

Mr. Gilmore

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THE average farmer has gotten in his corn crop this spring under difficulties. The late spring and the wet weather were against him in the preparation of the soil, and as a consequence the crop was planted very late upon the average farm. There was probably more corn planted in June this year than in any recent year in Michigan history, and unfortunately this promises to be a year in which the corn crop is of even greater importance than in the average season, important as it always is. There is no surplus of corn in the country and other grain feeds as well as hay and forage are correspondingly scarce. Hence, every farmer, whether he grows a large or small acreage of corn, will be anxious to make the most out of this late planted crop and give it such culture as will increase the yield to a maximum point under the conditions which obtain.

Of course, no one can tell what the weather conditions will be. We may have a favorable degree of moisture, well distributed through the season, or the severe midsummer drouth such as prevailed last season may be repeated. Just what the future cultivation of the corn crop should be will depend not a little upon weather conditions, but if we would secure a maximum crop under whatever conditions may prevail we should plan to be prepared for unfavorable as well as favorable conditions in the development of the corn crop. Thus, while it is impossible to lay down any fixed rule regarding the proper cultivation of the corn crop there are certain underlying principles which can be disregarded only at the peril of the crop, should unfavorable weather conditions prevail later in the season.

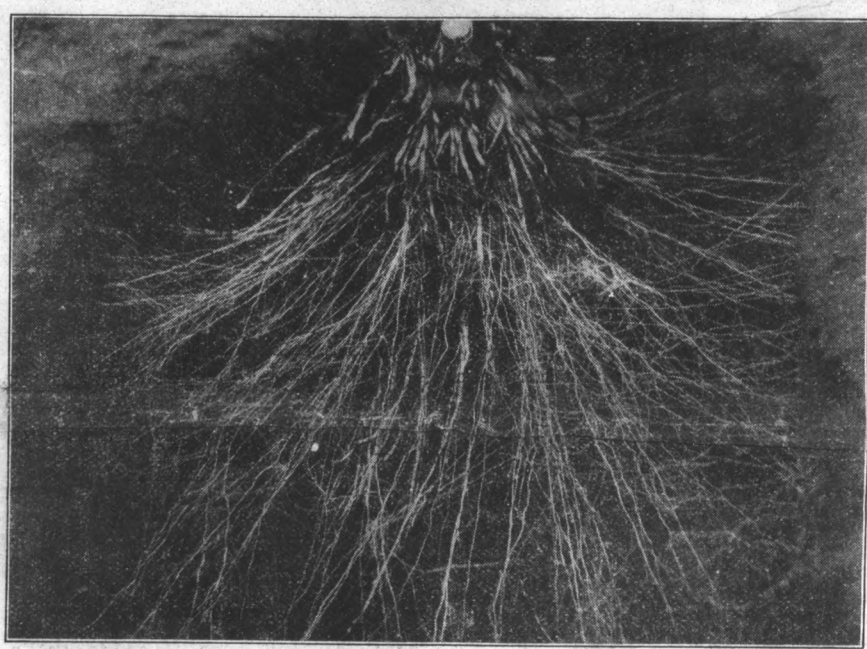
The principle of cultivation in moisture conservation is too well known and generally understood to require extended comment. Yet even upon this point there is a difference of opinion among those who should be best informed upon the subject. For instance, at the Illinois Experiment Station in a series of experiments conducted over a period of ten years it was found that cultivation of corn gave no appreciably higher yield than simply keeping the weeds cut off at the surface of the soil so that they would not rob the corn plants of the plant food or moisture. But Illinois soil conditions especially those which prevail on the better corn lands, are different from Michigan soil conditions, particularly in the depth of the soil and its content of vegetable matter, and we believe that it may be safely accepted as a fact that the conservation of soil moisture by surface cultivation of the growing crop will prove profitable, even though more frequent cultivation is given than would be required to keep the weeds in subjection.

So far as weeds are concerned, it is the early cultivation which counts most, and the corn field which has been properly fitted before planting and thoroughly tilled with weeder and harrow as well as cultivator until the present time will not be very weedy even though the cultivation is neither frequent nor deep. But if the weeds have

CULTIVATING THE CORN CROP.

not been killed during the early stage of their growth it will be more of a task to dispose of them and the later cultivation will necessarily be more frequent and deeper than would otherwise be necessary if the weeds are to be kept in subjection. There can, however, be no question in the mind of any observing corn grower that deep cultivation late in the season is harmful rather than beneficial to the corn crop and there may

deep cultivation which is given after these roots begin to reach out away from the hills between the rows results in a severe root pruning which cannot but be detrimental to the development of the plant, especially in a comparatively shallow surface soil. It is thus a logical conclusion that if deep cultivation is deemed necessary it should be given early in the season when the corn plants are comparatively small, and that later



The Root System of the Corn Plant is an Argument for Shallow Cultivation.

lie the explanation of results obtained in the Illinois experiment above noted. In the first of the accompanying cuts the root system of a hill of corn is shown after the soil has been carefully removed by washing it away. This illustration clearly shows how the small, fibrous, feeder roots of the corn plant occupy the whole of the ground between the rows and hills, filling it with a fine network of rootlets right near the surface, as well as deeper down in the soil. The

cultivation should be such as to be properly designated as surface culture, leaving a mulch of fine earth on the surface to conserve moisture. If, however, the ground has been well plowed and properly fitted before being planted to corn, deep cultivation will not be required at all and surface culture may be wisely practiced right from the start, since in this event the weeds will not be troublesome or hard to contend with.

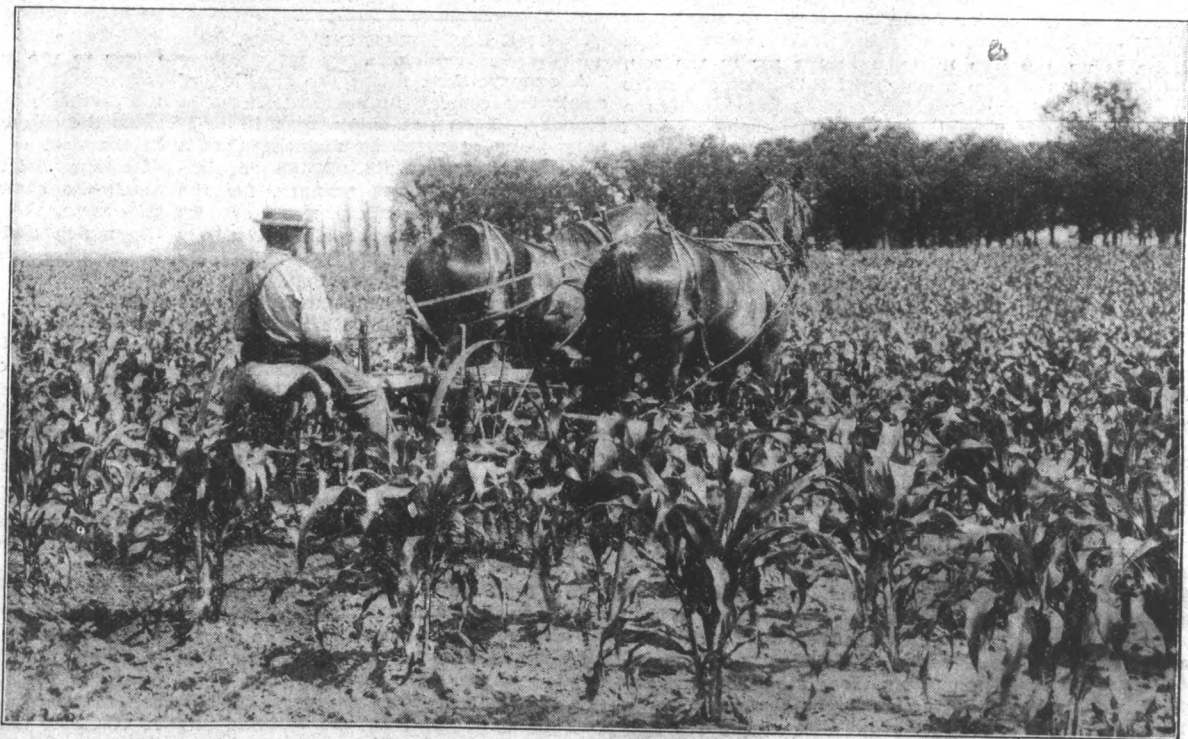
Granting, then, that the weeder and

harrow, as well as the cultivator, have been frequently used during the early cultivation of the crop and that the reader agrees to the proposition that surface culture is better for the balance of the season, the question of how frequently or how many times the corn should be cultivated during the remainder of the season may be properly discussed, as it is one which will arise in every case where proper consideration is given to this phase of corn production. This is a question upon which growers will differ materially, especially as to how late in the season cultivation should be continued under unfavorable weather conditions. It is a safe rule to follow to cultivate after each rain and before the ground commences to crust over, as long as it is possible to get through the corn with a double cultivator. This will promote the rapid growth of the plants and conserve soil moisture for their use which would otherwise evaporate quickly from the surface of the soil.

But after the corn gets too large to cultivate with the double cultivator, it will not, in the writer's opinion, pay to continue cultivation later in the season, except under exceptional circumstances. After the corn gets beyond this stage it not only shades the ground considerably but affords a great deal of protection from the wind, thus materially reducing the amount of evaporation from the surface, even where the capillarity of the surface soil is not broken up by cultivation after each rain. Again, cultivating close to the rows is impracticable after this stage, as the secondary roots are forming and should not be disturbed. Still again, after frequent cultivation has been given up to this time and a good rain occurs it is likely to carry the corn through until the season for fall rains is fairly good shape. Also upon the average farm it is difficult to continue the cultivation of corn frequently during the harvest season, and if late cultivation is to be practiced at all the cultivation should be fairly continuous from the beginning.

Thus, it is the writer's opinion that there is more of wisdom in the old plan of giving thorough cultivation early in the season and "laying by" the corn when it has reached a stage where it is no longer practicable to go through it with a double cultivator than in the plan sometimes practiced of beginning cultivation again after some weeks have elapsed since the last cultivation, during which time the corn has attained nearly its maximum growth, since by the latter plan more harm is likely to occur from root pruning than benefit from the conservation of the moisture.

It is well to remember that during the early part of the corn growing season the surface of the ground is exposed to sun and wind and the moisture evaporates from it rapidly, while during the latter part of the season the surface is protected largely from the sun and wind and the moisture is elaborated through the plant and rapidly evaporates from its large leaf surface, which is greater even than the total surface area of the ground which it occupies, and



Clean, Shallow, Level and Frequent Cultivation will Make for a Maximum Yield of Corn.

this evaporation of moisture cannot be prevented by any method of cultivation. Hence, the conclusion that the best results will be secured by giving very thorough and reasonably frequent cultivation early in the season, keeping a shallow dust mulch on the surface of the soil and the weed pests in subjection at all times. The number of cultivations which will be required to do this will depend, of course, somewhat upon the weather conditions and the number should be sufficient to maintain the dust mulch as long as the corn can be gotten through with a double cultivator. Then if a rain should occur which would re-establish the capillarity of the surface soil one or two cultivations may be profitably given with a one-horse surface cultivator, preferably a spring-tooth or some implement that will not go in too deeply. But after cultivation ceases for more than a week or ten days at most, at this season of the year, it is very doubtful whether it will pay to commence it again.

FARM NOTES.

Installing the King System of Ventilation.

In using the King system of ventilating a basement stable 42x70 ft. for about 10 head of horses and half a dozen cows, how many pure air intakes and ventilating shafts, and of what size, should be used? The bank side of stable will be three feet above ground so as to admit room for windows. Is there a way of installing the pure air intakes on that side? Would it be best to make the pure air intakes of tile right in the wall when building?

Oakland Co.

W. N.

In his work on "Ventilation," Professor King lays down the principle that outtake and intake flues in stables in which cows and horses are housed should provide not less than 30 square inches of ventilating space per head when the out-take flue has a height of 30 feet. If the out-take flue is shorter the area should be greater, and if higher it may be less, about six square inches being added or deducted per head for an increase or decrease of ten feet in the height of the out-take flue. Thus, for ten head of horses and a half dozen cows the out-take flue, if 30 feet high, should have a cross section area of 480 square inches, which would require a flue 20x24 inches inside diameter. A little larger flue would be required if shorter, or a little smaller one would do if higher than 30 feet. A single out-take flue is generally located as conveniently as possible with reference to the plan of the stable, while the usual practice is to install intake flues for the fresh air on all sides of the building. Where a bank barn is built, with space allowed for three-foot windows, a plan sometimes used and which gives very satisfactory results is to make the windows double with a casing between the sash and use this casing as an intake flue for fresh air. The rise of three feet will be sufficient to make it work satisfactorily for that purpose and this is an advantageous plan in installing intake flues in such a barn. The number of intake flues is not essential so long as their aggregate capacity is approximately the same as that of the out-take flues.

Seeding a Sandy Field to Alfalfa.

What would be the best thing to do with a light sand field of eight acres, one side and end rolling, which washes badly? Was sowed to alfalfa four years ago which grew thinly in a few spots, the whole stand would not more than cover half an acre. The field has been neglected until this spring, when it was plowed and sowed with cowpeas. The snow and cold of a few weeks ago killed most of the plants, but the alfalfa is up about a foot high and nearly as thick as it was before plowing. I wish to enrich this field so as to get it into alfalfa as soon as possible.

Oakland Co.

W. N.

It would appear from the fact that a partial stand of alfalfa has remained on this field for several years that it has become inoculated with the bacteria peculiar to the plant, and that for this reason it would be much easier to get a stand of alfalfa on this land now than when it was first seeded. Inasmuch as the cowpeas were a practical failure due to weather conditions, it might be the most practical plan to seed this field to alfalfa this summer by disking it over and preparing a good seed bed and sowing in June. If the field is considered so low in fertility as to make this necessary, some commercial fertilizer could be used and the field could be top-dressed with stable manure late this fall, which would insure a supply of plant food for the growing plants and some protection during the winter. If upon examination it is found that the plants growing in the field are well inoculated this would be all that is necessary to get a good stand of alfalfa on the field, although it would possibly be profitable to sow lime on the field while same is being prepared for the

alfalfa seed. Lime does not seem to be needed on some soils for alfalfa, but the writer has found it necessary upon his soil. A check plot left to determine the value of the lime on a piece seeded last year being plainly visible, the alfalfa being nowhere near as thrifty upon it as upon the portion of the field which was limed. It would be worth while to experiment in this direction at least.

Inoculating for Alfalfa.

I have a ten-acre field ready for alfalfa all but top-dressing. I can top-dress with manure or can get top-dressing from a five-year-old field of alfalfa. Which would be best? I have the seed but it is not inoculated.

Montcalm Co.

G. S.

In the writer's opinion it would be the better plan to apply some soil from a successful alfalfa field, harrowing same in at once in order to be certain that the bacteria peculiar to the alfalfa plant is present in the soil. While a top-dressing of stable manure would doubtless aid in hastening natural inoculation, the artificial inoculation secured by sowing the soil from the successful field would be likely to be more rapid and complete. The field could be more profitably top-dressed with stable manure next fall when it would aid in protecting the alfalfa over winter, as well as provide additional plant food. Where the ground is top-dressed with stable manure when the alfalfa is sown there is likely to be more trouble from weeds than where this is not the case. However, the plan above outlined would give satisfactory success unless the soil is acid, which would make it an unfavorable home for the bacteria, a condition which could be remedied by the application of lime. Lime is an essential to success with alfalfa on some Michigan soils, but does not seem to be required for the success of the plant in others and no prospective alfalfa grower should become discouraged until he has experimented to determine whether this is the case or not.

Vetch as a Forage Crop and Soil Renovator.

Would hairy vetch and rye make good hay for dairy cows? At what stage should it be cut? Would the vetch increase the fertility of the land?

Ottawa Co.

J. L.

There is no doubt that hay made from sand or hairy vetch and rye would make a very acceptable feed for dairy cows or any other kind of live stock. The protein content of vetch is nearly as great as that of red clover and as its content of fiber is only slightly greater it would be about as digestible. The rye in the hay, of course, would not be as valuable, consequently the hay made from the mixture would not be quite as high in feeding value as a good quality of clover hay. It would, however, be much better than timothy hay and probably nearly as good as mixed hay, such as is commonly produced upon Michigan farms.

It should be cut for hay at about the same stage of development as other legumes. But, while this crop may be used as a forage crop under conditions of scarcity of other forage, it probably has no proper permanent place among Michigan forage crops, its most apparent value in our agriculture being as a soil improver to be plowed under as a green manure crop.

In common with other legumes, its power to improve the soil is due to the fact that a species of bacteria find a congenial home in its roots and these bacteria, having the power to appropriate the free nitrogen in the air in the soil, store up a supply of this most expensive of our plant foods when purchased in a commercial way, not only for the use of the plant itself, but a surplus which is left in the soil and is appropriated by crops which follow. As with alfalfa, it is well to insure the presence of the bacteria peculiar to the plant by artificial inoculation, either with soil from some field which has successfully grown vetch, or with a pure culture applied to the seed.

There are certain drawbacks to the use of vetch, one of which is the high price of the seed which is practically all imported from Europe, much being of a poor quality due to the fact that it does not germinate well when more than two years old. Another drawback is that the vetch plant is somewhat inclined to become a weed on good soils, and on soils where there is no difficulty in growing clover or alfalfa these more enduring legumes will be found preferable to an annual like vetch. But where a soil needs the addition of vegetable matter and nitrogen badly and difficulty is experienced in getting these other legumes established, vetch may be profitably grown as a crop to plow down for green manure. If sown in August with rye it

will attain sufficient growth to plow down the following spring for potatoes or other late planted spring crops, and thus be often utilized as a catch crop where no other legume could be employed to such good purpose as a soil improver.

Cutworms.

Please tell me the best way to destroy cutworms. I understand salt is good, but do not know how to apply it. If there is any way to destroy them while crops are growing, please tell me.

Washtenaw Co.

J. A. P.

The application of salt is believed by many farmers to be of value in discouraging the ravages of cutworms. It is applied in amounts from 100 to 300 lbs. per acre. Generally, the same farmers believe it to be of benefit in the soil, aiding the crop on which it is grown or in the getting of seedlings of clover. This, however, does not seem to be borne out by facts, except possibly in the case of barley, for which crop some experiments have seemed to demonstrate that salt has a beneficial effect on some soils. So far as the cutworm is concerned, some recent investigations by the Bureau of Entomology of the United States Department of Agriculture indicated that the cutworm pest can be more successfully controlled by the use of poisoned bait, made and used as follows:

Take one bushel of dry bran, add one pound of Paris green and mix thoroughly into a mash with eight gallons of water in which has been stirred a half gallon of cheap molasses. After the mash has stood several hours scatter it in lumps about the size of a marble over the field where injury is beginning to appear, preferably about the plants or hills to be protected. It should be applied late in the day so as to leave the poison about the plants over night, which is the time when the cutworms are active.

This remedy has the disadvantage of leaving the poisoned bait in the field, to the possible damage of beneficial birds, and it would probably be well to cultivate or harrow the field on which it is used as soon as practicable after using on this account.

Frequent cultivations will prove helpful in checking the ravages of the cutworm and hastening the growth of the plants to a point where they will not be readily damaged by them. Where these pests are very numerous it would be a good plan to experiment with the method above given as compared with the use of salt and thorough tillage alone.

AN EXPENSIVE LESSON.

There never was a time in the experience of the writer, when there was so much complaint about corn not growing as is the case in this section this spring. Some farmers have replanted three and four times, and have failed to get a stand, and have put in beans or some other crop instead, because, after scouring the country they were unable to find any corn that would grow. Many who thought they had selected and taken good care of their seed corn, found on planting it that but little would grow. Those who had some place where they could fire-dry their corn have had no trouble. Fortunately I had my seed corn cured in this way, and for this reason I never had a better stand. Every farmer who got caught says he will take more pains with his seed corn next season.

Ottawa Co.

JOHN JACKSON.

THE CONCRETE GRANARY.

A correspondent raises the question of employing cement in construction of a granary. I do not think that in ordinary plans executed by farmers, that a cement granary meets all the requirements of a first-class granary, for the reason that it engenders more or less dampness. This can be almost entirely eliminated by employing the only truly scientific mode of construction.

Those erecting cement granaries have been so well satisfied with shutting out rodents of all kinds, that they have overlooked some important, desirable features, that might obtain—which is to cover the inside wall with hot asphaltum, immediately dusting on plaster paris. On each side of the structure there should be apertures six inches square, covered with two layers of quite heavy wire screen which can be built into the cement; this should be treated with a coat of hot asphaltum. In the center of the ceiling there should be an aperture, a foot or such a matter, square, protected also with wire screen.

Now the reasons for employing this method of structure must be obvious to anyone who will give the proposition serious thought. Can anyone imagine any plan more perfect. The vents should, on

bottom, be level with floor. In the event of having occasion to cleanse the floor, a slight slope might be given to floor. Desiring to use the granary for other purposes, as often happens, the vents would be exceedingly useful.

Should the room emit a disagreeable musty smell, the walls and floor can be treated with a pail of water with a spoonful of potassium permanganate, dissolved in it. Apply with a broom, or whitewash brush. Old cellars can be treated with this mixture, which in my opinion, is the "only one" well adopted to farmers' use, as a deodorizer, disinfectant, always safe, easily prepared, inexpensive, relatively so.

Bay Co.

A. C. MONROE.

TOP-DRESSING NEW SEEDING.

I have two fields which are sown to oats and barley. The one in oats is seeded heavy to mammoth clover; the barley field to timothy, alsike, June and mammoth clover and alfalfa. Both fields had 350 lbs. of fertilizer per acre. Land slightly run down but not too bad. Clay loam top with heavy hard clay bottom and deep. I expect to plow down the mammoth clover and hay the other. My winter manure is yet all under a shed out of the weather, well mixed cow and horse manure. I intend after the grain is harvested to use the manure spreader and draw this manure on one or the other of these fields. But I have read several articles claiming that top-dressing clover with manure is a damage to clover. Farmers' Bulletin No. 451, page 8, speaks strongly against this. I fell as thought I don't care to waste this good manure that has been so expensive to get so I want someone who has had some experience to advise. Some farmers say it is a good idea, while others say not. Which field would be the best to apply it to? Would it be best to apply a heavy coat or a light one, or if not at all, explain why?

SUBSCRIBER.

It is my experience that one of the most profitable uses that can be made of stable manure is to top-dress new seedings just after harvest. This application of manure does not want to be so heavy that it will smother any of the plants. If it is put on with a manure spreader, and here, by the way, is where a manure spreader shines in all its glory, there is little danger of getting on enough to smother the plants. There is nothing that I know of that will so improve new seedings as a good top-dressing of good stable manure.

I am not familiar with the bulletin mentioned by J. W. C. but I cannot imagine how anyone could disapprove of the application of manure to new seedings. People might differ in opinion as to whether manure might not be put to a more profitable use. Some people might prefer to use it on other crops in a different way, but when it comes to the fact of manure injuring instead of benefiting young clover there is no question about it whatever. If one hasn't manure enough to go over the entire field, if he will pick out the poor places in the field and top-dress those it will generally bring them on so that he will have a uniform stand of clover over the entire field.

Many of the best farmers in the country advocate manuring the clover crop, work it to the limit, and raise as big crops of clover as you possibly can and develop a heavy sod because this permanently improves the land. Where one hasn't stable manure to do this it can be done with commercial fertilizer. The best way is to apply the commercial fertilizer to the wheat the fall before, and then seed to clover in the spring, and the fertilizer will bring forward and develop the clover plant, but the thin places in the field can be given an application of commercial fertilizer which will act in much the same way as stable manure. Of course, the fertilizer will not furnish the mulch and vegetable matter which the manure does, but it will furnish the plant food and will assist very much in developing the plants. With J. W. C.'s system of saving his manure under a shed and applying it in midsummer I am sure that he cannot put it in a more desirable place than on this new seeding. If he has any left he can put it on his old meadows or pastures with equally good results.

My system of handling manure of course will not admit of applying it on new seedings because we draw the manure directly from the stable to the field the year around, which is the cheapest way to handle the manure and, if the land is kept in good condition so that it will grow good crops of corn, by the use of stable manure and fertilizer, when it comes in the rotation to seed to wheat and to clover we certainly get good catches of clover and good crops.

COLON C. LILLIE.

LIVE STOCK

SILAGE FOR SHEEP.

With the tremendous increase in the use of silos for utilizing a larger amount of the corn plant and the greater use of silage generally during the last two or three years, there has arisen a great deal of inquiry, especially during the present winter as to the value of silage for sheep. Recently silage has come into general use on cattle farms. Now that its value as a cattle food, from the standpoint of cheapness, is becoming more and more apparent, the man who owns sheep is beginning to ask why he cannot share in a good thing too.

Unfortunately, the use of silage for sheep feeding purposes has been tried out to a limited extent. Few farmers have used it and the experiment stations have done little. From all sources of investigation it seems now that there is no reason why silage shall not find a permanent place in the list of desirable and economical foodstuffs for sheep. The writer has met several men this winter who have used it with satisfactory results, and one man especially, who had fed out quite a string of sheep with silage almost the sole feed, was very enthusiastic in his appreciation of it. We have not found any men who have had trouble from feeding it.

There has been a popular conception that silage is more or less dangerous to feed to sheep, especially breeding ewes. It was thought that it had a weakening effect on the lambs, also that there is likely to be some mortality among the ewes. Such ideas do not seem to be well founded. It is true that such results have been noted in flocks which had silage, but careful observations show that other factors may have had more to do with the results than the silage. At the station three years ago the ewe flock had considerable silage, in fact, all they cared for. Also, the lambs were not as strong at birth as they ought to have been, and some loss was experienced at lambing time. But an excessive amount was allowed and ewes were entirely too closely confined without adequate exercise. Exercise is an absolute necessity for pregnant ewes if satisfactory results are to be had at lambing time. Lack of an experienced shepherd to handle these ewes at lambing time doubtless contributed to the loss. Since that year we have had no bad results.

Back in the fall of 1907 the Indiana station began to experiment with silage for feeding pregnant ewes. One lot of ewes was fed silage along with clover hay and grain, while another lot was fed more hay, slightly more grain, but no silage. These two lots of ewes were as nearly alike as could be had. The next year practically the same experiment was repeated, and again in 1909. During the first year a limited amount of silage was fed. The second year, four pounds per head, per day, was allowed and as no bad results accompanied this liberal feeding, the last year the ewes were given all they would clean up which was practically 4.6 pounds. With all they wished of the silage, no deleterious results were observed either in the ewes or in the lambs.

As to results from these three years' experiments, the authors of the bulletin concerning this experiment say that the general thrift and appetite of the silage ewes was superior to that of the lots fed hay and grain alone. The ewes, having a quantity of silage, made each year a larger gain over winter than did those on dry feed. The latter averaged for the three years a gain of six pounds while the silage ewes gained 13.75 pounds or more than twice as much. Yet the writers state definitely that this gain was not mere fat, like corn feeding would produce, but that the ewes were in good condition to produce strong, vigorous lambs. It was a noticeable fact, that right straight through the whole three years, the lambs from the ewes having the succulent feed, i. e., silage, averaged nearly ten per cent larger at birth. As to the cost of feed, the ration including silage, proved the more economical, while more satisfactory results were obtained. The lambs from these two lots of ewes were all fed out for early market and those from each lot did equally well, gaining nearly a half pound per day until they were sold.

The general results of this test running for three years show definitely that the use of silage for ewes, even in large amounts, will not interfere with the

health and thrift of the pregnant ewe nor of her prospective lamb. Also, the succulence which the silage affords seemed to promote the thrift and general health of the ewe, and because of the added health and vigor, the foeti were better nourished, with the consequent result that larger lambs were produced. Furthermore, the producing of all these satisfactory results did not affect the lambs unfavorably, and the silage ration was more economical.

Accurate data regarding the value of silage in a ration for fattening sheep and lambs is scarce, but what there is indicates that it is useful. As far back as the early nineties the Michigan Experiment Station fed some lambs on silage and other foodstuffs. The gist of their findings is to the effect that a mixture of fodders composed largely of a good quality of silage proved a cheap and successful ration for fattening lambs.

The Iowa station at Ames made some comparative tests of dry hays, roots, and silage as roughness in 1906 and 1907. In lots fed the first winter, the silage cheapened the ration considerably. During the second winter the various lots were fed for a long period, 168 days, and the silage lot refused to eat much silage. They ate almost as much grain and hay as the other lots did and the gain on these silage lambs was more expensive than was that with some of the other food combinations. But the average of the two years was favorable to the use of silage as a means of cheapening the ration. The lambs from all lots finished into market toppers, but the dressed carcasses showed the silage lambs a little superior on the hook. Taking these few experiments then, into consideration, and also the general results which various feeders have obtained in practical work, it seems that silage has an important place among desirable and economical feeds for fattening sheep.

It is my opinion that silage can be fed to sheep with satisfactory results. The use of moldy or frozen silage may cause trouble, but good, clean, bright silage can be used with excellent results, either as a succulent food for breeding ewes in winter or as a cheap but satisfactory and efficient roughage for fattening sheep and lambs. This opinion is based partially on observations of flocks which have been fed, and partially on the experiments quoted above. The results to date point toward silage as a cheap and valuable feed for sheep.

Univ. of Nebraska. ELLIS RAIL.

THE SAFE SIDE OF THE HOG BUSINESS.

There is only one way to raise hogs and to make money at the business, and that is by staying in it year in and year out. The man who raises just about the same number every year and who never gets discouraged, no matter how high in price feeds may be or how low pork may be, is the individual who usually stands well financially in his community. No investment connected with the farm pays a higher dividend than hogs. Usually the small farmer feels that he cannot afford to raise hogs, when really he cannot afford not to raise them.

A great deal depends on the management. One can grow into this business with very little capital if he is on the alert to make good use of his opportunities. First, and most important of all, is good foundation stock. Two or three well-selected, pure-bred sows is all he needs. Then breed these to a pure-bred boar. If the sows are given judicious care and attention the results will be remarkably pleasing.

What items I offer here are garnered from experience, hence they are practical. My success in hog raising has been very gratifying. In working with hogs for more than 26 years I have never lost one from cholera, and very few from any cause. In the first place, to follow this business successfully, we find an opportunity to verify the adage, "An ounce of prevention is better than a pound of cure." Keep off disease rather than try to cure it. If this is done there is very little danger of loss. Never allow the sows to become lousy; keep them thrifty and healthy, and the pigs will be strong and vigorous, not so susceptible to disease.

In addition to their regular feed of corn, peas or whatever they get at the barn, I give my hogs swill twice each day. I keep a barrel in the back yard (a coal oil barrel is best) into which I throw a handful of copperas twice a month, also put a gallon of salt and three or four buckets of wheat bran to start it; into this throw all the vege-

table waste, milk and slop from the kitchen. Very soon the barrel is full of rich food, all clean and healthy, although made up of almost every conceivable thing a hog could eat. And the cost is very small, too.

At the morning and evening feeds I give them from six to eight buckets of this mixture, according to the number of hogs in the drove, always stirring well before giving. By night the barrel will be full again and always ready. I clean out the barrel each time before being filled, and never allow the mixture to stand long before being fed. Cleanliness at all times and in all things is a feature that cannot be too strongly emphasized.

Now and then I gather the old bones and discarded scraps of meat from the smoke house and fill a large wash kettle with pokeweed stalks and leaves, chopped fine, and cook with the bones. I keep the kettle as full as it will boil. When thoroughly soft and done, I dip all into the barrel, throw in more bran and feed as usual. This I know to be a preventive of cholera, and even should there be symptoms already manifest, it will relieve it.

It is best never to allow hogs to run at large where they will be subjected to danger, but keep them in pasture, and no matter how fine the pasture may be, don't fail to call them up each evening for their swill; they will always relish it. Use a good deal of pine tar about the troughs, smear it in the bottom, and let them eat and drink it off; they soon grow to like it. Have a can for the purpose, in which keep a mixture of tar, sulphur, lard and kerosene. While they are drinking at the trough, smear them on the hips, back and around the ears with this mixture; it will keep vermin away. Burn all the beds occasionally and place new straw in, and each time sprinkle a good coat of lime under the straw. All these precautions take time and make work, but it takes less time and is less expensive than to try to treat sick hogs.

The little things are the important ones in raising hogs. The man who will not pay attention to the smallest details is the one who is going to be caught off his guard and first thing he knows he has a contagious disease on his hands and after that the end of the chapter is soon reached for that year.

Illinois. W. H. UNDERWOOD.

LIVE STOCK NOTES.

A good many pretty well-bred ewes adapted for breeding have been offered on the Chicago market recently for \$3@3.50 per 100 lbs. that were well worth the money to any farmers situated so that they could engage in the industry. It would cost hardly anything to carry them on pasture until the time for breeding, and by the time the demand for breeders starts up in earnest prices will undoubtedly rule higher.

A large Wisconsin sheep feeder who has made a success in that industry says he finishes his lambs on ground corn and pea ensilage furnished in self feeders. This is a combination he believes cannot be beaten. He says it pays well to furnish the best corn that can be had and to grind it, as the meal is an appetizer and reduces the cost of gains in weight. It acts better than corn ensilage.

A few large cattlemen of Ottawa, Ill., have been in the Chicago market recently for the purpose of buying high-class feeding steers to stock the pastures of their rich farms in La Salle county. They report the grass as luxuriant and awaiting the advent of cattle to transmute it into beef.

As there is every reason to look for a good summer and autumn market for fat yearling cattle, it is rather surprising that so many partly fattened yearlings are being hurried to market, and where feed is available owners should retain such stock until well fattened. Prices between half fat and well fattened yearlings of late have been very wide.

Distillery-fed cattle have been bringing the highest prices on the Chicago market ever known, but owners say the profits are less than many people imagine because of the high cost at the start for feeders. They state that they have been paying close to \$1.50 per month increase in cost of each steer's feed bill this season over the cost a year ago, but even then, profits are extremely large, the lack of large supplies of corn-fed cattle of the better class making a good outlet for distillery cattle. A big distillery cattle feeder says: "We will be taking a big gamble on the future when we buy feeder cattle in July and August at high prices. The prospect favors us being forced to pay close to \$6, and even better, for range feeders this year, and with our feedstuff correspondingly high, it will be a far-away guess as to where we will land next selling season."

There has been a remarkable increase in dairy farming in recent years, and much of the large shipments of calves to market the past spring has consisted of calves from dairy districts of the middle west. Holstein calves are so poorly adapted for converting into beef, that the bull calves are usually sold for veal. Farmers in some parts of the country are turning their attention to the dual-purpose cow, whose calves can be raised for beef.

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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 some one else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

Cow-pox—I am anxious to know what ails my cow. Yellow spots appear on teats and udder which break and the spot seems to cover with a scab. G. S., Mud Lake, Mich.—Your cow suffers from cow-pox, a disease that never interferes much with the health of cattle and in most cases requires very little medication. If her bowels are constive, give her 1 lb. epsom salts to open them and apply one part oxide of zinc and six parts vaseline to sores on udder once a day.

Unhealthy Skin—Cracked Heels—Have a mare eight years old covered with dandruff and it seems almost impossible to free the skin from it. This mare perspires easily, too freely, and the skin seems to be covered with a sort of scale, but she does not rub herself. I would also like to know what can be done for scratches. E. E. B., Grawn, Mich.—Give your mare 1/2 oz. Donovan's solution at a dose in feed three times a day until her skin shows improvement, then reduce dose until she is well. Dissolve 1/4 lb. borate of soda in a gallon of tepid water and wet her skin once or twice a day. She should be well groomed and if she has a long rough coat, clip her. For cracked heels apply equal parts tincture benzoin and glycerine once or twice a day.

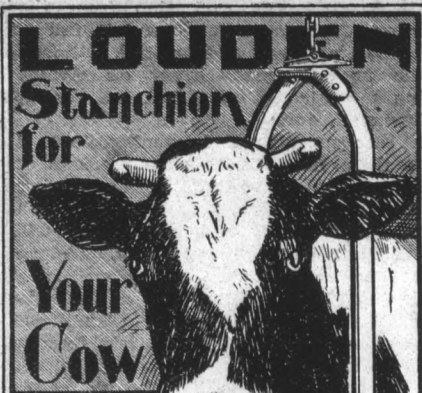
Too Much Appetite—I have a five-year-old mare that seems to have a ravenous appetite, in fact, she appears to always be hungry, eating almost continually and never thoroughly satisfied. It makes little difference what kind of food is placed before her, she eats all of it. F. C. H., Marcellus, Mich.—Give your mare 2 drs. santonine, 6 drs. aloes, 2 drs. ginger at a dose, one dose only. Then give 1/2 oz. ground gentian, 1 dr. powdered sulphate iron and 1 oz. ground ginger at a dose in feed three times a day. A change of food from dry fodder to grass will have a whole lot to do with improving her digestive organs.

Periodic Ophthalmia—We have a four-year-old mare that has one fairly good eye and the other appears blue. She has had several attacks, but seems to be affected much in the same manner, but her vision is not much affected. Mrs. L. B., Swartz Creek, Mich.—Dissolve 160 grains of borate of soda and the same quantity of boracic acid in a pint of clean water and apply to eyes two to three times a day; also give her a teaspoonful powdered nitrate potash at a dose in feed two or three times a day. It is well to keep in mind that a bright light always irritates a sore eye or a wound.

Out of Condition—I have a large work horse that has been out of condition for several months. About a month ago he had a sick spell, got down, seemed to be weak and when he would rise on foot would pitch forward as if his head was too heavy for body. At other times he would stand lowering and raising head as if in pain, tremble violently, unconscious of what is said to him. This horse is very thin and has a good appetite. F. J. T., Temperance, Mich.—Give your horse 6 drs. aloes, 1 dr. calomel, 1 dr. santonine and 2 drs. ground ginger at a dose, one dose only. Also give him 1/2 oz. ground gentian, 1/2 oz. ginger and 1 oz. bicarbonate soda at a dose in feed three times a day. Grass is better for him than dry fodder.

Diabetes—Weak Back—Last spring I bought a nine-year-old horse that was very thin. He is a nervous brute; I was careful with him, gradually increasing his food supply, but whenever he is worked hard, will straddle with hind legs and quiver and is inclined to back. C. E. S., Stockbridge, Mich.—Give your horse 3 dr. doses iodide potassium three times a day for 10 or 15 days, then give 2 dr. doses for 10 more, then give 1 dr. doses three times a day. Also give 1 dr. ground nux vomica at a dose in feed twice a day until he recovers, commencing with both remedies right away.

Diabetes—Blind Staggers—I read with interest every week the veterinary column of your paper, but failed to have noticed a parallel case to mine. I recently purchased a horse that urinates about every 30 minutes when working. He seems to be healthy, has a good appetite and does his work fairly well. I would also like to know what can be done for a horse that has blind staggers. R. C., Cass City, Mich.—I am inclined to believe that your horse has a light attack of diabetes or perhaps some irritation of the urinary tract. Give 2 drs. iodide potassium at a dose in feed or water three times a day for 10 days, then give 60 grs. urotropin at a dose in feed or water three times a day for 10 days, then give 1 oz. cooking soda at a dose in feed two or three times a day. Increase his food supply and instead of feeding dry fodder, feed grass. Blind staggers (verigo), is considered an incurable ailment, unless the cause is known and can be removed. Working horses in short collars and high feeding without sufficient exercise is very often the cause of staggers. Give 2 drs. potassium bromide at a dose in feed three times a day. If the horse is fleshy reduce him.



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DAIRY COW POPULATION MUST INCREASE.

The demand for productive cows during the past few years has provided for the breeder of dairy cattle a most profitable business. The farmer is rapidly becoming convinced that there is a vast difference between the profits yielded by the common cow and the cow whose ancestors have been bred for economical and profitable production for over a thousand years. Although since 1875 the number of milk cows has doubled, increasing from less than 11,000,000 to over 22,000,000, during the same time butter prices have not only practically doubled, but the price of cows has increased \$6.62 per head. During the period the population has more than doubled, showing that rapid as has been the increase in the number of cows milked, they have not kept abreast of the growing demand. Judging by statistics from reliable sources the population is to double again during the next 35 years, and in order to keep the price of butter as low as it now is, the cow population must also double. The breeders who furnish the blood for improvement that is necessary, as well as to increase the number of cows from 22,000,000 to 44,000,000, are assured of prosperity in their business during their lifetime.

The up-to-date farmer is rapidly coming to the point where he is conducting his operations on a strictly business basis. He realizes that the farm is but a factory and that every cow and every other animal is kept there as a machine with a certain capacity for converting raw materials raised in the fields into a finished commodity for the market. The value of each cow-machine is measured by the amount of feed she can eat and convert profitably into milk and butter-fat during the year.

To determine this point the dairyman weighs and tests the milk of each cow at intervals to determine the relative merits of the individuals from the production standpoint and by determining the amount and cost of feed she eats during the time, he is prepared to say which is the profitable cow and which is the loafer. In view of the fact that there are 6,000,000 cows in the United States that are eating a portion of the profits the other 16,000,000 cows are making, the sooner the dairy farmer finds these and substitutes for them cows of more profitable type and breeding, the sooner he will enlarge the profits of his business. In doing this he will not only become a manufacturer in the truest sense, but he will also become a wise banker in that he refuses to loan to the cow year after year that which she never returns and on which she never even pays interest.

In the New England states farmers who in the past thoughtlessly robbed their farms of the profit yielding available richness that was stored up in their lands are now reclaiming those same farms by the intelligent use of the dairy cow. Each year the land that provides for the dairy cow is growing richer while the farms that are devoted exclusively to growing and marketing grain in its raw state are growing poorer and less productive. The reason is not hard to discover for it is a known fact that with every ton of corn sold off the farm, bringing from \$18 to \$20, goes \$6.50 worth of fertility; a ton of wheat worth \$35 removes \$7.50 worth of fertility; a ton of beef, worth at the present high prices, from \$150 to \$200 takes with it about \$17 worth of richness, while a ton of butter, worth today on the markets of the world, \$600, takes with it only 49 cents worth of fertilizing ingredients. By providing those nitrogenous foods that are necessary for greatest butter production—alfalfa, cow-peas, soy beans fed in connection with ensilage—the dairy farmer returns to the land many times this amount.

Dairymen in northern Illinois have found that with alfalfa they need not purchase protein that they can keep the cows in perfect health and vigor; that they can get the greatest flow of milk the cows are capable of giving; that they can and should feed it every day in the year, by beginning early in spring by cutting it green and soiling; by feeding dry alfalfa hay and corn silage after frost comes, or at any time that no other business tends to so rapidly build up the farm, and when judiciously conducted, no other branch of farming yields more satisfactory financial returns. In addition to all this, by breeding, feeding and de-

veloping the world's champion cows of every breed, we are demonstrating beyond question that this country is the source of the best dairy blood in the world.

This view of the dairy situation, backed by the best available authority, is taken by the Illinois Farmers' Institute from whose bulletin the above material was gathered. The man who, with unlimited pains, well-balanced judgment, persistency and courage continues the excellent work done by our dairy breeders and feeders of the past is certain to reap a reward for himself and the thanks of generations to come.

BELIEVES AERATION A CURSE TO THE DAIRY BUSINESS.

In your issue of June 8, "A. H." says under title, "Caring for Milk," two things are necessary, viz., Cooling and Aeration. Four years' experience in the production of certified milk leads me to say that we firmly believe that the aeration is the greatest curse around a dairy today because it breeds carelessness both in the stable and milk room. "A. H." we believe is mistaken in his statement that "aeration is necessary." With the exception of possibly the first two streams from the udder, milk in the udder is absolutely pure in the healthy animal. If it were not nature would have provided some other way for the young to obtain its food than directly from the udder. We agree with "A. H." "that two things are necessary to fit milk for the trade," viz., keeping the dirt out of the milk in the stable and immediately cooling below 40 degrees F., and keeping it at that temperature until delivered to your customers. Keep the milk out and away from exposure to the atmosphere. When you have a pailful of milk get it out of the stable, pour it into the receptacle in which you deliver it, seal and immerse in ice water, let it stand for one hour, pack in ice and deliver to your trade. Can't keep the dirt out? You can if you think so. Expensive? No—the simplest equipment is the best. It takes a trifle more time, but the benefits are so much greater that extra time is not worth considering.

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FARMER.

"Farmer" and "A. H." approach the subject of aeration from the standpoints of two classes of dairymen. "Farmer," as he states, secured his experience in the production of certified milk where conditions are made as near ideal as it is possible to have them; while "A. H." had in mind the general class of dairymen who work under less favorable sanitary conditions. Our best authorities agree with "Farmer," that milk drawn under perfectly clean conditions requires no aerating; but on the other hand, the milk required to satisfy the great bulk of the trade would prove unsatisfactory were it not for the removal of odors by this process. It is unfortunate that we, as a people, have failed to do away with aeration by making all stables sanitary and keeping only perfectly healthy cows; but the fact remains that only a small per cent of our dairies are sanitary and not all of our cows are healthy, and that until they are made so the great mass of people must be provided with milk. Aeration makes this milk more agreeable to the palate.—Eds.

HOW MILK MAY BE IMPROVED.

The ordinary dairyman, the man who produces for the general trade, can improve the quality of the milk made upon his farm and that without making large outlays of capital. By the use of a covered milk pail much contamination is eliminated. Doing the milking in an exposure where the air is not laden with dust to a considerable extent prevents bacteria from entering the milk. Infection is also prevented to a large degree by thoroughly scalding and cleaning the milk pails and other utensils with which the product comes in contact, by dampening the udder and flanks of the cows before they are milked, by having the hands of the milkers dry and clean, by removing the cans or pails of milk from the stables and cooling immediately and by exercising ordinary diligence in keeping down cobwebs and eliminating places where dust and bacteria will collect. Most of these means are available to the average farmer; and if those who could do a part or all of the things mentioned, would do so, city boards of health would find less occasion to complain, and the increased demand resulting from the improved quality of milk would affect an advance in prices to adequately cover the increase in the cost of production.

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PRACTICAL SCIENCE.

NUTRITION STUDIES. (Continued).

BY FLOYD W. ROBISON.
The Balanced Ration.

In adapting the results of experiment and scientific reasoning to the practical feeding of animals there has probably been no theory promulgated which has been of so much direct benefit as the theory of the balanced ration. In our previous discussions we have observed that the different food nutrients may be converted to a uniform basis for purposes of comparison, this basis being the heat unit basis. In this respect we have conceded certain values to the different proximate principles. For instance, we have conceded that protein when fed to an animal has a value commensurate with, but not exceeding, the value of the carbohydrates. In a similar way we have shown that fats when fed to an animal have a value so far as heat production is concerned of approximately two and a quarter times greater than either protein or the carbohydrates. In actual practice this would cause us to believe that the economic value of protein and of the carbohydrates should of necessity be the same and on the same basis of calculation we might figure that it would be proper commercially to assign a value to the fats of approximately two and one-quarter times greater than the value prescribed to protein and carbohydrates.

The Proximate Principles Have Different Commercial Values.

As a matter of fact, and as we have explained, protein on the one hand and carbohydrates and fats on the other can be considered equivalent only after a certain point is reached in the ration. Furthermore, we do know as an actual fact, that considerations other than economic ones based upon food values, have caused a different valuation to be placed upon feed stuffs containing varying proportions of these different proximate principles.

We have explained and we apprehend there is perfect understanding on this point that the protein in a feed is of such a nature that it may constitute the entire ration. At the same time we have endeavored to clearly show that actual starvation may result if an animal is fed an abundant ration exclusively of carbohydrates and fats. The reason for this is that protein occupies a unique position in the dietary because of its containing the element nitrogen which we have shown to be so essential in repairing waste tissue and in promoting the life functions of the animal.

Commercial Considerations Prevent Excessive Protein.

Commercial considerations have shown us that for the economic production of milk, for example, protein feeds cannot be used exclusively although as explained above they would perhaps satisfy the requirements of the animal. Fortunately it is that we are able to experiment with the dairy cow because it is not so easy to demonstrate the value of the balanced ration when we are studying it from a work producing basis as when we can show its effect by a consideration of the contents of the milk pail.

Experiments on Economic Production Prove the Real Need of the Balanced Ration.

Experiments conducted at the Michigan State Fair and at the West Michigan State Fair, under Mr. Lillie's direction when he was Dairy and Food Commissioner, as well as experiments which have been conducted at times at some of the experiment stations have shown that by feeding protein foods almost exclusively a high state of milk production may be reached, which might indicate without any other consideration that it was decidedly advantageous to crowd protein feeds into the ration. In the northern states, however, protein feeds are practically without exception the most expensive feeds we have. Therefore, when we take into consideration not only the gross quantity of milk produced on the feed but the cost of that milk produced as well, we are convinced at once that economical considerations prevent the feeding exclusively of protein feeds. Were commercial considerations to be considered entirely and scientific deductions to be thrown to the winds, the feeder would eliminate protein feeds and feed exclusively on either starches (carbohydrates) or fats, but here again, as indicated above, the fact that protein

feeds are required in the ration is at once forcibly thrust upon the feeder. The feeder's problem, then, is to prescribe a ration in which the maximum amount of protein required by the animal is prescribed and at the same time the addition of these protein feeds is stopped exactly at the point where their economic addition ends. It is this evidence and the taking advantage of the facts gleaned through years and years of experimentation by men trained in making scientific deductions which have resulted in the promulgation of the balanced ration.

Balanced Ration Defined.

The term balanced ration, therefore, means a ration consisting first of those constituents which satisfy fully the requirements of the animal; second, a ration containing the above constituents in the exact proportion which makes them an item of economy. Economy in a ration means comparatively the same as does economy in anything else. It does not mean the cheapest feed that can be bought, but it does mean the cheapest feed which can be purchased which contains in proper ratio the constituent principles which the animal demands.

LIME IS NOT A FERTILIZER.

The Ohio Experiment Station calls attention to the fact that while a number of dealers are selling their product as some form of lime, in some cases the representation being made that lime is a fertilizer, and the terms "Fertilizer Lime" and "Lime Fertilizer" are applied to the products offered for sale, lime does not take the place of other fertilizing materials. With the exception of small amounts of phosphorus and insoluble potassium which are sometimes found in limestone and marl, it does not supply any of the available nutritive elements contained in fertilizers. When the need of lime is indicated, by the reaction of the soil or by the failure, partial or complete, of the leguminous plants which thrive best on limed soil, the fullest returns cannot be secured unless lime is added as a soil amendment in conjunction with materials carrying phosphorus, potassium and nitrogen. However, no form of lime should be mixed or used directly in combination with manure or with fertilizers containing organic nitrogen or ammonium salts. These materials should be applied after the lime has been thoroughly incorporated with the soil. While lime is a necessary substance for plant growth and is one of the mineral compounds present in greater or less amounts in all plant life, it is used primarily for neutralizing the so-called acid condition of soils.

INCREASING THE TOMATO YIELD.

The Department of Agriculture has just received a report from the New York Agricultural Experiment Station of tests made to determine the influence of crossing in increasing the yield of the tomato.

The infusion of new blood obtained by crossing somewhat closely related varieties, says the report, has been found, in many plants, to increase the vigor and yield of fruits to a very marked degree. Among the common commercial crops, corn, bean and tomato have been proven experimentally to be greatly benefited by such crossing. With this idea in view the experiments were begun as far back as 1907 in order to determine whether crossing increased the yield of tomatoes, and if so, how much. For this purpose, the Livingstone Stone and the Dwarf Aristocrat varieties were selected. Their fruit is identical in color and quite similar in shape, but the vines, however, are very distinct in stature, one being a standard and the other a dwarf. A third variety, Hedrick, a strain of the Livingstone Stone, which originated at the Michigan Agricultural College, was also used in the experiment. This experiment was highly satisfactory. The Dwarf Aristocrat and Livingstone Stone averaged 4.438 pounds more fruit per plant than the Livingstone Stone and 10.558 pounds more fruit than its maternal parent, or in other words, if the plants had been set four feet by four feet, or 2.722 to the acre, six tons more fruit would have been obtained from this cross than from the Livingstone Stone and over 14 tons more of fruit than from Dwarf Aristocrat. If the cross had been made between two standards, instead of a dwarf and a standard, the yield might have been greater.



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DETROIT, JUNE 22, 1912.

CURRENT COMMENT.

Every farmer should study the markets. be a student of market conditions since his profits depend upon the wise marketing of his products as well as their economical production. The reader will find upon investigation that practically every business man of his acquaintance is a close student of the markets in the particular commodity in which he may be interested, whether the same be raw material, a manufactured product or an investment security. These men keep in constant touch with market conditions whether or not they expect to enter the market either as buyers or sellers.

By this familiarity with market prices and conditions they are able to keep in mind the trend of the markets in which they are interested over considerable periods of time and by familiarizing themselves with conditions which have caused advances or reaction in that market upon previous occasions they are able to judge with greater accuracy, than would otherwise be the case, as to the probable future trend of the market. Thus, they are simply following good business methods in their study of the markets along lines in which they are interested.

Too many farmers fail to do this to any extent. They are so busily engaged with the problems of production that the question of marketing the products of their farms has been given little thought until they have a product to sell, and then they have little knowledge of conditions operating to govern the market of the commodity in which they are interested. One of the most important departments in any farm journal is its market pages and it has ever been the aim of the publishers of the Michigan Farmer to make the market pages of the paper of the greatest possible practical value to its readers. Take, for instance, the staple farm crops, the cereals, beans, potatoes, etc. The reader who desires to keep in touch with these markets will find a comment upon conditions which have a bearing upon the future of these markets, published over the quotations in our market columns each week.

These paragraphs are condensed news of crop and market conditions in different parts of the world which affect the particular market upon which they form a commentary. Directly following these comments will be found the daily quotations for the week, not only of cash products, but also of futures. A careful

comparison and study of these figures will reveal to the practical reader what dealers and speculators in these commodities think the future course of the market is likely to be. The price at which futures sell represents the consensus of opinion of those who make it a business to deal in these commodities, as to the probable trend of the future prices, and this consensus of opinion is also reflected in the market price of the cash product.

This information, which is given in condensed form, together with the monthly crop statistics relating to acreage, average yields, etc., of the principal crops, gives the reader the essential information upon which to base a continuous and comprehensive study of the markets in which he is interested. To do more, as some ambitious market writers in monthly farm papers, which cannot present this detailed information from week to week, attempt to do by making prophecies as to the future trend of the market, is to invite grave danger of misleading the reader to his own financial loss and personal dissatisfaction.

No man is so wise as to be able to predict accurately what future market conditions may be, else he would be in a position to become a bonanza speculator on a profitable scale. Every reader will find it much more to his profit to study for himself market conditions as they exist and are accurately reported by reliable journals than to depend upon the judgment of another, who has no better facilities or opportunities for studying market conditions than he himself has. There is every reason why each and every farmer should become a market student.

Space has been given in the columns of recent issues of the Michigan Farmer to a discussion of the township unit system, the last article of which discussion appears in this issue. The presentation of extreme views upon an important subject of this kind is perhaps essential to the bringing out of all points to be considered in the solution of the problem, but it is well in every case for the reader to devote a little serious thought to the subject in hand on his own account.

First, it may be conceded that conscientious educators, of which there are many in Michigan, are in closer touch with and have a better understanding of school problems from an educational standpoint alone than does the average citizen, and naturally they are, as individuals and through their organizations, prone to exercise their influence in the betterment of public schools from an educational standpoint. If we grant that there may be something of a mercenary incentive on their part, as has been charged, the same will hold true to an equal, and probably greater degree, with a large element of taxpayers who are not school patrons.

None will contend that our rural school system has not been highly efficient and productive of great results. Neither will any who have followed the proposition closely contend that it is not susceptible of improvement. Conditions have changed materially, and these changed conditions require changes in the system itself to meet them. Changes in the school law have made it possible for the people of school districts or townships to make such changes as they may desire or as may seem expedient to them in the schools of the district or township.

There need be little fear that our people will have foisted upon them obnoxious educational provisions through any outside influence. We take it for granted that the people of any township who have voted to adopt the township unit system have done so of their own accord, as was stated by the gentleman from Allegan county in a recent issue, to be the case in his township. It is also a reasonable assumption that all school boards elected by the people will carry out their well defined wishes. Otherwise, the electors will choose new officers in the future, and if the present law does not work out satisfactorily they will have it amended.

Public sentiment will ultimately control in school matters as in other questions. The people themselves can safely be entrusted with the task of solving this problem in the best manner, and while mistakes will be made here and there in the process of its solution, yet it is better that such mistakes be made than that advancement be delayed. In other words, we would counsel the people of every community to study these propositions for themselves and solve them up-

on their merits, rather than to oppose or favor them because others who are interested either from a standpoint of promoting higher education or keeping taxes down are for or against them.

MORE ABOUT THE TOWNSHIP UNIT SYSTEM.

Editor of Michigan Farmer:

I read your excellent editorial of June 8, on "School Pointers," and thank you for your advice to school electors to become familiar with the school laws" before the July 8 school meetings.

Every school district has copies of the 1911 General School Laws, or can get them free from the county superintendent of schools. I note that H. H. Hutchins, of Allegan county, disagrees with my article on the township unit system of May 25, and states "that Ganges and Cheshire townships, of Allegan county, voted to adopt the system at the April election."

I gather from his article of June 8, that "outside" members of Ganges Grange, also two public speakers, carried on a "campaign" for it by "giving talks on the subject" at the schoolhouses. (By the way, it was asserted last November that Allegan county would be a good place "to start in the lead"). No one has said \$500 would be used in one township for speakers, however.

The gentleman writes that the township high school idea "has not been so thoroughly investigated as the unit system was and we do not know whether we want it or not. One sure thing is, our people will act their own judgment, * * * and if the majority don't want it, that will settle it, if the subject should come up for discussion."

Can it be possible that after all that "thorough discussion in our Grange meetings," also the many "schoolhouse talks" by the Allegan county superintendent and the Barry county speaker, that all of the clauses of Section 9 of the township unit act, were not explained?

Section 9 reads that "the board of education shall have the following powers and duties: * * * clause (o) to establish and maintain a high school or high schools for the township and determine the qualifications for admission thereto." (See page 100).

If Ganges township has voted out the district school system and now has but one township district, the people have given away their powers to the five trustees, who may establish and maintain as many high schools as they wish, and the people have no voice in the subject, much less have power to settle the subject."

The people should have read over the whole township unit act, as given between pages 91 and 111 of 1911 school laws, and judged for themselves, instead of listening to one-sided arguments.

The National and State Granges, as well as state legislatures, have been "worked" by committees of education and legislation on this centralization of school subject for the past ten years.

In April, 1902, a Grange leader in Michigan was sent to Ohio "to investigate the centralized school system." On his return he reported that "at the present time there are in Ohio 33 fully organized townships, and 150 other townships where this system is partially adopted."

His report, with other matter, was sent to the sub-granges, also inserted in his 1901 report (on pages 26 to 30), as 1901 "history"—the report being printed in 1902. But the official Ohio School Report of 1902 reads that only 45 townships in Ohio were wholly or partly organized under the centralized school system.

A comparison of Ohio and Michigan reports of that year show other glaring mistakes as to cost, attendance, etc.

Near the close of 1902 the National Grange met at Lansing and influenced by such reports and accurate statistics was bunched into endorsing another committee resolution which favored the centralization of schools system because it was so "successful in Ohio and Illinois."

The truth was, there was not one such school in Illinois at that date, and further, Grange Editor Butterfield knew this fact but did not contradict it in the official organ.

The legislature has often been hoodwinked by committee reports framed by "leading educators."

An amusing thing occurred at "the inner temple of education"—or at the annual conclave of City Superintendents & Co., held in Lansing April 18-19, 1912. The "Co." (or school boards), are silent partners with one exception.

Nearly at the close of the meeting the resolution committee brought forth a set of resolutions, and the remaining com-

pany was told, "It is late, here are some resolutions, what shall we do with them?"

Adoption of them was proposed, and they were adopted without even being read to, or by, the members present, with no discussion by the voters.

One of these five long resolutions said that the joint association of city superintendents and school board members approved the work of its legislative committee at the 1911 legislature, and do "urge especially upon the next legislature the adoption of a compulsory township unit system, etc."

This means that it is to be forced on the people in 1913, unless they obligate their legislative candidates not to vote for it before nomination. The people will otherwise be ignored.

The Ohio School Reports of 1909-1910, report "that township supervision was at a standstill and the question is seriously asked whether centralization is dead in Ohio." Fifty-five townships went back in 1909 to the district system, such action being permitted after a three-year trial. Then why should Michigan follow an experiment which died in 18 years, when the district school system has had grand results for over a century. Note the professional agitators do not cite Ohio results any more, yet for 10 years they falsely quoted its success there.

They would sacrifice the health and comfort of the small children of the country through long, tedious rides in the old stage coach, for the sake of providing paying position for their favorites and themselves.

Think of little six-year-old children riding from six to eight miles last winter in the terrible cold. Township unit act and centralization mean the same thing in reality.

Lapeer Co. MRS. R. M. BROWNELL.

HAPPENINGS OF THE WEEK.

National.

A national institute of art and letters with a charter in the District of Columbia, is provided for in a bill that passed the lower house of Congress on Monday.

Mrs. Julia Clark, a woman aviator, was killed by a fall from an aeroplane at Springfield, Ill., Monday.

On Tuesday morning the outlook for the course to be chosen by the republican national convention, now in session in Chicago was very problematical. There appeared to be a gradual shifting of strength from the Taft to the Roosevelt forces, but at the same time talk of a compromise ticket became more general. The national committee gave to President Taft a sufficient number of the contested delegates to make it possible for the President's delegates to control, but later it developed that it was impossible to hold the men in line. Outside of these general impressions it is impossible to secure a bit of reliable news pointing to the probable course of convention affairs.

As the result of a cyclone which swept over Kansas City and vicinity late last Saturday night, 27 persons are known to have been killed, many injured and a large amount of property destroyed. The path of the storm was a half mile wide and about five miles long. Two persons were killed in Kansas City, 19 between Merwin and Adrian, and two at Creighton. Communication has been disturbed so that the extent of the damage done is difficult to learn.

Two persons were killed, two more fatally injured, a dozen others more or less seriously injured and property valued at a half million dollars was destroyed by a tornado that struck Zanesville, Ohio, Sunday morning. The storm struck a church which was occupied by 600 people at the time. All business houses in the central section of the city suffered losses ranging from \$100 to \$2,000.

A petition is being signed by practically all of the customs clerks at the port of Detroit asking for an increase in salary. The service has not provided the men an increase during the past quarter of a century.

The National Retailers' Hardware Association delegates are in Detroit this week to attend the thirteenth annual convention of the organization.

Seven miles west of South Amsterdam, N. Y., a double wreck caused by a passenger train running into the wreckage of a coal train, resulted in one fatality.

Preparations are being made for a fight in Congress to establish free tolls through the Panama canal when completed.

The socialist party opened its campaign in Chicago this week. A complete ticket has been arranged for in every state in the union.

The District of Columbia has enacted an ordinance providing for the extermination of all cats and dogs that are not confined. Dogs will, however, be released after impounded by the payment of a fee of \$2, but no such leniency is extended to the cats.

An inquiry made as to the number of lepers, isolated and under the control of authorities in the United States, shows that during the past ten years the number of persons afflicted has doubled, there being at the present time about 600 victims in this country.

Latest advices confirm the reports of devastation of life and property in and about the fishing towns near the volcano

FARMERS' CLUBS

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

THE SCHOOL AND THE FARMERS' CLUB.

There is perhaps no factor of greater importance to the rural community than the school which is maintained in that community. The changing conditions in country life have placed the average school on a different basis than it was a few years ago. The country school of today averages much smaller in size and for this reason probably considerably lower in efficiency than did the country school of a generation ago. In too many cases the parent's attention has not been directed to this fact with sufficient force and a little thoughtful study of the school problem would be of great value in any rural community, and there is no better place in which to study and discuss the phases of the school problem than in the Farmers' Club.

The school law's have been amended in recent years, giving greater power to the people of the school districts and townships in the changing of the size of the districts or the character of the schools until, at the present time, with general attention directed to this problem, it is possible for the people of any community to have just such a school in that community as they may desire. Whether it be the old, small, district school with its few scholars in the lower grades, sending the older pupils to nearby graded or high schools by the district paying the tuition; whether it be in the consolidation of two or more of these small, district schools into a larger and more efficient school, or whether it be the adoption of the township unit system, or the establishing of a township high school, or any one of a number of other pressing problems such as teaching of agriculture in the common schools, the power lies with the people of any district to direct the future of school affairs in that district, so long as they approach the subject intelligently and in a united manner.

Had school matters been thoroughly discussed in every local Farmers' Club prior to the annual school meeting in July this year there would be a greater unanimity of opinion among the school patrons as to the desirable course to pursue and a greater interest among the school electors which would inspire a larger attendance at the school meeting and make such action as might be taken more thoroughly representative of public sentiment than is ordinarily the case in the average school meeting. But it is not too early to begin a campaign of this kind for next year's results, and there will be no more profitable subject for investigation, study and discussion in any Farmers' Club than the local school problem which holds in it much of good or ill for the future of the community, depending upon whether it may be solved wisely or not.

GETTING THE VOTERS OUT TO THE SCHOOL MEETING.

About a year ago I called attention through your Farmers' Club columns, to the importance of attending the annual school meeting. I have often wondered how many districts adopted the plan of calling out crowds by the use of ice cream and cake and making it the occasion of a pleasant neighborhood gathering, and what were the results. I've only received a report from one school district.

In that case the director was kind and interested enough to furnish the entire amount of ice cream and invite them to meet at his home. The result was the attendance of five voters and a goodly number of children without their parents. To use his language, "It was a howling success." Not very encouraging surely, but not discouraging enough to call the plan a failure.

In this case I think two excellent rules would be, "Be sure you are right then go ahead," and "I'll fight it out on this line if it takes ten years."

Vary the plan if you have not succeeded, but try, try again, some plan to interest all parents and legal voters and get their attendance even though they may not vote with you.

Women of Michigan, do you desire suffrage? Then prove your worthiness by using intelligently the rights you already have.

Attend the annual school meeting the second Monday evening in July!
Kalamazoo Co. Mrs. L. J. BRADLEY.

CLUB DISCUSSIONS.

Triangles.—The June meeting of the Ingham County Farmers' Club was held last Saturday at the pleasant suburban home of Mr. and Mrs. Alton Jewett. The trees on Grove Lawn were set out 40 years ago by Mr. Rolfe and seldom, if ever, do we see a nicer building spot. The place contains 20 acres and with the abundant shade, the spacious and commodious home, the hard shrubs, it makes an ideal home and an ideal place for a meeting of the Farmers' Club. More than 100 did ample justice to the dinner served in the house. President Ives called the meeting to order upon the porch, most of the people enjoying seats in front, as the little folks had gone for an auto ride. Mrs. Ives read her paper first, "Triangles and Things." This was a clear and concise paper literally treating of triangles. She had a chart, giving illustrations of the perfect circle, which the ancients believed stood for "The Infinite," and a perfect triangle stood for a perfect man, thus an equilateral triangle inside a circle would stand for that which is highest and best, an agnostic was one who put himself outside the circle. To carefully study the triangle within the circle it touches at only three points—head, heart, hand—and no life can be perfect if lacking in one of the three, for if one line falls short the beauty of the perfect triangle is ruined. The three H's are more important in the life of the child than the three R's. She fully explained what would happen to have one H trained without the other two, and that there had been too much fuss about the man with the hoe, too many live only to work. It was a sad day when the Bible was ruled out of the public schools and it will be the dawn of a new era when it is reinstated. She closed with the following: "Then let it be the educational creed of this Club that we stand for manual training, medical supervision, physical culture, agriculture in primary schools and the best possible instruction in non-sectarian religion obtainable, to the end that the human triangles shall be all equilateral."

Agriculture in the Rural Schools.—Professor French of the M. A. C., was present and gave an interesting talk on "Agriculture in the Rural School." He said in part he wished to congratulate this Club upon the excellent work being done and thought all Clubs had a wide sphere of usefulness. Common schools include the high school and much criticism had been given that too much was taught. Rural schools, because of limitations, cannot teach agriculture as a text book, but there ought to be in every school library books of reference, just as there are books of history, and every rural teacher should know the difference between a Jersey and a Holstein, a Berkshire and a Jersey Red, a Northern Spy and a Jonathan. Enthusiasm can be communicated to child life—testing seed was an interesting experiment, and a good object lesson on the careful handling of fruit would be to take three apples, one bruised and jammed and the skin broken, one bruised and the skin not broken and the third one not jammed at all, place them on a shelf and very soon those that were bruised would commence to decay; the difference between a real painting and a daub should be pointed out. As regards the fundamental studies he said too much time was spent upon grammar and geography, language should be taught by example, and the boy or girl should be able to add, subtract, multiply and divide quickly and be able to measure lumber or a stone pile. We want teachers who are in sympathy with rural life and rural conditions and one who can impress fundamental principles, only 15 per cent of our boys and girls go to college, then 85 per cent do not go. He spoke of a teacher in northern Michigan, who had been in the same school three years and had transformed the school grounds into a beauty spot. He would like to have the interior of the schoolhouses reconstructed, have movable seats and desks, this would avoid the necessity of a large person having to stand if they were used for public meetings. The schoolhouse is now idle days and months during the year. He would like to see some short course work, where father and son could go to school together.

Favor Woman Suffrage.—About forty members and guests of the Thornapple Farmers' Club gathered at the pleasant home of Mr. and Mrs. Wm. Coman, on Thursday afternoon, June 6, and enjoyed the social hour spent with friends and also the program arranged for the day. After the usual business routine and an amusing recitation by Doris Hinckley, there was a lively discussion of the subject, "Would Michigan be benefited by woman suffrage?" A liberal amount of suffrage literature had been secured and many original thoughts were presented. It is very evident that the women know why they want to vote. Only one person, a man, had the courage to suggest that perhaps woman suffrage might not be just as desirable as represented, and he wondered whether home duties and children might not be neglected as a result of the new obligations that will fall upon the mother. Later on a vote was taken and only five persons voted on the negative side, the majority seeming to think that while it might not bring all the benefits hoped for, it would perhaps be the means of accomplishing some good.

Annual Picnic on July 4.—It was voted to hold the annual picnic at Aaron Adams' grove, two and a half miles northwest of Middleville, July 4. A cordial invitation is extended to all farmers and residents of Middleville to pack their lunch baskets and join with the Club in celebrating our greatest national holiday.

GRANGE

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

THE MADISON RALLY.

Heralded for months, advertised for weeks and worked toward for days, the "Madison Rally" has come and gone. It passes into Michigan Grange history as a unique, never-to-be-forgotten occasion. The day "was made to order," declared our capable hosts, and no one present doubted their ability to secure anything they desired to promote the pleasure of their guests. Invitations had been sent to all State Grange officers, to Granges in southern Michigan and to many individuals. The morning trains brought patrons from Branch, Hillsdale, Jackson, Wayne, Oakland, Washtenaw and Lenawee counties in numbers, while members of the Executive Committee of State Grange and Master Hull and family represented other sections of the state. A baker's dozen of autos, owned by Madison members, made repeated trips between the railroad stations at Adrian and Madison Grange hall, five miles away, out through the "finest farming lands of Michigan." Fragrant clover blooms, fields of green alfalfa, and level, freshly-planted seed beds lined the roadsides and called forth exclamations of appreciation from the visitors, while a royal sky and June sunshine beamed down upon all.

At the hall ample provision had been made for comfort in every way. A large tent was erected adjacent to the two-story hall—a hall so "homey" in its details that one woman was heard to ask, "Why is this a Grange Hall? It seems more like a home!" And so everyone was made to feel as if "at home." The Michigan Farmer had already shown a picture of the court of this hall arranged by its woman's work committee. That committee has from year to year added many softening touches and material furnishings.

A conference upon lecture work occupied the hour before noon, being introduced by a few comments upon the character-building effect of good Grange programs by National Lecturer Hull. How to balance a program ration was the phase of the subject taken up by other lecturers. Practical farm and home topics serve as proteids, giving strength and energy; public affairs represent carbohydrates in the ration, while entertainment features furnish desirable "roughage" to make the rest digestible and palatable. The point was well made by one lecturer that a Grange may be devitalized by an excess of either levity or seriousness.

Dinners were served from tastefully set tables in the dining-room, from improvised tables under the big tent and from overflowing baskets along the roadsides; and, even then, I am sure, the traditional number of "baskets of fragments" were left.

Promptly at 1:30 p. m. the gavel fell in the hand of L. F. Allis, master of Lenawee Pomona, and all were attentive to the long and carefully prepared program. Music was by the old-time favorite, B. P. Thomas, and the Harwood family orchestra. The address of welcome by the youthful master of Madison, and response by Past State Master Horton, exemplified in a high degree the effect of Grange habit. In fact, seldom, if ever, have I seen the distinct result of Grange training more obvious than in this program. Every one of the addresses, and there must have been a dozen, was constructive and had point. State Master Hull led the list with an earnest recognition of the fact that unanimity of purpose and action alone make a sure basis for effective co-operation. He was followed by state officers Coward, Hutchins, McNaughton, Baker, Miss Snook and others. Mrs. Mary Allis Beal delighted her many friends with two of her favorite recitations in her own characteristic style.

Among the many noteworthy features, the suffrage sentiment displayed by Madison was conspicuous. Coming first of our rallies, Madison has set a surely good suffrage pace for other counties to follow. She showed courage of her Grange convictions along this line. Rich yellow badges, bearing the word "Madison," were worn by local members; every auto floated pennants in the sunny color which stands for equal rights for all; bouquets and napkins at table showed yellow flowers; the State Lecturer was allowed to talk suffrage; girl "newsies" selling suffrage papers wore cocked hats adorned with the suffrage slogan; even Pomona Master Allis' tiny team of Shetlands loyally bore on placards the same advice, "Vote for Women," and a little play of Betsy Ross making the flag richly set off how women may be expected to get at public matters.

"Madison! Long live Madison! So say we all!" JENNIE BUELL.

AMONG THE LIVE GRANGES.

Coopersville Celebrates Close of Contest.

Coopersville Grange celebrated the close of its attendance contest Saturday evening, June 8. About 140 members and 35 guests were present. A short program was rendered, a prominent feature of which was an address on Grange legislation by State Master Hull. Following the program the winning team—honored ones of the occasion—led the march to the hall below where members and guests were greeted by five long tables, beauti-

fully decorated in the colors of the court and laden with food of which "truly Granger-like" is the best description. After the banquet five-minute responses to toasts were given by State Master Hull, Bros. Colon C. Lillie and John Park, Jr., the master and four other members of Coopersville Grange. These responses were all very enjoyable.

It might be said of the contest that it gained for Coopersville Grange over 70 members, including 15 by reinstatement. It stimulated an already intense interest in the Grange and increased the attendance over 100 per cent. For some time past I have jealously watched the reports of Capitol Grange and others, and I at last feel that we, of Coopersville, can meet them on equal grounds. Although Coopersville is not the largest Grange it is one of the best.—Frank C. Hambleton, Lect.

Oceana Pomona Grange held a very successful meeting on Saturday, June 1, at the Blooming Valley Grange hall. The patrons of Blooming Valley Grange are great entertainers and the manner in which they cared for the brothers and sisters who came from a distance will be pleasant to remember. June is a busy month at best, but it is especially so here this year on account of the recent wet weather which has retarded the work and made it necessary for people to employ every moment possible, in the important work of getting in the crops. The attendance was not so large as we had hoped in the forenoon, but many more came after dinner, and the house was pretty well filled. Reports of subordinate Granges in the morning showed the Granges of the county in generally good condition. Since the beginning of the year two of our most faithful workers have passed to their reward, and accordingly memorial services were held in memory of these honored sisters. A half hour still remained after the exercises, before the dinner hour, and we were therefore given a treat in an address by Hon. J. W. Helme, of Adrian. Brother Helme spoke upon the importance of agriculture. He said few of us realize the great importance of our calling as tillers of the soil. "I have been a lawyer for years," he said, "but I expect to quit the practice of law soon and devote my entire attention to the farm. I have concluded that the lawyer is of no use to the world, anyway, and I would like to render some service to mankind. Yes, we have been wrong in our estimates of the value of things. The farmer is the true nobleman. The other day we had a meeting in Adrian to boom the town, and when invited to be present, I declined. They said they wanted to secure some new factories, but I told them that those factories would have to be manned by help that was sorely needed on the farms of Lenawee county, and that if I went to that meeting, and spoke, I should break it up." He dwelt at some length upon the question of food supply and illustrated its important relation to the progress of the people. He said that before many years we should be importing wheat in America. "We must conserve the sewerage from our great cities and prevent the constant waste from that source. We must care for the soil in such a way that its fertility will be husbanded."

After dinner came a number of good papers, an address by our county school commissioner, and a good dairy talk by Brother Helme. The Oceana Pomona is prospering, and the interest was never better. Brother Adams is filling the office of lecturer in a very acceptable manner and already we are getting results from his energy in our behalf. After a short session in the fifth degree, in which a number of candidates took part, Blooming Valley held a meeting in the evening, and we regretted that we were unable to remain.—W. F. T.

Western Pomona met at Allendale, Ottawa county, Saturday, June 8. The meeting was well attended, seven of the ten Granges in the county being represented. Bro. Hull gave a stirring address in which he emphasized the need of farmers organizing and working together in order to improve conditions for themselves and their families. A class of six received the fifth degree. The attendance in the evening was so large that it was necessary to hold the meeting in the town hall. Mrs. Russell's address on equal suffrage was well received. Senator Huntley Russell sang and responded to an encore. Allendale Grange, though small in membership, was no less hospitable than our larger subordinates and entertained in a very pleasing manner. Allendale is to be congratulated upon its fine two-room school building and its five acres of school yard divided into play-ground and grove of fine young trees, of which the community may well feel proud.—Myrtle B. Brown, Lect.

Special Programs have been the order with Morenci Grange for some weeks. Early in May this Grange held a Mother's meeting, with appropriate program, which was well attended. Friday evening, June 7, Children's Day was observed. A lengthy and highly interesting program was rendered, opening with a march and flag drill in which 23 children participated. At the close of the meeting the children were given a treat of popcorn and candy in baskets decorated with the national colors. The next meeting of this Grange will be known as Father's night, thus continuing the special program idea.

COMING EVENTS

Pomona Meetings.

Wayne Co., with Huron Grange, Friday, June 21. Miss Jennie Buell will speak.
Ingham Co., with West Hadley Grange of Livingston Co., Friday, June 21.
Newaygo Co., with Sitka Grange, Wednesday and Thursday, June 26-27.
Genesee Co., with Burton Center Grange, Friday, June 28. Good speakers assured.

MARKETS

DETROIT WHOLESALE MARKETS.

June 19, 1912.
Grains and Seeds.

Wheat.—This market has declined since a week ago. The cool weather has improved the outlook for the new crop, although in some sections excessive rains are claimed to be working damage. The volume of the trade, however, is very small. Liquidation of July wheat by heavy holders is counted as a bearish feature. Most of the activity is in futures. Cash wheat is dull, millers do not appear in any hurry to load up and flour is having a quiet market. One year ago the price of No. 2 red wheat was 89½¢ per bu. Quotations are as follows:

	No. 2	No. 1	Red.	White.	July.	Sept.
Friday	1.12½	1.10½	1.12	1.13	1.13½	1.13½
Saturday	1.12½	1.10½	1.12	1.13	1.13½	1.13½
Monday	1.12½	1.10½	1.12	1.13	1.13½	1.13½
Tuesday	1.11½	1.09½	1.11	1.13	1.13½	1.13½
Wednesday	1.11½	1.09½	1.11	1.13	1.13½	1.13½

Corn.—This grain has followed wheat the decline being less, however. The influence of the wheat market no doubt had some effect here. Copious rains in the southern states where a drought threatened, improved the outlook for corn in that section. This, however, has been somewhat counterbalanced by the cool weather prevailing in the north where the growing plant is not developing as rapidly as it should. So far as the local market is concerned there is practically no dealing, the stocks being practically depleted. One year ago the price for No. 3 corn was 57¢ per bu. Quotations are as follows:

	No. 3	No. 3
	Corn.	Yellow.
Friday	77½	79½
Saturday	77	79
Monday	76½	78½
Tuesday	76½	79
Wednesday	75½	77½

Oats.—Conditions have favored a decline in oat values. The weather has been more or less favorable for the crop over a large section of the oat growing territory in this country. Iowa, however, is complaining that in many places the oats are becoming too rank for grain production. On Tuesday the local market showed an easy undertone and transactions were meagre. One year ago the price for standard oats was 41½¢ per bu. Quotations are as follows:

	Standard.	No. 3
		White.
Friday	57½	57
Saturday	57½	57
Monday	56	56½
Tuesday	55½	55½
Wednesday	55½	55½

Beans.—No transactions are reported in this department of the market and prices continue to be nominal. The trade has marked up quotations for October delivery 5¢. Following are the nominal figures:

	Cash	Oct.
Thursday	\$2.70	\$2.25
Friday	2.70	2.25
Saturday	2.70	2.25
Monday	2.70	2.30
Tuesday	2.70	2.30
Wednesday	2.70	2.30

Clover Seed.—Old seed is done and the trade is merely looking forward to the fall activity. October seed remains steady at figures given a week ago. They are as follows:

	Prime Oct.
Thursday	\$10.00
Friday	10.00
Saturday	10.00
Monday	10.00
Tuesday	10.00
Wednesday	10.00

Rye.—A decline of 2¢ was made in this deal last week, cash No. 2 now being quoted at 83¢ per bu.

Flour, Feed, Potatoes, Etc.

Flour.—Prices are steady with the trade slow.

Straight	\$5.60
Patent Michigan	5.80
Clear	5.00
Rye	5.40

Feed.—Trade is steady and prices unchanged. The carlot prices on track are: Bran, \$26 per ton; coarse middlings, \$30; fine middlings, \$32; cracked corn and coarse corn meal, \$33; corn and oat chop, \$34 per ton.

Hay and Straw.—Hay is lower, straw steady. Quotations: No. 1 timothy, \$23.50 @24; No. 2 timothy, \$22.50 @23; clover, mixed, \$21.50 @22.50; rye straw, \$11.50 @12; wheat and oat straw, \$10.50 @11 per ton.

Potatoes.—While the supply of new potatoes appears to be liberal and prices for them show a decline, old stock has a firm tone with quotations ruling about 10¢ higher than a week ago. They are quoted in car lots on track at \$1.15 per bu in bulk and \$1.20 in sacks.

Provisions.—Family pork, \$19.50 @21.50; mess pork, \$20.50; clear, backs, \$19.50 @21.50; hams, 14½ @15½¢; briskets, 11½ @12¢; shoulders, 12¢; picnic hams, 10½ @11¢; bacon, 14 @16¢; pure lard in tierces, 12¢; kettle rendered lard, 13¢ per lb.

Dairy and Poultry Products.

Butter.—While the Elgin and Chicago markets show a fractional decline in butter quotations the local market has advanced creamery stock 1¢. There is no explanation that can be offered for this except that of a temporary local shortage. Dairy stock remains steady. Quotations are: Extra creamery, 26½¢; first creamery, 25½¢; dairy, 21¢; packing stock, 19¢ per lb.

Eggs.—This trade is handling a very large volume of business. Offerings are heavy and the demand is vigorous from

both consumers and storage people. Quotations for fresh current receipts, cases included, are: Canned firsts, 19¢; do. seconds, 16½¢; checks, 15¢ per dozen.

Poultry.—There is a better supply of poultry than the demand will well take care of, particularly of broilers and chickens. Prices for these have declined as a consequence. Other kinds are steady. Quotations: Live—Broilers, 25 @28¢; chickens, 11 @12¢; hens, 11 @12¢; turkeys, 16 @18¢; geese, 11 @12¢; ducks, 14¢; young ducks, 15 @16¢ per lb.

Veal.—Veal is steady. Fancy, 10 @11¢; choice, 8 @9¢ per lb.

Cheese.—Market is steady. Michigan flats, 16½ @17¢; York state, flats, 16½ @17¢; limburger, 17 @18¢; domestic Swiss, 21 @22¢; brick cream, 16 @17¢.

Fruits and Vegetables.

Cherries.—\$4 @4.25 per bu.

Raspberries.—In small supply, and red are selling at \$4.50 per 24-pt. case.

Strawberries.—Michigan berries are in abundance and the price is cut in two since a week ago. The price paid for Michigan 16-qt. cases is from 60¢ @ \$1.

Honey.—Choice to fancy comb, 15 @16¢ per lb; amber, 12 @13¢.

Apples.—Market slow. Baldwins are selling at \$4.50 @5; Steele Red, \$5.50 @6; Ben Davis, \$3 @3.50.

OTHER MARKETS.

Grand Rapids.

There were 600 loads of fruit and produce on the city market Tuesday morning, and two-thirds of the sellers had strawberries. This fruit held up well on account of the big demand from outside, the price ranging from 75¢ @ \$1. Potatoes sold at \$1.20; leaf lettuce, 35 @40¢; spinach, 35 @40¢; radishes, 5 @7¢; pieplant, 40 @45¢; peas, \$1.15 @1.25. Old hay is lower, selling at \$15 @19. Jobbers in dairy products are paying the country trade 20 @21¢ for dairy butter; 16½¢ for eggs. Beans are quoted on \$2.20 basis to farmers.

Chicago.

Wheat.—No. 2 red, \$1.07 @1.09½; July, \$1.05½; September, \$1.03½.

Corn.—No. 3, 71 @72½¢; July, 71½¢; September, 71½¢ per bu.

Oats.—No. 2 white, 52½ @53½¢; July, 48½¢; September, 40½¢ per bu.

Barley.—Dull and lower. Malting grades, 90¢ @ \$1.15 per bu; feeding, 55 @ 70¢.

Butter.—Last week's ½¢ advance on creameries has been lost, the market showing an easy undertone. Quotations are: Creameries, 23 @25¢; dairies, 20 @24¢ per lb.

Eggs.—Market firm; no change in prices. Quotations are: Firsts, 17½¢; ordinary firsts, 16¢ per dozen; at mark, cases included, 15½ @16½¢.

Potatoes.—Market very quiet; both old and new stock showing material declines in values since this time a week ago. Old potatoes now quoted at \$1 @1.05 per bu; new stock, \$1.40 @1.60 per bu.

Beans.—Prices remain at last week's figures with sentiment unchanged. Quotations: Pea beans, choice hand-picked, \$2.92½ @2.95 per bu; prime, \$2.82½ @2.85; red kidneys, \$3.25.

Hay and Straw.—All grades of timothy are \$2 @3 lower and the same may be said of clover, while alfalfa has declined \$1 @2. Quotations: Timothy, choice, \$23 @23.50; No. 1, \$21.50 @22.50; No. 2 and No. 1 mixed, \$18.50 @20.50; clover, \$12 @16; No. 2 and no grade, \$8 @10; alfalfa, choice, \$16 @16.50; No. 1, \$15 @16; No. 2, \$11 @13. Straw—Rye, \$10 @11; wheat, \$8 @8.50; oat, \$9 @9.50.

New York.

Butter.—Top grades show a loss of a full cent; market steady. Creamery extras, 26½ @27¢; firsts, 25½ @26¢; seconds, 25 @25½¢.

Eggs.—Best nearby grades steady; western stock higher. Quotations: Fresh gathered extras, 21 @22¢; do. extra firsts, 19½ @20½¢; firsts, 18½ @19¢; western gathered whites, 21 @23¢ per dozen.

Poultry.—Live—Western broilers, 30¢; fowls, 14¢; turkeys, 12¢. Dressed—Chickens, broilers, 28 @30¢; fowls, 13 @14¢; turkeys, 13 @23¢ per lb.

Boston.

Wool.—The trade has practically forgotten the old deal and is now confining attention strictly to the new clip which is already in the eastern market. Although prices continue to be largely nominal, reports indicate that contracts are being made with farmers for the new clip at a still higher level than was reported earlier. Choice grades of fleece wool are said to be selling at 27¢; while 25¢ is the most popular price in Michigan. It appears that the condition of the wool in most of the fleece states is very fine, the shrinkage being reported as two per cent lighter than a year ago on shipments already made. This accounts in part for the willingness of buyers to advance quotations and take the offerings at prices asked by producers.

Elgin.

Butter.—Market is firm at 25¢ per lb., which is ½¢ below the price of the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

June 17, 1912.
(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York.)

Receipts of stock here today as follows: Cattle, 194 cars; hogs, 110 double decks; sheep and lambs, 25 double decks; calves, 2,500 head.

With 194 cars of cattle on our market here today, and 20,000 reported in Chicago, our market was fully 15 @25¢ per cwt. lower all around than last Monday. There was some of the best dry-fed cattle on the market here today that has

been shown here this entire year. The market closed dull at the decline.

We quote: Best 1,400 to 1,600-lb. steers dry-fed, \$9 @9.40; good prime 1,300 to 1,400-lb. do., \$8.75 @9.15; do. 1,200 to 1,300-lb. do., \$8.25 @8.50; medium butcher steers, 1,000 to 1,100, dry-fed, \$7.75 @8.25; best fat cows, dry-fed, \$6.25 @6.50; best fat heifers, \$7.50 @7.75; grass steers, 1,000 to 1,100, \$6.50 @7; light grass steers, \$6 @6.50; best grass cows, \$4 @4.50; grassy butcher cows, \$3.50 @4; do. fat heifers, \$6 @6.50; do. butcher heifers and steers, mixed, \$6.25 @6.50; trimmers, \$2.75 @3; stock heifers, \$4.50 @4.75; best feeding steers, dehorned, \$5.50 @6; common feeding steers, \$4 @4.50; stockers, inferior, \$3.50 @4; prime export bulls, \$6.75 @7; best butcher bulls, \$5.50 @6; bologna bulls \$4.25 @5.25, best milkers and springers, \$5 @6; fair to good do., \$4 @5; common kind do., \$2 @3.

Hog receipts today were rather liberal both here and at all other markets, consequently lower prices on everything. One or two loads of very choice 300-lb. hogs sold at \$7.65, and a few decks of handy mixed weights of choice quality at \$7.60, with the bulk of the transactions at \$7.50 @7.55; light yorkers, \$7 @7.25; stags, \$5 @6; roughs, \$6 @6.50; pigs, \$6.75 @6.90. Trade closed rather quiet, but everything sold that arrived in time for market. A few common grassy hogs are showing up. Shippers must be careful on this kind. We can handle a few to good advantage, but any time we would have a good many of them on the market, would sell considerably below the top quotations.

The lamb market today was active; most of the choice spring lambs sold at \$8.75 @9; few at \$9.25. There were no dry-fed yearlings on the market today, the best that were here sold mostly at \$7.50; one or two small bunches at \$8. The sheep market was slow; prices about the same as last week. Look for about steady prices on both sheep and lambs balance of this week.

We quote: Choice spring lambs, \$8.75 @9.25; cull to fair spring lambs, \$5 @7; yearling lambs, \$7.50 @8; bucks, \$2.50 @3; wethers, \$4.85 @5; handy ewes, \$3.75 @4; heavy ewes, \$3.75 @4; cull sheep, \$1.50 @3; veals, choice to extra, \$8 @8.50; fair to good do., \$6.50 @8.

Chicago.

June 17, 1912.
Cattle. Hogs. Sheep.

Received today 21,000 45,000 17,000
Same day last year, 26,816 40,336 18,915
Received last week, 34,193 152,956 86,134
Same week last year, 48,659 147,303 91,174

Cattle receipts today are larger than for recent Mondays, and while the best steers are unchanged, with a sale at \$9.40, the less attractive offerings are called about a dime lower, although after early dullness, the demand became fairly good. Butcher stock was extremely dull except for fat lots, and prices were all of 10 @15¢ lower, with some sellers reporting an even greater reduction in medium and common cows.

Sheep and lambs did not show much change, the offerings being only moderate in volume. A sale of prime spring lambs took place at \$9.10, and 2,000 California range springs brought \$6.75. About 2,000 southern springs arrived consigned to packers, and Louisville wired receipts there of 10,000 head. Receipts here embraced 3,400 Oregon range wethers and yearlings, the former selling at \$5 and the latter at \$5.75.

Hogs received here last week averaged in weight 236 lbs., compared with 233 lbs. a week earlier, 238 lbs. a year ago and 242 lbs. two years ago.

Hogs declined a dime more today under the liberal offerings, with a fairly active demand at \$6.80 @7.35, pigs going at \$5.15 @6.75. It is common talk that the hog supply of the country tributary to this market is larger than was supposed.

Cattle have been marketed very sparingly for still another week, and the growing scarcity of marketable beefs throughout the country is evident to everyone who is interested in such matters. It cannot be said that the requirements of the trade have improved perceptibly, the extreme dearthness of beef in all parts of the country tending to lower its consumption materially, but such meager offerings have brought out further advance of 30 @50¢ in the rank and file of the receipts. Demand still centers strongly in the middling kinds of cattle that can be converted into medium-priced light cuts of beef, and not many prime heavy beefs are needed to satisfy this demand; but so few are received that sellers have been in a position to obtain \$9 @9.40 for choice to extra lots. The commoner light-weight yearling steers sold at \$6 @7, with a large part of the steers selling by Wednesday at \$7.50 @9.10, and a sale was made of two car loads of prime branded Herefords that averaged only 1,251 lbs. at \$9.40. Cattle of good weight that graded well sold at least as high as \$8.50, although fat steers of lighter weight sold under that price. Steers selling between \$7 and \$8 were only fair in quality, with a medium-class offered at \$8 and upward. Cows and heifers brought \$4.35 @8.40, and a sale of 25 fancy Hereford heifers that averaged 750 lbs. was made at \$8.75.

Distillery fed cattle were numerous and sold especially well. Butcher stock was active when fat, and cows and heifers of the better class were highly favored. Canners sold at \$2.40 @3.25, cutters at \$3.30 @4.30, and bulls at \$3.75 @7.25. There were such limited offerings of stockers and feeders that buyers could not do much, stock steers selling at \$4.50 @6.30 and most of the feeders at \$6 @7. Slaughterers were taking young steers of merely a good fleshy feeder class around \$7.25. Calves were lower at \$3.50 @8.50, and milch cows were active and higher at \$35 @75 each.

Hogs have failed to show the strong undertone that was so pronounced a feature earlier in the season, the eastern

shipping demand having been much more uncertain, and when outside buying competition is restricted, local buyers are very apt to hold back for better terms. This has happened frequently recently, and buyers allowed hogs to accumulate in sellers' hands in big numbers, using these as a club to pound prices. Increasing receipts added to the weakness, the past week starting off with a good-sized Monday run, and all descriptions of hogs were lowered on different days, although there was a strong Monday market. The spread in prices was considerably narrowed, with a better showing of fat heavy swine among the arrivals, although thin and rough sows, as well as stags, were numerous. There was also a full supply of pigs most of the week. The large demand for fresh pork products, due to their cheapness as compared with other meats, is still the strongest factor in the hog trade. The close of the week found hogs selling at \$6.80 @7.45, compared with \$7.15 @7.70 a week ago, pigs selling at \$5.25 @6.75. The week's receipts were largely increased, while the shipments east from here were unusually small.

Sheep made a small show last week, the receipts continuing to run mainly on lambs in the big sheep house. There was a fair supply of native ewes, and bucks were fairly numerous, but wethers and yearlings were scarce. Native fed clipped lambs were offered less freely, while spring lambs were in materially increased supply. The Kentucky and Tennessee spring lambs were moving liberally to the Louisville market, as many as 10,000 head arriving there in a single day, and the Chicago packers had buyers stationed there, these men shipping large numbers consigned direct to the packing plants. Demand continued to center strongly in prime spring lambs, and while these brought strong prices as a rule, the market was dull and on the down-grade for everything else in the live mutton line. The first fat Oregon range stock of the season arrived on Wednesday, consisting of eight double-decks, nearly all yearlings. The fat yearlings brought \$6 and the feeder yearlings \$5. The close of the week found prices 25 @50¢ lower than a week earlier, the worst declines taking place in yearling lambs, ewes and cull stuff. Spring lambs sold at \$4.50 @9, fed lambs at \$4 @8.85, ewes at \$1.50 @4.40 and bucks at \$2.25 @3, breeding bucks going at \$3.50 @4.

Horses were in only moderate supply and demand last week, with buyers centering their demand on good animals and neglecting others. Prices were firm or otherwise according to the desirability of the offerings, inferior horses being slow at \$85 @100 per head, while choice heavy drafters were taken at \$250 @275, prime extra heavy drafters being scarce and pretty much nominal around \$300. Light drafters sold at \$150 @225 and wagon horses at \$150 @250. A pair of expressers sold recently at \$560, and pairs of geldings weighing around 1,800 lbs. brought \$480 @515. Mules sold freely to farmers for about \$480 per pair.

LIVE STOCK NOTES.

Kansas pastures are full of cattle, mostly younger of age than in other years and in the possession of large stockmen. Spring pig losses were about one-third greater than usual. Corn looks well, and alfalfa of the first cutting was the largest crop ever known. Small farms are short of cattle.

Cattle killers in the Chicago market have been buying a medium class of butcher cattle off grass at fair prices, but inferior stock of this kind has a poor sale, as such cattle are poor killers, making the cost of carcasses relatively higher than that of well finished yearlings on the butcher order.

A sale of a clip of wool in Michigan is reported at 25¢ per lb., and local buyers in Ohio have been paying 25 @25½¢ for best medium clips, prices that eastern buyers have been refusing to pay. In Indiana 25¢ has been paid for medium clips.

St. Louis butter merchants by telegraph on a recent Monday urged the Elgin Board of Trade to adopt a "safe and sane" policy in setting the price of butter. The message said that the Elgin board controls the butter market of the country and that the price is too high, with the result that the output of oleomargarine is constantly increasing and encroaching on the "legitimate territory" of the dairy interests.

Chicago sheepmen salesmen are complaining a good deal about the inferior quality of many of the fed clipped lambs and spring lambs offered on the market from day to day. Country shippers in many instances evidently fail to realize how strongly killers discriminate against offerings that are not well fattened. Sending in this stock at this time is a losing venture.

Ivanhoe, the Clydesdale gelding that is the pride of the Union Stock Yard & Transit Company of Chicago, has been loaned to the state of Wisconsin. Ivanhoe is a grand object lesson to northern Wisconsin farmers. When a raw three-year-old he cost \$385, and \$700 has been refused for him several times. There is a standing offer of \$1,000 for one to mate him.

Kentucky and Tennessee sheepmen are pursuing their long established custom of marketing their "crop" of spring lambs in Louisville, where the big Chicago packers have buyers stationed, and are in a position to dictate prices to a large extent, as there is little real competition between buyers. It is an admitted fact that such sellers are not able to obtain the full market value of their lambs, and the suggestion has been made many times by live stock commission firms doing business at Chicago and other western markets that these southern sheepmen would come out with much larger profits if they would make a distribution of their lambs at such points as St. Louis, Chicago and Buffalo.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

June 20, 1912.

Cattle.

Receipts, 1,306. Market 25c lower than Wednesday or last week. We quote: Best steers and heifers, \$7 @7.25; steers and heifers, 1,000 to 1,200, \$6.50@6.75; do. 800 to 1,000, \$5.50@6.25; do. that are fat, 800 to 1,000, \$5.50@6.25; do. 500 to 700, \$4@4.50; choice fat cows, \$5 @5.50; good fat cows, \$4@4.50; common cows, \$3.25@3.50; canners, \$2.25@3; choice heavy bulls, \$5.50; fair to good bolognas, bulls, \$4.75@5.25; stock bulls, \$4@4.50; choice feeding steers, 800 to 1,000, \$4.50@5.50; fair feeding steers, 800 to 1,000, \$4.50@5.50; choice stockers, 500 to 700, \$4.50@5.50; fair stockers, 500 to 700, \$4.25@4.75; stock heifers, \$4@4.50; milkers, large, young, medium age, \$4@6.00; common milkers, \$2.50@3.50.

Spicer & R. sold Kull 4 steers av 750 at \$6.25, 4 butchers av 742 at \$5.75, 2 cows av 1,040 at \$4.50, 1 do weighing 720 at \$3; to Applebaum 2 do av 850 at \$4.60; to Gerish 20 butchers av 775 at \$6.25, 1 bull weighing 1,030 at \$5.50; to Rattkowsky 3 cows av 947 at \$4.50; to Bresnahan 1 do weighing 1,110 at \$5.50, 1 do weighing 980 at \$4.50, 2 do av 1,135 at \$6, 1 do weighing 660 at \$3, 3 do av 923 at \$5.60, 1 do weighing 650 at \$2.50, 1 do weighing 930 at \$3.50; to Sullivan P. Co. 1 bull weighing 1,330 at \$5.50, 2 do av 800 at \$4.90, 4 cows av 1,137 at \$4.50, 11 butchers av 732 at \$5.25; to Regan 2 do av 615 at \$4.50, 3 do av 477 at \$3.90; to Mich. B. Co. 2 cows av 935 at \$4, 16 butchers av 740 at \$5.30, 1 steer weighing 1,050 at \$7.25; to Marx 6 butchers av 816 at \$5.50; to Kamman 8 steers av 764 at \$5.75, 6 butchers av 726 at \$4.

Roe Com. Co. sold Kamman B. Co. 20 butchers av 850 at \$6.50, 8 cows av 930 at \$5; to Bresnahan 2 canners av 670 at \$2; to Thompson Bros. 11 butchers av 607 at \$5.25, 2 do av 630 at \$5.25, 1 cow weighing 940 at \$3.50; to Mich. B. Co. 27 butchers av 729 at \$5.75.

Bishop, B. & H. sold Arndt 8 steers av 821 at \$7.25; to Rattkowsky 1 bull weighing 1,000 at \$5.50, 3 cows av 857 at \$4.60, 4 do av 760 at \$4.50, 1 do weighing 1,000 at \$4, 4 butchers av 635 at \$4.50, 4 cows av 900 at \$4, 3 do av 533 at \$4; to Hammond, S. & Co. 9 do av 840 at \$3.50, 3 canners av 750 at \$2.50, 7 cows av 933 at \$4.40, 2 bulls av 860 at \$4.40, 2 do av 1,015 at \$4.75, 4 cows av 995 at \$4, 1 bull weighing 1,350 at \$5.60, 8 cows av 1,039 at \$5, 22 steers av 835 at \$6.40; to Kamman B. Co. 10 butchers av 730 at \$6; to Goose 20 do av 660 at \$4.15; to Parker, W. & Co. 21 do av 820 at \$6; to Bresnahan 9 do av 691 at \$4.50, 2 do av 440 at \$4; to Austin 7 stockers av 580 at \$5; to Hammond, S. & Co. 18 butchers av 980 at \$7; to Elmbush 8 stockers av 522 at \$5; to Sullivan P. Co. 9 butchers av 780 at \$5.25, 3 bulls av 933 at \$4.50, 3 steers av 383 at \$6.90, 3 cows av 1,050 at \$5.15; to Schuer 17 cows av 926 at \$3.50; to Ginger 20 stockers av 714 at \$5.45; to Kamman B. Co. 8 steers av 927 at \$7, 5 cows av 1,048 at \$5; to Converse 3 canners av 773 at \$3, 1 cow weighing 1,020 at \$4.

Weeks sold Heinrich 6 steers av 840 at \$7. Sharp sold same 4 do av 985 at \$7.10. Walsh sold same 2 do av 1,030 at \$7.25. Sharp sold Bresnahan 3 cows av 1,300 at \$6.

Rosenhelm sold Mich. B. Co. 2 cows av 1,050 at \$4.50, 1 do weighing 940 at \$3. Weeks sold same 19 cows and bulls av 1,072 at \$5.65, 5 butchers av 988 at \$5.65, 11 cows av 1,034 at \$5.65, 10 do av 920 at \$5.65.

Sandall sold same 1 bull weighing 1,550 at \$6, 2 do av 1,050 at \$5.50, 2 steers av 920 at \$7, 4 cows av 1,005 at \$4.50, 10 butchers av 625 at \$5.

Haley & M. sold Kamman 10 butchers av 796 at \$6; to Bresnahan 10 do av 470 at \$4.70; to Applebaum 1 cow weighing 930 at \$4; to Rattkowsky 5 do av 984 at \$4.50; to Sullivan P. Co. 1 bull weighing 670 at \$4, 2 do av 1,265 at \$5; to Heinrich 3 steers av 827 at \$6.75, 10 do av 832 at \$6.75; to Sullivan P. Co. 4 cows av 970 at \$3, 4 do av 820 at \$4.50; to Schurman 18 steers av 790 at \$6.80.

Veal Calves. Receipts, 1,232. Market 25c lower than last week; culls very dull. Best, \$8@8.75; common, \$3.50@7.

Haley & M. sold Newton B. Co. 14 av 150 at \$8, 4 av 200 at \$6, 18 av 140 at \$7.50; to Parker, W. & Co. 13 av 130 at \$7.75, 2 av 195 at \$8.25, 7 av 130 at \$7; to Patrowsky 4 av 190 at \$4, 27 av 140 at \$7; to Mich. B. Co. 20 av 145 at \$3.

Roe Com. Co. sold Goose 7 av 125 at \$8, 17 av 135 at \$8.10.

Bishop, B. & H. sold Mich. B. Co. 3 av 150 at \$8.25, 23 av 140 at \$7.75; to Goose 25 av 175 at \$5.50; to Parker, W. & Co. 3 av 145 at \$8.25, 3 av 150 at \$7.50, 12 av 140 at \$7.50, 18 av 160 at \$8.25, 14 av 135 at \$8; to Hammond, S. & Co. 39 av 140 at \$8, 12 av 125 at \$6.50, 12 av 145 at \$8.25, 3 av 110 at \$6.50, 14 av 135 at \$8.25, 2 av 135 at \$8; to Rattkowsky 10 av 162 at \$8.25; to Parker, W. & Co. 10 av 176 at \$6.75; to Smith 63 av 135 at \$6.50; to McGuire 25 av 160 at \$8.75, 2 av 155 at \$7; to Elk 2 av 155 at \$8.50; to Nagle P. Co. 1 weighing 180 at \$6, 4 av 150 at \$8, 23 av 145 at \$6, 13 av 140 at \$8, 18 av 145 at \$8.25, 2 av 140 at \$8.50, 3 av 140 at \$8.50, 9 av 150 at \$8.25, 2 av 170 at \$6.

Spicer & R. sold Applebaum 12 av 145

at \$8; to Goose 9 av 185 at \$5; to Sullivan P. Co. 1 weighing 180 at \$5.50, 6 av 125 at \$6; to Hoffmann 11 av 130 at \$6; to Mich. B. Co. 3 av 120 at \$6, 10 av 142 at \$8; to Newman 13 av 130 at \$6, 17 av 140 at \$8, 4 av 157 at \$8.25, 6 av 112 at \$6, 7 av 150 at \$7.75; to Burnstine 9 av 150 at \$8.40; to Sullivan P. Co. 10 av 128 at \$5.

Sandall sold Mich. B. Co. 14 av 145 at \$8. Dwelle sold Burnstine 25 av 150 at \$3, 4 av 90 at \$6.

Sheep and Lambs.

Receipts, 1,259. Quotations for clipped stock 25c lower than last week; quality very common. Best lambs, \$6.75 @7; fair to good lambs, \$5@6; light to common lambs, \$3@4; spring lambs, \$7@8.75; fair to good sheep, \$3@4; culls and common, \$2@2.50.

Bishop, B. & H. sold Mich. B. Co. 2 sheep av 115 at \$4, 12 spring lambs av 62 at \$8, 12 lambs av 75 at \$4.50, 13 sheep av 98 at \$2, 48 lambs av 75 at \$6, 20 do av 60 at \$4; to Youngs 22 do av 75 at \$6, 25 spring lambs av 57 at \$7.50; to Fitzpatrick Bros. 10 sheep av 126 at \$3.25, 12 spring lambs av 60 at \$8.50, 5 do av 60 at \$8.50, 9 sheep av 115 at \$3, 47 do av 90 at \$4.25, 9 spring lambs av 55 at \$6.50, 13 do av 50 at \$6.50, 11 sheep av 115 at \$3.50; to Ba-lage 37 lambs av 65 at \$5.60; to Vess 19 spring lambs av 60 at \$8; to Fitzpatrick Bros. 39 sheep av 120 at \$3.25; to Parker, W. & Co. 20 do av 107 at \$3.

Spicer & R. sold Sullivan P. Co. 22 lambs av 60 at \$4, 2 do av 85 at \$3; to Young 11 do av 80 at \$6; to Mich. B. Co. 16 sheep av 95 at \$3.50, 5 do av 78 at \$2, 40 do av 125 at \$3.50, 12 lambs av 65 at \$5.

Haley & M. sold Newton B. Co. 6 sheep av 75 at \$4, 5 spring lambs av 63 at \$8, 18 do av 53 at \$7, 7 do av 77 at \$6, 9 sheep av 115 at \$3; to Mich. B. Co. 51 do av 90 at \$4, 3 lambs av 78 at \$6.

Allington sold Newton B. Co. 10 spring lambs av 65 at \$7.50.

Hogs.

Receipts, 3,429. Market 5@10c higher than last Thursday; pigs steady.

Range of prices: Light to good butchers, \$7.45@7.50; pigs, \$6.50@6.75; light yorkers, \$7.15@7.30; stags one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 124 av 200 at \$7.50, 60 av 180 at \$7.45, 1,710 av 170 at \$7.40, 200 av 150 at \$7.35.

Spicer & R. sold Parker, W. & Co. 240 av 200 at \$7.45, 240 av 180 at \$7.35.

Haley & M. sold same 540 av 190 at \$7.45, 210 av 180 at \$7.40, 140 av 160 at \$7.35, 90 av 130 at \$7.25.

Friday's Market.

June 14, 1912.

Cattle.

Receipts this week, 1,587; last week, 705. Market steady at Thursday's prices.

We quote: Best steers and heifers, \$8; steers and heifers, 1,000 to 1,200, \$7.50@7.75; do. 800 to 1,000, \$6.50@7.50; do. that are fat, 800 to 1,000, \$6@6.75; do. 500 to 700, \$4.75@6.50; choice fat cows, \$6; good do., \$5.25@5.50; common cows, \$3.50@4.75; canners, \$2.75@3.25; choice heavy bulls, \$6; fair to good bolognas, bulls, \$4.50@5.50; stock bulls, \$3.50@4.50; choice feeding steers, 800 to 1,000, \$5@5.50; choice stockers, 500 to 700, \$4.50@5.50; fair stockers, 500 to 700, \$3.50@4.25; stock heifers, \$3.50@4; milkers, large, young, medium age, \$4@6.00; common milkers, \$2.50@3.50.

Veal Calves.

Receipts this week, 1,731; last week, 1,397. Market steady at Thursday's prices. Best, \$8@8.50; others, \$4@7.

Sheep and Lambs.

Receipts this week, 2,342; last week, 1,215. Market steady on good grades; common grass sheep and lambs almost unsalable and not wanted. Best wool lambs, \$7.50@8; fair to good lambs, \$5.50 @6; light to common lambs, \$3.50@4; spring lambs, \$7@9; fair to good sheep, \$3.50@4; culls and common, \$1@2.75.

Hogs.

Receipts this week, 6,985; last week, 4,344. Market about steady with Thursday's prices, but dull. Range of prices: Mixed butchers, \$7.40@7.45; pigs, \$6@6.75; light yorkers, \$7.10@7.30; stags one-third off.

Hogs have been marketed this year in larger numbers than had been expected, and the fact has been brought out that the last hog crop was considerably underestimated to say the least. This explains the marked decline that has taken place in prices during the past month or longer. The big packers have been very bearish and have stood together in their efforts to depress values, while eastern shippers who buy hogs in the Chicago stock yards have joined in lowering the market, holding aloof after sharp advances. There seems to be a widespread impression that hogs are going to sell on a still lower basis, although it does not seem probable that the better class of matured barrows will fail to bring prices that will bring good returns to their feeders. One important element that enters into the calculation is the large consumption of fresh pork products throughout the country on account of their being much cheaper than any other meats. The dearthness of beef is causing many families to turn to pork, fish, eggs, vegetables, etc., as cheaper substitutes. Eggs are particularly plentiful and cheap, and in addition to large sales to consumers, speculators have been sending thousands of cases of eggs to cold storage warehouses in cities of the middle west of late.

HAPPENINGS OF THE WEEK.

(Continued from page 676). Mt. Katnai, Alaska. No evidence of life is now to be seen in the vicinity of these villages. It appears that the eruption was so great as to completely cover the towns and surrounding territory with material blown from the mountain.

The members of the Detroit Board of

Commerce returned to Detroit Monday after a journey to Chicago by boat.

The question has been raised by the beef packers in the matter of instituting an investigation by congress to determine whether the beef packers are forming a trust, and if so whether they are not holding prices higher than conditions warrant, that the country is not sufficiently supplied with fat live stock, resulting in the consequent high prices. The government has issued a bulletin showing that there is a substantial increase in the amount of live stock delivered at western markets over previous years, which makes the excuse raised by the packers seem somewhat untenable.

Foreign.

Nicaragua is confronted with two problems of an important nature: Crops in the interior have failed and the inhabitants are dying from famine. The conservative party leader has also left the cabinet and gone to Honduras with his followers, a move that is usually preliminary to a revolt.

Premier Tang Shoo Yi, of China, has resigned, declaring that he had lost the confidence of foreigners. Strong pressure is being used to induce him to return.

A collision between an express train and a freight train at Malmstaett, Sweden, resulted in 18 persons being killed and 16 injured.

The struggle of the dockmen in London continues. Parades were made Saturday. The condition of the men appears to be deplorable in many instances, families lacking food and the means to secure other necessities of life.

Twelve federals and two rebels are dead as the result of a skirmish at La Cruz, Mexico.

Foreigners have been ordered to flee from the war zone in Cuba. It is reported that 3,000 refugees are at El Cobre and a like number at Palma Seriano.

Many persons were drowned at Guanajuato, Mexico, in a cloudburst which flooded the city.

A report to the British government of the conditions in Egypt, shows that country to have a population of about 6,000,000 persons. The population of Egypt was at one time 9,000,000, but during the Mahdi's rule it was reduced to 2,000,000, since which time it has recovered to the number mentioned above. The Assuan dam is nearly completed. This dam will improve agricultural and other industries over a large section of country.

CROP AND MARKET NOTES.

Lapeer Co., June 8.—Warmer, the first really warm day thus far in June. The ground is too cold for corn that is planted, to grow. Some were plowing this week for corn, and hardly any plowing done as yet for potatoes. But little beans put in as yet. The acreage for beets is light in this part of the county. The hay crop and pastures are doing fine. Old hay dropped in price to \$19. The prospect for wheat ranges from nothing to fair. No wheat has been plowed up on account of being seeded. New seeding averages a pretty fair catch. Spring pigs slow sale. Other stock quick sales and at good prices. The prices of butter and eggs are lower.

Sanilac Co., May 24.—We have recently had the heaviest rains the country has seen for years. Farmers are badly delayed. Very few had their oat crop all sown when the wet weather started, which lasted about 12 days. As it is so late the oat crop will have to be supplemented by barley or corn. Possibly the bean acreage will be increased on account of the wet weather. The wheat crop does not promise very well, principally for the reason it was neglected last fall, perhaps not been drilled until a field of beans was harvested which prevented the wheat from getting sufficient growth to stand the winter. New seeding rather thin, especially on knolls where the snow was thin and gave the spring freezing and thawing a chance to do its work. Farmers doing all kinds of building, mostly barns. Some fine houses are being built and more silos are erected each year. Tile draining is occupying the attention of some. Hay scarce and high.

Indiana.

Laporte Co., June 6.—Cool northwest wind. Farmers replanting their corn as poor seed is prevalent with most of them. A few are plowing corn and others are dragging; but few weedeers in use now. Wheat not 20 per cent of a crop in this locality. Stock doing well. Butter, 30c; potatoes, \$1.25; home-grown strawberries are in market at \$1 per crate of 16 boxes. Apple crop very light; half a crop of cherries. Pasture is fair, not the best; oats good.

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Woman and Her Needs

At Home and Elsewhere

TOO MUCH "LIVING IN THE MOMENT."

AMERICANS are nothing if not extremists, and even editors and writers are not exempt from stepping beyond the bounds. Indeed, when we look through some magazines and glimpse the amount of twaddle mixed up with some common sense we sometimes wonder if in their desire for new the "thought molders" are not even more extreme than the readers for whom they cater, though we are told that the papers give the great public only what said public demands.

For instance, there is a great run in our woman's magazines just at present on the subject of living in the moment. Women are advised, urged and commanded to give up thinking of the future and live each day as though it were all of life. They are told to look for the beauty of the sunrise and sunset, to smile for a week over every new bud which appears on the rose, to live in silent ecstasy for a month over the first ripe strawberries, and even to find joy in the fact that the stove smokes, the men forgot to split wood, the reservoir is empty and company comes unexpected when the bread box is empty and a bakery five miles away.

Now, of course, the present moment is the only one of which we are sure, and it is good to enjoy it to the utmost, but our ready writers have not been satisfied with half-way measures. They have pushed the thought to the limit and are carrying the idea, some of them, that even provident care is not needed. Instance one magazine which gives us a picture of an overworked office girl (and office girls are usually none too well paid), who rents a flat and furnishes it, then spends all her spare money and none-to-spare-strength in keeping it up, because she has always wanted a home and means to have one now because this is the only time she is sure of.

"Sink or swim, survive or perish, I am going to live my hour as I wish to live it," says this heroine. "The unknown future may be kind or unkind. Next year may find me ill, without work, or perhaps I may not be here at all. Whatever the future holds for me I shall not let it drive my pleasure in today away."

Brave language, if there was anything to back it up, but the writer had previously assured us that her heroine was physically frail and often could put her hand in the wolf's mouth, so near did he come to her door. Notwithstanding this, she is lauded for spending all her reserve strength and money to gratify a longing, instinct in every human, the longing for a home.

Perhaps I am too sordid and practical, but when people satisfy their desires no matter what the cost, I can never help thinking of the other fellow. Next year may find them ill or out of work, probably will, but their bills will go on and someone else will have to pay them. This girl in particular, if she was a real one, will be worn out with keeping up a home before the year ends, and will plump back on relatives or friends for care and support. She will be out of money, for flats have a mean way of just eating money faster than you can earn it. Yet, although her words show she is aware of what will probably happen, she is held up as a model, because she chooses to live her moment and let the future take care of itself.

Personally I think she should have been roundly scolded and shown the error of her ways. No one has a right to "live his moment" unless the future gives him assurance that he can do it without inflicting on the rights of others. It is all right to take pleasure in the moment, but that pleasure must be taken with an eye to what the next moment will be if we indulge our desires. Too many girls and boys, yes, and men and women, are living for the moment. The salary is spent usually before it is earned. There must be stylish clothes, fruits out of season, dances, theaters, parties and automobiles whether there is a penny for the rainy day or not. These people certainly take pleasure in life, they gratify

their desires so far as their money will allow. And then when the crash comes, as it is bound to sooner or later, someone else who has been painstakingly spending his moments so as to have time and money to take his pleasure in the future, must foot the bills, and his pleasure continues in the future.

I suppose some of our writers would say that should be a lesson to the frugal one not to plan on the future. I must say it is a temptation when you see your savings swept away to pay up for the bad luck of someone else, never to save again. But it is scarcely a wise thing to do. Let us enjoy the sunrises and sunsets, the fruits in season, the love of our friends and the laughter of children, but let us not carry our doctrine too far and insist on gratifying our desires now because we may not be able to do so tomorrow.

DEBORAH.

LIKE HERSELF.

BY E. L. RUSSELL.

Ma thinks I look like her,
Pa says I favor him,
And my grandmamma 'clares,
"The child's like Uncle Jim."



But I tell you, old glass,
Now, just 'tween you and me,
I'm mostest like myself,
I guess 'at I can see!

AN INTERESTING STUDY.

BY HILDA RICHMOND.

Until quite recently it was thought that no special preparation or study was needed for farming, and every family of any standing in the community picked out the brightest boys to educate. From infancy it was talked over in the home that John was to be a lawyer, and Samuel a minister and Joseph a doctor, because they were bright and quick and apt, but poor Thomas, the slow, stupid lad, he was to stay with father and mother and do the farming. There was never any thought of injustice to Thomas, as he toiled day after day, helping raise and harvest the crops, and then saw the money go to pay the college expenses of the brighter boys. It was his duty to do so, and duty used to be a much more prominent word in the home than it is now.

Well, in course of time, John and Joseph and Samuel left the farm to enter upon their professions, and Thomas was left to resume the burden of farming almost alone, for by this time father was quite old or at least past middle age and did not attempt much heavy labor. Things have changed wonderfully since then in every way, for elderly men, even great grandfathers, now do much farming from necessity, the improved machinery enabling them to manage very well. Times have also changed in that people are realizing that it takes brains to farm successfully, and that it is not

fair to handicap one or more members of the family to educate the brightest member. But since conditions in our country were as above described some years ago, it is a very interesting study to look up the history of such country boys and find out something about the one who stayed on the farm, and how he compares with his brothers. Of course, young people have not had the opportunity to watch the life history of such families, but they can easily see the results, and the study may help them solve some of their life problems, especially if they are thinking of deserting the old farm because life there is too slow, and there is not enough money in farming.

One young man who took family after family in his neighborhood systematically was amazed to find that in nine cases out of every ten the one who stayed ranked far above his brothers who left the farm, from almost every standpoint. He discovered that the bright lads who were to astonish the world as lawyers and doctors and statesmen and ministers were in many instances mediocre workers, earning a bare living in the great field of competition, while the farmers enjoyed prosperity in the country. True, he discovered that most of the bright men in every walk of life, and the men who are doing things worthy of notice, were farm born and bred, but usually they were not the ones who had heard from infancy how bright they were. They were boys who had been thrown on their own resources in the majority of instances, and who possessed such determination and energy and patience that circumstances could not keep them down. Why, the biography of almost any successful man will show difficulties in the start, and very few of the lads who hear from babyhood that they are too bright and too precious for hard manual labor ever amount to anything. But this young man had to read the stories of many eminent men before this thought came to him.

In looking up the record of men who were boys 30 or 40 or 50 years ago, it must always be kept in mind that the dull boy was kept out of school whenever there was any extra work to do, while the bright ones went every day. Also that the bright boys had their leisure time for study, while the dull ones did the chores. Then, too, the dull boys were sadly handicapped for years to help provide the money for college educations for their brothers, and were unable to enjoy the privileges the farm boys of today have. But in spite of all these obstacles it is easy to find hundreds of thousands of successful middle-aged farmers who have lived in comfort for years, added to their acres, increased the fertility of their lands, brought up families and educated them, held positions of trust in local and even state and national affairs and who are regarded as wealthy, influential, progressive citizens, not only in their own little neighborhoods, but far beyond where their influence has extended. And most of them have brothers who never did anything remarkable in the world, and are hardly known six blocks from their own homes in the cities, not because they were educated, but because their fond parents led them to believe they were remarkable in youth and it spoiled them. Truly, it is a most fascinating thing to look into the past and present history of men who have lived on farms all their lives, and their brothers who long ago moved off to the city. Leaving out all question of health, in which the country man usually is richer than his city brothers, from a mere financial standpoint it would seem to pay to stick to the old farm.

The cry is always going up that the best and brightest young men and women are deserting the farm for city life, but that isn't entirely true. Some of the best and brightest young people the farms have ever produced have investigated conditions and judged the future from the past, and have decided to remain in the country. And there are many not unwise men and women who have thoroughly tested life in both places who are ready to declare, that even from a mere money-making standpoint, their decision was correct.

OUTDOOR LIFE

Will Not Offset the Ill Effects of Coffee and Tea When One Cannot Digest Them.

A farmer says:

"For ten years or more I suffered from dyspepsia and stomach trouble, caused by the use of coffee, (Tea contains caffeine, the same drug found in coffee), until I got so bad I had to give up coffee entirely and almost give up eating. There were times when I could eat only boiled milk and bread; and when I went to the field to work I had to take some bread and butter along to give me strength.

"I doctored steady and took almost everything I could get for my stomach in the way of medicine but if I got any better it only lasted for a little while. I was almost a walking skeleton.

"One day I read an ad for Postum and told my wife I would try it, and as to the following facts I will make affidavit before any judge:

"I quit coffee entirely and used Postum in its place. I have regained my health entirely and can eat anything that is cooked to eat. I have increased in weight until now I weigh more than I ever did. I have not taken any medicine for my stomach since I began using Postum.

"My family would stick to coffee at first, but they saw the effects it had on me and when they were feeling bad they began to use Postum, one at a time, until now we all use Postum." Name given by Postum Co., Battle Creek, Mich.

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PASTEURIZE THE MILK.

BY JOHN MICHELS.

With the approach of warm weather there comes to many a mother a certain degree of anxiety concerning the well-being of her baby or young children. How some mothers do dread the second summer in the life of their child, and why? Because of the danger of "summer complaint," or dysentery. Do mothers ever stop to inquire why the second season is so dangerous to children, while the first is passed with comparative immunity from bowel trouble? The explanation is simple and has been verified many thousands of times. During the first season, as a rule, the child feeds on its mother's milk, while the second, it feeds on cow's milk.

Now, what makes cow's milk so dangerous to a child under two years of age? It is the large number of undesirable bacteria (germs), contained in average market milk. A large percentage of these undesirable bacteria belong to the putrefactive and closely allied kinds, and it is the irritating effect which they produce in the child's intestines that is, in a large measure, responsible for the prevalence of diarrhoea and general gastro-intestinal troubles and, therefore, for the high mortality among infants and young children fed on cow's milk.

Fortunately there is a very simple means by which the danger from cow's milk can be largely eliminated, and that is to pasteurize it. Pasteurization is nothing more or less than heating and cooling milk, a process by which the great bulk of bacteria is killed. This is the way it is done: Put the milk into a double milk or rice boiler and heat it to 150 degrees F. Maintain this temperature for fully 30 minutes and then cool the milk to 50 degrees F., or below. Wherever possible it should be held on ice until ready to use. A thermometer should be used to observe the temperature, but approximate results may be obtained by heating milk until it begins to simmer.

This treatment is so simple and requires so little time that no household in which young children are fed cows' milk, can afford to neglect it. Indeed, home pasteurization of milk is recommended for all families regardless of whether there are children or not. Thorough pasteurization of milk renders it safe from pathogenic bacteria, with which milk is so frequently infected.

During the past 20 years, more than 150 epidemics of typhoid fever in different parts of the world have been traced to milk infected with typhoid bacillus. There are records of at least 28 epidemics of diphtheria and 80 or more of scarlet fever. Besides these epidemics, it is difficult to estimate how many thousands of isolated cases of these and various other diseases have been caused by infected market milk. The prevalence of tuberculosis among dairy cattle, alone demands the pasteurization of milk, a considerable percentage of which contains the tubercle organism. That the bovine tubercle bacillus can, and does, produce tuberculosis in man has been established beyond a doubt by the Royal Commission on Human and Animal Tuberculosis and by other notable scientific bodies and individuals.

ON DARNING.

BY MAE Y. MAHAFFY.

In this day of a multiplicity of colors in the hosiery realm one is frequently at a loss to obtain darning cotton of the shade necessary for satisfactory darning. At such times one can usually successfully resort to the embroidery silks or cottons, using always a reliable brand, so that there will be little danger of fading.

Have a needle holder made of a strip of flannel in the darning bag, and keep it well filled. One can then change needles instead of unthreading every time a different color is needed. Regulation embroidery needles are usually more readily handled than sewing needles, especially if one uses a rather heavy darning thread a portion of the time. The long, slender eyes of the embroidery needles allow the cotton free play, thus occasioning fewer tangles and knots, as well as being more readily threaded.

When attempting to close up a hole of much size first overcast the edge all around, so that it will not stretch out of shape, drawing it just sufficiently to lay flat and smooth. The filling-in process can then proceed without difficulty.

While not so neat in appearance if one is a capable darning the buttonholed closing is liked by a good many better than

the usual under and over darning, and it is certainly a much swifter process. In following this method buttonhole around the hole at close, regular intervals, and then gradually fill up the hole by continuing to buttonhole in each previous row of stitches until the gap is closed. This is a good plan to use in mending gloves.

Sometimes a thread in the ribbed portion of the hose will ravel for some distance without breaking away at the sides. This can be caught by using a crochet hook to draw the darning thread about the cross threads of the hose, and the mend will be well-nigh invisible.

HUMAN WELFARE QUERIES.

Household Editor:—I have been an interested reader of the Michigan Farmer for sometime. It is a source of pleasure to read the different articles in it and also the help a person can receive from Deborah's articles. I have a question I would like to have answered through your columns: Can fruit be kept with success if canned without sugar?—A Reader.

Fruit can be kept if canned without sugar, providing the utmost care is taken to perfectly sterilize the cans, tops and rubbers and seal absolutely airtight after the fruit is put into the can, boiling hot. The small amount of sugar put into canned fruit does not prevent its spoiling.

Household Editor:—I am going to have lots of currants this spring. Can you give me any new ways of putting them up? Also recipe for strawberry shrub?

Currants may be put up uncooked by mixing them in the proportion of one pound of fruit to one and one-fourth pounds of sugar, crushing the fruit with a wooden potato masher and sealing airtight in cans or bottles. Spiced currants are good to eat with meat. To make, boil for two hours seven pounds of currants, four pounds of sugar, one pint of vinegar, one tablespoonful each of cinnamon and cloves, one nutmeg grated, and other spices to suit your own taste. Strawberry shrub is made as follows: Put 12 pounds of strawberries in a large crock. Stir five ounces of tartaric acid in two quarts of water, pour over the berries, put plate over the crock and let stand 48 hours. Strain through a flannel bag, allow one and one-half pints of sugar to every pint of juice, stir until dissolved and then bottle. This makes a delicious summer drink.

How do you make currant jelly?—Beginner.

Select medium ripe fruit, pick off all bad berries, wash thoroughly, put stems and all into a kettle and mash each berry. Then pour into a double cheesecloth bag and let drip over night. If you are anxious to have clear jelly do not squeeze the bag, but if you prefer quantity rather than quality, squeeze out the juice in the morning. Measure the juice and boil 20 minutes, at the same time have the same number of cups of sugar heating in the oven. Skim off all the impurities that rise to the top, and stir the sugar frequently so it will heat evenly. At the end of 20 minutes put in the sugar and boil three minutes longer. Three minutes should be sufficient time for it to "jell," but try a little in a cold saucer to be sure before removing from the fire. Pour at once into sterilized glasses and when the jelly has set pour on melted paraffin, put on the covers and set in a cool, dark place.

Is there any rule by which I can tell how much baking powder to use in baking?—Young Cook.

Use two level teaspoonfuls to a half-pint of flour with biscuit dough, etc., and a slightly rounding teaspoonful to the same quantity of flour in cakes, unless the recipe states differently.

SHORT CUTS TO HOUSEKEEPING.

When baking gems fill all the cups but one with batter. Fill that one with water. When this is done they will not scorch. —A. D. P.

Vinegar will remove iodine stains. Soak article in vinegar one-half hour, then rub gently with hands. Repeat with fresh vinegar if badly stained, then wash thoroughly. —J. C. T.

A household help of equal value in kitchen and laundry is "Parowax," a preparation good both for sealing fruit and washing clothes. Ketchup and fruit juice bottles are quickly sealed by dipping the neck, after corking, in melted "Parowax." The wax melts quickly and so should be placed in a basin and this set in a second dish of boiling water instead of directly on the stove. A quarter cake of "Parowax" shaved into a boiler of soiled linen is said to loosen the dirt and make washing easy. —A. L. L.



Anty Drudge tells how

Mrs. Toil—"Man works from sun to sun, but woman's work is never done! I think that's about right."

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HORTICULTURE

MAINTAINING A PROFITABLE ORCHARD.

On the average farm where the chief income is not obtained from the orchard, but from other branches of agriculture, this part of the farm is usually neglected until it becomes but a little better than so much barren soil. Even in the famous fruit belts of Michigan where the soil, climate and drainage are especially adapted to successful fruit raising it is an exception to find a profitable orchard on the general farm. Here the distinction between a farmer and a fruit grower is apparent in the appearance and especially the yield of the apple orchard.

Practically all farmers engaged in general agriculture know nothing or care nothing about their orchards. In many instances varieties unsuited to the climate and soil have been planted, but even where the proper selections have been made the trees are invariably planted too close together and pruning is neglected year after year until the branches overlap and shut out the sunlight entirely or the trees are allowed to grow to excessive height. The average farm orchard has been seeded down to grass or is either used as a meadow or as a pasture. Tillage was entirely abandoned about the same time pruning stopped. This system of orcharding is entirely wrong. Whether a farmer has a dozen or a hundred trees, he should cultivate his orchard at least every other year and plant leguminous cover crops, whenever it is possible to do so.

If yours is an average orchard, steps should be taken at once to turn it into a profitable source of income.

Where a heavy sod has been allowed to set a good breaking plow should be put to work in early spring to be followed every two or three weeks, with a smoothing harrow until the soil is like an ash heap, and ready to take a cover crop of clover or other legume about August 1.

Pruning and grafting should be attended to with the same care and judgment used in selecting seed corn. Get cross fertilization when needed by grafting, and prune to let in the air and sunlight to color up the fruit. Cut the branches close to the larger ones or main trunk, and cover the fresh wound with white lead and oil to keep out the air. If there are decayed spots or cavities they should be filled with cement and that, too, should be covered with lead and oil. This effectively stops decay and will greatly prolong the life and productiveness of the tree. Spraying is as important as either the cultivating or pruning even before the pests make an appearance. The kind of a spray pump must, of course, depend upon the size of the orchard; but the spraying should be effectively done, and under the advice and directions of a man thoroughly posted on why it is done and how it should be done, if at all. In spraying especially, a group of farmers can organize a co-operative association and purchase a high pressure power sprayer to do their work effectively.

Fertilizing, too, has been sadly neglected. The stable manure has been put on the garden or truck patch, the corn or wheat field, but rarely is it thought necessary to apply plant food of any kind to the orchard.

When obtainable, applications of 10 to 12 tons per acre of barnyard manure every second or third year is to be recommended. However, as barnyard manure is deficient in phosphoric acid and potash the addition of these two elements will be necessary to properly balance the supply of plant food demanded by the growing and bearing trees.

In the absence of stable manure a substitute must be found to take its place. Where the soil is deficient in humus no better practice can be advocated than the growing and turning under of leguminous green manuring crops in connection with applications of potash and phosphoric acid to build up the organic content of the soil and furnish a readily available supply of plant food. Leguminous crops, such as clover and soy beans, need only small applications of nitrogenous fertilizers for the reason that they are able to obtain the greater part of their supply of nitrogen from the air. An application of 200 to 300 pounds of acid phosphate and 100 to 150 pounds of muriate or sulphate of potash per acre is a general recommendation of fertilizer for apples on average soil, when supplemented by cover crops.

Where the soil contains an ample supply of humus the annual application of

600 pounds to an acre of a fertilizer composed of two per cent nitrogen, seven per cent available phosphoric acid, and nine per cent actual potash, would convert the old neglected orchard into one of the most profitable sources of income on the farm.

W. T. DAVIS.

A FEW OF THE INSECT PESTS OF THE GARDEN.

The Pea Louse.

Every season pea vines are more or less infested with a green bug called the pea louse. To find them look at the under side of the leaves or beneath the vines, some will be flying from leaf to leaf and others crawling about as only a portion of them have wings. They are a true "bug" and like all plant lice obtain their food by piercing the epidermis of the leaves and sucking their juices. What the pea louse lacks in size it makes up for in numbers and often this insect injures the vines sufficiently to reduce the yield considerably.

In districts where they grow peas for the cannery, growers have developed two methods of combating the pest. One is to brush the lice from the vines onto the ground between the rows then follow with a cultivator to bury them. The other method is to spray with some contact insecticide. This species of louse is not a hard insect to kill provided the spray reaches it. The nozzles should be so arranged as to make it possible to thoroughly spray the lower part of the vines.

We have never tested either method. The pea louse thrives best upon weakly vines and we endeavor to combat it by securing a strong, vigorous growth. To do this requires a suitable soil, the right variety and clean culture.

Our experience has been that peas do best upon a clay loam that is inclined to be "stiff." You can get a heavy growth of vines by planting upon any fertile soil but such vines do not bear well and do not resist the attack of the lice. We grow a variety that has a short stocky vine growth but I presume any variety that produces a thrifty vine would do as well. Clean culture is an important factor in pea growing for where weeds are allowed to grow in the row the pea vines are bound to be more or less stunted and become breeding grounds for the lice.

When pea lice are plentiful the ground underneath the vines will be quite liberally sprinkled with what appears to be dead lice. Upon closer examination these prove to be only cast skins. A louse's skin fails to grow as fast as the rest of his body so when it becomes uncomfortably tight it splits and the insect crawls out with a new skin which has formed under the old one.

There are two insects which feed upon plant lice and which are always present where plant lice are abundant. One is known as the aphid-lion and the other is the beetle, commonly called a lady-bug or lady-bird.

The larvae of the aphid-lion are active creatures with strong pincer-like jaws. These are so constructed that the body juices of another insect can be sucked through them. These larvae are hatched from eggs which the adult female lays in colonies of from four to 12 and which she takes the precaution to place upon individual stalks about one-half inch high. It is presumed that this is done so that the larva which hatches first will not devour the remaining eggs. The adult is light green in color with four lace-like wings and two golden colored eyes.

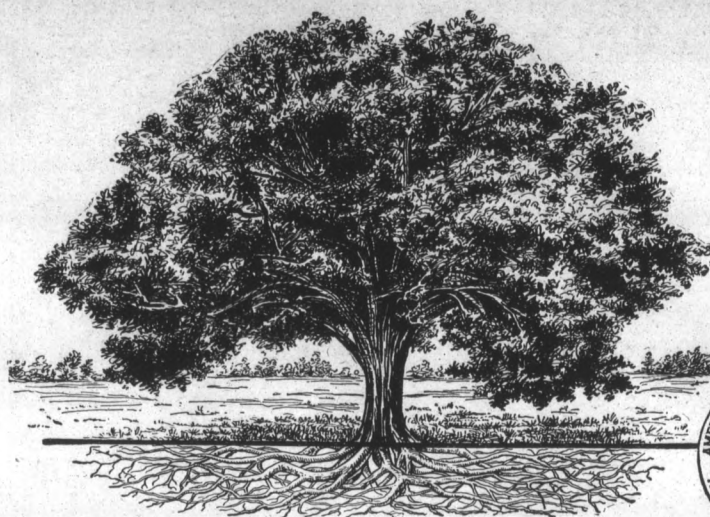
Last season our pea vines bore countless numbers of these stalked eggs, the adults were present in large numbers and the ground underneath the vines was thickly dotted with the larvae, each one either devouring a pea louse or hunting for one to devour.

The lady-bugs or lady-birds are small, turtle-shaped beetles which feed upon plant lice in both the larval and adult stages. The larvae are usually brightly colored in patches and are more or less warty. They lack the large jaws of the aphid-lions but each one will devour many lice in the course of a day. The adults are also very hearty feeders, though not as greedy as the growing larvae.

Most people have the idea that all insects are injurious but such is far from being true. Nearly every insect is preyed upon by some other insect and if it were not for this fact we would have a hard time to raise any crop to fruition.

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W. POSTIFF.



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HOME AND YOUTH

GIFTS OF JUNE.

BY FLOY SCHOONMAKER ARMSTRONG.

"June must love us," cried a maiden,
"For she always brings such joys,
And so many lovely presents
For us little girls and boys.

Roses red and white and yellow,
Quite enough for all, 'tis plain,
And a million big white daisies—
Everyone may have a chain.

Bluest skies of all the summer,
Nesting birds, and sunny days,
And a host of other beauties
Worthy of our song and praise.

But I think the wild strawberries
Hidden in the grasses tall,
Are so good, with cream and sugar,
That they are the best of all."

HENRY AND I MIND THE FARM.

BY JOHN A. SIMPSON.

When the Tiltons wrote, us that the heavy part of the farm work could be laid aside for a time about the middle of August, and that they would trade homes with us for a week if we cared to agree, we were too pleased for anything. We had visited back and forth a time or two and, as Mrs. Tilton said, they could eat and sleep in our house, and do what little was to be done, while we should live in their country home and attend to the few chores. While they were enjoying the city, we could enjoy rural life.

Well, we went out readily enough. The day after our arrival we drove them to the station, a mile and a half away. We watched the train pull out and then set out for our new home.

"Seems like a honeymoon over again, doesn't it?" I asked Henry.

He squeezed my hand. "Suits me," he said.

Then I decided to make hot biscuits for supper.

Before supper we went out to milk. I wore the cutest sunbonnet and apron, just like a milkmaid. And I carried both pails. It was awfully romantic.

"Isn't it sweet," said I, "to milk the gentle cows in the green carpeted pasture at sunset?"

"It's all right," responded Henry, "but can you milk?"

"Why, Henry, didn't Mr. Tilton teach you?"

"Yes, that is—I told him we could manage it."

"Of course we can. You just sit down by the cow, and put the bucket under her, and—milk."

We called the cows, but they wouldn't come. We sent the dog after them, but he only chased some birds, and lay down. It was provoking. Finally Henry had to go and insist upon their coming up to be milked. When they arrived they were panting with embarrassment at being milked by strangers. To reassure them, I went up to one's head and patted her on the horns while I leaned down to get a whiff of her clover-laden breath. I've always heard it's delightfully perfumed, but I almost fell over.

"Henry," I cried, "this cow's been eating—onions or something; her breath is strong."

He came and looked at her. "I guess she's a strong cow," he said; "she's a Holstein."

"A what?"

"A Holstein."

"Why is she?"

"Well, it's her nature. She's that variety."

"Are there varieties of cows? I supposed they were just cows."

"Yes, there are lots of them—Holsteins, and Jerseys, and Alderneys, and Durhams, and—"

"Durham? Isn't that a kind of tobacco?"

"Yes, and it's a kind of cow, but now don't talk, I'm going to try to milk this one."

So I tried to milk the other. But they both ran around awhile before either would wait to be milked. They were so full of fun. Finally Henry remembered that some cows had to be fed at milking time, so he went and got some corn. While they were eating the corn we slipped up as quietly as possible and sat down to milk.

"Henry, how do you work these handles, up or down?"

"You don't work them either way. You just squeeze them."

"But, Henry, they won't squeeze."

"Wait, and I'll show you."

But just then something happened to Henry's cow. When I looked he had fallen off the milking stool, and the pail was rolling down the hill.

"She upset the bucket and spilled the milk," yelled Henry.

"Why, Henry, did you get any milk?" I picked up the bucket, but it was perfectly dry.

"These cows won't let down their milk," said Henry. "If we don't get them milked they'll have milk fever," he continued.

"Oh, Henry, will they die?"

"Most likely."

Then I sat down and cried. "And what will the Tiltons think?"

We worked till nine o'clock and had to give them up at last. We didn't eat any supper, and I cried myself to sleep. The next morning we got up at five o'clock and tried again, but those cows were so self-willed and determined that we gave up once more. Then Henry hitched up and drove over to the nearest neighbor; he told them he had received a message to go to a town about twelve miles off (he had, because I had written it out and given it to him), and that I couldn't milk, and could we hire someone to come up and milk Tilton's cows for me? They were all so busy there that no one could come, so he had to drive on to the next place. By offering to bring him up in the buggy, and to see to his being taken back, Henry got a man to come with him.

Henry gave him the pails and then said he must start right off for Benville. "My wife will take you down," said Henry, "in the other buggy."

I gave him an agonized glance, for there was no other buggy, and I couldn't have driven anyhow. But he didn't notice.

Then Henry met with an accident. The man had scarcely gone out to the gate when Henry called to me for help. I hadn't heard him fall, but when I got out he was just getting up, and his ankle was sprained dreadfully. It must have hurt awfully for his face was as red as a tomato. He couldn't bear a particle of weight on his right foot, and he took his shoe off and I bound his ankle with an old white apron. He wouldn't bathe it in hot water, but hobbled with two canes out to where the man was milking and said he would keep him company, since he wouldn't be able to go to Benville after all. Then I went out, too, and the man got the cows to stand without any trouble, and milked them in a little while.

He seemed to be surprised at getting so much milk and wanted to know if they were milked the night before.

Henry and I looked at each other. "Why," said I, "didn't Mrs. Tilton say something about these cows only being used to milking once a day?"

"Something of that kind, I believe," answered Henry, gratefully.

Then the man looked at Henry and at the wrapping around his ankle. The apron didn't look very good, but Henry wouldn't wait for me to make bandages.

Mrs. Tilton had showed me where to put the milk, and while I was attending to it Henry explained to Mr. Whitman that, since he couldn't go to Benville, he would take him home and just 'phone over there, and that from the way his ankle felt he probably couldn't milk at night, either, especially since a cow might accidentally step on it though they were very gentle cows, and make it worse, and that he would just arrange with Mr. Whitman to milk again.

Then Mr. Whitman asked Henry how long we were going to stay, and when Henry answered, he suggested that the ankle might not be well for a week, and that there was a very good doctor in Benville, and that maybe Henry had better go right over and see him, and that perhaps they had better just drive the cows down to his place till the Tiltons came back home. Henry said that would be all right, although he would miss the exercise morning and night; that he was really becoming attached to the cows, that he had especially wanted to teach me to milk, and that it would be almost like losing members of the family, but that, considering the condition of his ankle, it might be the best.

So they drove both cows down to Mr. Whitman's and I wrote and told Mrs. Tilton all about it so she wouldn't be surprised when she came home.

When Henry got back I had hot water and bandages and liniment for his ankle, but he said he had stopped and bathed it in a spring and that it had taken a sudden turn for the better.

We fed the chickens and did all the chores and the forenoon slipped away.

After lunch we went out to enjoy the afternoon under the trees. Henry could wear his shoe, for the bath in the spring had taken all the swelling out of the ankle. It was while I was reading aloud to Henry that we thought of the calf. It was in a little lot back of the barn and was to be fed three times a day. Henry showed me how much feed Mr. Tilton said to give it each time. But as we had forgotten it for three feeding times, and almost four, I told Henry we must give it enough to make up. So he gave it twice the usual amount, but it looked so starved that while Henry was driving the hens out of the garden I slipped out and gave it a bucket of wheat. I put some salt in to make it taste good, for the poor little thing looked simply famished.

That evening, when we went to give it its supper, there was something the matter. It was groaning and rolling and tossing its head from side to side. Henry said he guessed it was the colic. We couldn't get it to drink anything, so at last I thought of a mustard plaster for its little stomach. I found the mustard and got an old sheet and tore strips; then we fastened the plaster and sewed the strips together on its back.

Next day it was better, but I forgot and left the gate open and it got out and started down the road toward Mr. Whitman's. Henry ran after it, but it reached Mr. Whitman's barnyard first. It looked like a ghost flying down the road, and two teams ran off, but their drivers managed to stop them before they had run far. When Henry explained to Mr. Whitman about the plaster he said that was all right, but wasn't the race a little hard on Henry's ankle. So he left the calf there, and Mr. Whitman said he would feed it along with the cows.

We got along first rate with the rest of the stock. The work horses were in a large pasture at the back of the place, and all that Henry had to do with them was to go every other day and see whether anything had happened to them. The pigs we fed just as Mr. Tilton had said, and they flourished famously. We fed the chickens and gathered the eggs.

When the Tiltons came back at the end of the week we met them at the station. They had enjoyed a glorious time and never worried a minute about the cows, after they learned that Mr. Whitman had them. We never wrote about the calf.

Next summer we are going to trade vocations and homes again, and Henry says if his ankle doesn't give out he'll learn to milk or die trying.

THE OLDEST FARMING COMMUNITY IN THE UNITED STATES.

BY AMOS REEM KANAGA.

The valley surrounding Los Angeles, California, is known as Gorgonia Pass and is one of the two oldest settled districts in the United States, and farming was carried on there by the Spanish in 1701, and hundreds of acres were then growing grapes and various kinds of fruits. It is one of the richest districts in the state and I think is by far the most beautiful valley in southern California. It has an elevation of 2,600 feet and its annual rainfall is more than 18 inches. St. Augustine, Florida, is its only competitor in age and it is destined to surpass it in the future drama of development a dozen times over.

In 1359 Jefferson Davis, of war fame, urged the building of a railroad through this district. Even Winfield Scott spent days and weeks writing about it from the standpoint of its use for war purposes.

An outpost of the San Gabriel Mission was built there in 1850, and Pio Pico, the last Mexican governor, was there for months at a time, the guest of the early Spanish Dons, whose farms covered the whole valley. To pay a debt of gratitude Governor Pico gave the whole country of 40,000 acres to Powell Weaver, a scout, trapper and Indian fighter and a companion of Daniel Boone in Kentucky.

Kit Carson was there with 200 head of cattle in the early sixties and history records the fact of his fattening his cattle on these plains before he drove them to market. Old Chief Fig Tree John, killed more than a dozen of the gold seekers in 1850 and they are buried where they fell; the last five sleep just south of this town.

John C. Fremont, who was there in 1847, says in one of his memoirs that he had butter, eggs, milk, cream, fruit and every modern delicacy, and it was there that he met Capt. Cook and his 500 Mormon soldiers that came from Iowa to help put down the scrap with Mexico.

Don Anza spent many months there in



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An ideal hot weather shoe for the man who works.

The uppers are of a soft chrome tannage, a tannage which gives the best wear of any leather made, and yet, having no oil or grease to fill the pores, makes as cool a shoe as could possibly be produced combined with such wearing quality.

The soles, also, are of the chrome tannage; light, flexible, and easy on the feet, but made to stand the hard wear a farmer has to get from his shoes.

This shoe is eight inches high, and has a bellows tongue all the way up. It keeps out the dirt and dust, and thus adds greatly to the comfort of the wearer.

You can get the same shoe in the ordinary height, six inches.

Ask your dealer for them. They're Wolverine leather well put together, the best shoes ever made for the harvest field, or for any other dry weather work on the farm.

Get into a pair and see how they wear.

If your dealer does not have them, write us and give his name. We will see that you are supplied.



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1777, and made such a glowing report of his travels to Mexico that Spain appointed him governor of what is now New Mexico, and it was Anza's relations that later on helped our government in the controversy that gave us all of this country that once belonged to Mexico and Spain.

Beaumont, a town of 1,500 people, with wide streets, lined with trees, is the trade center of the valley. The high development of this wonderful country has not reached there yet, but is now coming, for it is the last run of the cheap lands in this country of sunshine. They have a bank, store and board of trade and many other up-to-date accessories.

The country is fitted to grow deciduous fruits, walnuts and almonds, the soil is so productive and rich that I do not wonder at the rank it held in early days. It is older than the oldest settled places in New Mexico, for Father Kino, the first Spanish father was there before he visited the Aztec people in New Mexico and Kino says that in 1701, the country was then in a high state of cultivation. It is hoary with age, for it was farmed 100 years before Daniel Boone roamed over Ohio and Kentucky and when Indiana was a dense forest.

Major Bennett, an army officer went there in 1863 and in his report to our government spoke of it bearing many ruins of old cathedrals and Spanish haciendas. In 1859 one Dr. Edgar, bought the whole country and then retired from the army and made his home for many years. I found several families from Chicago residing in the foothills, near town.

Gen. Joe Lane was there in November and December, 1848, and would have remained for the rest of his life, as he said in his letters, but he was ordered to Oregon where he made his name immortal and is the greatest man in their state's history.

Only a few ruins are now to be seen and they consist of adobe walls. The valley was farmed long before the Pilgrim Fathers tried to raise potatoes and corn in Massachusetts, and the plains yielded big crops when its only rival was St. Augustine, Florida, where they raised no crops but put in their spare time rounding up wild game and hauling out St. Johns fish.

SMILE PROVOKERS.

"What's wrong now?" asked the impatient passenger of the conductor, after the cars had stopped twice.

"A cow on the track."

"But I thought you drove it off."

"So we did," said the conductor, "but we caught up with it again."

First Hobo—"Strange how few of our youthful dreams come true, ain't it?"

Second Hobo—"Oh, I don't know. I remember how I once yearned to wear long pants. Now I guess I wear them longer than most any man in the country."

A traveling man who stutters spent all afternoon trying to sell a grouchy business man a bill of goods, and was not very successful.

As the salesman was locking up his grip the grouchy was impolite enough to observe in the presence of his clerks: "You must find that impediment in your speech very inconvenient at times."

"Oh, n-no," replied the salesman. "Every one has his p-peculiarity. S-stammering is mine. W-what is y-yours?"

"I'm not aware that I have any," replied the merchant.

"D-do you stir y-your coffee with your r-right hand?" asked the salesman.

"Why, yes, of course," replied the merchant a bit puzzled.

"W-well," went on the salesman, "t-that's your p-peculiarity. Most people use a t-teaspoon."

BOOK NOTICES.

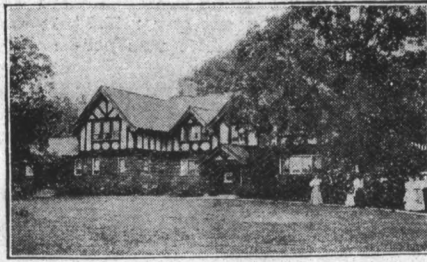
Study of the Paragraph. By Helen Thomas, M.A., formerly Instructor in English in the Lexington, (Mass.), High School. This little book teaches the pupil to arrange his thoughts so clearly and logically in paragraphs that his meaning is immediately understood by the reader. Cloth, 12mo, 125 pages. Price, 50c. American Book Company, Chicago.

Trading and Exploring (Dutton's World at Work Series). By Agnes Vinton Luther, Department of Science, Normal and Training School, Newark, N. J. This is the third volume of a series showing the development of the occupations of the human race, from fishing and hunting, through grazing and farming, to commerce and exploration. Cloth, 12mo, 240 pages, illustrated. Price, 40c. American Book Company, Chicago.

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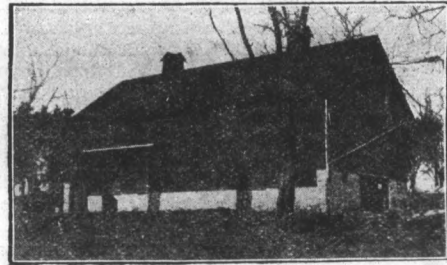
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Farm house of George Ade, the author, at Brook, Indiana, stained with Cabot's Creosote Stains

The colors are made of the strongest and finest pigments, the same as used in the very best paints, and the liquid vehicle is refined Creosote, "the best wood preservative known." Paint now costs more than ever before, but these Stains cost less than half as much and can be put on twice as fast, using



Barn in Iowa stained with Cabot's Creosote Stains

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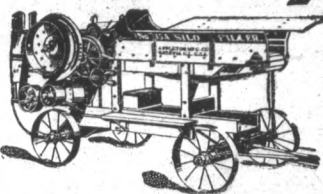
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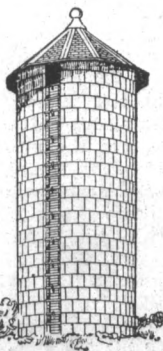
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that our Silo Filler will, under equal conditions, do more and better work with less power and will last longer, means absolute safety for you. More Silos will be built and more ensilage fed this year than ever before. We have already sold more Silo Fillers this year than we did in all of 1911. To insure prompt delivery you should arrange for a machine at once. Write to-day for free illustrated booklet.

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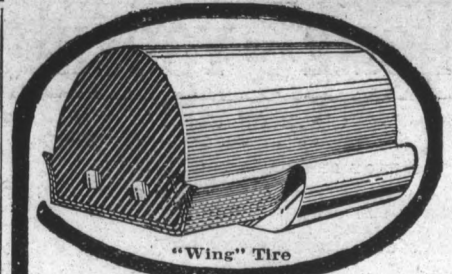
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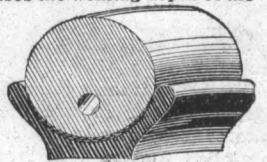
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