fighting the disease by cutting away the diseased parts and then dipping in formalin. The writer would point out that if many of the seed potatoes are cut, it is very dangerous to dip and leave in the formalin any length of time, since it has been found by actual experiments, as well as by the mistakes of growers, that if the potatoes are dipped in formalin to treat for scab, after cutting, a large proportion of them will fail to come up.

In the writer's opinion, the following course should be adopted in handling seed potatoes: First dip the whole potatoes,

bundles have become discolored, or they may harbor some other germ. Several bushels of potatoes have been examined and it was found that 99 per cent of the seed showed this slight discoloration extending, in no case, more than an eighth of an inch in the tuber. This discoloration did not increase with storage, while it is believed that in a case of Fusarium Wilt, the bundles would have become infected to a greater depth. Cultures which were made from these bundles did not give the characteristic Fusarium growth. This should be noted by the growers and the cuts in examination should be made a quarter of an inch or more in depth.

The Loss Caused by this Disease.

The loss caused by the Fusarium wilt is very hard to estimate. If one could compare the yield in fields where crops were originally very large, which have fallen off, due to this fungus, he might gain an idea of the possibilities of loss. If one walks through a field and finds one per cent or even ten per cent of the plants dying, two or three weeks before the right time, and producing only a handful of small, unsalable tubers, he can gain some idea of the possibilities of the damage.

Mich. Ag. College. G. H. COONS.

ANTHRACNOSE OF BEANS.

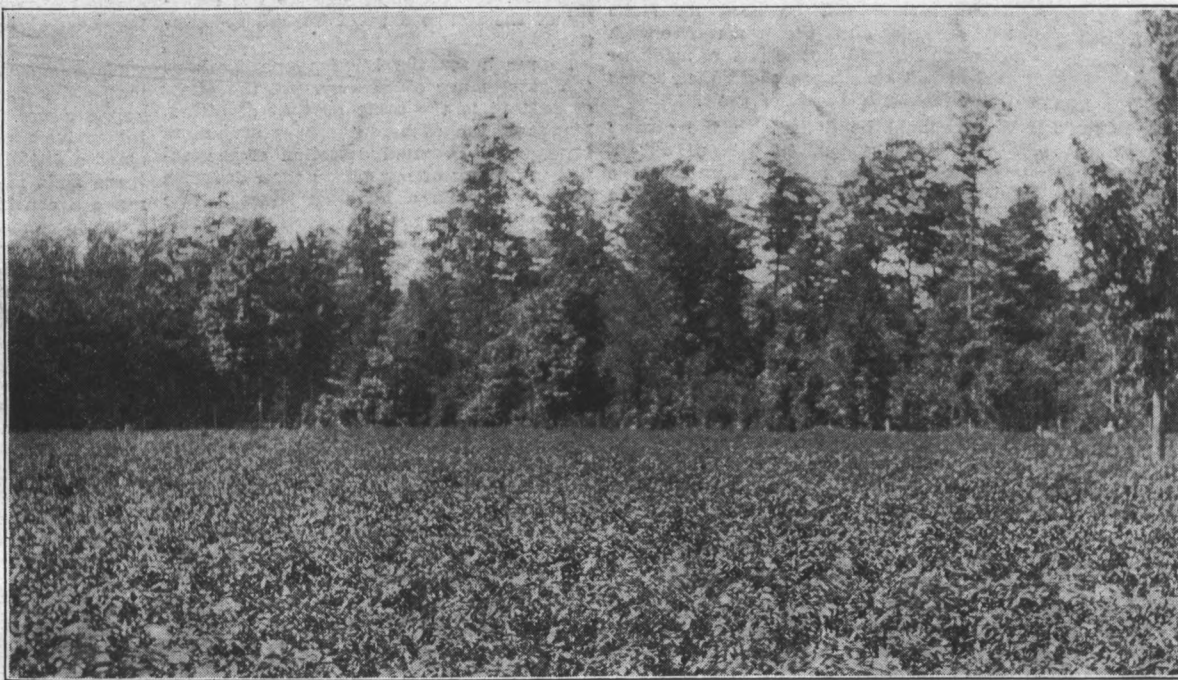
In a letter commenting upon the article on bean anthracnose by W. H. Parker, agricultural advisor for Genesee county, an Oceana county reader writes: "Beans are recognized as one of our most important crops and I will venture the assertion that in our section of the state not more than five per cent of the growers know that there is any disease that is a menace to their propagation. I have been interested in bean culture for several years and I am not certain that I would recognize bean anthracnose unless my attention had been called to the fact that it was prevalent in a certain locality. One of two things is certain, so far as Oceana county is concerned, either we are very fortunate in not having any of the disease here, or else we are very ignorant as to its appearance, as I have never heard of its existence in the county.

As a favor to your numerous subscribers in this section, I would like to ask someone who knows beans to give a comprehensive description of the symptoms of this disease before we become familiar with it from personal contact."

This fungous disease of beans can scarcely be brought too prominently before the attention of Michigan bean growers at this time, since it is undoubtedly present to some extent in most sections of the state where beans are grown on a commercial scale.

This disease was first observed in 1878 and its presence is often recognized, but ascribed perhaps to dry weather or sometimes perhaps to wet weather and is very variously but wrongly called rust and blight. It is a disease which is introduced into the field in almost every case through the planting of diseased seed. In some cases it develops rapidly and kills many plants while young.

Where the young plants are attacked it



Early Potatoes in Kalkaska County, Ready to Harvest and Estimated to Yield 150 Bushels Per Acre.

ence of the wilt fungus in the majority of cases, at least, by cutting across the stem ends. If the ring of water tubes is discolored for considerable depth of the tuber, it is safe to suspect that such a tuber is diseased with the wilt. Such potatoes keep badly unless they are stored under very cool conditions. The form that the disease takes in this case is usually called "dry rot." But this weakened potato, if placed under moist conditions, will rot with bacterial organisms and give a case of "wet rot."

Manns calls special attention to the necessity of knowing the condition of potatoes with reference to this disease before storing, since in the case of a widespread attack of the trouble, storage conditions must be looked after very carefully. Where the potatoes are found to be badly affected with this trouble, they should be sold for early use, since in the main, when potatoes are sold in the fall, there is little loss, so far as table use is

as usual to control scab. While these are still wet, look over carefully. All cases of Rhizovectonia (or scurf) should be thrown out. Then these potatoes should be cut by hand and those showing bundle blackening discarded. If in some cases the diseased part is cut away, these potatoes may be dipped for a few minutes in a formalin solution to kill any germs that are left by the knife in cutting. The potatoes are then dried and planted. Of course, the usual precautions that are necessary to prevent a reinfection with the scab organism are necessary to prevent a reinfection with the wilt organism. These are both diseases caused by minute organisms, and the use of old crates or sacks which have contained diseased potatoes will reinfest the treated seed.

A condition of seed potatoes has been noted in which bundle blackening extended in a very small fraction of an inch. In the writer's opinion, this is not a true case of wilt, but for some reason or other, the

will be recognized by brown or black sunken spots or pits on the stems or cotyledons. When a stem is attacked at the base close to the ground the injury may appear to be due to some insect and this is undoubtedly the cause of damage to the bean crop in some sections of the state this year where it has been reported that some insect was at work in the field and so weakened the stalks by eating them at the base that they fall over from their own weight and die. Where conditions are not favorable to the rapid development of the fungus before the plants are well developed, the leaves will also show the disease, particularly on the under side and along the veins which become brownish and dead.

It is its effect on the pods, however, which is most noticeable and which causes the greatest damage. Large, more or less circular sunken brown spots appear on the tissue of the pod, at the center of which a pinkish moldy mass may be observed, which are the spores or seed of the fungus. As the beans ripen, the disease works through the pods and attacks the seed, forming discolored and often roughened spots on the beans. Diseased beans may be detected by these discolored spots on the coat of the seed and are usually imperfect in shape and sometimes shriveled, although not necessarily so.

Unquestionably this disease is largely responsible for the increased percentage of poor beans in Michigan's crop, which is constantly picking heavier each year. Much of the damage which is ascribed to bad weather at harvesting time is undoubtedly often due to anthracnose, as when wet weather discolors the beans they will have a dull and blackened appearance, instead of a spotted appearance of the seed as is the case when affected with anthracnose.

It is spread in the field by working in the beans in wet weather when the spores from diseased areas are readily scattered and adhere to other plants. Insects and other similar agencies may also assist in spreading it. The main dependence for controlling the disease, however, must be the planting of clean seed secured either from fields where there is no infection or by the hand picking of pods which are not affected, as no clean and perfect bean pod is, for planting in a seed plot to provide clean seed for the next year's planting.

Bean growers would do well to give this matter their serious attention in the selection of seed for next year's planting, since by this means and this means only, can the spread of this most destructive of bean diseases be checked and the loss which it entails avoided by Michigan's bean growers.

THE CONSTRUCTION OF CONCRETE CORNER POSTS.

Most farmers find today that one of the weakest points in a wire fence is the corner post. The post is either pulled over when stretching the wire or if it does hold it rots off in a few years and consequently, weakens the whole fence. After the wire fence once becomes loose it cannot be stretched up properly again. Some farmers buy the concrete posts already made and place them in the ground as they do the ordinary wooden posts. These are better than wooden posts but they are too expensive and do not remain as solid as where the posts are built in the hole.

We have built several concrete corner posts in the field and find them to be far superior to any other kind of posts. We found that by building the post in the hole the cost for material was 90 cents. A good wooden post would cost nearly this amount and would not last nearly as long. We dug a rather large hole three or four feet deep, slightly undermined on the side, where the brace was needed. The concrete was then mixed, using one part cement to five parts gravel, and placed in this hole. It is essential that the gravel be clean; that is, free from loam, clay or vegetable matter. When the hole was filled to the level of the ground a form one foot square was placed over this concrete already in the hole. The form can be made so that it tapers slightly toward the top, making a very neat appearing post. A small amount of concrete was placed in the form. Then four irons four and one-half feet long from an old windmill derrick, were placed about two inches from the four corners of the form for reinforcement. The form was then filled with concrete and left 24 hours before it was removed. Holes can be made in the post by placing one-half inch gas pipe every six to 10 inches

apart in the form before applying the concrete. The wires can then be fastened to the post by pressing through these holes. We merely fastened the wire around the post and found this method of fastening it to be very satisfactory.

By this method of constructing corner posts braces are not absolutely necessary. Braces were attached to several of our posts and some were left unbraced, the latter stood the pull without giving a particle. Since the concrete posts are much cheaper in the long run than the wooden posts this is the only kind of a post a farmer should use.

Indiana.

J. C. KLINE.

THE STRAW PROBLEM.

Straw should not be burned. Burning straw, though very common in the west, is not much practiced in the east; but I have seen the blaze and smoke of burning straw piles along the flats of the Susquehanna river, which produce long straw, and a large quantity of it. The buckwheat straw which is usually threshed in the field, and is not considered of much feeding value, was generally burned as soon as the machine was moved out of the way.

Straw should not be sold unless the farm produces more than can possibly be utilized for feeding and bedding for stock. In Great Britain, where good farming and big crops are more general than here, and more pains are taken to make and apply a large quantity of manure, selling straw from the farm is considered an unpardonable sin and is strictly forbidden in the farm leases to tenants. Of course, near the cities and large towns straw can be sold to good advantage and manure brought back to supply its place on the farm. I have often exchanged a load of straw for a load of manure—say half a ton of straw for a ton of stable manure, and the person with whom I made the exchange brought the manure to my field, and took home the straw. He was glad to do it and I was well pleased. Long bright rye straw is in great demand for paper making and packing purposes, and sometimes brings nearly as much per ton as hay. It might be good policy to sell rye straw and with the money it brought buy bran or oil meal to feed to live stock or commercial fertilizers to maintain the fertility of the farm. The only danger in this transaction is that when the straw is sold the fertilizer will not be bought and the money will be used for some other purpose and the farm wronged. People who would not cheat a neighbor in a deal will sometimes cheat their farms without feeling a qualm of guilt.

What should be done with the straw? As soon as threshed, (if pitched out of doors), it should be pitched back into the barn before it gets wet. There is room for it there if well tramped down. A stack in the barnyard, if built ever so well, will get wet on top and sides and in the winter be frozen and crusted with snow and ice so that getting any dry straw when wanted is difficult. Hon. B. LaPorte, late of this county, erected a building in his barnyard on purpose for straw, which is run into it from the machine that stands in the barn. The sides and ends are planked up with three-inch scantling spiked far enough apart for cattle to get their heads between them to work at the straw when in the yard.

A considerable amount of bright straw can be fed with profit to young cattle and to cows. No matter how well they are fed on cornstalks or clover hay, they will eat some straw every day for the sake of change. We give them some straw in the morning when their appetites are keen. The choicest portions are eaten readily, and what is left is thrown under them for bedding, then they are given stalks or clover hay. We do not compel our cows to eat any straw but it is given to them regularly (placed at their forefeet) and they will eat some in addition to their other foods. It is surprising how much straw can be used during the winter for bedding cattle and horses, and how much cleaner they look and how much more comfortable they must feel; and what a large quantity of manure they will supply.

Our meadow having been flooded by high water in the river and rendered so short of hay, we wintered all our stock, horses, cows and fattening steers almost entirely on cut straw and meal and never wintered them better nor cheaper. The straw was cut in half-inch lengths, moistened with water, and mixed with meal ground from corn, rye, oats and buckwheat, mixed in about equal proportions. Some farmers at the beginning of winter after the ground is frozen, draw straw

and spread a thin layer over their wheat fields for protection against winter-killing. Pennsylvania. J. W. INGHAM.

THE RENTER AND THE SOIL.

Non-resident ownership of farm property means the depletion of soil fertility. For such possession of farm land means either a hired man or a renter upon the property. In farming, as in any other business, a representative of the owner seldom takes such an interest in the business as does the proprietor. Even though for the time being, the clerk may have as much interest in an establishment as the owner, it is at best only transient. If any red blood, any ambition is in him, he will soon desire a better position, and if he hasn't enough push to desire advancement, it is seldom that he has either the incentive or the capacity to fill his present position to the best interests of either his employer or himself. So it is in farming. The man possessing business sagacity and hustle rents or hires out, only until he is able to till a farm of his own. If he is unable to own a property he continues to live on another's. So, in the first instance, the tenant's interests are but temporary, and in the latter there is little or no interest.

When the non-resident owner has his farm tilled by an employe living on his property, the farm operations are usually supervised by the owner. Yet, this supervision by a man living miles from the farm, cannot be done as intelligently as if the owner were upon the ground. Owing to the fact that farm work depends entirely upon local conditions, farming by telephone is at best unsatisfactory. Because of that fact, the farm hand, even obeying the orders of his foreman, which he is unlikely to do, does not always do the things which should be done, that is the beginning of careless inconsistent farming. Because the right thing is not done at the right time, the yields decrease. Gradually interest is lost. Things go from bad to worse. The farm hand becomes even more irresponsible than he was at first. He looks toward pay day while the owner looks toward grain checks from the elevator. The future of the farm is lost sight of in the demand for greater profits. So, in order to obtain these profits the farm is taxed to its utmost while nothing is returned to it. Such a system of cropping is bound to eventually deplete the fertility of the soil to a point beyond redemption.

So much for the hired man. Perhaps the results are overdrawn, yet the effect of renting is the same as that of hiring. Mayhaps, the cash-renter does even more toward the eventual depletion of the fertility of many of our farms than does the man who rents a farm on shares. The interests of the first are even more temporary than those of the second. Fundamentally, the system of cash renting is wrong because it means soil robbery. It is to the interest of the owner to get the highest rental from his property, and it is to best interests of the tenant to get the largest returns from the farm at the least outlay. Thus he naturally grows those crops which pay the best. So he disregards live stock husbandry, crop rotations and indeed everything else which, consistently used, would increase the fertility of his farm, because the utilization of such methods might curtail his profits. His watchword is large profits not large yields. On the other hand, the share-renter knows as far as yields go, his interests are those of his employer. He, however, thinks it is to his advantage to get a few good crops off the farm, and then, as soon as the farm becomes "run" to move off, rather than by consistent crop rotation and fertilization to take the average return of several fairly good crops. Though it is a mistaken idea, it is, nevertheless, very prevalent among tenants, and so by the successive tenantry of that class thousands of acres of once rich fertile American farm land are being added to the numberless abandoned farms of the United States, and whether the tilling is done by a hired man, a share-renter or a cash-renter, it is, as a rule, bound to eventually result in a gradual depletion of the fertility of our farm properties.

Ohio.

CLYDE A. WAUGH.

CLIPPING THE MEADOW.

It is about time to clip the meadows that have been seeded last spring. Especially where a crop of wheat has been removed. By clipping quite early, weeds are prevented from going to seed, and the young clover seems to thicken up

better, so it is not so easily winter-killed. In this section when new meadows are not clipped, rag weeds generally spring up in great abundance, especially in a wet season like last year, but it generally pays to clip whether there are many weeds or not, and too many farmers are apt to neglect this part of farm work. Ottawa Co. JOHN JACKSON.

LILLIE FARMSTEAD NOTES.

The exceedingly dry weather was partially broken by a splendid shower on Sunday morning, August 17. Had the ground been only ordinarily dry there would have been sufficient moisture to have lasted for some time, but at the present time, Wednesday, August 20, the ground and crops begin to look as dry as they were before that splendid shower, only a few days ago. This, of course, gives some conception of the extreme dryness of the ground. It absorbs what little water comes apparently without being at all satisfied. The shower, however, did good. There was enough moisture fell so that it was a great benefit. Sometimes we have little showers, spatters of rain, that come in dry, hot weather that seem to do as much harm as they do good. There is not enough to even wet the dust, and falling on the dry, hot ground it evaporates at once, leaving the ground seemingly in worse condition than before. But our shower on the morning of the 17th was of sufficient quantity to wet all of the dry ground on top down to sub-soil moisture in most places, especially on cultivated fields. Where we were plowing oat stubble that had been disked thoroughly both ways, and it was just as dry as a powder house on Saturday afternoon, Monday morning when we began plowing again the rain had soaked down so that in many places there was no dry dirt at all. This field was a little bit rolling and yet not a particle of rain ran off, and it came down in torrents. The ground being thoroughly disked was just in shape to catch and hold every bit of the moisture that came, though it came in excessive quantities for the time. Corn that wilted and its leaves rolled during the middle of the day have stood upright and looked fine ever since, but it is just beginning now again to show the need of more moisture. I was hopeful that this shower would be followed soon by others and that it would furnish a sufficient amount of moisture so that the new seeding would come along fine. Where we just get a shower that even wets the surface soil thoroughly and then it remains dry for some length of time, the young clover plant and grass do not seem to receive much permanent benefit. They start a little bit and are refreshed, but there isn't moisture enough so that they make a continued growth, and their progress is exceedingly slow.

Several years ago I built quite a large summer feeding floor for hogs. This feeding floor is 90 feet long and some 18 feet wide with a cement trough on one side towards the feeding alley. I thought this would be just the thing for summer feeding. Then we have "A" shaped pens for shelter for the pigs. Now this works very nicely in moderate weather, in the spring and fall, but when we have such exceedingly hot weather as we have been having this summer I don't like it at all. The floor gets hot. In the middle of the day you can scarcely get the pigs there to eat at all it is so hot. The consequence is that I am going to have shelter over this. I have got enough of outdoor feeding places. I want shelter over it so that on an exceedingly hot day the pigs will come up and drink water at leisure. Of course we don't usually have so much hot weather as we have had in spells this summer, where the thermometer is way up in the nineties day after day, and yet, of course, we are liable to have this kind of weather any summer. Then, too, we find we want to use this feeding floor earlier in the spring and later in the fall than we originally intended, and consequently at both ends of the cold season it would be better if we had a roof over it and had it enclosed, not necessarily try to make it warm enough for winter quarters, but to protect from cold winds, and in the summer time to protect from excessive heat, and I am positive from the experience this summer that it would be a good paying investment to put a roof over this outside feeding floor.

One cheering fact connected with the long destructive drought in Kansas and other southwestern states is found in the increase in silos, thousands being scattered over Kansas and robbing the drought of some of its terrors.

SOME ALFALFA QUESTIONS.

Sowing Alfalfa Deep with Grain Drill.

Will Mr. Lillie please report through the Michigan Farmer the result of sowing alfalfa deep with a grain drill? Would you advise that plan now?

C. O. R.

Berrien Co.

There is a better and more vigorous stand of alfalfa where we turned the spouts on the seeder so that the seed would go into the wheat spouts on the drill and be sowed as ordinary wheat or oats, which would be much deeper. Previous to that we had fixed the spouts on the seeder attachment so it would scatter the seed ahead of the disks. Some places it didn't seem to come as well as it ought to. Whether it was too deep or whether the ground was too dry it is almost impossible to tell. In many places there is almost a perfect stand of alfalfa, in every row it stands thick. But some places it didn't come as well as it ought to, yet there is enough there so that there will be a good stand of alfalfa, I am sure of that. Where the seed all came it is many times too thick. But where we distributed the alfalfa ahead of the disks there is also a good stand of alfalfa. If it will stand this drought until we get rain there won't be any question about it. It looks green yet, but it makes very little growth. If I was to seed the field over again now after having had this experience I would put on a roller ahead of the drill, weight the roller pretty well and roll it down, so that the disks would not go quite so deep on the mellowier places. This I believe would be the best possible way to sow alfalfa in mid-summer or in dry weather. Is it Necessary to Inoculate for Alfalfa?

I am taking the liberty of writing you as an experienced alfalfa grower, asking your opinion as to the necessity for inoculation to assure a good catch of seedling. Some of our local farmers seem to have an idea that inoculation is unnecessary.

Otsego Co.

J. H. G.

While I do not think it absolutely necessary to inoculate for alfalfa, I am of the opinion that it invariably pays to do so. If the land is good and fertile and in good condition, or if it is made so by good heavy application of commercial fertilizer and stable manure, the alfalfa will live until it becomes inoculated naturally. In fact, if you have got good alfalfa land and it is rich enough you can seed early in the spring to alfalfa alone and get a couple of good crops that same season without any inoculation. On the other hand, if your land is not overly fertile the alfalfa makes slower growth without inoculation. If the soil is inoculated, on land that doesn't contain a good amount of nitrogen the plant begins to use nitrogen from the atmosphere sooner.

On ordinary land I am of the opinion that it will take from one to two years longer to get alfalfa well established if you do not inoculate than it will if you do. I am also of the opinion that many people who attempt to inoculate do not get results. Many of the bacteria are killed by being exposed to the direct rays of the sun. People don't seem to understand the importance of this point sufficiently. The pure culture made for inoculating alfalfa is all right if it is only used right. If you sow the seed on top of the ground on a sunshiny day practically all of the bacteria are killed.

The Glue Method of Inoculating Alfalfa.

Will you kindly tell me how to use the soil and glue system for inoculation of alfalfa? My field was plowed the middle of May; it was corn stubble. Have kept it well harrowed since and have added 260 lbs. of fertilizer to the acre. I now have 20 acres of good alfalfa. This was sowed without inoculation. I have raised alfalfa for the past eight years. My trouble is to keep it from running out. I have had some big crops and some very poor ones. I never sowed any as late as this before. Do you consider the time all O. K. with a proper seed bed? The soil is a 15-acre rolling field, some clay, gravel and sand.

Wayne Co.

W. M. S.

The glue method of inoculating alfalfa consists in glueing some of the fine dust from an alfalfa field to the alfalfa seed. Go into your alfalfa field and where you find the most vigorous stand dig down and examine the roots. If you find the nodules of bacteria there then take some of this soil. You don't need very much of it. A quart or two of soil is enough for a bushel of seed. Take this soil and keep it away from the direct sunlight, take it into the stable, into rather a dark room. Dry it thoroughly. Now, if the soil is coarse grained, that is, if it is sand and the grains are coarse it will be necessary after this soil is dry to take it on a smooth plank and take a brick and rub it, so as to fine it, make it real fine. If on the other hand, the soil is of the clay character it probably will be fine enough without this grinding. Now dissolve some glue in warm water. If you have only got a bushel of the seed

to inoculate five cents worth of glue dissolved in a quart of warm water will be sufficient. After it is thoroughly dissolved pour the water on the seed and thoroughly mix it so that every seed will be moistened with the glue water. Then take your real dry dust from the alfalfa field and mix it with this seed, thoroughly mix it so that every seed has some fine particles of the dust sticking to it. Then dry the seed. It won't take very much drying. Now some fine dust from this alfalfa soil is glued to every seed and every particle of that dust contains some bacteria. You have got the bacteria right where you want them, on the seed. Now sow the seed on a cloudy day, or put it into a drill so that when it is deposited in the ground it runs directly into the ground and doesn't come in contact with the direct sunshine. Then you will not have your bacteria all destroyed by the bright rays of the sun.

Keeping Alfalfa from Running Out.

I am of the opinion that the only way to keep alfalfa from running out is to fertilize it with phosphoric acid and potash, and to harrow it with a spring-tooth harrow. Early in the spring and directly after each cutting harrow it with a good spring-tooth harrow both ways, and treat your alfalfa with 400 or 500 pounds of phosphate and potash. Probably there is no better time to sow than in the late summer where it is sown on a well prepared seed bed.

COLON C. LILLIE.

RED COB ENSILAGE CORN.

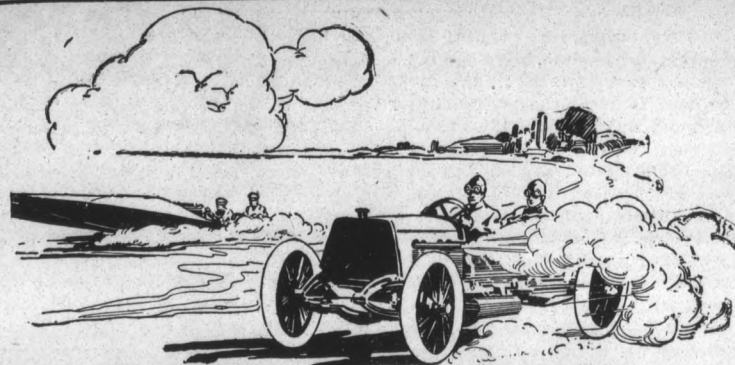
People now days, especially the farming class, desired to be "shown," and like more or less proof of the assertions made in regard to crops, and farming methods. I was impressed with the short article in the August 16 issue of this paper on "Red Cob Ensilage Corn," as to the possibility of its maturing in 90 days. I hardly believe any variety of true ensilage corn could, even in favorable weather,



mature in this time, but I do believe varieties of ensilage corn can get to the silage state in this length of time under favorable conditions and upon good productive soil in Michigan. The illustration is of southern Illinois Red Cob Ensilage Corn, planted on Gladwin county new ground June 30, this season. Much of this corn stands nine and ten feet high at this date, August 18, has extremely broad leaves and is a virtual "swamp" of forage, good to look at. Tassels and ears have started and the crop bids fair, with one month's further growth, to make a prize piece of ensilage corn. Our first killing frost occurred here September 27 last season so, even with earlier September frosts, a good crop is about assured. I could have planted this two weeks earlier as conditions were very favorable here, but was engaged in breaking ground and planting my regular field corn. This piece of corn at this time, owing to stress of time, has had but one cultivation, still the whole field appears alike and is quite free of weeds. Seemingly the weeds can't grow in such dense shade as this corn affords. The ground was thoroughly broken and pulverized, and being quite rough, was planted with hand planters. Two to four kernels were planted to the hill, the hills being about 18 to 24 inches apart in rows 38 inches apart.

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Modern Methods of Pork Growing.

TO secure maximum profits from breeding and feeding hogs one must work out a system of management adapted to conditions at the present time. In the good old days when the hog was allowed to roam about, feeding upon the mast and herbage of the woods, scant attention was given to early maturity, prolificacy and strength of constitution. It was not required of a hog that he be ready for market until he had reached an age of from one to two years. As to prolificacy, strength of constitution and ability to digest food—these qualities hadn't been weakened by improper feeding and too close confinement.

Then came the period of heavy corn feeding and small hog pens and yards. The hog found himself crowded into a tiny pen where his only function was to eat and sleep. This seemed a good way—at least for the time being. But differentiation accompanies development. No problem in agriculture is ever quite settled in a new country. We had hardly begun to realize the possibilities of dry-lot feeding until the price of corn and mill feeds began to rise. Simultaneously with the rise in price of grain foods, hog growers suddenly awakened to the fact that other complications confronted them as a result of corn feeding and close confinement. Lack of exercise and too much heavy, heat producing food had severely warped the constitutional vigor and destroyed the prolificacy of the breeding stock. The strong, healthy developed porker of the past had given way to the short, dumpy, quick maturing youngster developed to meet the demands of the packers, but light of bone and weak of heart, lungs and digestive capacity.

Now comes the demand for a more rangy, better developed hog that will give a carcass well marbled with fat and lean meat. A new system of breeding and feeding must be worked out to meet the present conditions. Something cheaper than corn must be found—something, too, that will restore and maintain the strength of constitution and increase the prolificacy of the breeding stock. When this new system is worked out and becomes more generally understood among farmers hog growing will become an attractive proposition in many localities where the squeal of the swine is now scarcely heard.

Pasture and Forage Crops.

This new step in the evolution of pork-making depends upon the use of pasture and forage crops in the growing of young pigs and the development of breeding stock. It is simply the adoption of old methods under modern conditions. It possesses many advantages over dry-lot feeding; inasmuch as it reduces the cost of producing a pound of pork about 20 per cent; it turns some of the labor required in harvesting over to the hog; it guarantees health among the swine and maintains a state of higher prolificacy among breeding stock than can ever be hoped for in dry-lot methods; and distributes the fertilizer out in the field all ready to be plowed under to produce another crop. The hog grower of the future, engaged in pork growing as a business proposition and not merely using hogs to scavenge the feedlots, must take cognizance of the fact that young hogs up to the age of five or six months need a growing, not a fattening ration, and that they need bulky and succulent foods to properly develop a strong digestion that will enable them to make efficient use of their grain foods when they are being finished for market.

The difficulties of maintaining breeding swine in suitable condition on corn and millfeeds has been manifest in this country for many years. But while grain feeds were cheap few farmers cared to fuss with pastures and forage crops. The tendency has been to neglect the natural cravings of the hog for exercise and succulent feeds, and accept as economic necessities the decreased thrift and prolificacy. However, the high price of grain foods and the decreased thrift and prolificacy of breeding stock has set many hog growers to thinking. Slowly, but surely, by these natural causes pasture and forage crops have worked their way into the favor of breeders and hog growers. It has proved of great value to the breeding herds as well as the young growing animals. Fattening hogs can also make highly profitable use of a limited amount of these feeds. For sows, boars and growing hogs the soothing, tonic effects of green feed and exercise obtained while gathering it help counteract the tendency of continuous dry feeding to depress the body's activities. The fatten-

ing hog on a full feed of grain does not live long enough to suffer from the bad effects of his unnatural diet, however, a careful study of the following reports of the Kansas, Nebraska and Missouri stations show that these green and bulky feeds have an important place in the economy of conditioning a hog for the market.

Better Gains Made on Pasture.

At the Kansas station ten shoats were pastured 98 days on an acre of rape. During that time they ate 3,231.4 pounds of grain and gained 1,068.2 pounds in weight. Here three pounds of grain made one pound of gain. The rape pasture did the rest. At Nebraska it was found that brood sows after weaning the pigs made eight per cent better gain on 23 per cent less grain when pastured on alfalfa.

At the Missouri station Professor Waters found that in a 40 day feeding trial it required 4.89 pounds of corn meal and middlings to produce one pound of pork in dry-lot feeding. When corn meal was fed under similar conditions with the pigs on rape pasture 4.41 pounds of grain made one pound of gain. With clover pasture 3.87 pounds of grain were needed to make a pound of gain; and with alfalfa pasture the quantity of grain was reduced to 3.43 pounds. Blue grass proved to be just a trifle better than rape, requiring 0.4 pound less grain per pound than rape. At the end of 40 days the rape lot gave out and the other lots continued another 62 days. Summaries for the entire 102 days show that the following amounts of grain were required for one pound of gain in live weight: With blue grass 4.31; clover 4.35; alfalfa 4.01 and without pasture 5.18.

Every experiment station in the country has endorsed pork production of pasture and forage crops. Every practical farmer who has set about the problem intelligently and kept a record of the cost of feed and gains made by his hogs has reached the conclusion that a system of forage crops is indispensable to economic pork production. The chief problem is to work out systems of growing clover, alfalfa, blue grass, cowpeas, soy beans, and the like to rotate with corn and small grains and help the farmer to grow the hog of quality at less cost, and such hogs will be the market toppers regardless of breed.

In planning a system of forage crops one should not depend on any one crop. The essential thing is to adapt a rotation of the crops best suited to his farm to provide an abundance of grazing at all times during the season. By starting the season with blue grass and rye, followed with oats and peas, alfalfa, clover, cowpeas, rape and the like he will have plenty of green feed at all times and the portion of the crops not consumed by the hogs will make manure to be plowed down on the land.

Grain Should Supplement the Pasture.

Natural, then, and not strange, is it that many men who have found out the value of green forage as a pork producer should go to extremes. As a sole ration it is little more than a maintenance feed. Pasture without grain is a far more expensive way of producing pork than grain without pasture. The amount of grain to feed hogs that have the run of these crops must be regulated by circumstances. We hear many advocate growing the frame on forage crops, and after the corn is ready finish them for market. These men claim that it does not pay to buy supplemental grain feeds, as it is possible to grow a good frame on forage and pasture crops. During favorable seasons one may succeed in growing the pigs with no direct cash outlay for millfeeds and very little corn until the new crop comes. Such pigs, it is needless to say, get into market late in the winter and present a very uncouth appearance. At about the time the prices break they are just beginning to get into condition to make good use of the corn crop and the owner lays awake nights wondering if he had better dump the whole drove on the market and take what he can get or finish them out and take chances on an advance in prices.

The better class of hog growers have learned that they can not make something out of nothing; that they cannot grow good pigs without feed enough to keep them growing steadily. They have found out that by feeding reasonable quantities of supplemental foods along with the forage crops they can grow and develop a better frame and carcass at less cost per pound of finished hog than it is possible to do by feeding semi-starvation rations in order to grow a cheap

frame to finish with corn. Of course, it costs more to develop a strong and vigorous feeder, but this does not prove that the plan is not better. If we withhold the feed from a dairy cow her flow of milk immediately shrinks. Men who persist in withholding protein feed from growing pigs suffer just as great a loss, but they do not have a shrink in the milk flow to draw their attention so quickly. The whole practice of half-feeding a pig to build up a frame is based on ignorance of the principles that underlie profitable pig feeding. The efficiency of the balanced ration, the losses and checks in growth during the summer drouth, when forage dries up are not taken into consideration by the men who practice this method of cheap frame building. Their chief aim is to raise as many pigs as possible by breeding young sows at six or eight months of age, keep them for practically nothing during the summer, feed them the whole of the corn crop and figure the pile of money they bring net profit.

Whether feeding fattening hogs, breeding stock or pigs that are being developed for breeding purposes the forage crops should be supplemented with some grain foods. This balances the feed and helps to prevent an abnormal development of the stomach and intestines at the expense of other more desirable development. The grass-fed hog, like the whey-fed, pot-bellied calf, is an example of slow growth and poor development. We should avoid extremes in feeding hogs. It does the breeding stock and young pigs good to rustle and develop stamina, but this does not mean that they should be compelled to subsist on a semi-starvation ration. One extreme is as bad as the other. We must have a proper relation between the protein and carbohydrates as well as between the bulky and concentrated feeds if we obtain the best growth and development the pigs are capable of making, and maintain a high degree of vigor and prolificacy among the breeding stock. Where an abundance of forage is available it is sometimes advantageous to feed bulk and protein in some excess than to increase the cost of the ration by securing expensive concentrated foods to make up a strictly balanced ration. The essential thing to bear in mind is that under present conditions there is no method of producing pork or maintaining breeding stock and growing pigs which in cheapness and economy can compare with the pasture and forage system.

New York.

W. MILTON KELLY.

FEED THE HAY AND STRAW ON THE FARM.

The possibility of raising a little ready money at times is often a great temptation for farmers to sell their hay and sometimes the straw. It is a mighty poor practice whether one owns the farm or is working it on a lease. The practice not only robs the farm of large quantities of fertility but the farmer of a greater source of profit if he utilized it for feed.

The best and eventually most profitable market for selling the hay is to live stock kept on the farm. While it may keep the money tied up slightly longer the additional profit is very remunerative interest. When fed to live stock it is sold just the same, but in the form of milk products, young stock or increase in weight, and the manure is left on the farm.

The average yield of hay might be figured at two tons to the acre. If a rather high price of \$15 a ton was received for it, the income would be \$30. Deduct the expense of harvesting and marketing this and the actual profit is small. Soil that produces two tons of hay to the acre generally will raise 200 bushels of potatoes. At 50 cents a bushel these would sell for \$100. The potatoes removed from the soil will not take away as much fertility as the hay, but the selling price would be enough greater so that one could afford to replace the fertility by the application of commercial fertilizers.

It is unwise business policy to sell hay or straw and then buy fertilizer to produce good crops. No farmer would think of selling butter at 25 cents a pound from his dairy and then buying a supply for his home at 35 cents a pound. If he could sell all his butter at 35 cents a pound and then be able to buy a supply of just as good butter for his home at 25 cents a pound, it would be a different matter. A farmer who sells his hay is doing what the farmer did who sold butter at a cheap price and paid for that for his own use. It is the opposite with money crops such as garden truck or vegetables.

By keeping and feeding the hay on the farm, as well as the straw, large quantities of manure can be produced. This will make it possible to convert the hay into as much money as if it was sold directly, and the fertility will be returned to the land in the manure. Because of the humus matter furnished in manure this has a greater fertilizing value than the fertility in commercial fertilizer.

Many renters cannot see where they are the losers when they sell hay. While the permanent improvement to the farm resulting from utilizing all hay and straw may not benefit them directly, they generally can turn it to greater profit by feeding it to their stock. When they sell it they are robbing not only the land owners but themselves as well.

Pennsylvania.

L. J. HAYNES.

INFLAMMATION CAUSED FROM CASTRATING PIGS.

I would like Mr. Lillie's advice on what to do for my pigs. They have just been castrated a few days ago and one is going wrong. It is badly swollen and seems stiff and lame; has no appetite. They are about three months old and have been kept in a roomy stable but have now turned them into a lot. The trouble came on suddenly. They all seemed healthy and hearty as usual in the morning. At noon this one would not get up or eat and seems to be getting worse. I feed them a slop composed of skim-milk, boiled potatoes and middlings. I imagine the trouble is caused by germs that may be lurking in the stable.

Allegan Co.

J. D. M.

I am not a veterinarian and am not qualified to speak on a case like this, except from what experience I have had with my own hogs. Castration is a very simple matter. Usually no harm comes from it, but once in a while if the pig is out of condition, or if the weather is extremely bad you may get inflammation there which will cause death. I have had this occur once in a great while. The older the pig is before he is castrated, of course, the more severe the wound, the greater the shock, and the more liable the inflammation which will cause damage. If the pigs are castrated when they are two or three weeks old they scarcely notice the operation. Even then, if the pig is not absolutely healthy this wound may cause inflammation which might be serious. I am inclined to think that is all there is in the case. Simply the hot weather or the pig was a little out of condition when he was castrated, and it has caused inflammation and perhaps blood poisoning and it may be fatal, and again the pig may recover. About all one can do is to put on an antiseptic solution, there is nothing better than some form of sheep dip. In fact it is a good plan to use some sheep dip when the pigs are castrated, especially if the weather is a little hot. If perchance, the pigs get a little large and the weather is hot when we perform this operation we always have some sheep dip in a large spring-bottom oil can, and then just as soon as the operation of castration is performed some of the sheep dip is squirted into the wound. I am sure this is a good thing. Now if this pig was mine I would make liberal and frequent applications of sheep dip on this swelling. I don't believe you could get anything any better, and this is about the only way I would know of treating it. Of course, I realize that one does not like to call a veterinarian in a case like this, because the veterinarian's fees would be almost as much as the pig is worth, and in most cases it will not be necessary to do so. COLON C. LILLIE.

REPAIRING A STAVE SILO.

E. A. N., of Livingston county, asks what to do for his stave silo that has holes in the sides and Mr. Lillie tells him to plaster them up with cement. I would suggest that you use pulp plaster. It is very tedious to try to plaster up holes with cement as it sags and does not adhere to top of hole, leaving an air hole and then wood will dry away from cement. Cement does not readily stick to anything, while pulp plaster will readily stick to almost anything. The lumber should be wet before plastering with pulp, or cement either for that matter.

When filling your silo, wet up a teacup of pulp plaster and plaster around the edge of each door, using an old discarded case knife for a trowel and see what a nice tight job it makes.

Cass Co.

F. E. SMITH.

Horse market has been overloaded with a lot of mediocre quality classes and lowest prices of the summer prevailed. Choice big drafters and smooth chunks were only kinds which had fair demand. A few selected heavy drafters went up to \$250@275 and common to fair at \$150@185. Best feeders made \$200@250 while poor to good farm workers brought \$75@190.

FEEDERS' PROBLEMS.

Pasturing Millet.

I have a field of millet that never got large enough to cut. Is it a safe pasture for cattle and horses?

Oakland Co.

H. M. S.

No injurious effects should follow pasturing millet with cattle or even horses until the seeds get well formed. When in that state, however, horses should not be pastured upon it, but it may be pastured with other stock without bad results, providing other forage is available at the same time. That is, if pastured part of the day on millet and part of the day on grass pasture, better results would be secured than if this were made the sole roughage available.

LIVE STOCK NEWS.

Hogs continue to sell at very much higher prices than those paid in most former years, in spite of the recent slump in prices under heavy supplies, and this is particularly true of the better class of corn fed hogs of light and middling weights, these being prime favorites with killers everywhere. The worst feature of the hog trade is the persistent liberal marketing of thin, grassy sows, which comprise a great share of the daily offerings in the Chicago stock yards. Packers do not want them and buy them only at extremely large discounts from prices paid readily for good lots of swine.

According to O. A. Parks, of Casper, Wyoming, the heaviest movement of sheep and lambs out of Wyoming this autumn will probably take place during September. It is probable that shipments will be made a little earlier than usual, as grass is luxuriant, and flocks are putting on fat rapidly. Colorado sheepmen are scouring Wyoming, looking for lambs for feeding, and more contracts have been made for range feeding flocks than in corresponding periods for several years. Most of these Colorado feeders made substantial profits during the feeding season of 1912-13, which probably explains their eagerness to engage in the business once more. The greater part of these contracts call for October delivery. Mr. Parks says the lamb crop this year will be well up to the average in size and condition. Lambing percentages the last spring were generally satisfactory, running from 70 to 75 per cent, and it is even possible to locate ewe flocks that do not contain a single dry ewe.

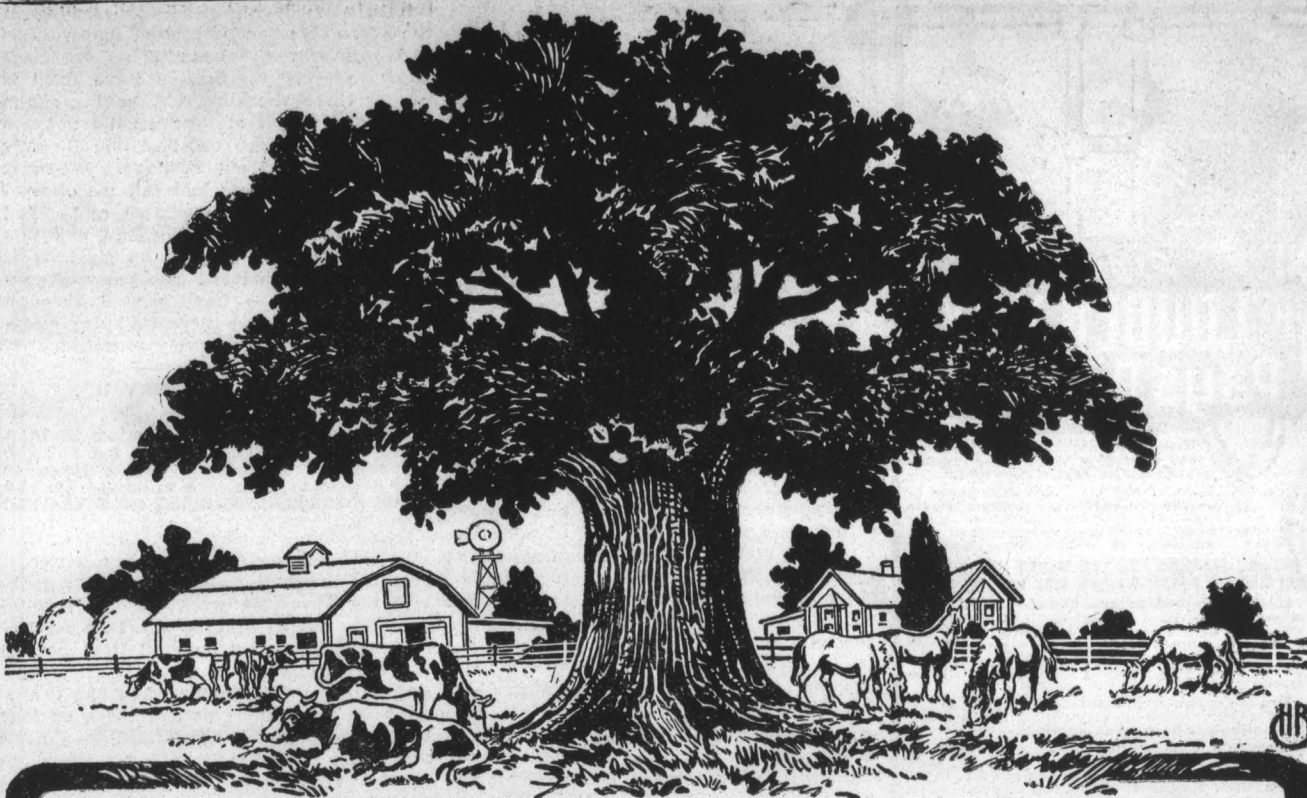
Nebraska is coming to the front as a cattle grower at a period when the need of producing more beef in this country is greater than ever before. In 14 out of 92 counties in that state that were reported this year 222,842 more cattle were held than last year, an increase of 22 per cent. The number of cattle in the territory covered by the agricultural board's reports was 984,190 in 1912 and 1,207,032 in 1913. Large gains were shown in the extreme northwest and southeast counties. This points to a revival of cattle growing endeavors in both the range and corn growing sections of Nebraska, and it is certainly an encouraging omen for the beef industry.

Hundreds of farmers living in the central western states are extremely desirous of buying flocks of good range feeding lambs, but it looks as though most of them would get left, for most of the lambs shipped to market are fat, the feeder percentage being very small, and these bring high prices.

Cattlemen occupying ranges in Standing Rock reservation in South Dakota say that the range is in good shape and that thousands of good range steers will be shipped to market this fall. Mexican bred cattle which went on the range 15 to 18 months ago are doing finely, as evidenced by a shipment of good Mexicans to Chicago a short time ago. Prairie fires, rather than range conditions, have been bothering cattlemen recently, but the fires extended over a comparatively small territory, and the greater part of the range was not affected.

Eggs have been coming on the Chicago market with a rush that is characteristic of the spring of the year, and in addition to enormous sales for immediate consumption, large numbers of cases are being placed in cold storage warehouses, to be held there until eggs become scarce and dear in price. The recent report on the increased cost of living issued by the United States Department of Agriculture states that after making a thorough investigation of the cold storage business and of the movements of food prices in the last 30 years, it is apparent that the contention of the cold storage interests that cold storage has counted for uniformity of prices is largely true, but it is not true for all commodities, nor for all comparisons and periods of years.

The Chicago sheep and lamb market has fluctuated far more than ordinarily in recent weeks, with greatly excessive offerings at times bringing about sensational declines in prices, followed by meager offerings and rallies in values. While the large crop of southern spring lambs is being shipped to Chicago and other markets sheepmen should use unusual caution in selecting a time for marketing their holdings, and where the number of sheep or lambs owned is particularly large it is much safer to divide shipments up so as to have them on the market on different days instead of trusting to luck and having them there all at one time. The Tennessee and Kentucky spring lambs are expected to be marketed up to the close of July. The spring lambs from Idaho and other remote sheep regions are marketed as yet sparingly, but there is a large crop, and later supplies are expected to be liberal, but the outlook for any considerable percentage of feeder lambs is very poor.



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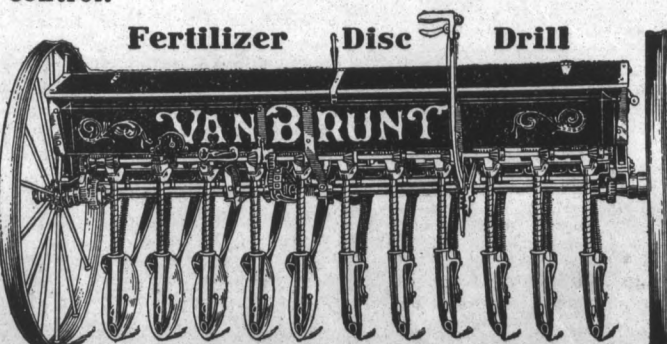
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CONDUCTED BY COLON C. LILLIE.

SILo QUESTIONS.

I am going to build a silo 14x30 ft., and eight feet in the ground. Which will make the best silo, to have a mason lay it all up out of stone, or have it built with concrete and put in all the stone that you could with forms and put rod iron around in the center of the wall? Would like advise from someone who has had some experience with stone or cement silos. How small a number of cattle can be fed out of a 14-ft. silo and have the silage good? Does a silo need a drain?

R. W. R.

I do not think it will make any difference whether you build a silo out of stone or whether you build it out of concrete. I would build it out of the material that I could provide the cheapest, either of the materials mentioned will make a good silo. There is no criticism about a stone silo only the first cost. You will find out that it takes a whole lot of work to build a stone silo 30 feet high. It costs to elevate the material up so high. It also costs to elevate the cement, but undoubtedly you can elevate the concrete cheaper than you can the stone. Of course, if you build a derrick or a gin pole so that you can do all this elevating with a horse, why it will lessen the expense very much. I am inclined to think that you could build the silo of concrete so much more cheaply that this would be the most practical. As you say, you could use a number of small stones in the forms with the concrete, which would take the place of a large amount of cement. Whether you build concrete or stone you have got to plaster it on the inside with good rich mortar, and whether you build it of concrete or stone you ought to reinforce it with iron rods or iron wire. Don't ever build a circular stone silo or a circular cement silo without re-inforcing with some kind of iron. If you have a lot of old barbed wire that you want to get rid of this is just a good place to put it. You can cut it up in lengths four or five feet long so that you can handle it and have them lap, and put in a layer of these say every foot in height and it will keep your wall from cracking. You will make a mistake if you build a concrete or a stone wall now days without reinforcing with some kind of iron. Of course, we didn't use to know this. It is surprising how little we used to know, and in fact, it is surprising how little we know now when we get right down and think about it. Any old pieces of iron rod, chain, or barbed wire thrown into a stone wall or a cement wall is really necessary to prevent that wall from cracking, and keeping it in good shape and making a permanent job out of it.

You can use a silo 14 feet in diameter with 14 cows, in very good shape. It would be better if the silo was only 12 feet in diameter, but I don't think you will have a difficulty with one 14 feet in diameter.

A silo does not need a drain. There is nothing that ought to be drained away from the silo. Of course, I wouldn't want to put a silo on real wet ground because when it was empty where it goes into the ground eight feet moisture from the outside will seep through and every time when you fill the silo you have to bale out this water. Of course, this doesn't amount to very much, and it can be done all right, but when your silo is full of silage then there won't any water get into it. There is pressure enough on the inside so that water from the outside cannot get in, and there is really nothing to drain away. If the corn is put in when it is properly matured it will absorb practically all of the moisture and there will be no surplus water. Sometimes if put in too green, it having been cut by the frost or something of that sort, there is juice that runs away, but it will do no harm if you leave this in the silo.

FILLING SILO ON TOP OF OLD ENSILAGE.

Would you tell me if some of last year's ensilage can be left in the silo and this year's crop of corn put on top? I have about four feet of good silage that I saved for summer feeding, but pasture is good so I really do not need it now but would like to have it in the silo if it would be all right.

J. O. J.

It is perfectly practical, where one has a quantity of old silage left over that he does need, to clean the top off of all decayed ensilage down to good fresh, sound ensilage and then fill in with new corn

cob just as though there was nothing in the silo. This has been tried many times and has proven successful so far as I know in every instance. I have tried it two or three times myself, having silage left over. Only last year we did not use up all of our silage but had one silo over one-third full of old ensilage. When it came time for filling last fall we cleaned it of all decayed ensilage and filled in, and then fed that ensilage out this past winter. It was just as good as it was the first winter. I also know of several farmers who have passed through like experience, and there isn't any question but what it is entirely practical.

COW DOES NOT DRY UP.

I have a cow that is coming in in a short time. She is good and fat but she did not dry up; she is giving three or four quarts of milk to a milking. Do you think she will be as good as if she had dried up?

Delta Co.

I. C.

It probably would have been better if you had dried up your cow so long as to give her about six weeks or two months vacation, but as long as she is a persistent milker and you haven't dried her up the only thing to do is to feed her well and milk her right along. We like to dry cows up for a short period, three or four weeks anyway, but sometimes we do not and milk them right along. They do nearly as well when they come fresh as though they had gone dry for a while.

LIVE STOCK SANITARY COMMISSION SENDS CAR LOAD OF DAIRY CATTLE BACK TO OHIO.

It has been a well known fact among breeders of pure-bred cattle and dairymen of Michigan that speculators from out of the state were shipping car loads of cattle into Michigan for breeding and dairy purposes, and selling them at auction and at private sale without complying with the state laws and filing a certificate of health with the president of the Live Stock Sanitary Commission, supplying one to the railroads carrying the cattle, and giving one to the purchaser. The law reads plainly that a tuberculin test shall have been made within 60 days of shipment of cattle by a competent veterinarian, who is a graduate of a veterinary college in the United States, Canada or Europe and tuberculin test charts made out in triplicate as stated above.

Recently H. H. Halliday, president of the Live Stock Commission, chanced to be in Coldwater and heard that a cattle dealer from Ohio was holding an auction sale of 26 head of grade dairy cattle at a livery barn. Mr. Halliday went around to the sale, joined the crowd and commenced to bid and ask questions. He soon learned that none of these cattle had been tuberculin tested and were being sold contrary to law. He stopped the sale at once and gave the dealer his choice, either to load the cattle and ship them back to Ohio or face immediate arrest. The cattle were soon loaded and on their way back to Ohio and the dealer warned not to repeat his offense.

Last week W. R. Harper, secretary of the commission, quarantined a carload of grade heifers in Berrien county. These heifers had been purchased from an Indiana dealer and were shipped into Michigan on June 26. About ten days after their arrival one heifer died with what probably was tuberculosis, while another heifer is badly emaciated and has the appearance of being in the last stages of the disease. These cattle will be carefully tuberculin tested in the near future and all the diseased animals destroyed.

Another young farmer residing in one of our good southern Michigan counties decided that he would start a herd of registered Holsteins and went to Ohio last November and paid \$1,600 for ten head of cows and heifers. He had them tuberculin tested in April and five head proved diseased and he had kept no other cattle on his farm during the winter from which they could have gotten an infection.

Still another young farmer bought a registered Guernsey cow in March that was shipped into Michigan from New York a year or so ago. This cow's laborer breathing caused her new owner to become suspicious and he had her tuberculin tested about four months after her purchase, and she also proved tubercular and when she was slaughtered, a post mortem showed her to be in the last stages of the disease, being a generalized case of tuberculosis. Mr. Halliday and Mr. Harper have decided that from now on the law relative to the importation of cattle into Michigan for breeding or dairy purposes will be rigidly enforced and certificates of health of every animal must

be filed with Mr. Halliday, president of the commission, before cattle will be allowed to enter the state for any other purpose than slaughter or stockers and feeders. These gentlemen believe that our reliable Michigan pure-bred cattle breeders and dairymen are entitled to this protection, and they respectfully ask all persons in any way interested in the dairy or cattle interests of the state of Michigan to co-operate with them in enforcing this law. Honest and reliable pure-bred cattle breeders and dairymen will be given every assistance and consideration by the Live Stock Sanitary Commission, but the speculator and dealer in questionable cattle will do well to take warning, as prosecutions will be started against railroads and speculators violating the Michigan live stock laws wherever sufficient evidence can be obtained.—W. R. Harper, Secretary Live Stock Sanitary Commission.

WARNING AS TO CARE OF MILK IN THE HOME.

No matter how carefully milk is handled between the farm and the home, or in how pure a state it is delivered at the domestic ice box, it quickly can become an undesirable food if carelessly handled in the home, according to the specialists of the U. S. Department of Agriculture. Milk that is left for only a short time in summer heat may become unfit for use.

Milk will quickly become contaminated when exposed to the air, or when placed in unclean vessels. Though some bacteria are always present, even in the best grades of fresh milk, they are generally harmless provided their numbers are small and they are not of the disease producing type; but milk must be kept cool to prevent the bacteria already in it, and which may get in it by accident, from multiplying to a point where the milk is undesirable. Producers and dealers have done their duty if they have left at the door a bottle of clean, cold, unadulterated milk free from the bacteria which cause disease. The consumer must then do his part if he wants clean, wholesome milk for himself and his family.

Milk should be taken into the house and put in the refrigerator as soon after delivery as possible. This is particularly necessary in hot weather. If it is impossible to have the bottle of milk put immediately in the refrigerator, provide on the porch a box containing a lump of ice. In planning a house, arrange to have the refrigerator set in the wall with an opening on the outside. It is always possible to provide locks for these boxes or refrigerator doors, and supply the milkman with one key. The interior of the food compartment should be wiped every day with a clean cloth, and thoroughly scalded as often as once a week. Under no circumstances should the drain-pipe of an ice-box be connected with a sewer.

The milk should be kept in the original bottle, and the bottle left in the refrigerator until needed. Before use, the neck of the bottle and the cap should be washed and then carefully wiped with a clean cloth before the cap is removed. Remove the cap with a sharp-pointed instrument, so as not to push the cap down into the milk. Once a bottle is opened, it should be kept covered, both to keep out dirt and bacteria and to prevent absorption or undesirable odors. The original cap should not be replaced. Instead, place an inverted cup or tumbler on the top of the bottle. The milk should be used from the bottle as needed and any unused milk should not be returned to the bottle after having been poured into another vessel. Do not let milk stand in a warm room on the table any longer than is necessary. Do not place milk in a refrigerator compartment with onions or other food having a strong odor.

Before returning the bottles to the milkman, wash them first in cold water and then in warm water. Do not use milk bottles for holding vinegar, kerosene, or other substances than milk. Never take milk bottles into a sick room, because infectious diseases can be spread through a milk bottle returned to the farm and delivered to some other home. This is a civic duty that everyone owes to his neighbors. If there is a case of typhoid fever, or other serious communicable disease in the house, the fairest thing to do for one's neighbor is to provide one's own clean bottles or covered dishes into which the milkman can pour the milk from his bottle. If bottles are left in such a home, the milkman should not be allowed to collect them again until they have been properly disinfected by the Board of Health. At any rate, if there is a serious sickness in the home, all milk bottles should be boiled before being sent out of the house.

Practical Science.

SODIUM SALTS IN THEIR RELATION TO SOIL FERTILITY.

BY FLOYD W. ROBISON.

The earliest writers in agricultural chemistry laid great stress upon the necessity for the balancing of what was known as the famous tripod of agriculture—the elements nitrogen, phosphoric acid and potash. Experimenters have from time to time for a great many years endeavored to break up this idea of the necessity for these three elements and particularly the necessity for the use of potash.

It is known that an element found in some considerable quantity in plants is sodium, an alkaline material analogous in almost all particulars to potash. It has seemed rational to assume, therefore, that perhaps such an alkali as closely resembling potash in all its properties as does sodium could be substituted for potassium in fertilizers. Soda can be purchased for a nominal figure compared with that which is charged for potash, consequently if it could be substituted for potash it is plainly seen that it would be an item of great economic importance. Experimental evidence has pointed overwhelmingly and in no uncertain manner to the fact that plants could not use soda to the exclusion of potash. Curiously enough, however, there has been very little experimental evidence on the possibility of the use of smaller quantities of potassium and relatively high quantities of soda. It would seem perhaps at first instance that there were no need for assuming this possibility but physiological chemistry as applied to animals has given us new light on these points. We know, for example, that there is a minimum amount of protein which may be given to an animal in a maintenance ration. In other words, protein is absolutely essential to the animal growth. In the same way potash is absolutely essential to plant growth and there is in an analogous way, with possibly every plant a point which marks the lowest amount of potash which can be applied to secure satisfactory growth.

In animal nutrition it has been found that certain of the less complex nitrogen compounds, which we may call the amido compounds while having no direct nourishing values when used alone in the ration, do, however, have decided values when applied as a supplement to the protein in the ration. In other words, gelatin in a ration is valuable as a supplement to lean meat or white of egg.

It seems possible that soda in its relation to plant nutrition may hold somewhat the same position toward potash as gelatin and other amido bodies occupy in their relation to proteid nutrition.

So far as we are able to note the only station which has made any investigation of this supplementary value of sodium is the Rhode Island Station, and in bulletin 153, Dr. Hartwell and Mr. Wesels detail the results of experiments on this point. Some of the conclusions of this investigation are interesting, for example:

"The results with onions in a single year showed that the addition of the full ration of sodium to the full ration of potassium affected uniformly neither the size of the crop nor the percentage of total and reducing sugars. Furthermore, although in the presence of the full ration of sodium, the reduction in the amount of potassium to one-half and one-fourth rations resulted in successive decreases in the crop but did not change the percentage of sugar."

"Mangel wurzels from certain of the crops were analyzed each year from 1907 to 1910. The yield of this crop showed as a rule that even with the full ration of sodium, the quarter ration of potassium was not sufficient for maximum growth. A reduction from the full to the quarter ration of sodium in connection with the quarter ration of potassium usually depressed the yield."

These conclusions substantiate what we have discussed above in the value of soda in the ration. This evidence is not without value because it has been customary in certain cases of nitrogen manuring to use the soda salts of nitrogen, and consequently if the soda does have a certain supplementing influence, it increases by that amount the value of the soda salt used.

Other than this point shown in the conclusion above there does not seem to be any marked value in the use of soda supplementing potash in the fertilizer.

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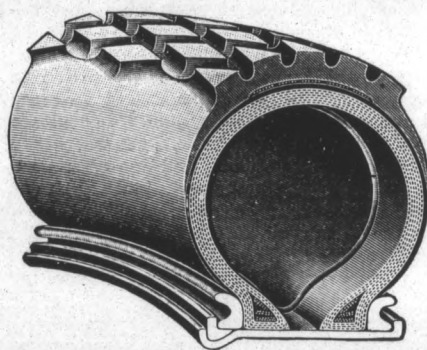
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DETROIT, AUGUST 30, 1913.

CURRENT COMMENT.

The following preliminary report of the investigations of rural credits and agricultural co-operation in 14 European countries by the American Commission on Agricultural Co-operation was made public at the annual meeting of the House of Governors at Colorado Springs, Colorado, August 26, by Senator Duncan U. Fletcher, of Florida, Chairman of the American Commission and President of the Southern Commercial Congress which took the initiative in bringing about this investigation. The text of the preliminary report follows:

"The commission is deeply impressed with the vital importance of a thoroughly organized and united rural population. In this respect the countries of Europe offer a lesson which may not long be disregarded in America without serious consequences.

"The agricultural interests of most of the European countries visited by the Commission are organized along one or more of the following lines: credit, production, distribution and social organization for the betterment of country life.

"Organizations for the provision of credit facilities for European farmers follow the natural division into short time personal credit and long time land-mortgage credit. The organizations for the provision of personal credit facilities are as highly developed as are the systems of commercial banking. The prevailing rate of interest paid by the farmers for short time loans, is from four to five and one-half per cent. The terms offered European farmers are generally better designed to meet the peculiar requirements of agriculturists than are the terms obtainable today by the American farmers.

"The personal credit organizations have the form of co-operative societies. Very often the members of these societies assume unlimited liability for the debts of the society while in other cases the societies take the form of limited liability. As a rule in European countries, the law makes little or no provision for exemptions of any kind. These short time credit societies furnish cheap, safe and elastic credit to their members by reason of their control by farmers and are organizations exclusively in the interest of farmers who operate them at nominal cost and without seeking dividend profit to such societies.

"Land mortgage credit has been organized so as to place a collective security back of bonds issued by land-mortgage societies in contrast with the system of marketing individual loans upon individual mortgages. Without discussing the form of organization employed for this purpose, it may be stated that these land-mortgage institutions brings to European farmers low interest rates; the privileges of repaying loans in small fixed annual installments extending over a term of years—in some cases as long as seventy-five years under the amortization plan, although provision for earlier payment is made if the borrower so desires; protection from advance in interest rates; and the practical elimination of commission charges. Many of these personal

credit societies and land mortgage associations are fostered by government grants, loans or special provisions of law. Mortgage bonds issued by commercial banks and by private joint stock land-mortgage banks sell substantially on the same basis with like securities issued by government favored institutions and both classes of banks are recognized as needful in the development and conservation of agricultural resources. In many instances private and commercial banks purchase the securities of land-mortgage associations. Experience has demonstrated that such land-mortgage bonds are liquid assets.

"The systems of land title registration in countries possessing such mortgage institutions practically prevent dispute of title upon mortgaged land. Provisions are also generally afforded these mortgage institutions which eliminate undue legal delays in the recovery of loans placed with defaulting borrowers. Savings and trust funds are frequently invested in securities of such mortgage institutions under sanction of law. Loans up to fifty or even sixty-six per cent are made on lands of dependable value and are considered safe and conservative and compare favorably with provincial and government bonds.

"The organizations for production and distribution of farm products follow co-operative lines. Farm products are sold by the producer at a relatively higher price and are bought by the consumer at a relatively lower price because the cost of distribution is considerably lowered by co-operative marketing which results, also, in improving the quality and uniformity of farm products and in promoting more business-like methods in farming operations.

"It is the opinion of many of the leaders of this movement in Europe that the question of rural credit ought not to be divorced from co-operation for business purposes and the general organization of community life in rural districts. In some European countries visited, agriculture and country life interests generally are thoroughly organized and co-ordinated. The studies of the Commission emphasize the necessity of defining the functions, on the one hand of the government, and on the other of voluntary organizations, in promoting the development of country life. In some of these countries great emphasis is placed upon the value of voluntary associations and such state aid as involves governmental control over the activities of rural organizations is deprecated as tending to stifle the initiative of the people.

"Rural conditions, environment and temperament in Europe differ widely in the various countries and also differ from rural conditions, environment and temperament in America, as conditions differ in our several states and provinces; therefore, it may be necessary, in some cases, to modify these European systems if they are to be adapted to meet the needs of American farmers. At the same time, co-operative effort among the farmers of America might well be more generally employed and the facts gathered should be of great value in developing methods suited to the needs of the farmers in the several sections, states, and provinces.

"To this end, the American Commission with a membership in thirty-six states and in four provinces of Canada, has effected an organization with headquarters in Washington, D. C., and invites the aid and co-operation of farmers and all agricultural organizations and persons concerned in promoting a more prosperous and contented rural life as the enduring basis of our material, social and civil warfare.

"The Commission desires to call attention to the geographical scope of its inquiries which were conducted in Italy, Hungary, Austria, Germany, France, England, Ireland, and Wales, while sub-committees were sent to Russia, Denmark, Switzerland, Holland, Belgium, Norway, Sweden, Egypt, Spain and Scotland. In all of these countries the members of the Commission were officially received by the respective governments and were given every opportunity to carry out their studies. National and local officials, central institutions, and local societies, eminent economists, leading agriculturists and business men, all contributed with most gratifying willingness to the successful accomplishment of the work of the Commission.

"The Commission has selected two committees which will devote their time to drafting the final report regarding the investigation." Senator Fletcher discussed various phases of the rural credit and co-operation problem at length, which discussion

will be made the subject of future communications as will further official reports of the commission when they are formulated.

The Bankers and the Currency Bill.

An official expression of the views of prominent bankers of the country regarding the pending currency bill is to be found in the action taken by the American Bankers' Association at its recent session in Chicago. This proposition was first considered by a committee of fifteen, known as the "currency commission" of the American Bankers' Association, and their report was a compromise between a radical faction, believing that the entire bill should be renounced by the bankers, and a conciliatory faction, contending that it would be to the advantage of the bankers to work in harmony with Congress rather than against it.

The most important of the recommendations contained in this report and adopted in the resolutions passed by the association are included in the following:

That there should be not more than five federal reserve banks instead of 12; that many of the provisions of the bill applying to national banks be made optional rather than compulsory; that the national banking associations which do not come under the bill within one year should not be dissolved, as provided by the bill in its present form; that the federal reserve board consist of three members chosen by the president, three members elected by the directors of federal reserve banks, and three others to be members ex-officio, the secretary of the treasury, the secretary of agriculture and the comptroller of the currency; that the provision for a federal advisory council be eliminated on the grounds that it is not necessary if the bankers are given representation on the federal reserve board; that sections of the bill relating to note issues and bank reserves be rewritten; that the section relating to the savings departments be eliminated on the ground that it would interfere with the savings departments now conducted by the national banks in an unwarranted manner.

In addition to the above there were recommendations, numbering 18 in all, but those mentioned are the most important.

The resolution set forth that although the administration bill had many excellent features, some of its provisions would be likely to cause petty disturbances, but that if amended in the manner suggested a system would be provided which would develop into "a great bulwark for the protection of our commerce." The bankers appointed a committee of seven to present their views at Washington.

This action by the American Bankers' Association would appear to mean that there is a well defined feeling among bankers that the currency bill will be enacted into law by the present Congress, else they would have opposed it entirely as one faction of their committee sought to do instead of seeking to modify its provisions in accord with their own views. What effect the influence of the Bankers' Association will have upon the character of the bill remains to be seen, but in the interest of the most practical legislation it is essential that all parties interested should be heard and their views harmonized to such an extent as is practical in order that there may be a definite effort to have the law, should it become one, work out to the best interests of the country at large.

The season for agricultural fairs will open next week with the West Michigan State Fair at Grand Rapids, September 1-6.

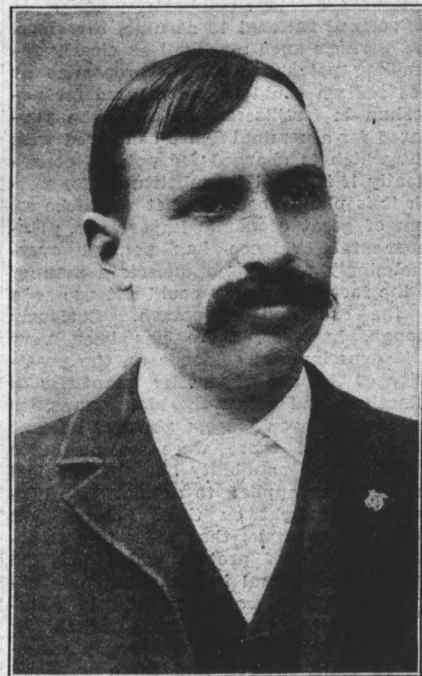
One of the important innovations adopted by the present management will be the keeping of the fair grounds open during the evening and the providing of an interesting entertainment. Arrangements have been made to furnish ample lights in the buildings, on the grounds and in front of the grandstand where entertainment features will be given in addition to the spectacular pyrotechnic display, which, among other things, will illustrate the scenic possibilities of airships and battleships in combat. The management asserts that this program will make up one of the finest productions in fireworks ever placed before the public. The new grandstand will be finished and will be one of the finest and most commodious in the state. Other entertainments include first-class racing.

Educational features of a unique character have been added to the fair pro-

gram, including contests for which scholarships at the agricultural college are given as premiums. These include contests for the judging of horses, cattle, sheep, hogs, corn and wheat. Contests will also be conducted in architecture and in landscape gardening.

An unusually large number of entries insures a good exhibit in every department of the fair, and undoubtedly this year's fair will be the best in a long line of fairs which have been held in Grand Rapids.

The announcement of the prominent features of the State Fair, to be held at Detroit, September 15 to 20 inclusive, which will be found on another page of this issue, is of a character to convince every reader that this show will be well worth the time and expense involved in attending same. The state fair grounds are in better condition than ever before, due to the fact that the present manage-



F. E. Walker, Superintendent of State Fair Grounds.

ment secured an unusually good superintendent of the grounds in the person of Mr. Walker. Hundreds of yards of new concrete walk have been laid and considerable permanent roadway has been put in to facilitate the handling of the exhibits and the crowd that comes by automobiles as well as in the electric cars and railway.

Every preparation has been made to entertain a record crowd at this season's State Fair and from present indications this will be a record show in the history of the State Agricultural Society, both from an educational and entertainment standpoint. Every reader who can arrange to do so should attend these big fairs and follow up by attending his district or local fair in order that he may gain the greatest possible educational benefit from these agricultural exhibits.

Several inquiries have lately been received asking for information on different phases of the line fence problem, as to how to compel an adjacent property owner to build a share of it, the law regarding the sufficiency of the line fence, etc., and relating to disputes which arise between adjacent property owners regarding different phases of the line fence problem.

As a means of furnishing inquirers and other interested readers with the desired information we will briefly review the provisions of the Michigan law relating to line fences.

The law is rather indefinite in the description of the legal requirements of a fence, the one essential given in the law itself being that it shall be four and one-half feet high and of sufficient web to turn ordinary farm stock.

In order to settle disputes with regard to line fences which may arise in any neighborhood, the highway commissioner and the overseers of highways, or if they are interested parties, the justices of the peace not members of the township board, are constituted fence viewers, any two of which may be called out by aggrieved parties to render judgment regarding the sufficiency of the line fence or to make division of such fence and order same built by the respective parties. Their judgment in the matter is final and in case it is not complied with by either of the parties to the dispute the aggrieved party may then build the

(Continued on page 183).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK*
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The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

Peru as an Agricultural Asset—By Wm. V. Alford.

FEW people who read the columns of the Michigan Farmer, realize that man's last home on earth will be in the valley of the Amazon. None of the readers living today will be a part of the last decennial census. Nor are we able to approximately determine the year when man's last habitation will be confined to what is now an impenetrable jungle of tangled tropical growth, extending for hundreds of miles on either side of a river that closely follows the equator, and whose vast volume of discharge is so great that it freshens the salt water of the ocean for three hundred miles from its mouth.

Today the virgin soil in the torrid zone is a negligible quantity, so far as man's necessities are concerned. Yet, it is the richest spot on earth in its power of plant growth. Let us recount two incidents, among a thousand, that have come under our notice, showing the wonderful energy stored up in the soil and the sun of the tropics. In Nicaragua, north latitude, 11 degrees, we had occasion to clear a large space of more than two acres for a permanent camp. Not a twig was left, and the ground was beaten smooth and hard by thirty barefooted natives for over three months. In a little less than two years we had occasion to go back to the same place with a temporary camp. We found it a veritable jungle. Trees six inches in diameter were growing thickly over the site, and the tangled vines were even

thicker than in the adjoining jungle. Again, nearly as far south of the equator as the above is north, we were fighting our way through an unexplored and unknown section of the great Amazon valley, where the jungle growth was so thick that it was with the greatest difficulty that a trail, barely sufficient to permit the passage of the Indians carrying packs of provisions, could be cut more than half a mile per day. A bag of beans was broken and fully a quart was left on the ground covered with the leaves. In just a week, almost to the hour, we retraced our steps. The beans had sprouted and grown from six to ten inches high. In some of the stalks there were six and eight nearly full-grown leaves. The soil is too rich and the potential energy of the sun too great. Fruits and flowers are only by-products. This may seem, to the reader, a contradiction to the statements made. Not so, for the plant growth is so vigorous that all the vitality goes into the body of the plant or tree. It is no uncommon sight to see vines ten to twenty inches in diameter, hanging from trees whose limbs are larger than the forest trees of Ohio. We have seen squash vines a hundred feet long, and the squash no larger than a Baldwin apple. On stalks of corn fifteen feet high, only nubbins with but little corn on the soft cob. The Irish potato vines grow as large as current bushes, and the potatoes no larger than hickory nuts. Tomato vines twenty

feet high will have blossoms, but no fruit large enough for table use have we ever seen on the vines.

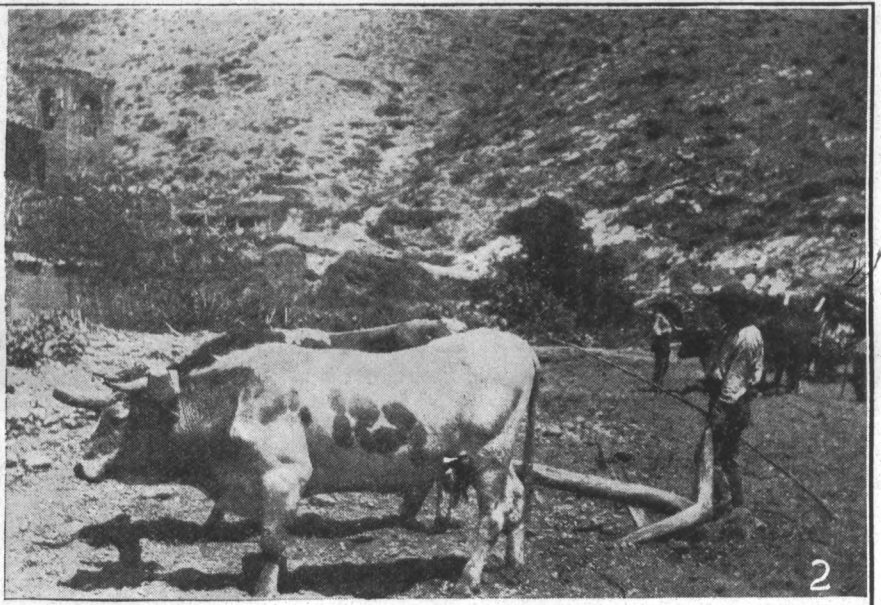
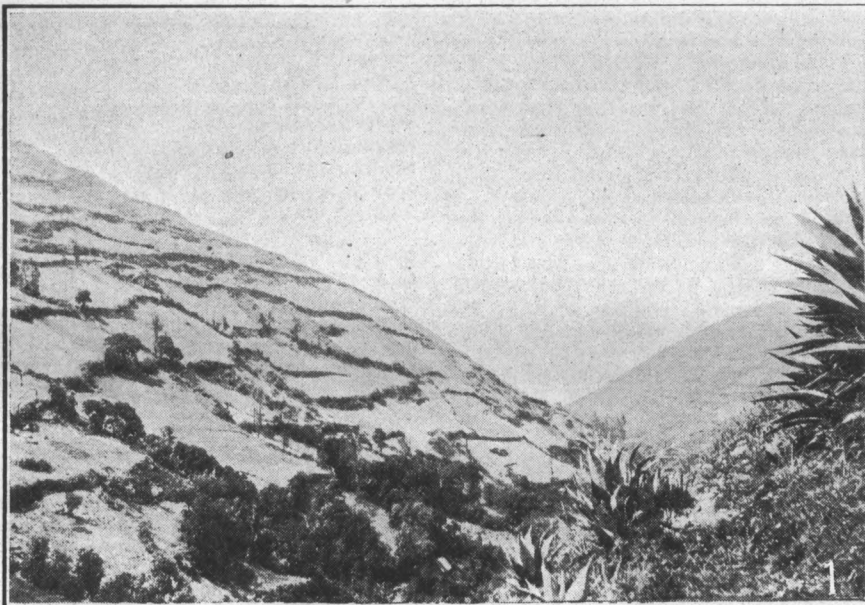
The clearing of land in this jungle belt is a serious problem. Nature is so prolific that the sound of the ax scarce dies away, before a new growth covers the ground with a carpet of living green. In an incredibly short time the work has to be done over again. This great torrid belt is the world's hot-house. Here, mother earth will produce and give sustenance to man, long after the temperate zone is a frozen or barren waste.

What are the present day conditions of the agricultural progress in Peru? An intelligent answer must analyze three grand divisions, viz., the hot belt of the upper Amazon, the high valleys of the tributaries, and the slopes of the Andes, close to the snow line. This latter section was the home of the old Inca civilization, and is now the home of their lineal descendants, the Quichua Indians. There is still another section that will call for a brief notice, viz., the desert strip lying along the Pacific coast.

Of the first division, there is very little to be said, excepting in a general way. In the upper valleys of the Amazon, not more than one acre is cleared out of every million acres. There are many large tributaries the size of the Ohio and Tennessee rivers, almost unknown to the white man, and so imperfectly is this section mapped, that many of these riv-

ers do not appear on the maps of the best atlas. Along some of these larger rivers, will be found small clearings on which a native Spaniard lives, surrounded by a dozen families of Indians, who are engaged in gathering rubber, and for their labor receive the same wage that has always been the money standard of the white man when dealing with the Indian—a bottle of whiskey. This bottle of whiskey goes for about \$10, and when smaller change is needed cheap trinkets are used at an exchange value of a thousand per cent profit. This is the white man's way of civilizing and colonizing savage peoples! Its effectiveness has stood the test of history!

The little ground that is tilled, is given to bananas, plantains, yams and yuccas. The banana, the most perishable of all, has already found its way to the table of the rich and poor in every northern home. Either one of the remaining three has greater possibilities as a food factor than the banana, and especially is this true of the yucca. When cooked it serves every purpose of the Irish potato, has a greater percentage of starch, and is many times more prolific. The yucca of South America must not be confounded with the yucca of Mexico. The latter belongs to the family Liliaceae, while the former is a small tree, about the size of a peach tree of three years, and has a cluster of tuber-like roots, quite similar to the dahlia tubers, which grow to a size of ten to



1. Cultivated Fields in the high Andes; altitude 14,500 feet. 2. Bull plow in the Amazon Valley; showing construction. 3. Agricultural experts, in the Andes. 4. Native Indians, descendants of the Incas, spading the fields of the Andes; altitude 13,000 feet.

thirty pounds. The tuber is the edible portion and when cooked is exceedingly nutritious.

To dwell upon the possibilities of the Amazon valley as a man-serving increment in sustaining life on this old world of ours, would require volumes and enter upon paths that we have little knowledge of, as our observations are too limited. As a present agricultural asset, it is nil; but its possibilities are beyond the ken of man. The Lord is keeping it for future generations, protecting it from present invasion by swarms of mosquitoes, poisonous insects, venomous snakes and the slimy mire of boundless swamps. If the reader doubts this method of protection, we offer an invitation to the doubter to go with us for six months, sleep with us on the sand bars, or in the crotch of a tree, out of reach of wild animals, snakes and lizards; wade through bottomless swamps; hew a path through jungles dark and slimy, where the brightest rays of the sun have not once penetrated for a thousand years. If, after hundreds of miles through the upper valley of the Amazon, the doubter is still a doubter, we will ask him to get into a dugout with us, and travel nearly three thousand miles of river and tributary streams, as we have traveled them, where the only sound that reaches the ear is the cry of the wild bird, the snarl of the tiger or puma, the chatter of the monkey. On the last day, after months of such travel in the jungle and along the winding course of tropical rivers, the doubter will say, "Oh, Lord, take me back to God's country." We have said the same thing after weary days in a rotten dug-out, fighting our way against a swollen river for two hundred and fifty miles, with nothing to eat but rice, dried fish and broiled monkey.

Leaving the hot belt of the Amazon, we climbed up to an elevation of 5,000 feet or more. The Paradise of the Bible might be found in one of these beautiful valleys in the foothills, on the eastern slopes of the Andes. Their soil is rich, the climate is absolutely perfect, not a mosquito or insect pest, a bracing air so saturated with ozone that one breathing this pure vitalized air feels as if he were wearing the seven-league boots of the fable story. The feeling of fatigue leaves one, and life has a brighter outlook. Flowers bloom every day in the year, while acres of geraniums, in full flower, line the roadside, and roses grow like ragweeds. Often have we thrown our bed into a cluster of geraniums in full bloom, and slept profoundly until the sun was hours high. Even our saddle and pack mules seemed to enjoy the scent of the wild flowers.

There are whole communities in our northern states living a real life of drudgery. Six months of the year is given over to high pressure work, that an existence may be had for the remainder of the year. Why should this be, when there are untold millions of acres, surrounded with every natural advantage that the heart of man can ask for? It is true that the first settlers in these beautiful valleys would be debarred the delights of the Grand Opera, the elevating and Christianizing influence of a political campaign, and its attendant moral effect in raising the standard of the government! But, what of it, if nature opened up a long vista of absolute peace, comfort and a ripe old age, free from the thousand ills that go with 365 different kinds of weather in a year, besides the jealousy that is born in your heart when your next-door neighbor gets a new touring car!

Before telling the readers how easy it is to live in these beautiful valleys, we will anticipate a question that will probably present itself to everyone, and answer it, viz., "If to live in these Peruvian valleys, types of Paradise, is less labor than to die, why are they not known and densely populated?" The one that asks this question has but the faintest conception of the geography and topography of Peru. These valleys are on the eastern slope of the Andes, fully 4,000 miles from the Atlantic Ocean, by the windings of the Amazon River. Uncomfortable river boats, and frequent changes, are the only means of reaching these valleys from the east. The time required from Para, the mouth of the Amazon, to reach the outposts of this land, would require fully six weeks, untrammelled with baggage; and if you were going to stay, taking your family, a piano, pig, mattress, a flock of ducks and a dinner set of Haviland china, the time required, to say nothing of the worry and expense, would lap over into the next century.

These valleys are protected on the west by a mighty range of mountains, whose summit is far up in the clouds, so high

that only persons with perfect hearts can cross the snow-capped range. Two short spurs of railroads reach the summit, crossing the range at an elevation of nearly 16,000 feet. Then there is yet left two hundred and fifty, or three hundred miles of travel on mule back, over rugged parallel ranges to the main Cordillera, along trails on the side of the mountains, so narrow that mules can scarcely pass, and where the vertical walls drop a thousand feet, or rise to twice this distance over the narrow road. Leaving the rocks of the canyon, the road plunges into a dark, black forest, where only a path has been blazed. Sitting in the saddle, as the traveler reaches the summit of the last range, before dropping into the valleys, the eye traverses league upon league of rolling hills and valleys, clothed in the luxuriant green of the tropics and bathed in sunshine that has lasted for ten thousand years, and will last until man has been driven from the shores of Lake Erie for centuries.

What will grow in these valleys? The fullest answer is the shortest one, viz., everything. We have seen blackberries on stalks fifteen feet high, shaded by orange trees yellow with fruit; luscious strawberries twice a year, and garden truck every day in the year; four crops of alfalfa in a year, so tall that it would reach to a man's shoulders; cotton of finest fiber, growing on trees; the branches of the coffee trees bending with the red berries; grapes, peaches and pears on the mountain side, while the thatched huts of the natives were hidden from view by the broad banana leaf. Such conditions can be found in valley after valley leading down to the Amazon. These lands have little more value today than the granite in the range of mountains that guard them on the west. The cost of the land is approximately the cost of a survey and a deed from the government, amounting to about 50 cents per acre.

The tilling of the soil is done in the crudest manner, not alone in the valleys of Peru, but throughout the whole of South America. Aside from the wheat fields of the Argentine, the methods employed would scarcely do credit to the Egyptians in the days of the Rameses. In fact, the bull plow, as it is used in South America today, dates back to the kings of the first dynasty. A gang plow, given to the most progressive farmer in Latin America, if such a farmer could be found, would be set up in one corner of the family chapel, and used only on feast days to haul the wooden saints from the family shrine to that of a neighbor. The sum total of agricultural implements used in these countries, can be classified under three headings—the bull plow, the Peruvian spade and the grub-hoe, which is simply a crooked stick with an iron shoe. It is used to pulverize the ground after plowing, and to clean the weeds from the growing crop.

No kind of implement, drawn by oxen, can be found to crush the hard lumps of ground in the plowed fields. This work, if done at all, is done by the women and children with a short club, like a ball bat, or with the hoe. Corn is planted by using a sharp stick to make a hole in the ground, and after dropping the kernels they are covered by a push of the bare foot through the soft earth. Rains are not a necessity in these valleys. Scores of small brooks, from the mountain side, cut across the floor of the valleys. The natives, where clearings have been made, have constructed admirable irrigating ditches that convey an abundance of water to every portion of the cultivated field. We have often noticed the alfalfa fields cut by parallel and shallow ditches, reminding us of the sand, in a great furnace, made ready to receive the molten iron as it is run into pigs. The water moistens the corn roots from day to day, or, turned into the ditches that furrow the cane fields is a potent factor in its luxuriant growth.

The best cultivated fields of the Mississippi delta do not grow the cane that is grown in these valleys, but, unfortunately a great portion is made into rum and sold to the Indians, or shipped in casks, on mule back, to the high Andes and there sold to the native Quichua. Probably not more than ten per cent is made into sugar. This is not surprising, as liquid damnation always brings more money than when sold by dry measure. We are acquainted with a young Peruvian widow, whose income is £600 per month (nearly \$3,000) from the sale of rum. The hacienda of this young and sprightly widow is in one of these beautiful valleys. She has traveled extensively on the continent, now lives in Lima, and refuses to marry again. She

is above the average in intelligence, so she well knows the motive that would prompt a suitor to seek her hand. It would be, as she declares, the same old story of greed and avarice.

Turning now to the higher altitude of the Andes, and the plateaus lying between the parallel ranges, many of which are several hundred feet above the top of Pike's Peak, we find many surprising conditions, not only in present methods, but in the remains of a people that did full credit to their avocation, long before the New World was known to the Europeans. It is not our wish at this time to encroach upon a subject that more properly comes under another title, "The Inca Ruins, and the Civilization of Peru in the Fifteenth Century." Yet, to give the clearest possible idea of the present Quichua Indian, and his methods of tilling the soil, we must go back a few hundred years and make a casual survey of the probable conditions that existed around the homes of his progenitors.

In central Peru we have traveled in the saddle over thousands of miles, and in secluded valleys, close to the snow line, have found evidences of large cities. Around them the remains of terraces built of stone, amounting to hundreds of miles. The steps of these terraces range from eight to ten feet, up to as many as fifty feet wide. They are like steps in an uneven stairway, extending from the valley up the slope of the mountain side for five hundred and a thousand feet, and along the valley for miles. Near the noted ruins of Pisac, both sides of the valley were terraced. On one side they remain in a fair state of preservation, being used by the natives today. In less than two miles along the side of the mountain, there are more than a hundred miles of stone walls, ranging from eight feet to twelve feet high, one above the other, like successive steps in a huge flight of stairs.

On these steps, corn, barley, alfalfa, and the potato are raised today. The tillers of these artificial farms are the direct descendants of the old Incas. It is but fair to suppose that the methods are nearly the same as they were in the long ago. From the cross-section of a farm, it can readily be seen that few farming tools are necessary. The spade and a hoe are really the only tools that are necessary in farming these terraces. Why the valleys are not farmed, we have not the remotest idea. Wherever a level valley is found, it is given over to grazing, and you will see the Indian, with his wife and children, a thousand feet up on the side of the mountain. Wherever the old Inca terraces remain, they are utilized. In many places they are fast disappearing, as no care is given to the walls, which are falling down and the surface of the ground is again taking the slope of the mountain. The labor required to loosen the ground on these steep slopes is very little. However, the real labor falls on the women and children. They stand on the lower hillside, and as the ground is cut loose with the spade they catch it in their hands and turn it over, stepping on it to keep it from rolling down the side of the mountain. This is the universal practice, and the women and children are just as essential as the spade. In fact, more so, for without them the loose ground would find a resting place in the valley below.

The readers of the Michigan Farmer may think it almost impossible to till ground, standing at an angle of thirty degrees, yet there are thousands of acres of potatoes raised on ground that has a grade close to 45 degrees. In these high altitudes crops grow slowly. Potatoes are fully seven months from the planting to the digging. It must be remembered that 40 degrees Fahr. is the average temperature for the year. The growing temperature stands so close to the "dead line," that it is a long, hard fight from germination to fruitage. This is true of every growing thing. Of all the crops, flowers and grasses that we have seen in these high altitudes, but one lone flower bespoke its perfect satisfaction with the natural conditions, viz., the pansy. With its rainbow colors, and petals spread the size of a newly-coined silver dollar, and just as bright, it always impressed us with the feeling of being perfectly satisfied with its home close to the eternal snows. Every other product of nature seems to evince the feeling of being cold and shivery.

There is a greater curse than that of cold, that is sapping the vitality of the natives of Peru. The coca leaf is used as a tobacco is, in this country, but is vastly more injurious, as it contains a good percentage of cocaine. Its effect is to deaden all sense of hunger, fatigue and pain. A native Indian, with a small

pouch of coca leaves, and a few handfuls of parched corn, will travel for days, carrying a load that would stagger a white man at the end of the first hour. Both men and women chew the coca to excess and the children show its effect. The infantile death rate is abnormal. At the other end of life, the same effect is a pronounced factor. Very few old persons are to be seen. When this practice was first introduced into Peru, no history tells. As the bush is a native of the low Andes it may have been a common practice before the coming of the white man.

Looking for a moment at the agricultural possibilities of the desert strip lying between the Pacific and the foothills of the Andes, we find a totally new set of conditions. Here is a strip of land as barren of vegetation as the palm of your hand; yet its possibilities will surprise every reader. First, let me say, the average rainfall of this desert strip is only three hundredths of a foot in a year. Along the coast it rains once in twenty-one years. At Pyta, a coast town in the north of Peru, the people have painted trees, shrubs and flowers on the side of the houses to break the monotony of the sand and in the cool of the evening the young people sit on benches close to the houses and think that they are in the parks, listening to the rag-time music by the town band. Why not, when life is but a huge joke?

Across this desert strip there are a few rivers breaking down from the high Andes. The river courses are plainly marked for, wherever water touches the sand rank vegetation springs up as if by magic. This is fully demonstrated in southern Peru. The railroad leaving Molendo for Lake Titicaca, crosses ninety miles of burnt up and drifting sand. Great sand dunes are creeping across this desert waste, pushed along by the constant winds. Often the railroad has to be taken up and laid on the opposite side of these shifting hills, or the track would be buried yards deep in the sand. Before the railroad could be built, a pipe line was constructed, bringing water from the mountains to the workmen. At the few stations where water tanks have been erected, the waste water percolating through the sand, has worked almost a miracle. Not more than half an acre has received the benefit of the water, but on this small plot of ground, a vegetation is growing that reminds one of the jungles of the Amazon valley. Oranges, lemons, figs, bananas, yams, yuccas and pineapples, are growing as in a garden, to feed the station master in this lonely desert.

This is but an example of what this desert waste might be, if some genius would solve the problem of pouring water onto the burned-up sand. The eastern slope of the Andes in Peru is the richest spot on earth, and some day it will feed millions, where now only a few score of wild Indians live. The western slope is bare and dead as the Sahara Desert, yet there is lying dormant a germ of life that, when touched with water will blossom forth and feed its millions of God's children. Who can say that the Almighty is not holding the torrid belt in reserve for some good purpose?

SMILE PROVOKERS.

"I hear you actually encourage your boy to send poetry to the magazines. Do you want your son to become a poet?"
"No: I merely want him to get the conceit knocked out of him."

"How's your brother, Tommy?"
"Ill in bed, miss. He's hurt himself."
"How did he do that?"
"We were playing at who could lean farthest out of the window, and he won."

Willie came in from the shed where Uncle Rufus was picking a Christmas chicken for his small city nephew's dinner.

"Aunt Sue!" he cried as he entered, "what do you think? Uncle Rufus is out in the shed husking a hen."

Little Augustus Johnson had learned some things about the face of a clock, but not quite all there is to know.
"What time is it, Gustus?" asked his employer one night, to test him.

"It's jes 8 o'clock," said the boy, after a careful survey of the clock.
"No, you're wrong," said his employer; "it won't be 8 for quite a while yet—not for twenty minutes."

"Bofe hands is p'inting to 8, jes as straight as dey can pint," said the boy, stubbornly. "If dey ain't telling de truf I can't help it."

THE RUSTLING OF THE CORN.

BY J. A. KAISER.

When in the east the first faint gleams
Of hot mid-summer's sun are seen,
And dewy pearls on leaf and flower
Adorn with points of dazzling sheen—
When gently from the balmy south
Is wafted up the breath of morn,
There's music in the dark green leaves,
The rustling of the corn.

At mid-day when the sun's fierce heat
Beats downward from the burning sky,
And but the locust calling shrill
Or scream of some hawk sailing high
The sultry silence breaks—a sound
Refreshing as at dewy morn
Comes whispering through the broad
green leaves,
The rustling of the corn.

At twilight hour when cooling breaths
From creek and marsh come creeping
up,
When crickets sing their drowsy songs
And dew-drops fill each flowery cup—
When night-hawks twang above the trees
And hoot-owls sound their notes for-
lorn,
There's music in the whispering leaves,
The rustling of the corn.

THE TREASURE OF THE FOX DEN.

BY G. A. RANDALL.

Near the southern line of C— county, Michigan, lies a cluster of hills not many of them easily farmed on account of their steep slopes, the most yet being covered with white oak thickets, the favorite haunt of small game and birds. In years past many red and gray fox tenanted burrows in these "short-hills," as they were commonly called, and trappers often made, during the winter months, snug sums catching them for their furs.

My old home was only a mile from the nearest of these hills and it became a regular custom of my older brother and I to set out "deadfalls" and "flip-ups" for rabbits during the winter months, as they were eagerly sought then by country merchants who purchased them to ship. Many of these abandoned holes or dens became homes of rabbits, and it was principally here among the slender oaks, which were ideal for making "flip-ups," that we trapped them. On one side of a very abrupt hill which we dubbed, "pilot-knob," some trappers a few seasons before had undertaken to dig out a colony of foxes but quit the task after digging a hole as large as a small cellar. This excavation became a haunt of ours while trapping and in the event of a good catch we would leave the game here until traps farther on had been attended, then take all on our final way home.

One morning, on making our round, as far as the den, we had a bunch of rabbits which were left here as usual, but, being the younger of the two and tired from tramping three miles in a loose snow that had fallen the preceding night, it was arranged that I should stay with our catch while my brother made the remainder of the trip. To this I readily consented.

The cavity afforded a dry and secure retreat from wind and snow. A large quantity of dead leaves had accumulated to the depth of a foot or more at the farther end, which extended several feet into the hillside, and as a mass of green roots held the soil above, a space 10x14 feet in width and length, by seven feet high, open at one end, was thus formed. Into these leaves I buried myself at full length and must have dozed, for I was awakened by a rustling noise among the leaves at the back of the chamber. Scrambling up I peered, half awake, in the direction whence it proceeded but could only discern the darker profile of the hole which penetrated straight into the hillside from this corner. I stood thus a moment when, quick as a flash, a blur of white darted in at the opening. I knew that it was a rabbit which had been startled by my presence, and had thus sought safety. While planning, boy-like, to get it, my brother returned and I told him of the incident.

We finally determined upon a plan of action. Cutting a short pole we sharpened it at one end, so that after being driven into the gravel floor the other end would easily clear the roof when bent to form a "flip-up" at the entrance, but, on striving to set the pole in place we found the gravel too loose to hold it firmly. Wholly trying here and there, our exertions loosened a portion of the wall surrounding the opening through which the rabbit had disappeared, and this now fell in, revealing a larger cavity or cave-like passage extending into the dark, we knew not how far.

Startled by this sudden disclosure, it was several moments before we mus-

tered courage to advance and per in. In the dim light we perceived it to be a cavern whose uneven floor was about on a level with the one we were in and whose sides were rough with jagged sand rocks protruding from the gravel. On entering, the roof was found to be formed similarly, and all had the appearance of being made by the erosion of water in ages past. The place, on further inspection, proved only a chamber some twelve feet wide by thirty feet in length; loose small stones were scattered over its floor, and at one side near the center of one wall, larger rocks appeared to choke a passageway some four or five feet across and at an incline which, if continued, would lead to the surface above. These latter were so placed as to lead us to suspect they were put there by human hands, and the more we speculated on this the more convinced we were that this was a fact. Other indications also seemed to confirm our suspicions. At the farther end, overlooked by us on our first inspection, we found a low, short mound formed of stones, uniform in size and compactly placed. These were not easily removed but, after a few minutes' work, enough were taken from one end to reveal a low opening extending lengthwise into its interior. Immediately at the mouth of the opening thus made we picked from the dust within an oddly formed ax or hatchet of metal. This subsequently proved to be of copper and tempered to a cutting edge. A further search revealed crude metal ornaments for wrist or neck wear, and a shallow receptacle having a handle, resembling an ancient hand lamp, all black with age.

Evidently this was once a tomb containing the body of some noted chief or ruler of his time, but now all dust within, not a vestige remaining save for the articles mentioned. These we took and we were on the point of leaving when I accidentally stumbled over some rubbish of stone and fell full length, one hand striking something hard of a longish shape and quite smooth. The fall only jarred me and I was soon tugging at my new find, which was very heavy. That it was

made of metal there could be no doubt, for it took our united efforts to finally loosen and carry it to the light outside. There we scraped it with a knife blade, which showed it to be an ingot of quite soft metal having the luster of gold.

We were now radiant, thinking we had unearthed some treasure of untold wealth. Hastily returning to the search we finally found two similar bars which were deposited with the first.

Carefully covering our find with leaves we started home with our rabbits, debating on the way the best method of getting our treasure home. As no rig could be driven to the spot, we finally resorted to the use of our handsled. Upon this a box was fastened to receive the bars, and thus equipped we returned in the afternoon. Very tired boys we were when at dusk we finally arrived home with it all.

Our chagrin was nearly complete when we learned, from a peddler who chanced to stop at our place a few days later, that our "gold" bars were only copper, but very pure, for which he offered us a shipping a pound. The offer was finally accepted, on the advice of our parents, who knew all the time but dreaded to tell us that the metal was not gold. Nevertheless we did well on that day's rabbit hunting, as there were over two hundred pounds of the copper, for which we received a nice sum of money, all our own.

No one knows why or when the bars were deposited there, but at one time, ages ago, when the copper mines of the Lake Superior region were worked by prehistoric man, when the secret of tempering copper equal to the finest steel of today was common knowledge with them but now a lost art, it may be presumed that some company of copper workers, on their homeward march, had the misfortune to lose their leader near this spot. Finding here a natural tomb beneath the ground, they buried, with customary rites, their chief, depositing with him his favorite war ax, trophies and symbols of their trade, the ingots of copper, which we accidentally found.

Chasing The Circle.

By HOWARD DWIGHT SMILEY.

Betty Hurley was washing dishes when the bell rang. Hastily removing her apron, she hurried to the door and opened it, to be confronted by the grinning countenance of Jim Outwater.

"I haven't a minute to spare," the young man informed her as he seized her hand and drew her to the porch settee. "The store is full of customers and I had to duck out the back way. The boss will be furious, but I couldn't wait. I had to get this where it belongs before somebody else beat me to it."

While Jim was speaking he had suddenly slipped a solitary diamond ring onto the third finger of her left hand, and before the astonished girl could recover from her surprise he had dashed down the steps, mounted his wheel and was speeding back to his work.

"Why, the presumptuous thing!" she exclaimed angrily. "The very idea of putting that ring on my finger without so much as by your leave!"

She flounced into the house and put on her apron to resume her dish washing. Removing the ring from her finger she placed it in the shelf over the sink without deigning to give it even a cursory examination, and then plunged into her work with that vigor a girl displays when provoked by some inexplicable action of a member of the opposite sex.

She would have liked to express her opinion on the nerve of some men to an audience, but her father was out of town, and her mother was spending the day with a sick neighbor, leaving her alone in the house.

Having finished her dishes the girl carried the dish pan out onto the back porch and threw the water on the ground. Returning to the kitchen she hung up the pan and then busied herself for an hour ironing several shirt waists.

This done she washed her hands and reached for the ring, intending to place it on her finger for safe keeping until she had the opportunity to return it to Jim with appropriate scorn.

The ring was gone!

Frantically Betty searched the shelf, the sink and the floor, but without bringing the missing trinket to light. Thinking that perhaps it might have dropped from the shelf into the dish water, she

rushed outside and hunted in the grass where she had thrown the water. No ring.

She re-entered the house in a flurry of emotions. Where could that ring have gone! Surely it couldn't have taken wings and flown away! Betty studied hard for several minutes before the only probable solution came to her.

There must have been a burglar in the house! He had probably entered at the back door while she was on the front porch talking with Jim Outwater, and had concealed himself somewhere, probably in the dining-room, and had been watching her and had stolen the ring while she emptied the dish water. He could easily have gotten out of the house through the front door! This was a case for the sheriff!

After a moment's hesitation Betty hurried to the phone and asked for the jail. The sheriff himself answered the call.

"Oh, Mr. Hughes," cried Betty, "won't you please come right up to our house? This is Betty Hurley, and I am afraid there has been a burglar in the house!"

The sheriff assured her that he would be there as quickly as possible and she hung up the receiver with a sigh of relief and then hurried out onto the front porch. She felt that she would be more comfortable there.

She had hardly seated herself on the settee when a man dashed up to the steps on a bicycle, dismounted and sprang onto the porch.

"I shouldn't have left the station," he panted as he sat down beside her, "but I had a few minutes before the ten-fifteen train and took a chance. Didn't dare wait any longer—feared Jim or somebody might beat me out!"

"What are you talking about?" asked Betty, much bewildered.

"Why, where is your engagement ring?" cried the young man, suddenly seizing her left hand.

Betty gasped with surprise. How did he know anything about that ring, she wondered.

"I—I am afraid I've lost it," she stammered.

"Lost it! Why, what is this?" laughed Allen in a teasing tone.

Betty looked at her hand. The third

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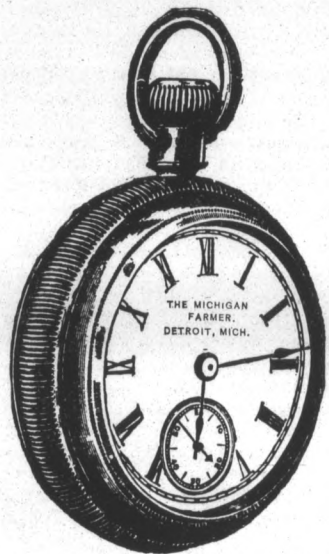
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The watch is the real thing, 16-size, nickel case, stem-wind and set, second hand, fine watch movement, and keeps absolutely correct time. It's fully guaranteed and if you don't hammer tacks with it or take it apart, in fact, if you will treat it as the friend it will prove to you, the manufacturer will keep it in repair for one year without charge. That's fair, isn't it?

Go to three of your neighbors who are not subscribers to The Michigan Farmer, or whose time has run out, tell them that you will have sent to them the Michigan Farmer (the best farm paper in America), every week for a year (52 copies) for only 50 cents. Collect 50 cents from the three of them and send us the \$1.50 you collect, together with the three names and addresses, and the watch will be sent to you at once, post paid.

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Start right away, the sooner you start the sooner you have the watch ticking in your pocket and telling you at a glance the hour, the minute, and the second of the day.

THE MICHIGAN FARMER, Detroit, Mich.

finger was adorned with a solitaire diamond ring. Before she could speak the young man jumped up and ran down the steps.

"I knew you'd be surprised," he cried back gayly as he mounted his wheel. "Well, you know what you said last night. Sadie Cummings hasn't anything on you now, has she, girlie? I'll be up again tonight and clinch the bargain," and away he flew.

"Allen Lothrop, you come back here!" cried Betty, but the young man did not hear.

She gazed after him with an expression of exasperation, which quickly changed to one of dismay and understanding.

"The very idea!" she exclaimed. "Why, I do believe those boys actually took me seriously last night!"

For a month back both Allen Lothrop and Jim Outwater had been paying marked attention to Betty. They were in the habit of dropping around each evening for an hour's chat, and Betty had entertained them impartially on the porch. She was not taken seriously with either of the boys, but she enjoyed their company and the exclusive feminine privilege of watching two jealous suitors vie each other for her favors.

The night before both boys had appeared glum and uncommunicative until Betty happened to touch on the subject of Sadie Cummings and her diamond ring, whereat both men suddenly chirped up and showed a lively interest in what she had to say.

Sadie had been the cause of much envy among the damsels of the town. She was engaged to Liston Walker, and Liston, to clinch the matter, had presented her with a quarter carat diamond ring.

That ring had nearly disrupted half the young couples in town. Sadie displayed it to her girl friends in a manner that aroused in each a jealous yearning to also possess one of the sparkling trinkets, and, as a result, the local jeweler was doing a rushing business in engagement rings—mostly on the installment plan.

"It seems like every girl in town is getting a diamond ring," Betty had complained. Whereat both young men pricked up their ears and looked worried.

"Humph! Since Sadie flashed that head-light, it seems that all a man has to do in order to get engaged to a girl is to produce a diamond ring," was Allen's comment.

"And why not?" Betty had retorted. "If a fellow cares enough for a girl to give her a real diamond, he is certainly worth considering, isn't he?"

"Oh, sure," scorned Jim, "I suppose you will seriously consider the first man who slips a ring on your finger, won't you?"

"I most certainly shall," Betty had assured him earnestly. She meant it, too; but not in the way the boys understood.

And this had been the outcome of that careless remark. Both boys had taken her at her word and had lost no time in placing a ring on her finger. What had been said in jest, now took on a very serious aspect, and Betty began to see where she would have considerable explaining to do.

"Well, young lady, where's your burglar?"

The sheriff's voice brought Betty abruptly back to earth. He had approached the porch so quietly that she had not observed him until he spoke.

His appearance recalled to Betty the fact that one of those rings was missing and must be recovered. How could she ever explain to Jim that she had lost it in so short a time and under such absurd circumstances.

Quickly she related her experience to the sheriff, omitting the particulars of how she came into possession of the ring.

"Are you sure you lost that ring, Betty?" asked the sheriff when she had finished.

"Of course I am! I wouldn't have sent for you if I hadn't!"

"What's that, then?" he asked, pointing at her left hand.

Betty started guiltily and put the hand behind her.

"I—why, this is another ring," she explained weakly.

"Diamond rings seem to be flying around pretty promiscuous this morning," commented the sheriff dryly. "Yours is the second complaint today, of one being stolen. Well, give me a description of it and I will do what I can."

"I am afraid I can't," answered Betty in confusion.

"You can't?" exclaimed the sheriff in surprise. Don't you know what your ring looked like? What carat was the stone?"

"I don't know," confessed Betty. "It was given me only this morning."

"How does it happen you lost but one ring? You must have removed both when you washed the dishes."

"I didn't have it then. It was given me just before you came."

"Who gave it to you?"

"I can't tell," answered the distressed Betty.

"Would you mind letting me see it?" Betty handed it to the sheriff, who examined it with growing surprise.

"Young lady," he said sternly, "you'll have to tell me who gave you this."

"I—really, I can't, Mr. Hughes," stammered Betty.

"It's a pretty serious matter," said the sheriff. "This ring is stolen property."

"Oh, it can't be!" cried Betty incredulously. "There must be some mistake. The man who gave me that ring couldn't possibly have stolen it!"

"Well, it's mighty curious that these initials engraved inside the ring tally up with the description given me by the party who lost the ring."

She took the ring and examined it. Inside the band were engraved the letters, "A. L. to B. H." Betty gasped.

Allen Lothrop had even gone so far as to have his and her initials engraved on that ring! The very idea! This passed all bounds of impudence! Well, anyhow it proved that Allen hadn't stolen the ring; he must have come by it honestly to have had it engraved. She would tell the sheriff that much!

"This isn't stolen property," she assured him. "Allen Lothrop gave me this ring, and these are his and my initials. That ought to be convincing enough."

"It's mighty curious," answered the puzzled sheriff. "Reckon I'll have to ask Allen where he got this ring."

"Oh, I'm sure you'll find him innocent of any wrong doing!" cried Betty.

"I hope so," answered the sheriff dryly. "I'll take this ring along if you don't mind; it might come in handy."

Betty watched him walk away, with mingled feelings of self-reproach and apprehension. She hoped she hadn't got those boys into any serious trouble.

The sheriff went directly to the depot where Allen Lothrop worked, and found the agent busy selling tickets for the eleven forty-two. He decided to wait until after the train had gone before approaching Allen on the subject of the ring.

The officer sauntered outside and surveyed the crowd that was waiting for the train. Ever on the alert for malefactors, his practiced eye suddenly fell on a lanky, shifty-eyed man, who was walking nervously about close to the track.

Something about the man's appearance caused the officer to dip into his inside coat pocket and extract several printed cards, one of which he read through carefully, lifting his eyes frequently to the man as if for comparison. Finally, with a grunt of conviction, he returned the cards to his pocket, stepped briskly forward and seized the lanky one by his arm.

"Hello, Slim," he said cordially. "Guess I want you."

The man tried to break away, but the sheriff held him fast. "Better not make any fuss," he advised in an undertone. "Come along quietly, and don't attract the attention of these people; it might prove embarrassing."

Sullenly the man fell in with the sheriff, and the two walked around the rear of the depot just as the train rolled in. As they rounded the corner of the building a man lurched out from behind a coal shed and ran toward a line of empty freight cars that stood on the track parallel with the one occupied by the passenger train. The sheriff at once surmised that this last man was about to steal a ride out of town on the passenger.

"Hold up there, bo," he called.

The other paused irresolutely, and the sheriff stepped quickly forward, dragging his prisoner after him, and seized the tramp with his free hand.

"I ain't done nothin'," whined the man.

"All right, the judge'll give you thirty days for that. Now come along with me."

They proceeded toward the jail, and then the first prisoner broke out.

"I dunno what yer pinchin' me for," he complained bitterly. "I ain't done nothin'."

"No?" queried the sheriff pleasantly.

"How about this?" and releasing his grip on the tramp, he flashed the diamond ring before the man's eyes.

The prisoner started and paled, but quickly recovered his self-possession.

"I dunno nothin' about that," he averred sullenly.

"I suppose not," returned the sheriff dryly. "You're wanted for a job in Sy-

racuse, anyhow. Don't know anything about that either, do you?"

The man did not answer, and Mr. Hughes glanced at him curiously. He was staring straight ahead with an expression of consternation, and following his gaze, the sheriff saw Jim Outwater approaching from the opposite direction.

The prisoner again tried to break the sheriff's grip, struggling so desperately that the officer had his hands full controlling him and keeping a grip on the tramp at the same time.

"Lend a hand here, Jim," he called to the young man.

Jim hastened to his aid, and between them they quickly subdued the man.

"Phew!" whistled the sheriff. "He pretty near made a get-away that time. Guess you'd better come along, Jim. He might take another notion to cut up."

Jim, who was staring at the first prisoner, at once became much embarrassed, and weakly pleaded other business.

"Tut, tut," said the sheriff. "Get on the other side of these fellows and come along. I'm not taking any chances of their getting away."

Jim reluctantly fell in and they proceeded toward the jail. The first prisoner was glowering fiercely at the unwilling deputy, beside whom he was walking and finally he leaned over and whispered hoarsely.

"De cop ain't got nothin' on me, and if yer peach I'll croak yer sure, see."

In spite of the fellow's effort to speak low, the sheriff caught the remark and pricked up his ears. He said nothing, however, until they reached the jail.

"This fellow seems to know you, Jim," he remarked casually.

"He was in the store this morning" admitted Jim uneasily. "What have you arrested him for?"

"Oh, on suspicion mostly. I have an idea that he is the party who picked a man's pocket on the train last night and got away with a diamond ring."

The tramp, who had remained silent up to now, uttered an involuntary exclamation that caused the sheriff to turn quickly in his direction.

"What's the matter with you?" he demanded sharply.

"You ain't pinchin' me for frisking a diamond ring, are you?" whined the tramp.

"I don't know whether I am or not," answered the sheriff. "Here, Charlie," he continued to the turnkey, "lock these fellows in the cage. I'll attend to 'em later."

"And, now," he said, turning sharply to Jim, "what do you know about this affair?"

"Why—how should I know anything about it?" stammered the young man.

"Did you ever see this before?" The sheriff suddenly produced the ring.

Jim gasped and held out a trembling hand. The sheriff permitted him to take the ring, observing him closely the while.

"Why, I bought this from that slim fellow this morning," cried Jim, after he had examined the trinket. "He said it had belonged to his mother, who is dead. He told a straight enough story, and as I needed a ring in the worst kind of a way, I took it for ten dollars. I had no idea it was stolen."

"And then you, in turn, either gave it or sold it to Allen Lothrop," concluded the sheriff.

"Allen Lothrop! Certainly not! I presented it to a young lady friend! How do you happen to have it, anyhow?"

"I got it from Betty Hurley," answered the sheriff quietly.

"You did! Why, I gave it to her this morning! Great Scott! What am I up against?"

It was the sheriff's turn to be surprised. "This is getting mighty curious!" he exclaimed. "You say you gave her the ring, and Betty assures me that Allen Lothrop presented it to her. Somebody must be lying."

Allen never gave her this ring! I can swear to that! I know it by these initials!"

"This is getting beyond me," observed the sheriff. "Let's run up to Betty's house. Maybe she can clear this thing up if we both get at her."

Jim balked most decidedly at this proposal. He didn't want to undergo the humiliation of facing Betty under such embarrassing circumstances.

"You'd better come," advised the sheriff. "You're a receiver of stolen property, and now the least you can do is to help clear up this thing."

This phase of the situation had apparently been overlooked by Jim, and he immediately expressed his entire willingness to accompany the sheriff.

They went immediately to Betty's

home, and found her on the porch, seated beside a stalwart, sun-browned young man, whose squared shoulders and uniform proclaimed him a lieutenant of the United States Army.

"Hello!" cried the sheriff in a pleased tone, "Here's Mr. Lewis, the man who lost the diamond ring!"

"Have you found it?" asked the other, rising and coming forward.

"I have," answered the sheriff, producing the ring, "if you can pick this out of the collection, that seems to be flying around this town, as yours."

Lieut. Lewis seized the ring and examined it eagerly. "This is the one!" he exclaimed happily. "I've been at my wit's end trying to think of some way to tell Betty how I came to lose it. I took the early train back to Pigeon, this morning, after reporting my loss to you, thinking that I might have lost my pocket-book around the depot there, when I changed cars there last night. I came back on the eleven forty-two."

"I reckon your ring was stolen all right," said the sheriff. "I picked up a couple of fellows at the depot a few minutes ago, and one answers the description of 'Slim the dip,' a notorious pickpocket, who is wanted in Syracuse for a job. Jim, here, informs me that this fellow sold him a ring this morning, which he presented to Betty. He probably touched you for your purse on the train between Pigeon and here."

At this juncture the telephone bell rang, and Betty answered, returning to inform the sheriff that he was wanted.

When Mr. Hughes came out again he wore an expression of satisfaction that made it obvious to the others that he had cleared up matters; at least in his own mind.

"That tramp got cold feet," he chuckled. "Charlie just called up to say that the man has made a confession. He's afraid I arrested him for picking pockets and thinks he is headed for state prison, and is therefore willing to admit that he sold the ring to the ticket agent at the depot. He swears that he found it in the grass, back of this house this morning. He was coming to the back door to beg something to eat, saw the ring and grabbed it and ran. He went straight to the depot, intending to get out of town, but found out from the agent that there would be no train under an hour, and being hungry, he sold the ring to Lothrop for five dollars."

"Why, then, I must have knocked the ring off the shelf into the dish pan and then threw it out with the water!" cried Betty.

"And the tramp came along immediately afterwards and found it," finished the sheriff. "That part is settled, and the question now is what I'd better do to you and Allen for receiving stolen property," he continued, turning to Jim.

The young man flushed and hung his head, and for the first time in his life experienced the sensations of a horse thief brought to justice.

Betty came forward, blushing with shame and mortification, as she remembered that she was responsible for this most distressing state of affairs.

"I hope you won't blame the boys too much for what they have done, Mr. Hughes," she began, and then, with much blushing and hesitation, she related the conversation of the night before, when she had agreed with Jim that the first man who came along and placed a diamond ring on her finger would receive her serious consideration.

"Only I didn't mean it the way they thought," she concluded shyly. "I knew Arthur was on his way here from the Philippines, and that he was bringing this ring. He came in last night, intending to surprise me, and then went chasing back to Pigeon after that horrid old thief. If you are going to put any more people in jail on account of this ridiculous affair, I hope you will take me and let the boys go. They have been imposed upon enough, already."

"I reckon that's so," chuckled the sheriff. "Guess I'll have to be satisfied with the two men I have now, and let it go at that."

THE GUN'S RANGE.

BY JOHN E. DOLSEN.

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YE EDITOR.

BY M. B. R.

Have mercy on ye editor,
Ye writers great and small;
Remember, he has trials sore
And don't get mad at all
Tho' he return your "words that burn"
And thoughts that "breathe" so loud
they snore.
Remember there's a dozen or, more
rightly, twenty score
Waiting on his desk in line
For the day when they can shine
In the printed column;
This thought alone doth make him groan
And look most mighty solemn.

Have mercy on ye editor,
He who toiling goes
Up the hill of criticism,
Weighing quip and witticism,
Essay, story, rhyme and prose
Till the sweat stands on his nose.
Struggling with the doubts that gather,
As he vainly tries to say
Which is best—or poorest—rather,
Which to hold or send away;
Which to choose for "tails" or "leaders,"
When they come to printed page,
Which will suit the youngest readers,
Which will satisfy old age.

Have mercy on ye editor
Who never takes a whirl
In his auto or his bob-sled
With his aunt, or frau, or girl.
Who, when church bells are a-ringing,
And the sleigh bells are a jingle,
And all save him are gayly singing
At the advent of Kris Kringle,
With his pens behind both ears
And his ink-pot good and handy
A full-sized martyr sure appears—
Butt of dude and dandy,
Who on their lives don't even know,
(When their would-be jests they're
firin')
Difference 'twixt Pope and Poe
Platonic poetry and Byron.

Have mercy on ye editor
Who never, on spring morning,
Washes mustache in May-dew;
Or, with wreaths adorning
Classic brow, is ever seen
Paying court to chosen queen;
Or with coat-tails gayly flapping,
Round the May-pole goes a-hopping
The "maddest, merriest" sprite I ween
In the circle turning.

Have mercy on ye editor
Whose cheeks are wet with crying
At the crumpled hopes he's piled
In yon basket lying.
(That same basket's weight is such,
With wet paper reeking,
That janitors resign at once
And new places go a-seeking).

Think not that I'm a favored scribe
(Although a right smart poet);
I've had my ups and down with him
And feel that you should know it.
He's hit me with his hardest bats,
And knocked my hopes into cocket hats
On many sad occasions;
But time has healed the blows received
And cured up sore abrasions
Till I can wrap my charity
About him like a shawl,
And say, have mercy on him,
Ye writers great and small,
And though he sends your efforts back,
Pray don't get mad at all.

THE BOYS' BUSINESS VENTURE.

BY MRS. JEFF DAVIS.

"I am ready to try any plan that seems
practical."

It was Saturday. All the week Harry
and James Conway had been worrying
about the low state of their finances, and
had decided that on Saturday they must
devise some definite plan to improve their
commercial rating.

Their vacation business ventures had
failed, and now that school had com-
menced there were many extra financial
demands, and besides they had to plan
ahead for funds to carry them through
the Christmas holidays, as Mr. Conway,
their father, was not a wealthy man.

"Of course, if we lived in the city,"
Harry said, "we could find plenty to do.
We could get some delivering to do after
school, and work on Saturdays besides.
But there isn't much chance for boys who
live on a farm to make money."

"We ought to be able to find some way
to make a few dollars," replied James.
"There must be something in all these
woods, that we could sell."

"I laid awake last night till past twelve
thinking over different things we might
do and I could think of nothing except
the nut crop, and you remember our ex-
perience with that crop last year taught
us that there isn't much demand for hick-
ory nuts and walnuts. There are too
many pecans, and other nuts that are
easier to shell, and people seem to prefer
them even if they do come higher," Harry
continued.

"Well, we must find a way, neverthe-
less," James insisted. "You know the
corn crop was almost a complete failure,
and father has had so much other hard
luck this year that we must not call on
him for our spending money. Besides,
boys of our age should be clever enough
not only to supply themselves, but should

be able to help with the family expenses
if necessary. So we must put on our
'thinking caps.'"

"I am willing to try any plan that
seems practical," Harry cheerfully agreed.
That night Harry was reading the daily
paper that came from the nearest city.
Suddenly he clutched it tightly. "Here it
is. We can increase the returns from our
nut crop. Read that," he said, handing
the paper to his brother.

When James read the notice he was as
delighted as Harry had been. It was an
advertisement for hickory and black wal-
nut meats, at a price which seemed to
them very fair, although it was below
that offered for other nuts.

The boys immediately began to make
plans. They decided to go to their near-
est neighbor, Mr. Brown, who did not
bother to gather the nuts from his big
woodland, and buy the crop on the trees.
That very night they wrote to the big
city grocery asking for more definite in-
formation, and as to how many pounds
would be needed each week and in a few
days they received a reply that gave them
hope of having profitable sales the entire
winter.

The real work then began. Their two
younger brothers, and even their little
sister Jennie, proved able assistants. It
was no easy job, cracking and shelling
the nuts after they were gathered. Their
fingers became tender from handling the
shells, but they did not give up.

As fast as the nut meats were ready
they were shipped to the city grocery,
and the money received was very encour-
aging. When all of the nuts had been
sold the boys were in possession of a sum
far greater than they had hoped to make
from their business venture.

"You are developing into fine business
men," Mr. Conway said in proud com-
mendation of their efforts. "I'll soon
have so many able partners that it will
take more than one poor crop year to
make this family despondent."

James and Harry proved to be more
than business boys; they were very un-
selfish with their money. The younger
children were given a generous share, as
pay for their services. Their parents
were substantially remembered, and there
still remained sufficient surplus for their
own needs.

"I guess after this we won't grumble
about not having a way to make money
in the country," said James.

"The trouble is," Harry replied, "we
don't appreciate our opportunities. I have
been keeping my eyes open, and I have
discovered various means by which boys
here might increase their supply of cash.
Why, James, the country is full of op-
portunities for boys who are willing to
work instead of whine. We could grow
popcorn, or asters, or raise chickens and
sell eggs to the people in the large cities.
We need only to produce good products
and let these people know we can supply
them, and then do it."

And James agreed.

A farmer rushed up to the home of a
country doctor in the village late one
night and besought him to come at once
to a distant farm house.

The medicine man hitched up his horse
and they drove furiously to the farmer's
home. Upon their arrival the farmer
said: "How much is your fee, Doc?"

"Three dollars," said the physician in
surprise.

"Here y'are," said the farmer handing
over the money; "the blamed liveryman
wanted five dollars to drive me home."

Out west, two men were to be hung for
horse-stealing. The place selected was
the middle of a trestle bridge spanning a
river. The rope was not securely tied on
the first victim to be dropped and the
knot slipped; the man fell into the river
and immediately swam for the shore. As
they were adjusting the rope for the
second, he remarked:

"Say, will yez be sure and tie that good
and tight, 'cause I can't swim."

"Why do you want a new trial?"

"On the ground of newly discovered
evidence, your honor. My client dug up
four hundred dollars that I didn't know
he had."

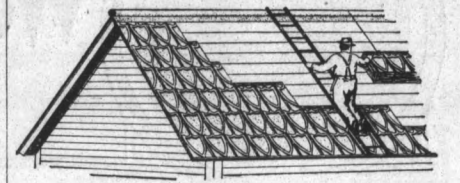
She—Say are those poems in the paper
signed "Oedipus" yours?

He—Yes.

She—Well, the girls persisted that they
were, but I always spoke up for you.

"Why doesn't your wife sing to the
baby when it cries?"

"Sh! We've found that the neighbors
would rather listen to the baby."

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my share. At end of five years each would own
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who can furnish references as to honesty and ability
considered. For full particulars address.

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Woman and Her Needs

At Home and Elsewhere



Why Not Make Work Easy.

I THINK farmers' wives do their work in the hardest way possible," confided a town girl who had married a farmer and was spending her first summer in a farm kitchen. "At home we had everything to work with, running water, a washing machine, a mangle, kitchen cab-

of going out with a cradle to cut wheat like his grandfather did. But here am I doing like his great-great-grandmother did. And he thinks it is the only way."

I couldn't but sympathize with her. Housework is hard enough when everything is made easy. But when you have to carry water and wood, rub clothes on a board, and empty heavy tubs, travel from stove to ironing board and back again by the hour it becomes slavery.

Running water is one of the greatest labor savers known to woman, and there is no reason why every farmer who knows even a little bit of the meaning of the word prosperity should not supply it for his wife. After running water on wash days, to me the greatest boon is stationary tubs. When I think of the pails of water to be carried and put in a tub in order to wash and rinse a family washing properly, and then the emptying of them all again, I wonder more backs do not break. With the stationary tubs, which may be installed in any kitchen, half the work of washing is cut out. You turn a faucet to get your water, and when you are through pull out a plug and let the dirty water run out.

And a plumber has told me he could and would install two tubs in any farm kitchen, with all inside pipes, for \$13! And yet farmers' wives do without them because they don't feel they can afford them. With the time and strength they would save they could can and sell enough fruit and vegetables to pay for them twice over in one summer.

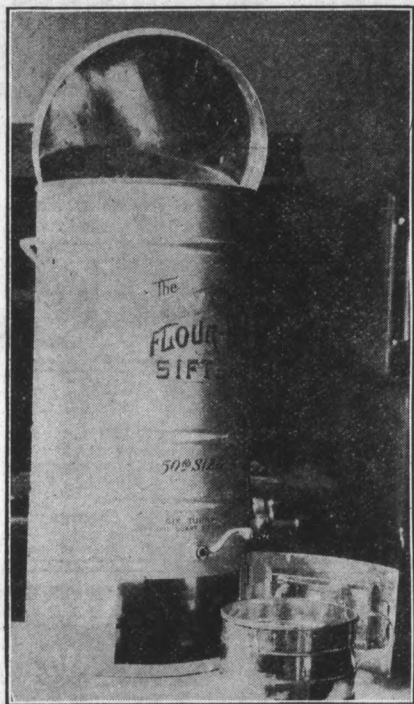
After the running water and the tubs, a water-power washing machine could be added. There are hand-power washers in many homes, but these mean work to run. With the water-power machine, the running water does the work and you save so much muscular energy. If you can not manage this there is a washer now on the market which may be operated either with the hand or the foot and you can stand or sit to use it. Even

with a washer like this you might save most a year's vacation in the 25 years it strength and do some light work with the hands while you were rubbing the clothes. These washers come at \$10.

For the woman who really can not afford a machine of any sort there are funnel shaped clothes washers which many women find a great help. These consist of a stick with a galvanized iron funnel on the bottom. A perforated piece of the galvanized iron fits into the bottom of the funnel and the water is forced up through the holes and out through other holes in the sides of the funnel. Air and suction does the work.

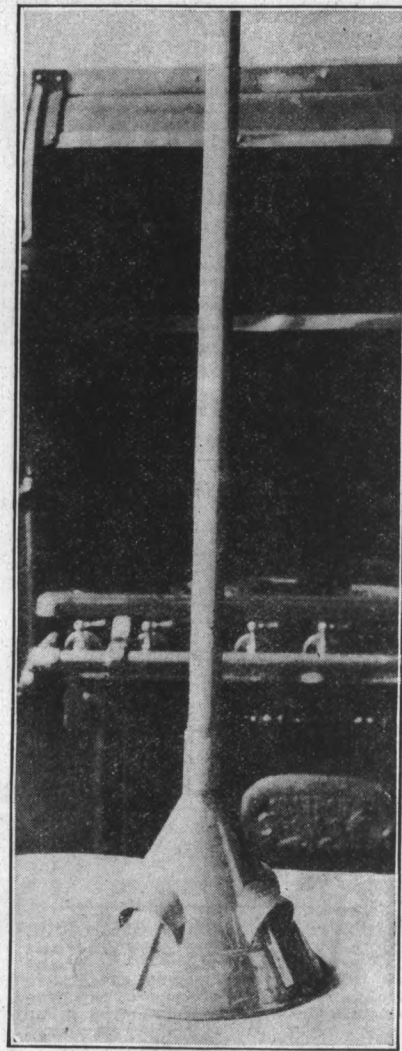
A small mangle which is clamped on the table is a great help on ironing day. It looks something like a clothes wringer, and does nicely for ironing sheets, pillow cases, towels, kitchen aprons, dust cloths, tablecloths and napkins for everyday use. Some women even put the men's workday shirts through them, and there is no reason why they should not. Thus half your ironing is done without recourse to an iron. One of these small mangles may be bought for \$8 and ought to last a life time. For \$1.25 more a charcoal iron can be added to the supply of laundry helps. These seem to be more satisfactory than the gasoline iron at twice that price, as the gasoline fumes make so many women ill.

The flour bin with a sieve in the bottom can be purchased for from \$3.00 to \$4.50. Or one may be made at home. Twenty-five years ago the handy man in one family made one which is still in use. It is shaped like a four-sided pyramid with the apex cut off, and hangs small end down. A sieve is fitted into the bottom and the cover off a two-quart pail fits into the bottom of the sieve to keep the flour from constantly sifting out. This is fastened to the wall directly over the kitchen table and is always ready. Think of the convenience, you women who make constant trips to the barrel, over which you bend to scoop up flour! And one afternoon's work did the deed. Only four hours' time, but it has saved the wife al-

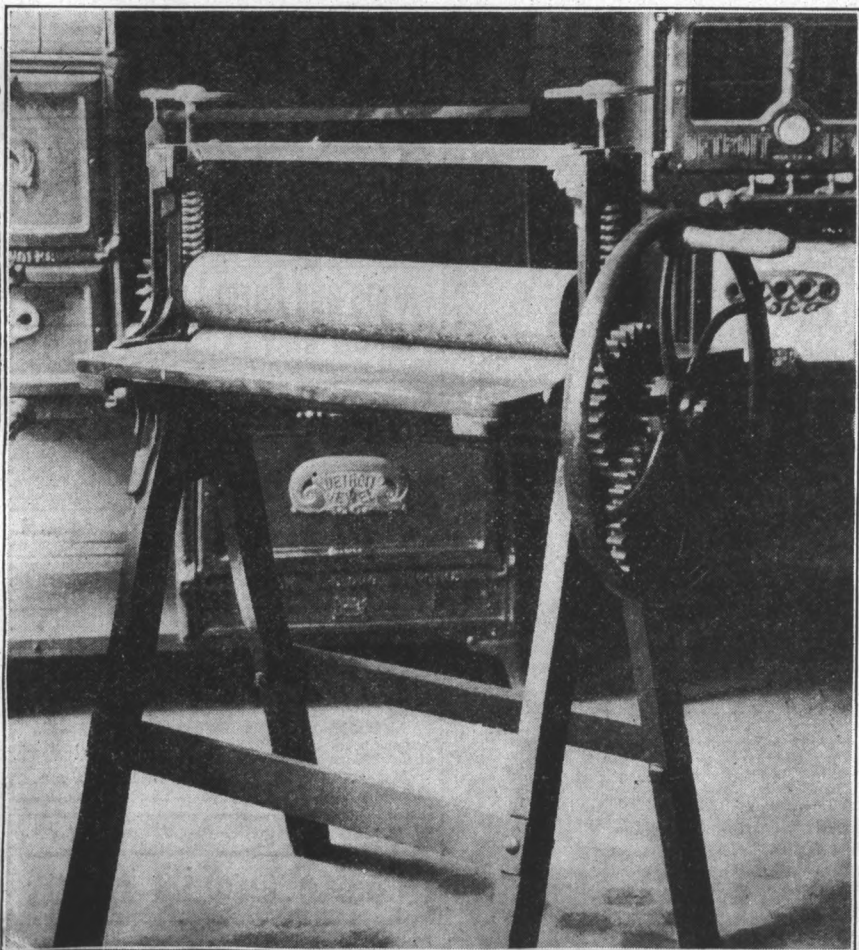


The Flour-bin Sifter Shortens Cooking Operations.

inet, the flour sifter in the bottom of the bin on the wall ready to give the handle a couple of turns, and every kitchen convenience mother heard of. John's mother never had any of those things, and it will take me a year to get them. But I am going to have them. He wouldn't think



Funnel-shaped Washer.



A Larger Type of Hand Mangle. Smaller Ones May be had at a very Nominal Price. They Save Much Ironing.

One More Cult To Teach Us How To Eat.

AMERICA is the greatest country on the globe. I was told that when I went to school; thought there must be something in it when I saw Niagara; began to believe it when I looked down into the Grand Canyon, but only became convinced of it when I began to study foods and their fads and found out the astonishing number of diet cults there are in our broad land. In no other country under the sun could there be so many different systems of diet all guaranteed to cure illness, prevent disease, put off death and make man happy. But the most astonishing thing of all is that each of these diverse schools of eating can point with pride to people who have been cured by following their methods. Every last one of them has someone who has been able to perform all the gastronomic stunts prescribed and thrive on it.

The last school to be heard from is just making its appearance. We have been used to the no-breakfast regime, vegetarian diet and the hot water cures. This one seems to be a mixture of all of them, with physical culture and sweat baths thrown in and fish on the side to bait the ones who must, absolutely must, have some animal food.

A man who has been notorious for over-eating, two dozen pancakes, a couple of pork chops, French fried potatoes, fruit, a couple of sinkers, and three cups of coffee being his usual breakfast, is taking the cure. A fifteen minute electric sweat bath daily, with vigorous massage at the close, is the part given by the doctor. The rest the victim does himself.

He must take nothing for breakfast but one pint of hot water. Then one hour later he may eat an orange. At noon he may eat any cooked vegetable or fresh green one; fruit of any kind and all he wants; all the fish he wants, and more



A Charcoal Flatiron Saves Time and Strength.

hot water, and at night the same. He must take no tea, coffee, salt, pie or cake, meat, milk or eggs. But he may smoke or drink one glass of beer a day.

The inconsistency of the thing does not appear to the young man who is paying hard-earned money to be "cured." Anti-

mal food in the form of meat, eggs and milk must be left alone, but fish, which is as truly an animal food as the other three, he may eat if he likes. Stimulants in the form of tea and coffee are denied him, but nicotine and alcohol, far more baneful, he may have.

And the queer part of the whole thing is that he is actually picking up under the treatment. Naturally, anyone who has been over-fed and over-stimulated, would feel better to go on two meals a day, while the poisons generated by too much food were being sweated out of his system. He feels better and the school will claim him as a cure and will go on trying to induce other people to give up the meat or milk or eggs they need to build up wornout tissue and keep them in trim.

I never could figure out if human beings were not intended to eat animal food why God sends us into the world unable to take any other kind. The baby can take nothing but milk, a true animal food. It has not the saliva to digest starch until it is seven months old. Science has taught us that we need protein to build up wornout cells and that children must have it to promote growth. Yet there is a great hue and cry against meat, and much talk of the autointoxication caused by the use of it.

Perhaps some people eat too much meat. But the average person in these days of high prices gets all too little meat, eggs and milk and far too much sugar and starch in the shape of fruits and baked goods. Protein we must have. At least one-fifth of the diet should be protein. We can get vegetable protein in beans, lentils and peas, but just who could stand it to have creamed or baked beans, split pea soup or lentils dished up three times daily?

Common sense in diet, which means a little of all real foods in moderation, is all any of us need. There are many things these schools have taught us that we can follow with profit. For instance, all would be better to drink more water than we do and to eschew condiments and relishes, including catsup and pickles of all sorts except sparingly. None of these are real foods, and if children are brought up from infancy to leave them alone they will not need them to tempt jaded appetites when they become men and women. I think every person, too, who leads a sedentary life or is of a nervous, excitable temperament, would be better without tea or coffee. But the healthy, placid, active individual who is exercising constantly, especially in the open air, is rarely harmed by these beverages.

Just temperance in the literal sense of the word. That is all we need to keep us well. If we simply used the knowledge that we have we would have little need to pay a faddist to tell us how to diet.

DEBORAH.

RECIPES.

Lemon Custard Pie.

Set a pan of sweet milk on the stove where it will heat without burning. (I use an asbestos mat), to near scalding. If separated milk is used, drop a lump of butter the size of a hazelnut into every pie before baking. For the crust, sift a heaping teaspoonful of baking powder and one-half teaspoonful of salt into one quart of flour; mix to a stiff dough with rich sweet cream, using a knife and cutting the cream and flour together; turn out on a floured board, and mold to a smooth dough with the tips of the fingers, handling as little as possible. Cut off enough to line a pie tin, roll rather thin (about one-eighth inch in thickness), and fit closely to the tin, patting and smoothing to exclude air; cut even with the edge of the tin, fold under slightly, and crimp upright with the fingers. Whip two eggs very light; add one-half cup of sugar and one tablespoonful of corn starch, beat together, turn on enough hot milk to fill the pie, stirring at the same time; flavor with lemon and turn into the pastry lined tin; bake in a steady oven.

Peas with Lamb.

Chop one pound of lamb; add to this one pint of shelled peas and put in a stew pan and let simmer slowly in water enough to cover until they are tender, season with salt, pepper, butter and cream and serve.

Grandmother's Cough Candy.

Take all you can pick up in one hand of fresh catnip in flower, the same of fresh horehound, and the juice of a large lemon. Put in a granite basin with about two quarts of water, let steep until there is about one quart. Put in a dessert-spoonful of ginger. Strain, and add as much sugar as there is fluid. Boil until

it hairs. Have whites of two eggs, beaten very stiff, ready. Pour syrup on slowly, beating constantly. Then beat the candy a little, not as much as fudge or it will be too hard. Pour on buttered plates and mark in squares as the surface hardens.—L. C.

Cherry Pie.

Make the crust in the usual way and bake it to a light golden brown. Pit two cups of ripe, juicy cherries. Heat them to a boiling point mixed with one and one-half cups of sugar. Have ready the beaten whites of two eggs and stir them into the cherries gradually. When smooth pour into the pie crust. Frost and brown in the oven.

Peach Cake.

Bake a white cake in loaf or two layers. Make frosting as follows: Take one cup of sugar, one cup of canned peach juice and boil together until a bit of the mixture will form a soft ball in cold water. Have white of an egg beaten stiff, pour syrup on while beating them together, beat the creamy mixture till cold, then spread on cake.—L. C.

Green Peas with Bacon.

Remove the rind of a small square of bacon, about a half pound. Parboil for a few minutes; then put a tablespoonful of butter in a frying pan and fry the bacon slightly brown in this. Sprinkle a few teaspoonfuls of flour over the bacon and fry a few minutes longer; then add three pints of green peas and a pint of boiling water, a few onion stalks and a few sprigs of parsley. Cook slowly for about 20 or 25 minutes, skim off the fat, season with salt and serve.

Mock Peach Pie.

Take a quart of nice crab apples and core them, stem and wash. Have the upper and under crusts ready the same as for any pie. Place in a layer of crab apples and cover with sugar, and so on until the pie plate is full. Then cover with the upper crust. The flavor is so near that of a peach that one who does not know cannot tell the difference.

Juditha.

Fill the center of a mold of vanilla ice cream with a fruit filling made by cooking one pint of gooseberries, mashing and straining them and then adding two well beaten eggs and sugar to taste. In serving serve a little of the fruit with each dish of cream.

Gooseberry Pudding.

Few people use gooseberries except for pie. Here is a recipe for a pudding: Make a biscuit dough, roll half-inch thick, cover with gooseberries and then sprinkle with sugar. Then, beginning at one end, roll up tightly, pinching the ends and edges together. Steam for two hours and serve with cream and sugar or your favorite pudding sauce.

Fruit Cake.

One pound of brown sugar, one cup of butter, one cup of molasses, four eggs, two cups sour milk, one teaspoon each of soda, allspice, cloves and cinnamon, a pinch of salt, two pounds of raisins, one pound of currants, quarter pound each of citron and lemon. Add fruit last. Nuts may also be added. Flour to make a soft batter. This will keep any length of time.—Martha S.

My Favorite Cake.

Two eggs, one cup of sugar, one cup of sour cream, one and a half cups of flour (scent), quarter teaspoonful of soda in cream, two teaspoons baking powder in flour. Flavor as desired. This cake is equally good as a loaf or in layers and may be varied by adding spices. I sometimes make a marble cake by adding spices, a teaspoon of molasses and some raisins to a part of the batter.—M. W.

Uncooked Chili Sauce or Relish.

One peck of ripe tomatoes chopped fine and drained over night. In the morning add to this, six onions, two bunches of celery, one red sweet pepper, chopped, one pint of vinegar, two pounds of brown sugar, half cup salt, two tablespoonfuls white mustard seed and one tablespoon of cinnamon.—Mrs. C. W.

Pickles, Cold Process.

One gallon of cider vinegar, one cup of salt, one cup ground mustard, two cups sugar, one heaping teaspoon alum. Mix thoroughly and put in cucumbers as they are picked. Sealed up in glass jars these will keep all winter if the cider vinegar is of first quality.—Mrs. E. E., Elsie.

Cucumber Pickles.

Wash and pack in jars, then cover with one gallon of vinegar, one large cup of salt, one cup of ground mustard or horseradish, cut small and scatter through the pickles. Will be ready to use in about two weeks.

Tomato Soup.

When canning tomatoes the juice that is left may be strained through a wire

sieve, simmered down on back of stove, canned, and in winter is already to make soup.—N. M. K.

HOME QUERIES.

Household Editor:—Is there any way of keeping the juice from running out of a fruit pie?—Young Cook.

If there is I have never discovered it, and I have tried every way suggested by every pie-maker and cook book. Mixing two tablespoons of flour with the sugar you use and then mixing the whole with the fruit instead of sprinkling the sugar on is said to work. But it doesn't. Neither does putting a funnel of paper in the top crust, nor binding the edges of the pie with strips of old muslin dipped in cold water. Nor do all three done together to the same pie work when I try them. Perhaps some veteran pie-maker has a sure preventive she will pass on.

Household Editor:—My little boy stammers dreadfully. How can I help him?—Anxious.

He probably stammers because he is very nervous. Keep him out of doors as much as possible and do not excite him or allow him to be teased or frightened. See that he drinks plenty of milk, has plain, nourishing food, and that his bowels are kept open. Have a competent physician examine him to see that he is in normal condition and that no physical defect is keeping up the condition. Some children are cured of stammering by removal of adenoids, and there are other slight operations which improve the nervous condition and cure stammering.

"CAMPHOR COMPOUNDS" WITHOUT CAMPHOR.

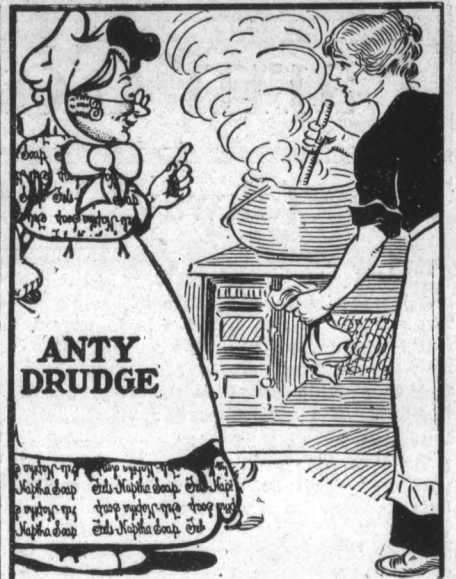
By publishing 10,000 notices of judgment under the Insecticide Act, secured against a manufacturer of compounds sold to prevent moths in clothing, etc., the Department of Agriculture hopes to protect housewives from buying such a compound. The decisions were obtained against the Lewy Chemical Company, of New York, which has been selling three articles for moth prevention. One judgment was obtained because "Extra Refined Camphorated Flake Compound" did not contain camphor; another because "Cedar of Lebanon and Camphor" did not contain camphor, but consisted wholly of cedar, and common red cedar and not true "Cedar of Lebanon;" the third case was "Extra Refined Chinese Ta Na Compound," proven to be neither camphor nor camphor compound.

FASHIONS BY MAY MANTON.

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



No. 7951—Cutaway coat, 34 to 42 bust.
No. 7953—Belted coat for misses and small women, 14, 16 and 18 years.
No. 7942—Three-quarter loose coat, 34 to 42 bust.
No. 7955—Girl's draped coat, 8 to 14 years.
No. 7930—Child's coat, 2 to 6 years.
No. 437—Embroidery design.
The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer on receipt of 10 cents for each.



Mrs. Newfarmer: "Come in Anty Drudge—one of my neighbors gave me a receipt for soap and I'm trying to make it. Did you see my chickens? All thirteen hatched out, so I drowned eleven, because I thought two was all the old hen could suckle."

Anty Drudge: "Land sakes, woman! You've got lots to learn! There never was a hen that couldn't take care of thirteen chickens, and nobody with sense makes soap any more. They use Fels-Naptha for washing and everything else. Buy it by the box and keep it on hand."

Every woman can cut her work in half by letting Fels-Naptha Soap do the hard drudgery for her.

Fels-Naptha dissolves grease, takes out stains and does away with wash-day drudgery. Clothes soaped with Fels-Naptha and put to soak for 30 minutes in cool or lukewarm water require no hard rubbing and no boiling. Just as good for all kinds of housework.

Full directions on the red and green wrapper.

Better buy it by the box or carton.

Fels & Co., Philadelphia.



Farm Commerce.

The Jakway Fruit Packing Bill.

The following is the text of a bill made law by the last Legislature of Michigan. The purpose of the measure is to prevent fraud and deception in the sale of Michigan-grown fresh fruits and vegetables, and to provide penalties for violation of the act. The sections read:

Section 1. In this act, unless the contents otherwise requires, the term "closed package" shall be construed to mean a barrel, box, basket, carrier or crate, of which all the contents cannot readily be seen or inspected when such package is prepared for market. Fresh fruits or vegetables in baskets or boxes, packed in closed or open crates, and packages covered with burlap, tarlatan or slat covers shall come within the meaning of the term "closed package." None of the provisions of this act shall apply to other than Michigan grown fruits and vegetables.

Section 2. Every person who, by himself or by his agent or employe, packs or repacks fresh fruit or vegetables in closed packages intended for sale in the open market, shall cause the name to be marked in a plain and indelible manner, as follows:

First, with his full name and address, including the name of the state where such fresh fruits and vegetables are packed, before such fresh fruits or vegetables are removed from the premises of the packer or dealer;

Second, the name and address of such packer or dealer shall be printed or stamped on said closed package in letters not less than one-quarter inch in height.

Section 3. No person shall sell or offer, expose or have in his possession for sale, in the open market, any fresh fruit or vegetables packed in a closed package and intended for sale, unless such package is marked as is required by this act.

Section 4. No person shall sell or offer, expose or have in his possession for sale, any fresh fruits or vegetables packed in a closed or open package, upon which package is marked any designation which represents such fruit, as "No. 1," "Finest," "Best," "Extra Good," "Fancy," "Selected," "Prime," "Standard," or other superior grade or quality, unless such fruit or vegetables consist of well-grown specimens, sound, of nearly uniform size, normal shape, good color, for the variety, and not less than 90 per cent free from injurious or disfiguring bruises, diseases, insect injuries or other defects, natural deterioration and decay in transit or storage excepted.

Section 5. No person shall sell or offer, expose or have in his possession for sale, any fresh fruits or vegetables packed in any package in which the faced or shown surface gives a false representation of the contents of such package, and it shall be considered a false representation when more than 20 per cent of such fresh fruits or vegetables are substantially smaller in size than, or inferior in grade to, or different in variety from, the faced or shown surface of such package, natural deterioration and decay in transit or storage excepted.

Section 6. Every person who, by himself, his agent or employe, knowingly violates any of the provisions of this act, shall, for each such offence, be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding ten dollars, or by imprisonment in the county jail for a period not exceeding 30 days, or by both such fine and imprisonment in the discretion of the court.

The above law has been framed to fit the conditions among the fruit farmers of Michigan. The farmers have desired a law that would enable them to ship proper packages and receive credit on the market for a first-class pack. In some instances buyers from other states have purchased Michigan fruit in the bulk and have placed it on the market without grading and then represented the pack as consisting of first-class Michigan fruit. Every fruit farmer in Michigan has been injured by this kind of business and the farmers have not been entirely responsible for the poor reputation of Michigan fruit. The poor packers will now have to label their goods as being good or leave off the label and by so doing, acknowledge that their produce is poor. The good

farmer will not have his packages shunned because they come from a region that has formerly shipped ungraded and blemished fruit—in the bottom of the basket.

A large grower in Van Buren county said last winter: "If the Jakway Bill goes through the Legislature I am going to select a brand and ship all my fruit under that brand. I am going to grade more carefully and ship the various grades under the same brand until I build up a reputation for the fruit I am growing."

Furthermore he said: "If this bill is defeated there will not be much use of careful grading and shipping under a brand as the buyers in Chicago will not believe us when we stamp the contents of the package on every shipment. He had the idea that as long as Michigan fruit had a bad name on the market it would be folly for him to waste any energy in trying to remedy the situation. Now that the bill has become a law, it will be necessary for this large grower to properly label his packages or go out of business. The big fruit raiser cannot use cull methods in shipping his entire orchard output and ever make any dividends on the investment.

It is hoped that every progressive fruit grower will take advantage of the benefits of the Jakway Bill and help to raise the standard of Michigan fruit on the big city markets. The story of the buyer who bought Michigan apples and shipped them east and then back again because he was ashamed to tell where they were raised will be branded as a falsehood when the Michigan apple growers appreciate the value of making the most of the new fruit package law.

Good fruit is still bringing an excellent price and there seems to be little danger of over production of good apples. The secret of future success in the fruit business is going to be in the increased marketing ability of the farmers. Production has received more than its share of study and it is now time to give our attention to marketing. Study the Jakway fruit package law and then apply it to the first shipments that leave the home orchard. It will pay now and it will pay better returns when the big apple buyers of the country realize that Michigan fruit growers are adopting business methods and can demand business-like treatment in the disposing of their fruit.

Ingham Co.

R. G. KIRBY.

BUSINESS EXPERIENCE AND CO-OPERATION.

A Mecosta county subscriber writes: "I am a farmer and have tried repeatedly to get men in my vicinity to pull together on this buying and selling proposition and thereby obtain mutual benefits, but my experience has been very similar to that of many others—farmers as a class will not pull together—and I would like to ask what you consider the cause of this apparent lack of foresight on the part of farmers in the matter of co-operation."

There are many reasons for the apparent lack of loyalty on the part of farmers as a class in the conduct of co-operative enterprises in which they may be interested, perhaps through the efforts of others. Farming is an individual or family business, so that the independent or individualistic tendency is apt to predominate in the farmer's make-up. For this very reason farmers are, to perhaps a larger extent than those engaged in any other business enterprise, naturally suspicious of all who may take the lead in co-operative enterprises and upon whom quite generally the conduct of co-operative enterprises will fall. But in the writer's opinion, the greatest reason for that lack of consistency and loyalty to co-operative enterprises which is essential to their continued success, is due to lack of business training and experience on the part of the average farmer.

While farming is a business in which a relatively large proportion of capital to the business done must be invested, yet it is a business in which only a limited working capital is necessary and the average farmer is apt to look upon other business enterprises in the light of his own business experience and cannot understand why a co-operative business of considerable volume cannot be conducted up-

on a small working capital when the plant—where a plant is required to conduct the business—has been paid for. As a matter of fact, the average farmer does not understand this need of his own business to the extent which he should and the working capital or money available for conducting the farm is altogether too limited in the majority of instances to make a maximum profit from the business possible. And yet a working capital in proportion to the investment which would be ample for the most successful conduct of farming, would be altogether inadequate for the conduct of any kind of a co-operative business for the selling of farm products or the purchase of needed supplies to the best advantage.

As an illustration of this fact the writer will refer to an early experience along this line. Some twenty years ago, just at the beginning of the panic in the early 90's, he became interested, together with a number of other farmers in the community, in the building and operating of a co-operative creamery. After considerable work on the part of those who were originally interested in the matter a sufficient amount of capital was subscribed to build and equip the plant. But we soon found that the working capital was too limited to carry on a successful business, and, after the usual expedient of borrowing enough money through the endorsement of the directors to tide the business over immediate needs, it became necessary to levy an assessment of 20 per cent on the capital stock to keep the business going—and right at this point a number of those who had gone into the enterprise quit.

Of course, the conditions were a little unusual. With the advent of the panic prices for dairy products were low. A further discouragement was a very dry season, scant pastures and a very limited hay crop. Then many of those who joined the enterprise were not experienced dairymen and with the care and feed given them the very ordinary cows which they owned failed to return a profit. By dint of perseverance, however, the business was carried on for two seasons, when through a lack of that loyalty which is essential to the success of every co-operative enterprise it proved a failure and the original investment was practically lost.

Yet this was a business more simple in character and with which the average farmer should be more familiar than with the commercial distribution of other products. This experience is a common one with many similar enterprises and it is perhaps most common with the enterprises which are limited to the distribution and marketing of farm products, since these enterprises come into more direct competition with the already established channels of trade and quite often those who should be loyal to the enterprise are induced to withhold their patronage from it by the offer of comparatively slight inducements in the way of advanced prices which are made by competing dealers.

Now, this is not due to any inherent weakness of the farmers who are identified with the movement as a class, but rather due to a lack of business training and experience which leads to a better understanding of the absolute necessity for liberal capitalization and support for any business enterprise if it is to prove a success. The man who has his all invested in a business enterprise of any kind is bound to appreciate this fact more fully than the man who invests a small amount in a co-operative enterprise merely as a side issue and with the hope of receiving more remunerative prices for his products as a result, rather than the earning of big dividends on the investment. It is the better price that he is after and it is difficult for him to understand why a competing dealer can offer him better prices, or does offer him better prices, sometimes, than the institution in which he has invested his money.

Business training or broader business experience would remedy this difficulty. Co-operative experience, when it reaches its higher development will largely remedy it. But the difficulty is that we Americans like to do things in a big way and our co-operative undertakings are commonly started on too big a scale. Where these undertakings are begun in a small way on a basis of community production and where those identified with them grow into the business instead of going into it on an extensive scale they are more uniformly successful because in the process of evolution the members get a better business training and a broader view of business propositions in general than they enjoyed before.

But this growth is bound to be grad-

ual, and not until community interest has supplanted individualism to a large degree will this most serious difficulty in the road of successful co-operation be wholly surmounted.

THE 1913 POTATO CROP.

The potato crop August 1, as given out by the Bureau of Statistics of the Department of Agriculture, covering the entire United States, was 78 per cent compared with 87.8 the same time last year, 84.1 for the ten-year average and 86.2 July 1, 1913. The total acreage this year is 99.3 per cent of last year or 3,685,000 acres. It is estimated that this year's yield will run 92 bushels to the acre or 339,000,000 bushels compared with 113.4 bushels to the acre and 421,000,000 bushels total in 1912, final; 293,000,000 bushels in 1911, final; 389,000,000 in 1909, census; and a general average of 96.1 bushels per acre for the five years 1908-1912 inclusive.

It will be seen that this year's crop August 1, promised 82,000,000 less than last year's final yield, which was a very big crop, and 46,000,000 bushels more than the final production in 1911.

The report in detail by states, with comparisons, is as follows:

State.	Aug. 1, 1913.	Aug. 1, 1912.	Aug. 1, 1911.
	Per C.	Per C.	Per C.
Maine	92	86	82
New Hampshire	83	85	78
Vermont	91	83	68
Massachusetts	75	80	75
Rhode Island	80	79	65
Connecticut	75	72	66
New York	79	80	75
New Jersey	72	76	70
Pennsylvania	83	88	65
Delaware	74	84	45
Maryland	66	99	45
Virginia	86	88	42
West Virginia	78	96	40
North Carolina	84	90	46
South Carolina	80	84	60
Georgia	78	88	70
Florida	87	84	81
Ohio	76	90	48
Indiana	57	92	46
Illinois	51	91	34
Michigan	79	88	61
Wisconsin	88	91	71
Minnesota	89	92	65
Iowa	70	91	38
Missouri	55	88	20
North Dakota	85	93	75
South Dakota	86	92	58
Nebraska	69	80	34
Kansas	51	88	19
Kentucky	64	94	40
Tennessee	72	90	40
Alabama	80	84	70
Mississippi	79	80	70
Louisiana	78	75	83
Texas	70	67	70
Oklahoma	73	67	20
Arkansas	76	79	45
Montana	87	96	87
Wyoming	95	91	75
Colorado	85	90	75
New Mexico	70	75	86
Arizona	88	90	85
Utah	93	94	87
Nevada	92	96	95
Idaho	90	96	95
Washington	92	98	90
Oregon	98	101	90
California	80	91	89
United States	78	94.4	85.7

LIVE STOCK NEWS.

After every good rain in the country it is observed that marketings of grassy hogs from regions needing moisture begin to fall off in volume. A generous down-pour over the entire country would start a scramble upon the part of farmers to buy feeder cattle, and prices would undoubtedly shoot up at a rapid rate.

The following resolution passed by a recent gathering of Chicago live stock interests has been signed by representatives of all the firms in the stock yards of that city: "The undersigned members of the Chicago Live Stock Exchange hereby commit their firms and employes to the so-called five-day market proposition now pending before all the stock yards' interests. We hereby pledge ourselves and employes to do all in our power to promote a more equal distribution of live stock, especially cattle, on Monday, Tuesday, Wednesday, Thursday and Friday of each week and to miss no opportunity whatever to bring about such results."

The main trouble with the Chicago sheep market recently was the too liberal supplies of fat flocks, lambs especially. Had the distant ranges shipped in a large percentage of feeder lambs and sheep instead of almost exclusively mutton classes, the outcome would have been widely different, for hundreds of farmers in Michigan and other states of the middle west are hungry for feeders and are unable to secure any, even at ruling high prices, so near those paid for finished live muttons. Range stock has been headed marketward in larger numbers than the trade expected, lambs predominating overwhelmingly, of course.

D. D. Cutler, general live stock agent of the Chicago & Northwestern Railroad, says: "Minnesota and Dakota have excellent crops of oats, and so has northern Iowa. They have a bumper crop of hay as well, and the only farm commodity which is really short is cattle, but they are raising a whaling lot of spring calves up in that country. Young hogs are in heavy supply and also in healthy condition."

CROP AND MARKET NOTES.

Mecosta Co., Aug. 19.—August has been very warm, with an occasional rain, so that crops and pastures are looking well. Live stock is scarce. A good fruit crop, although not what we had last year except for the plum crop, which is good this year and there were none last year. The largest acreage of corn and potatoes here and prospects for a bumper crop that there has been in years.

Sanilac Co., Aug. 23.—Fall work is progressing rapidly, except oat drawing, the heavy rains hindered it greatly. Beans have suffered badly by the heavy rains of August 8-9. Fifty per cent loss will be conservative figures. Corn has made a big growth and with a few more hot days will be on the way to maturity. Each season finds more silos erected. Butter-fat is now at 26c and eggs are 18c per dozen.

Oakland Co.—Timely showers during August have been a great boon to Oakland county farmers, there having been sufficient moisture to push the corn crop rapidly, which, with the warm weather has made up for lost time earlier in the season and there is now a normal prospect for a good crop which should mature at the usual season. Late potatoes, while not a perfect stand, are growing finely and new seedlings which survived the early drouth are doing well. Some farmers are sowing a considerable acreage of alfalfa, although this crop has not become general on the farms of the county as yet. Plenty of moisture to prepare for fall seeding, although from present indications no large acreage of wheat will be sown.

Ottawa Co.—The exceedingly dry season in this section of the state has been relieved by light showers, but more rain is needed to mature growing crops and make conditions ideal for wheat seeding. Pasture is not so abundant but is better quality than last year and prospects may be considered fair for average crop yields.

Lapeer Co., Aug. 22.—Threshing seems to have been the job among the farmers for the past week. Average yields are about as follows: Wheat, about 16 bu; oats, 40 bu; rye, about 15 bu. per acre. Not much preparation noticed as yet in plowing and preparing for the wheat seeding. Corn fields begin to show quite good sized ears—much behind as compared with former years. Some fields of potatoes promise fair, while others show poor prospects. Beans and potatoes in many fields are adorned with a heavy growth of weeds, the farmers were not quite busy enough or they would have been kept clean. We notice an occasional "jag" of potatoes going to market lately. Some parties are baling hay already. Farmers wonder why rye brings such a small price. Oats and barley seem to bring best prices lately. There seems to be promise of some June clover and this season spring calves are being bought up at low prices. Good prices for hogs.

Missouri.
Wright Co.—Hot and dry weather has injured the corn crop and seared the pastures brown. Wheat is the best crop of the season, averaging around 15 bushels per acre. All other crops have been injured by the unusual drouth.

Clinton Co.—Live stock in this section has been much reduced by the rush of cattle to market on account of short pasture caused by exceedingly dry weather. The corn crop has been very badly injured and potatoes are nearly a failure. The wheat crop is yielding fairly well and is of good quality.

Howard Co.—Dry weather is spoiling the finest prospect for corn in years. The supply of live stock is below normal, farmers being obliged to sell on account of short pasture. Preparations for fall grain are at a stand still owing to exceedingly dry condition of the ground.

Iowa.
Boon Co.—August rains have improved the condition of the crops which were injured by dry weather early in the season. Potatoes are a short crop and selling high. Oats are yielding well but are light in weight.

Mitchell Co.—Recent rains insure the best corn crop in years owing to an unusually good stand in most fields. Wheat, oats and barley are yielding well. Pastures are getting short but live stock is still in good condition.

Fayette Co.—Corn is injured badly in some sections by drouth, but pasture shows the effect of dry weather more than anything else by being short. Small grain are yielding an average crop.

New York.
Wyoming Co.—The fruit crop is light with the exception of pears. The dairy industry is strong in this county, being carried on on nearly every farm. It is also getting to be one of the largest bean growing sections in the state. Wheat a good yield and other small grains a fair crop. Other crops coming well and with timely showers will prove a bounteous harvest.

Columbia Co.—The past month has witnessed a further decline in crops. August has been practically without rain and the precipitation since April is six inches below normal. Corn will be short and late potatoes not half a crop. Pastures are badly burned and cows have greatly declined in milk. Butter, 35c; eggs, 36c; corn, 55c; oats, 65c; potatoes, \$1.30 per bushel.

Ohio.
Wayne Co., Aug. 18.—The weather has been pretty dry for several weeks past, threatening rain but all showers seem to pass us by. Harvest is nearly all completed, nearly all the oats being drawn. Some farmers are nearly done plowing for wheat; others have not started. Some wheat threshing being done, turning out fair. New wheat market about 80c; corn 70c; butter, 26c; eggs, 20c.

Indiana.
LaGrange Co., Aug. 23.—The late rain in this section greatly helped all of the

growing crops. The dry weather injured the corn to some extent but it is not hurt as badly as in some sections. Most of the corn will be helped by the late rain of Aug. 22. Most of the grain threshing is completed. Wheat averaged all the way from 10 to 45 bushels per acre. Oats were a very poor crop. Some of the oldest farmers claim that the oat crop in this section was the poorest yield that they have ever seen. Many fields of good fertility only yielded six bushels per acre. Late potatoes will be a better crop than was expected. Peppermint is yielding a great amount of oil per charge but not very much per acre since the dry weather checked the growth. Young alfalfa sown the first of August is doing fine and will make a crop next year if it doesn't winter-kill. Hog cholera is taking a great many hogs all over the country. Wheat is selling at 82c; cattle, \$6@8; potatoes \$1.50 per bu; eggs, 19c; butter 25c.

Allen Co.—Rain was general throughout this vicinity this week and was of benefit to most of the growing crops. Oats, however, were damaged to some extent by the heavy downpour. Although the onion crop is only 40 per cent of the normal yield those farmers that were fortunate enough in planting last spring will make money on the crop. The heavy rains of a few weeks ago affected the onion crop considerably. Hail, also, caused slight damage. Some growers, however, are getting a normal yield. Difficulty in securing help in pulling is predicted. The price of onions will, no doubt, be high. Some dealers look for the price to be 50c out on the field when they have been screened but once. Wheat is doing well. The yield is from 25 to 40 bushels per acre. Corn is a promising crop, although this, like oats, has been damaged in some places by hail. Late potatoes are doing fine, but the crop is short on account of not getting a good stand.

Wisconsin.

Polk Co., Aug. 18.—This county has been harmed a great deal from want of rain in the fore part of summer, which came very near ruining the crop. Barley in most instances is a little over half a full crop; oats fairly good. Late oats eaten up by rust. Wheat is of very poor quality; corn is the best it has been for a number of years. All kinds of fruit and berries of all kinds are very scarce. There is a promising crop of potatoes if weather conditions stay favorable. Harvesting is about all done and stacking has begun. Shock threshing will be under way in a few days if it does not rain. Hog prices are high, selling at about 8c per pound. Beef, 5@6c; veal from 7@9½c.

Illinois.

Macon Co.—The season now drawing to a close has proven most perplexing. Farmers in this section carry considerable stock but lack of pastureage has made it hard for farmers to hold on to their young animals. Interest in beef cattle seems on the decline due to prospective high cost of feed and the feeling that contemplated tariff changes will lower live stock values to some extent. Very few feeders or stock growers have utilized the silo in the past, but doubt as to the profit in pasturing high-priced land is causing some to consider the advisability of erecting silos. The corn crop is a very fair one, considering the season, but the proportion of big marketable corn will be comparatively small. On the other hand the crop will make an abundance of feed, and recent rains promise to provide some late pasture. Many clover fields look well but examination shows that dry weather prevented filling and that the yield of seed would not cover cost of cutting and building. A little more wheat will be sown than usual since this season's yield was good, running from 25 to 35 bushels per acre. Oats were not more than half a crop and the grain very inferior in quality. Many farmers marketed their surplus wheat and oats at threshing time. Farmers having old corn are shelling and marketing at 70@72c per bu.

Christian Co.—While some sections have suffered seriously from drouth, pastures and growing crops, on the whole, seem nearly up to the average condition at this season. Many fields of corn will average 50 bu. per acre or better, and the acreage is large. Wheat, while not extensively grown, was a good crop, averaging 25 to 30 bu. Oats about half a crop. A few farmers giving some attention to alfalfa with rather indifferent results. Trees bearing summer and fall apples are overloaded; much of the fruit going to waste or suffering from codling moth. Peaches bearing well and grapes promise a good crop, though shortened somewhat by early dry weather.

Shelby Co.—This county, especially the southern and eastern portions, has this season experienced one of the severest drouths in its history. In some sections practically no rain fell from late April to mid-August. Modern methods of culture, however, brought crops through in better condition than many expected. Although corn will be less than half a crop a good proportion of farmers practice dairying and many are prepared to preserve the crop in the form of silage. Cowpeas, millet and other dry-weather crops were put in to supplement corn, and since the abundant rains which came about the middle of this month these crops give promise of supplying enormous quantities of feed. Dairy cows are in fair request at \$50@80 per head but there is little interest in beef cattle. Wheat was good but oats were a total failure in many sections. Old meadows yielded little or no hay and new seeding did not survive the drouth. Fruits and garden vegetables generally very poor. Some inquiry for horses and mules with very fair prices offered.

REG. Percherons, Shorthorns, Shropshires and Duroc-Jerseys for sale cheap, as 2 of my barns burned Aug. 9th. M. A. BRAY, Okemos, Michigan

HOG FEED CHEAP. ASK BARTLETT CO., JACKSON, MICH.

FOR SALE—A fine, large pair of old. **THE MAPLES, Munger, Michigan.**

FOR SALE OR TRADE (What you got.) Registered Percheron Stallion, black, 17½ hands high, weighs 1800 lbs. This horse is sound, good style and a colt getter. No use for him. He will make you good money. Come quick. **J. C. BUTLER, Portland, Michigan. Bell Phone.**

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CATTLE.

Aberdeen-Angus.

Herd, consisting of Trojan Ericas, Blackbirds and Prides, only, is headed by Egerton W. the GRAND CHAMPION bull at the State, West Michigan and Bay City Fairs of 1912 and the sire of winners at these Fairs and at THE INTERNATIONAL, Chicago, of 1912. **WOODCOTE STOCK FARM, Ionia, Mich.**

FOR SALE—Pure Bred Aberdeen Angus Cattle. **MARSHALL KELLY, LONGWOOD FARM, R. R. 10, Charlotte, Michigan.**

Guernsey Bull Calf—Rich in A. R. breeding. Fit to head any herd. **A. Gee Dandy, G. A. WIGENT, Watervliet, Mich.**

GUERNSEYS—Reg. Tuberculin Tested. **Windermere Farm, Watervliet, Mich. J. K. BLATCHFORD, Auditor in Toyer, Chicago, Ill.**

HEREFORD BULLS FOR SALE China Hogs. **ALLEN BROS., Paw Paw, Michigan.**

A FEW CHOICE Holstein Friesian Bull Calves for Sale. A. R. O. Stock. **GREGORY & BORDEN, Howell, Michigan.**

Buy A World Record Holstein Bull NEXT TIME. We have 2 with 75% same blood of 3 world record cows. Great bargains at \$250 each. **LONG BEACH FARMS, Augusta, (Kalamazoo Co.) Mich.**

"Top-Notch" Holsteins. Choice bull calves from 6 to 10 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. **McPHERSON FARMS CO., Howell, Michigan.**

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

Bigelow's Holstein Farms Breedsville, Mich. Have for sale several fine young bulls out of cows with high official butter and milk records.

Send for circular.

HOLSTEIN—Bull Calf sired by best son of Pontiac Butter Boy. Dam is sister by same sire to 8 cows who have official butter records averaging over 27 lbs. butter in 7 days. Price \$50 for quick order. **C. D. WOODBURY, Lansing, Mich.**

Bull Ready For Service.

A grand son of Pietertje Hengervelds Count DeKol, and out of Bertha Josephine Nudine. This is an almost faultless individual, Guaranteed right in every particular, and "dirt" cheap to a quick buyer. Also 7 good cows, one fresh—the others yet to freshen. The above would make a fine herd for some one. \$1950 will buy the bunch. **L. E. CONNELL, Fayette, Ohio.**

REGISTERED HOLSTEIN Cow 4 years old, fresh. Good breeding, very nice individual in every way, evenly marked. \$250. Write for delivered price. **ROBERT W. FAY, Mason, Mich.**

Holstein Friesian Cattle. A couple of young bulls for sale. We boast of quality not quantity. **W. B. Jones, Oak Grove, Mich.**

HOLSTEIN BULLS ready for service. Bred, built, and priced right. Write or better, come and see. **E. B. CORNELL, Howell, Michigan.**

FOR SALE—On Cornwell Farm, Clare, Mich. Holstein new milk cows. Also 400 yearling steers. Also good Dairyman wanted. Enquire of **ERNEST PIETZ.**

For Sale—reasonable prices, choice registered HOLSTEIN SIRE, ready for service. **HATCH HERD, Ypsilanti, Mich.**

For Sale—4 Reg. Holstein cows bred to Sir Korndyke Pietertje Hengerveld, No. 5529. Also 2 bull calves and 3 heifers. **E. A. BLACK, R. 6, Lakewood, 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.**

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.**

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

JERSEYS—Bulls calves bred for production. Also cows and heifers. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

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.**

Notton Farm, Grass Lake, Mich. A few young Jersey Bull Calves at \$25 to \$45 each.

RED POLLED COWS and HEIFERS—For sale, of good blood, good milkers. Also Shropshire, John Berner & Son, Grand Ledge, Mich. Route 4.

9 Shorthorns—Bulls from 8 to 12 months old. Best of breeding. Write for pedigrees. **W. W. KNAPP, Howell, Mich.**

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

Dairy Shorthorns—Large Cattle—Heavy Milkers. No stock for sale at present. **W. W. KNAPP, R. No. 4, Watervliet, Mich.**

113 Choice Shorthorn Bulls For Sale. 6 to 8 mos. old. Bates bred. Registered. Call or write to **J. E. TANSWELL, Maple Ridge Farm, Mason, Mich.**

FOR SALE—A registered yearling Short-horn Bull, color red, good enough to head most any herd. Write or come and see. **WM. D. McMULLEN, R. R. 9, Adrian, Mich.**

SHEEP.

IT PAYS TO BUY PURE BRED 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. I. Grand Ledge, Michigan.

SHEEP FOR SALE IN CARLOAD LOTS. **PARKHURST BROS., Reed City, Michigan.**

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

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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.

The Ingleside Farm is offering more and better Shropshire Sheep than ever before. All stock recorded. Write us what you want. **HERBERT E. POWELL, Ionia, Mich. Citizen's Phone.**

1st and 2nd Prize two-year-old Shropshire Rams 1912. Also good yearling Rams and Ewes for sale. **E. E. LELAND & SON, Ann Arbor, Michigan.**

REGISTERED SHROPSHIRE—Rams and ewes for sale at reasonable prices. Breeding of the best. **Harry Potter, Davison, Mich.**

Shropshire Rams—Good ones cheap. Write before Aug. 15th, for special proposition. **KOPE KON FARM, Kinderhook, Michigan.**

SHROPSHIRE rams 1 and 2 years old, and some extra good lamb rams, wool and mutton type. **GEO. P. ANDREWS, Danville, Ingham Co., Mich.**

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.**

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

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

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.—MARCH and APRIL PIGS, the long growthy kind, with plenty of bone. No cholera ever on or near farm. Satisfaction guaranteed. **A. NEWMAN, R. 1, Marlette, 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.—Large, heavy boned boars and gilts at a bargain for next 30 days. **GLENWOOD STOCK FARM, Zeeland, Michigan**

O. I. C's—Bred sows, March pigs pairs and trios. **Buff Rock Farm, R. No. 15, FRED NICKEL, R. 1, Monroe, Michigan.**

O. I. C's—All ages, growthy and large. Males ready. 100 to select from. Attractive prices on young stock. **H. H. JUMP, Munith, 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." **C. S. BENJAMIN, R. No. 10 Portland, Mich.**

O. I. C. SWINE—Bred gilts all sold. have a No. of Spring pigs on hand. Will book orders for Sept. pigs, get my price on pairs and trios not akin. **A. J. GORDON, R. No. 2, Dorris, Mich.**

Duroc-Jerseys—Spring boars from prize-winning strains. Sows all ages. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

Durocs—25 High Class Spring Boars. Excellent quality and Breeding. Write or come and see. **J. C. BARNEY, Coldwater, Mich.**

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

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

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

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

LARGE STYLED POLAND CHINA SPRING PIGS. Sows bred for fall farrow, also Shorthorn Bull calves at close prices. **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.**

P. C. MARCH and APRIL PIGS—The long bodied kind. Guaranteed to please. **R. W. MILLS, Saline, 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 delivery 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. Best breed for Michigan. Also Pones. **J. DUNLAP, Box M, Williamsport, Ohio**

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

IMPROVED LARGE YORKSHIRES Sows and gilts bred for September and October farrow. Service boars. Pigs all ages. Breeding and prices upon application. **W. C. COOK, R. 42, Ada, Michigan.**

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**

Markets.

GRAINS AND SEEDS.

August 27, 1913.

Wheat.—Notwithstanding the fact that prices have ruled higher throughout the past week than for the previous period, fluctuations in the market have occurred daily and to a very large degree were credited to weather conditions. Last Friday a fractional advance was made in cash and September because of a poor outlook for the spring wheat, and also for the corn crop, which cereal is becoming a strong factor in making wheat prices. Monday conditions favored the bears and a fractional loss was sustained, which loss was not only regained Tuesday but an additional advance made that put values at the highest point for the week. The bullish side of the trade has been aided by farmers holding back their grain, which cuts primary receipts to about one-half what they were at this time a year ago. The bears are hoping that when the spring wheat begins moving farmers will be more liberal in their deliveries and thus assist in keeping values down. All along Europe has continued a good buyer. Millers are purchasing heavily as there is a fair demand for flour and wheat stocks are so low that the millers are anxious about securing ample supplies. One year ago the price for No. 2 red wheat was \$1.10 per bu. Local quotations for the past week are as follows:

	No. 2	No. 1	Sept.	Dec.
Thursday	91½	90½	92	96
Friday	91½	90½	92½	96
Saturday	91½	90½	92½	96
Monday	91½	90½	92	95½
Tuesday	91½	90½	92½	96½
Wednesday	91½	90½	91½	95½

Chicago, (Aug. 26).—No. 2 red wheat, 90¢@91½¢; Sept., 87¢; Dec., 90½¢ c per bu.

Corn.—The average value shows a substantial advance over quotations for a week ago, although there has been a fractional reduction since last Friday. During the past week rain has fallen over a considerable portion of the corn belt, which temporarily relieved the corn plant. However, the trade on Tuesday believed that no permanent good had resulted and that a few days of dry weather would undo all the benefit thus far given by recent rains. In all, the trade is occupying an extremely bullish position which promises to make corn a profitable crop for those having a good yield. One year ago No. 3 corn was selling on the local market at 81¢ per bu. Quotations for the past week are:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	77	78
Friday	77	78
Saturday	76½	77½
Monday	76	77
Tuesday	76½	77½
Wednesday	76½	77½

Chicago, (Aug. 26).—No. 2 corn, 76¢@76½¢; No. 3 corn, 75½¢@76¢; Sept., 73½¢; Dec., 69¢ per bu.

Oats.—This trade is weaker than last week. Offerings have come more freely and the demand is fair. According to figures published by the International Institute of Rome the world's crop of oats is below that of last year by nearly 300,000,000 bu., this estimate not including France and Canada. From this it would appear that with a strong corn market the oat deal ought to be good for those having the grain to sell. One year ago the price for standard oats was 37¢ per bu. Last week's quotations are as follows:

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

Chicago, (Aug. 26).—Standard oats, 42½¢@43¢; No. 2 white, 42½¢@43¢; Sept., 41½¢; Dec., 43¢ per bu.

Beans.—Nominal quotations have been advanced 5¢ on the local market the past week. Recent rains in Michigan have damaged the prospect in some sections. Immediate and primary shipments are nominally quoted at \$1.80 and October at \$1.85 per bu.

Chicago, (Aug. 26).—No change has occurred in local bean values. Pea beans, hand-picked, choice, are still at \$1.90@1.95 and red kidneys at \$1.65@1.80 per bushel.

Rye.—Although practically no trading has been consummated for some time, the position of the rye deal has improved during the past week. Quotations show an advance on the local market of about 4¢ during the week, the present price being 68¢ per bu for cash No. 2. At Chicago a similar advance is noted and No. 2 now ranges from 68½¢@70½¢ per bu. on that market. The International Institute of Rome shows the world's rye crop to be 128,000,000 bu. short of the 1912 yield.

Barley.—Better values rule in this cereal. On the local market values have advanced this past week from 5¢@10¢, good samples now selling at \$1.20@1.30 per cwt. At Chicago an advance is also noted, the quotations being 55¢@77½¢ per bu. At Milwaukee prices have gone up to 66¢@75¢ per bu.

Clover Seed.—There seems to be an improvement in the outlook for clover seed, prices showing a large decline for the week. October and December seed are now quoted at \$7.60, which is a decline of 60¢ from last week. October

alsike is now \$11 per bu., or 25¢ less than a week ago. At Toledo similar depreciation of values is reported, prime cash being \$7.50; Oct., \$7.45; Dec., \$7.47½; Mar., \$7.62½ per bu. Alsike October is down to \$11.25 and December and March to \$11 per bu.

Timothy Seed.—This seed has weakened after last week's substantial advance and is now quoted at \$2.60 per bu. for prime spot. At Toledo the same grade is quoted at \$2.72½ 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, \$5.50; second, \$5.20; straight, \$5; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$23; coarse middlings, \$24; fine middlings, \$26; cracked corn, \$31; coarse corn meal, \$29; corn and oat chop, \$25.50 per ton.

Hay.—The market rules lower. Carlots on the track at Detroit are: No. 1 timothy, \$15@15.50; standard, \$14@14.50; No. 2, \$12.50@13; light mixed, \$14.50@15; No. 1 mixed, \$12@12.50.

New York.—New hay is offered in fair quantities and selling within range of \$16@21 per ton. Old hay firm and higher for best grades. Large baled, No. 1 timothy, \$21@22; standard, \$21; light clover mixed, \$19@20; heavy mixed, \$16@17 per ton.

Straw.—Detroit.—Steady. Rye, \$8@9; wheat and oat straw, \$7@7.50 per ton. New York.—Steady. New, rye straw, \$17 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—With all outside markets showing an advance, local interest has increased, resulting in a more active market. Prices, however, remain practically the same as a week ago. Extra creamery, 27¢ per lb; firsts, 25½¢; dairy, 21¢; packing stock, 19¢.

Eggs.—Market steady at 27½¢, a half cent advance over last week's price. Chicago.—Market firm with top grade creameries ½¢ higher. Quotations: Extra creamery, 27½¢; extra firsts, 26¢; firsts, 25¢; seconds, 23½¢@24¢; ladies, 22¢; packing stock, 21¢@21½¢.

New York.—Conditions in this market have not changed during the past week and values are again higher, some grades of both creamery and dairy stock gaining a full cent. Creamery extras, 29½¢@29½¢; firsts, 27¢@28½¢; seconds, 25¢@26½¢; state dairy, finest, 27½¢; good to prime, 25½¢@27¢; common to fair, 23¢@25¢; packing, 19½¢@22½¢ as to quality.

Eggs.—Supplies continue light at all points and values are steadily mounting to a higher level. The local quotation on current receipts is ½¢ higher than a week ago. Current offerings, candled, quoted at 21½¢ per dozen.

Chicago.—A general advance of 1¢@2¢ since last week is noted. Market firm. Current receipts, 14¢@21¢; ordinary firsts, 21½¢@22½¢; firsts, 23¢@23½¢; extra, 28¢; checks, 12¢@14¢; dirties, 14¢@16¢ per doz. New York.—Last week's big jump in values is increasing receipts. The market is steady at last week's values. Fresh gathered extras, 28¢@30¢; extra firsts, 26¢@27¢; firsts, 24¢@25¢; western gathered whites, 22¢@28¢ per dozen.

Poultry.—The local market is easier this week, due to a rather limited demand. Quotations are lower on all kinds except turkeys. Quotations are: Live—Broilers, 18¢; hens, 14¢@15¢; No. 2 hens, 11¢@12¢; old roosters, 10¢@11¢; turkeys, 17¢@18¢; geese, 11¢@12¢; ducks, 13¢ per lb.

Chicago.—Turkeys and geese higher; other kinds a shade lower. Market in fairly good condition. Quotations on live are: Turkeys, good weight, 20¢; others, 15¢; fowls, good, 14¢@14½¢; spring chickens, 17¢@18¢; ducks, 12¢@13¢; geese, 10¢@13¢; guinea hens, \$4 per dozen.

New York.—Dressed poultry dull with prices slightly lower. Fresh dressed western chickens, 17¢@22½¢; fowls, 15¢@19½¢; turkeys, 18¢@20¢.

Cheese.—Easy. Wholesale lots, Michigan flats, 13½¢@14¢; New York flats, 15½¢@16¢; brick cream, 15½¢@16¢; limburger, 15½¢@16¢.

FRUITS AND VEGETABLES.

Apples.—Market about the same as a week ago with supplies running below normal. Now being quoted at 50¢@51¢ per bu., and \$2.50@3 per bbl.

Huckleberries.—In a little better supply and lower. Quoted at \$4.25@4.50 per bushel.

Peaches.—Supply increasing and market is becoming more active. Prices range from \$1@2 per bu.

Potatoes.—Shipments are of inferior quality in most instances. Values rule steady with last week. Dealers believe the market will not drop considerable because of the light crop of the country. Imported tubers are quoted at \$2.50@2.60 per 2½ bu. sack. Per bushel, 85¢@91¢.

Tomatoes.—Increased offerings has put values on a lower basis. Home-grown 90¢@91¢ per bu.

Cabbage.—Steady. Good quality quoted at \$2.25@2.50 per bbl.

GRAND RAPIDS.

Tuesday morning's market was the biggest of the season, with 700 people in attendance and 475 loads of fruit and farm produce. Fruit prices ranged as follows: Peaches, \$1.50@2; pears, \$50¢@1.25; plums, \$1@1.50; apples, 35¢@65¢; grapes, \$2@2.50 per dozen 4-lb. baskets. About 1,500 bushels of potatoes were sold at prices ranging from 25¢@70¢. The tubers are of better size now. Tomatoes were in good supply and sold at 50¢ per bu. Much complaint is heard of dry rot

which will greatly reduce the tomato crop in this section. Muskmelons are of smaller size than usual and sell at \$1@1.50 per dozen. Hay is worth \$17@19. Jobbers are paying the country trade 20¢ for eggs and 23¢ for dairy butter. Wheat is worth 85¢; oats, 41¢; corn, 77¢; beans, \$1.50. In live poultry broilers are worth 13¢@14¢; fowls, 11¢@12¢.

DETROIT RETAIL PRICES.

Eastern Market.—On Tuesday morning the supply of produce was not sufficient to satisfy demands and growers did not have to cut prices. The variety of vegetables and fruits was narrow for this season. Cucumbers were in fair supply with prices for the larger ones ranging from 90¢@1.50; picklers, 20¢@25¢ per hundred; celery, 25¢@30¢ per large bunch; corn, 50¢@65¢ per six-dozen sack; tomatoes 85¢@1.20 per bu; onions, \$1.15; potatoes, 85¢@95¢; cabbage, 90¢@1; pears, \$1; radishes, 25¢ per ten bunches. Loose hay \$13@16 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

August 25, 1913.
(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York.)

Receipts of stock here today as follows: Cattle, 130 cars; hogs, 55 double decks; sheep and lambs, 35 double decks; calves, 800 head.

With 130 cars of cattle on our market here today, trade ruled active with prices about 10¢ higher than last week. At the close everything was cleaned up and market closed steady.

We quote: Best 1350 to 1500-lb. steers, \$8.75@9.10; best 1200 to 1300-lb. do., \$8.50@8.75; best 1100 to 1200-lb. do., \$8.25@8.60; coarse and plain heavy steers, \$7.75@8; choice handy steers, \$8@8.40; fair to good 1000 to 1100-lb. steers, \$7.75@8; grassy 800 to 1000-lb. steers, \$7.25@7.75; best cows, \$6.50@7; butcher cows, \$5.50@6; cutters, \$4.50@5; trimmers, \$3.75@4; best heifers, \$7.75@8; medium butcher heifers, \$6.50@7; stock heifers, \$5.35@5.50; best feeding steers, \$7.25@7.50; fair to good do., \$6.75@7; common light stockers, \$6@6.25; best butcher bulls, \$6@7; best bologna bulls, \$5.25@5.75; stock bulls \$5@5.50; best milkers and springers, \$7@8; common to good do., \$5@6.

Receipts of hogs were light again today, about 55 double decks on sale. Liberal receipts at all western markets had but little effect on our trade, and the general market ruled full steady with the close of Saturday. Heavy quotable from \$9.25@9.50; mixed and mediums, \$9.50@9.60; yorkers, \$9.65@9.75; pigs, \$9.25@9.50; roughs, \$8@8.25; stags, \$7@8. Our market closed strong and everything sold.

The sheep and lamb market was active today, with prices about 15¢ higher than the close of last week; most of the choice lambs selling from \$8@8.15; few fancy at \$8.25; yearlings, \$5.50@6.50. Look for steady to strong prices the balance of the week. We quote: Choice lambs, \$8@8.25; cull to fair do., \$6@7.75; yearlings \$5.50@6.50; bucks, \$3@3.50; wethers, \$5.25@5.50; handy ewes, \$4.75@5; heavy ewes, \$4@4.25; cull sheep, \$2.50@3.50; veals, choice to extra, \$12.50@13; fair to good, \$10@12; heavy calves, \$5.50@8.

Chicago.

August 25, 1913.
Cattle. Hogs. Sheep.
Receipts today 23,000 50,000 33,000
Same day last year..18,579 26,844 34,745
Receipts last week..47,378 105,519 108,106
Same week last year..46,141 98,661 111,428

Too many cattle, 23,000 locally, for the opening day market this week, and \$5.50 at six western points, Kansas City alone getting 38,000, put the trade in a weak condition. Choice to prime heavy and best yearling steers were exceptions. These sold steady while for all other classes it was a 10¢ lower market. This decline offset for the bulk of the crop above \$8, the advance scored in late days of the previous week. Prime 1,428-lb. steers sold up to \$9.10 and a fair crop of fat heavy and yearling bullocks made \$8.75@9. Bulk of medium to good 1,100 to 1,350-lb. steers sold at \$8@8.50 and common light grassers down to \$7.25. A range run of 3,000 head sold 10¢ lower. Quality was common, few steers going above \$7.10 and range she stock at \$5.25@6.75. Native cows and heifers were unchanged from last week, also bulls and calves, but feeder supplies were larger than recently and buyers broke prices 10¢@15¢.

Hog supply of 50,000 was far above expectancy and caused 10¢@20¢ decline for all excepting light weights. Latter classes were steady to strong and sold up to \$9.30, a point 5¢ higher than the previous week's top. Wide-priced spread continued in force, grassy packing sows having to sell down to \$7.25. Average weight of hogs last week was 230 lbs. against 235 lbs. the previous week and 241 lbs. a year ago.

On a supply of 33,000 sheep and lambs, former grades sold strong to 10¢ higher while lamb market showed 15¢@25¢ decline from the close of the week previous. Bulk of the run comprised range lambs in contrast to the scant quota of them marketed the week before. Range and native lambs topped at \$8.15 and best wethers made \$4.75 with ewes at \$4.50.

Numerically supplies of cattle still continue heavy at all markets, result of dry weather forcing in many pasture steer, but from a beef standpoint the crop is not above trade needs. Feeders constitute a big portion of the Kansas and Oklahoma cattle being marketed at Kansas City and there is a broad demand for them not only from the east but as well from western sections where fall feed is sure to be plentiful. All desirable fat beef steers found a good market last week, prices showing 10¢@15¢ gain. Choice

to prime yearling and heavy steers especially were in keen request. Medium and plain natives ran against seasonable range cattle competition and showed a barely steady basis. Range run totaled 7,700 head and while quality still continued to show up plainer than this time a year ago, offerings were of a little better class than marketed earlier in the season. Prime heavy native steers topped at \$9.15, comparing with \$10.60 a year ago. Yearlings sold up to \$9 and a generous quota of choice heavies made \$8.65@9. A spread of \$8.15@8.50 took medium to good light and middle weight steers and common to fair light grassers and warmed up cattle made \$7.60@8, these being relatively higher than a lot of strictly good sorts, when dressing percentages are taken into consideration. Tailing natives sold down to \$7.25. Range steers topped at \$8, bulk for beef trade making \$7@7.35, and range feeders \$6.25@6.75.

Competition from rangers effected a little lower selling of native she stock barring prime grades. Latter were in good call, and fancy yearling heifers brought \$8.60@8.85; fair to choice heifers, \$6.60@7.85, good to prime cows, \$6.25@7.50 and grass cows \$4.85@6.15. Canners sold at \$3.25@4 and cutters up to \$4.75. Bull trade continued low, bolognas making \$5.25@5.75 and fair to choice butcher bulls \$6.10@7.40. Calves rebounded to prices close up to highest of the season, topping at \$11.50 and plain to good vealers made \$10@11.25. Heavies sold at \$5@7.50.

High prices failed to scare out feeder cattle buyers. A big number of Michigan, Indiana, Ohio and Pennsylvania farmers, whose pastures are good and who will have a heavy crop of corn bought freely of 600 to 900-lb. steers. Choice grades, both yearling and fleshy feeders, sold at \$7.65@7.90, and bulk of medium to good 600 to 850-lb. cattle at \$7@7.50, only common light stockers going down to \$6.50. Stock heifers of good kind cost \$6.15@6.40 and a fair to good class of stock cows \$5@5.75. Milkens and springers sold freely at prices \$5@10 higher than noted late in July. Not enough of the best ones came to fill demands. Prime reached \$9@100 per head, medium to good \$6@75 and common sold down to \$50.

Hogs have gone to lowest average levels since last spring and widest spread in prices for some years past has been shown. Various quality grades have sold from \$7.25@9.25, and bulk of 280 to 325-lb. hogs below \$8. Light weights and choice butchers command a big premium. Following severe breaks to bed rock levels the country has shut off generous receipts and some repairing of declines was witnessed in the past week. Rise in corn prices was a factor forcing big porcine supplies into the markets and again there was shortage of stock water in many of the drought driven sections which caused feeders to let the stuff come to market. The country is taking a little more bullish view of hogs now, however, since the price break appears to have about run its course. Any strengthening of demand from packers should bring about a narrower spread in values. Heavies are intrinsically too low. Packers are evidently cutting them up at big profit. A heavy crop of grassy sows still comes forward and there is evidence of swine sickness in many districts since pigs are frequent among the arrivals, many of them being of suspicious health. Demand for hog cholera serum from state laboratories is increasing fast, further indication that the crop faces a serious condition of ill health and losses can only assert a bullish influence on prices for those which survive.

An upward trend of affairs has marked the ovine trade, especially for lambs. Advances of 50¢@75¢ were scored last week while sheep went 15¢@25¢ higher. It is the season when a big movement of range fattened stuff is under way and most westerns are ewes and wethers. Lamb scarcity is acute at present since the crop of southern lambs has quit running freely. Idaho, Wyoming and Montana are furnishing bulk of supplies, and the good condition of stock permits feeders getting only a short quota of purchases. Lambs advanced to a top of \$8.25 and bulk of rangers went at \$7.60@8 while natives sold at \$6.50@8.25 with inferior down to \$5.25. Feeding lambs brought \$6.50@7. Range wethers topped at \$4.85 and culls sold down to \$3.25. Range and native yearlings made \$4.75@6, range ewes \$3.25@4.25. Native ewes topped at \$4.40 with culls at \$2.50.

LIVE STOCK NEWS.

What the cattle raisers of Oklahoma and Kansas lost by the drought, feeders in eastern states have gained. In recent weeks forced liquidation of thousands of thin steers from pastures in drought-stricken states has enabled feeders in sections where both corn and grass still held in good shape, to load up pastures with big purchases at cheaper prices. Recently when the Kansas City market had 28,700 cattle in one day and nearly 18,000 of these were feeder kinds, prices broke 25¢@50¢ but within two days so keen was the demand from feeder buyers in Iowa, Illinois, Indiana, Michigan and Ohio, values were quickly readjusted to top levels again. The eastern country is shy on thin cattle and fairly long on cheap feed. A certainty of fat beef shortage next spring and summer is inducing farmers to take long chances on feeding high-priced corn to high costing thin steers. Many of them look for a return of the \$10@11 fat steer market which was had a year ago.

Pennsylvania.

Adams Co.—Hay was a fairly good crop but quality rather poor. Wheat yielding well. Corn prospects normal.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
August 21, 1913.

Cattle.

Receipts, 1305. All grades dull at Wednesday's and last week's prices.

We quote: Steers and heifers, 1000 to 1200, \$7.75; do., 800 to 1000, \$6.50@7.25; grass steers and heifers that are fat, 800 to 1000, \$6.50@7.25; do 500 to 700, \$6.50; choice fat cows, \$5.75@6; good do., \$5.25@5.50; common do., \$4.50@5; canners, \$3@4; choice heavy bulls, \$6.25@6.50; fair to good bolognas, bulls, \$5.75@6; stock bulls, \$4.50@5; choice feeding steers, 800 to 1000, \$6.75@7; fair do., 800 to 1000, \$6.50@6.75; choice stockers, 500 to 700, \$6.25@6.50; fair do., 500 to 700, \$5.75@6; stock heifers, \$5.25@5.75; milkers, large young, medium age, \$6.00@8.50; common do. \$4.00@5.50.

Bishop, B. & H. sold Kendall 6 feeders av 705 at \$6.75, 5 stockers av 690 at \$6.50; to Breitenbeck 7 butchers av 614 at \$5.80; to Johnson 10 feeders av 795 at \$6.90; to Jesse 5 do av 816 at \$6.60; to Bragg 11 canners av 866 at \$4; to Newton B. Co. 5 canners av 934 at \$7.40, 3 cows av 866 at \$5.50; to Sullivan P. Co. 1 steer weighing 1270 at \$8, 9 cows av 993 at \$5, 4 heifers av 625 at \$6, 5 butchers av 570 at \$5, 1 heifer weighing 760 at \$5.75, 3 cows av 1073 at \$5.75; to Bresnahan 16 heifers av 540 at \$5.65; to Hammond, S. & Co. 1 bull weighing 1290 at \$6, 2 cows av 1010 at \$4, 1 do weighing 910 at \$4.50, 3 do av 933 at \$4, 1 do weighing 900 at \$4.50, 1 bull weighing 700 at \$5.60; to Bracy 5 canners av 870 at \$4.25; to Newton B. Co. 1 cow weighing 850 at \$4.50, 2 do av 1140 at \$6, 10 butchers av 818 at \$6.40; to Sullivan P. Co. 12 do av 854 at \$6.35; to Marx 1 steer weighing 1030 at \$7; to Rattkowsky 5 cows av 1040 at \$5.20; to Kendall 4 feeders av 727 at \$6.75; to Bresnahan 12 butchers av 560 at \$5.75; to Kull 1 cow weighing, 1270 at \$6, 10 steers av 841 at \$7; to Bray 3 cows av 977 at \$4.25, 8 do av 834 at \$4; to Newton B. Co. 12 butchers av 986 at \$5.75; to Kull 4 steers av 850 at \$7; to Hammond, S. & Co. 22 do av 1100 at \$8; to Newton B. Co. 24 do av 1000 at \$7.25; to Parker, W. & Co. 27 do av 1004 at \$7.40; to Jesse 10 do av 690 at \$6.

Haley & M. sold LaBoe 19 stockers av 543 at \$5.75, 1 bull weighing 520 at \$5.25, 3 stockers av 453 at \$5.50; to Johnson 9 do av 584 at \$6.50, 5 do av 645 at \$6.60; to Applebaum 5 butchers av 510 at \$5.25, 9 do av 491 at \$5.80, 2 cows av 1080 at \$5.35; to Kull 3 bulls av 747 at \$5.50, 1 cow weighing 960 at \$5; to Lachalt 3 butchers av 740 at \$6.10, 3 do av 677 at \$6.15, 2 cows av 745 at \$5, 2 do av 930 at \$6.10; to Bresnahan 10 heifers av 610 at \$6; to Sullivan P. Co. 2 cows av 955 at \$5.65, 1 do weighing 960 at \$5, 3 heifers av 550 at \$5; to Rattkowsky 2 cows av 1010 at \$5.75; to LaBoe 4 stockers av 480 at \$5.50; to Mich. B. Co. 1 bull weighing 1320 at \$6.75, 3 do av 937 at \$5.75, 3 do av 1107 at \$5.85; to Sullivan P. Co. 3 do av 532 at \$5; to Thompson Bros. 2 do av 1090 at \$6; to Roky 4 stockers av 512 at \$5.25, 4 do av 587 at \$6, 4 do av 540 at \$5.50.

Spicer & R. sold Lowenstein 22 stockers av 490 at \$6, 23 do av 565 at \$6.40; to Kull 3 cows and heifers av 990 at \$7, 5 butchers av 850 at \$6.75; to Bracy 3 cows av 890 at \$4.10, 1 do weighing 1050 at \$5, 2 canners av 750 at \$4; to Sullivan P. Co. 7 cows and bulls av 924 at \$5.75; to Kull 2 steers av 905 at \$5.60; to Riley 2 stockers av 560 at \$5.50; to Goodwin 5 cows av 1000 at \$4.90.

Roe Com. Co. sold LaBoe 8 stockers av 512 at \$5.50, 8 do av 550 at \$6.10, 3 bulls av 557 at \$5.25, 2 heifers av 525 at \$5.50; to Hammond, S. & Co. 3 canners av 833 at \$3.75; to Bray 2 bulls av 725 at \$5.25; to Rattkowsky 2 cows av 1080 at \$5; to Rolner 1 bull weighing 970 at \$5.30; to Newton B. Co. 5 steers av 966 at \$6.75, 1 bull weighing 1270 at \$5.50; to Bray 1 cow weighing 750 at \$3.50, 2 do av 925 at \$4; to Sullivan P. Co. 6 do av 1056 at \$5.60, 3 heifers av 666 at \$6.25, 2 do av 565 at \$5, 1 bull weighing 700 at \$5.50, 2 do av 655 at \$5.50; to Kammann B. Co. 26 butchers av 740 at \$6.50, 2 cows av 975 at \$6, 1 steer weighing 1200 at \$7.25; to Parker, W. & Co. 2 bulls av 1285 at \$6, 2 do av 925 at \$5.80, 1 do weighing 1040 at \$5.80; to Bresnahan 4 heifers av 660 at \$6.10; to Bray 1 cow weighing 800 at \$4, 5 stockers av 676 at \$6.25, 3 cows av 917 at \$4.10; to Sullivan P. Co. 1 bull weighing 1150 at \$6, 1 do weighing 680 at \$5.25; to Hammond, S. & Co. 6 cows av 910 at \$4.

Bigelow sold Mich. B. Co. 12 butchers av 340 at \$7, 6 do av 733 at \$6.

Veal Calves.

Receipts, 476. Market strong at last week's prices. Best, \$11@11.50; others, \$7@10.50.

Haley & M. sold Newton B. Co. 3 av 140 at \$11; to Goose 5 av 155 at \$11.50, 5 av 190 at \$8.50, 12 av 225 at \$6, 6 av 155 at \$11, 3 av 250 at \$6.50; to Mich. B. Co. 7 av 175 at \$11; to Newton B. Co. 5 av 160 at \$11.50; to Goose 5 av 150 at \$10.50, 5 av 160 at \$11.50; to Newton B. Co. 3 av 180 at \$11.50, 2 av 135 at \$10, 14 av 150 at \$11.25, 9 av 140 at \$11.

Spicer & R. sold Parker, W. & Co. 8 av 160 at \$11, 9 av 200 at \$11; to Thompson Bros. 4 av 180 at \$11.25; to Parker, W. & Co. 4 av 170 at \$10.75; to Sullivan P. Co. 5 av 155 at \$11.50, 7 av 175 at \$11.50, 4 av 150 at \$11.

Bishop, B. & H. sold Sullivan P. Co.

5 av 155 at \$11, 3 av 185 at \$11.50, 1 weighing 170 at \$11, 5 av 165 at \$11, 1 weighing 140 at \$9, 6 av 165 at \$11.50, 2 av 150 at \$11, 2 av 160 at \$11; to Parker, W. & Co. 15 av 150 at \$11, 7 av 185 at \$11.25; to Applebaum 7 av 275 at \$6.50, 2 av 150 at \$8.50; to Sullivan P. Co. 2 av 140 at \$9.50, 8 av 155 at \$11.50, 3 av 150 at \$10.50; to McGuire 1 weighing 270 at \$9, 9 av 150 at \$11, 1 weighing 140 at \$10, 3 av 180 at \$10.50, 4 av 130 at \$11; to Hammond, S. & Co. 10 av 160 at \$11.50, 8 av 150 at \$11, 2 av 195 at \$8.50, 2 av 130 at \$7.

Sheep and Lambs.

Receipts, 4858. Market steady at Wednesday's prices; lambs 25c lower than last week. Best lambs, \$6.75@7; fair to good do., \$6.25@6.50; light to common do., \$5@5.50; fair to good sheep, \$4@4.50; culls and common, \$2.50@3.

Spicer & R. sold Parker W. & Co. 20 lambs av 55 at \$6.15, 15 do av 57 at \$6.25, 17 sheep av 80 at \$3.75; to Sullivan P. Co. 24 lambs av 73 at \$6.50; to Thompson Bros. 23 sheep av 95 at \$3.50; to Parker, W. & Co. 10 lambs av 61 at \$6; to Thompson Bros. 5 sheep av 110 at \$4, 15 lambs av 63 at \$6.50; to Sullivan P. Co. 39 do av 75 at \$6.75.

Roe Com. Co. sold Barlage 12 sheep av 105 at \$2.25, 31 lambs av 75 at \$6.50, 58 do av 77 at \$6.50; to Mich. B. Co. 156 do av 70 at \$6.45, 92 do av 83 at \$6.65, 42 sheep av 100 at \$4; to Barlage 10 do av 101 at \$4; to Hayes 19 do av 75 at \$4.50, 21 lambs av 65 at \$6.50.

Haley & M. sold Hathaway 19 sheep av 115 at \$3.75, 20 do av 95 at \$3.50, 50 lambs av 70 at \$6.50, 33 do av 67 at \$6.50; to Newton B. Co. 20 sheep av 125 at \$3.50, 145 lambs av 73 at \$6.50; to Sullivan P. Co. 65 lambs av 75 at \$6.50; to Mich. B. Co. 80 yearlings av 75 at \$5, 11 sheep av 120 at \$3.75; to Youngs 59 sheep av 100 at \$3.40, 133 lambs av 66 at \$6.60; to Newton B. Co. 31 do av 55 at \$6.25, 25 do av 75 at \$6.75, 5 sheep av 110 at \$4; to Parker, W. & Co. 55 lambs av 65 at \$6.50.

Downing sold Tack 45 sheep av 90 at \$3. Same sold Sullivan P. Co. 41 lambs av 58 at \$5.75.

Bishop, B. & H. sold Tack 8 sheep av 120 at \$3.50, 42 do av 90 at \$3.15, 10 do av 82 at \$3, 11 do av 90 at \$3; to Sullivan P. Co. 14 lambs av 55 at \$5.50; to Parker, W. & Co. 8 do av 90 at \$7; to Nagle P. Co. 34 do av 75 at \$6.75, 52 do av 70 at \$6.75, 45 do av 73 at \$6.75, 22 sheep av 100 at \$4, 56 do av 85 at \$4; to Sullivan P. Co. 27 lambs av 58 at \$5.50; to White 80 yearlings av 75 at \$5; to Sullivan P. Co. 126 lambs av 55 at \$5.50; to Nagle P. Co. 14 sheep av 100 at \$4; to Fitzpatrick Bros. 23 do av 115 at \$4, 1 buck weighing 160 at \$3.25; to Nagle P. Co. 23 sheep av 110 at \$4; to Calkins 10 sheep av 95 at \$3, 5 do av 85 at \$2.75; to Applebaum 2 bucks, av 160 at \$3.25; to Fitzpatrick Bros. 61 lambs av 70 at \$6.75; to Nagle P. Co. 19 sheep av 115 at \$4; to Nagle P. Co. 80 lambs av 70 at \$6.75, 34 do av 70 at \$6.65, 51 do av 75 at \$6.65, 54 do av 75 at \$7; to Young 27 sheep av 105 at \$3.25; to Hayes 67 lambs av 55 at \$5.75; to Youngs 33 lambs av 70 at \$6.60, 8 sheep av 110 at \$3, 22 do av 80 at \$3.25.

Hogs.

Receipts, 2174. None sold at noon; looks steady with Wednesday.

Range of prices: Light to good butchers, \$8.90@9; pigs, \$8.90@9; light yorkers, \$8.90@9; heavy, \$8.60@8.75; stags one-third off.

Roe Com. Co. sold Sullivan P. Co. 225 av 190 at \$9.

Spicer & R. sold Hammond, S. & Co. 230 av 190 at \$9, 20 av 210 at \$8.90.

Haley & M. sold same 250 av 195 at \$9, 75 av 215 at \$8.90.

Bishop, B. & H. sold Parker, W. & Co. 810 av 180 at \$9, 317 av 170 at \$8.95, 80 av 150 at \$8.90.

Friday's Market.

August 22, 1913.

Cattle.

Receipts this week, 1316; last week, 1362. Market steady at Thursday's close.

We quote: Dry-fed steers and heifers, \$8; steers and heifers, 1000 to 1200, \$7@7.50; do. 800 to 1000, \$6.50@7.25; grass steers and heifers that are fat, 800 to 1000, \$6.50@7.25; do 500 to 700, \$6@6.50; choice fat cows, \$6; good do., \$5.25@5.50; common do., \$4.50@5.50; canners, \$3@4.25; choice heavy bulls, \$6.25; fair to good bolognas, bulls, \$5.50@6; stock bulls, \$4.50@5; choice feeding steers, 800 to 1000, \$6.75@7; fair do., 800 to 1000, \$6.50@6.75; choice stockers, 500 to 700, \$6.25@6.50; fair do., 500 to 700, \$5.75@6; stock heifers, \$5.25@5.75; milkers, large, young, medium age, \$6.00@8.50; common milkers, \$40@50.

Veal Calves.

Receipts this week, 522; last week, 671; Market steady to 50c higher. Best, \$11@12; others, \$8@10.75.

Sheep and Lambs.

Receipts this week, 5395; last week, 4056. Market steady. Best lambs, \$6.75@7; fair to good lambs, \$6.25@6.50; light to common lambs, \$5@5.75; fair to good sheep, \$5@4.50; culls and common, \$2.50@3.

Hogs.

Receipts this week, 2418; last week, 2950. Market steady to 10c higher.

Range of prices: Light to good butchers, \$9@9.10; pigs, \$9; light yorkers, \$9@9.10; heavy, \$8.70@8.90; stags one-third off.

Steps are being taken by prominent ranchmen to improve the quality of their cattle. The American Ranch, of Montana, is preparing to engage extensively in the pure-blood Hereford cattle industry and has already purchased the registered cows of James L. Johnston, of White Sulphur Springs, which were formerly the top cows of the celebrated Catlin herd of Montana. The herd will be increased from time to time and made as good as careful breeding can make it. Young bulls will be for sale in later years, and the plan is to make the business a profitable one.

(Continued from page 172).

fence and recover expense of same by following proper legal forms to have the cost assessed against the property and collected the same as other taxes are collected.

There are, however, few cases in which a dispute of this kind cannot be settled amicably and this is far the better way in every case.

THE DUTY OF THE HUSBAND.

It's the duty of the husband to see that his wife is supplied with modern equipment with which to lighten her labor.

Outside of the house, labor-saving machinery has worked a revolution in farming. Very few men walk the fields any more, and most of the back-breaking jobs of ten years ago are now being done by machines.

As we make the work easier in the field, let us not forget the woman in the house. Keep an eye on the advertisements in the Michigan Farmer. Quite frequently something is advertised that the wife should have.

HAPPENINGS OF THE WEEK.

National.

Three persons were drowned in Gogauac lake, near Battle Creek, Sunday.

Rural visiting nurse associations are meeting with success where they have been tried and the work is being extended to new territory. In Massachusetts and New York the plan has already been pronounced as thoroughly practical and now the work is started by women in the state of Pennsylvania.

The police department of Detroit is waging a wholesale war upon organized vice in that city. Already many places of vice have been closed and the order has gone out that no more liquor can be sold in these houses.

The wife of Owen Wister, the novelist, died in Philadelphia, Sunday. She was actively identified with educational work in that city.

Five persons were killed and three seriously injured when the automobile in which they were riding was hit by a train at St. Johns, Indiana.

The dairy and food department and the health department of Michigan are finding much work that needs to be done in Detroit. In the cold storages of the city large quantities of food were being held that was totally unfit for consumption. Slaughter houses are being visited this week and it is announced that a large number of the many restaurants will also be probed, as well as concerns vending wines, whiskeys and soda.

The third session of the international congress of refrigeration will be held in Chicago September 17 to November 30. At a banquet the guests are to be served dainties kept in cold storage under the supervision of the United States government till the day of the feast.

An innovation is being installed on the trains of the Pennsylvania Railroad in the form of a wireless telephone system for the use of engineers and conductors. It is expected that the system will aid in preventing accidents.

The political situation in New York state has not been settled and the probable outcome of the present predicament cannot be foretold. It is announced that a criminal conspiracy charge is to be brought against Tammany by the Sulzer forces and by this means they expect to delay impeachment proceedings against Governor Sulzer. On the other hand, Tammany, among other things, is working through the federal government to start a probe of Sulzer's activities in certain Latin-American claims while he was still a member of Congress.

The state of Nebraska now has a mothers' pension law in operation. The statute provides a pension for mothers who have three children or more and no means of support. The purpose of the law is to hold such families together where, otherwise, it would be impossible.

A plan is under way whereby the waste crops of Berrien county, Mich., will be gathered and forwarded to Chicago for use by charity associations.

Representatives of Illinois and Minnesota have been studying the cement roads of Wayne county, Mich., which roads have recently attracted such wide attention among road builders of the country.

Edward Rowley was killed and the son of Charles Root is dying as the result of a carriage in which they and three others were riding, being struck by a Grand Trunk train at Charlotte.

The settlement of the copper country strike seems no nearer than a week ago. A few of the shafts are now being worked by small forces of men but the owners are not optimistic regarding the extension of operations to idle property. The men appear to be holding together well and it is reported that financial assistance from western miners has been received. Judge Alfred J. Murphy, of Detroit, special representative of Governor Ferris in the controversy, has reported to the executive his findings of a several-day investigation. The nature of his recommendations has not been made public. The federal department of labor has been endeavoring to act as a go-between but has found both sides unwilling to compromise and so reports failure in this direction.

Foreign.

The policy of the United States towards Mexico is winning support from other countries. It has become known that Great Britain, France, Japan and practically all the Central and South-American countries are now co-operating with

the government at Washington to bring about a peaceful settlement of the Mexican revolution. President Wilson declares that unless satisfactory overtures are made by the Huerta government by Tuesday of this week, he will present in person in a message to both Houses of Congress the principle that constitutional government alone can be recognized in Mexico. He also will plan for the elimination of Huerta and the establishment of a legally constituted administration in the republic. Such a program carried through would put Mexico on a firm political basis and would better protect the interests of the other countries, hence, their support of the policy.

Two aviators were killed Sunday in the hydro-aeroplane race from Paris to Deanville, a distance of 200 miles. There were nine starters in the contest and the distance was covered by the winner in three hours and 48 minutes.

A hurricane swept Messina, of southern Italy, Sunday, and many buildings were destroyed. The river also broke its embankment, flooded many of the lower portions of the city and made rescue work difficult.

There is every prospect that the marketings of northwestern range cattle this year will show a large falling off compared with last year, especially from Montana and in a less marked degree from Wyoming, North Dakota and South Dakota. This promises to help materially in maintaining prices for beef cattle, especially as no excessive supplies of fat native cattle are expected. Under all the circumstances, good prices for beef cattle are confidently expected for the remainder of the summer and all through the autumn months, and stockmen should use every means possible for making their cattle good and fat before shipping to market.

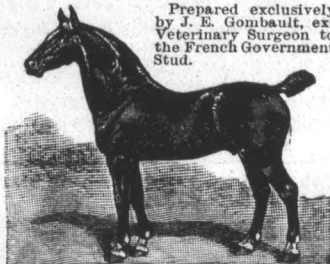
The worst feature of the sheep and lamb traffic is the extreme irregularity with which they are marketed, much of the time either a feast or a famine. In some recent weeks the Chicago and other markets of the country have been fairly glutted, particularly with spring lambs, including liberal supplies shipped from Louisville to the big Chicago packing plants direct, while the marketing of Idaho range spring lambs has at last started up. Even far away Oregon has been shipping wethers and yearlings to Chicago. It is a time when sheepmen should use extra care in selecting a time for marketing their holdings, and it is best where a large flock is owned to divide up the supply so as to have them shipped in at different times.

Horse Owners

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Dawson's Golden Chaff, 250 bu. from 5 acres this year. No smut or eye in wheat. \$1.50 per bu., bags free. MILLARD PATRICK, Webberville, Michigan.

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GOEING WHEAT. A hardy variety of bearded red wheat. Stiff straw. Never lodges. Very productive. I have grown it for years. Write for sample and price. COLON C. LILLIE, Coopersville, Mich.

Seed Wheat—Niagara, a hardy, bearded red wheat. Very heavy and productive. Goeding, a bearded red wheat, stiff straw and a good yielder. Write for sample and prices. E. H. & J. A. COLLAR, Coopersville, Mich.

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SEED WHEAT RED WAVE A hardy, heavy yielding beardless variety. Send today for circular. WALLACE BROS., Bay Shore, Michigan.

SEED WHEAT—Buy improved seed wheat direct from the producer. American Banner, Early Windsor and Shepherd's Perfection varieties. Among the highest yielding and best all round wheats tested at the Agricultural College. Price \$2 per bu. Address Secretary, Michigan Exp. Ass'n, East Lansing, Mich.

Gold Coin Seed Wheat, cleaned, bald, 1913 crop over 43 bu. per acre. \$1.30 per bu. No. A bags free. Muncytown Stock Farm, Flat Rock, Mich.

When writing to advertisers please mention The Michigan Farmer.

Horticulture.

Selection of Fruits for Exhibition.

WHEN one receives the premium lists of the different fairs and sees that a hundred or more dollars are offered for a single collection of fruit and fifty cents to a dollar premiums for single plates of five apples or pears, or when he hears that some make as much as six to eight hundred dollars at one fair, he feels that he would like to try a hand at it himself. He may also want to join in a friendly contest with his neighbors at the local or county fairs, or show with pride that really such good fruit can be grown in his particular locality.

All of these ambitions are worthy ones, and it is only an ambitious grower who will have thoughts along that line. There occasionally are some lazy fellows who grow no fruit at all but who are onto the game, beg the fruit from their neighbors and try to make some easy money. Such fellows are seldom very successful in getting premiums and will give it up in a short time because the money does not come easy enough. The honest exhibitor need have but little fear of competition from such fellows for as soon as they are found out things are made uncomfortable for them.

The mere money gained by winning premiums is not the only advantage gained by exhibiting. The fact that you have won prizes is a good advertisement and would look good on your letter heads if the prizes are of any consequence at all. Showing good fruit at local fairs where the premium does not even pay for the trouble is an act of public spiritedness. It shows what can be done by good care and will lead others to care for their orchard on account of the good example shown.

Judging from much of the fruit exhibited at the fairs many people do not know what constitutes a good collection or plate of fruit. A single plate of either apples or pears should consist of five specimens, no more or no less. Five is the recognized standard in number of these two fruits and any plate having more or less will be scored against. Many plates of fine fruit have lost prizes on this account alone.

In other ways a good plate of fruit has the same good features that a good box or barrel of fruit does. It should be uniform in size and color. Four medium sized apples topped off with one large one at first sight presents a good appearance but such a plate will rarely win a prize. One green specimen among four well colored ones is also scored against. The nearer alike the five fruits are in size, color and shape the nearer it will come to getting the blue tag. The fruit should also be entirely free from blemishes and be typical in shape, i. e., characteristic of the variety. In size the fruit should also be typical of the variety. Over-large fruit wins no more prizes than that undersized.

For peaches and quinces five is the required number, and for crab apples and plums one dozen is the standard number. With these fruit, as with pears and apples, anything other than the proper number will be scored against. Uniformity in size, color and shape is also just as important. For grapes five bunches is the required number.

It is a matter of personal preference of the judge as to the value of wiping the fruit. Personally I would not let that matter influence my judgment. Dirt or spray spots should, of course, be wiped off. Fruit polished with paraffine wax or by other means I would discriminate against.

In making up a collection of fruits to be entered in the collection contests the catalog should be studied well. There may be a general collection, a collection of market varieties and then the single plate contests in which such common varieties as Baldwin, Greening, etc., can be entered. It would therefore be advisable to send three plates of each of those varieties, having one for each contest.

In getting up collections for market purposes, dessert purposes, or family use, it is advisable to use such varieties as you have which you consider the best for the purpose and have them selected so that they will afford a succession through the season. In collections as well as with plate contests, the number of fruits, size and uniformity are important.

In arranging for the general collections it should be kept in mind that while a large number of varieties is good, the quality of the fruit is generally given first consideration. Often an exhibitor having a large collection of many varieties of fruit feels disappointed when the prize is given to a smaller collection of better quality fruit. He thinks the decision of the judge unjust when his dissatisfaction is really unjust.

It is very essential that all plates be correctly labeled with the name of the variety in the collection contests as well as with single plates. Many have lost prizes just because they failed to do this.

In packing exhibition fruit for shipment great care should be used so as to prevent bruising in transit. When fruit is shipped by express it is not handled any too carefully, and therefore it should be thoroughly wrapped and packed. The ripener and softer fruit should have each individual specimen wrapped. The green and hard winter fruit may be put in paper sacks, enough for one plate in each sack, and then well packed in barrels or boxes. Plenty of excelsior or paper should be used where there will be any pressure on the fruit.

It is advisable to pack extra specimens for each plate; six or seven, depending

in securing specimens of fruit for exhibition purposes, or in gathering stray fruits after the main bulk of the crop has been harvested, the fruit picker becomes a useful implement.

If the following directions are followed closely by one having a little mechanical judgment he can construct a useful type of picker. There are three parts to the implement, the long handle, a circle made of wire at the top and a tube constructed of muslin cloth. The pole should be light and twelve or more feet in length. The wire circle is made about five inches in diameter. Where the wire comes together the ends should be allowed to extend about five or six inches and be bent at right angles to the plane of the circle. At the opposite side of the circle from where the wire comes together there should be a little lip bent into it projecting outward. This circle is fastened firmly to the end of the pole by means of the two ends extending at right angles. Make ready a casing or tube of light weight muslin, open at both ends and as long as the pole. Hem one end of this over the circle of wire and allow the casing to hang down beside the pole, fastening it at intervals.

To use, gather the lower end of the casing in one hand, grasp the pole and slip it over the fruit, allowing the stem to slip into the lip at the side. Give a gentle pull and the fruit rolls down to your hand unbruised.

Ingham Co.

E. L. LAMB.

FALL VEGETABLES.

The successful gardener does not depend altogether on his early spring vegetables, nor those harvested during mid-



Picking-baskets. Used for Harvesting Plums.

upon the liability of the fruit bruising. For fruit requiring twelve specimens to the plate, fifteen ought to be packed and in the case of plums, which will rot, twenty would be better.

Do everything you possibly can before going to the fair. Pack the fruit so that it will unpack with the least confusion. Study the catalog thoroughly to learn exactly the requirements that you may determine just what you are going to enter in the contests. The few days of unpacking and setting up the exhibits are ones of confusion and hurry. The work is hard, even though you have everything arranged conveniently.

Be sure to send your fruit early and get there early yourself. The fair managements are justly anxious to have things in shape as soon as possible. The people who pay admission the first day are as much entitled to a good show as are those who attend later.

Any man who comes in with entries after the fruit is arranged for judging is imposing on the management. There is a lot of work attached to getting the fruit arranged for the judge, and when it is brought in late it has to be all rearranged. The man who brings his fruit in late should feel under obligations to the management if they failed to allow him to unpack it at all.

Van Buren Co. FRANK A. WILKEN.

A HOME-MADE FRUIT PICKER.

It is desirable to have a fruit picker on every fruit farm. By this it is not meant that the fruit picking should all be done by the use of mechanical pickers, but that there always arise occasions for the use of these implements where many trees are producing fruit. For instance,

summer, for his profit. He keeps busy all the year round and makes his truck patch produce crops of some sort just as late in the fall as it is possible to grow them. Late fall vegetables are always in demand and the gardener who can produce them is the one going to make the most money. At this season of the year many persons who planted gardens in the early spring have abandoned them to the weeds and will depend entirely on the produce market for their supply. As a consequence the persons who make gardening a business should reap a good profit. It is a mistake to stop garden operations in August.

Those vacant places in the garden from which the early crops have been harvested can be profitably used. If it is too late to sow some other vegetable crop, plant it to crimson clover. This can be done a little later on, but the earlier the better. Sow the seed thickly and you will obtain a fertilizer crop equal to a coat of barnyard manure. In addition to the hay that will be obtained the soil will be put in excellent condition for the next season.

Those gardeners who raise fruit in connection with their other produce would do well to closely watch their apple and pear trees for signs of scab and rust. Once a week is not too often to give the orchard an inspection, and if any trace is discovered of insects or disease, Bordeaux mixture should be applied.

An application of nitrate of soda to the late cabbage patch will have a good effect and will be the means of reviving many plants that look puny and poor. Constant watchfulness for insect pests should be the slogan of the gardener through August and September.

Texas.

A. M. LATHAM.

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.

Ringbone—Exostosis.—I have a five-year-old gelding that has a bunch on pastern joint, had it fired by local Vet. three weeks ago, but the horse is still very lame and I would like to know if it would be advisable to have him fired again? I also have a cow with a bunch on shinbone situated a few inches below hock joint. But this bunch causes no lameness; however, it depreciates her value and I would like to have it removed. E. R. S., Schoolcraft, Mich.—I do not believe it necessary to fire him a second time so soon; however, if he is no better in five or six weeks, it will be good practice to fire him again. Kindly understand he should have absolute rest and kept in a dark place away from flies. Apply one part red iodide mercury, one part iodine and eight or ten parts fresh lard to bunch twice a week, and if the shin bunch does not reduce it may be necessary to cut it out.

Enlarged Joints.—I have a horse that has bunches on hind leg caused by standing on plank floor most of time when he was young, but these bunches only showed themselves this summer and as yet have caused no lameness or other inconvenience. I only regard the puffs as a blemish, but as he is a valuable horse I would like to have them taken off. C. P., Traverse City, Mich.—The puffs in joint are perhaps the result of sprain and you will find it difficult to remove them. Apply equal parts tincture iodine and spirits of camphor every day or two and you will slowly reduce them, but it is doubtful if you can remove the swelling entirely until cold weather sets in.

Surfeit.—I have a mule which has a breaking out on neck and upper part of body and the skin is covered with pimples which seem to create an itchiness that makes him quite uncomfortable. C. A. M., Grand Rapids, Mich.—Give your mule a teaspoonful of hypo-sulphite soda and a dessertspoonful of Fowler's solution of arsenic at a dose in feed three times a day. Dissolve 1 oz. hypo-sulphite soda in a quart of water and apply to itchy parts of body twice a day. This treatment should be kept up until your mule recovers. Kindly understand if you are working him, he will be benefited by washing him with tepid water every evening.

Cow Gives Stringy Milk.—I have a cow which dropped her fourth calf May last, was wintered on cornstalks, also fed sugar beets and Hubbard squash as long as she would eat them. The man who fed her tell me that she was fed no hay during the winter and after calving was turned out in grass and seemed to do all right; furthermore, the calf lived and it thrived. Now this cow has not given as much milk and of as good quality this summer as formerly. For the past three weeks she has been giving stringy orropy milk, but the cow appears to be in good condition and has a large run of pasture with other cows that are all right. I would like to know what causes stringy milk. E. E. B., Rushton, Mich.—Stringy milk may be caused by fungi developing in the liquid, and it can be safely stated that the spores are often present in the system of the cow. If this were not true two or three cows of a herd would not be the only ones affected. Frequently cows give stringy milk which drink certain kinds of water, besides water that is infected seems to readily change milk when a small quantity of it is mixed with it. Change her feed and give her 2 or 3 drs. of bisulphite of soda at a dose in feed once or twice a day.

Contagious or Infectious Ophthalmia.—Two of our six-month-old calves have been troubled for some time with sore eyes; first symptom was a watery discharge, then a white scum forms on eye ball, causing partial loss of vision. These calves were treated by our local Vet. some five weeks ago, who succeeded in removing most of the scum, but a small bunch seems to have formed below pupil; however, vision does not seem to be affected. Some two days ago a two-year-old heifer became affected and this leads me to suspect that it is perhaps a contagious disease. I would like to know if the milk from cows with sore eyes of this kind is diseased milk, and would there be any danger from drinking it? H. E. S., Reading, Mich.—Infectious or specific ophthalmia is no doubt communicated from one head to another, besides the same exciting causes may bring on sore eyes in several of your herd. It is no doubt distinctly a contagious disease and is often brought into a herd by one individual animal. It is generally good practice to give a cathartic of epsom salts and for an eye wash dissolve 1 dr. boracic acid by pouring 4 ozs. of boiling water on it and apply to eyes three times a day. I am inclined to believe they have suffered from ulceration of the cornea and there will be a scar left on the eyeball. Dissolve 1 gr. sulphate of morphia and 3 grs. nitrate of silver in 1 oz. of rain water and apply cautiously to growth on eyeball once a day. The diseased and healthy should be separated.



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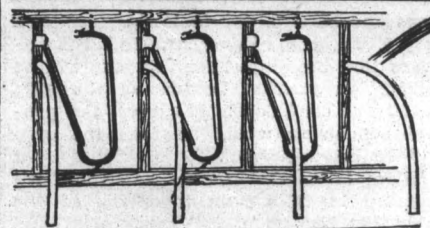
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Poultry and Bees.

KILLING AND DRESSING OF POULTRY.

There are several ways of killing chickens. They are, wringing the neck, decapitation, dislocation of the neck, and sticking. The latter is the best and most used method. We kill several thousand chickens and ducks every year, and always kill them by sticking. Decapitation by severing the head with an ax, brings good bleeding, but also a great muscular action, which holds the feathers instead of loosening them. This makes it almost impossible to dry pick them. Then, too, most buyers demand the head on, so they can tell whether the chicken was sick or healthy when killed.

In wringing the neck, the fowl does not bleed as well, the blood settles in the neck, turning dark after a while. Then, too, dry picking is entirely out of the question, the fowl does not look as well, nor sell for as much. In Canada fowls killed for export trade to England are killed this way. In picking they do not pick the feathers off entirely from the neck and head so the collected blood does not show up so bad. Under this method of killing the fowls weigh between one and two pounds more because of all the blood being saved. To kill a bird by this method hold the bird firmly by the legs, in the left hand, the head in the right between two of the fingers back of the skull, the back of the bird upward. The legs are then pressed against the left hip of the operator, the fowl's head laid against the right thigh, near the knee of the killer. Next the fowl should be rapidly and firmly extended or drawn, and at the same time the head is suddenly bent backward, by which performance the neck is dislocated just below the junction with the head, and death follows immediately as all the brains are torn across.

But by far the best method, and most practical, is the killing and bleeding by sticking through the mouth, then de-braining and dry picking. Here is my way of doing it: Hang bird up by the feet, grasp the neck of the fowl with the thumb and fore finger of the left hand directly behind the ear, but not too far up, draw the hand gently downward until it strikes the angle of the jaw, forcing the fowl's mouth open, without choking it. Hold the mouth firmly open with the third finger. The knife is introduced into the throat, and with a couple of quick motions up and down the larger arteries at the side of the neck just below the ear are severed so that the bird bleeds freely. Next hold the knife at an angle with the bird's bill, pointing towards the back part of the roof of the mouth, in a line with the eye, and with a rapid movement drive the knife through the roof of the mouth into the base of the brain and give a quick half turn to the knife. This causes paralysis and renders the bird insensible, practically killing it. A shudder passes through the fowl and the feathers loosen. Begin picking at once before the bird gets cold.

In picking grasp the wings with the thumb and first two fingers of the left hand, holding the neck between the third and little finger. In dry picking don't try to rub off the feathers, because if you do you are very apt to tear the skin. Remember, quick jerks bring the feathers better than steady pulling, and with less tearing of the skin. We pick the feathers on the so-called feather tracks first. With several quick jerks the large wing feathers are removed first and the stiff feathers on the shoulder joint are removed. Next grasp with the right hand the main tail feathers, and with a quick twisting movement remove them. Pass the hand rapidly up the back from the rump to neck, removing the feathers with a rolling motion as you go along. Whether the picking is easy or hard depends entirely on the sticking. If the sticking has been properly done the feathers come out easy. The pinfeathering we usually do with the aid of a blunt knife, taking care to get all of them out.

The fowls' crops should be empty and this can best be brought about by not allowing them to eat anything for 24 hours before killing.

Immediately after being killed and picked the fowl is thrown into a pail of water of about 60 degrees temperature, and from there into ice cold water for about an hour. Always be sure that all the

animal heat is out before packing for shipment. This is very important and should not be overlooked.

The easiest way of picking chickens is by scalding them. This is done by immersing the fowl three times into boiling water. When so doing take hold of the bird's head and legs and do not allow the same to get scalded, because it will discolor them and give the bird an unhealthy appearance. Scalded poultry do not keep as long nor bring as much in most markets per pound as when dry picked.

New York.

F. W. KAZMEIER.

POULTRY FEEDING.—II.

The foods that supply the nitrogenous material are called protein. Protein is found largely in meat, milk, egg and the gluten of grain. The great importance of protein in the feeding of all kinds of animals, as well as chickens, lies in the following statement: A protein food ingredient can replace carbohydrates and yield heat and energy; but carbohydrates can not replace protein. Therefore, if you should feed a ration very rich in protein and with little or no carbohydrates, the fowls might grow and do well; but if you should feed a ration rich in carbohydrates and lacking protein, the animal and fowls would be unable to properly grow. They would gradually waste away. Although protein can be used in place of carbohydrates it is extremely unwise to so use it, because protein is always much higher in price.

Nearly all grain foods are rich in carbohydrates and short in protein, while most all meat food is rich in protein.

The non-nitrogenous parts of the body are principally the fatty tissue. The food substances that have furnished it to the body are chiefly carbohydrates and fat. In the analysis of a food the nitrogen-free extract, plus fibre, plus ether extract times 2½ equals the total carbohydrates as given in the feeding-tables. Nitrogen-free-extract includes starch, sugar, gums, etc. Ether extracts (fats) are materials dissolved from the foods by ether and may include the real fats, wax, green coloring matter of plants, etc. It is considered 2½ times as valuable for the production of energy as the other carbohydrates. Therefore in simplifying the composition of the different feeding stuffs only the total carbohydrates is stated. This includes sugar, starch, fat and fibre.

Water is contained in all foods and feeding stuffs, the amount varies from eight to 90 per cent in the various food materials.

Dry matter is the part remaining after excluding or removing the water.

Ash is what is left when the combustible part of the feeding stuff is burned away. It is used largely in the bones, and in the shell of the egg.

Protein is a group of substances containing nitrogen, it furnishes a large part of the materials for lean flesh, blood, skin, muscles, tendons, nerves, feathers, albumen of egg, etc.

Fiber is the framework of plants and is usually the least digestible part.

The nutritive ratio of a food is the ratio between the digestible protein and the digestible carbohydrates contained in the food.

A wide ration is one in which there is a large per cent of carbohydrates as compared to the per cent of protein.

A narrow ration is one in which there is relatively little difference in the proportion of protein and carbohydrates.

A balanced ration is one that contains the proper proportions of protein, carbohydrates and fat proper to meet all the needs of the animal economy without unnecessary waste or strain. It must also contain the requisite amounts of bulky and concentrated foods.

In the case of laying hens it has been found that rations with a nutritive ratio of 1:4.5 or 1:5.0 have proven very successful.

POULTRY FEEDING EXPERIMENTS.

Reports concerning experiments with poultry are always interesting, for not only are chickens found on every farm, but it is becoming to be recognized that with the high price of beef it is to poultry we must turn for our supply of meat. The Pennsylvania Experiment Station re-

cently conducted experiments to ascertain the value of different methods and different feeding stuffs in common use on farms. Ninety farm-raised cockerels weighing from three to five pounds each were used in the experiment and divided into nine lots and fed for one month. The largest and most profitable gains were secured with a mixture of finely ground, sifted corn meal, buckwheat and oatmeal mixed with milk. There was practically no difference in gains in crate-fattening as compared with pen fattening.

In an experiment with four lots of 15 Leghorn cockerels, each averaging 1.22 pounds in weight, confined to open-front sheds and small yards set with blue grass, the best lot, fed a ration of nine pounds of soaked corn and one pound of meat scrap, gained 12 pounds in three weeks, each pound of gain requiring 3.12 pounds of feed, at a cost of 3.68 cents. Another lot of 15 Leghorn cockerels of the same average weight, fed equal parts of soaked corn and wheat and 12 per cent meat scrap, required 3.3 pounds of feed to a pound of gain at 3.75 cents. This experiment was repeated in 1911 with practically the same conditions but with slightly heavier cockerels. The most profitable gains, 4.38 pounds of feed per pound of gain, at a cost of 6.58 were made by a ration consisting of corn meal, ground buckwheat, ground oats, and meat scrap.

To test the cost of gains in Leghorn cockerels at different ages, four lots of 10 each of different weights, were fed the regular growing ration which consisted of a wet mash in the morning, and noon and evening feeds of mixed grain. The most economical gains, 5.6 pounds of feed per pound, at a cost of eight cents per pound, were made by the lightest lot which weighed 12 pounds, six ounces. The greatest gains, nine pounds, seven ounces in three weeks, were made by the lot weighing 19 pounds, four ounces. This experiment tends to show that up to two and a half pounds Leghorn cockerels may be produced at a profit. In another experiment with Leghorn cockerels the regular growing ration proved superior to the fattening ration, and little was gained by fattening in close confinement.

THE HONEY CROP.

It is yet too early to get figures on the 1913 honey crop but recent reports indicate the general conditions and the probable yield so we will pass the information along, that our readers may be warned thus early as to what they may reasonably expect in competition and prices.

In few years have the reports from states indicated so wide a variety of conditions within small producing communities. In what is known as a clover belt of this state some keepers tell us of big yields while others have suffered total failures. From the sage districts of the west there will be comparatively few shipments while the alfalfa honey will come forward in fair quantity, although the yield is not expected to equal last year's output. Producers of white clover honer are holding for better values than were received in 1912 because that variety seems to be a little short and some other kinds are almost a minus quantity. Because of the adverse weather conditions raspberries, for instance, furnished very little nectar this year. In all it appears that the output for the year will be difficult to forecast because of the wide variety of conditions. However, the general conclusion would be that the crop will be below normal.

There is another factor we should remember in taking an inventory of the facts bearing upon the honey deal and that is the large number of swarms that have been destroyed, or weakened, by foul brood, other diseases and severe weather conditions. While these losses have fallen most heavily upon the smaller producers who individually do not have large amounts of honey but who collectively furnish a very large part of the marketable product, the influence on the trade ought to be noticeable since to those in close touch with bee conditions it is apparent that extensive inroads have been made by these enemies of the hive.

It is our belief, therefore, that from the general crop prospects, prices ought to rule a little higher than a year ago.

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THE SEPTEMBER PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Opening music.
Fall handling of crops: 1. Corn. 2. Potatoes. 3. Beets. 4. Fruits.
Music.
My favorite poem with some account of its author.
What can a farm boy do, while attending school, to earn money toward a high school or college education?
What can a farm girl do, while attending school, to earn money toward her high school or college fund?
Summary of good points made in this program.

Suggestions for Second Meeting.

Song by children of the Grange.
Roll-call responded to by each member mentioning the name of some person whose home he passes on way to Grange, who does not belong to the Grange.
How did you start in life for yourself? Answered by two men and two women.
Recitation.
Shall father and mother move to town when they cannot work as they once did and children are grown? Why, or why not?
Some things a retired farmer and his wife may do for their community. Discussion.
Solo, "Stay on the Farm," No. 120, Grange Melodies.
Short farce.
Light refreshments, served by the "bachelor girls" of the Grange.

CONDUCTING PLOWING CONTESTS.

One or two Granges in this state have held annual plowing contests for some years past. These contests take the form of a special outdoor meeting planned for the latter end of the season when a good attendance is assured. They have become popular wherever introduced, since they stimulate friendly rivalry in a very important farm operation and appear to engender interest in what is sometimes regarded as drudgery. The realization that he is preparing for a public contest must inevitably lighten and improve the work of the man or boy who is following a plow.

The rules and regulations governing such contests necessarily vary to some extent, as do the methods of judging the work. A few years ago the manner in which one Michigan Grange conducts its annual plowing match was described in these columns. Other Granges have adopted similar rules and methods, but all will be interested, especially at this time, in contest plans which in any way differ from their own.

In one of these plowing matches, held by the School of Agriculture of the University of Minnesota, each contestant used successively a sulky plow, a gang plow and a walking plow. The same team remained hitched to a given plow throughout the contest so that each man had exactly the same team and plow to work with. A different score card was used in judging the work of each plow. It is not necessary to reprint all three score cards as the points of one card will enable local judges to prepare a suitable score card for use in judging work of plowing with the other two types. The final rank of each contestant is based upon the sum of scores made with the three plows. A summary of the score cards used in judging the work of the gang plow follows. Slightly different score cards were used in judging the work of the sulky plow and walking plow. Subdivisions of the main points, together with the weights attached to them, are given in parentheses: Furrow and furrow slice, 58 points; (straightness, 10 points; furrow capacity, 10 points; cleanliness, 8 points; uniformity of depth, 10 points; covering trash, 10 points; evenness of crowns, 10 points;) ridge, 16 points; (straightness, 10; uniformity of crowns, 3; height, 3); dead furrow, 6 points; (depth, 4; finish, 2); ends, 10 points; (evenness, 5; straightness, 3; uniformity of depth, 2); horsemanship, 3 points; time, 7 points.

GRANGE RALLY NOTES.

Maple Ridge, Twining, Wickham and Prescott Granges, in Arenac county, united, for the first time, in an August rally at Nuttle's Grove, on the 20th. From this grove can be seen four farms and their trim buildings which have been given names that appear on the barns. This shows something of the enterprise of this

increasingly prosperous section. A perfect day in an ideal spot for a quiet, social time together, were the means of calling out several hundred persons from these and other Granges of the county. Mr. Upton, of Bay Grange, presided at the afternoon session. Mr. and Mrs. Wilkins led the audience in some stirring songs. Hon. Peter Gilbert, who is a resident of this county and widely known over the state, led off the speech making in one of his plain and happy homilies; he was followed by the State Lecturer, who dwelt upon the effect upon the individual member of regular contact with a good Grange lecture hour. Mr. E. A. Holden, secretary of Patrons' Fire and Cyclone companies, closed the afternoon with a strong address upon the worth of a Grange in training men and women for public efficiency. Following the program Mr. Holden met those interested in a conference upon insurance matters, while elsewhere a ball game was played and friends renewed old-time acquaintances. The general opinion seemed to be that this should be made an annual affair.

Montcalm Pomona held its annual rally at Baldwin Lake with 300 present. Few counties in the state contain a choicer bit of natural landscape, preserved in its original beauty, than this lake presents, and this fact, combined with Greenville patrons' skill as picnic engineers, made it a day long to bear in fragrant memory.

The day following the Montcalm Pomona rally, Greenwood Grange, in the extreme northwest corner of the same county, had a rally all by itself. Here, seven miles from Howard City, a group of plucky patrons have built a Grange hall and are bravely working out their community problems. They are making a specialty of enlisting their children in attendance and participation in the program hour. In a year or so these children will begin to arrive at the age when they may join as regular members, and thus the future stability and character of the Greenwood neighborhood seem assured.—J. B.

AMONG THE LIVE GRANGES.

Clinton's Annual Rally.—The annual rally of Clinton County Pomona Grange was held on the fair grounds at St. Johns, August 20. The day was fine, the crowd fairly large, and the program, consisting of solos, recitations, songs by the ladies' quartette of St. Johns, a short talk by Senator Wm. Smith, of St. Johns, and last but not least the talk on "better living," by our State Grange Master, John C. Ketcham, was all that was needed to make a successful day. The next regular meeting of the county Grange will be with Wacousta Grange, Wednesday, Sept. 17.—Cora Sowles, Sec.

Kent Pomona's Annual Picnic, held at John Ball park, Grand Rapids, on Aug. 13, was a great success, more than 1,000 patrons attending. Mayor Ellis, in welcoming the patrons, gave the "better babies" movement a boost by showing how the object aimed at is dependent upon the production of better milk and other food products. Mr. Lee Bunce, of the Chamber of Commerce, gave an excellent talk on co-operation, showing in a very forcible way how the city people are dependent upon the farmer and the farmer upon the city people. Then came State Master John Ketcham, who gave one of his excellent addresses. Among the things he advocated were that each county set aside a week for Grange picnics, each patron to attend as many as possible, and that farmers take advantage of the new amendment to the parcel post law and ship their produce direct to city people, thus cutting out the middleman.

Children's Night.—Coopersville patrons will have a special meeting on Saturday evening, Aug. 30, which will be designated Children's Night. An appropriate program of music, readings and dialogues is being prepared by the children and young people. Refreshments will be a feature.

Eaton County Patrons are taking hold of the "better babies" movement with considerable enthusiasm, this county holding its first baby contest at the coming county fair when town and country babies will compete for the prizes offered under the recently perfected plan of subjecting the contestants to a physical examination and careful tests by competent physicians. The purpose of the movement is to direct the attention of parents to deficiencies or errors in care and feeding, to the end that the standard for babies in the community may be raised.

Union Picnic.—Silver Lake and Grant Center Granges, of Grand Traverse county, had a picnic at Duck Lake park on Aug. 10. The day was ideal and the patrons were in good spirits. The usual big dinner, which was served in the beautiful grove on the banks of the lake, was followed by a good program consisting of songs, recitations and speeches. The speaker for the occasion was R. M. Bates of Hastings, who gave a clear and interesting talk upon alfalfa growing. He covered the different points in such a pleasing way that several wanted to know how they could get alfalfa fields started. The work of the Grange as a useful institution was presented by R. H. Elsworth, of Grand Traverse Grange.

COMING EVENTS.

Pomona Meetings.

Wayne County Pomona rally, in Joseph Waltz's grove, at Waltz, Friday, Aug. 29. D. E. McClure, state speaker.
Clinton Co., with Wacousta Grange, Wednesday, Sept. 17.

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.

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

Associational Motto:

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

Associational Sentiment:

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

EDUCATIONAL OPPORTUNITIES FOR THE FARMERS' CLUBS.

While the Farmers' Clubs as at present conducted in Michigan, are of very great educational value to their members, yet many times opportunities of this kind are neglected. In the conduct of organizations of which we are members, and perhaps take a leading part, as well as in the conduct of our own business and every-day life, we are very apt to get into a rut and follow the precedent of former years with a complacent self-satisfaction which is a handicap to our greatest progress, both in a business and educational way.

Perhaps one of the greatest educational advantages afforded by the Farmers Clubs is neglected by the larger per cent of organizations of this kind—the advantage which would accrue to the membership of local Clubs from the use of the traveling libraries sent upon application by the state librarian. At practically every meeting of the State Association in the last decade, the state librarian has had an exhibit of the traveling library in the hall where the meeting was held and has briefly addressed the delegates present on the subject of the traveling library and the advantage which it would be to local Clubs to secure this free service.

In a recently published statement Mrs. Mary C. Spencer, state librarian, said that through the medium of the traveling library 25,000 good books were circulated in this state last year at the rural schools, Granges, Farmers' Clubs and other similar associations. With an experience as state librarian covering a period of 18 years, Mrs. Spencer is well qualified to make selections of books which will be of greatest educational value to the members of an organization of this kind. Where there are any well marked preferences among the members of an organization as to the particular line of reading they would care to peruse, special selections could no doubt be secured which would conform to their needs or desires in this direction. The main thing is to become interested in the proposition and to secure through the state library this means of educational advancement which is to be had for the mere asking. With the Club meetings occurring once each month there is every facility for the exchange of the books among members and if more frequent exchanges are desired arrangements could be made with the Club librarian by which such exchanges could be made between neighboring members of the Club in the interim between the meetings.

This is a subject which every local Club in the state would do well to discuss at an early date and by having the secretary correspond with the state librarian get all information with regard to this traveling library service so that with the coming of the winter season, when the members of the farm families have more time for reading, arrangements could be completed, a librarian appointed and a traveling library installed so that the members would secure the greatest possible educational benefits from this free source during the coming winter.

Perhaps it would be an incentive to the general adoption of this suggestion if the members of the Farmers' Club who have already taken advantage of this educational opportunity would write briefly concerning the benefits which have accrued to them from this source for publication in this department.

A few Clubs have taken advantage of another educational opportunity which more organizations of this kind would do well to emulate in the establishment of lecture courses during the winter months. This involved a little more expense, but it is not at all certain that this factor should be counted against it, since we are prone to better appreciate that which costs us something than that which we get for nothing. Undoubtedly the lecture course idea is a good one for consideration by all local Clubs and for adoption by many.

The nature of the subjects to be included in the lecture program should be given careful consideration and speakers selected who will best represent modern thought upon these subjects. Many such can be secured at but slight expense from the educational institutions of the state and once an educational propaganda of this kind is instituted in an organization of this kind the members will become so enthusiastic in favor of its continuance that there will be no difficulty at all in meeting the expense incident to carrying it on.

There are other educational factors which might be introduced in the work of the local Club with profit but these are perhaps the most important of such opportunities which should be considered at this season of the year. May we not hope that at the coming annual meeting of the state association more delegates than ever before will report progress along this line in the work of their local organization?

CLUB DISCUSSIONS.

Young People's Meeting.—The Ingham County Farmers' Club holds the regular monthly meeting, if the corresponding secretary has been slow to report the same. The July meeting was held at the County Farm, nine miles north and east of Mason, and as it was a place many of the members had never been it was an interesting place. After the picnic dinner the inmates were seated in the spacious halls and the Club, under the leadership of President Ives, gave an impromptu program of songs, recitations and talks. The August meeting was held at Brookside, with Mr. and Mrs. W. A. Melton. Miss Florence Taylor gave a most excellent paper upon the "Value of Education." This was freely discussed and all felt the time well spent. This is the regular young people's day and the program committee was disappointed in having a patrol of the Lansing Boy Scouts and a Boy Scout talk by O. O. Stanchfield, of Hillsdale. The next meeting will be held the second Saturday in September, with Mr. and Mrs. W. M. Webb.—Mrs. J. E. Tanswell, Cor. Sec.

Annual Picnic Meeting.—The Odessa Farmers' Club held its annual picnic Saturday, August 9, in the village grove. One of the most important items, the dinner, was served a little after noon, 67 being seated at two long tables. Some of the young ladies of the Club opened the literary program by singing "America." Miss Clara Lapard gave an interesting recitation entitled, "Intemperance." Mr. Henry Sinchcomb read a paper which so far as the reporter can see is without a title, nevertheless some extracts from it may prove of interest. He said: "No person commands the respect of others without proper respect for himself. There is no other occupation so ancient, useful, honorable, or so independent and none requires more intelligence than does farming. On the farm is the best place to study the sciences, all is spread in ample pages before us and illustrated by the Divine Artist Himself. Shall we in Odessa magnify our calling? This we will not do until we feel and know that we are the peers of any in the land; until our ranks are filled with educated men and women. By educated I do not simply mean one versed in the text books as taught in our schools, but one who it may be has been self-taught, acquiring the habit or power of forming clear ideas and expressing them in a clear forcible manner." Mrs. Frances Tucker recited "Hannah Jane and I." This was finely rendered and well received. The Rev. T. Laity gave a short but interesting address. This closed the program. Adjourned to meet with Mr. and Mrs. John Bower the second Saturday in September. This will be the last of the afternoon meetings for this year.—Reporter.

The Young People's Meeting of Howell Farmers' Club was held at the fine, modern farm home of Mr. and Mrs. S. Munsell, the first Thursday in August. Many of the young people were present and gave a very interesting program of readings and music. "A bump on a log," was the subject of a paper read by Mrs. J. S. Brown. The Mexican situation was discussed by Mr. Silas Munsell and after a social hour was enjoyed by all the Club adjourned to meet with Mr. and Mrs. Charles White the first Thursday in September.—Mrs. J. S. Brown, Cor. Sec.

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