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# MICHIGAN FARMER

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## ORCHARD CULTIVATION.

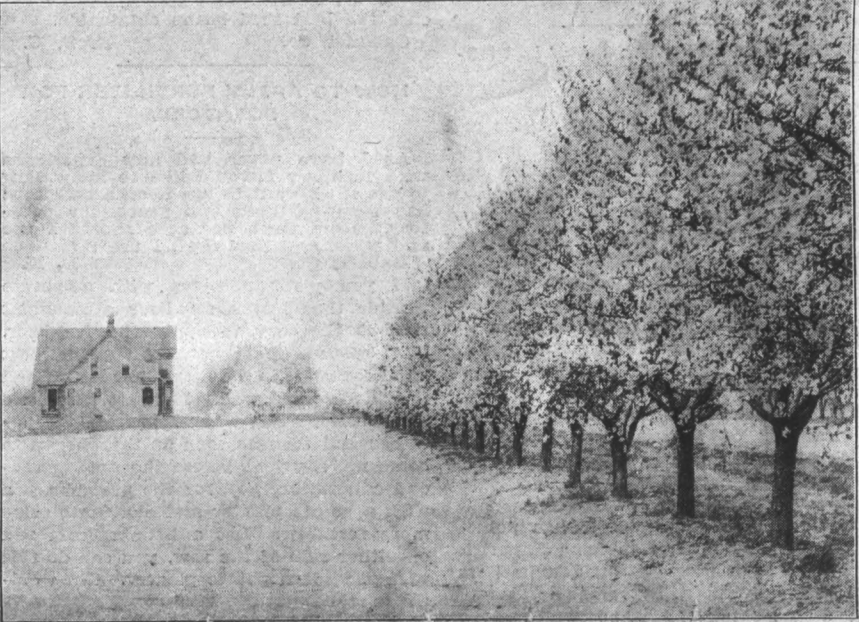
**T**HERE are three ways of caring for the orchard soil. They are cultivation and cover crop method, the sod mulch method and the half-sod mulch method. Neglect of the soil in the orchard is not a method but rather a lack of method and should not be confused with any of the methods just mentioned.

The sod mulch method has some strong advocates and in some locations is undoubtedly the best method to be used. Such locations are those that have plenty of soil moisture and where plenty of mulching material can be obtained. Hillsides that can not be easily cultivated and are liable to wash can also be sod mulched. The sod mulch method is the exception rather than the rule. In practicing it care must be taken to do it thoroughly. Many prominent practitioners of it do not mulch their trees enough. The mulching should be put on thick enough under the trees to kill out all growth of grass or weeds as far out as the spread of the limbs.

The half sod mulch method is practical for those who believe in cultivation but have hillside orchards that are too steep to permit cultivating the entire surface. It is a combination of the sod mulch method and cultivation, a strip of sod four to six feet wide being left in the tree row and the rest of the space being cultivated and sown to cover crops. The sod strips should be at right angles to the general flow of the water. The sod part should be treated the same as in the sod mulch method. The advantages of this system are that it prevents washing of the soil and also gives all the benefits of clean cultivation.

The cultivation and cover crop method is generally accepted as the best method of caring for the orchard soil. Without a doubt it should be practiced in nine-tenths of the cases.

The principles underlying the reason for cultivating an orchard are the same as those underlying the reason for cultivating any crop. The conservation of soil moisture, destroying of weeds and the aeration of the soil to hasten the process of making the plant food available are important to the benefit of the orchard. The small, hair like roots lying



Cherry Trees by the Roadside. In One Season \$500 Worth of Cherries were Taken from this Row. Trees are Assured of Cultivation on One Side.

near to the surface are the main feeders of the tree. Most of the plant food is in the first few feet of the soil. It is necessary, therefore, to make conditions such so that this plant food is made most easily and quickly available to these surface roots. This is best done by cultivation.

Cultivation should start as early in spring as possible and should at least be started by the time the blossoms fall. The moisture from the spring rains should be conserved as much as possible. Plowing is generally advisable as there is usually some growth of the cover crop sowed the past fall that the plow will handle better than anything else. However, if there is not much growth disking is preferred as

the work can be done quicker and the disk will not cut the roots as easily as the plow. If plowing is done it should be done as shallow as is consistent with good turning under of the green stuff. The plowing should always be done one way as the roots become established and in plowing cross ways there would be an unnecessary cutting of the roots. The ridges caused by plowing can be worked down to a great extent with the cultivating tools. In this the disk also has an advantage over the plow. It can be worked both ways and the ground can be kept more level.

This early cultivation may also be important for another reason, where cover crops are grown, and that is, that in the

spring after the cover crop has attained some size and is growing rapidly, it uses an enormous amount of moisture that should be available to the trees. Of course, should the soil be in need of humus the crop could be allowed to grow longer than where vegetable matter was not lacking and especially in a rainy season, but it is better not to permit the crop to remain on too long. The small rootlets of the tree grow quickly and become entwined with the roots of the cover crop after a short period. The plowing down of the crop breaks up this root formation and thus cuts down the drinking and feeding capacity of the tree. Early plowing would avoid, in whole or part, this disturbance to the root system.

Tools to be used in cultivating the orchard should be determined by the kind of soil in the orchard. Any tool that will work the soil up well is suitable. There are several cultivators that are made for orchard cultivation especially that will quickly and conveniently keep the soil in a nice dust mulch after it has been worked down in spring. Extension disks and cultivators are very desirable in orchard work because of the nearness to the tree that they can be worked.

The ground should be kept in a good dust mulch condition until about the middle of July or first of August when it should be sown to some cover crop. In dry seasons the cultivation may be continued a little longer than in good growing years. It is very seldom advisable to cultivate after the first week in August. It is very essential to stop soon enough to allow the tree to stop growing and thoroughly harden up its wood before the winter sets in. Generally cultivation should be stopped sooner on young fast growing trees than on bearing ones. Young trees are most liable to carry immature wood into the winter and suffer from winter injury as the result.

Half-way methods of all kinds are to be condemned. I would rather see an orchard in sod with the grass and weeds cut with a mower once or twice than to see an orchard half plowed and cultivated. Growing grains or allowing stock to pasture in the orchard is not good orcharding, although some orchards that



The Cultivation and Cover Crop Method of Soil Management is Generally Accepted as Being the Best for the Orchard.



have been used as hog yards have paid. An orchard is a thing that will stand quite a little abuse and still pay some profit if it is sprayed. But orchards so abused are not those that pay the maximum profits or pay good profits yearly. Experience has proven that it pays abundantly to give the soil of the orchard good care.

Van Buren Co. F. A. WILKEN.

#### FARM NOTES.

##### Bean Culture.

Will you kindly advise me how to successfully grow a crop of beans? The field is a sandy loam sod, mowed last year and top-dressed with manure last winter. I plowed it early this spring and would like to sow to wheat this fall. Is the last of May too early to sow? How wide apart should the rows be, how much seed should be used, and how often should the crop be cultivated?

Midland Co.

READER.

This preparation of land for beans should insure a good crop. The bean crop is not generally given as good a chance upon Michigan farms as it should be, being ordinarily used as a second, rather than a first crop in the rotation following grass. The time of planting should depend upon weather conditions, as the soil should be in condition to promote an early germination of the seed and quick growth of the plant. Beans are ordinarily planted with a drill, which necessitates making the rows 28 to 35 inches apart. This makes little difference with the yield, so long as the amount of seed used is approximately the same. Where drilled in rows of this width about three pecks per acre are planted, or where planted in checks about one-half bushel. Cultivation should begin as soon as the rows can be followed, which is often within a week or ten days from planting. Where the ground is plowed early and well harrowed before planting, it will not be necessary to continue cultivation very late. It is better not to cultivate when the vines are wet as this facilitates the spreading of anthracnose and other fungous diseases of the bean plant. The crop may be safely put in the last of May under favorable weather conditions, which will insure maturing sufficiently early to get the ground into wheat in the fall.

##### Disking vs. Plowing for Corn.

I have a field of wheat that was not very good and I want to put it to corn. Would it do just as well to disk it and would I get just as good corn as if I plowed it?

Cass Co.

F. B.

If the field were disked up thoroughly to the same depth that it would be plowed, it is probable that the result would be just as satisfactory as though the ground were plowed, and perhaps more so, as the capillarity of the soil would be better preserved, but it would require fully as much time and work to fit the field properly in this way as to plow it, and in case there are places where the wheat has attained some little growth it would be better to use the plow instead of the disk. It may be a good plan to experiment on this field, disking a portion of it and plowing the balance in order to determine this matter for yourself and under your own local conditions.

##### Building a Corncrib.

I intend to build a double corn crib, that is, a crib on each side of a driveway and under one roof, and would be pleased to get plans for same as to width of cribs, width of driveway, etc. Would it do to make the bottom of cribs of concrete?

Jackson Co.

J. C.

The double corncribs of the type mentioned above are usually made about 16 feet wide with an eight-foot driveway through the center, making the crib on each side about four feet wide. Formerly it was the practice to make them a foot or two wider at the top than at the bottom, but in recent years the most common method has been to bevel the edge of the boards to side up the crib on the outside, so as to prevent the free admission of moisture and at the same time admit of the free circulation of air. Regarding the use of a concrete floor in corncribs, it is the writer's opinion that it would be satisfactory, provided a good layer of cinders were placed under the concrete and proper surface drainage provided about the building.

##### Teosinte as a Forage Crop.

Please advise me as to raising teosinte; how to sow, how much seed per acre, and when. Also the best way to harvest, and at what time. Is it of much value for horse feed?

Ingham Co.

H. O.

This plant gives wonderful yields of forage in the south on rich soil, where the seasons are long and the climate is moist, but in the north it is not considered of superior value and is not the equal of corn as a forage crop. For this reason it should be experimented with on

a small scale instead of making it a main dependence for forage purposes. It has an advantage as a soiling crop in that it may be cut more than once, as it tillers abundantly and will send up new stalks after the first cutting. It will, however, produce as abundant forage if allowed to grow to near maturity and cut but once.

The seed should be planted late in May or early in June on a well prepared seed bed, drilling in rows three and one-half to four feet apart and thinning to one plant each foot. One pound of good seed will be sufficient to plant an acre. Give the same culture as for corn and use for a soiling crop or cure in the same manner.

##### Steel Roofs and Lightning.

Will you kindly inform me at your earliest convenience through the columns of your paper as to whether steel roofing is considered a protection from lightning?

Eaton Co.

F. J. C.

It is generally conceded that steel roofs will furnish a large measure of protection against lightning in case the roof is grounded by running wires down the corners of the building, grounding them in permanently moistened earth and connecting them with the roof and eave troughs.

##### BETTER SEED BEANS WILL PRODUCE INCREASED YIELDS.

Readers of the agricultural papers and magazines could not help but be impressed by the good seed campaign carried on this spring. The careful selection of pure seeds has been emphasized again and again. The agricultural press has done nobly in pointing out the necessity of unadulterated grass seeds and the danger of sowing the cheap and impure. Lengthy articles have appeared upon the sowing of oats and barley, thoroughly milled and as free from light and inferior seeds as possible. Repeatedly have articles been read by the writer upon the advisability of testing seed corn. The Michigan Farmer has ever been in the front ranks in the securing of larger yields by the way of better seeds. With articles and illustrations it has pointed out that good seed, free from impurities and of a high germinating standard was not only advisable, but what is more, a necessity providing a large yield is to be secured.

What has been true of the clovers, the spring grain, and the corn crop will also be true of the bean crop. The successful farmer has bought his clover seed only after the most thorough investigation, milled his oats and tested his seed corn. But what about the seed beans? Will they receive the same careful inspection by the bean growers throughout the state? Perhaps some will, but is it not true that in far too many cases during the rush to get the crop in that "any old culls" will be drilled upon newly plowed, half fitted ground. Surely a thing worth doing is worth doing well and seed beans should have the same careful inspection and testing as other seeds secure.

The bean crop of Michigan in recent years ranked as the best in the world. This prestige was established by an advertising campaign of the Michigan Bean Association in the following manner: Its members used in their correspondence folders giving the relative value of beans as food in comparison with several of the principal food articles and laid particular stress on the fact that Michigan beans are the best in the world. A canner soon afterward took advantage of the advertising campaign and advertised also that he used only the best Michigan beans which are the best the world over. This limited advertising campaign firmly established the supremacy of Michigan beans.

How long this prestige can be maintained remains to the bean growers. Not for many years if farmers are influenced in the unwise planting of inferior seed. The erroneous claim that culls are good enough for seed must be overcome. Inferior seed beans produce plants of low vitality, subject to disease and of undesirable strains. The natural tendency of all plants or animals is to degenerate and hence the bean grower must build upward, not downward. It is up, then, to the bean grower if he desires more than a crop of cull beans, to plant more than culls. He must secure improved seed, not the seed of a low vitality; beans that will grow rapidly and mature early, and thus will he avoid the losses frequently occasioned by the autumn rains.

Prof. Hopkins writes that there are six essentials and positive factors in a successful crop production, and he heads the list with seed. He further adds, "Good seed is exceedingly important." The

quality of the seed selected and planted determines how productive the other five factors will have a chance to be. Thus, the whole success or failure of the crop may be made with the seed. Surely, with the yield depending upon the seed, too much attention can not be given to having seed of the highest standard possible.

Careful selection of the seed beans will net the bean growers of the state larger crops, of a higher grade, at a smaller expense per acre. This may be a strong assertion but try it and see for yourself. All crop authorities agree that the better the seed and its germinating power, the better the stand, other things being equal. From the strong stand a better quality is secured with a higher marketable value per unit. And all this upon the same acreage. But further, a strong healthy plant grows faster and matures sooner than the plant of low vitality. The earlier maturity of the crop may save the extra expense for labor and the serious losses caused by the fall rains that are apt to occur.

Then it behooves the bean growers that desire to make the larger profit from their bean crop the coming season to wake up, to get a hustle on and to secure the best seed beans obtainable.

Oakland Co.

E. S. C.

##### HOW TO APPLY FERTILIZER FOR POTATOES.

As I have never had any experience with fertilizer I would like to know how to use it. I want to use it on a field that has been pastured two years, for potatoes. How much per acre should I use and when and how shall I use it?

Isabella Co.

L. N.

If you plant potatoes with a potato planter that has a fertilizer attachment that is the way to apply the fertilizer. Not because it is particularly the best but because it is the most convenient, and it will do very well. I would distribute 200 to 300 pounds when I planted the potatoes and then as soon as they began to come up, say just before the first or second cultivation, go over the ground again with a potato planter and distribute some more fertilizer. Let a little stream run on either side of the row, you can do this with a modern potato planter. Then cultivate the potatoes and work this fertilizer into the soil. For this last application you could use 400 to 500 pounds as you think best. This is the easiest and most convenient way to apply fertilizer to potatoes. If you haven't got a potato planter with fertilizer distributor or if you don't use a planter at all, then I would furrow the ground out with a shovel plow, scatter some fertilizer in the bottom of the furrow, mix it with the dirt, and then drop the potatoes properly. I think the best way to apply fertilizer, certainly where a heavy application is used, is to put on about 500 pounds of fertilizer to the acre broadcast, before the potatoes are planted at all, cultivate it into the soil and get it all mixed, you want a good even distribution, and then when you plant your potatoes use at the rate of 200 pounds in the row with the potatoes. If you have no machinery to apply the fertilizer in this way you can distribute it by hand with no great trouble.

COLON C. LILLIE.

##### IS FARMING A LOTTERY?

In The Farmer of May 11, L. J. Bradley, of Kalamazoo county, sees fit to criticize me a little for saying, "That farming was a sort of lottery any way," in an article just after I had finished sowing my oats on April 17. The reason I made the remark was because the ground was in good condition for sowing and the weather looked favorable until toward night of the 17th, when quite a snow storm came on during the night, which slowly melted the next day, making the ground very wet. But fortunately, the ground did not stay wet long enough to rot any of the oats. They were a little slow about coming up, but they are all up and growing nicely now, and I would sooner chance them for a crop than any sown in May. Mr. Bradley candidly admits that early sown oats are the best in his locality. Such is the experience of the majority of farmers in many other localities. Then why should he criticize Mr. Lillie and myself for sowing our oats as early as the middle of April, if the soil was in proper condition for working, and the weather was favorable, even if we did get caught last year, which, to my certain knowledge, only happened once before in 15 years. That is, that oats rotted anywhere near as bad as they did last year after being sown. A farmer may fit his ground in the

best of shape and take great pains putting in a crop, and everything look favorable, but before harvest, owing to unfavorable weather conditions, the crop may prove nearly, if not quite, a failure. At least such has occasionally been my experience in the business of farming. After having had such an experience is it anything strange that I should consider farming as something of a lottery. Mr. Bradley says he does not believe in sowing oats until he can feel comfortable without a woolen undershirt on. Now it would not be possible for me to follow that rule, because I never wore a woolen undershirt in my life. He further says he hopes I will take his criticism in a friendly spirit. To take such criticism in any other manner, would show a lack of good sense.

Ottawa Co.

JOHN JACKSON.

##### FERTILIZING CORN GROUND.

I am plowing 14 acres of ground for corn; land is along Thornapple river, about 15 feet above river level. Land is for most part dark sand and gravel loam, some lighter sand and on one side a clay loam, but for the most part it is sandy gravel loam, not real dark or too light sand. Three years ago I plowed under meadow sod and had a big stand of corn. Had a favorable season, quite a lot of rain, and had about 1,300 bu. crates of corn on 14 acres, though the corn failed at the end of the season of maturing even fair sized ears, so I am satisfied that the element mostly lacking is phosphoric acid. I had the poorest oat crop after the corn I ever harvested. Did not consider it good oat ground but did not want to break my rotation. I prepared it well for wheat, drew on some manure, plowed under at oat sowing, then back on top for wheat, sowed wheat the 15th of September and with favorable wheat season last year had 20 bu. per acre on the 14 acres, but had a very dry summer and lost my seeding, the first seeding lost in several years' seeding on wheat. As I said at first, am plowing this same piece for corn but am fearful it won't mature a good crop. It will start well but will fall in earing and maturing. How would about 200 lbs. of steamed bone meal per acre do on this land and how would you put it on? I have no fertilizer drill nor corn planter with fertilizer attachment. How would it do to sow on broadcast after planting corn, as I shall drag corn twice with spiketooth drag before cultivating, or would sowing broadcast be too much of a job? I want to sow rye in the corn for fall pasture and mammoth clover next spring and drag seed in, or would you use some other fertilizer?

Barry Co.

SUBSCRIBER.

From the history of the field given in your letter, I am inclined to think that your land needs both phosphoric acid and potash. If you have a good thrifty growth of stalks it would seem that the plant has got a sufficient amount of nitrogen. Your soil, though, is one of those kinds of soil that gives up its nitrogen easily and a soil in which nitrification takes place rapidly during warm weather. These kinds of soils are the best for corn. But, where nitrogen is consumed in large amounts it must necessarily take phosphoric acid and potash to produce the plant. This draws heavily upon these constituents. The very fact that your corn didn't ear well shows that it lacks phosphoric acid, as you surmise.

I would not use steamed bone meal alone. Steamed bone meal is a good source of phosphoric acid and nitrogen but it contains no potash, and if you purchase steamed bone meal I would also purchase some muriate of potash and use about 100 to 150 pounds to the acre. Personally, I would use a mixed fertilizer containing about two per cent of ammonia, eight per cent of phosphoric acid, and four per cent of actual potash. Then the three ingredients can be all applied at one time. It might be, however, that all you would need is phosphoric acid and potash, and then I would use a mixed fertilizer containing these two ingredients, one something like 10:4, that is ten per cent of phosphoric acid and four per cent of potash.

As long as you have no fertilizer drill the fertilizer can be distributed broadcast as our forefathers used to apply land plaster, or you can load the fertilizer in your wagon box, get a couple of men to assist you, you really ought to have three, one to drive the team, one to scatter on each side of the wagon, and one from the back of the wagon, and you could go over the 14-acre field some morning before breakfast. I would recommend a heavier application of fertilizer than you suggest. I don't think 200 pounds is enough for corn. I would use at least 500 pounds. You may think this will cost too much, but if you had ten loads of manure to the acre to put onto this field you would not hesitate to apply it, and the cost of application would amount to more than 500 pounds of fertilizer per acre.

COLON C. LILLIE.



# PRACTICAL SCIENCE.

## ANIMAL NUTRITION.

BY FLOYD W. ROBISON.

### Metabolism.

In our preceding discussion we have attempted to give briefly and yet with sufficient clearness, so that the reader will grasp in general terms at least, the principles upon which the digestion of food is based. We have likewise attempted to show that the digestion of food is in itself not a vitalistic phenomenon taking place inside the animal organism but rather a more or less mechanical operation preparing food for assimilation later on in the absorptive organs of the body.

If food were entirely soluble and if it existed in the raw material in the same condition in which it exists after it has been taken up by the circulatory system of the body, there would be no need for digestive organs nor would there be need for digestive fluids with their accompanying enzymes. The conditions, however, which pertain in food have rendered it necessary that each complex organism, such as the animal body, be furnished with means permitting it to attack and make more simple and soluble food material which in crude form is presented to the organism. Hence the necessity of a more or less complex digestive system for animals.

### The Building Up and Tearing Down in the Body.

The digestion of food having become, accomplished in the alimentary canal, and the undigested, rejected residues having been passed on and subsequently eliminated, the next step concerns the introduction of these digested portions into the body proper. The process by which the food is handled after it leaves the alimentary canal is what we call metabolism. The metabolism of food means the changes which that food undergoes in its building into the cellular structure of the body and in its breaking down, through muscular and vital activity, in the body. The process of metabolism which we call constructive, or the building up process, is termed anabolism, while the destructive or breaking down process styled catabolism. Both processes are comprised in the general term metabolism. Both processes are carried on by means of the circulatory system of the body. The anabolic changes are in general carried on through the arterial system supplemented by the lymphatics and capillaries. The catabolic changes are in general carried on through the capillaries and the venous system.

### The Circulatory System Like a City Water System.

The circulatory system therefore consists in general of three divisions; first, lymphatics; second, the veins and arteries; third, the capillaries. The main trunks of the circulatory system, that is, the arteries and veins, may in general be likened to the water and sewage systems of a city. The large water mains in the city fulfill the same purpose generally as do the arteries, that is, carry the pure supply to the cells of the body. The veins represent in general the sewage system of a city, carrying the waste products of metabolism to the outlets of the body. It is necessary for the nourishment of the cells in the body that from time to time these arteries be tapped with branching tubes of lower diameter, finally terminating in the fine network of capillaries. Food material carried in the arteries in the blood may thus, through the network of capillaries enter into the structure of the cells themselves. So it is in the water system of the city. The main trunk line is not used except rarely to furnish the individual water supply, but lateral pipes of lower diameter spread out like a net-work of capillaries to furnish this water supply, in the same way. Similarly with the sewage system of the body. It starts in the capillaries and accumulating gradually pours into the larger tubes until they finally reach the large trunk vein, and thus to the sewer outlets of the body.

### The Circulatory System a Marvelous System.

The system of food supply and waste disposal in the body is one of the finest and most complete, if not the most complete, waste disposal system known. Just how important it is that these systems be kept clear and free is shown when the seriousness of a damming up of any of the large veins, or sewers, is comprehended. Without doubt, there is no more im-

portant function, so far as the physical condition of the body is concerned, than that of keeping in perfect control these anabolic and catabolic changes in the body. The stoppage of a city sewer system parallels in effect the clogging of the channels of excretion in the body. It is little wonder that our greatest insight into animal physiology has been obtained through a study of the circulatory system.

### The Uses of the Absorptive Nutrients in the Body.

As we have noted heretofore, the principal uses of the nutrients which are absorbed in the body are to furnish energy for the carrying on of the various vital functions, and to furnish heat to maintain the temperature of the body. One does not think of the immense amount of heat needed which, of course, must be supplied by the burning within the cell of the absorbed nutrients of the food but if one should take a box the size of the animal body and attempt to maintain it twenty-four hours at 100 degrees F., during any and all kinds of weather, the exceedingly great amount of heat thus required would be quite astonishing.

It is probable that the proteids of the food are changed into serum albumin and serum globulin, and a portion no doubt changed into fat. Protein, however, is not completely utilized in the animal organism for we find still an unutilized portion in the urine, namely, the urea. The carbohydrates, that is the starches, sugars, etc., all of which in general when absorbed and taken into the body are in the form of grape sugar or glucose are without doubt changed principally into fats.

### Mineral Matter Eliminated in the Urine.

Nearly all of the digested mineral matter except that which is built (anabolism) into the bony structure of the body, becomes eliminated in the urine which is voided through the great sewer outlet of the body. Of course, the skin serves an important function in this respect also.

### The Pioneers in Nutrition Investigation.

So complete is our knowledge of the total changes which food undergoes in the body and its residual products which leave the body, that practically everything in the food may now be accounted for. Through the researches of the late Dr. W. O. Atwater, the pioneer of nutrition investigators in America, and the subsequent work of Kellner, Armsby and others with the respiration calorimeter, much light has been thrown on the changes which food undergoes in the animal body. The respiration calorimeter has furnished a nucleus upon which to work and much of the progress now noted in animal husbandry is due directly to the impetus given by these men.

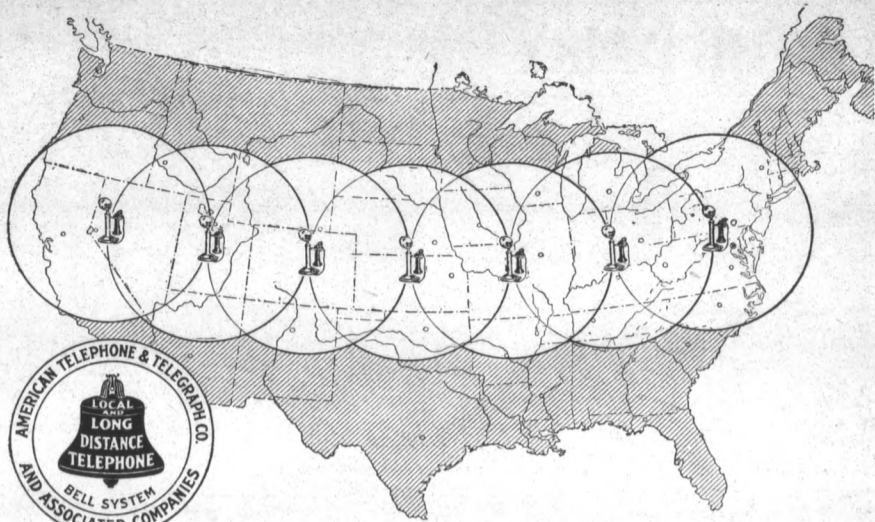
### NATURE KILLS THE WEAK.

The survival of the fittest is fully exemplified in the growing of grain, according to experiments recently conducted by the Nebraska Experiment Station, a report of which has just been received by the Department of Agriculture.

Beginning in the fall of 1907 a series of small winter wheat plats were sown for the purpose of procuring data on the amount of natural elimination of plants that takes place under various rates of planting, and also to determine to what degree plants coming from undeveloped or small seeds might be eliminated when planted in competition with plants from large, well-developed seeds. It was found that for every 100 seeds of wheat or oats sown under favorable conditions, about one-third that come up, for some cause or other, died out before maturity. At least one cause for this seems to be the natural competition which takes place when the stronger plants crowd out the weaker ones. This seems to be nature's method of maintaining the stronger and more vigorous plants in field crops when sown under ordinary conditions.

It was ascertained that the thicker the rate of planting the greater number of plants are crowded out. Practical results with corn have shown that seed grown under thick planting, namely, five plants per hill, has produced a higher yield than seed from one stalk per hill, the difference after six years' selection from the two rates of planting amounting to seven or eight bushels per acre.

Nature seems to have a way of eliminating the weaklings, especially when very thick planting is done as is the custom when sowing small grain crops,



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CONDUCTED BY COLON C. LILLIE.

### CORN AND SOY BEANS FOR SILAGE.

I want to go into the dairy business on a moderate plan. I have a silo and I want to know if cowpeas or soy beans are a good thing to cut and put in with silage. I have no pasture so will have to feed winter and summer. Under my conditions what would you advise me to feed? How much? How should I manage a place of this kind? I intend putting in some alfalfa.

Monroe Co. H. J.  
By mixing soy beans or cowpeas with the time of filling the silo one would get an ensilage which is richer in protein than where corn is used alone. It will make more nearly a balanced ration for the cows, and I believe it will make fully as palatable a ration, for the cows like either cowpeas or soy beans. At first thought one would say that it would be much better to grow these crops together and fill the silo with the combination, than it would to fill the silo with corn alone, but if you stop and think that when you have a good crop of corn on hand there is little chance for that same land to grow cowpeas. I tried this once and I couldn't get any growth of cowpeas and soy beans. Why, even weeds will not grow in a silage corn field after the corn gets well started, it is so shady. The corn occupies the whole ground. I think the only practical way would be to raise soy beans on one field and corn on the other and then mix them as the silo is being filled.

There is another question also that should be considered here. With good land and good tillage you can raise 15 to 25 tons of corn silage per acre. How many tons of cowpeas and soy beans one can raise I do not know, but unquestionably nowhere near this amount. Now will it pay to grow a certain acreage of soy beans to mix with the corn silage to make a more nearly balanced food, or will it pay to plant this ground all to corn and raise more corn and then buy a concentrated food rich in protein to get the necessary protein to balance up the ration? That is a question that is worth discussing. All we would attempt to raise the soy beans for would be to add protein to the corn silage. We can add this in the form of gluten feed, or oil meal, in the grain ration when we are feeding. I am going to try some soy beans this year and mix it with silage as an experiment.

I believe that H. J. can make a success out of this manner of keeping dairy cows and do away with pasture if his land is all tillable land. I do not think we are warranted in having very much land devoted to pasture that is level and in good condition to raise crops.

### REDUCING THE SIZE OF A SILO.

I would like to know your opinion on our silo. It is 15 ft. across, inside diameter; it is made of two thicknesses of 1/2-in. lumber and paper in between and then studded with 2x4's every 12 in. It is sheeted on the inside with two more thicknesses of 1/2-in. lumber and paper. We purchased this farm four years ago and this silo was on the place but we have never used it. Now this is what I want to know. The lumber in this silo on the inside for about 10 or 12 ft. high is all rotted, full of holes, some of them as much as a foot square, which were caused by letting the ensilage rot in it. They tell us the silo is too large and to reduce the size we intended to spike 2x4's on the inside, as it is 15 ft. and we are told 12 ft. is what we want, then board it up. We want to reduce the structure from 15 ft. to 12 ft. Now can this be done successfully. The amount of stock we keep is seven cows and we raise four calves every year and we have four two-year-olds every year, so we have 15 head every winter to winter through and 27 sheep that we wanted to feed ensilage to. Will this size be about right or would the 15 ft., as it is, be about right for our stock? Now how much will the 15 ft. silo hold and how much will a 12-ft. silo hold, if we make it smaller, and how long will both feed?

Gratiot Co. J. R.  
A silo 14 feet in diameter is rather large for the number of head of stock which J. R. wishes to keep. The rule is to have for one head eight square feet of surface in the silo. In other words, you must have a sufficient amount of stock so that you feed the entire surface of the silo every day to the depth of about two inches in order to keep the silage in good condition. If you only have a sufficient amount of stock to feed only half of the surface of the silo then part of the surface will remain undisturbed for two days and, in warm weather especially, this ensilage will be exposed to the air too long and will deteriorate in value. It will be-

come dried up and tend to sour. It will not be as palatable, and therefore will not be relished by the stock as when fresh. Now adhering strictly to the rule, with a silo 15 feet in diameter, the way I figure the stock, there would be about 12 feet of surface to each head of stock instead of eight, or the silo would be too large. I figure that the four yearlings and the four two-year-olds would amount to about the same as four mature cows, and the 27 sheep would amount to about the same as three, making a total of 14 head to feed from the surface of a 15-foot silo. It is certain that in this respect a 12-foot silo would be better, and a 12-foot silo 24 feet deep would hold a sufficient amount of ensilage to carry this stock eight months of the year.

But I don't like the idea of trying to reduce this old silo in diameter. By putting 2x4's on the inside of the old silo and making an octagon out of it, having it only 12 feet in diameter, would seem practical, and yet I don't like that kind of a silo. The single board silo is a silo of the past. It will not keep ensilage as well as a two-inch stave silo, a lath and plastered silo, or a cement silo. Then again, the space between the old silo and this new structure on the inside will be a splendid place for the accumulation of filth, dirt and rats, and I don't like the idea at all. It can be done. A silo made on the inside will last for a considerable length of time, but my judgment would be to take this old silo, lath and plaster it on the inside, leave it the size it is, 15 feet in diameter, and then keep a sufficient amount of stock so that you can keep the ensilage to good advantage. You could increase the number of dairy cows, you could increase the number of sheep, or you can fatten a few steers every winter to use up this silage, and I believe in the long run it will be more satisfactory than it will be to try to reduce the size of your silo.

A silo 15 feet in diameter and 24 feet high will hold about 75 tons of silage, and one 12 feet in diameter the same height would hold in the neighborhood of 50 tons of silage. Fifty tons of silage would carry the amount of stock which J. R. says he keeps. If he fixed up the old silo by plastering it on the inside he could keep a bunch of steers every winter or fatten a few sheep. In the long run I think he would be better satisfied than he would if he tried to reduce the size of the old silo and I am sure it could be done at much less expense.

### WOULD THE PIT SERVE AS A SILO WHERE BUT FEW ANIMALS ARE KEPT?

In issue of May 11 H. M. R. inquires in regard to pit silo. Your answer is all right as regards the big fellows, but in the case of one who wishes a silo say, for half a dozen head or less of stock, and who would not want a large silo, may not the pit be the correct idea after all? The silo could be filled without any blower, which would require much less power, and no frozen silage would ever be had.

An ordinary hoist using 3/4-in. rope, with which one man can raise 600 pounds and costing with 100 feet of rope, a couple of dollars, would solve the problem of getting the silage out of the pit, as well as a large part of the excavation. The pit could be cemented directly on the earth thus saving much expense, and if made with arched cement cover would be ever-enduring, with a fresh coating of cement perhaps once in a long series of years.

With present high prices for hay, with no prospect for the return to old-time low prices, the man with the small flock or herd, must have a silo or go out of business it seems to me, and any mode of effectual construction of a silo that will be inexpensive in the long run, would be very desirable for this class.

### FORMULA FOR MAKING GOVERNMENT WHITEWASH.

We are constantly getting requests for the formula for compounding what is known as government whitewash, and although we have published it many times, for the benefit of our new subscribers and those who may not have observed former write-ups of it we are reprinting it again. If you do not file your Farmers, which is the best way to secure the greatest good from any publication, we would advise that you clip out the formula and lay it by for future reference. Following is the method of making:

Use a half bushel of unslaked lime, a peck of salt, three pounds of ground rice, a half pound of powdered Spanish whitening and one pound of glue. To make, slake the lime in warm water, having the

receptacle covered during the process, and strain the liquid through a strainer with a fine mesh sieve. Dissolve the salt in warm water and add it to the slaked lime. Have the ground rice boiled to a thin paste and stir it in the above mixture while boiling hot. Add the Spanish whitening and glue, which have been dissolved over a slow fire. Five gallons of hot water should next be added to the mixture, which is stirred well and allowed to stand for a couple of days. The receptacle in which it is contained should be covered to prevent dirt from getting in. The mixture should be applied hot and it is well to strain it a second time before using, in order to remove any lumps that would interfere with its application.

Should one desire to make a material of a different color, it can be done by adding either common clay, Spanish brown, yellow ochre, or other material to produce the shade or color wanted. This whitewash makes a permanent covering and can be used in many places to advantage.

### WHAT TO DO WITH OLD BULLS.

During the past few years farmers have shown a very commendable desire to improve their live stock. This they have aimed to accomplish, says Mr. Washburn, of Minnesota College of Agriculture, by better feeding and care of the stock already possessed, and also by introducing males of some pure breed. All this is entirely the right thing to do. It is customary among our farmers to use such an animal for about two years, or until his progeny are of an age to be bred, and then to sell the bull, rather than to use him on his own daughters. Such bulls are generally, at this stage of their life—when only three to four years old or at early maturity—just at their prime, or but little below it; and certainly, for the good of the live stock interests, if they have done reasonably well as getters of good stock, they should not be sent to the butcher, as is so often the case. The mature male is able to get stronger calves than the immature one; and, when a sire has proved his power to produce well-formed, clearly-marked, robust calves, he certainly should not be cast aside for a young and untried one. There are a good many dairy sires that are right now in such a position. There appears to be an opportunity here for the many breeders associations to establish exchange lists through which they can inform their members of valuable sires that have completed their usefulness in the locality where they are and that are to be disposed of. This would aid in conserving the blood of tried individuals of the several breeds. The dairy division of the Minnesota Agricultural College has undertaken to keep such a list for the interest of dairymen of that state. Many dairymen who have animals to dispose of realize the demand for good bulls, advertise them through their farm papers and thereby inform others who are on the lookout for new blood. In these and other ways we can save our good bulls to build up the quality of the dairy animals of the states.

### DATES OF 1912 NATIONAL DAIRY SHOW.

The board of directors have decided upon October 24 to November 2, as the dates for holding the 1912 National Dairy Show. The show will be held on the same date on succeeding years. The services of W. E. Skinner have been secured to manage this year's exhibition. His success with the International and other large shows insures the greatest dairy exhibition yet held this side of the Atlantic.

### MACHINE VS. HAND MILKING.


From experiments with milking machines conducted for nine years by the Agricultural Experiment Farm of New South Wales, it was found that the flow of milk is not appreciably decreased when machine milking is substituted for hand milking, except in isolated cases, and that the period of lactation is not shortened or subsequent periods of lactation adversely affected in any way. Cows that had been milked by machine continuously for five years apparently did not decrease in the annual yield of milk. The percentage of solids in the milk remained the same as with hand milking, and the cows were no more subject to udder troubles. Machine milking was much cheaper and cleaner when the machines were properly cared for and run by a capable operator.

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**BUILDING A CO-OPERATIVE CREAMERY.**

I met a very good friend the other day, who is in the employ of one of the largest companies in the United States engaged in the distributing of farm machinery.

We had a very spirited discussion upon the subject of co-operation among farmers, and since that talk with my friend, I have been thinking a great deal about the co-operative creamery.

The whole subject of co-operation is being studied today, as never before in this country. We are bound to get something out of this discussion. The great army of men who get their living in the field of competitive trade are by far the greatest obstacle in the way of the growth of co-operation. They will keep right on opposing it because, like the ancient Ephesians, they fear that "their craft is in danger." Here, as elsewhere in the world, human selfishness is the greatest barrier in the way of progress.

We have tried the principle of co-operation in government, and it is established to remain forever. And yet, it is not so long since there were men in our own America who thought it much safer for the people to trust a fortunate few to do their thinking for them, than to trust the whole people. In every case like this, however, it turns out that the fortunate few are interested.

Business co-operation is attended with some difficulties always. Among them are inexperience, lack of individual effort, and the opposition of those special interests which live off from the profit of distribution.

But why build the co-operative creamery.

First, because it is the cheapest way in which butter can be made and distributed to the public. Second, through this system the public will secure the butter in the best possible condition, and of superior quality. Third, the profits of the business will go directly into the pockets of the men whose skill and industry produce the goods, and not to those whose chief interest is in the sum which they can with propriety take out of what the farmer has produced.

Now here are three very good reasons, if they can be established. Let us see. Of course, we have considered the creamery as a local plant. The cream is delivered directly to the factory from the farm, is in the best possible condition, and the freight is saved. True, the freight must be paid on the butter, but it costs much less to pay freight on butter than on the requisite amount of cream to make it.

The quality of the product is good, for two reasons. The cream is delivered direct to the plant in good condition and the patrons feeling that the creamery is theirs and that the price of the product will depend upon its quality, are bound to be more particular and deliver a much better article. The man who simply sells his cream to a private creamery has only to satisfy the party at the factory and often does not satisfy him but the creamery man is forced to take his cream for fear of losing patronage, when he knows oftentimes, that it is unfit for butter. Then the buttermaker at the co-operative creamery takes nothing that he does not want, if the patrons are really co-operating. He is not slow to inform the man who brings a bad article, that his cream will not make good butter, and the patron knows that his neighbors who are interested with him have a right to expect a square deal from him, and so it comes about that everything combines to induce him to furnish the best article possible under the circumstances.

Now it must be admitted that here and there is a creamery of this kind which does not produce the best butter, but this is for the lack of co-operation and not at all to the credit of the private concern. I believe that it would be safe to say, in a general way, that there is no way in the world in which butter can be made and delivered in such good condition as from the right kind of production and there is no better right than that in the world. Because it is his, he has the first and best right to say how it shall be marketed, so long as he does not form a combination in "restraint of trade" and wrong the public.

I know of one co-operative creamery, not very large, but making about 175,000 lbs. of butter per year that, after paying the cost of making and selling the product the patrons receive an average of two cents per pound above the Elgin price for butter-fat.

This amounts to the nice little sum of \$3,500. This amount is quietly distributed every year among the patrons, and I sup-

pose there is not a dairy community in Michigan which might not do as well, if the would only co-operate. Now, kind reader, is there any reason in the world why this \$3,500 should be taken from these farmers and given to a few so-called "business men?" We need "business men," and I have not the least objection to them, but we do not need them to do those things for us which we can do even better for ourselves. But you know of a co-operative creamery that has not paid out, and another reader knows of many that have started up, ran for a little time and then passed into the hands of private capital because the people failed to make them pay. At this, and even more, may be true, but in every case where the people have failed in a community that needed a creamery, the people have not really co-operated.

When the promoter descends upon the quiet neighborhood whose people have only thought of a creamery as something far away, and sells them a plant for much more than it should cost, and when the people do not buy it because they have investigated the business, but merely submit to the power of the promoter, and go in with their eyes closed, these people do not co-operate, and it is a great mistake to call their plant a co-operative creamery.

Sometimes they learn co-operation through temporary failure and go on to success. In fact, this might be true in most cases if they would only hold together. It is not the fact we may have paid the promoter too much for our plant that has caused the most of our trouble, but the fact that we did not work in harmony to a definite end. A better way, however, would have been to study the creamery business thoroughly among ourselves before building and then organize the company, and raise the money. The machinery can be bought right if we know just what we want, and the plant can be erected in the same way and with the same business-like attention which the farmer would use in building a barn, or a business man in putting up a brick block in the city.

It will be easy to market the product after the plant has started if the quality is right.

The people who are most interested will reap the reward of an increased price, and the fact that they have learned to work together will be worth much to them in many ways.

Oceana Co. W. F. TAYLOR.

**BUTTER PRODUCTION IN THE UNITED STATES.**

According to the last census report there were produced in this country in creameries and on farms 1,620,766,000 pounds of butter during the year 1909. Of this amount 996,001,000 pounds were produced on farms, while 624,765,000 pounds were produced in factories. The total value of the butter made was \$405,054,000. That produced on farms was valued at \$225,544,000 and that produced in factories was worth \$179,510,000.

In spite of the fact that the creamery has become a large factor in the manufacture of butter, it will be seen from these figures that over one-half of the butter made in the country is manufactured on the farm. Where dairying has attained its highest development there the factory system is more largely employed. This is generally true in the east north central and west north central states. In these states slightly over one-half of the butter is made in factories. In the state of Wisconsin, which makes more butter than any other state in the Union, only about one-fourth of her output is made on the farms. In the southern states the opposite is true and, while there has been a very rapid advancement in the dairy business in the south Atlantic states as well as the other southern states east of New Mexico, by far the larger part of the butter is made on the farms.

In total production Wisconsin, as stated above, ranks first, Iowa second, Minnesota third, Pennsylvania fourth, Michigan fifth, Ohio sixth, Illinois seventh, New York eighth, Texas ninth and Indiana tenth. The Michigan production is larger than that of the three Pacific states taken together. Nearly two-thirds of Michigan's 85,917,000 pounds of butter produced in 1909 was manufactured on farms. The value of her total product for that year was \$21,849,000.

Correspondents report the average price of butter in country places to be 25 cents per pound. Retailers in the city of Detroit are receiving 37 cents for the same grade. It takes 12 cents, therefore, to get butter from producer to consumer.

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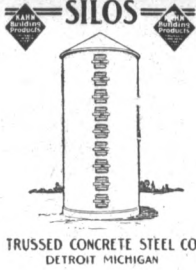
This not only applies to the users of other makes of separators but likewise to the many thousands of DE LAVAL machines now 10 to 25 years old. They are still good, of course, but there are so many improvements embodied in the modern DE LAVAL machines that these old DE LAVAL users can well afford to make an exchange and would soon save the cost of doing so.

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## POULTRY AND BEES

### FIXTURES IN THE HEN HOUSE.

A laying hen spends more than half her time either on the perches or on the nests, so it is very evident that these fixtures in the poultry house should be given careful attention for the sake of the comfort of the fowls and also because it is to the poultryman's interest from a pecuniary standpoint.

Of late years there has been a radical change in the methods of constructing roosts in poultry houses. Formerly the roosts were usually put up in the form of stair steps, the topmost one being located close to the roof. The principal objection to this form of construction is due to the fact that the instinct of self-preservation prompts fowls to perch on the highest point possible when taking their quarters for the night; they naturally desire to be above danger from below. This desire of the fowls therefore leads to fighting and crowding for the highest positions at roosting time when one perch is higher than another, and at some time some of the weaker hens will be pushed off these high perches, perhaps resulting in injury. For this reason, it is now the common practice to put all the roosts on the same level.

The perches should also be low. Eighteen inches above the floor is plenty high enough. There are many disadvantages to high roosts. First, fowls of heavy breeds are almost certain to injure their feet when they fly down from a high perch to a hard floor; this is the way most cases of bumble-foot are contracted.

All perches should preferably be built so that they will not touch the walls at any point. When they do so it is much easier for lice and mites to thrive. The fewer creases or cracks, wherein lice may find a lodging place, about the perches the better, and if they do not come into contact with the walls of the building at any point the insect pests will have very little opportunity to hide. Then if the roost poles are thoroughly drenched with coal oil, or some other good liquid lice killer, frequently, all vermin about the perches can be kept in check.

The roost poles should be two or three inches wide, slightly rounded on the upper edges. Two by three scantling, with the top corners smoothed off, will make very desirable roosting poles. These should not be nailed fast to a framework, instead, they ought to be laid so that they may be moved easily. Then they may be taken outside the house occasionally and given a good cleaning.

The nests in the poultry house need not necessarily be expensive affairs, but they should be strong and substantial and at the same time comfortable for the layers when they go on them. In winter the nests ought to be filled with hay or other soft material, while in summer they should be as cool as it is possible to get them. Nesting material should be used in the boxes, however, in summer as well as in winter. Then they should be constructed with a view of giving the hens easy ingress and egress and they should be so arranged in the building that they can be removed quite frequently for cleaning and disinfecting. Nest boxes should never be nailed fast to the walls of the building, for then the work of cleaning them will probably be neglected.

When some of the hens steal away from the poultry house to build a nest where it may never be discovered, it is usually the case that there is something wrong with the nests provided for them, although it must be admitted that some hens never lose the instinct originally given them by nature to secrete their nest in a patch of tall weeds or grass, no matter how comfortable the nests furnished them in the poultry house may be. However, the majority of the hens of a domesticated flock prefer nests in the poultry house if they are comfortable, but when nests and house are dirty and infested with numerous insect pests some of the hens are bound to seek laying places elsewhere. So one cannot make the nests too inviting, or go after lice too vigorously, or keep the house too clean, if it is not desired that many eggs be deposited where they may never be found.

When the hens go on the nests to lay on a warm day, the temperature under them will be very high. This furnishes an ideal condition for lice to multiply. During the summer season nests should be examined once a week at least, and if dirty or lousy they ought to be cleaned at once. Burn the old contents of the boxes and put in fresh material.

Have the nest boxes of the right size for the breed of fowls you have; if too big the eggs will roll around and become broken, or too many hens will try to crowd into the same nest, which mean broken eggs and a soiled nest and at the same time the hens are furnished an opportunity to learn the egg-eating habit.

Nest boxes should be constructed with the side where the layers are to enter only an inch or two high, or just sufficient to prevent the eggs from rolling out. Then if the boxes are placed close to the floor, the hens can walk into them instead of being compelled to fly up and then jump down on the eggs already in the nest, thus probably breaking one now and then.

Properly constructed perches insure comfort for the fowls at night, and by their use crippled or injured birds in the flock are avoided; rightly constructed nests insure comfort for the hens while they are laying, and they make it possible for the poultryman to have more eggs in the basket on market day, as few if any will be lost or broken before they reach the basket.

Indiana. W. F. PURDUE.

### HOT WEATHER CHICKS; THEIR FEED AND CARE.

Hatching operations will have to be carried well into the hot months of summer by most breeders if they are to expect the full number of chicks planned for at the beginning of the season. The spring was exceedingly backward in all parts of the country, and good spring weather—the kind that makes chicks grow and thrive—was not in evidence until well into the month of May.

Although late hatched chicks are not so easily raised as those hatched in April and May, they can, however, if properly cared for, be raised profitably. Therefore, if hatching results were poor early in the season it will prove profitable to continue hatching as late as July, or until the desired number of chicks are obtained. To have the best of success with late hatched chicks, however, close attention must be given to details. Careless or indifferent management will surely work harm. Be methodical in the work, and do not slight anything.

Feed consisting of heating properties should be practically eliminated from the rations of the late hatched chicks. Corn or corn meal should form but a small, if any, part of the chick feed. Do not over-feed. A little and often should be the rule and should be strictly adhered to. Do not allow any feed to lie around uneaten, especially soft feed. If feed is left lying around in hot weather it will soon sour and ferment, and often cause bowel trouble.

Move the brood coops as often as possible. Do not allow them to remain on the same spot for weeks at a time. The bottoms of the coops will become filthy from the accumulated droppings, and will be unhealthy for the chicks. Do not allow the chicks to run out in the damp grass in the early mornings. Keep them confined until the sun is well up and the grass dry. Also keep the grass around the brood coops cut short. Dragging about through the long grass with the hen will soon exhaust and weaken the chicks.

Watch out for lice on the late hatched chicks. If the chicks appear sleepy from no apparent cause, you may assume that lice are responsible. Grease their heads, throat and under the wings with lard. After they are a few weeks old they may safely be dusted with insect powder. Persian insect powder is excellent and is cheaper than the prepared powders. It must be freshly ground to be effective. The hen should also be dusted occasionally. Whitewash the inside of the coop thoroughly. A little crude carbolic acid added to the whitewash will make it more effective.

Indiana. O. E. HACHMAN.

### SHUT THE SITTING HENS ON THEIR NESTS.

It is important in caring for sitting hens to have the nests so arranged that one can shut the hens in. This is done not so much because the sitting hens will get out as it is to prevent their being disturbed by other hens. This disturbance is often of such a nature as to be fatal to many of the eggs. Then, too, the sitters are more likely to be faithful in their duty when so enclosed than where they are given more freedom. Of course, it is necessary to permit the sitting hens freedom for feeding and watering. In case a hen seems nervous and a little inclined to leave her nest, the spreading of a piece of burlap over the nest to keep

out the light will encourage her to be quiet. If she persists, however, it is better to release her and put the eggs under another mother.

### BEES AND POULTRY.

That most able and well loved editor and bee-keeper, W. Z. Hutchinson, when he was living, always answered the question, "What occupation will best work in with bees?" with "Keep more bees." He was first, last and always a specialist in the bee business. And he was right. Nevertheless, there are cases where another avocation will be better than more bees. For instance, some men will make a success in bee-keeping with one yard of bees when, if they tried to run more than one yard, they would make a complete failure of it. As they cannot profitably make a sole business of one yard of bees, they must turn to something else as a side line. This something else has usually been poultry. There's a reason for this, more than one, in fact.

One reason is that the two do not conflict. The principal part of the work with the chickens comes in winter, not all by quite a lot, but the heaviest part of it, and the principal part of the work with bees comes in summer. In the winter the odd hours left over from the work with chickens can be used to advantage in getting the bee supplies ready for the next season. In summer the bulk of the work with chickens can be done mornings and evenings. What has to be done through the middle of the day the good Frau will usually do.

Another reason is that it takes some of the same characteristics to make a good bee-keeper as it does to make a good poultryman. For instance, a bee-keeper soon learns that there are times when he can push his work right along by quick rapid movements, but that there are other times when slow careful movements will accomplish more than undue haste. As a rule, the man who is slow in his movements will be the most successful in the bee yard. He will make every move count and probably in the end get as much accomplished as his more rapid moving brother. This same slow moving bee-keeper will go among the hens without creating a panic among them, and good poultrymen realize the value of refraining from quick movements about the henry. It is a common thing for me, when I am feeling well, to go about much of my work on the run, but I have learned to change that gait when I strike the bee yard. I very often fail, though, to get my motions toned down sufficiently, and a severe stinging has many times been the result. This has taught me a much needed lesson and, while I forget it occasionally, I am reminded often enough so that I manage pretty well. Again, in handling chickens, I have often ran to the door of the coop and had to stop a moment outside the door to quiet down, so to speak, before entering. If I failed to do this the chickens would go helter skelter when I entered the coop, and several days might elapse before they got entirely over the fright I had given them. You see I am lacking in one essential for either a bee-keeper or a poultryman, but bee-keeping has been a help to me in fitting me for a poultryman.

Then again, in keeping bees we learn that the apparently little and unimportant things are often the very things that spell the difference between success and failure. This is also true in keeping poultry, and the bee-keeper who has learned this important lesson among the bees will find it a great help when he comes to apply it to hens.

Once more: Persistency is very essential in either avocation. The man who becomes discouraged at the first set-back he gets, or the second, or the third, or at innumerable ones, will never make a success with either bees or poultry. Persistent effort in spite of obstacles, and a thorough study of the work is necessary to success in either one. My wife, in commenting on what I have said in this article, says that she must take issue with me on what I said about the principal part of the chicken work coming in winter, as she thinks it comes in spring when the incubators are turning out young chickens. Well, I suppose that is true, but in our establishment she does that part of the work, but even at that the most of this work is out of the way before the rush of the bee season is on, which very seldom comes before June 10 or 15. As there is little profit in chickens hatched later than that date, I still contend that I am right, if not in the literal statement, at least in the spirit of it.

Mecosta Co. L. C. WHEELER.

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**LIVE STOCK**

WITH THE SOWS AND PIGS.

At this time of the year one should give the young pigs special care and provide an abundant supply of the best kinds of flesh-forming foods. Perhaps the best insurance against loss of young pigs is the proper care and feeding of the sow. It is surprising to see how quickly the sow and her litter will respond to a little special care at this critical period. The heavy-milking sow will lose flesh very rapidly, and one that has this characteristic and farrows a large litter is deserving of the best of care and a well proportioned ration.

A sow suckling a litter of say, eight or ten pigs which we wish to have started into life with plenty of vitality, needs a ration containing an unusual amount of protein and mineral matter. Of nearly as much importance as feed is the matter of exercise. Unless the sow and her pigs have plenty of exercise they will be lacking in vitality and it is difficult to get the pigs growing nicely unless they are strong and thrifty at weaning time. At farrowing time there is a tendency for the sow to become feverish and constipated. It is, therefore, well to give her a small dose of epsom salts a day or two before farrowing and another, if needed, the next day after farrowing. If the sow is feverish she should have warm water to drink. Many feeders say that the sow should have no feed for the first day after farrowing. This is not always a safe rule to follow, because some sows will become restless and insist upon having their feed. It is important that the sow be kept quiet at this time and if she is uneasy and up about looking for her food it is preferable that we supply her with a bulky and satisfying feed. Nothing is better than a warm bran mash.

The first few days after farrowing generous feeding should be avoided. As the pigs begin growing they become a greater drain on the sow and her feed should be judiciously increased. When they are about three weeks old a ration of skim-milk, wheat middlings and a little digester tankage will promote the pigs' growth and maintain the flesh condition of the sow. As soon as the pigs begin to follow the sow to the trough and look about for food, it is well to provide a shallow trough and have it near the sow's feeding place. A ration of skim-milk and middlings makes an ideal feed for the young pigs at this time. Feed but little of this ration at first. Keep the pens and troughs clean and never allow any old feed to sour before it is time for the next meal. Some shelled corn may also be placed where they may have free access to it at all times. There is no danger of pigs eating too much shelled corn when they have plenty of other food. After the sow and her pigs are well started in this way her ration may be safely increased until she is being given about all she can consume. If she is a good milker and has a fair-sized litter it will be impossible to keep her from losing flesh rapidly, and a really good sow is usually a skinny-looking individual after a litter of husky pigs have been suckling her for a number of weeks.

Opinions differ as to the proper time to remove the pigs from the sow. It is my judgment that we make a mistake by allowing the pigs to stay with the sow too long. Of course, a man must rely upon his own judgment as to the condition of the sow and pigs. Providing she is a fair-sized sow and that the pigs have made a good growth it is better to begin removing a few of the largest pigs when they are seven weeks old and gradually remove the others so that the sow may safely be turned into the pasture about nine weeks after farrowing. By using judgment in weaning the pigs and drying off the sows one can so plan his management that the pigs will be of nearly the same size and the sows will suffer no injury or discomfort from caked udders. I have always made it a point to have the sow's milk flow nearly checked before the last pigs were taken away from her.

The care and feeding of the brood sows after the pigs are weaned is an important factor in determining the value of the next crop of pigs. It is my aim to begin feeding the sows liberal rations as soon as the milk flow is checked and I feel impelled to say that there is nothing better than corn to feed for a few weeks until the sows begin to gain in flesh. Corn as an exclusive diet for brood sows is not good, but it is folly to decry its value when supplemented with good pasturage

or other bulky and succulent foods. Some of the breeders of registered swine feed corn almost exclusively as a grain ration when their animals have the run of good pastures. The exercise and bulky and succulent grass and forage counteract the detrimental effects of the corn ration. By properly supplementing corn with good pasture crops, bran and roots it may be used advantageously as a food for breeding swine. Corn is the cheapest grain food and withal the best, that is, providing it is fed with caution.

As a general rule it is better to provide separate inclosures for each sow and her litter, for the pig from five to eight weeks old is a thievish fellow. Unthrifty pigs suffer more hardships when two or more litters are kept together. In large litters it is frequently wise to destroy those that are unthrifty. In smaller litters it may perhaps pay to give them a little extra care.

Sour slops are a frequent source of trouble among pigs. In fact it is a mistake to allow the sow or pigs to have access to any soured feed. Scours is the most dangerous trouble affecting young pigs, and a preventative is far better than a cure.

After weaning the pigs your real responsibility commences. You are the pig's foster mother and their thrift depends largely upon how well you administer to their needs at this period. They have been growing well up to this time, but they have had the sow's milk to offset their dependence upon you. There is little danger in feeding them too much, that is, if you are feeding a reasonably well-balanced ration. If skim-milk is available it is comparatively easy to make

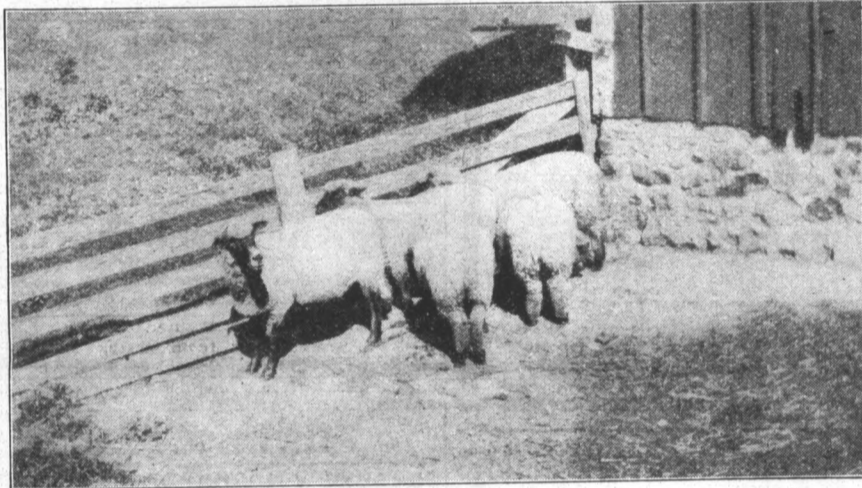
that sheep pay them better than anything else they can raise.

The conditions under which they raise sheep, are no more favorable than ours. They get more for mutton it is true, but the hay and grain fed to the sheep, if sold, would bring more than with us. There are no closer calculators in the world than the farmers of Great Britain, and if they can raise sheep profitably on high-priced land, so can we.

I doubt the propriety of having sheep grazing much of the time on the pastures in the winter, gnawing off the grass clear into the ground, and in wet weather when the ground is soft, cutting the sod to pieces with their sharp hoofs. A pasture, to be lasting, should never be trampled to death by stock when the ground has been made soft by heavy rains. A good thick sodded pasture free from noxious weeds, is too valuable to be injured permanently for a few days' pasturing when it is wet.

In England and Scotland it has been found that some breeds of sheep do better than others in certain localities. For instance, the Southdowns do best on the chalk hills of Sussex, one of the most southern counties in England, bordering on the English Channel. They stand at the head of the middle wool sheep, have long been celebrated for the fine quality of their mutton, and will thrive on comparatively scanty herbage. Their heads are small without horns, faces speckled or grey, belly and back straight, bodies round like a barrel, with wool on the belly and legs.

The blackface heath breed seem to be the proper inhabitants of every country abounding in elevated regions. They have



A Remarkable Breeding Ewe and Her Four Lambs Produced Last Year.

up a ration that will promote the growth and vigor of the pigs. In developing the pigs for breeding purposes one should handle the animals rather differently than when he is feeding them for market. These pigs want a feed richer in protein, in other words, more flesh-forming rather than fat-forming foods. The pig that is being grown for a breeder should have more exercise than the market hog. Growth and muscular development are what we want in our breeding swine. The growing pig requires an abundant supply of mineral elements, and it is a good plan to provide a receptacle in which should be kept at all times a supply of salt, wood ashes, lime-phosphate and charcoal. It is better to keep the ingredients in separate compartments.

New York. W. MILTON KELLY.

**MORE FARMERS SHOULD RAISE SHEEP.**

The farmers of the United States, and especially those residing in the hilly regions, should all raise sheep. That rough, hilly farms where the soil is thin, can be used for sheep raising more profitably than for any other kind of stock, or for raising grain and hay for sale, is generally conceded; but it is believed by some that sheep cannot be kept profitably on rich, high-priced land, where grain raising, and dairying, can be successfully followed. The better the land, the more grass and grain it will produce for the maintenance of the sheep and the more animals can be kept per acre. It does not follow that because sheep are profitable on poor land, they will not be equally profitable on good land. In England and Scotland the farmers almost universally keep more or less sheep. They are kept not only on the highlands and heathers and sterile regions of northern and western England, but on the richest and most productive lands in the valleys for which the farmers pay an annual rental of six to eight dollars per acre, and they say

spiral horns, their legs and faces are black, with a short compact body. They fatten readily on good pasture and yield the most delicious mutton, and weigh from ten to sixteen pounds per quarter. Their wool is coarse, weighing from three to four pounds per fleece. These sheep, I think would be preferable to most other English breeds to raise in the United States on account of their superior mutton and their hardiness and vigor of constitution in withstanding the rigors of the Highland heathers of Scotland.

The ups and downs of sheep raising in the United States have been numerous during the last century and sheep raisers have been as easily frightened as sheep, and never with sufficient reason. It only required a member of congress to introduce a bill to lessen the tariff on wool and farmers who kept sheep would tumble over each other to sell out their flocks and afterward find out that the bill did not pass. Sheep can be raised in the United States as cheaply as in any other country in the world, not excepting Australia. Tariff or no tariff on wool, sheep raising will be profitable.

Pennsylvania. J. W. INGHAM.

**A REMARKABLE RECORD.**

Daisy, the dam of the four lambs shown in the accompanying cut was dropped in 1900, which makes her 12 years old this spring. She was a poor little twin, discarded by her mother and left to die. My girls, Hazel and Hilda Furman, took her in charge and with the bottle made a pet of her. She has raised twins nearly every year and last spring she dropped five lambs, all alive. The four shown in the cut, with a little help, she raised. This picture was taken in August. In the eleven years she has raised, if I figure right, 24 lambs. She now has a lamb two weeks old. If we took one of these lambs from the pen the mother missed it as quickly as though she had but the one.

Oakland Co. E. B. FURMAN.

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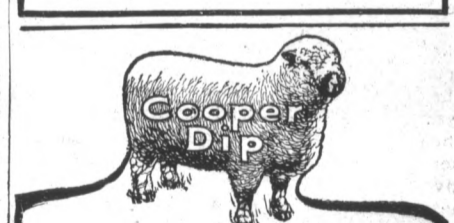
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FEEDERS' PROBLEMS.

Value of Pea Vine Ensilage.

Can you give me any information in regard to the feeding value and keeping qualities of green pea vines from a canning factory, cut and put into a silo the same as corn ensilage?

Muskegon Co. F. M. R.

We know of no analyses having been made of pea-vine ensilage. It probably would not differ greatly, however, from ensilage made from cowpea vines which contain 1.5 per cent of protein, 8.6 per cent of carbohydrates and 0.9 per cent of fat, thus giving this silage a nutritive ratio of about 1.7. Possibly pea-vine ensilage would be considerably richer in protein than this, as soy bean ensilage contains 2.7 per cent protein and pea-vine straw contains considerable more protein than soy bean straw, the percentage being 4.3 and 2.3 respectively. It will thus be seen that if these comparisons are correct pea-vine ensilage would be much more valuable in protein content than corn ensilage, which has a very wide nutritive ratio containing about three times as much carbohydrates in proportion to its protein content as would pea-vine ensilage. There should be no more difficulty in making a good quality of ensilage from pea vines than from corn, or beet tops or any other green material. All that is required is a tight silo and that the material be properly packed in it. It would doubtless be better to feed this silage with corn ensilage if practical, but if not convenient less protein feed should be required with it than with corn ensilage.

Pasturing Hogs in the Orchard.

Please advise me about keeping hogs in an orchard sprayed with lime-sulphur and arsenate of lead. Will the arsenate of lead which gets on the grass poison them?

Macomb Co. J. F.

Experience has demonstrated that there is no danger in pasturing hogs in orchards which have been sprayed with arsenates. Not enough poison will get on the grass to have a deleterious effect upon the animals.

A Ration for Idle Horses.

No fixed rule can be laid down for the feeding of idle horses, much depending upon the individuality of the animal. However, as a general proposition idle horses should be fed sparingly of grain. The grain should consist of a mixture containing bran, with a very little corn meal and oats added. Then, if the amount is suited to the condition and temperament of the horse results will be satisfactory and attacks of azoturia, which often result where horses are given a heavy grain ration while standing idle, will be avoided. The proper nutritive ratio for idle horses is given in Henry's table as about 1:7, while horses at heavy work require a narrower ration, approximating 1:6; that is, one part of protein to six of carbohydrates.

DO HORSES REQUIRE OATS IN THEIR DIET?

Many horse feeders regard oats as almost necessary, and it is doubtless true that in large regions of the United States the most common ration for horses consists of oats and hay, with an occasional bran mash. A number of the experiment stations have reported tests to the Department of Agriculture which support the theory that horses may be satisfactorily fed any reasonable combination of wholesome materials which supplies the required nutrients in due proportion. In other words, protein and energy are required by the animal body rather than any special feed.

After tests conducted for over two years one station drew the conclusion that any food stuff or combination of food stuffs furnishing the desirable nutrient at least cost should be considered in preparing rations for horses. A mixture of bran and corn, half and half, is a good substitute for corn and oats for feeding work horses. Corn stover is a good substitute for timothy hay for winter feeding of horses because of its feeding value, the yield per acre, and commercial value. A change from a grain mixture, consisting partially of oil meal, slowly or abruptly, does not cause a decrease in weight in horses if a proper substitute ration is fed.

In the future all horses, swine, and other animals imported into the United States will have to stand an examination at quarantine, and their owners will have to present a certificate of health for them. Veterinary inspections and examinations will be made at the port of entry of all imported animals, by an inspector of the Bureau of Animal Industry of the Department of Agriculture.



Cut Your Hay The Thornburgh Way

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FOR SALE—Yorkshire Gilt due to farrow June 9. WATERMAN & WATERMAN, Meadow Land Farm, Ann Arbor, Michigan.

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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.

**Unthrifty Colt.**—I have a yearling colt that has been in an unthrifty condition ever since he was three months old. During the winter I fed him two or three pints of oats three times a day and good mixed hay. Since he has been in pasture I have fed him a little grain every evening. I have also given him some warm separator milk. S. E. T., Allegan, Mich.—You had better feed the colt some grain three times a day, also salt him well and keep him in good pasture. This is better for him than drugs.

**Indigestion—Worms—Itchy Anus.**—Have a horse that will soon be four years old which is not thriving; his old coat remains on him, his legs stock when in barn over night, he passes some worms, and is inclined to rub his tail. F. M., Fairgrove, Mich.—Mix together equal parts, powdered sulphate iron, gentian, ginger, fenugreek, rosin and salt and give him a tablespoonful or two at a dose in feed three times a day. Are you feeding him enough grain and do you exercise him regularly? disobeyed.

**Barrenness.**—I have an eight-year-old mare that had a colt four years ago which appears to be in a healthy condition and we have been unable to get her with foal since. She shows no indication of ever being in heat and refuses to be mated. J. S., East Tawas, Mich.—I am inclined to believe that your mare is perhaps barren; however, a forced service might have a tendency to bring her in heat. Hand pressure applied to ovaries might bring on heat; however, this work should be done by a competent Vet.

**Sprained Shoulder.**—I have a mare that is lame in right shoulder and there is some swelling of shoulder muscle. Have applied blister without good results. Have been working her and I might say that she has shown stiffness in front for the past three years. She has a habit of placing foot in manger and this may account for her lameness. F. C. H., Hemlock, Mich.—Apply equal parts turpentine, aqua ammonia and olive oil to swollen muscle every day or two.

**Influenza—(Pink Eye).**—How long will pink eye infection remain in a stable and do horses have more than one attack? A. M. H., Millington, Mich.—Horses seldom have more than one attack every two years and the infection may lurk in a stable for several months; however, you should fumigate your barn with either formaldehyde or sulphur, or whitewash it. Be sure and ventilate your stable. As a rule little is done to prevent influenza infection for the contagion seems to carry in the air.

**Sweeny.**—I have a valuable five-year-old horse that sprained shoulder some six weeks ago causing some wasting away of muscles of shoulder. A. B. C., Yale, Mich.—Clip off hair and apply cerate of cantharides or you may safely use any of the blisters that are regularly advertised in this paper.

**Partial Dislocation of Stifle.**—I have a colt coming two years old which showed stiffness in left hind leg for past three months. When forced to move he jumps about, then the leg suddenly leaves the ground and seems to unlock, then he travels all right. When moving he drags foot very close to ground and always has trouble when backing out of stall. J. H., Cadillac, Mich.—Apply one part red iodide mercury and ten parts cerate of cantharides to stifle joint three times a month.

**Eczema.**—I have a five-year-old mare that seems to itch and enjoys to be cured. She has a few little pimples on skin and is working every day. W. T. S., Oak Grove, Mich.—Give her a dessert-spoonful of Donovan's solution of arsenic at a dose in feed three times a day and apply one part bichloride of mercury and 1,000 parts water to sore parts of body twice a day. Her bowels should be kept open.

**Weak Eyes.**—I have two horses that appear to have weak eyes; one of them is four years old, the other six. Their sight is not affected, but water drips from eyes. M. W., St. Charles, Mich.—Mix ½ oz. boric acid and ½ oz. borate of soda in a quart of clean boiled water and apply a few drops to eyes twice a day.

**Chronic Cough—Swollen Glands.**—Our nine-year-old mare caught cold two months ago which was followed by a swollen gland, considerable discharge from nose and our local Vet. has applied several blisters to throat, also prescribed medicine for her, but she shows little improvement. We have followed out Vet's directions and given her good care. The doctor calls it a case of catarrh or nasal gleet. L. E. K., St. Louis, Mich.—Give your mare a teaspoonful of powdered sulphate iron and ½ oz. Donovan's solution at a dose in feed three times a day. She will soon show improvement after you turn her on grass and out in fresh air; besides, the warm weather will palliate her ailment.

**Serous Abscess on Knee.**—My 17-year-old mare must have hurt her knee five weeks ago, causing a bunch to appear which since opened and discharges a watery fluid. She shows no lameness, but is a little stiff. Our local Vet. has treated

her without very good results. R. M., Allenton, Mich.—It is possible that you have done far too much in line of treatment for knee. Dissolve 4 ozs. sulphate of zinc and 3 ozs. of carbolic acid in a gallon of water and apply to knee two or three times a day. She may bruise her knee when working or when down.

**Loss of Vision.**—We have a heifer calf ten weeks old that has gone blind. This calf has shown considerable stiffness and has also had scours. Her eyes appear glassy but not covered with film. L. H. R., Metamora, Mich.—Your calf suffers from paralysis of optic nerves and is incurable.

**Cow Gives Bloody Milk.**—I have a cow that came fresh May 8, that has been giving bloody milk ever since, but she is not sick. F. C. F., Utica, Mich.—Dissolve ¼ lb. sugar of lead in a gallon of cold water, add one pint tincture of arnica and apply to bruised quarter of udder three times a day.

**Indigestion.**—I have a pair of twin heifer calves four weeks old, one of them is quite costive, but I relieved it by giving raw linseed oil and epsom salts. This calf has not fed well and, of course, is in rather an unthrifty condition. It has a habit of shaking its head while eating as if it did not like separator milk. A. B., Marlette, Mich.—Put ½ teaspoonful of fluid extract gentian and ¼ teaspoonful cooking soda in its milk three times a day. You should feed the calf warm milk.

**Rheumatism.**—I have a young sow that farrowed nine pigs eight weeks ago and I weaned them a few days ago. I feed sow corn, little ground oat meal added in the form of slop. For the past few days she has shown stiffness in hind legs and I would like to know what to give her. F. G. R., La Salle, Mich.—Give sow 10 grs. sodium salicylate at a dose three or four times a day. Feed her oats instead of corn and apply one part turpentine, one part aqua ammonia and five parts olive oil to back and hind quarters once a day.

**Partial Loss of Power.**—I have a pure-bred Yorkshire boar six months old that has been showing some lameness in hind quarters lately and he gets up with difficulty. H. B. S., Wolverine, Mich.—Give him 5 grs. iodide potassium at a dose three times a day for a week and if he shows no improvement increase dose to 10 grs., also apply alcohol to back and hind quarters two or three times a day.

**Husk, or Parasitic Bronchitis.**—I am sending you under separate cover by mail a box containing a few worms taken from the larynx or upper part of wind pipe of a sheep that died. The treatment we have given our sick sheep has failed to give them relief. I might mention that a good many of our neighbors have lost sheep showing very similar symptoms. I shall appreciate an early reply through your paper. C. R. C., Vassar, Mich.—Your sick sheep should be fumigated with sulphur and this is best done by placing them in a close room, sprinkling sulphur on a red hot plate or shovel or a shovelful of red hot coals, remaining in the room while this fumigating is going on, for fear of suffocation to the sheep. You can arrange so as to breathe fairly fresh air yourself, but at the same time watch the actions of your sheep. I also advise that you treat same sheep for stomach worms and you may give 8 drops of carbolic acid in ½ pint of milk, two doses a week for two weeks. In my practice I have given as much as 12 drops in four or five ounces of milk and obtained good results. I have also given 3 ozs. of a one per cent solution of coal tar creosote with fairly good results and, of course, you have perhaps given a teaspoonful of gasoline in two or three ounces of milk or two ounces of olive oil with good results. In conclusion I might add that parasitic bronchitis is not a very common ailment in sheep in this country, but your sheep are doubtless suffering from it.

**LIVE STOCK NOTES.**

The sheep market has been the most sensational in recent weeks ever known, a record-breaking boom in prices being followed by almost as sensational declines. When fat lambs shoot up as much as \$2.30 per 100 lbs. in three weeks, there must be an extraordinary difference between supply and demand, and this is the only explanation of the recent boom that sent prime lambs up to the highest figures ever recorded in the Chicago market. At the best time the prime wooled Colorado lambs sold at \$10.60 per 100 lbs. at the Chicago stock yards, duplicating the record price paid there in March, 1910, and clipped lambs of superior quality brought \$9.75. A fancy class of wooled heavy weight yearling wethers sold as high as \$8.25, while prime shorn wethers brought \$7.75 and fancy native ewes landed at \$7.50. These prices were never duplicated except in March, 1910. There has been an unusual demand for mutton and lamb meats; and with stocks held in coolers reduced to almost nothing, the packers paid almost any price to get what they wanted. The result of this was just what was expected, the consequent sharp advance in prices for mutton in retail markets throughout the country causing many families to cease buying it. This brought about a much slower demand for live muttons, and not until sellers submitted to large reductions in prices would killers make their usual trades.

The sheep feeding season has been a very unfavorable one for the great majority of sheepmen, the usual rush to ship holdings to market early being greatly intensified by the fact that prices of feed were about the highest ever known. Few sheepmen had faith in the future market, fearing that a course of long feeding would eat up all the profits, and the result was that extremely few flocks of sheep, yearlings and lambs were carried into the late spring. From very low prices the market jumped to the other extreme, and late shippers made unex-

pectedly liberal profits. A prominent sheep seller at the Chicago stock yards advises his patrons in sheep feeding districts that it would be much more profitable one year with another to feed only such a number of sheep and lambs as feed can be provided for to carry them through until late in the spring, provided they could not be marketed earlier at a profit.

With most of the sheep and lambs now marketed, the present conditions are against any low range of prices until grass sheep from Texas and spring lambs from east of the Mississippi river are marketed in large numbers. Several weeks of high prices seem to be assured, with nearly all the supplies held in big railroad feed lots not far from Chicago, these being owned by men who have no idea of shipping them in at a faster rate than the market will absorb them at stiff values.

The rank and file of the cattle sold in the Chicago market have been selling at the best prices ever known in the late spring months, and the best heavy steers have gone above \$9 per 100 lbs. Of course, the dearthness of beef is becoming a factor in lessening its consumption, and this is causing the packers to buy up all the handy light weight cattle that are convertible into moderately low beef to suit the popular demand. Looking as far backward as the year 1882, prime beefs sold as high as \$9.30 per 100 lbs., this figure standing as the highest summer price since the Civil war. Anything with a "kill" sells extremely high, and medium grades sell much higher than fancy cattle did a year ago. Further marking up of prices for a fair class of cattle is not improbable, with wholesale prices for beef in New York quoted the highest for any year since 1881. Recently a carcass of native corn-fed beef was quoted at a Brooklyn market at a top figure of 13 cents per pound, which old-timers agreed was the highest price seen in over 30 years.

The extreme dearthness of beef and mutton is causing many families to substitute pork to a much greater extent than heretofore, for fresh pork products are much cheaper than other meats. There is also a large domestic and foreign demand for cured hog meats and lard, with bacon and hams, as well as salt pork, much favored. Owners of thriving young hogs should make note of these things before they hurry their stock to market. In all probability, hogs will sell at high prices for a long period, for there is no over-supply left in feeding districts, according to all reliable advisers. Furthermore, the spring pig "crop" is below normal, according to late returns, while the country is growing rapidly in population. The packers are awake to these facts and want every hog they can get hold of, under confident expectation that the drain on cured hog products in their cellars will continue heavy for months to come.

L. D. Paget, of Mitchell county, Kansas, has fed sheep regularly for the last 14 years, having fed 1,000 last winter and marketed the last of them about a fortnight ago at the high prices then ruling. He says: "In looking over the sheep feeding situation, I am convinced that the only safe way to feed is to lay in a full supply of corn and other feed in the fall, and be prepared to hold back in marketing till the lambs are fat, and until the market seems to be best. To be caught short on feed toward the last, and compelled to unload then, is dangerous."

Reports from Madison county, Ohio, are that young cattle are very scarce, due principally to many farmers going into the dairy industry and selling most of their calves for veal. Many of the calves are of a beef class and could profitably be used for feeders and matured as beef cattle of a good class, but a good many farmers prefer to market veal calves indiscriminately so as to take advantage of the high prices paid for cream and butter and for veal calves.

John Feller, of Waterbury, Neb., is a great advocate of alfalfa as a stock feed. He says in this day of high-priced land, he does not see how a farmer can feed profitably cattle and hogs without alfalfa. It being the cheapest roughage he knows of in a long experience of stock feeding. His stock have a great relish for it, and cattle and hogs make satisfactory gains upon it. Mr. Feller owns a drove of hogs that are hybrids of Poland-Chinas and Chester Whites. He regularly raises Poland-Chinas, but has found that after long breeding, the hogs become too high bred, and the infusion of different blood results in fresh vigor.

Chicago warehouses contain 164,000,000 lbs. of hog meats, compared with 167,828,000 lbs. a month earlier and 127,175,000 lbs. a year ago, and holdings amount to 118,000 tierces, compared with 107,000 tierces a month ago, and 44,900 tierces a year ago. The decrease in stocks of hog meats during April reflects the increasing consumption of hog products.

The good grass growth everywhere has resulted in extremely small marketings of high-grade milch cows, and intending buyers in the Chicago and other western stock yards from dairying regions are disappointed in the quality of the offerings. Strictly prime milkers are scarcely offered, and when one is discovered, the price is very high.

Reports from various farming districts are that much plowed up wheat lands will be devoted to corn, as well as considerable areas at first intended for oats, which will be used for corn instead because of the lateness of the spring. Much meadow and pasture land is also being plowed up and turned over to corn. Should there be a good corn crop this year, farmers will naturally realize the importance of feeding more live stock, and this will benefit them, as well as the vast numbers of consumers. Traveling grain men who represent cash houses operating over the corn belt are almost unanimous in the belief that more acres will be planted to corn this spring than ever before.

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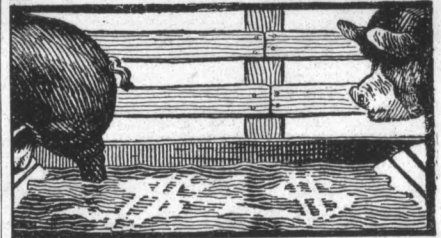
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The Lawrence Publishing Co.,  
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DETROIT, MAY 25, 1912.

**CURRENT COMMENT.**

The Bureau of Education of the United States Department of the Interior has recently issued a bulletin on agricultural education in secondary schools in which the problem is propounded of where the teachers required to give such instruction in secondary schools, as is acknowledged to be needed at the present time, are to be secured. In this bulletin the statement is made that at present nearly 2,000 high schools in the country are teaching agriculture, the course being taken by an aggregate of 37,000 pupils but, according to the bureau's specialist in rural education, only a very few besides those giving four-year courses on this subject have instructors with a college or normal school training on scientific agriculture.

In commenting upon this phase of educational work this expert says that probably no one factor has had a greater influence in retarding the introduction of substantial courses in agriculture in all those high schools where pupils are drawn in large numbers from farming districts, than the shortage of properly qualified teachers. This has been one of the difficulties met with in the introduction of agriculture in the high schools of Michigan, but notwithstanding this fact the men have been found who were qualified for the teaching of agriculture in the fifteen high schools of the state in which agricultural instruction is now given.

Among the 600 pupils who are profiting by such agricultural instruction in Michigan high schools there will be many who with some supplementary training as our agricultural college will be well qualified to take up this branch of educational work, and, as noted in the bulletin above mentioned, the salaries which are offered for this line of work are much more attractive than those offered for ordinary educational work of a similar grade. It is estimated by Professor French, who is in charge of this department of educational work in Michigan, that next year similar courses will be in operation in something like twenty-four high schools in different sections of Michigan. It would thus appear that in Michigan a right beginning has been made in the matter of introducing agricultural instruction in the public schools.

With the rapid increase in the number of high schools in which agricultural courses will be offered in future years,

the number of pupils who will have advantage of this instruction will be multiplied many fold, and within a decade at most the average high school graduate who seeks to make teaching a business will be prepared to take an examination in agricultural subjects and to give primary agricultural instruction in the common schools of the state. In the installation of this system of introducing agriculture into our schools through the medium of the high schools first, Michigan has provided against the need which is recognized by the government specialist in the bulletin above mentioned, and it would appear that the preliminary work toward the general introduction of agricultural instruction in our Michigan schools has been of such a nature as to prove a good foundation for the further rapid extension of that work in a manner which will give a maximum of results at a minimum of cost.

**A Profitable Field for Investigation.**

A comparison of the crop yields in the United States with those of some of the European countries brings to light an interesting situation which should prove a profitable field for investigation by our agricultural scientists. It has been estimated that during the past quarter of a century the increase in the yield per acre of American crops has been comparatively small, amounting to only 2.8 per cent in the case of wheat and 21.3 per cent in the case of potatoes, which showed the highest increase of any of our staple crops. When averages are taken in the five staple crops of wheat, rye, barley, oats and potatoes the average increase in the per acre yield in the United States is estimated at 4.6 bushels.

This does not compare favorably with some of the European countries. Germany, for instance, has increased its average yield of these staple crops 24.8 bushels per acre. These comparisons are hardly fair to this country because of the fact that Germany raises such a large acreage of potatoes in comparison with the United States, and yet there is no doubt whatever that the soils of many of the European countries which have been tilled for many centuries are today growing much larger yields of these staple crops than are the comparatively new soils of the United States.

Some agricultural experts who have studied this problem ascribe the comparatively recent general improvement in crop yields in Germany and some other European countries to the adoption of a better crop rotation in which sugar beets have been included over a wide area. This contention is assumed rather than proven so far as we know, and in case it is a correct assumption it remains to be proven whether the result is due to better cultural methods or more liberal fertilization practiced in the growing of sugar beets or to some cause peculiar to the effect of this root crop upon the soil. It is entirely possible also that the extensive growing of potatoes in Germany may have had a similar influence upon the crop yields. It is a fact which has been repeatedly noted by commercial potato growers in Michigan that where this crop is grown upon our soils in such a manner as to produce a maximum yield, that is where proper methods of fertilization and cultivation are followed to produce a maximum yield, subsequent crops grown upon the land show a marked improvement over crops grown upon soil devoted to corn, or other spring crops which are given similar cultivation.

Whether this is due entirely to better fertilization commonly given the potato crop in order to produce profitable yields, or whether it is due to more thorough cultivation of the ground and a later working of the soil in the fall in digging the crop, which is very thorough in cases where the machine diggers are used, is a matter for further scientific investigation. Much the same effect might be produced by the lifting of beets in the fall, and it is claimed by many observant farmers that the fertility of the best sugar beet land has increased with the introduction of this crop in Michigan agriculture.

If there is anything in this contention it would indeed be a profitable field for scientific investigation, in order that, if it is established that this desirable result follows the growing of root crops upon our soils, the primary cause or causes of the effect may be determined and our agriculture benefited thereby.

This is more important at this time since the increased production of crops in this country which will be required to feed an ever increasing population must come from increased yields per acre,

rather than from the addition of larger areas to our improved lands. Until such scientific investigation may be undertaken and carried to a successful issue our farmers would do well to make careful observations to determine whether or not it is a fact that general crop yields are improved by the introduction of sugar beets in the crop rotation, and whether as a general proposition similar results uniformly obtain where potatoes and other root crops are grown under the improved cultural methods which are more generally in use upon Michigan farms than ever before.

**Increase in Production of Staple Crops.**

The data collected by the census bureau for the most important general crops has recently been tabulated, making crop statistics for the decade of 1900 to 1909 available for comparison. In a recent issue the figures relating to the area and value of farm lands were given with comparisons covering this decade. These figures showed that there were in the United States 878,798,325 acres of land in farms, of which 478,451,750 acres were improved.

From the figures presented in the statistics just made public relating to the acreage and value of staple crops, including the cereals corn, wheat, oats, barley, rye, buckwheat, rice, emmer and kaffir corn, the hay and forage crops, potatoes, tobacco and cotton, we find the land devoted to these crops aggregates 301,325,598 acres, occupying somewhat over one-third of all the land in farms and somewhat less than two-thirds of the improved farm lands, while the total value of these crops in 1909 amounted to \$4,499,320,000, representing a per capita production of \$48.92.

Quoting from the statistical report issued by the census bureau, the following figures will afford an interesting opportunity for comparison:

The most important crops in both census years in respect to acreage are corn, with 98,382,665 acres in 1910; hay and forage, 172,280,776; wheat, 44,262,592; oats, 35,159,441, and cotton, 32,043,838, in the order named. Barley, which comes next in order with 7,698,706 acres, has less than one-fourth the acreage of cotton.

In value the order of the crops is different. Corn stands first, with \$1,438,553,919, but hay and forage assumes the second place with \$824,004,877, followed by cotton, \$703,619,303, wheat, \$657,656,801, and oats, \$414,697,422. The value of the potato crop \$166,423,910, which ranks next in importance, is less than two-fifths that of oats.

The increases in the acreage of hay and forage and cotton both exceeded that for the combined cereals. Among the cereals there was a marked decrease in the acreage of wheat, which, however, was somewhat more than compensated for by the increases in the acreage of other grains, especially oats, corn and barley. In value, the enormous increase of \$1,182,936,665, or 79.8 per cent, was shown for 1909 as compared with 1899. For none of the crops considered was it less than 60 per cent.

Comparing 1909 with 1899, the figure for the United States as a whole show an increase of 3.5 per cent in the acreage of cereals and of only 1.6 per cent in production, the difference in the rate of increase being due to a slightly smaller production per acre. During the decade the population increased 21 per cent, while the per capita production of cereals, which in 1899 was 58.4 bushels, was in 1909 only 49.1 bushels. With a production only slightly larger, the value of the cereal crop in 1909 exceeds that in 1899 by \$1,183,000,000, or 79.8 per cent.

The eighteenth volume of the Yearbook issued by the United States Department of Agriculture, which is just off the press, contains 31 articles and 67 full page illustrations. In size and makeup this book is very similar to those which have preceded it. The annual report of the secretary of agriculture for the fiscal year ending June 30, 1911, occupies 142 pages and this report is supplemented by statistical matter covering 200 pages, thus giving the most complete and comprehensive summary available of the agricultural conditions in the United States. In addition to this matter, the 354 pages comprising the body of the volume contain some 30 articles contributed by members of the scientific force of the department relating to many of the important questions now occupying the attention of farmers of the country and the topics equally vital to producers and consumers of food stuffs. Among these articles are two relating

to forestry, one entitled "Tree Planting by Farmers," and one on the "Business Aspect of the National Forest and Timber Sales." There are also several articles of special interest to the farmers of the semi-arid sections of the west relating to dry farming and irrigation problems. Considerable space is devoted to the interests of the general farmer, the fruit grower and the truck gardener. Among these are articles on "Seasonable Distribution of Labor on the Farm," "Some Results of Farmers' Co-operative Demonstration Work," "Rotations in the Corn Belt," "Promising New Fruits," etc.

Of especial interest to poultry men, and also to general farmers who make poultry production an important branch of their work, are articles on the "Handling and Marketing of Eggs," "The Reduction of Waste in Marketing," etc. Many other subjects of more or less general interest to both producers and consumers are treated in the volume.

As usual, the larger part of the edition of this volume is reserved by congress for distribution by senators and representatives, to their constituents who may desire them, to whom all requests for the book should be addressed.

**A Case for Suspended Judgment.**

On May 1, a suit was filed in St. Paul by the federal government against the International Harvester Co., of America, for alleged violation of the Sherman Act. Pursuant to the filing of this suit, President Cyrus H. McCormick of the Harvester Co., issued a statement in which he asserted that the International Harvester Co., was organized for the purpose of securing economy in the manufacture and sale of machinery and of increasing the foreign trade. He asserts there is no "water" in its capitalization, and that it has earned only reasonable returns on its capital, or an average of less than seven per cent per annum.

He calls attention to the fact that the prices of its machines are substantially the same now as when the company was organized, notwithstanding an increase of 15 per cent in raw material prices and 30 per cent in wages. Mr. McCormick asserts that the company has caused a large saving to American farmers in the cost of agricultural implements and increased the foreign trade in this line four fold, or to an aggregate of \$42,000,000 in 1911, and further asserts that in thus promoting its foreign trade it has not sold its products cheaper abroad than at home.

In this statement, reference is made to the charges of misconduct found in the bill and a decision rendered by the Supreme Court of Missouri in a case brought against the company in that state, is cited in refutation of those charges. In summing up Mr. McCormick says that, "The organizers of this company acted under the advice of able counsel and in the sincere belief that they were violating no law. If under later decisions it should be held that the law was violated, it could only be through the power to oppress which has never been exercised."

In this statement, Mr. McCormick reviews the history of the government investigation of the company, beginning more than six years ago when the company's books and records were opened for inspection and all information requested was furnished. Mention is made of the recent frank discussions of the whole situation between representatives of the government and the company and the honest efforts on both sides to avoid litigation, and the hope is expressed that plans may yet be formed which will avoid the necessity of protracted litigation by satisfying the claims made under the Sherman act without impairing the economic advantages and benefits secured by the present organization, although he states that no form of re-organization has been suggested by the government which seems practically possible.

In connection with this suit, it may be stated that the government has carefully avoided the embarrassment of the company in carrying on its present business and that no inconveniences will be caused to that portion of the public which may have dealings with the company during the progress of litigation. This being the case, we may well suspend judgment in the matter until the proposition is finally threshed out in the courts, hoping in the meantime that whatever the final solution of the problem, it may be more satisfactory from a public standpoint than has been the case in some of the more notable trust prosecutions under the Sherman act.



THE TOWNSHIP UNIT SYSTEM.

May I take some exceptions to your "explanation of the township unit school system" in an editorial of May 2, 1912.

You said that a number of townships in the lower peninsula of Michigan voted to adopt that system at the April election, other districts were holding special elections on the question of adopting the system and still others are circulating petitions for such organization.

The above are doubtless the "selected townships" that the sum of \$500 was used in, for an "educational campaign on the subject."

In the county commissioner's section of the State Teachers' Association held in Detroit, November 2, 1911, State Superintendent Wright said:

"We need give no reasons why the township unit system should be adopted. A law was passed in 1909 and amended in 1911 allowing the change, but not one township in the lower peninsula has been organized." \* \* \* "The farmer is suspicious of all, suspects motives, 'has to be shown.' \* \* \* Everyone is for it except the immediate ones concerned."

Mr. Wright suggested two ways of bringing about the change. "First. This section asks from the State Teachers' Association \$500 for an educational campaign in certain selected townships. Second. Through legislation. That after a certain date all townships shall be organized under the township system."

His motion to ask for the sum of \$500 was passed, also an amendment that he could direct its use, which may account for the "apparent increase of public sentiment for that system," that you note, for "not one township school district has been organized, since the law passed," prior to November 2, 1911.

This plainly shows that farmer parents do not want such change, they being "the immediate persons concerned."

No true reform requires either money, talk or force to promote it. The farming people know their own needs, and are not fools "that have to be shown."

The fact is that some of the big city superintendents and professors are the main ones who demand this change in the country school system through selfish motives. There is no country demand for it.

These agitators are trying to promote it by pushing through lobby legislation, by sending in to the press misleading paragraphs and by the use of money "to create public opinion."

If this system "does not mean the consolidation of country schools, or the abandonment of the schoolhouses as now located," it permits such action without consulting the people—if not, what does the last section of the act mean? That section gives the township board of education the power to make "any order, or decision with reference to the formation of any school, the division or arrangement of any territory, or location of the schools, or maintaining of school in any part of said district."

It allows people aggrieved by such "order or decision" no redress except they may appeal to the state superintendent, but the Act reads that "if in his opinion the appeal is frivolous or without sufficient cause he may summarily dismiss the same; \* \* \* his decision shall be final."

People could not take their grievance to court. Of course, the name "centralization" is suppressed, but it is a main object both in a political as well as educational sense.

This township unit law is not like the upper peninsula law nor like the Ohio township system. There is no provision made in this law to allow the people to amend, repeal or recall their vote of organization if not pleased with change.

The whole Act of 1909 is replete with crafty, ambiguous and misleading provisions scattered through it as well as through Act 117 of 1911. Both should be entirely repealed.

They deprive the people of all power over the schools and vest it in boards of education who are subject only to the state superintendent who in turn is subject only to "his opinion."

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HAPPENINGS OF THE WEEK.

National.

A congress is to be held at Seattle, Wash., during July, for the purpose of formulating plans to counteract the immigration of American farmers from the northwestern states into Canada.

At the Methodist Episcopal conference in session in Minneapolis, Bishops Moore, Warren and Neely have been retired.

The bill providing for an amendment of the federal constitution so that United States senators may be elected by direct vote of the people has been acted upon

by the United States senate and signed by the president of that body. The amendment will now be presented to the several states for ratification.

Gov. Foss, of Massachusetts, has refused clemency in favor of Clarence V. T. Richeson, who died early Tuesday morning in the electric chair for the murder of Avis Linnell.

The trial of Clarence S. Darrow, indicted for jury bribery in the McNamara dynamiting case, tried at Los Angeles, Cal., is now on in the same place.

Delegates to the general assembly of the Presbyterian church are gathering at Louisville, Ky. It is expected that 1,200 representatives will be present. Sessions will continue throughout the month.

The fire losses in this country and Canada for the year of 1911 is stated to be something over \$234,000,000. This amount makes a per capita loss amounting to between \$3 and \$4, while the estimated per capita loss in Europe is less than 40 cents.

A fire, estimated to have cost \$1,000,000 occurred in the central business district of Houston, Texas, early Sunday morning. The fire is believed to be the result of defective wiring.

The United States department of justice is bringing action against the Southern Pacific railway for the recovery of rich oil lands in southern California. The officials of the road secured patents for this land under the pretence of its being for agricultural purposes when they were privately informed that rich oil fields were included in the property secured by the patents. The land is valued at many millions of dollars.

An effort is to be made in Washington by representatives of the United States and Canada to adjust disputed questions concerning fisheries in the waters between the two countries.

Fire at Nadeau, Mich., destroyed about 20,000,000 feet of timber. The loss is estimated at \$35,000.

The American baseball organization is in a dilemma. Tyros Cobb, the star player of the Detroit team, was suspended after a game in New York where he assaulted a spectator because of the latter's persistent activity in shouting insulting remarks at Mr. Cobb. Upon learning the facts the entire regular Detroit team announced their determination not to play another game until Mr. Cobb is reinstated. Ban Johnson, the president of the league, refused to change his decision so that on Saturday last Manager Jennings of the Detroit Tigers, was compelled to go outside for players to prevent his liability to a fine for failure to appear with a team when the game was called at Philadelphia. The players are working for cleaner base ball and the public is in sympathy with them in this effort. On Monday a temporary settlement was made whereby the team goes back to play without Mr. Cobb. An investigation into the demands of the players will be made.

The republicans of North Carolina have instructed their 23 delegates to work for the nomination of Col. Roosevelt at the republican convention in Chicago.

The democrats of Iowa have instructed their 26 delegates to the national democratic convention to vote for Champ Clark as nominee for President.

Foreign.

King Frederick VIII of Denmark, died suddenly while walking in the streets of Hamburg, Germany, on the morning of May 15. He was born June 3, 1843, at Copenhagen, and succeeded his father, King Christian IX, who died January 29, 1906. Frederick VIII was married to Princess Louise, daughter of King Carl XV of Sweden and Norway. The dead King's brothers and sisters are: Alexandra, dowager Queen of Great Britain and Ireland; George I, King of Hellenes; the dowager Empress of Russia; the Duchess of Cumberland, and Prince Waldemar. His son, King Christian X, was proclaimed King the afternoon of May 15. The new ruler is 42 years old. He was married to Princess Alexandrine of Mecklenburg and has two sons.

Prince George William, nephew of the late King Frederick VIII of Denmark, and his chamberlain, were killed in an auto accident while en route to Copenhagen to attend the funeral of his uncle.

There has been little excitement in Mexico since the defeat of the rebels under General Orozco. The federals are unable to locate the rebel forces, which leads to the belief that the latter have to a considerable number, forsaken their leader. It is further believed that the few rebels remaining will make trouble along the frontier in order to provoke American intervention, if possible. United States troops are stationed along the border to prevent such an outcome by their presence.

In retaliation of the action by the American congress abrogating the treaty of 1832 between this country and Russia, a boycott is being prosecuted throughout Russia against the sale of American agricultural machinery. The government is holding up shipments of these goods made to Russian agricultural districts.

The president of France has submitted to the ministerial council a draft of a proposal for a system of international wireless telegraphy.

A collision on a northern railway of France resulted in 13 persons being killed and 45 injured. A defective switch was the cause of the accident.

A negro uprising in the districts of Santa Clara, Sagua a Grande and Cruces provinces of Cuba caused the Cuban government to send out troops with machine guns to quell the disturbance. Alleged discrimination against the Negro in franchise legislation is attributed to be the direct cause of the trouble.

Experiments made at McGill University, Montreal, establishes the practicability of the micro-thermometer, which will indicate the presence of icebergs from two to seven miles away, depending upon the direction of the wind.

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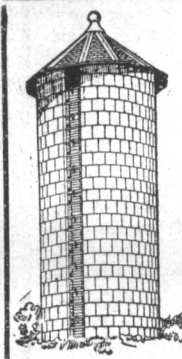
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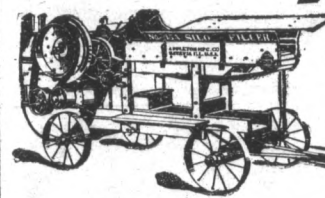
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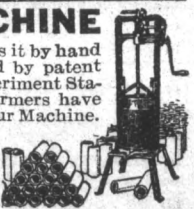
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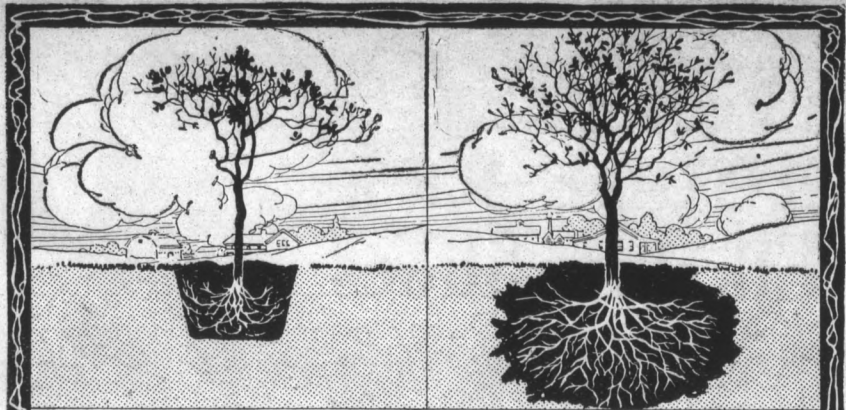
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## HORTICULTURE

### EXPERIENCE WITH CUTWORMS IN YOUNG ORCHARDS.

Old fruit growers know of the damage cutworms do to young trees and to fruit buds on bearing trees, but for the benefit of growers not acquainted with the habits of these pests and successful methods of combating them, I write the following:

The same cutworm that destroys the garden and the young field corn is also a tree climber. It goes up the young tree and eats out the new growth down to the solid wood. The inexperienced grower sees nothing of it, as the damage is most always done during the night. The next night he goes up again and eats out what grew during the day. If the weather is cool for a time he remains in the ground, only to go up again on a warm night and renew his work. During cool nights a few buds may grow to be a little more woody than others and these are left for the more tender ones, in which case the tree may be able to complete the growth of one or two branches, but it is ill shapen. In case of continuous warm weather many of the trees will be completely smothered.

To detect their work the grower should inspect the young trees every day, and if the bud where the new growth should start shows a fresh cut, about one-eighth of an inch deep this is sufficient evidence that the worms are at work. Then to prove their presence scratch lightly in the soil around the tree for a foot or two and he will be found. A good tool for this purpose, if one is desired, is to make a little hand hake by driving nails an inch apart through a stick about five or six inches long and nail on a little handle. I have known them to be gathered by the quart in this way.

We have tried keeping them down with tins and papers, applied in various ways, but upon going out on a warm night, with a lantern we found them climbing over the obstruction and working as though there was no hindrance there. We also tried cotton batting wrapped around the trunk of the tree, and found them above that also, and watched them to see how it was done, and found them simply crawled up over it. We then noted their method of climbing was to proceed one end at a time, (which is no new discovery), so we tore off a strip of cotton about three inches wide and wrapped it twice around the tree trunk and tied it near the top with twine. Then, with the fingers we expanded the lower portion a very little to form a bell, or inverted funnel shape. We then placed about half a dozen of the worms at the base of the tree and sat down to watch results. (They pay no attention to the light of a lantern). In a few minutes they started up the tree. The first attempt was to go under the cotton next the tree and press through. Upon failure in this they backed up and tried to climb over, and here also they failed as the cotton was so loose, or fluffy at the lower edge that it would spring down when they attempted to pull themselves over, so we thought we had them cornered. Finally one got hold of the loose end of the twine and climbed up over on that. We cut the string near the knot and our success was complete.

The following is worthy of attention: The cotton should be thick, and lap over enough so they can't press through it. Don't cut it in strips as this leaves a compressed edge, but tear it off so the lower edge will be loose and fluffy, so they can't pull themselves up over it. Cut the twine short. Be sure the cotton is not stringy or they will climb over the coarse portions. Have it high enough from the ground so the rain will not beat sand into it as the sand and water make it a little more solid. Don't let it extend more than about two or two and a half inches below the string or the wind will loosen it and the birds will carry it away for nests. See that no broken-limbs or dead weeds reach from the ground to the tree above the cotton or the worms will go up on them.

Cutworms will go to the very top of a bearing tree, eat a small hole into the side of a blossom bud, just before it opens, eat out the little peach and then go to another bud, and so on, and the blossom will open as though nothing had happened, but the fruit is gone. They seldom stop at the lower buds. I knew a four-year-old peach orchard of three or four acres on light sand, to be killed in one season by cutworms eating out all the buds and keeping them back. I have never tried poisoned bran but

intend to this season, as I see it highly recommended for corn.

Cotton should be cut off the trees as soon as the cutworm season is over as the growing tree will expand into the string and girdle it, or nearly so, the first season.

The above facts are the result of 25 years observation. Orchards on heavy soil are not troubled with cutworms.

Allegan Co. H. H. HUTCHINS.

### BEANS AS A GARDEN VEGETABLE.

If a farmer has plenty of time to spend in caring for a garden there are plenty of things he can raise. Most farmers, though, are short on time and even when they do make a brave start in the spring and plant a variety of vegetables they are seldom able to give them the needed care during the growing season. The result is that the garden has a ragged appearance and does not reflect any credit upon what may be an otherwise well kept farm.

There are many vegetables, however, that may be raised with very little hand labor and beans belong to that class. As they are planted in hills there is no hand weeding and the rows should be far enough apart to allow using a horse cultivator.

It will hardly pay to grow navy or pea beans in the garden as they can always be purchased if they are not grown on the farm as a regular crop. That is not the case with wax or lima beans, they are used fresh and to raise them is the only way to have them.

There are several good varieties of wax beans, Golden Wax being a first-rate variety for the home garden. Two or three quarts of seed will supply green beans for a large family. The ripening of seed stops further blossoming so if it is impossible to use all of the pods as they become fit it is a good plan to abandon one-half of the patch and to keep the other half well picked. In this way the piece that is kept picked clean will continue to put out new blossoms and form pods as long as weather conditions are favorable. Another scheme is to make two or three small plantings instead of one large one, and if the first seed is planted as soon as the ground warms up nicely they will come into bearing about the time when some of the earlier vegetables, such as lettuce and radishes, have passed their prime.

Considering how easily lima beans may be grown and what a fine vegetable they are it is surprising how few gardens contain them. Cooked in the same way, most people like them as well as green peas. Besides being easier to care for than peas they are fit to use over a longer period of time.

There are both pole and bush varieties, the former yield better and it is claimed that the beans are larger but for the home garden the bush form is the most desirable, simply because there is much less work attached to caring for it.

Henderson's Bush Lima is a dwarf bush bean and may be safely planted as early as the wax beans. They come into bearing early but the beans are only medium in size, making them slower to pick and shell than the large varieties. The quality, however, is good.

Burpee's Bush Lima is a bush form of the large pole lima and bears large pods which contain large beans of very fine quality. They will not stand adverse conditions as well as the Dwarfs so should be planted from a week to ten days later.

A good clay loam furnishes about the best conditions. The ground should be worked till the top soil is fine and mellow. Mark the rows from two and one-half to three feet apart and plant the wax beans and dwarf limas in hills about two feet apart in the row. For these a common hand corn planter does the work satisfactorily. Set the gauge so that it will drop from two to three seeds in a hill. The large limas have to be planted by hand. Place the seed about one foot apart in the row with the "eye," or seed scar, down and then cover lightly with a hoe.

With limas the flavor is finest when the beans are still green in color when picked. To determine whether a pod is fit to pick press the blow end between your thumb and forefinger. If it feels spongy the beans are full grown, if it is hard there is yet material in the pod to be absorbed by the beans and they may be not more than half grown. When the pods are yellow the beans have passed their prime as a green vegetable.

All wax and lima beans which are allowed to ripen make a very good dry vegetable to be used in the winter.

Wayne Co. W. POSTIFF.

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## GRANGE

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

### THE JUNE PROGRAMS.

#### State Lecturer's Suggestions for First Meeting.

Songs loved by children.  
Distribution of his products—the farmer's great question.

Solo.  
What would you do to improve your home. 1. With \$5? 2. With \$25? 3. With \$100?

Music by orchestra or band.  
Some efforts that are being made to improve the human family, a paper.

Fancy drills, motion songs, recitations, etc., by children.  
Refreshments, served with children as the special guests of honor.

### THE FARMER'S BIGGEST PROBLEM.

The State Lecturer announces, as leading topic for the first June meeting, the distribution (or marketing) of farm products. It is hoped that members generally appreciate the fact that this is today regarded the most difficult question confronting the farmer, and one which vitally affects the consumer, hence is worthy of most careful study and discussion.

Speaking of the supreme importance of judicious marketing, State Master Kegley, of Oregon, recently said: "What gain will it be to the farmer to make two blades of grass to grow where only one grew before if the profit of the extra blade is to go to someone else? What gains it to him to produce abundant crops and then find that he can receive for himself only 41 per cent of the price the consumer has to pay? Not until the farmer has discovered and stopped the leak in his profits in that other 59 per cent of consumer's cost can the problems of production occupy the farmer's chief concern, and the first duty of those who are elected to lead in the Grange organizations, or who assume to speak for the farmer, is to see that no mistake is made in this respect.

The mission of the Grange is to make glad the heart of the rural people; to bring the farmer to a full realization of his sovereign citizenship; to make of him, indeed, a country gentleman, the farm home the ideal home, and the farm district the ideal social center.

The farmer can never become the independent, prosperous, liberty-loving, educated, kindly country gentleman that he ought to be if he is continually robbed of the profits of the larger part of his produce, and unless he succeeds in stopping the leak he is doomed to remain poor; or if he becomes rich, as riches are counted among farmers, it is at the sacrifice of much that makes life worth living.

Farm life will indeed become ideal when the farm families have all the profits of the farm for themselves. With means and the leisure for social intercourse, study and travel, refinement will come quickly, and the beautifying of the home and the achievement of all that the higher education stands for will follow as a matter of course.

### RAISINVILLE GRANGE.

(This original poem constituted a part of a contest program in which the married members of Raisinville Grange, of Monroe county, defeated the unmarried ones by a good score. The author of the production is Mrs. L. J. Smutz, an energetic, capable member of this live and well equipped Grange. Many readers will recall that the State Lecturer has reported several visits to this Grange in recent years, finding it a most enterprising organization of more than 300 members.)

Raisinville Grange, number four hundred ten,  
Enrolls as its members, both women and men.  
From near and from far they come with a will,  
Good weather and bad, the new hall to fill.

The young men and maidens are handsome and true;  
They're wholesome and good—of the type called "true blue."  
And many a song, and a poem, and play  
They render in programs at close of the day.

The farmers and wives are happy and jolly,  
Who deem it a sin to be melancholy.  
These folks are too busy to mischief to turn.  
The pleasures the idle are seeking they spurn.

But enter the door when a meeting's in order  
And see for yourself if the humble recorder

Too highly sings praise of the patrons, in rhyme!  
Please view the officers, one at a time.

The master, so worthy, to order has called  
The meeting of patrons. He's duly installed  
To serve the third year in this difficult role.  
Which shows with what kindness and tact he'll control.

Yes, Mr. Fred Kinsting, we're all of one mind,  
is able and tactful, true hearted and kind.  
So all must be ready whenever he may speak  
To help him the good of the order to seek.

Overseer, so dread, makes the timid ones shake  
When, by chance, they are called salutation to make.  
Being late is no fun when it makes the heart flutter  
To stand fore the desk and perform in a splutter.

However, we pardon his mirth at our panic.  
For, if he does rule with a scepter tyrannic,  
Will Cominess serves well, the office of trust  
And seeks, while he serves, that his rule may be just.

Your heart would be warmed could you chance but to see  
Bro. Cominess ready to enter, with glee,  
The pie-eating contest. He's certain to gain  
A prize eating pies—both fancy and plain.

The lady who sits in the lecturer's place,  
Performing her duties with wisdom and grace,  
Preparing all programs, and giving her time  
With a spirit so willing, is Mrs. Will Cline.

We've money to guard, of silver and gold,  
This position of trust we most jealously hold.

A man of high honor, by days and by nights,  
Is our worthy treasurer, Mr. M. Seitz.

Mr. Dave Weillau, with accurate pen,  
Writes up the record to show to all men.  
Letters he writes, receipts and all such.  
For business transactions he "just beats the Dutch."

That gentleman there, who is lacking in hair,  
Who's fat and good-natured with never a care,  
Is our worthy chaplain, the third time installed,  
Whose heart is all right, if he is a bit bald.

You never would think that a preacher could be  
So happy and jolly, warm-hearted, care-free,  
As our Mr. Gerweck, and when he says grace  
We all feel alike—he's the man for the place.

Those maidens so fair, with fresh youthful faces,  
That occupy places reserved for The Graces,  
Are Misses Weillau, Wright, and Seitz,  
whom you see  
As Ceres, Pomona and Flora—the Three.

"Our steward's a young man 'of color?'"  
O, no!  
But acting as minstrel he isn't so slow.  
Olive and Anson are certainly Seitz!  
When singing and dancing behind the footlights.

With hook and with crook, they march down the aisles.  
Steward's assistants, listen with smiles,  
While each of the patrons recites very low  
The words that each member's expected to know.

Miss Martha Opferman bridles with care  
The goat of the order, when candidates fair,  
Ride the wild animal into our ranks  
And hold on so grimly in spite of his pranks.

Mr. Lee Gerweck with red tape adorns,  
When serving the order, his gay goat-ship's horns.  
Look at the mad ride! The men cling so tight  
You never would guess how they tremble with fright.

Ho! Mr. Gatekeeper! Guard well the keys!  
Keep from our midst those who revel in ease.

With Mr. Sauerwein protecting the flock,  
Never will enemy break through the lock!

Our officers, worthy, we've viewed one by one,  
And now we must close, for the program's begun.  
Stay 'till the end! Come again, patrons, all,  
Ever you're welcome to Raisinville Hall.

### COMING EVENTS.

#### Pomona Meetings.

Kent Co., with Evans Grange, Wednesday, June 5.  
Lenawee Co., with Madison Grange, Thursday June 6. Grand rally of southern Michigan Granges.

Grand Traverse Co., with Grant Center Grange, in Grant town hall, Wednesday and Thursday, June 5 and 6. Summer meeting with program in charge of county commissioner of schools.

## FARMERS' CLUBS

### Associational Motto.—

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

### Associational Sentiment.—

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

### SPECIAL FEATURE MEETINGS FOR THE SUMMER.

As years go by the special feature work carried on in the Farmers' Clubs is assuming a more prominent place in the program of many Clubs. Particularly is this true of mid-summer picnics and the Club fair, which two special feature events have gained a permanent place in the yearly programs of many Clubs. The picnic meeting is a feature which requires little in the way of special preparation or work, which is an advantage during the heated summer season. But it is not too early to begin making plans for this event which may be made the occasion of interesting many people who are outside any Club organization in the possibilities and benefits of affiliation with some Farmers' Club.

The Club fair is an event which requires more in the way of preparatory work, and already many Clubs in the state are making preparations for their annual fair of 1912, two such being reported in the Club Discussions column of this issue. One of these Clubs reports a novel special feature in a recent meeting in a garden seed exchange, the prophecy being made that the results of this feature will be seen at the coming fair which will be held in October. The special feature meetings may be made to serve a valuable purpose in the way of advertising for the Club, as well as in interesting its members in the organization and its work, and they should be given publicity as soon as plans are completed for them, in order that other Clubs may be inspired with the possibilities of and advantages in special feature work of a similar nature.

For this reason we desire to urge that corresponding secretaries of local Clubs will send notices to the Michigan Farmer for publication in this department, regarding any special feature meetings which may be contemplated in the summer season.

### CLUB DISCUSSIONS.

**Do Women Want the Ballot?**—At the April meeting of the Napoleon Farmers' Club, of Jackson county, Mrs. B. R. Tracy opened the subject, "Do the women of Michigan want the ballot?" In speaking on this subject, she said in part: "Contemporaneous with the better education of women was the movement in favor of woman suffrage. It actively began in England in 1867 and in the United States in 1869, but it was nearly 30 years later before it took on a national importance in either country. In six states, Wyoming, Colorado, Utah, Idaho, Washington and California, women now have the full elective franchise. But the higher and more vital interests of society are in the keeping of the wives of America, not as property owners, business women, or units of industry, but as makers and preservers of homes, as intelligent and devoted mothers, as inspirers and preservers of social, moral and religious ideals. The wives should have their fullest legal rights, but it is in the exercise of their peculiar privileges and duties that they render the largest service and attain an abiding influence. Undoubtedly the liquor interests fear the intrusion of women into politics, yet their fear may be unjustified as woman suffrage has not thus far imposed prohibition in any state. If I ever went to vote it would be to vote against liquor. I would cast a ballot against that every time, as would a great many women, but a great many women would vote for it. I believe God created woman for another purpose. She is to be the helpmate and the homemaker, rear the children to be honest, upright, pure men and women. What woman can ask for a better monument, than her children, who make the world better for their having lived and worked in it. Personally, I say that the women of Michigan do not want the ballot." In closing she quoted from several noted women who are opposed to the movement. The discussion was opened by Mrs. Minnie Greenwood, who said in part: "I am in favor of woman suffrage. I can see no reason why a woman has not as good a right to vote as a man. I have no fears of the degradation of woman by the ballot. I believe rather that it will elevate men. I believe that the tone of our politics will be higher; that our caucuses will be more jealously guarded, and our conventions more orderly and decorous. I believe that the polls will be freed from the vulgarity and coarseness which now too often surround them. I believe the character of the candidates will be more closely scrutinized and that better officers will be chosen. I think her influence will help to put down the saloon and gaming houses, and taxes might be diverted to purposes of general

sanitation and higher education. Women have exercised the highest civil powers in all ages of the world without detracting from their graces as women or their virtues as mothers. May God speed the time when the women of Michigan shall have the ballot." A lively discussion followed, many good points being given on both sides.

**Discuss Dairy vs. Dual Purpose Cattle.**—The Salem Farmers' Club held its April meeting at the pleasant home of Mr. and Mrs. Wm. Tate. After the bountiful dinner was duly discussed, we were all glad to greet President Thompson again after his illness. Excellent solos were given by Miss Golden Tate and Miss Lyke. A select reading on "The best thing to build," by Mrs. Edwin Smith, brought to our minds the inestimable value of character building and better education for our children. A humorous reading by Mrs. G. H. Thompson, entitled, "Uncle Chatterton's Gingerbread," was very enjoyable. A recitation was given by Miss Ruth Ross, entitled, "The O'er Neat Housewife," which appealed to the gentlemen present. Edwin Smith read a paper on "The Dairy Herd," preferring the strictly dairy cow to the dual purpose animal. The paper was followed by Mr. Bolgoss, who had directly opposite opinions on the subject. Club adjourned with music, to meet with Mr. and Mrs. Wm. Hamilton for the May meeting.

**Discuss Practical Farm Problems.**—The May meeting of the Wixom Farmers' Club was entertained by Mr. and Mrs. Frank Burch at their pleasant farm home. A goodly number were present. After a bountiful dinner and a pleasant social hour, the program was taken up, which consisted of vocal and instrumental music and recitations. Among the questions, the one on treating potatoes for scab and oats for smut, were freely discussed by different members. The opinion was about equal. One member said he had a neighbor who treated his oats for smut and he was the only one in the neighborhood who had smut in the grain. Several other questions were given but the one that provoked quite a discussion was the trust problem, which took the rest of our time. —Mrs. R. D. Stephens, Cor. Sec.

**Will Hold Club Fair.**—The Troy Farmers' Club was entertained by Mr. and Mrs. W. H. Hill and Mr. and Mrs. Frank Beaton, of Royal Oak, in their spacious and beautiful homes, which were just completed, on May 4. President John Snook called the meeting to order at the home of Mr. and Mrs. Hill, and Rev. Cross, from Detroit, offered prayer. Roll call was responded to by members telling how their favorite pie or cake was made. Many good recipes were given by the ladies while some exciting laughter was given by the gentlemen. It was decided to hold a Club fair on the 5th of October in some central place in the township at which the ladies are to enter fancy work, cookery and canned fruit and the gentlemen produce from the farm. Mrs. Hall, of Detroit, sang a solo and responded to an encore. Hildreth Cross gave two readings in a very pleasing manner. Professor Velker was then introduced and gave a short address. Mrs. Bond read a well prepared paper on "Conservation of human force." "Should a woman have an allowance and if so, how much?" was opened for discussion by Mr. Hill and Mr. Abbott and Mrs. W. Davenport, the gentlemen taking the affirmative and Mrs. Davenport the negative. Others followed with their opinion and the majority seemed to think there should be but one pocketbook in any well regulated family. Instrumental music by Miss Knowell. "The waste of time and land," was discussed by Mr. E. A. Starr. An interesting question box was conducted by Miss Heribson. Mr. and Mrs. Le Roy joined the Club. Club then adjourned to the home of Mr. and Mrs. Beaton where an excellent supper was served. The Club will meet in June at the home of Mr. and Mrs. Wm. Davenport.

**A Garden Seed Exchange.**—The Washington Center Farmers' Club met May 9 with Mr. and Mrs. George Hill, at 1:30 p. m. President Frank Cook called to order promptly on time. After music and roll call, which was responded to by naming a state, its capitol and largest city, Mrs. O. J. Campbell read a paper on "Making the farm garden profitable." Mrs. Hill read a selection and Miss Birdie Curren gave a recitation. "Should the bible be read in the public schools?" was the subject of talk by Mrs. W. C. Long. Mr. French also spoke on this topic, recalling the custom of reading the bible in the schools of "Old New Hampshire," in his boyhood days. This topic was well discussed and resolutions to the effect that this Club is in favor of having the bible read in the schools were passed. This Club also had the pleasure of hearing a most excellent paper on "Prevention of sickness," by Dr. C. T. Pankhurst, and the doctor's advice, if carefully followed, would certainly prevent much sickness. A garden seed exchange was a feature of this meeting, and the results will be seen at the Club fair. After a very elaborate supper served by the hostess, the meeting adjourned to meet at "Shadelands," June 13.—Mrs. O. J. Campbell, Cor. Sec.

**Discuss Road Question.**—The Hartland Farmers' Club met at the home of Mr. and Mrs. Wm. Wilson, May 4. Meeting called to order by President H. W. Clark. Following a song by Rev. Porter and wife and prayer by Rev. Porter, several good literary numbers following, including an interesting paper by Mr. Dwight Parshall on dairy business, from M. A. C. He thought it the place for the parents to see that their sons attended. Mr. J. Devreaux not being able to be present, the question box was omitted and the time was taken up with the road question, then the meeting was adjourned to meet with Mr. and Mrs. Wm. Kershner. The president asked the Club to all adjourn to Mr. Wilson's beautiful basement barn and see eleven October calves, and they were certainly fine.—Miss Mary E. Openo, Cor. Sec.



MARKETS

DETROIT WHOLESALE MARKETS.

May 22, 1912.

Grains and Seeds.

**Wheat.**—Prices tumbled last Thursday when heavy stocks of wheat in Chicago were thrown upon the market. On that day the price for cash goods declined 4c while July and September sagged 2c. There was little recovery of the loss until Tuesday of this week when it appeared that sellers had oversold and were compelled to go into the market again to get supplies. Crop news during the week favored the bears. In all sections the weather has developed the plant splendidly considering the condition it has been in. The outlook in the spring wheat states at present is very encouraging for a good crop. There is a strong cash demand for wheat and flour is having a good sale. The world's visible supply is 30,000,000 bushels greater than that of a year ago. The visible supply in the United States showed a decrease of over 3,500,000 bushels for the week. The price a year ago for No. 2 red wheat was 92c per bu. Quotations are as follows:

	No. 2	No. 1	Red.	White.	July.	Sept.
Thursday	1.14	1.12	1.15	1.14	1.14	1.14
Friday	1.14	1.12	1.14	1.14	1.13	1.13
Saturday	1.14	1.12	1.14	1.14	1.13	1.13
Monday	1.14	1.12	1.14	1.14	1.13	1.13
Tuesday	1.15	1.13	1.14	1.14	1.13	1.13
Wednesday	1.16	1.14	1.16	1.16	1.15	1.15

**Corn.**—Corn values declined in sympathy with the drop in wheat quotations, and also because weather conditions have improved prospects for the new crop. The planting, however, will be later than usual and the seed corn question gives the situation a more bullish tone than would otherwise be the case; and Iowa sent in discouraging reports to the effect that planted corn is rotting in the fields. The visible supply of corn is practically the same as for a week ago. The price paid a year ago for No. 3 corn was 55c per bu. Quotations are as follows:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	79	81
Friday	78	80
Saturday	77	80
Monday	77	80
Tuesday	77	80
Wednesday	78	80

**Oats.**—In this deal a decline corresponding to that in corn and wheat was reached the past week. The stocks of oats appear to be somewhat short of those a year ago. The visible supply's decrease amounts to a little over a half million bushels. The market revived on Tuesday with the same bullish feeling pervading that brightened the corn and wheat markets. The price for standard oats a year ago was 38c per bu. Quotations are as follows:

	Standard.	No. 3
		White.
Thursday	59	58
Friday	58	57
Saturday	57	56
Monday	56	55
Tuesday	56	55
Wednesday	57	56

**Beans.**—The volume of trading in this product is small. Prices, however, during the past week indicate a fair demand, present figures ruling about 5c above those of a week ago in both cash and October deliveries. Outside market conditions appear to correspond with those of Detroit. Quotations are as follows:

	Cash.	Oct.
Thursday	\$2.65	\$2.25
Friday	2.65	2.25
Saturday	2.71	2.25
Monday	2.70	2.25
Tuesday	2.70	2.30
Wednesday	2.70	2.30

**Clover Seed.**—This quarter of the market is lifeless and prices are merely nominal. Cash and alsike seed are steady while October has declined. Quotations are:

	Cash.	Oct.	Alsike.
Thursday	\$12.50	\$10.00	\$11.50
Friday	12.50	10.00	11.50
Saturday	12.50	9.90	11.50
Monday	12.50	9.90	11.50
Tuesday	12.50	9.90	11.50
Wednesday	12.00	10.00	11.50

**Rye.**—On Tuesday rye declined 1c, making the price for cash No. 2, 94c per bu. **Timothy Seed.**—No change in the price of this product is reported, prime spot being quoted at \$6.40 per bu.

Flour, Feed, Potatoes, Etc.

**Flour.**—Prices are steady with last week. **Straight** ..... \$4.40 **Patent Michigan** ..... 5.00 **Second Patent** ..... 4.75 **Rye** ..... 5.20

**Feed.**—All grades are steady. The carlot prices on track are: Bran, \$30 per ton; coarse middlings, \$30; fine middlings, \$32; cracked corn and coarse corn meal, \$33; corn and oat chop, \$32 per ton.

**Hay and Straw.**—Straw is lower, hay steady. Quotations are: No. 1 timothy, \$27@27.50; No. 2 timothy, \$25@25.50; clover, mixed, \$24@25.50; rye straw, \$11.50@12; wheat and oat straw, \$10.50@11 per ton.

**Potatoes.**—There appears to have been some potatoes in reserve for while last week the markets all over the country were showing strength at advanced prices, the present week sees values lower and the feeling easier. The new crop is affecting the deal in some sections while in others the receipts of 1912 tubers are so small as to go unnoticed. Quotations for ear lots on track are \$1.05 per bushel in bulk and \$1.10 in sacks.

**Provisions.**—Family pork, \$20@21.50; mess pork, \$20; clear, backs, \$20@22;

picnic hams, 11c; bacon, 14@16c; pure lard in tierces, 11 1/2c; kettle rendered lard 12 1/2c per lb.

Dairy and Poultry Products.

**Butter.**—Increased butter receipts were reported at New York, Chicago, Philadelphia, Minneapolis, Buffalo, Kansas City, and other places last week. This weakened the tone of the trade and prices have generally declined over the country from two to three cents per pound for creamery goods, which is the margin of decrease on the local markets. Dairy offerings are steady. Quotations are: Extra creamery, 27c; first creamery, 26c; dairy, 22c; packing stock, 20c per lb.

**Eggs.**—With an active demand, especially in the better grades of stock, prices for choice eggs have been maintained. The markets of the country are complaining of an unusual proportion of eggs that must go in the inferior grades. Current receipts, case counted, cases included, are quoted at 18c per dozen.

**Poultry.**—With but limited offerings and a restricted demand, poultry trade rules dull with prices steady at last week's figures. Quotations as follows: Live.—Spring chickens, 15 1/2@16c; hens, 15 1/2@16c; turkeys, 16@18c; geese, 11@12c; ducks, 14c; young ducks, 15@16c per lb.

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

**Cheese.**—Prices are off except for old and limburger. Michigan, old, 22c; Michigan, late made, 18 1/2@19c; York state, old, 22@23c; do. new, 18@19c; limburger, 21@22c; domestic Swiss, 21@22c; brick cream, 18@18 1/2c per lb.

Fruits and Vegetables.

**Hickory Nuts.**—Shelbark, 2c per lb. **Honey.**—Choice to fancy comb, 15@16c per lb; amber, 12@13c.

**Apples.**—Market easy with prices steady. Baldwins are selling at \$4@4.50; Steele Red, \$5.50@6; Ben Davis, \$3@3.50.

OTHER MARKETS.

Grand Rapids.

Hay sold at \$20@22 on the city market Tuesday morning. Vegetables were as follows: Potatoes, \$1.20@1.30; pieplant, 40c; spinach, \$1; onions, three bunches for 25c; radishes, 15c; lettuce, 9c per lb. Hand-picked beans are quoted at \$2.20. Dressed hogs are worth 8 1/2@9c. Live poultry is lower, with quotations as follows: Chickens, 11c; turkeys, 12c; ducks, 10c; geese, 8c. Broilers weighing 1 1/2@2 lbs. are scarce and bring 50c.

Chicago.

Wheat.—No. 2 red, \$1.13 1/2@1.14; May \$1.13 1/2; July, \$1.08 1/2. Corn.—No. 3, 76@77c; May, 79 1/2c; July, 74 1/2c per bu.

Oats.—No. 2 white, 53 1/2@54 1/2c; May, 52 1/2c; July, 48 1/2c per bu. Barley.—Malting grades, \$1.14@1.23 per bu; feeding, 75@85c.

**Butter.**—With receipts expanding the trade failed to hold prices at last week's basis, the decline averaging 2c for both creameries and dairy offerings. Quotations: Creameries, 24@27c; dairies, 22@25c per lb. **Eggs.**—Quotations: Firsts, grading 70 per cent fresh, 17 1/2@18c; ordinary firsts, 16@16 1/2c per dozen; at mark, cases included, 17 1/2c.

**Potatoes.**—Receipts were increased by 30 cars this past week and values have dropped fully 20c for all offerings. Situation weak at the lower figures. Michigan and Minnesota stock now quoted at \$1.05@1.10 per bu; Wisconsin, \$1@1.10.

**Beans.**—Prices improved and strongly held at the new level. Trade active. Quotations are: Pea beans, choice hand-picked, \$2.85@2.90 per bu; prime, \$2.75; red kidney, \$3.

**Hay and Straw.**—Timothy hay is lower. Other grades and straw rule steady. Timothy choice, \$26@27; No. 1, \$25@26; No. 2 and No. 1 mixed, \$23.50@24.50; No. 3 and No. 2 mixed, \$18.50@22; clover, \$19.50@21.50; No. 2 and no grade, \$12.50@17.50; alfalfa, choice, \$23.50@24; No. 1, \$22@23; No. 2, \$20@21. Straw—Rye, \$12@13; wheat, \$9@10; oat, \$10.50@11.

New York.

**Butter.**—With stocks accumulating butter sellers have been compelled to mark values down. The decline amounts to about 6c here. Creamery, extras, 28@28 1/2c; firsts, 27 1/2@27 3/4c per lb.

**Eggs.**—Trade about steady. Quotations are: Fresh gathered extras, 22c; firsts, storage packed, 20@20 1/2c; do. regularly packed, 20@20 1/2c; western gathered whites, 21@22c per dozen.

**Poultry.**—Dressed.—Irregular. Western fowls, 14@15 1/2c; turkeys, 13@22c per lb. Live.—Steady. Chickens, broilers, 25@30c; western fowls, 17c; turkeys, 12c per pound.

Elgin.

**Butter.**—Market firm at 27c per lb., which is a decline of 3c from the price of the previous week.

Boston.

**Wool.**—The strength of the market is shown by the disposition of dealers to refuse to consider offers for their holdings that are not at the highest quoted prices. Manufacturers are having a wide demand for goods, which is compelling them to go to the growers for raw material. However, buyers operating in the wool growing states hesitate in many instances to pay the price asked by the producers. In Idaho last week 800,000 lbs. were purchased at 19c. Unfavorable weather has delayed shearing and also selling in the southwestern part of the country. During the week 150,000 lbs. of Michigan, fine unwashed changed hands at 19c. Medium clips have been selling around 24c in the state, which would make the wool cost in Boston from 28@29c. In Ohio prices for the same grade of wools are reported at 22c per lb. There is a light demand for the finer grades, coarser

goods now having the preference. In London, auctions show a stronger market with prices advancing.

THE LIVE STOCK MARKETS.

Buffalo.

May 20, 1912. (Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York).

Receipts of stock here today as follows: Cattle, 160 cars; hogs, 110 double decks; sheep and lambs, 55 double decks; calves, 2,250 head.

With 160 cars of cattle on our market here today, all the butcher grades from 1,200 lbs. down sold about steady with last Monday, and heavy cattle, weighing 1,200 lbs. and over, sold 10c per cwt. lower, quality considered. There was some of the finest cattle here today that has been here in a long time.

We quote: Best 1,400 to 1,600-lb. steers \$8.60@9.10; good prime 1,300 to 1,400-lb. steers, \$8.25@8.50; do. 1,200 to 1,300-lb. do., \$7.75@8.10; best 1,100 to 1,200-lb. shipping steers, \$7.25@7.75; medium butcher steers, 1,000 to 1,100, \$6.50@7.20; light do., \$6@6.50; best fat cows, \$5.75@6.40; fair to good do., \$4.50@5.25; common to medium do., \$3.75@4.25; trimmers, \$2.75@3.25; best fat heifers, \$6.50@7.25; good do., \$5.50@6; fair to good do., \$5@5.25; stock heifers, \$4.25@4.50; best feeding steers, dehorned, \$5.50@6; common feeding steers, \$4.25@4.75; stockers, inferior, \$3.50@4; prime export bulls, \$6.75@7.25; best butcher bulls, \$6@6.50; bologna bulls, \$4.50@5.50; stock bulls, \$3.75@5; best milkers and springers, \$60@70; fair to good do., \$40@50.

The supply of hogs here today was liberal—110 double decks—and with close to 60,000 in Chicago, buyers had a little bit the advantage, and bought hogs anywhere from 10@20c lower than Saturday's average. Bulk selling at 8c; few loads of fancy at \$8.05; yorkers, \$7.75@7.95; lights, \$7.35@7.50; pigs generally 7c; roughs, 7c; stags, 5@6. Trade closed about steady, and everything sold that arrived in time for market.

The lamb market opened active today on all kinds; most of the best lambs selling at \$9.35@9.40; we sold one load of fancy at \$9.50. About all sold; look for about steady prices, with moderate receipts, the balance of the week. The sheep market was active, but prices about 75c lower than last Monday. Prospects steady.

We quote: Best lambs, \$9.25@9.40; cull to common do., \$6@7; wethers, \$6@6.50; bucks, \$3@4.50; yearlings, \$7.25@7.75; handy ewes, \$5@5.75; heavy ewes, \$5@5.25; cull sheep, \$2@3.50; veals, choice to extra, \$8.75@9; fair to good do., \$6.50@8.50.

Chicago.

May 20, 1912. Cattle. Hogs. Sheep. Received today ..... 16,000 58,000 17,000 Same day last year. 25,148 52,337 15,936 Received last week. 31,262 144,981 79,227 Same week last year. 52,302 135,514 67,002

Another Monday of extremely meager cattle receipts is here, demonstrating clearly not only the scarcity of cattle in feeding districts, but also the confidence of stock feeders in higher prices later on. Butcher stock of good grade had a further advance, and the best beef steers moved up a dime or more, with several car loads reported sold at \$9.40, but the less attractive steers were no more than steady. Hogs were in very good demand, but the liberal receipts caused declines of 10@15c, light lots selling at \$7.15@7.75 and the best heavy lot at \$7.85. The hogs marketed last week averaged in weight 235 lbs., compared with 227 lbs. a week earlier and 240 lbs. a year ago. Sheep and lambs were mostly at steady prices, but prime clipped lambs brought \$9, an advance of 10c, due to meager offerings of that class. Spring lambs received averaged poorly in quality and sold accordingly.

Cattle receipts of late have been variable, reaching greatly excessive numbers some weeks and declining sharply, while the following week would see such meager runs that values would shoot upward at a lively pace. The average stock feeder all along has been very anxious to get his holdings disposed of as fast as possible, and little encouragement is required to hurry the cattle to market, the great bulk being lots that average in weight below 1,200 lbs. Week before last the market suffered such severe breaks in prices because of the liberal offerings that the receipts last week were cut to unusually small numbers, and sellers were in a position to obtain much higher figures all along the line, everything sharing in the upward movement, including steers, cows and heifers, and stockers and feeders. Not until Thursday was there any reaction, prices on that day ruling a shade lower, following advances of about 25@45c in the general run. The great bulk of the steers sold during the week at \$7.40@9, with choice to fancy heavy beeves selling at \$9@9.30 and the commoner class of light steers at \$6.15@7.50. Good steers with considerable weight sold at \$8.50 and upward, while medium grade steers were purchased at \$8 and over, with a fair class going at \$7.60 and upward. A fancy 1,540-lb. Hereford steer went at \$9.50, and it was the highest market seen at any time since the upward movement started. A larger proportion of steers sold above \$8.50 on Wednesday than on any previous day this season, and cows and heifers had a free outlet at \$4.30@8.15, canners selling at \$2.35@3.45, cutters at \$3.50@4.25 and bulls at \$3.90@7.40. Stockers and feeders recovered much of their recent decline, and this checked trading, stockers selling at \$4.10@8.15 and feeders at \$6@8.85. Calves were bought at \$3.25@8.75 per 100 lbs., and milkers and springers sold at \$40@80 each, prime cows being scarce and advancing.

Hogs sell frequently well below the \$8

level for prime offerings, but they always get there again, and last week they sold above that figure, with a good deal of talk that the future will see higher values than have been touched yet. It seems to be a pretty well established fact that there is no over large supply of hogs in the country, and as the spring pig "crop" is not a big one, the prospects appear bright for the future market. Eastern shippers continue to take very good numbers of the best class of heavy barrows, and this outside competition is of great help in maintaining prices. The lighter weights sell at quite a discount, strong weights topping the market daily, and more heavy hogs could be used by killers to advantage. Fresh pork continues to have a large consumption, largely because of its much greater cheapness than other meats, and there is a fair demand for cured meats, although their dearness checks sales to a considerable extent. Hogs are selling at much higher prices than at corresponding dates in former years, 1910 excepted. Prime heavy hogs sold last week up to \$8.05, and despite the great gain in receipts over the previous week, closing sales of hogs were at \$7.40@7.95, the top being 5c higher than a week earlier.

Sheep and lambs were irregularly lower last week on account of greatly increased receipts, but the declines in prime lambs were much less than in the large percentage of ordinary stock, much of the gain in supplies consisting of poorly fattened consignments. Texas grass sheep are now being marketed freely at Kansas City, and many of them are re-shipped from there consigned direct to Chicago packers direct, while packers are receiving some Tennessee spring lambs already, although not many are ready to come yet. Not much woolled stock is now coming, and such flocks are not wanted by killers, woolled sheep selling 25@50c above clipped and woolled lambs 50@75c higher than clipped. Fair numbers of spring lambs have sold at \$3@9.50 per 100 lbs. for culls to prime, and clipped lambs sold at \$4.50@8.90, while other clipped lots sold as follows: Yearlings, \$6.25@7.40; ewes, \$2@5.65; bucks, \$3.50@4.50. Prime springs were about steady, while prime clipped lambs were off 10@15c. Sheep and ordinary lambs suffered severe declines.

Horses were marketed with fair freedom last week, and there was a good attendance of buyers from various parts of the country, the demand running mainly on good business horses. More prime extra heavy drafters than were offered could have been sold easily, but there were more than enough inferior, thin horses. The poorer animals had to go as low as \$85@100 per head, with less call for farm workers at \$100@200, while chunks weighing 1,250 to 1,450 lbs. were salable at \$156@200. Light drafters found buyers at \$175@225, and heavier and choicer ones were quotable at \$230@325, with a scarcity of horses quoted around \$300.

LIVE STOCK NOTES.

Charles O. Robinson, of Chicago, widely known to the live stock interests of the country, made a long trip through Nebraska, Colorado, Wyoming, Montana and the two Dakotas recently, investigating carefully range conditions. He reports serious losses of live stock last winter of both cattle and sheep, the winter being the worst experienced since 1886. Especially great losses of cattle and sheep were suffered in central and northern Wyoming, and similar conditions prevailed in western and southern portions of South Dakota. Big snow storms fell over the range country frequently, so that the stock could not reach the grass, and in several sections many horses succumbed. Some sections lost half of their sheep, and some herds of cattle were wholly destroyed. Montana stockmen did not lose much stock as stockmen in several other regions, but for all that the winter was a disastrous one there. From what could be learned, only about 10 per cent loss was suffered in sheep in the northern and western portions of Montana, but in the southeastern part losses of cattle and sheep ran as high in places as about 25 per cent. At the Montana Cattle Growers' Association meeting, held at Miles City, Secretary Raymond of that organization told Mr. Robinson that there would probably be 40,000 fewer cattle sent to market from Montana than last year. Mr. Robinson found considerable losses in the eastern half of Colorado, and in the northern and western parts of South Dakota cattle losses were heavy, but in North Dakota cattle and sheep wintered fairly well, and the grass in North Dakota has got a good start. Mr. Robinson says: "The loss of cattle in the northwest this season will create one of the heaviest shortages of rangers at South St. Paul, Sioux City, South Omaha and Chicago that they have ever experienced. The drought of last summer and the bad winter last has decimated a great many herds and some of the big ranchmen are practically out of the game for the present. Last year the receipts of range cattle at Chicago showed a shortage of 25 per cent from the previous year. With 40,000 head less to come from Montana this coming season than last year, along with the loss there and other range states of last winter, it is easy to see that there will be an enormous decrease in shipments for the 1912 season. Besides, most of the ranchmen who are in a position to hold their thrifty she stock will not market anything in that line this season. From a market price standpoint, the northwestern ranchmen anticipate a very prosperous time this fall. Unless conditions are reversed, they stand a good chance of having their hopes come true. There is undoubtedly a big shortage of cattle in the corn belt states, and also in the eastern states, and range cattle should be highly appreciated by buyers this season."



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. May 23, 1912.

**Cattle.** Receipts, 692. Market strong at Wednesday's and last week's prices on all grades; run light.

We quote: Extra dry-fed steers and heifers, \$8@8.60; steers and heifers, 1,000 to 1,200, \$7.25@7.75; do. 800 to 1,000, \$6.50@7.50; do. that are fat, 500 to 700, \$5.50@6; choice fat cows, \$5.50@6; good do., \$4.50@5.25; common cows, \$3.50@4; canners, \$2.25@3; choice heavy bulls, \$5.75@6; fair to good bolognas, bulls, \$4.75@5.25; stock bulls, \$4@4.50; milkers, large, young, medium age, \$4@6; common milkers, \$2.50@3.5.

Lowell sold Newton B. Co. 2 bulls av 700 at \$5, 3 cows and heifers av 866 at \$6. Lowenstein sold same 1 steer weighing 1,140 at \$8, 1 canner weighing 820 at \$3, 11 steers av 700 at \$7, 9 cows av 900 at \$5.25.

Johnson sold Mich. B. Co. 2 cows av 1,145 at \$5.25, 1 heifer weighing 970 at \$6.50.

Bishop, B. & H. sold Hammond, S. & Co. 16 steers av 1,269 at \$8.60; to Nagle P. Co. 15 do av 1,230 at \$8.35; to Bresnahan 1 cow weighing 1,010 at \$5.50, 1 bull weighing 1,170 at \$5.50; to Mich. B. Co. 12 steers av 1,133 at \$7.70, 1 do weighing 830 at \$7, 1 bull weighing 1,140 at \$5.50; to Heinrich 27 steers av 881 at \$7.60, 26 do av 904 at \$7.75; to Bresnahan 2 steers av 890 at \$6.50; to Mich. B. Co. 2 cow and bull av 1,025 at \$6.25, 3 steers av 913 at \$7.40; to Regan 9 butchers av 515 at \$4.70; to Parker, W. & Co. 1 cow weighing 820 at \$3.25; to Newton B. Co. 4 butchers av 775 at \$5.50, 2 bulls av 780 at \$5, 6 cows av 900 at \$6; to Mich. B. Co. 10 steers av 800 at \$7.25; to Sullivan P. Co. 6 do av 1,050 at \$7.75, 1 bull weighing 1,500 at \$6; to Hammond, S. & Co. 1 cow weighing 890 at \$2.50, 1 do weighing 1,350 at \$5.75, 4 steers av 900 at \$7, 1 cow weighing 1,050 at \$5.50, 3 do av 1,050 at \$4, 1 steer weighing 1,160 at \$8, 1 cow weighing 780 at \$3.

Spicer & R. sold Bresnahan 3 bulls av 657 at \$4.50; to Mich. B. Co. 2 cow and bull av 940 at \$6, 3 cows av 833 at \$4.50, 1 do weighing 890 at \$3.25, 29 steers av 833 at \$7.75; to Regan 2 heifers av 495 at \$5.50; to Parker, W. & Co. 21 steers av 931 at \$7.75, 19 do av 962 at \$7.75, 3 do av 803 at \$7, 1 cow weighing 1,030 at \$6; to Kamman B. Co. 2 butchers av 880 at \$6; to Reid 1 cow weighing 760 at \$3.50; to Breitenbeck 21 butchers av 885 at \$6.50; to Lachalt 12 do av 854 at \$6.50; to Bresnahan 9 do av 630 at \$5.75; to Newton B. Co. 3 do av 863 at \$6.20, 3 cows av 943 at \$4.50; to Kamman B. Co. 1 do weighing 830 at \$5.50; to Bresnahan 1 do weighing 1,050 at \$4.50, 4 cows and bulls av 1,298 at \$5.75.

Roe Com. Co. sold Mich. B. Co. 24 steers av 942 at \$7.75; to Bresnahan 5 do av 760 at \$7; to Thompson Bros. 2 cows av 1,010 at \$4.50, 2 do av 895 at \$4.50; to Sullivan P. Co. 1 canner weighing 920 at \$2.50; to Regan 2 steers av 610 at \$4.50; to Newton B. Co. 15 cows av 911 at \$4.50. Merritt sold Parker, W. & Co. 1 bull weighing 1,490 at \$5.50, 1 cow weighing 790 at \$5, 1 bull weighing 980 at \$4, 1 cow weighing 1,010 at \$3.

Haley & M. sold Rattkowsky 1 bull weighing 600 at \$5, 1 cow weighing 1,010 at \$4, 2 butchers av 625 at \$5.50; to Sullivan P. Co. 10 do av 708 at \$6.60, 3 cows and bulls av 1,043 at \$5.50; to Regan 1 heifer weighing 750 at \$5; to Schuer 2 cows av 985 at \$4.60, 2 do av 900 at \$3.50, 1 do weighing 810 at \$3, 1 do weighing 900 at \$3.75, 1 bull weighing 600 at \$4.50; to Sullivan P. Co. 1 bull weighing 1,400 at \$5.50, 2 cows av 950 at \$5, 1 cow weighing 760 at \$4.25, 1 bull weighing 1,550 at \$5.50, 1 cow weighing 1,070 at \$5.75; to Parker, W. & Co. 1 bull weighing 860 at \$4.50; to Thompson Bros. 2 cows av 860 at \$4, 9 do av 900 at \$5.

**Veal Calves.** Receipts, 794. Market strong at Wednesday's prices; good grades 25@50c higher than last week. Best, \$8@8.75; common, \$4@6.

Haley & M. sold Parker W. & Co. 2 av 100 at \$7, 3 av 140 at \$8; to Rattkowsky 23 av 125 at \$7.25, 2 av 105 at \$5.25; to Newton B. Co. 15 av 125 at \$5.50, 23 av 135 at \$7.25; to Parker, W. & Co. 8 av 135 at \$8.25; to Burnstine 1 weighing 170 at \$9.

Bishop, B. & H. sold Parker, W. & Co. 1 weighing 210 at \$8.75, 2 av 170 at \$8.75, 4 av 150 at \$8.25, 20 av 130 at \$8.25, 8 av 125 at \$8; to Sullivan P. Co. 6 av 100 at \$5, 10 av 120 at \$8, 7 av 110 at \$7, 5 av 120 at \$6.50, 7 av 140 at \$8; to Burnstine 3 av 125 at \$6.50, 19 av 140 at \$8, 3 av 130 at \$6, 19 av 145 at \$8.50; to McGuire 14 av 140 at \$8.25, 21 av 135 at \$8; to Newton B. Co. 8 av 150 at \$8.25; to Sullivan P. Co. 12 av 120 at \$6, 35 av 145 at \$8.25, 6 av 125 at \$6.50, 2 av 115 at \$6, 10 av 136 at \$8.

Spicer & R. sold Friedman 9 av 100 at \$6.50; to Mich. B. Co. 8 av 145 at \$8, 18 av 135 at \$8; to Parker, W. & Co. 8 av 140 at \$8.15; to Mich. B. Co. 17 av 145 at \$8, 6 av 125 at \$6.50; to Newton B. Co. 17 av 140 at \$8.

Kalahar sold Mich. B. Co. 23 av 140 at \$8.25.

**Sheep and Lambs.** Receipts, 3,309. Sheep 50c, lambs 25@50c lower than Wednesday or last Thursday. Best lambs, \$8@8.25; fair to good lambs, \$5.50@7; light to common lambs,

\$4@5; spring lambs, \$9.50@11; fair to good sheep, \$4.25@4.75; culs and common, \$2.50@3.

Bishop, B. & H. sold Thompson Bros. 48 sheep av 80 at \$5.50; to Sullivan P. Co. 109 do av 80 at \$5.50, 145 lambs av 75 at \$8, 19 do av 60 at \$7.50, 6 sheep av 110 at \$4; to Newton B. Co. 84 lambs av 65 at \$7.75; to Swift & Co. 440 do av 80 at \$8.50; to Parker, W. & Co. 3 sheep av 100 at \$5, 4 do av 90 at \$3.75, 3 lambs av 70 at \$6.50; to Bray 238 lambs av 80 at \$8.25; to Young 46 mixed av 67 at \$5.50; to Fitzpatrick Bros. 12 sheep av 120 at \$4.50, 9 spring lambs av 57 at \$11, 17 sheep av 70 at \$2.50, 67 do av 100 at \$4.50; to Bossow 16 lambs av 55 at \$5.50.

Spicer & R. sold Parker, W. & Co. 30 lambs av 60 at \$8; to Newton B. Co. 6 spring lambs av 50 at \$9.50; to Barriage 11 do av 67 at \$4.

Haley & M. sold Parker, W. & Co. 30 lambs av 60 at \$6, 14 do av 65 at \$6.50, 11 do av 60 at \$6.50, 7 sheep av 110 at \$5, 28 sheep av 88 at \$5, 3 do av 80 at \$5.

**Hogs.** Receipts, 4,229. Market 5c higher than Wednesday and 5c lower than last week. Pigs steady.

Range of prices: Mixed butchers, \$7.55@7.70; pigs, \$6.50@6.60; light yorkers, \$7@7.50; stags one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 425 av 209 at \$7.65, 710 av 180 at \$7.60, 667 av 170 at \$7.55, 510 av 150 at \$7.50, 415 av 140 at \$7.45, 251 av 140 at \$7.40, 70 av 220 at \$7.70.

Roe Com. Co. sold Sullivan P. Co. 350 av 190 at \$7.60, 85 av 180 at \$7.55, 75 av 170 at \$7.40.

Spicer & R. sold Parker, W. & Co. 270 av 190 at \$7.60, 65 av 150 at \$7.50, 80 av 170 at \$7.55.

Bishop, B. & H. sold Childs 32 pigs av 115 at \$6.50, 23 do av 125 at \$6.60, 14 do av 120 at \$6.75, 39 do av 127 at \$6.65, 4 do av 45 at \$6.25.

Market closed slow.

Friday's Market. May 17, 1912.

**Cattle.** Receipts this week, 1,032; last week, 1,278. Market steady at Thursday's prices on all grades. Run very light.

We quote: Extra dry-fed steers and heifers, \$8@8.40; steers and heifers, 1,000 to 1,200, \$7.25@7.75; do. 800 to 1,000, \$6.50@7.50; do. that are fat, 500 to 700, \$5.50@6; choice fat cows, \$5.50@6; good fat cows, \$4.50@5.25; common cows, \$3.50@4; canners, \$2.25@3; choice heavy bulls, \$5.75@6; fair to good bolognas, bulls, \$4.75@5.25; stock bulls, \$4@4.50; milkers, large, young, medium age, \$4@6; common milkers, \$2@3.

**Veal Calves.** Receipts this week, 2,029; last week, 1,617. Market steady at Thursday's prices. Best, \$7.50@8; common, \$4@6.50.

**Sheep and Lambs.** Receipts this week, 3,154; last week, 2,580. Market 25c lower than Thursday; very few on sale. Best lambs, \$8@8.25; fair to good lambs, \$6.50@7; light to common lambs, \$4@5; spring lambs, \$9@11; fair to good sheep, \$4.50@5; culs and common, \$2.50@3.

**Hogs.** Receipts this week, 9,655; last week, 5,837. Market dull at Thursday's close; 12 loads shipped out of here for other markets today.

Range of prices: Light to good butchers, \$7.60@7.70; pigs, \$6.50; light yorkers, \$7.25; stags one-third off.

LIVE STOCK NOTES.

Strong objections are raised by stockmen to the proposition before congress to enforce sales of live stock subject to post-mortem examination. Several years ago the live stock exchanges fought the proposition vigorously and defeated it decisively.

The European markets for cattle and hogs are unusually high, the beef and pork production everywhere being largely reduced.

Wisconsin farmers are still applying the tuberculin test to dairy cattle, although the law requiring such tests has been repealed. This shows that farmers realize the value of these tests.

The purchases of feeder cattle made in the Chicago market recently have been very moderate, farmers generally regarding prices as still too high, although reductions have been made. The best heavy feeders are taken largely by killers, who outbid country buyers, and this cuts into the future beef supply.

Cattle have been selling extraordinarily high, even after considerable declines in prices, with the best long-fed heaves selling at \$9.30 per 100 lbs., but it is the intermediate kinds that make the most profits for stock feeders. The class of steers selling around \$8.50 and lower makes the larger profits, and farmers are discovering that in the long run much the most money is made by a short feed, say from 75 to 90 days. This is especially the case with corn and all other feeds selling at the ruling exceptionally high prices. Corn has sold in the Chicago market recently up to 81 1/2c per bushel for May delivery, being 28c higher than a year ago, and May oats at 54 1/2c stands 24c above last year's figures. Hay is extraordinarily high, due to its great scarcity, and all the grains are away up. May wheat selling a short time ago on the Chicago Board of Trade at \$1.19, a record price for the season and 22c higher than a year ago. This is certainly a time when the farmer is getting good prices for his products, whether grain, hay or live stock.

Prices of feeder cattle have gone so high that some farmers have withdrawn buying orders they had placed in the hands of their live stock commission firms. One good judge of the market gives his view of the situation as follows: "Prices for stockers and thin feeders are already too high to give much chance for a margin of profit to the man who carries them through on grass and feeds them for the market the last half of the year.

Chances are that as good a class of feeders will be available during the later months of summer at considerably less cost than they can be secured here now. As to the good fleshy feeders that can be put in shape for market in 90 days or before the influx of range cattle, and the depressing effect that the flood of grass cattle always has on the beef market, there may be a chance to take out some of these good feeders even at high cost and make some profit by feeding well in pasture, but prices have reached a pretty high level to make the proposition look at all promising, especially for the plain and medium class of feeders."

Observers of present cattle conditions agree that the country faces a cattle shortage at least two years ahead, and they also agree that the slaughter of steer calves with good beef quality should cease. It also is conceded by everyone that farmers should be less eager to dispose of female calves. The situation is serious, and many people are in favor of congress taking action admitting free entry of young Mexican and Canadian steers for fattening in the corn belt states. In this connection, farmers are reminded that the building of silos is a mighty good thing, as silage is a great economizer in fattening cattle. Alfalfa is also a highly profitable crop where it can be grown successfully by stockmen.

The continued advances in prices for cattle, hogs and sheep have been followed by corresponding marking up of prices for beef, mutton and hog products in the retail meat markets, and already there is considerable talk of decreased consumption. Many families are either eating less meat or buying cheaper kinds, and eggs are being largely substituted, being abundant, choice and cheaper than meats. Decreased consumption is the only thing that will check the upward course of prices for live stock.

Lewis Maxwell, of Doddridge county, W. Va., showed up in the Chicago stock yards not long ago and bought through a leading commission firm 369 head of Shorthorn, Angus and Hereford steers for fattening. He will graze them. Mr. Maxwell said that cattle were scarce in that part of the country, with prospects for good grass. He is a big land owner and a heavy exporter of cattle.

J. C. Wilson and his son, John Wilson, fed about 20,000 sheep and lambs the past winter season at Burlington, Wis.

Montana and Wyoming are being settled up rapidly, and former open ranges are to a large extent replaced by moderate sized farms, where farmers are becoming extensive producers of hogs. Within a short time Montana and Wyoming hogs have topped the market at Chicago, Omaha and St. Paul.

Much reduced marketings of northwestern range cattle the coming season are looked for than last year. Chicago's range cattle season for 1911 brought out a total of 252,100 cattle, against 319,700 in 1910, 342,100 in 1909 and 291,000 in 1908. It was smallest range marketings since 1903, when there were received only 209,900, while in 1901 the range run was 140,500, smallest receipts in the history of the range cattle trade.

Word comes from Oregon that the spring was bad for lambing, with snow and rain every day in April, resulting in heavy losses of lambs. Late reports say there will not be over 70 per cent raised and perhaps not as many as that.

CROP AND MARKET NOTES.

Gratiot Co., May 17.—A spell of weather, cold and rainy for several days, has passed, leaving most ground too wet to work. Wheat has improved since April and oats show a good per cent of germination. The writer knows of no corn being planted to date. Meadows have not grown rapidly, but the last few days have been very beneficial to them. A great many sheep are not yet shown as there have been so few warm days. Peach trees through this section were greatly damaged by the cold winter and some orchards are killed, almost to a tree. Apple trees are just bursting into bloom. Beans and wheat are advancing in price. Eggs, 16c; butter, 25c.

Livingston Co., May 20.—The cold, wet weather that has prevailed thus far this month has retarded the work on the farm and as a result corn planting will be very late, the majority of farmers not having their corn ground plowed at this date. Wheat will be a very light crop, owing to the severe winter. New seeding is coming on good, but hay will be scarce because so many pieces were ruined by the dry weather last summer. Grain is selling high, as is also hay, which is almost unobtainable at any price. Fruit trees are blossoming quite full with the exception of peach trees. Help scarce and wages high.

Lapeer Co., May 18.—Another 24 hours of rain has interfered with farm operations. Some oats are up but the water stands on many fields. Some oats are just showing and some farmers have not finished sowing. Wheat is not looking as well as when snow first went off, as water stood on land so long. Some are leaving last year's meadows, as new seeding is not good.

Kalkaska Co., May 15.—Spring grain all sowed and making its appearance; 75 per cent of corn ground plowed. Planting corn will commence about the 20th. Grass making a fine start. Fall grain looking bad. Stock of all kinds quite thin on account of long winter and high cost of feed. First soaking rain commenced on the 11th and continued for 40 hours, in a moderate way. A car load of silos unloaded at station last week. Some farmers are putting up the second one. Not many potatoes planted, although farmers are preparing to plant quite extensively in the near future.

Indiana.

Laporte Co., May 17.—Fair and pleasant today with cool northwest wind. Has rained every day at some time during the

past seven days. Wheat is a failure and oats a large acreage. Farmers busy plowing for corn, but mostly too wet. We are running a gang plow with four horses. Fruit prospects light, apples and cherries in bloom. Seed corn is poor, only 50 per cent will germinate that is raised here. Outside corn that tests 96 to 100 sells at \$3 per bu. Cowpeas will be sown quite largely; hay cures well and is fine for dairy cows. Butter, 35c; feed is very scarce and no surplus of stock on pasture.

Ohio.

Hardin Co., May 15.—Everybody busy getting corn in the ground. Weather has been cool with plenty of moisture for good work; oats making a good showing this spring. Wheat is scarce and what stood the winter is growing nicely. Not a large per cent of apple blossoms this year. Not many peach blooms. Hay is scarce and high.



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# Woman and Her Needs

## At Home and Elsewhere

### "Eternal Sunshine" is too Advanced for this Generation.

I HAVE been taken gently to task by a kindly reader for my recent remarks on "Co-operative Trouble."

"Your article dampened my spirits, or ardor, dreadfully," writes this critic, "and I'm blue every time I think of it. For myself, I do not believe in that train of thought at all. Of course, it is true, but does it not sadden the home wherein such things have occurred, bringing up painful memories that have been buried, or nearly so? Why not always write cheerful things?"

I wonder if the woman who wrote that really thinks the world would be made better by preachers and teachers and writers never mentioned disagreeable things, but preached and sang always eternal sunshine? Or did she write it impulsively because her heart had been saddened, and she did not want to think of unpleasant subjects?

If we were living in an ideal world where sunshine was the rule and the shadows only appeared occasionally, or never at all, such homiletics might do, but in this old world where sunshine and shadow, wrong doing and right are so thoroughly blended, but little would be accomplished in the way of righting wrong if all the preachers and teachers refused to think of sin and talked always of goodness. Unfortunately there are many persons in the world who can understand nothing but a hard knock. Kindness and sunshine slip off them like water off a duck's back and they require harsh treatment to open their eyes.

Did not the One who came to bring "peace on earth and good will to men," the first prophet of "sunshine," set us the example of denouncing wrong? The sayings of Jesus are about equally divided between promises of rewards for right-

eousness and denunciations of sinners. "Woe unto you," is uttered quite as impartially as "Blessed," and those warning words have had quite as much to do with working out the salvation of the race as have the promises.

Following this example the great reformers of all ages have been those men who were fearless enough to condemn wrong doing. "Hell fire and brimstone" are not pleasant topics, but the awful pictures of the old preachers did more to make men live right than the "pleasant pastures" of the modern pastors are able to accomplish. Not alone in the religious world but in the body politic the hammer is needed. The statesman who does his country's real work is the one who attacks graft and crookedness, even though he may hurt the feelings of the innocent while he punishes the guilty.

Much as I should like to think and write only of pleasant topics I can not do it while I live in this world where unpleasant things are constantly being done. When I see so many suffering from the wrong doing of others how can I help but warn those who are taking their first steps down? Perhaps the article which my reader condemns may be the means of stopping someone who is about to bring trouble on herself and her family by her unwise or wrong conduct.

Some of us thrive on sunshine and behave ourselves beautifully when we are prosperous. But there are more of us who get heady when things go our way and we need the caustic criticism, the sharp blow of adversity to keep us humble. I am sorry if anything I write saddens a heart already broken, but so long as I see people starting wrong I must call their attention to their mistake.

DEBORAH.

#### OUTDOOR CLEANING.

BY MARGARET WHITNEY.

Cleaning time is here and while the housekeeper is scrubbing and washing indoors there will be a good-sized job of cleaning up in the fields, barnyard and around the house for the man to do. The spring rains will wash a great deal of the winter's dirt away; and then the winds will do their part and blow some of it away, but there will still be enough setting to rights to keep the farmer busy for at least a part of his leisure time.

The fields get littered up more or less during the long winter, especially if there is a small stream running through the place to bring down with it a few loads of sticks, brush and even logs which it distributes very impartially over every part of the place it can reach. And if, as it so often happens, that this stream, ordinarily so small that one could step across it, has become a raging torrent after the spring rains, this trash will be so well scattered that it will be no short job to gather it all off the fields.

Around the barn where straw, corn fodder and hay will necessarily get badly scattered during the long months of feeding there will be some cleaning up to do. There will very likely be some boards to nail on that have been neglected during the cold weather and pieces of boards and timber to gather up and burn.

The task of raking the yard generally falls to the women or children and the ease with which the lawn is mowed during summer will depend upon the kind of job that is done in clearing the yard of sticks and trash. If all pieces of brush are not removed they will annoy every time the lawn is mowed, and dull the mower besides, by getting fast on the knife when one attempts to run over them.

A thing that many farmers neglect year after year is to cut the brush that grows up along the fences, especially the front fence. Often a perfect wall of bushes entirely hides the place behind them and makes it look as if uninhabited. No one would accuse a man of being an

up-to-date farmer who permitted his place to get into such a condition.

Then during the summer it may be necessary once in a while to mow weeds. Railroad companies evidently consider it good policy to keep the weeds down along their right of way; and the section men are employed almost exclusively during a certain part of the year to do nothing but mow weeds. It will take a very little while for the farmer to mow along in front of his place some day when he comes up from cutting grass in the meadow. And think how much a place is improved by even as small an effort as this!

Neatness costs very little but if one wants to sell his place it will add very much to its desirability, and will enable the owner to ask a few more dollars per acre than if it were dilapidated and run down. A few hours spent in this sort of work will be all that is necessary after a farm is in good order and it will be of as much value as if it had been spent in planting corn or hoeing potatoes.

#### A RIGHT AND A WRONG WAY TO DUST.

Every careful housewife will tell you that absence of dust spells the difference between a well-kept and an illy-kept house. Plain pine furniture carefully dusted appeals to the eye with greater force than the most expensive mahogany if it be coated with even a slight film of dust. Yet in spite of this well-known axiom of good housekeeping how few women know how to dust.

How often your careful housekeeper proceeds after this fashion. She raises the windows, pins up the curtains, seizes the broom and "falls to" in her onslaught on dirt. Every ounce of muscular energy she possesses is laid out to raise all the dust out of the carpet she can get, and all the dirt which remains on the floor is carefully swept into a dust pan and burned. Meantime clouds of dust have settled on every article of furniture. Without waiting for the air to be still a few minutes so that all may settle, the

hurried worker arms herself with a feather duster or dry cloth and starts in to dust. A wipe here with the cloth and a flirt there with the feather brush is considered sufficient dusting, and the dust which has just been stirred up is thus thrown off into the air to settle again on carpets and in curtains, to be stirred up again week after week. No wonder the house looks next days as though it had never been cleaned.

The proper method on sweeping day is different. Every article of bric-a-brac should be carefully wiped off with a slightly dampened cloth and put in a cupboard or cabinet. Books which have been lying around should be taken out doors and dusted, then returned to the book case. Heavy articles of furniture, as the piano, couch and table should next be dusted and covered, and then the sweeping may begin. When this is finished the sanitary way is to dust with a cloth which has been saturated with one of the many dust absorbing compounds on the market. Only in this way can the housekeeper take up the dust and remove it from the room instead of scattering it again to the four winds of heaven. There are many compounds on sale today for making these "dustless" dust cloths, and the woman who values her health, as well as desires a clean home, will employ some one of them. In this way the dust which was drawn into the lungs by the old method of dusting is taken up on the oiled cloth and a spotless room and shining furniture are obtained with no resulting damage to the respiratory organs.

#### THE LITTLE OLD SHOES.

BY M. C.

In preparing the children for a visit to grandpa's I had occasion one night recently to black the little shoes, four little pairs, and as I picked them up preparatory to "shining up," how forcibly it came to me what those little old shoes stood for and I wondered if busy parents ever made the little shoes a study.

The first pair I chanced to pick up were tiny ones, belonging to the little two-year-old girl, such walking as they had endured, and that meant that two little sturdy feet had tramped in them all day long. Rather weak looking, to be sure, but still many a step would they continue to take before thrown aside. While busy thinking, I had finished blacking them and giving them a last searching glance I set them down on the window seat.

The next pair belonged to little blue eyes, aged just three. Longer a trifle were these, broader a bit, perhaps, and I could almost read the character of their owner in the lines and curves of the dear little shoes, which brightened up so well under the touch of the sponge. These I set beside the first pair.

Next came Miss Six-year-old's. There it seemed I could read "School days, readin' and writin' and 'rithmetic." Longer in the foot, higher in the instep, more trim and with a look as of a firmer purpose and determination. This represented a little bark well launched upon the waves of time, my first born, and gently I gave them the extra dab and set them down beside the others.

Now I pick up the last pair, property of my little curly, red-headed boy just five years of age. Let me describe them. Oh, the poor heel, mamma surely did not know it was so run over, and sand, for lining evidently, as it began to sift out on the floor. Broken shoestring, also, to be replaced, and altogether these shoes had an unsteady look, representing the nature of the little fellow, (as known only to father and mother), who from morn 'til night had these faithful shoes, jumping, running, or walking, as all boys do.

Having them all placed in a row, I leaned back in my chair, and a sigh escaped me, and I will tell you why. I was thinking of the little feet, those four pairs of shoes encased, of the little bodies those feet belonged to, and the little lives that dwell therein, and, like the old worn shoes, I wondered if spots came on the little souls, would they be erased by the God-given Spirit, as easily as the spots on the shoes were by the liquid blacking. Could I, as a mother, guide those little

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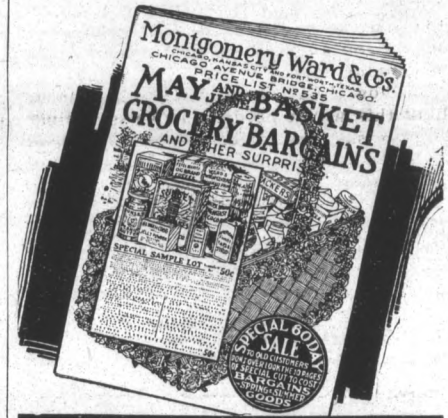
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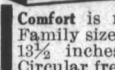
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feet into paths wherein would lie the roses, instead of thorns? If you, fathers and mothers, have never thought of it seriously, some evening after the little ones are far away in dreamland, take up the little shoes, study them and think well on it. And above all, and at all times, remember this, father and mother are the mirrors, our children are reflected there.

**WOMAN'S HAPPINESS ON THE FARM IS IMPORTANT TO RURAL PROGRESS.**

In the latter part of March there convened in Philadelphia one of the most notable assemblages ever brought together on the American continent. The gathering was made up of statesmen, scholars, educators, clergymen, professors of agriculture, scientists and agriculturists. The conference was held under the auspices of the Pennsylvania Rural Progress Association, the oldest agricultural society in the United States, having been organized in 1785.

At this gathering were discussed the problems of the farmer's wife and the conditions under which she struggles, not only to bring up her family but to help to make the living and means to alleviate her from isolation and bring about conditions favorable to her well being.

Miss Martha Van Rensselaer, of New York, struck the keynote to the meeting when she declared that rural progress depends on the happiness and comfort of the woman on the farm more than upon well-tilled fields and well-built and well-stocked barns.

"If the woman is not satisfied," she said, "and if no effort is made for her comfort, the farmer might as well give up his aspirations to become successful; for the family cannot remain on the farm if the wife and mother rebels. On thousands of farms in this country there is every reason for rebellion, for absolutely nothing is done to give the woman the aid she needs in housekeeping, in the bringing up of her children and the performance of her share of the farm duties. How many men who have reapers and binders think of the washing machine and the ironing machine for their wives?"

"In how many cases would the woman think this was a needless expense, simply because she has been trained to believe that her health and her happiness and conservation are inferior matters and do not measure up to the needs of the live stock and the farm? The farmer's wife should be taught how to conserve her time and energy, how to get the latest labor-saving devices, how to do her work scientifically and intelligently and how to combine pleasure with duty. She should have some idea of art, so that her home may be beautiful, and she should not be given to believe that there is nothing in life beyond the dreary routine of daily toil."

**HUMAN WELFARE QUERIES.**

Household Editor:—Should young children be allowed to eat freely of fruit?—Young Mother.

No. Fruits are largely composed of water and, of course, are not nourishing. They are often responsible for the bowel disturbances from which little children suffer. This does not mean that fruit must never be eaten, as oranges and baked or scraped raw apple are allowable if not given too freely. But young children should not be allowed to munch fruit whenever they feel like it.

Household Editor:—Is spinach considered a valuable food?—Cook.

Spinach is called by some "the broom of the stomach." It contains valuable salts and should be cooked without water if possible so that it need not be drained and these salts lost.

Here is my recipe for corn salad: Eighteen ears of corn and one large cabbage, four onions, two green peppers, chopped fine, cup of salt, two quarts of vinegar. Boil one-half hour. Then add quarter cup of ground mustard, two-thirds tablespoon of tumeric powder, two cups of sugar and two cups of flour and cook until done but not too soft.

Household Editor:—Can you give me some ways of putting up pieplant for winter use?—Busy Mother.

Pieplant and figs are delicious preserved together, using them in the proportion of one pound of figs and six of sugar, for every six pounds of pieplant. The figs should be cut fine and the fruit and sugar placed in a preserving kettle and allowed to stand over night. Cook until thick. The grated rind and juice of three or four lemons adds to the flavor. Oranges, rhubarb and raisins cooked together are also good. Use three oranges, grated rind

and pulp, with two pounds of sugar to every two pounds of rhubarb and add raisins to suit your taste. This should also stand over night.

Household Editor:—At what hour do you think young children should be put to bed? We have always allowed our children to stay up until we go to bed ourselves, but a friend says we are doing wrong and that they should go to bed early.—Mother of Two.

I agree with your friend. The earlier young children are put to bed the better for them and for the mother. Seven o'clock is a good time until they are at least ten years old. I can not decry too much the habit of allowing children to stay up until nine and ten, especially if they are dragged out to town or to parties. Of course, it is hard on the young mothers to give up amusements to stay in with children, but the sound nerves and healthy bodies that come to their children as the result of enough sleep, combined with the right food, should compensate the mother for the loss of a little fleeting pleasure. The children will grow all too quickly and there will then be many years for the mother to enjoy herself.

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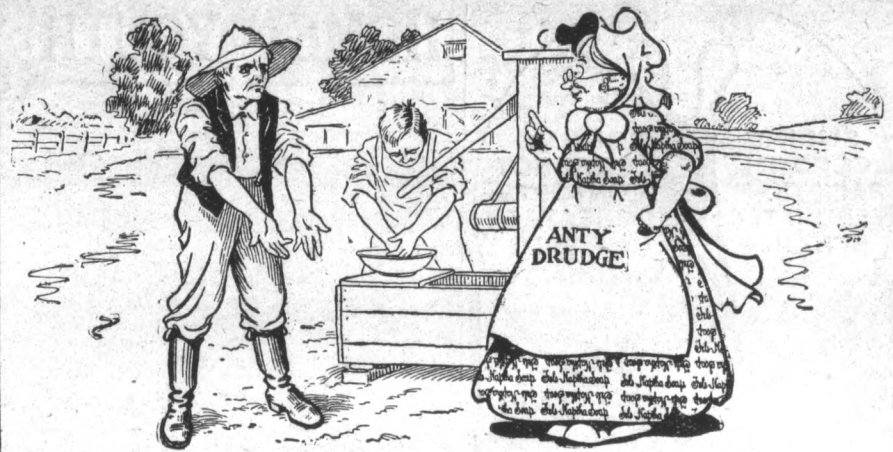
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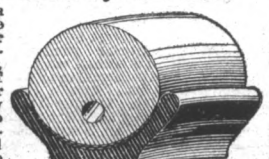
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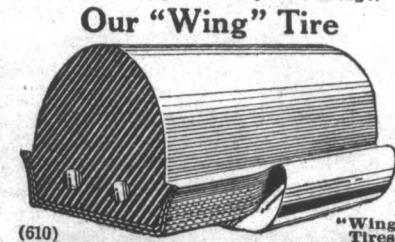
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**HOME AND YOUTH**

**MEMORIAL.**

BY L. M. THORNTON.

Fairest of blossoms, the white and blue,  
Tribute of honor and homage true;  
With laurel wreaths o'er each sleeper's bed,  
And prayers and praises and fond words said.  
Early we gather this morn in May  
Keeping together, Memorial Day.

Fierce was the conflict, and dearly won;  
Silent their slumbers, their life-work done.  
Gallant and fearless they faced the foe,  
In summer's heat and in winter's snow,  
Heroes departed, we reverence pay  
In wreaths we bring on Memorial Day.

**A DECORATION DAY STORY.**

BY RUTH RAYMOND.

It was Decoration Day, and Ernest and Mable were anxious to see the veterans decorate the soldiers' graves. They were visiting their grandfather in the country. Grandfather Darling was a veteran of the Civil war but, being a cripple, could not march with the old comrades.

After gathering a basket of flowers they sought their grandfather and Mable said, "How are we going to decorate the graves, grandpa, unless you go with us?"

"I was just thinking of that," answered the old soldier, putting his arm about the little girl. "I have not walked up to the cemetery in a number of years, my knee has been so bad. I'll tell you what we will do. I will have John hitch up the gray colt and take us up to the burying ground, and we will decorate a grave I know about which the comrades do not remember, perhaps never heard of."

"Tell us the story," said Ernest, putting down his flowers and sitting on the grass by the side of his grandfather, for he knew there was a story by the far-away look on Mr. Darling's face.

"It was long ago, but I was young and strong then. Ethan Gray and his two sons, Byron and Sammie, enlisted. It was the breaking out of the Rebellion and they expected to be home again inside of three months. In fact most people thought at that time that it would just be a play-spell to conquer the rebels and bring them back into the Union. Mrs. Gray was left alone on a rented farm to do the work and take care of the stock. She did her best with the crops, but of course could not raise enough to pay the rent the first year.

"Inside of three months Ethan was killed in battle. She bore up bravely for, though he was buried on the field, she tried to remember that many other women were suffering even more than she. Again came sad news. Byron Gray was shot while on picket duty. Mrs. Gray looked paler and very aged now, but she worked on, trying to keep up the place until Sammie should come home. I went often to help her in the field, though, as my father was in the army, I had little time to spare.

"Again the country needed more troops and, though I was still young, I enlisted and went south. Before going I called on Mrs. Gray to bid her good-by. I noticed how slender she looked and how sad, even with the smile which she wore to hide her tears.

"I am going to endure everything," she said, "if Sammie is only spared, but if he is killed I cannot stand that, even for my country. I would have no one to live for and I should surely die."

"A few months later when I learned through the papers that Samuel Gray had been shot in the thick of battle while our troops were making a charge, I thought of the poor broken-hearted mother left alone to weep her tears uncomforted.

"I was taken prisoner soon after and at the close of the war returned home to learn that the Widow Gray had survived Sammie but a few months and had been buried in the potters' field, as she had no means and nothing could be found to defray even burial expenses, these being paid by the neighbors."

"Now children, as the carriage is ready we will go and decorate the grave where a noble woman sleeps."

Soon the old veteran and the two silent children passed solemnly among the graves where little flags told that here brave soldiers were sleeping. On they went and through a little gate into the potters' field. Here, in one corner, they found a grave overgrown with grass and weeds. The hired man took the sickle which he had brought and cut down the weeds and grass, carrying them away while Mable made a wreath of Mock

Orange boughs, and some bouquets of violets, to lay upon the sunken grave.

Their work was nearly completed when the veterans, with music and banner, came, bearing flowers to decorate the soldiers' graves. Pausing wherever a flag fluttered to lay down a floral offering, they drew near to the potters' field and saw Mr. Darling and the children busy in their work of love. The chaplain came through the little gate to speak to the lame veteran, while the old comrades gathered around.

"Is this a soldier's grave which has never been marked?" inquired the commander.

"No, but it is the grave of one of the heroes of the Civil war," answered the old soldier with a sad smile.

Then he told the story of Mrs. Gray as he had previously told it to Mable and Ernest. When he had finished a command was given and, one by one, the old soldiers passed through the little gate and gathered about the grass-grown grave, each piling upon it a handful of spring flowers until it was almost hidden from sight. Then hats were removed and the chaplain made a prayer which told how veterans remember the mothers who stayed at home to pray and to weep.

Then the commander said, "We will add the name of Rebecca Gray to our list of honored dead, the G. A. R. will purchase a stone to mark her resting place, and each year, so long as we decorate comrades' graves, this one shall be remembered. We owe much to you, Comrade Darling, for reminding us of this sacred duty."

"Not to me, but to these children," answered the old soldier. "They wished to do something in memory of the heroes of the war and led me to think of this lone grave on the hillside."

An hour later, as they were again grouped under the apple tree, their grandfather told other stories of the war, but they thought they would remember always the one about Mrs. Gray, since they had seen her grave and helped to place her name upon the roll of our country's heroes.

**HITTING THE BULL'S-EYE.**

BY HOWARD DWIGHT SMILEY.

The old house was haunted, the neighbors averred, and it certainly looked the part, setting back among the big trees with its glassless windows and all overgrown with vines and the yard waist deep with weeds.

Both Minnie and I laughed at that idea of course. The place was a splendid bargain, with its twenty acres of land, a fair barn and chicken coop. A mighty good grab, we thought, for three hundred dollars, and we told the neighbors that we reckoned we could put up with the ghost all right if he minded his own business and let us alone.

I guess the owner, Miss Nelson, was glad enough to get that price for the place, because she hadn't been able to even rent it since her brother, old George Nelson, died, after living alone in the old house for over thirty years.

We heard a heap about Nelson from the neighbors. It was his ghost that haunted the place, they said. Crazy old miser, who wouldn't even be civil to those about him or let them come near him. Poor as a church mouse, too, although they never understood why he hadn't been able to make a good living off his farm, which was an exceptionally good one. They said it would have really been a relief to have him gone if it wasn't for his ghost capering around and scaring daylighters out of folks every once in a while.

They seemed so cock-sure about it that Minnie and I kind 'o looked for the old fellow the first few weeks, but as time went by and he didn't show up we gradually forgot about him, and I guess the neighbors did, too, as they stopped asking if we'd seen him yet.

Well, I fixed up the old house myself, with a daub of paint here and a nail there, until I had it in ship shape. Minnie, who is mighty handy at fixings, papered some of the rooms and tacked up some little knick-knacks on the walls that brightened things up considerable.

One stunt I thought was mighty cute; she found an old Sunday newspaper and on the back of one part was a full page picture in colors, called "Autumn," which showed a big marsh with trees around it and a flock of wild ducks flying across the sky.

Minnie cut these ducks out and stuck them up on the wall of the little den she'd fixed up for us to sit in evenings. She strung them out clear across the room so that they looked for all the world

**A DAUGHTER OF MARS.**

BY MRS. M. B. RANDOLPH.

Across her breast a kerchief,  
(Fair mode of by-gone day)  
Across her brow deep furrows  
Neath cap and locks of gray;  
Across the spicy orchards  
The young May winds at play.

In the sunlight, dreaming,  
She sits at farm-house door,  
Old, and bent, and wrinkled—  
Dame Margie—ninety-four.

It is the land's Memorial day;  
Its dead sons are her guests;  
The living slowly wend their way  
Past vales and wooded crests  
To meet again in silent halls  
Those guests that make no sign,  
Tho' wreathed with laurels year by year  
And toasted with love's wine.

The whistling bugle rends the air,  
The measured beat of drum,  
As o'er the hill her townsmen now  
With gallant feathers come;  
Still farther from the door she leans  
To hail the passing stars—  
Dame Margie, old and bent and wan,  
The child of many wars.  
With withered hand uplifted  
She makes the rev'rent sign:  
"I greet thee, flag, for grandsire, he  
Who fought at Brandywine."

Along the quiet countryside  
All gallantly they come;  
More shrill the wailing bugle's sound,  
More deep the moaning drum,  
Again the feeble hand stands out  
Against the May-morn lights:  
"I hail thee, flag, for my brave sire  
Who fell on Queenstown Heights."

On, on, they come with martial tread—  
Her townsmen down the way—  
Once more the trembling hand salutes  
The stars that kiss the day:  
"This, this," she cries with streaming eyes,  
"For him in youth I wed;  
Alas! My knight who dreamless lies  
With Buena Vista's dead."

Still closer now the banners come;  
Their wav'ring shadows fall  
Across the gate; more deep the drum,  
More shrill the bugle's call.  
Once more the rev'rent hand salutes:  
(A kiss the fingers sealed);  
She scarce can whisper, "For my boy  
On Chickamauga field."

Beyond the gate and far away,  
With measured step they go;  
She cannot see the floating stars  
Nor hear the bugle blow;  
But still she totters to her feet,  
Her white lips tense with pain:  
"This last," she sighs, "for thee,  
babe,  
On Santiago's plain."

Her kinsmen from the green halls come—  
The green halls of the dead—  
When brimming urns of eloquence  
Poured love's wine rich and red.  
They tell her of the songs they sung,  
And how they twined the brows  
Of loyal dead; the words they speak  
No answers can arouse;  
They take her hand; they strive to look  
Within responsive eye;  
They call her name; naught but the wind  
Gives back a low reply.  
Day declines; the sunset dies;  
The ruddy light of Mars  
Gilds lifeless brow of Margery,  
The child of many wars.

like a flock of live ones making for the feeding ground.

After all this we still had a hundred dollars left from the little nest-egg we had saved up when the doctor fired us out of the city on account of Minnie's health, and we put nearly all of it into a flock of chickens, for that was the idea we had when we took the place, to raise chickens for the eggs. We figured that at the high price they were bringing we could make a nice little income out of the hens after we got started.

Things looked mighty rosy, I can tell you. Minnie and I both pitched in and by October we had a nice clean flock of three hundred chickens, with half of them laying regular; and besides, we had the place nicely cleaned up and a goodly supply of winter vegetables put away in the cellar. There was a number of old dead trees on the place and I had cut these up into firewood, so we figured that we'd go through the winter very nicely and have a good start when spring came.

And then one day cholera took the chickens and inside of a week every last one was dead.

I tell you we felt pretty blue. We were depending on the eggs to keep us in groceries and other things, and now that the hens were gone and winter nearly on us we didn't know what to do.

Still we weren't going to give up without a fight, and I determined to find a job somewhere so as to earn enough to keep us going through the winter, and we figured that in the spring we could make a fresh start somehow.

There was a big saw-mill about four miles away, where I might find work, and one morning I started for there on foot. We hadn't been able to buy a horse yet. I didn't get much encouragement at the



mill. The boss must have seen that I was a city man and inexperienced, for he told me he had a full force of men and didn't think he'd need any more that winter.

When I got home again Minnie was waiting for me at the gate. As soon as I saw her face I knew something had happened while I was away.

"What's the matter?" I asked.

She came close to me, put her hands on my shoulders and looked up into my eyes with a funny little expression.

"We've got company, Jim," she said.

"Pshaw, is that so!" I exclaimed with a grin, although I felt a little dismayed at the thought of entertaining company in our present circumstances. "Who is it?"

"It's Uncle Jerry," she answered with a dubious little twitch of her nose, as if that should explain it all.

"Who's Uncle Jerry?" I asked, for I was still in the dark.

"Papa's brother," she answered, coming closer and putting her little brown head against my breast so I couldn't see her eyes. "I guess you never heard of him, Jim. I—you see—well, we never talked about him much at home—he was never home much."

Well, I saw right off that this was a relation she was ashamed of; but I didn't want her to think I cared and started right in to cheer her up.

"Never mind," I said, patting her head; "I guess we can stand him all right, seeing he's your uncle. Where is he now?"

"He's—he's up to the house asleep, and he's—he's drunk, Jim."

Her voice broke at this and she began to sob on my shirt front.

"Oh, sugar, girlie!" I cried, giving her shoulder a little shake. "What do you care? You didn't get him drunk. Come along and we'll go up and see him."

I put my arm around her and led her into the house. He was sitting in the big rocker, slouched down, with his feet stuck up on the sewing machine and snoring like a buzz-saw.

When I looked him over I didn't blame Minnie for feeling ashamed. He was a big hulking brute with red whiskers sticking out of his fat bloated face; his clothes were dirty and pretty ragged, and the backs of his hands and wrists were all covered with tattoo marks.

There was a big flask, partly filled with whiskey, protruding from his inside coat pocket and the first thing I did was to gently take possession of this, for, although I hadn't been properly introduced, I could see that he had about all he could comfortably tote, and didn't have any scruples about taking the balance, although I had no idea of touching the stuff myself.

"How'd he ever find out that we lived here?" I whispered.

"Aunt Mary told him. He says he don't know but that he'll spend the winter here."

"Oh, he does, does he?" I said a little grimly, for I didn't relish the thought of having this specimen around the place, even if he was Minnie's uncle.

"Of course we can't have him," said Minnie quickly. "He's not a bad sort when he's sober, but he has always drank heavily and none of us could ever do anything with him."

"Have you told him he couldn't stay?" I asked.

"Not yet. He acted so funny that I was afraid. I almost believe the man is out of his head, from the way he's been talking."

"Well, we'll let him alone for the present, girlie," I said as lightly as I could. "Let him stay a day or two until he gets sobered up and the booze out of his system and then I'll have a talk with him. When he is himself again and can understand our circumstances, he'll very readily see that we can't take care of him."

The fellow remained fairly quiet until we began eating supper; then he started moaning and mumbling and shortly woke up a little and felt for his flask.

Not finding it he sat up slowly and stared around the room with bleary eyes. He didn't seem to realize where he was until Minnie spoke and asked him if he wanted some supper. Then he got unsteadily onto his feet and stumbled out into the room, where he saw me for the first time.

"Who's this guy?" he demanded, after leering at me for a minute.

"This is Jim, Uncle Jerry," answered Minnie, rising from the table and stepping to his side to steady him, for he was pretty wobbly. "Hadn't you better sit down again, uncle? You don't seem to be very steady."

"Where's my bottle?" he mumbled, again feeling clumsily through his pockets.

"Jim has taken care of it," answered Minnie gently. "We don't think you ought to drink any more tonight, Uncle Jerry."

"Oh, you don't, hey?" he growled. "Say, you," he roared, turning savagely on me, "gimme that bottle before I hand you one!"

Of course I refused, at which he became very abusive and used some pretty strong language. It made me pretty hot under the collar and I was half inclined to throw him out of the house, but held my temper for Minnie's sake. I could see that she was taking this scene very much to heart.

After awhile, when he saw that his threats did no good, the fellow got maudlin and began to beg.

"Give me just one little drink," he sniveled pitifully. "I'm sicker'n a horse, and I'll die sure if you don't."

Well, I saw that he was in a bad way; he must have been drinking for months, judging from his condition, so I measured him out a portion in a teacup and let him swallow it.

This seemed to quiet him and after awhile he permitted us to lead him upstairs to the den where he lay down on the cot, which was the only spare bed we had. He at once dropped off into a troubled sleep and Minnie covered him with a quilt, after which we left him. I took the precaution to lock the door, however, so he couldn't get loose and go prowling around the house in case he woke up.

We heard nothing more from him that evening, and we retired at our usual hour. I guess it must have been about two o'clock when I was awakened by Minnie shaking me gently.

"What's the matter, girlie?" I asked sleepily.

"Uncle Jerry," she whispered. "He's making an awful noise."

I roused up at this news and sure enough I could hear him jumping around the den and rumbling and hissing to himself in a most uncanny manner.

Minnie didn't want to let me go, but I slipped out of bed and into my trousers, then tiptoed down the hall to the den door. This I softly unlocked and, opening it a little, peeped in.

I saw right off that I had a crazy man to deal with. The fellow had lighted the candle we had left on the table, so it was light enough to see what was going on. He had my double-barreled shotgun, which always stood in the corner of the den, and I remembered with a sickening feeling that I had neglected to remove the cartridges the last time I used it. He had both barrels at full cock and was stepping stealthily about the room in stooping posture, peering warily about as if in search of something.

"I'll get 'em," he kept mumbling to himself. "They're under the bed, now, but I'll get 'em in a minute," and he went rambling off into a lot of talk. I couldn't understand.

Pretty soon he straightened up and his eyes went leering around the room for a minute and stopped at a point just over the cot, as if he saw what he was looking for there.

"Look at the ducks! Look at the ducks!" he yelled suddenly, and before I realized what was coming he threw the gun to his shoulder and fired both barrels at the wall.

He must have been pretty weak, for the recoil bowled him over, and before he could recover himself I had him pinned down. He was too weak to offer much resistance, and after Minnie had brought me some rope I had but little trouble in tying him securely.

"This fellow's going to jail!" I panted grimly when I had finished.

"Oh, no, Jim," protested Minnie. "We won't have to do that, will we?"

"We sure will, girlie," I answered earnestly. "I can take care of myself all right, but there's no telling what a man with the delirium tremens will do, and I'm not taking any chances of you getting hurt."

She offered no further objection, and, after making sure he couldn't get loose, I hustled down the road to Steve Conkling's farm and roused him out. As soon as I explained the situation he hitched right up and drove over to the house, where we bundled Uncle Jerry into the wagon, raving and swearing, and covered him with blankets. Inside of an hour we had reached town and had him safe in the lock-up and a doctor there.

When I got back home I found Minnie up and dressed and looking mighty funny. She wouldn't say anything until she had led me up to the den. Then for the first time I had a chance to see what damage had been done by the gun shots.

I wasn't long in figuring it out. In look-



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ing around the room Uncle Jerry had spied Minnie's paper ducks and, to his bleared and distorted vision, they must have appeared to be alive and flying.

He did a bum job, for he overshot the ducks by two feet and the charges had torn a ragged hole through the lath and plaster, up near the ceiling.

"Phew!" I whistled. "That was a nasty shot, but I guess we're lucky it wasn't worse."

"Jimmy, dear," said Minnie, with a funny little smile, "I believe that shot was the luckiest thing that ever happened to us!"

"Lucky!" I cried in astonishment. "Why, what do you mean?"

For an answer she threw back the quilt on the cot, uncovering a heap of dusty greenbacks and gold coins that would have filled a peck measure.

"Where—where on earth did you get those?" I gasped in amazement.

"Out of the hole, Jimmy," she laughed. "I took the trouble to look in there after you had gone and found them. There seems to be some sort of a tin receptacle back of the plaster in which they were lying."

On investigation I found this to be the case, and that same night I climbed up into the little attic and found a cleverly arranged board that could be raised so as to drop the money into the receptacle, which was about two feet deep.

"Well," said I, after we had made these discoveries, "Uncle Jerry certainly hit the bull's-eye that time! This money must have been old man Nelson's; the neighbors said he was always something of a miser, you know. I suppose we will have to give it up and—"

"No we won't, Jimmy," broke in Minnie with sparkling eyes. "You know Miss Nelson died two months after we bought the place, and she was the only heir to the old man's estate. The money is ours, and it is going to start us all over again."

And that proved to be the case in the end. We counted the money and found that it amounted to \$2,700, which is not to be sneezed at, even if it does sound small for hidden treasure.

It isn't so small now, for it seemed to bring us luck and has grown rapidly, while we have one of the best stocked chicken farms in this section of the state.

As for Uncle Jerry, after he had recovered from his attack of the tremens, I had a good talk with him. As he was pretty sick, I didn't have much trouble in persuading him to go to a good institution, at my expense, where they treat cases of chronic inebriety. After he had taken the treatment he returned to us and has been my right hand man on the farm ever since, and a right good one, too—so it was a good shot all around.

SMILE PROVOKERS.

"You speak of everybody having a mission. What is yours?"

"My mission," said the parson, "is to save young men."

"Good," replied the girl, "I'm glad to meet you. I wish you'd save one for me."

Isaac (who has just recovered from typhoid): "Doctor, you have charged me for four weeks' calls; I will pay for only three weeks."

Doctor: "But I called on you every day for four weeks, Mr. Isaac."

Isaac: "Well, dere was one week I was delirious and I didn't see you come in."

The teacher asked, "When did Moses live?"

After the silence had become painful she ordered, "Open your Old Testaments. What does it say?"

A boy answered, "Moses, 4000."

"Now," said the teacher, "why didn't you know when Moses lived?"

"Well," replied the boy, "I thought it was his telephone number."

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At the first glad peep of morning sun, Go earnestly to your work undone, It will prove the best, and be more fun, To whistle along.

If you're out of sorts an' out of cash, Just whistle along! There's mighty-small chance to cut a dash, So whistle along!

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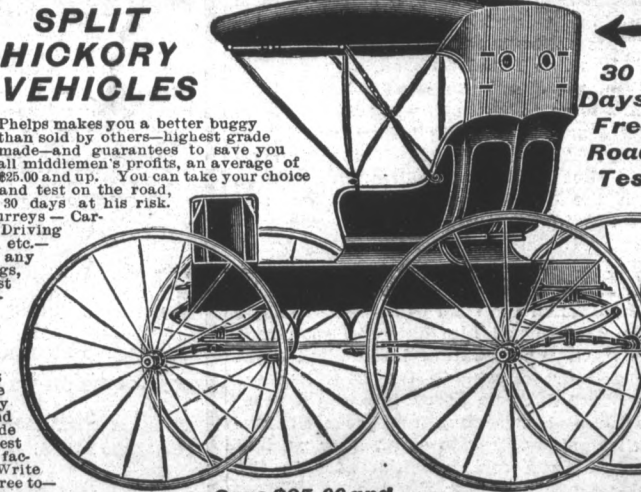
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