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Increasing the Efficiency of Farm Labor.

IT requires some careful planning to furnish farm help with steady, profitable work even throughout the busy season. Even the most industrious of men fall far short of their possible accomplishments unless the entire farm is managed on a far-seeing plan. This plan must be dominated by one thought; help must be kept busy every day. It is the man who has the faculty of keeping his help steadily on the move who accomplishes the big season's work. It is not the big single day's work, but the big average that measures the efficiency of farm labor. The few minutes and hours saved now and again tell mightily in the year's results. Storms and unusual seasons will enforce some loss of time, but there are always odd jobs apart from crop work that must be done some time in the year, and the year's work is done easier, with less anxiety, less rush and more profit if these things are done a few days or even a few weeks ahead of time, than when they demand immediate attention. It is business suicide for a man to employ labor without planning his farm work so that each hour will add most to the net income of the farm. This net income is made up of cash profits and direct benefits. The food for the family grown on the farm, the home comforts and conveniences, the permanent improvements, and so forth, should be taken into account in figuring the profits of the farm. All these items as well as cash profits should be taken into account when figuring the most profitable use of labor on the farm.

The varied demands of labor on the farm present a more complicated problem than the management of labor in the factory. To further complicate the problem there are unfavorable seasons and unexpected factors to contend against. Therefore, any system that will distribute the labor continuously over the year and furnish for the help the right amount of work at the right time and give the owner means of contending against unusual factors is a desirable one. Different crops demand attention at different seasons, and live stock call for the greatest attention when crops require the least. By an intelligent selection of crops which fit nicely into a general scheme of rotation and the selection of live stock which fit together, the labor problem is greatly simplified. Many scientific farmers have failed because they have disregarded this important economic question of the most efficient use of farm labor.

Large horses and implements save the time of men. The constant use of four-horse implements has greatly reduced the cost of operating many farms and this plan of working is rightfully spreading in all directions. On every farm there is some work that requires two-horse teams and odd jobs that call for one man. With a number of horses marshalled under one man's control, there is greater opportunity to have the other activities of the farm kept up without hiring additional help. Walking plows and one-horse cultivators are time-killers of the

worst sort. Only in exceptional circumstances is there an excuse for having a man waste his time plowing with two horses or cultivating with one. The big implement with a seat saves the strength of a man for other work and keeps his mind clear for planning. If one-half of the energy wasted in wearily plodding after a team of light horses and a walking plow were spent at other more remunerative work, a great saving would be made in the efficiency of the help. Small horses and out-of-date implements are of small account and retard the efficiency of labor on the farm where they are employed.

Crop rotation is a great economic factor in distributing the labor so regularly over the season as to greatly economize the acreage cost of tillage operations and to aid in settling the hired help question. By growing small grains, grasses and cultivated crops it is possible to keep the help busy continuously. The hay seems to conflict with the cultivation of cultivated crops, but fortunately early haying and crop cultivation can be sandwiched together to keep all hands busy without cutting down the hay when the weather is rainy. The interference of these crops is very frequent and unavoidable. The amount of hay one can profitably harvest without seriously interfering with the cultivated crops sets the limit on the

growing with other small grains grow a larger acreage of small grain than by growing oats alone. By sowing a portion of the small grain in the fall it saves the time of the men and teams during the spring and helps to distribute the work over the year. The wheat crop ripening before the oats means a more even distribution of the work at harvest time. The only objectionable feature of growing these two crops on the same farm is that they occupy the same place in the system of crop rotation, although on some farms the rotation is lengthened a year and wheat succeeds the oat crop and the land is re-seeded with clover and grass.

When two crops require labor at the same time, the question of which one to grow should be settled by calculating which one is the most profitable. This can be settled by keeping a record of the cost of labor, seed and fertilizer required to produce the various crops. When crops are being grown that do not require labor at the same time one cannot safely be guided by such a record. Some crops require quite an amount of labor but it comes at such a time as not to conflict with other farm work. These crops are often desirable even though they return less per acre than some of the others. On my farms potatoes pay much better than corn, but I grow the same number

for spring grains. Winter manuring, dairying, wood cutting and hauling keep up activities until spring comes round again. This furnishes an even amount of work for the same men during the year and is a great economic aid in solving the problem of keeping efficient and contented farm labor.

New York. W. MILTON KELLY.

FARM ECONOMY.

We have all read that little leaks sometimes sink a ship, and how often do little leaks in farm management make the difference between success and failure.

First among the leaks I will mention, is waste of time and strength on account of mismanagement, or more likely lack of management on the part of those who arranged our buildings. A bad arrangement of buildings can seldom, if ever, be fully righted. But many of the defects in a badly arranged set of buildings can be largely remedied by a little intelligent effort. A door here to enable us to pass through a partition instead of making thousands of trips around it, a feed chute there to save unnecessary trips up stairs or down, a window over yonder to enable us to work by the light of day instead of stumbling around in the dark. Now the spring crops are in the ground, the stock in the pasture, and the mows and bins generally empty, it is a good time to make provisions for these necessities before the rush of the harvest season.

A little medicine chest in a convenient nook, supplied with some articles for the cure of the more common diseases, will often save the delay of a trip to the drug store, or the expense of a visit from the veterinary, who may have other engagements at the time and come too late. But right here let me drop a word of caution lest a mistake in the diagnosis of the trouble may result seriously. "If it does no good it will do no harm," is too often a dangerous doctrine to follow in administering remedies, with the nature of which we are not well acquainted. The necessary loss of condition and occasional loss of life in diseased animals is a serious leak in the pocket-books of

many of us—a waste which we can ill afford. It is not my purpose to recommend the medicine chest as an assurance against the need of a veterinary at all times, for every intelligent farmer knows there are times when the only means of safety lies in the employment of a competent veterinary, and to do otherwise than employ one is the worst of economy.

The conservation of soil fertility is a matter not to be overlooked in the study of farm economy. On too many places the false economy practiced in allowing an inexcusable waste of fertilizing material is a matter worthy of serious consideration.

In the early days of Michigan, still well remembered by the writer, most of the grain was harvested among the stumps with cradle and rake, and on many of the better farms it was not an



Four-horse Team and Gang Plow, by which Efficiency of Labor is Increased by E. F. Chapin, of Osceola County.

number of acres he should keep in meadow. Beyond this, however, the hay becomes a competitor which requires extra labor or a reduction in the area of cultivated crops that can be planted. If possible it is best to hire extra hands during haying and harvesting and not neglect the crops that need cultivating. It is a situation where one must weigh the value of his crops against the wages of extra men and get them if he can. In many sections it is the common practice to hire additional help in June and use them during the rush of haying, harvesting and cultivating.

Winter grains and oats seem to be complementary. The wheat or rye is sown in the fall and harvested before the oats. This suggests that the farmer can take advantage of the seeding of these grains in the fall and by combining wheat

of acres of each, because I need the ensilage and grain to feed my dairy cattle. The growing of corn, hay and small grain makes it possible to feed dairy cattle and make manure to help out the potato crop. The potato crop, in turn, is handled by the same help required to care for the dairy cattle and grow the necessary crops to supply food for them. Clover and mixed hay, corn, potatoes and small grain are grown in the rotation. Each crop so succeeds the other that planting is continuous from April to the first week in June, when tillage follows immediately or begins before planting is over. Clover harvest begins late in June, followed by the mixed hay, wheat and oats, early potatoes, silage corn, apple picking and potato digging. Plowing and manuring begins early in the fall, the wheat crop is seeded and considerable ground plowed

uncommon occurrence for an abnormal growth of straw to largely increase the labors of harvesting, without any increase in yield over a normal growth. It need be no source of surprise that even our more enterprising farmers often touched a match to a large pile of straw after threshing, simply to get it out of the way, then during the winter watched with more regret than satisfaction the increasing size of the manure piles around their barn doors as they thought of the back-breaking job of cleaning out the yards in the coming spring. Nor need we be surprised if the less thrifty ones climbed over, walked around, or waded through these increasing accumulations from year to year until the old log barn rotted down, and had to be replaced by another, unless some far-seeing neighbor chanced to offer a small sum for the privilege of cleaning up their yards. But in years now long gone by, the more provident ones began to sound a note of warning which was heeded to some extent by the average farmer. But on how many farms is the fertilization material husbanded with the care the present conditions demand? The modern demand for baled straw in the city markets certainly is a strong temptation to sacrifice the future good of the farm for the present good of the owner's pocket-book, but in most cases it is, to say the least, a question of doubtful policy.

A few months since the writer called at a farm where 30 or 40 head of cattle were kept in a large basement barn. Much of the winter feed was bought at a large expense. Under and around the litter carrier was a pile of manure four or five feet high, covering as much ground as a fair sized straw stack, and showing unmistakable signs of having withstood the action of the elements for at least one summer. For yards around this pile men and stock waded through a mixture of mud and manure several inches deep. It may properly be mentioned that the owner of this farm was a busy man and none too fore-handed. He may not have felt that he could hire the necessary help to draw out the manure from all this stock as it accumulated. In the judgment of the writer, he could not afford the loss of so valuable an asset of farm economy, to say nothing of the inconvenience and unpleasantness of living in close contact with a large pile of fermenting manure, with its aroma, and its thousands of accompanying flies in their season.

We are not disposed to overlook the difficulty of obtaining the necessary help at reasonable wages, but for the sake of our homes as well as our farms, let us, one and all, make a heroic effort to take care of the manure pile.

It is not that I consider this the proper season for this work, but if the work has been neglected, it is better to do now what should have been done last winter than to wait longer. If no other place is available, a light dressing on our pastures certainly will not be amiss, especially if there are dry knolls that are unproductive.

Are we remembering the weeder and the cultivator at the opportune moment? On our heavier soils, cultivating after the ground is packed by rain, before it is crusted by drying winds and sun, is of the utmost importance. And often in case of light rains during a dry time, the immediate use of a cultivator is a factor in conserving moisture that the farmer cannot afford to overlook.

To meet the necessary expense of putting in a crop, then allow the yield to be cut down in both quantity and quality for the lack of a little prompt attention to cultivation is a leak in the management of entirely too many of our farms.

Kalamazoo Co. L. H. S.

FARM NOTES.

Seeding Clover in Late Summer.

I have a piece of new seeding which is not a good stand, being spotted, with considerable sorrel present. I intend to plow under the clover, as the soil is evidently not in first-class condition, and re-seed the field as soon as possible. Now would it be practicable to attempt to sow the clover about the first or middle of August, after liming the field and fitting a good seed bed? Is there a nurse crop you would advise sowing at the same time? Alfalfa is sometimes seeded in this way and would it be advisable to try the plan with red clover?

Ionia Co. H. W. W.

There is little doubt that there would be a good prospect of getting a stand of clover by the method proposed in this inquiry, always providing there should be sufficient moisture in August at the time of seeding to insure the germination of the seed and the rapid growth of the plant. This could be insured by plowing the present partial stand of clover under

sufficiently early in the season so that the moisture might be conserved by frequent cultivation, which would also insure a good seed bed for the late sown clover. Several farmers in the different sections of the state have reported excellent results from seeding clover in August with a very thin seeding of rye, using about one peck per acre. Others use a very thin seeding of buckwheat as a nurse crop, while still others sow dwarf Essex rape, permitting it to stand over winter as a cover crop. Any one of these plans would probably be all right and in an especially favorable season the clover would get of sufficient size so that a cover crop would not be needed. One should be guided by conditions at the time of seeding in this respect in order to secure the best results.

Weevil in Seed Peas.

I have 2½ bushels of seed peas that I want to keep over until next year and there are a few that have a black bug eating in them. Is there anything I can use that will rid the peas of them, and how applied?

Clinton Co.

J. R. H.

The weevil which infests peas lays its eggs on the pods while the peas are green directly over the seed, and the grub eats its way through the pod into the pea, where it passes the winter and emerges about planting time. Thus, peas which have been infested are of no value for seed purposes. While seed peas may be kept over for one season in a closed receptacle even though slightly infested as the beetles which emerge during the time will die, it is better to treat the seed peas for their eradication by placing in a tight box and subjecting them to the fumes of bisulphide of carbon applied at the rate of one to two ounces to 100 pounds of seed peas. This treatment should last from 36 to 48 hours before the box is opened and one should be careful not to go near same with a light as the liquid is very volatile. Other methods of destroying the weevil are subjecting the seed to a temperature of 145 degrees F., which will kill the weevil and will not destroy the germinating power of the seed, or the peas may be immersed in boiling water for one minute. However, for seed which one desires to keep over, the bisulphide of carbon treatment would be far the most preferable. Simply place the liquid in a shallow dish on the surface of the tight box holding the seed, and cover same when it will evaporate, and the gas being heavier than air will reach every beetle which may be in the seed.

Seeding Alfalfa With, vs. After, Rape.

I am an old subscriber to your valuable paper and have gotten much information and advice from it. I have a field of about 1¼ acres which I intend to sow to rape for hog pasture. Now, can I disk same up in September and sow to alfalfa, providing the weather conditions are favorable? Any information will be appreciated.

Genesee Co.

C. D.

It would be entirely practical to seed rape in the above pasture during the early part of the season and then disk and sow to alfalfa in the early fall, but it would be a better plan in the writer's opinion to seed the alfalfa this spring when the rape is sown, then, if the hogs are not permitted to root it up and if it is not pastured too closely, you should get a good stand of alfalfa, which would go into the winter in much better condition and with a greater prospect of making a good crop next season, than would be the case if it were sown late, as suggested in the inquiry.

Fertilizing Cucumbers.

Would an ounce of fertilizer testing 4:10:10 and an ounce of land plaster, applied in hill, be enough for cucumbers on sandy land which is rather poor in fertility, or would it be better to add 200 lbs. of nitrate of soda to a fertilizer testing 2:10:10 at the rate of 200 lbs. of soda to 500 lbs. of the other goods?

Kent Co.

A. A. L.

The writer's experience in growing cucumbers leads him to believe that for best results on a rather thin sandy soil it is necessary to use stable manure. This may be applied liberally and plowed down and a small amount of fertilizer used in the hill as suggested, or a shovelful of well rotted manure may profitably be applied in the hill at the time of planting. In case the latter plan is used the manure should be composted, the rows furrowed out and the manure placed in the bottom and covered with about two inches of dirt before the seed is planted. In case the stable manure is applied broadcast, a small amount of fertilizer applied in the hill and well mixed with the soil will give the plants a good start until they can reach out and avail themselves of the fertility in the stable manure. This organic matter will supply the plants with nitrogen and a measure of the other essential plant foods much

longer than will the commercial fertilizer, especially if nitrate of soda is used, which is very readily available. It will also help in the conservation of moisture, which is an important factor of success with the crop on thin sandy land. But in case the commercial fertilizer is used as suggested in this inquiry, and it is desired to supplement this with nitrate of soda as suggested, it would be better in the writer's opinion, to make the application later in the season after the plants had attained considerable growth in which the application of fertilizer in the hill would aid them.

HOW TO APPLY FERTILIZER ON POTATOES.

Would you advise me through Michigan Farmer which is the best way for me to use fertilizer on my potatoes? I have six acres of sandy land to plant and want to use about 300 lbs. to the acre. Would it be best to drill it or put it in hills? Will the fertilizer burn up the potatoes in the hill if put in with them?

Genesee Co.

B. H. F.

If I intended to use only 300 pounds of fertilizer per acre on potatoes I would put it all in the drill with the seed. This can best be done with a modern potato planter with a fertilizer attachment. These machines are so constructed that the fertilizer is dropped and does not come in direct contact with the seed. The fertilizer is distributed ahead of the seed and then the seed is dropped and finally covered by the disks behind.

If B. F. hasn't a modern potato planter with fertilizer attachment he can apply this fertilizer by furrowing out his ground for planting. This can be done with a common shovel plow or it can be done with a common breaking plow and the furrows should be about four inches deep. Then distribute the fertilizer by hand in the bottom of the furrow and it ought to be mixed with the soil. This can be done by taking a common one-horse cultivator and taking off the outside teeth so that there is only two or three teeth left when it will run in the bottom of the furrow. Let the horse walk in the bottom of the furrow and the cultivator teeth will mix the fertilizer thoroughly with the soil. Then drop the potatoes and cover them as you think best. I would prefer to cover them with a hoe by one good big hoe-ful of dirt. Then in a day or two you could run over the field with a smoothing harrow and fill in some more of the dirt, and before the potatoes come up run over again, perhaps crosswise, and this will make the ground level. This harrowing after planting and before the potatoes get up will destroy many weeds.

The practice of some of the best potato growers, after the potatoes get nicely above the ground, is to go over the ground with what is known as a potato hoe, and by the way, the modern potato planter can be made into this sort of an implement. Straddle the row and by having the disks set at the right angles a layer of dirt can be covered directly over the potatoes. This covers them up but they will soon come up through the dirt. Then in a day or two you can go over the ground with a common weeder crosswise and remove a portion of this dirt. This again destroys numerous weeds. By working the potato field in this way it usually is not necessary to use a hand hoe in the potato field at all.

My judgment would be that on sandy soil 300 pounds of fertilizer to the acre is hardly a sufficient amount. I would say that it would pay better to use 500 pounds of fertilizer broadcast by fitting the ground before the potatoes are planted. This can be put on with a wheat fertilizer drill or with a fertilizer distributor, and thoroughly harrowed or worked into the soil. Then when you plant your potatoes use the 300 pounds in the furrow as directed above. If B. F. has not faith enough in the fertilizer question to use this amount of fertilizer on the entire six acres I would suggest that on one acre he use 500 pounds before planting and 300 pounds at the time of planting, then on the balance of the field use 300 pounds. Dig the acre of potatoes where the 800 pounds has been used separately, and compare them with any other acre where only 300 pounds was used and note the results. The only way we can find out the profitable amount of fertilizer to use on different crops is by careful experiments on our own land.

COLON C. LILLIE.

DESTROYING WOODCHUCKS.

There is an occasional member of this family who personally may not be an undesirable citizen, but who chooses his home outside of the limit of one's desires. A meadow infested with the holes

and mounds of dirt are serious in interfering with all modern machinery. One family of woodchucks had their abode near where early peas were planted and they kept the peas pastured off short. A stick of dynamite put into their dens and then closed up tightly and exploded is death and burial at one operation. The best plan is to use a bar or augur and put the charge several feet into the hole and stop up all the entrances. Do not tamp earth about the cartridge, the explosion gives a greater jar when not tamped. There are professionals in some countries who use carbon-bisulphide for woodchucks and prairie dogs, but to the average farmer who wants quick work and on a small scale, dynamite is more desirable and less dangerous.

Shiawassee Co. JAS. N. McBRIDE.

DOES FERTILIZER LOSE STRENGTH BY BEING HELD OVER?

Would you please inform me if fertilizer that I have had on hand one year is as good as the fresh article would be. Kindly advise me which fertilizer you would use on sandy land that has not much humus, and which is now sown to rye. I want to sow clover with fertilizer and later cut the rye for hay, as we never get a good stand of clover where the rye is allowed to ripen.

Oceana Co.

L. F.

If the fertilizer is kept in a dry place it does not lose its strength. Fertilizer when shipped by the manufacturer, is very dry. It has been artificially dried so that it contains no more than eight or 10 per cent of moisture, and it will keep indefinitely if stored in a dry place. There is no chance in losing any plant food out of a fertilizer as long as the fertilizer is dry. If it gets wet and ferments then you lose some ammonia, but if it is kept in a dry place it will be just as good ten years from now as it is today. Sometimes fertilizer bakes in the sack when it is kept over. Acid phosphate sometimes bakes into hard lumps that are almost impossible to pulverize, and of course, there is some loss here because it is impossible to crush this and get it in good condition, but a complete mixed fertilizer rarely forms hard lumps. It just simply bakes a little and it can be easily pulverized by striking the bag with the back of a shovel.

A good fertilizer to help clover on sandy land that is seeded to rye would be one that contained a good fair per cent of potash and phosphoric acid. I should say that a fertilizer containing one to two per cent of ammonia, eight to 10 per cent of phosphoric acid, and two to four of potash would be as good as any. Of course, you could buy a higher grade fertilizer and might possibly get a little more plant food for your money, but there is one thing in the use of fertilizer that few people figure on that is very important, and that is distribution in the soil. Now a small amount of very high-grade fertilizer will not give the results that a larger amount of low-grade fertilizer will because you can't possibly get distribution. For instance, I would rather have the same number of dollars worth of 2:8:4 fertilizer than I would of 4:16:8 fertilizer. I am sure I can get better results. I wouldn't use so much of the high-grade fertilizer and consequently I would not get thorough distribution in the soil. With the same number of dollars' worth per acre I am sure one would get better results with the lower grade than he would with the higher grade, but with equal amounts of the same analysis one would get better results with the higher grade.

COLON C. LILLIE.

RATE OF SEEDING CORN.

The Kentucky Experiment Station has for the past two years been carrying on experiments in an effort to determine the rate of seeding that will give the best yield. It was found that on rich soil in a normal season relatively thick planting will give the highest yields. In dry seasons, thin planting gives the best results. On poor land the best yields will be secured from rather thin planting. On good corn land of fair fertility, three stalks per hill or the equivalent in drilled corn will probably give the best results when an average number of years is considered.

Iron sulphate has been found of special value in controlling chickweed and other early weeds in strawberries, alfalfa, and other crops. The Maryland station used this at the rate of one and a half to two pounds per gallon of water during the dormant season, preferably in the fall after frost when the weeds were small.

LIVE STOCK

THE FARM TEAM.

The farmer of today who will look back forty years and consider the tools and machines then in use, and compare them with what are used on the average farm today, will easily realize how much more important the team is now than in the past.

In those days the team drew the wagon in summer, the sleight in winter, the plow, a clumsy affair compared with the steel plows of today, the spike-tooth harrow, which often consisted of a tool called a "crotch drag," which, as I once heard a farmer remark, "scratched the ground about as much as would a cat when dragged by the tail." Few farmers owned a mower, except the scythe, and fewer still a dropper, or hand rake reaper. There were no wheel plows, disks, spring-tooth harrows, drills, riding cultivators, harvesters, tedders, side-delivery rakes, hay loaders, hay slings, corn harvesters, corn huskers, and other tools which the modern farmer considers so necessary today, and for which the farm team is called upon to supply motive power. It can be easily seen how much more important the team has become to the farmer of today.

The farm horse has kept pace with the demands made upon him. Instead of a scrub weighing a thousand pounds, or a little more, we have many weighing half as much again to handle the heavy machinery which we now use. The horse is better, but he needs better care than did the scrub, the latter could stand a great deal of neglect and abuse, and still live to a good old age, and do a lot of work, but the finer animal, like most finer things, must have better care. The old scythe could be hung in a tree for months at a time with little damage, but the mowing machine needs to be protected from the elements. The scrub could be left out in the cold, exposed to the hot sun, fed on straw, and stabled on the warm side of a straw stack, overworked and over driven, but that kind of treatment would kill our big horses of today, especially the over driving, though some men do not seem to realize it. I have seen so many of the large horses ruined by over driving. The horse weighing from 1,200 pounds up is not a speed machine. The farmer who has a pair weighing 2,500 or more has a team to be proud of, but his pride should not be in the way they can trot, and he should be willing to let the lighter horse pass him on the road. The heavy horse should be trained to walk fast when without a heavy load, and if so used will give double the service that the over driven team will. With careful driving, feeding, and general kind treatment the heavy team is the farmer's most valuable asset.

Eaton Co.

APOLLOS LONG.

TEACHING THE COLT.

One of the most common mistakes is to let the colt grow up big enough to work before bothering to teach him much. After doing as he likes until he is big and willful he is ready to put up a big fight for his own way and sometimes gets the start of his trainer and learns tricks that he never forgets.

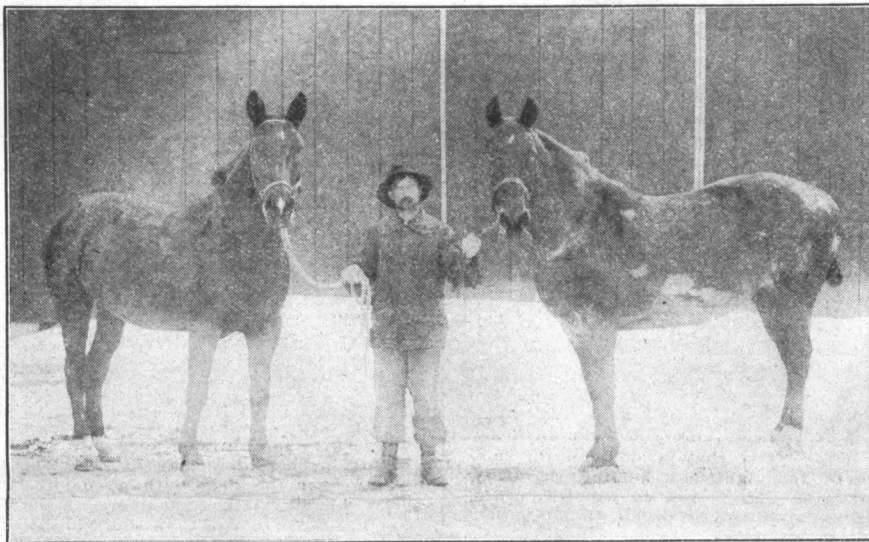
Taken in time it is an easy matter to teach him right and he takes each lesson as a matter of course, never putting up a very big fight as he becomes used to being controlled while he can be controlled easily and never thinks of resisting much after he is big enough to be very hard to manage. Then, too, most of a colt's apparent stubbornness comes from attempts to pile lesson on lesson so fast that he becomes confused and so mixes up his lessons that he does not know what you want of him, and no wonder, for he must be taught not to resist a part of his harness (bridle or halter), and yet to use all his strength against his collar, breast straps and hold-backs.

A colt, like a child, needs to be taught one thing at a time until he understands that well, then teach him another and so on, giving him reviews often enough to have him remember what he has been taught. The first lesson to teach a colt is that you are his friend, and there is no better way than to be on hand when he first comes to town and help make him comfortable and see that he gets his rations as soon as he is hungry, especially if his dam is young, as they will often not let a colt nurse at first without some fuss. Continue to care for and pet him

and when a few days old a taste of sugar, later of salt and still later of an apple, oats, and other nice things, will keep up the friendship.

Next he must be taught to be controlled. This lesson is more complicated, as he must be taught to be controlled in different ways and so needs a variety in the lessons. I usually teach him first by holding him and petting him when he wants to go until he gives up. Then I teach him to be led. A good way to begin is to have someone lead his dam and you lead him, letting him follow under your control. Then teach him to go away from the mare and back and to be tied to her when you drive her. He should be well halter broken at eight or ten days old if he is strong and all right. When leading a colt give him the word to start, also to stop. Learning him to always stop at the word and never to be afraid of anything are two of his hardest as well as most important lessons, and too much trouble can hardly be taken on these two things, as on these two lessons being well taught lives are often dependent. You need not be rough with him but you must always compel him to stop at the word.

After he learns to stop close by, let him go farther and then stop him with a long rope or other means. To teach him to be fearless let him see and smell of anything he is afraid of until he ceases to fear it. Give him plenty of time to sat-



A Typical "Business" Farm Team. Owned by Andy Woods, of Gratiot County.

isfy himself and do not whip him unless you have to to keep him from backing up.

Teaching the colt to back is easy if done right. I take his mother out of the barn and then hold his head towards the manger so he has to back out of the stall to get out, at the same time pushing back on his head and telling him to back and he will soon learn to back out of the stall promptly. Then teach him to back up when outside of the barn.

When he is old enough to drive use an open bridle and give him a few lessons in backing before he is hitched to anything. After that a cart is nice for a few more lessons.

From the first, when handling a colt, I pet and rub his legs and feet and as soon as he is halter-broken I tie him up and lift up his feet and pet him at the same time. I bend his legs so as to bring his feet up under his body and as soon as he does not resist you can take them the other way. If he tries to kick do not let him draw up his legs so as to get any slack to kick with.

When teaching your colt always pet him so he will not think you are imposing on him and never let him be teased. I teach the colt to drive in the harness alone first, putting the lines through the straps that hold the thills in place until he drives good that way. If you teach him with an older horse first he learns to pay too much attention to the other horse, instead of to you.

Do not ask him to pull much until he learns how. Begin with so little that he does not notice that he is pulling and increase the load slowly enough so that he will never think that he cannot draw it. Balty horses are made easily by overloading at the start, also a good many cripples.

Use strong harness, especially the bridle and lines, and keep your horse in reach, especially when he feels good; also tie strongly when you leave him.

I do not check my colts high until they are used to the bit, and not then for a long drive or hard work. Don't jerk colts but use an easy bit and keep their mouths' easy.

Isabella Co.

F. G. SMITH.

HOGGING DOWN CORN.

There is such a diversity of opinion and results from allowing hogs to harvest the corn crop without any further attention than fencing off a section and turning in that one wonders at these conclusions. My own observation is that the results are dependent on the ability of the swine to get green succulent food in connection with the corn, which makes the practice profitable.

Adjoining an eight-acre section of corn field was 20 acres of rape which had been sown at the rate of three pounds of rape seed to the acre with the grain crop. The rape crop was most excellent, especially as it was a wet season, and the rape made many pounds of pork and mutton from about 18 cents per acre investment in seed.

The wet season made corn harvesting impracticable except by the way of the hogs which also had access to the rape pasturage. The hogs were very impartial and seemed to spend fully as much time in the rape field as in the corn and the gains were very satisfactory. There is no reason why, with unlimited corn, that the appetite of the hog will not become satiated and that overeating prevents economic assimilation of food.

The various experiment station reports are unanimous in the statement that corn alone is neither an economic nor a balanced feed. The mere fact of it being

fed in the field rather than in the pen would not change these conditions. A mixed lot of swine, that is some small pigs to pick up the scattered grains, is desirable. An old-fashioned flock of turkeys would be an acquisition and profitable in this line. If any one has the idea of feeding off corn it would be well to make some provision for rape or clover. Shiawassee Co. JAS. N. McBRIDE.

LIVE STOCK NOTES.

The hogs coming to Chicago and other western markets are averaging well in quality, and the average weights are fairly large, but the average is decidedly lighter in weight than at corresponding periods in recent years. The heavier hogs are the best sellers, eastern shippers usually wanting this class of barrows, and more weighty, well-finished droves could be utilized to advantage by the packers. It does not seem that stockmen who are well situated for preparing hogs for the market could make any mistake of judgment by finishing off their hogs carefully and making them weigh up well before shipping. It may be regarded as a settled fact that hogs are going to sell extremely high for months to come at least, for there is no excessive supply in any part of the country at the present time, according to reliable advices, and the eastern supplies of marketable hogs are extremely small. Eastern farmers should go into breeding and raising swine much more extensively, and the average farmer of the west, middle west and southwest could raise larger numbers of swine than he has been doing and profit well by doing so. The country must grow larger crops of corn and more cattle, hogs and sheep in order to keep pace with the rapidly increasing requirements of our fast growing population. Hogs may sell off temporarily, as they have done frequently of late, but it is noticed that they rally after any considerable break, as farmers' generally decline to sell on reduced values. The spring pig crop is below normal, according to all accounts, and stock pigs are too valuable to part with.

Cattle marketed in April last year at western points were decidedly superior in quality to those received last month. Higher prices of food have been responsible for the free marketing of cattle lighter in weight than in other years and with much less finish than last year.

The persistent demand for prime Holstein dairy cows and their constant scarcity have combined to raise prices several notches, and fancy cows have been sold recently in the Chicago stock yards for \$70@80 per head.

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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.

Enlarged Fetlock Joint.—I have a four-year-old colt that sprained his ankle last winter; was quite lame for three weeks, but recovered from lameness; however, the joint remains thick and what I have applied fails to reduce it. F. R. Henderson, Mich.—Apply one part iodine and 10 parts lard two or three times a week. Kindly understand it is very difficult to reduce a bunch of this kind and it is not always good practice to treat a case of this kind while working the horse.

Corns.—Have recently purchased mare that was used for driving on stone road which has caused her to have corns in both fore feet. What had I better do for her? C. K. Reese, Mich.—Discontinue driving her on hard roads; her place is on farm, walking in soft ground. Remove pressure off corn and avoid keeping heels too high. A bar shoe with wide web relieving inside quarter of pressure, and be sure not to cut away too much of sole of foot, and stand her in wet clay an hour or two every day.

Chronic Grease Heel.—I have a horse that first had a cracked heel, later a large sore appeared, making skin rough and scaly, besides his legs stock when standing in stable. He is a very hearty eater and has been well fed, but he does not lay on flesh. G. N. Pompei, Mich.—Give him 1/2 oz. of Fowler's solution at a dose in feed two or three times a day, and apply one part salicylic acid and six parts vaseline to sore parts of skin every day or two.

Melanotic Tumors.—I have a white horse that has several warts on tail that are growing and I would like to know how to cure them. A. H. Sparta, Mich.—These little black tumors should be cut out. This ailment is peculiar to white horses and the bunches are filled with a black substance. No internal remedy required.

Bunch on Hock.—Our four-year-old colt has a bunch on hock that is causing some lameness. W. H. E. Babbling Brook, Mich.—Apply one part iodine and eight parts lard to bunch every two or three days. If he kicks in stall, pad post.

Spasm of Larynx.—I am much interested in veterinary column, but fail to find a case treated like mine. We have a mare that I bought last spring that has coughing spells and she seems in great distress until clearing out her head. This mare is eight years old, raised colt when five, another when six years old. M. J. S. Barryton, Mich.—Apply spirits of camphor to throat twice a day and give 2 drs. fluid extract opium, 1 dr. guaiacal and 1 oz. glycerine at a dose in feed two or three times a day.

Chronic Leucorrhea.—I have a mare 14 years old that has been troubled for some time with what our local Vet. calls leucorrhea. His remedies have lessened discharge, but as soon as treatment is discontinued she is as bad as ever. This mare is not worth more than \$50 or \$60, consequently a big veterinary bill is not justifiable. E. A. R., Maple Rapids, Mich.—First of all in the treatment of leucorrhea it is well to know that the food supply should be of the best quality, highly nutritious, of a really digestible and laxative character and she should be liberally supplied. Give 1/4 dr. fluid extract of belladonna root at a dose in feed three times a day; also dissolve 1 oz. carbolic acid in two quarts of water and inject her once a day. Also dissolve 1 dr. permanganate of potash in a gallon of water and use this lotion once a day. Give her a dessertspoonful of Fowler's solution at a dose in feed three times a day.

Internal Hemorrhage.—I bought a mare six months ago; for three months she appeared to be all right, then became lazy and a little dumpy. Her appetite was fairly good, but for three weeks before she died she was very dull. I put her in the barn in the evening and thought she was as well as usual, but found her dead in the morning. I thought perhaps she had been doped with arsenic or some other drug. C. L. B., Charlevoix, Mich.—Your mare died of either hemorrhage of brain or an internal hemorrhage.

Canine Distemper—Eczema.—I have a dog that has had distemper for the past three weeks. He seems to wobble in hind legs as if losing control of them. Distemper has been prevailing in this locality for the past three weeks and if you will give me a remedy I shall be glad to cure my dog and tell the neighbors how to cure theirs. Nearly every dog that had distemper in this locality has died. I also have a colt that must itch, for he rubs himself, and especially on back. Have examined him for lice and found none. F. B. Unionville, Mich.—Canine distemper kills 50 per cent of pups that have it in winter season and 30 out of a 100 during mild weather, or it leaves them with chorea, which is incurable. For the past few months I have used curative vaccine with good results in the treatment of distemper, but with your dog give small doses of nuxvomica and quinine, and if it fails to help him in two weeks better destroy dog. Dissolve 1/4 lb. cooking soda in a gallon of water and apply to itchy parts of colt twice daily. Give him a teaspoonful of Fowler's solution.

(Continued on page 627).

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BY FLOYD W. ROBISON.
(Continued).

The object, of course, of the introduction of food into the animal system is that it may be later transformed into a form of energy with which the animal organism may perform some function. This energy may take a variety of forms. It may take the form of the energy of moving, that is, of walking or running; or it may take the form of energy of work whereby it performs some task such as pulling or lifting; or it may take the form of energy which is required in the involuntary functions of the body, such as breathing. Then again, it may take the form of the energy of heat which maintains the temperature of the animal body. Whichever form of energy the food becomes converted into, these different forms are exactly equivalent to each other. For example, the energy used up by the muscles in walking is exactly equivalent to the energy of heat produced from the destruction of the same amount of tissue which is destroyed during the muscular exertion of walking. Likewise with lifting, or any task, or even the involuntary functions of the body.

Comparison is Based on Heat Production.

In the study of nutrition it has become desirable to compare different food materials on the basis of heat-energy-producing values and various expedients have been proposed and utilized for making this comparison. Now that these various functions are interchangeable in their values the customary method of determining their relationship has been by determining the heat equivalents of the food consumed. For this purpose there has been devised an instrument known as the calorimeter.

The Calorimeter.

In the calorimeter a certain definite quantity of the food material to be considered is burned so that all of the energy in that operation is transformed into heat. The instrument is so devised that this heat is again absorbed by a body of water, which surrounds the calorimeter and which has inserted in it a very sensitive thermometer whereby the slightest increment of temperature is readily observed and noted. These studies have led to the adoption of certain standards of heat.

Calorie Defined.

The common standard is the Calorie, which means the amount of heat required to raise one pound of water through approximately four degrees of temperature, Fahrenheit, or in the metric system, one kilogram of water through one degree, Centigrade. Inasmuch as calories in feeding materials usually run into the higher numbers, for convenience what has been called the Therm is used also. One Therm is the amount of heat required to raise 1,000 lbs. of water through four degrees Fahrenheit, or 1,000 kilograms of water through one degree Centigrade.

Example.

Now let us consider, for example, the energy value of, say timothy hay. By taking a definite portion of timothy hay and burning it in the calorimeter, thereby determining the amount of heat given up to the water, we would find that 100 lbs. of timothy hay containing 15 per cent moisture would yield 175.1 Therms (Henry). In the same way if we should burn in the calorimeter 100 lbs. of oat straw containing 15 per cent moisture, we would find an energy equivalent in the form of heat of 171.0 Therms (Henry). If we should burn 100 lbs. of anthracite coal in the same way, we should find an energy value in the form of heat of 358.3 Therms (Henry). The fact that we may compare feeds from their heat producing values has led to the frequent comparison with the fuel as used in an engine.

Feed is Like Coal in an Engine.

When coal is burned in an engine or in a calorimeter there is a certain portion of non-combustible matter left behind, which we term ash. In the same way in the burning of a feed, timothy hay, oat straw, etc., there is a considerable amount of ash material left behind. This ash, or mineral matter has no energy producing value and therefore in a feed the higher the ash content of the same the less accordingly is the heat or energy producing value of that feed. This is not the undigested material but it is the mineral matter which fulfills an important office

in the animal mechanism but which in mature animals finds its way ultimately into one of the channels for the removal of the waste matter from the body, i. e., the urine.

Not All the Feed is Attacked in the Body.

Suppose, now, in the combustion of fuel in an engine or in a calorimeter, a portion of the fuel escapes complete burning, then the energy or heat producing value of that fuel is lowered by just the amount of coal which escapes being burned. As in the animal organism, if any of the feeding material passes through the animal system unchanged or only partly changed, the animal body has derived less nourishment than the real value of that material will represent. Consequently after the feeding stuff has been burned in the calorimeter and its energy producing value in the form of heat has been ascertained, it is desirable then, in feeding it to animals, to ascertain how much material passes through the system unchanged which should be deducted from the amount consumed so as to determine the amount of energy which has been taken into the system by the animal. Nor is this all.

The Indigestible.

Frequently in the furnace not only will whole pieces of fuel pass through the grates unattacked but also in certain grades of fuel so much slag is present that in the furnace this slag melts and fuses around other particles which otherwise might be burned. Consequently, a considerable portion in this way escapes being converted into heat. Similarly in the animal system we find that in nearly all feeds there is a certain proportion, more or less variable depending upon the nature of the feed, which escapes being utilized, not because it is unattacked but because it resists digestion. This residue we say, then, is indigestible. So, then, to the amount which passes through the animal organism entirely unchanged we must now add the portion which is undigestible. This is all to be deducted from the energy represented by the food consumed, before we can determine how much is available to the animal body.

Energy of Radiation.

Now, when fuel is burned in the engine a certain amount of the energy is utilized in warming the engine and a certain amount is radiated from the surface of the boiler and other parts of the engine which, of course, does not become converted into steam in the boiler and is not utilized on that account in the engine. This we may consider to be the amount required to keep the engine in shape to perform work and likewise the amount used to make available the other heat which is transformed into real energy.

Energy of Maintenance.

When food is eaten by the animal, before it may be transformed into energy in the animal's body it must be digested and treated in the multitudinous ways in which it is treated in the animal body. All this requires the consumption of energy and depending upon the nature of the feed this energy utilized in preparing it varies. Consequently before we can determine the real energy available to the animal body from the feed consumed we must deduct that food for absorption. This factor then, is added to the other two factors, which in turn is to be deducted from the total energy of the food. We then have the following:

Resume.

Assuming that timothy hay is the feed consumed, we know that 100 lbs. of timothy hay when burned in the calorimeter are equivalent to 175.1 Therms. We know, likewise, from this previous discussion that the animal body cannot derive 175.1 thermal values from 100 lbs. of timothy hay but there must be deducted from this the heat equivalent of

First, the hay which may pass through the animal system unchanged.

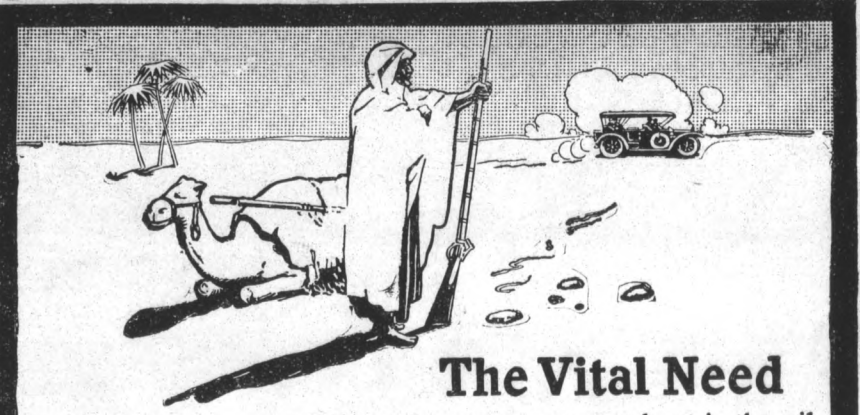
Second, the undigestible portions of the hay; and

Third, the energy equivalent of the digestion and absorption of that hay.

The remaining value we call the net available energy of the hay.

Had to Return More than \$150.

F. E. Moninger, Camden, Mich., who ran a three-line advertisement two times to advertise seed corn, writes as follows: "We were snowed under with orders for corn and were compelled to return over \$150 worth of orders. We had 150 bushels to offer, which only lasted two days."



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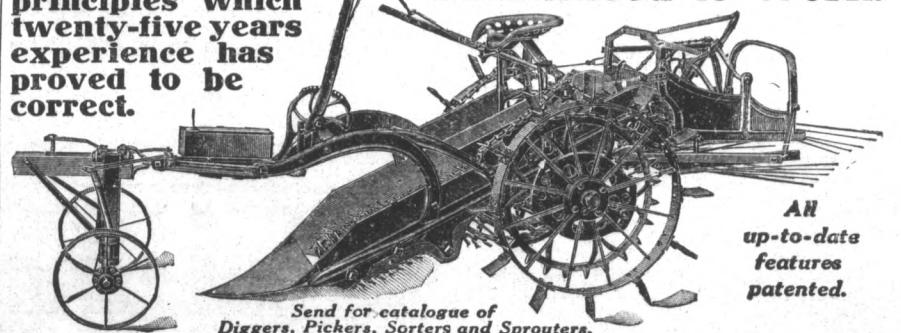
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The Lawrence Publishing Co.,
Detroit, Mich.

DETROIT, JUNE 1, 1912.

CURRENT COMMENT.

A recent published report of the Irish Agricultural Co-operation Society for the year ending June 30, gives some interesting information with regard to the development and growth of agricultural co-operations in the Emerald Isle. The statistical summary presented in this report shows that in 1910 there were in existence 880 co-operative agricultural societies in Ireland, which were classified as follows: Dairy societies, 312; auxiliary societies not separately registered, 79; agricultural societies, 165; credit societies, 237; poultry societies, 18; home industrial societies, 20; miscellaneous (including bacon curing societies) and bee keepers, 38; flax societies, 9; federations, 2. The total membership in all these societies numbered 94,512, while the paid up shares capital aggregated £177,824, loan capital £240,010, and an annual turnover in the transaction of business of £2,589,559, or nearly \$13,000,000 American money.

The dairy societies have the largest aggregate number of members, the largest capital and the most extensive business in the ownership and operation of co-operative creameries. The agricultural societies, so-called, transact a variety of business which depends very much upon local conditions. Some of these organizations are erecting stores for business purposes, so as to be able to supply their members' requirements, while others make the purchase of the most expensive kinds of machinery, the same to be hired out to their members, their main business.

There has been a measure of affiliation with what is known as the Irish Agricultural Wholesale Society, although the volume of co-operative selling is admittedly very small in comparison to the possibilities along this line. The credit societies are organized on similar lines as those of other countries heretofore described, although interest rates have never been kept at such a low point, it having been found impracticable in many cases to support the organizations on an interest charge of five per cent, but has been found that in many cases six per cent is a sufficiently low rate of interest to conduct the operations of the organization and accumulate a small surplus against losses.

The poultry keepers' societies are admittedly inefficient in promoting the pro-

ductivity of this industry and recommendations for their betterment are made in this report. The other societies of different kinds are not sufficiently numerous to merit special mention, but it would appear that the Irish Organization Society Limited, so-called, the funds for the conduct of which are derived partly from fees contributed by affiliated societies and partly by subscriptions and other small sources of income, is doing a good work in promoting the growth of agricultural co-operation in Ireland.

In the last issue of the Michigan Farmer appeared an article in which the writer urged bean growers to make the same careful germination test of their seed beans this year which is conceded to be necessary with corn, and desirable with other farm seeds. Since the publication of that article a similar caution has been issued by the Michigan Experiment Station. In a circular, of which Professor Shoemith is the author, bean growers are cautioned particularly against planting beans that are partly discolored. Many tests of beans showing no discoloration have resulted in a low germination, probably due to the fact that they were subjected to freezing weather before they were thoroughly dried out owing to the unusually wet weather which prevailed during bean harvest last year. Like corn and other seeds, some beans may germinate which do not make a vigorous growth; these plants seldom, if ever, make a satisfactory crop.

No commercial bean grower should plant his bean crop this year without making a careful germination test in order to secure a good stand of healthy plants. Also, seed that is free from anthracnose and other fungus diseases should be secured if possible, and if the crop should be troubled with this disease, which is commonly called rust by bean growers, seed should be secured for next year's planting which is free from the disease, even if it is necessary to select healthy pods by hand at harvesting time. This warning with regard to making a germination test of beans has been issued in season to save the bean growers of the state many thousands of dollars if it is generally observed.

In a recent circular issued by the United States Department of Agriculture, attention is called to the work of the seed laboratory of this department in the examination of many lots of forage plant seeds imported into the United States from foreign countries during 1911, many of which were of low vitality and high weed seed content.

For instance, the analysis of 18 lots of seed of alsike clover, red clover, white clover and sand vetch amounting to 225,780 pounds showed a content of pure seed of only 44.9 per cent, 64.2 per cent, 51.2 per cent and 23 per cent respectively in the consignment, while the germination ran from 30.5 per cent to 77 per cent. On account of this poor quality and low germination test the actual cost per cwt. of the seed that germinated was \$44.35 for alsike clover, \$34.66 for red clover, \$111.86 for white clover and \$23.29 for sand vetch, which made the cost of seed from two to four times the market price for seed of prime quality.

Examinations of seed of alsike and red clover imported from Canada during 1911 showed that approximately one-half was unsalable for seeding purposes in that country, the seed control act there prohibiting the sale of seed when more than a prescribed number of noxious weed seeds are found to the pound. One lot of alsike contained less than 50 per cent of pure seed, and this gave a germination test of only 15 per cent, which meant that only 7½ per cent of the entire bulk was alsike seed of good germinating quality. Something of the danger of introducing noxious weeds in such seed will be seen when it is stated that this particular lot of seed contained approximately 135,000 weed seeds per pound.

This is another forcible illustration of the fact that home-grown seeds are better than imported seeds or seeds which are purchased in the general market for farm planting, and every farmer should make provision for growing his own seeds or secure them from some reliable source.

The Western Michigan Development Bureau, which has been conducting an active "Remain in Michigan" campaign, proposes to broaden out this kind of work and urge those who are permanently set-

tled in western Michigan to fix up a little. To this end a barn painting campaign is now being started by the organization as a beginning point in the "fixing-up" program and everyone will be urged to paint his barn, and if he can afford it put on a few trimmings. This sort of a campaign will undoubtedly be productive of good results in the betterment of the appearances of a good many farms throughout the territory covered by this organization.

There is no doubt that it pays to keep farm buildings well painted as a means of preserving the material of which they are constructed and prolonging their period of usefulness, to say nothing of the large degree of satisfaction which will be derived from their improved appearance. Good business judgment on the part of every farmer would make a campaign of this sort unnecessary, yet there are many of us who need prompting in the making of improvements of this kind which are too often put off from year to year when they are needed at once. Any campaign for community betterment is deserving of the support of all the people of the community in which it is undertaken.

Not a little uncertainty remains as to what may be the final result of the

Parcels Post Legislation. efforts to secure an adequate parcels post law during the present session of congress. As before noted, the post office appropriation bill contained a clause providing for an experimental parcels post on rural mail routes, to which a temporary makeshift parcels post was added pending the report of a committee to be created for the investigation of the entire proposition. The post office bill including these clauses passed the house after a long debate and is now before the senate. Parcels post on rural routes, as provided for in the bill, contemplates the carrying of packages of not more than 11 pounds in weight at a rate of five cents for the first pound and one cent per pound for each additional pound. These packages at the rates above named, to be handled only on rural routes from one point to another on the same route. The general parcels post provision of the bill simply provides for the extension of the international postal union rates on packages handled in the domestic mails. The limit of weight of such packages shall not exceed 11 pounds and the rate provided for in the bill is 12 cents per pound between all points in the United States.

So far it has been impossible to get any line on what action the senate may take with regard to these provisions, but it is entirely probable that the matter may go to a conference between the two houses, when an effort will be made to increase the efficiency of the parcels post clause by interested members of the lower house. It is, perhaps, to be regretted that this legislation came up as a factor in the general post office appropriation bill rather than as a separate measure, when it could have been threshed out on its merits independently of other considerations such as are included in the general bill. It is apparent, however, that some measure of parcels post legislation will be enacted by the present congress, and even though it is not as broad in scope as might be desired by the friends of the parcels post idea, it will at least prove an entering wedge for the later introduction of a general parcels post which will be adequate to the needs of the country.

In a recent issue of the Michigan Farmer reference was made to the general appreciation

among men of all classes of the fact that profitable agriculture means general prosperity in the state and nation, and thus prove a direct benefit to the business in which they may be engaged. Reference was made to the work which has been done by business men and organizations to impress farmers with the necessity of making an ear test of their seed corn this year, and the good which will doubtless result from that work.

Another example of such appreciation which may result in an even greater benefit in one farming community is the action taken by a local bank in one of South Michigan's prosperous counties, which has published for the benefit of its patrons a booklet on "Alfalfa and its Culture in Allegan County," which gives the experiences of a number of farmers in that county who have successfully grown this crop, and describes the cultural methods which have been successfully employed in its growth. This is an example of business co-operation which

goes a step further than that advocated by our correspondent whose plea for general co-operation for a greater Michigan was commented upon in the last issue.

HAPPENINGS OF THE WEEK.

National.

An official aeroplane mail route between Cliffdale and Lynn, Mass., has been authorized by the post office department to continue from May 30 to June 1. The aviator for the position has not been selected.

Wholesale prices for prime cuts of beef have again been advanced. The largest judgment ever ordered against an individual by the supreme court of the United States was decreed Monday, when Albert S. Bigelow, of Boston, was ordered to pay \$2,100,000 and interest, which amounts in all to about \$2,500,000.

Samuel M. Lemon, a prominent business man and politician of the state, and a resident of Grand Rapids, died there on Monday.

The state school for the blind, located at Lansing, was burned on the morning of May 22. The fire was caused by the building being struck by lightning. At the time of the fire there were housed in the building 325 pupils, all of whom were saved.

The records of the Detroit police department indicate that during the past seven months 50 automobiles have been reported stolen.

The streams of the Saginaw Valley were swelled to overflowing of their banks by heavy rains throughout that section last week. Considerable property was destroyed by the high water.

The stalling of an automobile on the tracks of an electric line near Martinsville, Ind., resulted in four persons being killed. The victims were the occupants of the automobile.

Among the features of Cadillaca week at Detroit, will be a beautiful pageant representing the history of the city.

The racing automobiles of America, France, Italy and Germany will try for first place in the 500 mile race at Indianapolis on Decoration Day.

Dr. F. D. Leete, pastor of Central Methodist Church of Detroit, has been made Bishop by the general conference in session at Minneapolis. Seven other bishops were also elected for this highest office of the church. They are: Homer C. Stuntz, New York; T. S. Henderson, New York; W. O. Sheppard, Chicago; N. Luccock, Kansas City; F. J. McConnell, Green Castle, Ind.; R. J. Cooke, New York; W. P. Thirkfield, Washington, D. C.

The regents of the University of Michigan have appropriated \$1,230,000 for the work of that institution during the coming year.

The state railroad commission is holding a session at Grand Rapids to consider the weighing of cars by the railroad companies, the present system appearing to be out of favor with the shippers.

Foreign.

It is announced through the rebel headquarters at Chihuahua that the rebel forces under Gen. Arguemedo captured Torreon.

By special order of President Taft two carloads of explosive were permitted to be shipped from El Paso to mining districts in Mexico. Rebels, however, captured the cars before they reached their destination whereupon the special order was rescinded.

Eighty persons were killed in a burning theatre at Villareal, Spain. The fire was caused by the explosion of a cinematograph.

A German warship squadron will visit this country early next month.

The revolt of the Negroes in Cuba is growing. Already the government has been forced to place 3,000 troops in the field against the Negroes who are burning and pillaging unprotected parts of the island. Reports indicate that much property, especially sugar mills, has already been destroyed by the Negroes. The United States government is rushing war ships to southern ports in order to be ready at any time to go to the assistance of Americans and their property in case such help is needed. President Gomez is protesting against the action of the government in sending the ships, stating that he is able to command the situation.

An observatory has been established near the crater of Kilauea, a volcano of the Hawaiian Islands, by the Massachusetts Institute of Technology.

Dockmen who are out on strike in London, Eng., marched through the streets of that city Sunday, 150,000 strong. There is some talk to the effect that electricians will walk out because of their own grievances and also to aid the dockmen in their effort to secure better wages and conditions of labor.

Prizes for Junior Corn Growers.

The Michigan Corn Improvement Association has recently announced its decision to discontinue the awarding of prizes, other than trophies, ribbons or certificates, to exhibitors in the senior class. The junior class will comprise three sections, one admitting boys and girls between the ages of 16 and 20 years, another admitting those between 12 and 16 years of age and the third admitting all under 12 years. Each of these sections will be represented in the competition for the sweepstakes award. With many valuable prizes already assured, it is planned to so arrange the awards that each boy or girl entering an exhibit will receive a prize of not less than \$1. School commissioners in the various counties are co-operating with the Association in bringing this opportunity to the attention of all public school pupils. Sending names to Secretary L. J. Bradley, Augusta, Mich., will insure receipt of copies of the prize list as soon as it is ready for distribution.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

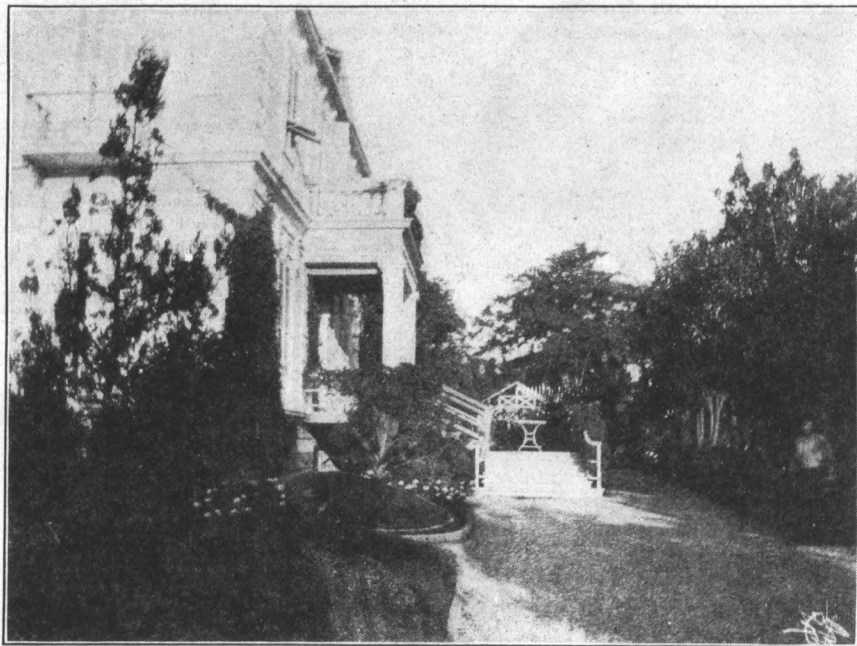
This Magazine Section forms a part of our paper twice a month. Every article is written especially for it, and does not appear elsewhere

IF it were our fortune, or misfortune, to take up a residence in Macedonia, the ever-turbulent province of Turkey-in-Europe, a most vital factor for our consideration at the very outset of our planning, would be, what religion we should openly adopt. We would be required to affiliate ourselves with the Christian or Jewish religion, on the one hand, or the Mohammedan on the other. The differences between these will regulate completely the mode of life to be pursued. Possibly the life of the Greek Christian peasant in the Ottoman domains is the more picturesque, if the least to be coveted from a political viewpoint, of all.

If of this muchly-persecuted race we

PEASANT LIFE IN MACEDONIA.

By FELIX J. KOCH.



The American Consulate at Salonica.

Macedonia in mid-summer one can often imagine himself in a deserted hamlet. Only the hamlet is curiously different from those in other sections of Europe.

Take the town of Gradobor for example. We come to it by way of a country pike, filled with ruts, which narrows suddenly into a thin, sadly-cobbled lane, covered ankle-deep with mud. At either side thick rock walls rise, without end, it would seem. The continuation of house-walls, leading from dwelling to dwelling, enclose the little yards behind with a veritable rampart. One rides in consequence, as between walls alone. On the street side the dwellings have no windows, in order that the invader may not enter by such a passage. Where there are exceptions to this rule, the little pane is set high up in the wall and is extremely narrow.

Withal that our house rises directly from the roadside, entrance to it is through a small, half-hidden doorway in a wali leading into the garden. This yard is usually very dirty, rubbish heaps littering the area between the few out-buildings. There is neither garbage nor ash barrel, but as wastes accumulate they are tossed into the streets, where the hungry packs of dogs, the saviours of the Turkish Empire, gnaw away the

last trace of things eatable, and the rest remains for the mud to slowly cover, or, in seasons of drought, for the dust to settle upon.

The village lies at an elevation of 700 meters over the sea. There rises behind it a protective mountain chain, upon which each family has its vineyard supplying it with the wine which is here an essential to everyday life. Water is an item of purchase over the Balkans and wine is frequently decidedly cheaper. Further, the Sultan's tithe-gatherers expect each household to turn over a certain amount of wine each fall, and it behooves the Christian peasant to have this ready at the appointed season.

The village folks build their houses in conformity with a style of architecture centuries old, and this includes a veranda overhanging the garden, reached by a flight of wooden stairs, from the flagging. These exterior stairs are easily defended in time of siege, and are quite the thing in the Levant. On the porch are kept mangoes and corn ripening, for these are the staples of life. Built up under the slate roof, and reached from the portico by a low door, is a loft for storage. Below it is the living-room, the floors of earth, the ceiling of wooden puncheon and the walls are crudely plastered. By one

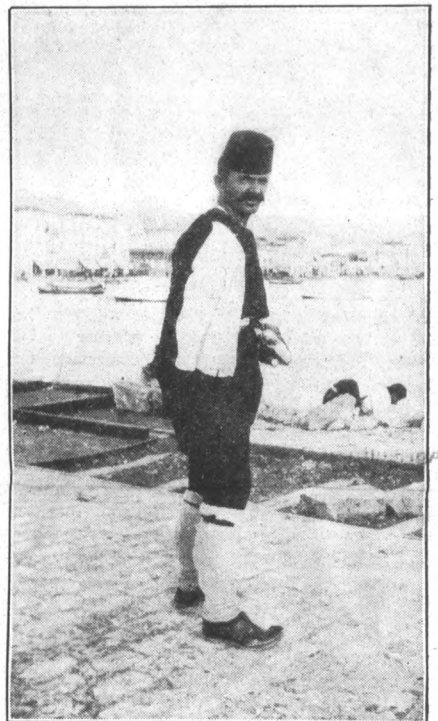
wall stand some bottles and suspended from pegs or nails are some greens to dry. There are two chairs, a bench and a table, the latter holds a few glasses, and if it were the winter time, when there is no work outdoors, the men folk would be sitting about idling away their time. If especially industrious they would take out the spinning wheel and do a shift of work, but the clothes worn last very long, and there is no need for extra labor. Every household spins and weaves what it needs and only that amount, for they could not dispose of a surplus if they had any. They take the wool from their own sheep, the hides from the goats, and upon these work with thread dyed by home-made dyes, and beads



A Greek of Salonica.

should find our residence in some little village, for in the south of Europe people do not live upon their farms, but in villages. Each morning men, women and children go out, in merry troupes, to work the fields.

Only the oldest woman of the household remains behind, preparing the dinner and bringing it out to the workers in the field at the nooning. In seasons of heavy crops even she will be impressed in the fields and then the simple luncheon is taken along at sun-up and the town sees nothing of its peasantry until night. Riding through a Christian village of



A Macedonian of the City.

bought on the rare visit to the city. Everything is of home production in a Greek village in Turkey.

If the weather grows hot, a dark, low hall takes one to a rear portico, where there are a couple of benches, and where huge, home-woven mattings, used also as wagon covers, is kept curled. There, shaded by an apple tree at the creek side, work may be continued. There is certain to be more peppers and tomatoes and mangoes here, and possibly a bouquet of zinnias, picked from the little flower-bed in the garden. Four times a day meals are prepared, for the peasantry rise very



A Typical Street in a Macedonian Village. The Riders Constitute a Greek Band.



Type of Greek Girls Found in the Villages of Macedonia.

early, (2:00 a. m. oftentimes, from May to September), and must have their luncheon that many times.

Bread and peppers, peppers and bread, is the unchanging menu, and it does not take long to make ready. Meat is rare, it costs 10 cents the kilogram, and the most a peasant will earn in the summer is 30 cents a day, while the winter average of remuneration comes to but 3½ cents. Out of this he must save, first of all, to pay an extortionate tithe. The tax collector has bought the taxes of the district from the Turk and he will extort what he can. By tampered weights and measures he takes more than his due and if the peasant complains he delays collection until the greater part of the crop had spoiled in the field. Then he levies upon the original harvest. Secondly, the peasant must save for the church, for in every village there is the good, black-robed priest who must be supported, for the Turks do not keep up any church but the Mohammedan. The priest is the village father, he enters the homes unbidden and is a welcome guest at all times. The little ones and the adults, on seeing him, come running to kiss his hand, and to receive his blessing. Thirdly, the peasant must lay aside something for the war chest, the one and only way to keep peace for themselves in this saddest of lands.

Some day, while working in the fields outside town, a cloud of dust will be seen on the turnpike and a band of horsemen swoop down, shooting right and left, not caring who they hit and intimidating everyone. Christians are forbidden to carry arms in the Sultan's domains and so are defenseless. They are ordered to pay over blackmail at once and to swear themselves no longer Greek Christians, but of the Bulgar Church, and this under penalty of death. Then, when the powers interfere in Macedonia, it will seem that the vast majority of the population is Bulgar and the country will be given to Czar Ferdinand. With this prospect before them they usually yield. There is really slight difference in the faith, beyond one owing allegiance to the Exarch at Sofia and the other to the Metropolitan at Constantinople.

But the money, too, must be given and with it they depart. Tomorrow a band of their own late co-religionists will repeat the indignity, murdering the men

and dishonoring the women until they have forced them back into the fold. Then the Turkish troops come in to put down the disturbance, pillaging and ordering the unfortunate inhabitants to tell who perpetrated the trouble. If they do so, they may be certain of dire kluks vengeance. If they do not, or if information be lacking and the Turks think them concealing it, they, too, will take a hand at extermination. So the peasant lives a life of continual fear.

Some of the people in this village of 2,000 souls, (250 families), are a bit better off than are the ordinary workmen. In their living-rooms there are little chimneys rising from the earth, with a mantel shelf, containing some meager trinkets about. There will be an iron bedstead, too, with red blankets and two pillows, the bed is, of course, never "made." There will be a rack on which the family's extra clothing is tossed, and there are two cubby closets in the wall for the inevitable beaker of coffee. A rag carpet and a chair come also into the inventory. Heavy iron bars are set across the windows so that the light streams between, as in a prison. At ceiling center there is a hood for the lamp which is used in early evening. At the door are left the clog-shoes, for why wear them out by keeping them on when inside, where one can go barefoot with quite as much comfort.

To this cozy room there comes, from the street below, the tinkle of the bells of the long-horned goats, driven by the village herd boys. When the young herder comes in he may be sent to the tavern, a dark and gloomy place, for a draught of wine, if the supply has given out. Then, with peppers and bread, served on tin platters, they have a feast, indeed. Their joys are as few as their sorrows are many. They live a life of work and fear and then enforced idleness. When the sun is right they slave from sunrise till dark out in the fields. When the cruel winter comes, they are forced to idle. On Sunday they attend church and then in the summer time go to the fields to work, for in these lands the peasants know no Sabbath observance. They must have their coffee and tobacco at all times for they are in the Balkans, and with them one should be content. Thus is the hum-drum life of the Christian farmer of Macedonia.

fulness brimming over in her expressive eyes. And in a moment both children were sitting beside Mrs. Grey and they were clattering cheerily out into the broad open country.

Little Jane chattered incessantly, pointing out to her small brother various objects of interest as they passed them. "We used to live in the country," she volunteered, glancing at Mrs. Grey. "Benjy's too small to remember. It was before papa and mamma died. Since then we've been in the Home."

Somehow as the chattering went on, and the baby emerged from his bashful timidity to utter little gurgling syllables of delight at the unaccustomed scenes, there welled up in Mrs. Grey's heart a great tenderness for the two little waifs so bravely seeking just one little week of God's fresh air. She was troubled, too, fearing for their reception and care at Mrs. Fletcher's. What could be the woman's object anyway, and had she changed her mind and so not come after them? It was not like her to be charitable, and with that thought Mrs. Grey decided to tie out by the roadside, leaving the children in the carriage, while she went alone to interview Mrs. Fletcher.

"Fresh Air children? I sent for 'em to come here and live off a me? Found 'em at the station, did you? Said as how I'd sent for 'em? Hum. Well, I didn't. I don't know nothin' about 'em. Who sent 'em here, anyway. You don't know. Well, neither do I, and they kin jest go right back where they came from—as quick as ever they can." And with that the irate woman slammed the door.

For a moment Mrs. Grey stood on the porch undecided. It was as she feared. There was some dreadful mistake and two innocent, dependent children had been sent out here into the country where there was no one to welcome and take them in.

There was but one thing to do, and she did that promptly, though with some slight trepidation, for she was afraid John didn't like children. Once or twice when they had noted struggling young parents, he had even said to her, with a grave puzzling light in his eyes that she could never quite fathom, "Now aren't you glad we haven't any children?" and she had always laughingly answered "Yes," though in her heart she knew better.

Nevertheless she walked out to the carriage resolutely enough. "Well, kiddies, you're going home with me instead of stopping here," she said briskly. "There's been a mistake and this isn't the Mrs. Fletcher who sent for you. We don't know where she is, so you can come along to my house until we find out."

John was in the yard when they drove up. In response to his hearty, "Well, what have you got here?" his wife explained briefly the plight of the youngsters.

"Bet a cooky they ought to have gone on to Walton Junction," he guessed immediately. "There's a Fletcher lives over near there somewhere."

"Well, they're here now, and hungry too, I expect," put in his wife, smiling down at them, "so I'll just hustle round and get dinner, and after that we'll see what we can find out."

So the children were ushered into the Grey's comfortable living room and told to enjoy themselves. It was not many minutes until Benjy, over-tired from his trip, had succumbed to the sandman's advances and lay peacefully sleeping on the large commodious couch. Then Jane turned her attention to the kitchen and Mrs. Grey. "Can't I help you, lady?" she queried, "Miss Graham said as how I was to help Miss Fletcher, and as long as we ain't found her, maybe I could help you instead."

Mrs. Grey didn't need any help, but allowed Jane to follow her about. By the time dinner was ready the two had become fairly well acquainted—the little half-starved waif of the city, and the kindly, sweet-faced country woman who had never known a want. Then John came in and they sat down to dinner. Somehow during the course of conversation Jane told about the brakeman with the broken leg, and the big-voiced man who had helped them off the train, instead of the conductor whom they had expected.

"Just as I thought," ejaculated John. "That fellow made a mistake and put them off at the wrong place, I'll warrant." "I'm going to 'phone over to that Mrs. Fletcher's right now," exclaimed his wife, who had finished her dinner.

Then after a few moments of one-sided, and, to her interested listeners, only half-illuminating, conversation, she turned and faced them tragically. "It was

them," she said. "Mr. Fletcher went to the station to meet the children, and on the way home his horse ran away, and he is hurt—they don't know yet how bad—but they can't have the children now, and Mrs. Fletcher says they'll have to go back to the Home. Did you ever hear of such a mix-up? And isn't it lucky they did not go on to the Junction? They might have been hurt, too."

During this speech John's eyes had been riveted upon little Jane, who sat, her hands clasped tightly before her, staring straight ahead, bravely trying to wink back the tears which persisted in making their appearance at this new disappointment.

"She wants to know if we don't want to keep them. It's only for a week, you know," went on his wife. "Says she'll write and tell the Society how it is and she's quite sure it will be satisfactory to them. It really is too bad to send them back without any outing—and one week is such a little while."

"Tell her we'll keep 'em," he answered roughly, rising abruptly to escape the sight of Jane's tragic little face; then, catching her quick tearful glance of gratitude, "for two weeks," he added gruffly.

That was the beginning of days for his wife. She gave the children the room just off their own—the very one that, in the first years of her married life, she had planned to have her own little ones occupy—sometime. She loosened Jane's hair, which had been drawn so tight that it must have hurt, fluffing it out about her face and tying it with huge bows of red ribbon which set off the lustre of her dark eyes. Then, stooping she kissed her, saying, "I'm going to call you Jennie; I like that better," and was rewarded by the child's beaming delight and a tenderly impulsive, "Oh! I'm glad! That's what mamma used to call me."

She overhauled her own wardrobe mercilessly, "making things over" into sweet dainty little garments for the two. She even went into town and purchased new material, making it up into the prettiest little clothes they had ever had.

She was living now—real life—gladly and consciously happy in her service for these children. But back of it always was a disquieting sense of impermanence, the thought that it was only for two short weeks, and that she must help them to snatch every moment of joy as it came.

There came a day when, having given Benjy a bath, she set him on a table while she dried his soft little body and kissed and fondled his dimpled neck and arms and shoulders which already had begun to take on new flesh and firmness, until he, in an ecstasy of baby glee at the unaccustomed caresses, leaned forward and took her face between his two tiny hands, gazing into her eyes with his wistful winsome baby smile. For a full moment they feasted on the love-light in each other's eyes, so absorbed that she did not hear her husband's step until, feeling the compelling power of another's gaze, she turned, rosy red, to meet in his eyes the strange look that she could never quite understand. He turned away abruptly, and because he spoke not a word she thought that he was displeased.

Almost from the first, Benjy had shown a marked liking for her husband, climbing upon his knees, unceremoniously brushing his paper aside, rumpling his hair, and poking interested baby fingers down his neck and into his mouth. At first John had effected not to notice, but Benjy's attentions usually grew too insistent to be overlooked, so he'd throw his paper aside, apparently regretfully, and proceed to delight the little chap's heart by a good-natured frolic. At such times Mrs. Grey often wondered if her husband was not enjoying it almost as much as Benjy himself, but he'd always look so stern when he put the child down and left the house that she concluded it was done simply to humor the youngster. Several times, when he had come up from the fields at noon or night, and the baby had toddled forth to meet him, arms outstretched, she had thought she caught a look of real joy as he tossed the youngster to a seat on his broad shoulder, laughingly upturning his own face to take the proffered kiss.

Then there was the evening when she was called away just at dusk and had returned to find Jennie sitting close at John's side, her hand clasped in his, and Benjy's drowsy little head pillowed tenderly in the hollow of his arm while they listened to a wonderful story of his own "make up." Her heart gave a great thump then. She was sure that he was beginning to "care," but when she ended

(Continued on page 622).

The Mission of the Fresh Air Kiddies.

By Pearle White M'Cowan.

"This is Walton. You get off here you know. Come on, I'll help you," said a big-voiced, kindly looking man, as he reached to the rack for the small girl's bundle, and stooped to lift the pale-faced toddler at her side. "No," he answered, as the girl opened her mouth to speak, "the conductor isn't coming. They've had a little accident—brakeman's broken his leg, I believe—and the conductor's pretty busy just now, so I told him I'd help you youngsters off."

"All right, there you are. That must be your woman over yonder in the carriage," he laughed good humoredly a moment later, as he deposited the baby upon the walk and handed Jane her bundle, bestowing a kindly pat upon her shoulder. Then, whistling, he turned, mounted the stairs and entered the car again, his one backward look entirely satisfying him, for it revealed the said lady leaning forward and smiling pleasantly at the children.

"Bet she'll give 'em a good time," he soliloquized. "She looks kindly."

Two seconds later the train was pulling rapidly out from the little station. They were rushing the wounded brakeman on to medical attendance, and spent just as little time as possible at this small wayside station. Possibly five minutes later they slowed down and paused for the brief space of a moment at Walton Junction. "Queer proposition. What'd they stop here for? Thought they were in a hurry," mused the genial drummer audibly as they began to gather steam again. "Nobody got off, but the fellow in that buggy that looked as though he'd been expecting somebody." And it never once sailed through the man's good-natured complacency that he might have made a mistake.

Meanwhile the lady in the carriage at Walton, who had just seen her sister aboard the train, had been somewhat surprised at little Jane, pulling her toddling brother along by the hand, who had approached her timidly.

"Be you Miss Fletcher?" queried the girl, her large black eyes anxiously

searching the lady's face, while the small youngster slunk behind the friendly shelter of his sister's skirts and peered out, shyly afraid.

"You ain't? Ain't she comin'? Miss Graham said she'd be here," affirmed the girl, her eyes opening wide with apprehension. "What'll we do if she don't come?"

"There, there, Benjy, don't cry," she comforted soothingly. "Sister'll take care of you," flopping down suddenly on her knees and tenderly folding in her arms the little fellow, who at mention of such a calamity had begun to wail.

The unusual sounds attracted the station master also to the scene, and finally, by dint of considerable questioning, and between comforting Benjy and drying his tears on her apron, Jane told her little story.

"We're fresh air children. Miss Fletcher said as how she would take us—" here she had to stoop and cuddle Benjy, whose sobs had broken out afresh again, and the station agent and Mrs. Grey exchanged meaning glances. She was a widow, and, as the villagers were fond of saying, "as hard as stone and as tight as the bark on a tree," her special aversion being dogs and children.

"Yes, Miss Fletcher said," began Jane again, Benjy comforted once more, "as how she could take two of us for one week, and Miss Graham thought we needed it most, count of Benjy—he ain't strong—and she said it ought to a'been two weeks but one was better'n none. But now if she don't come after us we won't have any at all, and we'll have to go back to the Home—and—and we ain't even got any money to pay our fares back," she ended desperately, squeezing Benjy's hand till he tried to draw it away.

"Oh, no, I guess you won't, at least not just yet," temporized the lady. "You can climb in here beside me and I'll take you up to Mrs. Fletcher's house," with another glance at the station master; "I go right past there."

"Oh, can we?" murmured Jane, thank-

THE BEST MEMORIAL.

BY JOHN E. DOLSEN.

On the plinth of grand desire
Build the monument of toil.
Build it high, and ever higher
Let it tower above the soil.

Build it patiently and well;
Make it strong with careful thought.
To the ages let it tell
How you grandly lived and wrought.

GETTING THEM INTERESTED.

BY P. C. GROSE.

In the face of all that is being said about boys and girls leaving the farm, is it not well to give a little thought to the matter? If boys and girls go to the city, it must be because their interest is there. It is human nature to go where one is most interested, so the source of the trouble must be a lack of interest in the farm.

Now the question arises, what causes this disinterest. We will not blame the boys and girls; their likings are only what originated naturally in the course of human nature at their age. But how about the parents? Does not the responsibility rest largely with them?

It is simply this: The parents have neglected to make the farm environment one that appeals to youth. Too often a farmer is toiling to get a lot of acres so as to give his son a good "start," while that same son is longing for a home with a good library, a means of getting with other young people, a good education, all



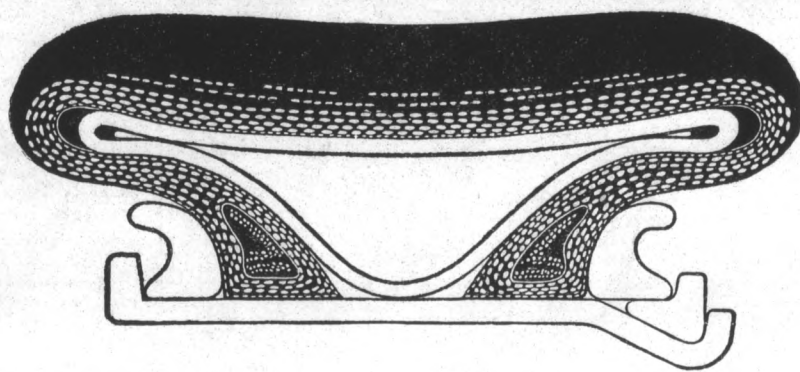
Where Interest Originates.

of which he sees the city boys enjoying while none of it does he see on the farm.

His sister, perhaps, is longing for a chance to make some money for herself. She would like to buy some things to fix up her room. She would like to have some books to read. But she has no money. All she does make goes to help her father buy more land. Naturally, her mind drifts to the city. There she sees girls working in the factories, in the stores, in the offices, getting their own wages and having their own money to spend. And she feels that she would like to go there too.

Now it is only natural that boys and girls should like these things—the trouble is this: The parents have become so engrossed in doing well for their children that they have grown blind to what really is the best for them. They look only at accumulating acres for them, forgetting wholly that youthful longings can not feed on the thought of some day getting a "nice thing" from home. The parents have forgotten that to put so much in accumulating for the child that there is nothing left to be used in preparing the child to receive it, is folly.

Here is the remedy: Cut off a few acres at one end and put on a few amenities at the other. Put a little less time to rushing the work, and a little more time to training the child. Put a library in the home. Fix things up so that the children will not be ashamed to have their friends come to visit them. Then begin when the children are young, to train them. Start the little boy in with a sheep, and see what an interest in farming it gives him. Give the little girl a setting of eggs, and see how she delights to feed the chickens. Let them have their money. Learn them how to take care of it and how to do things up in a business way. Then as they get older provide them some way to go; young people are bound to have their social pleasures and in the country they must go to get them. Give them an ed-



No-Rim-Cut Tires

10% Oversize

This is the tire which now outsells every other tire in existence.

The tire now used on some 200,000 cars, after more than one million have been tested out.

The Hookless Tire

Note that this tire has no hooks on the base. You don't hook it, like the old type, into the rim flanges.

Through the base of this tire run six flat bands of 126 braided wires. These make the tire base unstretchable.

The tire can't come off, whatever the pressure, because the base can't stretch one iota. But remove one of the flanges and it slips off like any quick-detachable tire.

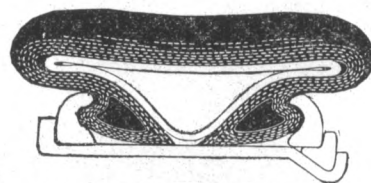
Your removable rim flanges, with this new-type tire, are set to curve outward. Just slip them to the opposite sides. Then the tire when deflated rests on a rounded edge, and rim-cutting is made impossible.

This tire fits any standard rim.

Saves 23 Per Cent

The old-type tire, as shown in next column, must be hooked to the rim flanges. So these flanges are set to curve inward.

If the tire is wholly or partly deflated, these curved-in flanges dig into the tire. That is the cause of rim-cutting.



This type of tire may be wrecked in a moment if punctured and run flat.

Statistics show that 23 per cent of all ruined tires of this old type are rim-cut. No-Rim-Cut tires save this 23 per cent.

The tire that cuts tire bills in two.

We spent ten years in perfecting it. Then, at one bound, this patent tire jumped to the topmost place. All motor car owners should know this tire.

Also 25 Per Cent

We make these tires—No-Rim-Cut tires—10 per cent over the rated size. That is done to save the blow-outs due to overloading.

This 10 per cent oversize, with the average car, adds 25 per cent to the tire mileage.

These two features together—No-Rim-Cut and oversize—under average conditions cut tire bills in two.

Our Patent

The only way to make a practical tire of this modern type is controlled by the Goodyear patents. Other methods are not satisfactory.

So nearly all the demand for tires that can't rim-cut centers on Goodyear No-Rim-Cut tires.

And that demand is growing faster than we can build the tires. It is larger now than for any other tire.

You should investigate these tires. Ask men who use them. Saving half on tire upkeep means too much to miss.

Our 1912 Tire Book—based on 13 years of tire making—is filled with facts you should know. Ask us to mail it to you.

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ucation and let them feel that the farmer is a man of intelligence. And you will not need to worry about them leaving the farm.

It is the home environment and training that gets the child interested.

WATER MUSIC.

BY KENSETT ROSSITER.

One of the most pleasing sounds in nature, and one which is constantly echoing and re-echoing thoughts of life, is the sound of rushing water. There is more music in the mountain brook than in all the great metropolitan orchestras. It holds a note for every mood; and the thought is not suggested alone in brooks and rivers, but in all moving water. What, for instance, is more suggestive of awe and stern appeal than the suck and drift of ocean tides? And what sound do we dare nestle so close to our hearts as the gentle, murmuring, gurgling sound of the brook? There is a message in the great combers out at sea just as there is a message in the silvered tones beneath the winter ice artillery.

Every woodsman, every fisherman, every lover of nature, is familiar with these sounds, and although some tone (and there are millions in every brook) may hold its special meaning for each, it is seldom that one reasons why these different sounds, by their suggestion of thought, produce distinct and separate moods. The fisherman may follow up his stream, superbly conscious or unconscious of the happy voices of the brook; he may stop to eat his lunch beside some waterfall; but, if his mind is not too occupied with his fishing, he will begin to feel the changing of a mood. The merry, murmuring babble is drowned in the steady pour of the falls. He enjoys the change for a little space, but, should he reflect, he would not care to build his cabin there. Ceaseless falling of water is depressing to the mind, and if depressing on a small scale, how exaggerated would be the effect of a falling body of water embracing the vast proportions of Niagara!

It was the Italian who first turned his brook into music, and learned how to account for, and control, its different moods. He discovered the myriad sounds of water flowing through the hollow tile that are pleasant to the ear. He, too, came to know that falling water is depressing; but in the fountain he found the mood reversed. The buoyant effect of a gushing, bubbling flow of water is as stimulating to the mind as sunshine and happy thoughts.

In the gardens of the Villa d'Esta, near Rome, have been brought together more illustrations of these moods and fancies than, perhaps, at any other spot in the world. In days gone by thousands upon thousands of dollars were expended in merely conveying the water to the grounds, but it is apparent that the owners were amply repaid for their labor and skill. The flow reaches the estate through an artificial channel whose banks are now as free, as wild and as overgrown with ferns as those of one of nature's woodland streams. In the garden below is a woody walk, flanked by a series of carved stone troughs into which the water drops gently with the sound of distant bells. Here is a waterfall, and there a fountain, and in an unexpected place we find the pool, reflecting branches of trees and passing clouds, for the eye must be pleased as well as the ear. A little farther on are four great cement basins hedged thickly about by cypress and smaller trees; and, even when the wind ripples the surface of the water, the scene suggests peace absolute, and quiet.

It is in the gardens of the Villa d'Esta, too, that the ruins of the ancient water organ may be seen. Here the water, falling in the great hollow tiles, renders a wonderful harmony of sound, each separate tone having been developed with consummate skill and art.

These are but a few illustrations of water music, but they belong in part to a vast system, ever responding and contributing to our various moods.

THE MISSION OF THE FRESH AIR KIDDIES.

(Continued from page 620).

tered he started guiltily, and, though both Jane and Benjy begged for a continuance of the story, he pleaded "chores" and left the room abruptly, though Mary knew full well that the chores had all been finished before she left.

And the day that Benjy was sick—just a little childish illness—she knew she could pull him through with a few simple home remedies, but John, half an-

grily asserting that, never having had the care of children she could not know how to nurse one in sickness, had persisted in calling a doctor and hanging around the house most of the afternoon. She had felt sure then that he "cared," but when in the wee sma' hours of morning she had crawled into bed, after sitting by Benjy until the troubled moans had merged into natural peaceful slumber, John had wakened and growled irritably. "What time is it? Lucky you don't have to do this sort of thing regularly." And then Helen had gone to sleep with her heart heavy again.

Finally the last night that the children were to be with them came. Little Jane mentioned the fact regretfully, and Benjy entered a vigorous protest. "Me no want to do back. Me doin' to taye here," he affirmed confidently.

Mrs. Grey, her heart touched, glanced appealingly at her husband, but he only stared moodily at the floor with a stern and forbidding expression. Even little Benjy noticed the man's moroseness and forebore his usual teasing antics. So she took them up to bed early—and stayed a long while.

Down stairs John sat silent, still staring moodily at the floor. By and by, noticing his wife's continued absence, he began to listen, and finally, hearing no sound, tiptoed softly up the stairs. At their head he paused. Through the open doorway, at the far side of the room, he could see his wife as she sat by the side of the sleeping children. On her face was that peculiar rapt expression he had now and then seen pictured on the faces of Madonnas. A lump seemed to rise in his throat. He caught his breath. It brought to mind a picture he had dreamed long ago, before he had suspected that it would be their lot to be childless. Well, he had hidden his disappointment under a cloak of indifference and apparent dislike, and he was satisfied that Helen never suspected the hunger for the love of little children that sometimes crept into his heart. Now while he watched, his wife half arose, and he was surprised to see her hold out her arms toward the children piteously, then stoop and kiss them each, not once but over and over again, as though she would never stop; and when she stood again he caught the longing hungry look in her eyes and—for the first time—he knew. She was not being good to these little kiddies just because she pitied them and thought it was her duty. She really cared, and it was going to hurt her—woefully—when they went away tomorrow.

In that moment John Grey's love and reverence for his wife became so hallowed a thing that it was nigh akin to worship. "When they go away," he murmured, as if they could ever go, now that he understood. With long quick strides he went to her, held her close, and whispered huskily, "We'll keep them, darling. They shall not go. They shall stay—and be our very own."

BREEDING RUST-RESISTANT ASPARAGUS.

For a number of years the Department of Agriculture has been at work breeding asparagus plants that are rust-resistant. The first pedigree seedlings from select rust-resistant plants were grown in 1910 at Concord, Mass. A severe attack of rust on the station grounds showed that some of these pedigree lots were highly resistant to rust and demonstrated the complete success of the breeding methods. One male plant has been found that transmits to its offspring both rust resistance and increased vigor in a marked degree. This plant is being used with the best female plants to develop progenies of practically rust-immune asparagus. The best breeding plants are being propagated by division to increase the output of resistant seed.

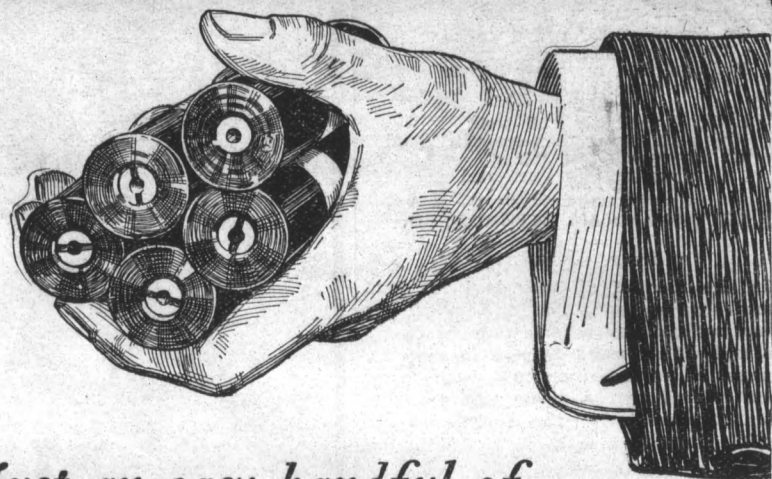
At a lecture a well-known authority on economics mentioned the fact that in some parts of America the number of men was considerably larger than that of women, and he added humorously:

"I can, therefore, recommend the ladies to emigrate to that part."

A young woman seated in one of the last rows of the auditorium got up, and full of indignation, left the room rather noisily, whereupon the lecturer remarked: "I did not mean that it should be done in such a hurry."

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Woman and Her Needs

At Home and Elsewhere

WHEN DAUGHTERS CRITICIZE.

Household Editor:—I wish you would tell me through your Human Welfare Queries, some way to correct my mother's grammar. She says "het" for "heat," and "I skum the milk," and "knowed" for "knew," and so many other things that I am ashamed to write. It mortifies me almost to death and she don't like to have me correct her.—Miss Fifteen.

Poor "Miss Fifteen," and poor "Miss Fifteen's" mother! I do not know which one is most deserving of pity, the girl who is ashamed of her mother or the mother whose daughter is ashamed of her.

The trouble is that the viewpoint of mother and daughter is so widely separated. Mother knows that sensible people, people whose opinion is worth while, value her not for the fine English she uses, but for what she can do and what she is. She knows that true worth goes deeper than words and she is careless in her speech. Probably she knows better than to use the expressions which shock daughter, but she has unconsciously dropped into the habit and is too busy keeping things moving to bother to break her habit. Possibly she really does not know better, she may not have had the chance to go to school that her daughter enjoys. In either case she just can't see things through her daughter's eyes.

At fifteen all girls and some boys are hypercritical. Girls are just beginning to compare their world with that of their friends. Their clothes, their complexions, their hair, their homes, everything which is theirs comes under their critical eye, and woe be to the parents if the things of home do not measure up to those of the "other girls." And because she is dearer to them than anything else on earth mother comes in for her share of criticism. The average girl of fifteen suffers the keenest torture if her mother does not compare favorably with every other woman in the neighborhood. If mother's clothes are not as pretty, her hair not as becomingly arranged, her teeth not as even and pearly and her language not as good as that of her chum's mother, the girl's pride has been struck a blow from which it can scarcely recover. Girls at this time are critical of their mothers, not because they do not love them but because they love them so passionately they just can't bear to see them surpassed. I have known girls to suffer agonies of mortification because the mother did not "dress up" every afternoon. The poor woman might be worked to death and have ample excuse for not stopping to change her attire. But the girl could not see farther than the fact that the neighbor across the road always changed her dress after dinner. And a proper pride in her mother made her desire to see her mother as prettily dressed as the next one.

It is such a feeling as this which has prompted "Miss Fifteen" to wish to correct her mother's English. She can't stand it to see any fault in her mother, the dearest person in the world to her. But "Miss Fifteen" must try to see through mother's eyes. First try to remember that your mother's mistakes sound far worse to you than to anyone else just as the mistakes you make look worse to her than to anyone else. A mispronounced word isn't such a terrible thing. It isn't half so bad as a lie, or an oath or a bit of scandal. It isn't so bad as cheating or quarreling or neglecting your home. So long as your mother is kind and true and loving, what difference does it make whether she says "knowed" or "knew?"

How much have you helped her to a chance to learn better? Do you wash the dishes and sweep and help with the baking and do your own mending so that your mother has time to read and learn the things you want her to know? Or do you lie in bed mornings until just time to rush to school and come home at night with the plea of being "too tired to move?"

I shouldn't try to correct my mother in any way. It is hardly the place of a

daughter to set the mother right, no matter how badly the mother may need it. I do not wonder your mother objects to your correcting her. You might help her in a roundabout way by always speaking the purest English yourself. Really, when you read your letter over, can you blame her for objecting to your teaching? I believe I should object myself to a correction from a person who writes, "She don't like to have me correct her." Seems to me it is a case of the pot calling the kettle black.

DEBORAH.

CALIFORNIA ROSE BEADS.

BY PEARLE WHITE M'COWAN.

Rose beads are a novelty in many parts of our country, but having recently received a gift of a string of them from a friend in California, along with a letter telling how they are there made at home, I decided to pass the information along.

The beads are black, and though pretty, are not prized so much for any special beauty, as for their delicately eluding odor of roses. They are made as follows:

First, gather a dishpan full of rose petals, being careful not to get any of the green parts. Run these twice through the finest knife of the meat grinder, saving the water that comes from them, and pouring it over the pulp thus formed. Into this rose pulp put a quart of old rusty nails (any bits of rusty iron will do as well). This is to make them black. They should be left uncovered out in the fresh air, though not in the sun, for four or five days, and stirred thoroughly once or twice daily to prevent moulding.

When ready to make up into beads, add five or six drops of attar of roses mixing it thoroughly with the pulp. The bits of rusty iron or nails should be removed just before adding the perfume.

For each bead, fill a small thimble with the pulp and add one drop of glycerine to harden them. Roll each thimbleful between the hands, moistening the fingers now and then with a little water, it necessary to make it roll smooth. Lay each bead upon a board and stick a pin through its center. This serves the double purpose of keeping the bead where it is placed and making the opening whereby they are strung together. They should be allowed to dry for several days before using.

If one does not care for all black beads, a few of the ordinary gold or light blue ones found in stores, may be strung with these at regular intervals, thus relieving the tediousness of all black and making a dainty and pretty combination.

HUMAN WELFARE QUERIES.

Household Editor:—What is the best way to make a mustard plaster?—Home Nurse.

There are so many ways all called the best that it is hard to answer your query. A good way is to make the plaster one part mustard and three parts flour and stir with water enough to make it easy to spread. Some use egg white instead of water. If you want a plaster to blister use less flour.

Household Editor:—What is the diet for persons suffering from diabetes?—Mrs. X.

The physician should prescribe the diet, and the patient should rigidly adhere to it. Things usually avoided are sugar, syrups, potatoes, sweet fruits, tapioca, sago, etc., chocolate, liquors, and the coarser vegetables, as beets, parsnips, carrots, beans, peas, etc. Sour grapes, grape fruit and currants may be taken, spinach, asparagus, lettuce, mushrooms, cucumbers, onions, and tomatoes and gluten bread, gems, etc.

Household Editor:—I have to take sandwiches to our school picnic. Can you suggest something different?—June.

If the picnicers were to be all girls sandwiches with flower flavored butter would be nice. Put a pat of butter in a dish on a bed of rose petals and cover it thickly with more fresh petals. Close

the dish so that the odor can not escape and leave over night. In the morning the butter should have the delicate flavor of roses. If there are to be many boys I am afraid these sandwiches would receive scant favor. For them try sandwiches spread thin with peanut butter and strawberry jam.

Household Editor:—What is wrong in the sentence, "She begun to sing?"—Beginner.

"Begun" is the past participle of the verb "begin" and should be used only in the perfect tenses. "She began to sing" is right, "began" being the past of the verb.

Household Editor:—Which is correct, "He sang a song," or, "He sung a song?"—Singer.

According to the past form of the verb, either would be correct as the principal parts of the verb are present "sing," past, "sang or sung," past participle, "sung." "He sang a song" is the form generally used, and, "He has sung a song."

Household Editor:—When is the best time to can pineapple, and how do you do it?—Beginner.

Most housekeepers can pineapples when they first arrive in the spring, but I know one woman who always waits until she cans her raspberries, and her pineapple is delicious. The usual way is to cut the apples in dice, which is easily done by cutting in slices, paring and removing the core and putting through the food chopper. Put in a porcelain lined kettle and add a generous cup of sugar for every medium-sized pineapple. Let stand over night and in the morning boil until thoroughly heated through and can as other fruit in sterilized cans.

Will you kindly inquire through the Michigan Farmer for a very thorough article on stenciling for household decoration? I have a small outfit and have had it for nearly four years, but do not know how to use it. The colors are oils.—Mrs. J. W. C.

Stenciling is so simple it does not need a long article to explain. Tack your pattern firmly to the cloth you wish to decorate, using the thumb tacks draughtsmen use to fasten their drawings to the board. It must be held tightly to prevent the paint running and blurring your outline. Then paint over the holes with your brush, using any color you select as suitable to the cloth you are using and the general color scheme of the room. It will not hurt the pattern if you get paint on it, it can be used again and again. Crash, scrim, linen, even cheese-cloth, may be stenciled. Crash is much used for cushion tops and scrim with a stenciled border for curtains. The only point to be remembered is to keep the pattern tightly pressed down on the material.

Household Editor:—I have a bedroom with fiber matting for floor covering. It is quite badly faded but not worn enough to lay aside. The color was dark green. What can I do with it?—Reader.

If the matting has not already been turned it can be reversed and the other side used. If it has, I do not think there is any good way by which the color can be restored. You might try getting a package of dark green dye, making a strong solution and applying to the matting with a brush. This was suggested some months ago by a correspondent. Try a small corner of the matting first so that if the method is not a success the whole will not be spoiled.

SAVING HEAT AND FUEL.

BY HILDA RICHMOND.

Seeing my grandmother's old charcoal stove, or furnace as she called it, made me want to try it for ironing days, more for curiosity than from the thought that it would save labor or anything else. After many failures I could make a satisfactory fire and was delighted to find that it was ideal for ironing. Perched on an old stool beside the ironing board there was no walking back and forth necessary, indeed, one could sit down comfortably for the small pieces and get the irons without a bit of trouble, and they retained the heat perfectly. Even a hot plate makes some heat and the odor is not pleasant, so the charcoal stove saves both heat and money.

Of course, from ironing to cooking evil smelling vegetables out of doors was a

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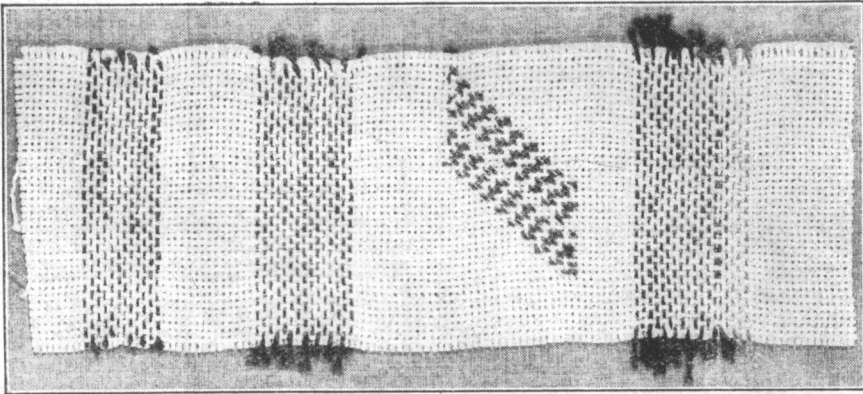
THE MICHIGAN FARMER,
Detroit, Mich.

short step, and it certainly looks picturesque, if not foreign, to cook in the back yard, while the house is saved the smell of cabbage or onions or cauliflower. Three utensils can be placed on the grate at once and the fun of sitting down in the open air to sew or read and keep watch over the dinner is much appreciated. From that to making a picnic stove out of the faithful old furnace was the next step and we are wondering what will be the next invention. Of course, much depends upon the locality as to the price of charcoal, but in most instances it is cheaper than gas, a great deal. If there is an old charcoal stove in your garret rout it out and enjoy ironing days as well as picnics. It will take a little time to learn to make a steady fire, but by saving the berry boxes and fine scraps of wood it can be mastered.

HAND WEAVING.

BY MAE Y. MAHAFFY.

WE have discussed various forms of darning in these embroidery articles, but have not enlarged upon the possibilities of the ordinary darning stitch used as in plain weaving. This form of fancy work can scarcely be called embroidery in the true sense of the word, though the same stitch frequently forms part of embroidery designs, yet it is utilized in so many ways in place of regular embroidery stitches, and answers for so many purposes which embroidery



usually fills, that it seems quite worthy a place among articles on embroidery. It will certainly give any needleworker pleasure in working out its numerous features.

No designs, in the ordinary acceptance of the term, are required for the hand weaving, thus giving wider opportunity for individual effects. The work is sometimes called lazyweave, and quite appropriately it would seem, since it is so easily managed that one might with all propriety confer some such title upon it. Even the children may be taught to work up quite attractive articles with but little effort.

Only the more open-work materials, like Monk's cloth, burlap, canvas, scrim, etc., are available for the work, and floss of silk or cotton of a slightly heavier quality than the individual threads entering into the weave of the material used will be needed for the weaving. Blunt needles will be found most feasible for attaining speed, since they will not so readily enter into the background threads, though one can sometimes manage fairly well by running the usual pointed needles backward, or eye first.

All sorts of color effects are possible, several borders or bands being shown in the accompanying illustration. When one once becomes interested in the work much pleasure is obtained from planning these effects, broad or narrow stripes, straight or bias, and combined in every conceivable way. Sofa pillows have the bands running crosswise and lengthwise at sides and ends, making double weaving at the corners. Others have bands running only one way, and some are finished by fringing the material at the ends, allowing the floss to project at equal length.

The stitch itself is just simple darning, such as was described in Article No. 6, a running in and out of the mesh of the background fabric, the "under and over" alternating in each row. Portieres of Monk's cloth or burlap may be handsomely trimmed by bands of such weaving across the bottom and down the sides, or at least one side. Curtains of scrim, too, are readily decorated in any favorite color or white; while pillows, scarfs, pin cushions, bags, etc., provide ample usage for the lazy-like weaving.

Keep a roll of passe partout binding on hand and use it for the many little breaks in pasteboard boxes, torn patterns, etc. —Mrs. S. S.

SLEEPY TIME.

BY ELLA E. ROCKWOOD.

When mother turns the blankets back
And takes my nightie from its hook
I know my day of play is done
With dolly and with picture book.

She gently lifts me on her lap—
Takes off my shoes and sets them
straight.

My stockings, too, she lays away,
Each by its faithful little mate.

And then my eyelids seem to droop—
I lean my head against her breast
And scarce can wait to cuddle down
Till mother gets me all undressed.

At last she lifts me in her arms
And bears me to my little bed,
And bending there we pause awhile
Till "Now I lay me down," is said.

Then mother's hand the pillow smooths.
She tucks me in all snug and tight;
"God bless and keep my precious child,"
She murmurs low. "Good night, good
night."

SHORT CUTS TO HOUSEKEEPING.

When done frying fried cakes try dipping them each one into boiling water and out again.—L. F.

Salt will curdle new milk; therefore, in making gravies, soups, etc., where milk is used, the salt should not be put in till ready to take it from the stove.—A. E. L.

Varnished woodwork can be kept bright and shining by wiping with a woolen cloth wrung out of warm water then pol-

ishing with a cloth moistened with a mixture of equal parts of boiled linseed oil and kerosene oil. This will also remove all scratches and white marks and spots. It is also good for furniture.—Mrs. J. C. T.

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These patterns may be obtained from the Michigan Farmer office at the prices named. Be sure to give pattern number and the size wanted.



No. 4531, Ladies' Combination.—Six sizes, 32 to 42 inches bust measure. For 36-in. bust it requires 1½ yards of 15-inch flouncing for corset cover and 2¼ yards 24-inch flouncing for petticoat, with ¾ yard of material, 36 inches wide, for yoke. Price, 10 cents.

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No. 4635, Boys' Shirt Waist Suit. Five sizes, 4 to 12 years. For 8 years it requires 2¾ yards of 36-inch material. Price 10 cents.

No. 4949, Girls' Dress. Five sizes, 4 to 12 years. For 8 years it requires 5 yards of 24 inches width; ¾ yard of contrasting goods 27 inches wide. Price, 10 cents.

No. 4554, Ladies' Four-gored Circular Skirt. Six sizes, 22 to 32 inches waist measure. For 24-in. waist it requires 6¼ yards 44 inches wide. Price, 10 cents.

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POULTRY AND BEES

FEEDING THE NEWLY-HATCHED TURKEYS.

Turkey chicks have in the past been often accused of being stupid when first hatched, and the advice used to be given to put a chicken with them to teach them to eat, as they were very slow in commencing to pick up the food given them; but the more probable cause of the alleged "stupidity" is that nature does not call upon them to eat so early as chickens. Not till they have been out of the shell a good 36 hours need we try to feed them, and an extension of a few hours further does no harm; when they are hungry they will eat the food offered them.

The first food is still egg and bread crumbs, though this now is not so universal as it used to be; an alternative is rice boiled in milk, and biscuit meal made with boiling water in the usual way; mix equal parts, and feed the turkey chicks on this food. Still, on the whole, hard-boiled egg passed through a piece of perforated zinc, and stale bread crumbs, the whole moistened with milk, is a food which cannot be improved upon; but it must be fresh. The chicks are easily upset, as food the least stale is prone to give them diarrhoea; this and their susceptibility to damp, and their tendency to get lice-infested and die in consequence, are the three chief dangers the rearer has to guard against.

For the first week or ten days, unless the weather is exceptionally dry and warm, the coop should stand in an open shed to ensure the chicks being kept dry, and if the weather is uncertain they should stay there longer. The coop should have a bottom board, and there should be a sheltered run in front of it. Place the coop in as sheltered a place as possible when they are moved out, and be sure the grass around it is short, as the chicks draggle themselves in wet weather if the grass is at all long, and die off in consequence. All soft food mixed for them should be as dry as possible; sticky food puts them off their appetite, for they are dainty feeders, and they eat very little at a time, their crops being very small. Therefore, they must be fed little and often. Most turkey rearers give the chicks plenty of chopped onions; some rearers condemn giving this vegetable, but personally I have never known it do any harm, and the chicks are very fond of it. Likewise they enjoy dandelion leaves or lettuce leaves, and should be given some, even when they can get plenty of grass. They need more meat than ordinary chickens; the meat should be minced and given in the soft food. Ground oats are a very good food for them, and should be given with biscuit meal and a little pollard and corn meal, as by itself it is sticky. Then there is rice, which should be boiled till it swells, but not until it gets sloppy.

Never leave stale food lying before the coop; feed them on a board and remove it when they have finished till the next meal is due. Also grit is very necessary for them, and should always be supplied.

If possible let the hen out for a run each day when they are two or three weeks old; the turkey chicks then get more animal food. Be careful to protect them against wet till they "shoot the red," that is, develop the red, fleshy protuberances on the head that distinguish them from other poultry; this occurs when they are about ten weeks old.

Besides the soft food mentioned, turkey chicks should have grain from a few days old. "dry food" mixture at first, such as makers advertise, and as they get older, wheat. The last meal of the day should always consist of grain. Keep them clean and dry, away from ordinary poultry; feed frequently on sweet food, let them have a free range, and barring accidents, the death rate will be but trifling.

Canada. W. R. GILBERT.

It is most interesting to watch the first poults of a hatch care for themselves while the mother is still brooding the slower eggs. If the nest is placed, as it usually is, where nature will provide food for the young, it is wonderful to see how soon, and apparently with no hint from the mother, they will begin to forage on moving ants, mosquitoes, flies and bugs. The down fairly transforms itself before the eyes into feathers. The most remarkable thing is their apparent ability to exist without water. It often seems that with its long neck and peculiar walk the turkey resembles the camel among

the quadrupeds, and it seems like it, too, in its ability to go without water. I have had a turkey hatch and rear a flock until half grown before she left her dry woods locality to bring them to a stream for water. I am fortunate in having good running water available and, taking this hint from the birds, except in extreme cases, I never put water about in dishes for them. Then the water is protected as carefully as for a young baby. Notice your own flock and you will see how rarely the mother takes young poults to a drinking place.

In regard to feeding the poults, my principal advice is "Don't." But, to keep them tame, go to the fields or woods daily, call them and sprinkle a small amount of chick starter before them. If the hen is wild, or refuses this food, I add to it at first a few grains of corn for her special benefit. As the points increase in size, wheat becomes a valuable food. But the best food is what they get for themselves from the fields and woods. Saginaw Co. H. C. McDONAGH.

PROVIDING NESTS.

A fault with the poultry houses on many farms is the too limited number of nests provided for the hens. The number in actual existence is often cut down to a few by the filthy condition most of them are in. There is an unsanitary condition at which the hen revolts and she goes elsewhere to lay. An investigation by the government of houses for poultry on farms showed that the average number of nests for each 100 hens was eleven.

One of the results of too few nests is that the hens will "steal" their nests away. They will prefer to go about the straw stack, underneath the barn, in the grass or anywhere to get away from the disturbance caused by so many hens seeking the same nest. The hiding of the nests almost invariably results in financial loss for often the eggs are not found and when they are discovered they have deteriorated in quality, or should the mother sit on them the hatch is almost always of a low per cent. It is better to keep the hens laying in the chicken house, a matter which is easily accomplished by providing at least one nest for every four laying hens in the flock.

The second result from the lack of nests, is the production of dirty eggs. Of course, this is not necessary where much care is exercised in keeping the nests re-filled with chaff, but when so many hens lay therein and fight for first place the eggs are certain to be trampled upon and the nest gets filthy in a much shorter time than where adequate nest room is provided. Dirty eggs always sell for less in a discriminating market. Again, the eggs are kept warm by the constant presence of hens. Through this heat bacterial growth proceeds vigorously. These faults are overcome by supplying the requisite number of nests, which should be made clean and kept so.

Wayne Co.

SUBSCRIBER.

WHEN BEES STING.

The bee is by a great many people considered a very vicious little insect, who likes nothing quite so well as to sting someone. But this is not the case. One noted author says of them, "Bees are, on the contrary, the pleasantest, most social genial and good-natured little fellows one meets in all animated creation, when one understands them." He then goes on to prove this by saying that you can tear their combs to bits before their eyes and rob them of all their hard earned stores without a bit of resentment on their part, etc." While I should hardly go as far as this, perhaps, still when we think of it there is usually one or two, or perhaps a dozen, real cranks to be found in the average apiary and many times not a single one out of the millions there. Can you say as much of any other creatures? To be sure, bees will sting, but the man who understands them will not get stung nearly so often as the one who does not, and who attempts to do the same work among them. This is not as some people think, because the bees know them, but because the bee-keeper knows them and knows when to do the work and get along with them peaceably. During a dearth of honey, bees are like human beings, are liable to get mad when things are not coming their way and then if some great monster comes and takes what little they have got from them they are apt to resent it. Or, after a storm when the bees have been working hard for sometime and are tired and then have been forced into idleness and ill humor, they are good things to let alone. Nothing will make bees more vicious than to let them get

to quarreling over scraps of honey that have been left around. If you pinch a bee she will quite naturally sting.

So, after all, it simmers down to this: If you don't want to get stung, don't work any more than is absolutely necessary among the bees in a dearth of honey or immediately after a storm. Do not pinch them or leave scraps of honey around for them to get to quarreling over. Do not stand right in front of the entrance to do your work. Those bees coming home with a heavy load of honey, or those going out in quest of more, do not like to be compelled to dodge around a man's legs to get there. Handle them as much as possible in the middle of the day when the most of the bees are out in the field to work and not much trouble may be anticipated.

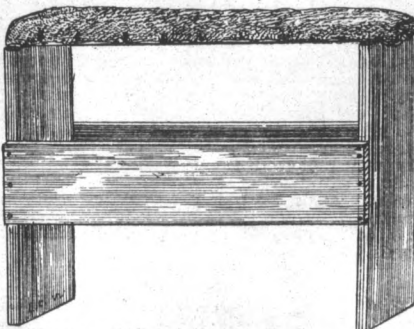
Mecosta Co.

L. C. WHEELER.

LABOR-SAVING DEVICES IN AND AROUND THE BEE-YARD.

The amount of work we can do in almost any business is governed partly by our skill, but also in a large measure by the things we have to do with. Many times we do without things, too, that we could just as well have, and that at very little expense.

There is nothing, perhaps, which will tire one more than to stand humped over a lot of bee hives all day, especially when mixed along with it there is much heavy lifting, as there is many times when honey is abundant. One can sometimes sit on the covers, turned up on end,

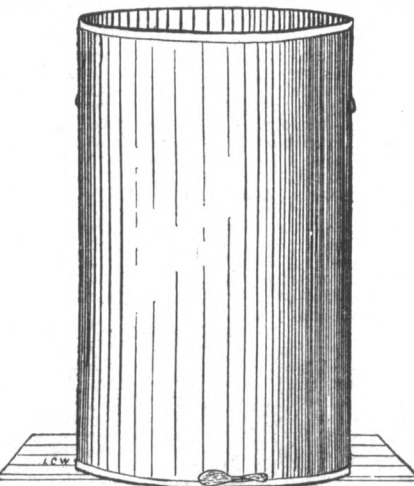


if he has the right kind of cover, but even then you must sit with your feet braced to keep from falling over. Twenty minutes' work will make a very handy seat and tool box combined, with which you can work in comfort and at the same time have your tools right where you can find them whenever you want them.

The material needed consists of a few pieces of board, a strip of good stout cloth and a little bit of excelsior or some other cushion material. The illustration shows just how it is made.

The following tools will generally be needed and should be carried with you all the time in the box: One hive tool, one hammer, a few nails, a pencil, one bee brush, a pair of pincers and your book for the hive records if that is the method you use of keeping track of them.

If you are extracting quite a lot of honey, the straining of it becomes something of an item and anything to lessen this part of the work will be appreciated. This has been accomplished by what is called the gravity separator, which is nothing more than a small but deep tank with a faucet at the bottom, into which a float is put to keep the honey from

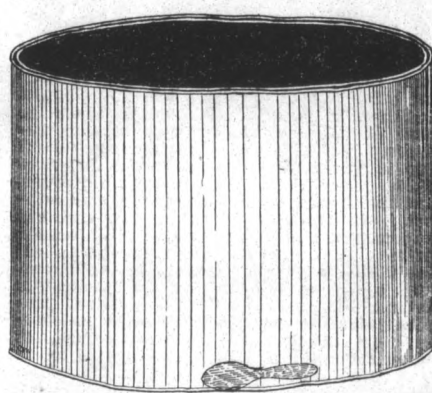


driving the cappings clear to the bottom of the tank when pouring in after you have it partly full. As you fill it up, the cappings, etc., will rise to the top leaving the clear honey at the bottom which can be drawn off when the tank is full a pailful at a time as it is filled at the top.

You should be able to get one of these made at your local tinsmiths for \$2.50 to \$3.00.

The cappings are inclined to pile up pretty fast when one is extracting and it

is also a pretty hard matter to get them drained properly so as to avoid losing a lot of honey. This want is supplied in the capping melter, which is a sort of a double boiler, or a can within a can and a gate at the bottom to let the honey and wax run out as it melts. The space between the two walls of the cans are filled with water and the inner can with cappings and the whole set on a stove, preferably a one-burner oil stove, to melt.



Fine wire screens are slipped down over the gate on the inside to keep the unmelted cappings from running out. As the honey runs out as fast as it is warmed the heat does not hurt the honey very much, and as it would be all wasted without the use of the melter it is just so much clear gain. As this would be rather difficult to make it would be best to buy it ready made of the supply dealers. Mecosta Co. L. C. WHEELER.

Bees on the Farm "Gleanings in the Bee Culture" will help you get more pleasure and more profit from Bee keeping. 6 months trial subscription 25c. Book on Bees and Catalog of Supplies sent free. THE A. I. ROOT COMPANY, Box 240, Medina, Ohio

Blue Belle Barred Rock eggs now 75c a setting; two, to same address, \$1.25. **White Orpington.** Lake Ridge Farm, Levering, Mich.

Indian Runner Duck Eggs. Flock of 38, averaged 205 each in 1911. Care of ducks with order. Cut price. \$3.50 per 100; \$2 per 50; 75c per 15. **WM. P. BOOTH, R. 3, Orland, Ind.**

Crystal White Orpingtons—the great winter layers. Bargains in stock; eggs half price balance of season. Send for mating list. **MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.**

MOTTLED ANCONAS. Beautiful, nonsetting, persistent layers of large eggs. \$1.00 for 15 eggs. **WILL W. FISHER, Watervliet, Mich.**

Barred Rock Eggs—Great Laying Strain and prize winners. 15 eggs, \$1.50; 30, \$2.75; 100, \$7. **W. C. Coffman, R. 6, Benton Harbor, Mich.**

R. C. Br. Leghorns—Mad. Sq. Garden & Boston winners. M. Pekin Ducks. \$1 per setting. **CLAUDIA BETTS, Hillsdale, Mich.**

EGGS—Light Brahma, Barred Rock, and White Wyandotte, \$1 per setting, \$1.50 for two settings. **E. D. BISHOP, Route 38, Lake Odessa, Mich.**

Eggs for Hatching from Standard Silver, Golden Broun's Wyandotte and W. Wyandottes. 15, \$2; 30, \$3. **Browning's Wyandotte Farm, R. 30, Portland, Mich.**

HARTFORD POULTRY YARDS, HARTFORD, MICH. S. C. White Orpington Cockerels, \$3.00 to \$10.00. Pure bred S. C. Blk. Minorca incubator eggs, \$5.00 per 100.

Prize Winning Barred Rocks, R. I. Reds, Mammoth Pekin and I. Runner ducks. Stock for sale. Eggs \$1, \$2, \$3 per set. Utility \$5 per 100. **EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.**

EGGS Buff & White Orpingtons, Buff & White Leghorns, Barred & White Rocks, R. I. Reds, and Black Minorcas. Circular ready. **H. H. KING, Willis, Michigan.**

R. C. & S. C. RHODE ISLAND REDS—Eggs \$1 per 15, and cockerels. **BUELL BROS., Ann Arbor, Mich.**

R. C. B. Leghorns—Kulp strain. Eggs in season, \$1.00, 15; \$4.00. **MRS. EMMA MASON, Gobleville, Mich.**

LILLIE FARMSTEAD POULTRY B. P. Rocks, R. I. Reds, and S. C. W. Leghorn eggs for sale. 15 for \$1.25 for \$1.50; 50 for \$2.50. **COLON C. LILLIE, Coopersville, Mich.**

FOR SALE—S. C. Buff Orpington Eggs. FINE STOCK. 15 \$2; 30, \$3.50; 50, \$5. **H. B. ATWOOD, Laingsburg, Michigan.**

STANDARD Bred R. I. Reds, Rose & Single Combs, 30 eggs \$1.50. Wonderful layers. Red Turkey and Afr. geese. **W. T. FRENCH, Ludington, Mich.**

WHITE WYANDOTTE EGGS from prize winners. \$2 for 15. S. C. White Orpingtons: quality the best \$3 for 15. **J. D. ST. JOHN, HAYDEN, INDIANA.**

R. C. B. LEGHORNE EGGS 15 for \$1; 30 for \$1.50. **O. M. YORK, Millington, Mich.**

R. C. R. I. R. eggs. \$5, \$2 and \$1. Pencilled Indian Runner Duck eggs, pure white egg strain, \$1 for 15. **COY G. BRUMM, Nashville, Michigan.**

S. C. Rhode Island Reds of quality. Eggs from first pen headed by Red Cloud \$2 per 15; Range \$1 per 15; \$5 per 100. **E. J. MATHEWSON, Nottawa, Mich.**

Single Comb Black Minorcas. **R. W. MILLS, Saline, Mich.**

SINGLE COMB BROWN LEGHORNS. Six grand exhibition matings, two utility pens. Eggs and stock. Send for catalogue. My motto—a satisfied customer. **Charles Ruff, Box M. F., St. Clair, Mich.**

WHITE Wyandottes—The most beautiful and useful of American breeds. Send for 1912 circular. **A. FRANKLIN SMITH, R. F. D. 9, Ann Arbor, Mich.**

DOGS.

30 Pure Bred Fox Hound Pups ready to ship in May hounds. Send stamp. **W. E. Lecky, Holmesville, Ohio.**

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MARKETS

DETROIT WHOLESALE MARKETS.

May 29, 1912.

Grains and Seeds.

Wheat.—Both the bulls and bears have tried their utmost the past week to work values in their direction, but conditions have been such that quotations have remained very nearly to those of Wednesday last. The market is entirely dependent upon crop conditions and the reports from many sections, especially Kansas and other western states are so conflicting that it is difficult for the trade to arrive at any satisfactory conclusion regarding conditions. The spring wheat crop is going into the ground under favorable conditions. This means, however, that the bears cannot count on any support from this direction since any changes that may occur from now on will be for better values, the trade giving the fullest credit for a perfect crop. In some sections of the states east of the Mississippi favorable weather conditions have prevailed and the crop appears to be improving. In other parts the crop fails to make any gains and the outlook is as poor as at any time this spring. On Tuesday cash grain remained steady, while July advanced $\frac{1}{4}$ c and September wheat 1c per bu. The cash trade is strong with a good demand and stocks decreasing quite rapidly, the visible supply of this country having decreased 2,342,000 bushels. The Hessian fly is reported to be doing serious work in Kansas, hot winds are making trouble in Texas and Oklahoma, while complaints of excessive moisture are coming from the Dakotas and Minnesota. One year ago the price for No. 2 red wheat was 91c per bu. Quotations are as follows:

	No. 2	No. 1	July	Sept.
Thursday	1.16	1.14	1.15%	1.15
Friday	1.15%	1.13%	1.15%	1.14%
Saturday	1.16	1.14	1.15%	1.15
Monday	1.16	1.14	1.15%	1.15
Tuesday	1.16	1.14	1.16%	1.16

Corn.—Prices have been maintained at a $\frac{1}{4}$ c advance over the closing figures of a week ago. Planting is being delayed in many parts of the country through continued rainfall and the average planting period will be much later than normal. This will greatly impair the prospect of the crop. There is also a scarcity of seed and much that is available is proving to be of inferior quality due to a low germinating percentage. The visible supply of corn shows a decrease of about three-quarters of a million bushels. One year ago the price for No. 3 corn was 55c per bu. Quotations are as follows:

	No. 3	No. 3
Thursday	78½	81
Friday	79	81½
Saturday	79	81½
Monday	79	81½
Tuesday	79	81½

Oats.—Oat values have gained about 1½c since Wednesday of last week. While the plant has been making splendid development in many sections, in other places too much moisture has worked to the crop's detriment. The visible supply, which is small, shows a decrease of but a few thousand bushels. One year ago the price for standard oats was 38c per bu. Quotations are as follows:

	Standard	No. 3
Thursday	57	56½
Friday	57½	57
Saturday	58	57½
Monday	58	57½
Tuesday	58½	58

Beans.—The local bean trade is inactive and the quotations given below are merely nominal. The position of the trade is stronger than usual at this season of the year. Prime grades are scarce. The nominal quotations are as follows:

	Cash	Oct.
Thursday	2.70	2.30
Friday	2.70	2.30
Saturday	2.70	2.30
Monday	2.70	2.30
Tuesday	2.70	2.30

Clover Seed.—The activity in this market has practically passed for this season and the figures given below are nominal ones. No change has been made in prices for any of the grades this week. Quotations are:

	Cash	Oct.	Alsike
Thursday	12.50	10.00	11.50
Friday	12.50	10.00	11.50
Saturday	12.50	10.00	11.50
Monday	12.50	10.00	11.50
Tuesday	12.50	10.00	11.50

Rye.—This trade is steady with a week ago, the price for cash No. 2 remaining at 94c per bushel.

Timothy Seed.—Trade is inactive with prices unchanged. Prime spot is quoted at \$6.40 per bushel.

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.—Hay is lower, straw steady. Quotations: No. 1 timothy, \$26 @26.50; No. 2 timothy, \$24 @24.50; clover, mixed, \$23 @25.50; rye straw, \$11.50 @12; wheat and oat straw, \$10.50 @11 per ton.

Potatoes.—The supply is greatly reduced and demand fair, causing an increase in quotations. On the local market prices are up 10c per bushel from a week ago. In carlots on track the price is \$1.15 per bushel in bulk and \$1.20 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, 11½c; kettle rendered lard 12½c per lb.

Dairy and Poultry Products.

Butter.—The increase in the output of butter caused another decline. The margin between this and last week's price on the local market is 2c per lb., which is the same margin recorded at Elgin. This puts the butter market at the lowest point of the season. Quotations are: Extra creamery, 25c; first creamery, 24c per lb.

Eggs.—Although the market is receiving a very liberal supply of eggs, the demand encouraged by high meat prices, and also by the activity of the storage people, is caring for the large volume of receipts. Current receipts, case counted, cases included, are quoted at 18c per dozen.

Poultry.—Chickens and hens are lower. Other grades remain steady with last week. The offerings of poultry are of fair dimensions with a weak demand. Quotations are as follows: Live.—Spring chickens, 15c; hens, 15 @15½c; 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.—Steady. Michigan, old, 22c; Michigan, late made, 18½ @19c; York state, old, 22 @23c; do. new, 18 @19c; Limburger, 21 @22c; domestic Swiss, 21 @23c; brick cream, 18 @18½c per lb.

Fruits and Vegetables.

Hickory Nuts.—Shellbark, 2c per lb.

Strawberries.—In 24-qt. cases, \$2.25 @2.75 per case.

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.

The old potato deal is nearly over now, with stock practically all out of farmers' hands, and the market fluctuating from day to day. Only a few potatoes are offered on the city market and they sell around \$1.25. Present indications point to a large acreage of potatoes this year. The hay market continues at \$20 @22. Local dealers are paying the country merchant 17c for eggs and 18c for dairy butter. Grain prices are as follows: Wheat, \$1.11; oats, 59c; corn, 82c; rye, 83c. Beans are worth \$2.20.

Chicago.

Wheat.—No. 2 red, \$1.13½ @1.14½; May, \$1.13½; July, \$1.11½.

Corn.—No. 3, 76 @77½c; May, 80½c; July, 75½c per bu.

Oats.—No. 2 white, 56½ @56¾c; May, 55½c; July, 50½c per bu.

Barley.—Malting grades, \$1.12 @1.19 per bu; feeding, 65 @85c.

Butter.—Butter has been moving a little slow which, with increased receipts, is giving trade a heavy undertone. The local quotations have declined since a week ago. Quotations: Creameries, 23 @25c; dairies, 20 @25c per lb.

Eggs.—Liberal receipts reduced quotations which stimulated buying. Storage people are active. Quotations: Firsts, 17c; ordinary firsts, 15½c per doz; at mark, cases included, 15½ @16½c.

Potatoes.—The receipts are inadequate to meet the requirements of the trade, with a consequent advance of 30c per bushel. Michigan and Minnesota stock now quoted at \$1.35 @1.40 per bu.

Beans.—Better prices rule and are bringing out consignments that have been waiting for the higher figures. Quotations: Pea beans, choice hand-picked, \$2.92½ @2.95 per bu; prime, \$2.82½ @2.85; red kidneys, \$3.25.

Hay and Straw.—The better grades of timothy are lower. All other grades of hay and straw rule steady. Quotations: Timothy, choice, \$26.50 @27; No. 1, \$24.50 @25.50; No. 2 and No. 1 mixed, \$23 @24; No. 3 and No. 2 mixed, \$18.50 @22; clover, \$18 @21; 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.—Another decline has followed the big slump in values last week. The market is rated firm and the product is moving freely. Creamery extras, 27 @27½c; firsts, 26 @26½c.

Eggs.—Except storage packed, all grades rule lower. Trade active. Quotations are: Fresh gathered extras, 21 @21½c; firsts, storage packed, 20 @20½c; do. regularly packed, 19 @20c; western gathered whites, 20½ @21c per dozen.

Poultry.—Broilers higher, fowls lower and other kinds steady. Dressed.—Chickens, broilers, 38 @45c; fowls, 13½ @14½c; turkeys, 13 @22c per lb. Live.—Chickens, broilers, 30 @35c; western fowls, 15½ @16c; turkeys, 12c per lb.

Boston.

Wool.—There is increased animation in the wool trade due to the demand from manufacturers who are receiving liberal orders for woolen cloth and goods. In Ohio the best medium clips are being contracted for at from 25 @26c per lb. Michigan goods going at slightly lower figures. Prices for fleece wools will not be well established until a sufficient amount is delivered at seaboard markets to attract the agents of large mills. There has been considerable shearing in Michigan and Ohio, although poor weather has delayed the operation somewhat. Following are the leading quotations on the market here for domestic fleeces: Ohio and Pennsylvania fleeces—Delaine washed, 30c; XX, 28c; fine unmerchantable, 23c; ½-blood combing, 26c; ¾-blood combing, 27 @27½c; ¼-blood combing, 26 @27c; delaine unwashed, 25c; fine unwashed, 21c. Michigan and New York fleeces—Fine unwashed, 19 @20c; delaine unwashed, 23c; ¼-blood unwashed, 25½

@26c. Wisconsin and Missouri—¾-blood, 26c; ¼-blood, 25 @26c. Kentucky and similar—¾-blood unwashed, 26c; ¾-blood unwashed, 26 @27c.

Elgin.

Butter.—Market firm at 25c per lb., which is a decline of 2c from the price of the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

May 27, 1912.

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

Receipts of stock here today as follows: Cattle, 135 cars; hogs, 75 double decks; sheep and lambs, 90 double decks; calves, 2,500 head.

With 135 cars of cattle on our market here today, and 20,000 reported in Chicago, our market was full steady with last Monday on all fat cattle of all grades weighing 1,150 lbs. or less. All good fat cattle of 1,200 lbs. and upwards sold from 10 @15c per cwt. lower than last Monday. However, with the exception of a few loadsofex tremely heavy cattle, our market was quite active, and everything was closed out early at the prices.

We quote: Best 1,400 to 1,600-lb. steers \$8.50 @8.90; good prime 1,300 to 1,400-lb. do., \$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 butcher steers \$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 fat heifers, \$5.50 @6; fair to good do., \$4.25 @4.50; 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, \$6 @70; fair to good do., \$40 @50.

Hog receipts were moderate here today, but all western markets show liberal receipts and with lower prices all over the country our packers were not very strong buyers, and the general market on the yorkers and mixed grades was 5 @10c lower, while pigs were in lighter supply than in sometime past, and sold 15 @25c higher; bulk of the best hogs sold at \$8 @8.05, with some ordinary kinds at \$7.85 @7.95; pigs and lights, \$7.65 @7.75 as to weight and quality. Weather is getting warm, and we would advise shippers to be careful in loading hogs; clean out all manure and dirt, and try and have hogs well cooled before putting in cars; this should prevent loss in dead.

The lamb market opened active on the choice kind, but slow on the medium; most of the best lambs sold from \$8.75 @9; some very good lambs sold from \$8.50 @8.65. Will be about 10 loads holding over, mostly fair to good kind. Look for about steady prices the balance of the week. Sheep market was active, but prices about a quarter lower than last week.

Best lambs, \$8.75 @9; cull to common do., \$6 @7; wethers, \$6 @6.30; yearlings, \$7 @7.50; handy ewes, \$5.5 @5.25; heavy do., \$5 @5.25; cull sheep, \$2 @3.50; veals, choice to extra, \$9.50 @9.75; fair to good do., \$6.50 @9.

Chicago.

May 27, 1912.

Cattle. Hogs. Sheep.
Received today 20,000 53,000 19,000
Same day last year, 21,331 38,231 25,039
Received last week, 59,966 141,159 74,955
Same week last year, 53,364 141,370 89,111

The moderate Monday receipts today failed to cause any improvement in cattle prices, and firmness was restricted to the better class, with others slow and largely a dime lower. Hogs were fairly active at 5 @10c lower prices, sales ranging at \$6.95 @7.70, the top price being paid only at the opening. Hogs received last week averaged 233 lbs., or 10 lbs. lighter in weight than for the corresponding week last year. The general run of sheep and lambs went at unchanged prices, a sale of choice clipped wethers from Ohio fetching \$6.35. The best clipped lambs were 15c higher, selling for \$9.25, and a consignment of Tennessee spring lambs, the first offered on the market this season, brought \$9.75. Prospects are regarded as good for the future market for fat live muttons, lambs especially.

Cattle receipts last week were larger than recent meager supplies, but they were far from large, and desirable offerings developed additional firmness, new records for the year being established for prime steers and heifers. The larger part of the beef steers sold at \$7.50 @9, with a good showing of \$9.10 @9.40 heavy beefs on Monday and Wednesday. The commoner light-weight steers brought \$6.25 @7.50, with a fair grade selling at \$7.60 and over, medium steers at \$8 and upward and good cattle at \$8.60 and over. Light-weight steers continued to greatly predominate in the receipts, and there was a small percentage that weighed over 1,200 lbs. Prime yearlings that weighed but 1,127 to 1,138 lbs. brought \$9 @9.15, and there was a good showing of distillery steers that brought \$7.85 @9. The only drawback to further advances in prices was the marked curtailment in the consumption of beef everywhere because of its unusual dearthness. Cows and heifers had their share in the upward movement, in fact, advancing more than steers, as the demand was particularly good for such stock. They sold for \$4.40 @8.50, with cutters going at \$3.60 @4.35, canners at \$2.40 @3.50 and bulls at \$4.25 @7.60. Calves were higher on short supplies, bringing \$4 @9 per 100 lbs. and milkers and springers sold at \$40 @75 per head, with scant offerings and advancing prices, fancy cows being quotable at \$80 @100. Grass is so abundant that few cows with quality are marketed, and it is usually impossible to pick up prime dairy cows. Few stockers

and feeders have been offered on the market of late, and when any good lots were shown, prices were apt to be so high as to frighten away buyers. Besides, farmers were too busy with delayed spring work to attend to buying cattle. Stockers were disposed of at \$4.40 @6.25 and feeders at \$5.90 @7. Looking into the future, it may be said that increasing marketings of Texas grass cattle will naturally tend to depress prices for the cheaper class of cattle, but high prices for choice beefs are certain.

Hogs are marketed freely most of the time, particularly when the ruling prices are satisfactory, with the big runs usually seen at the beginning of the week, close to 56,000 hogs showing up on Monday a week ago. Smaller purchases made by eastern shippers at times recently have helped the local packers to depress prices all through the list, with recoveries after sharp declines. Recently the average weight of the hogs marketed has increased, this being regarded as an indication that stockmen generally were more confident of the future of the market than heretofore, but the average has still fallen short of the last two years. The hogs show up well in average quality most of the time. Then the heavier barrows of prime quality continue prime favorites, and sell at a good premium over prime hogs of lighter weights. All kinds of hogs are selling much higher than in most former years, and a continuance of high markets is generally promised, hog products being in good demand, especially fresh pork. Provisions are in large supply in western warehouses, and they sell much higher than a year ago. The close of last week saw sales of hogs at \$7 @7.75, the best 185 to 195-lb. hogs selling 10c below the top price. A week earlier hogs sold at \$7.25 @7.95. Pigs sold at the close at \$5.40 @6.95. Eastern markets are receiving more hogs from home territory.

Sheep and lambs were marketed freely last week, with but a small percentage of prime clipped lambs and the best grade of spring lambs, and buyers took these readily at high prices, while refusing to bid on the other offerings except on lower terms. It was an extremely uneven market on the whole, buyers being after the high dressers, while everything else sold slowly, frequently at lower prices. Prime extra heavy lambs had to be sold at a great discount, selling at yearling prices, while fat handy weights were sold as fast as offered. Spring lambs were received in increasing numbers, with a better showing of fat lots, and these sold all right. Lambs and ewes comprised most of the receipts, with not many wethers or yearlings offered. Texas grass sheep continued to arrive in Kansas City quite freely. At the close of last week lambs were 10 @15c higher and sheep mainly 15 @25c higher than a week earlier. Clipped stock closed as follows: Lambs, \$5 @9.10; spring lambs, \$5 @9.50; yearlings, \$6.40 @7.50; wethers, \$5.25 @6.35; ewes, \$2 @5.75; bucks, \$3 @4.

Horses were in smaller supply last week than a year ago, and the demand was not as large as it has been of late, with fewer eastern buyers and a slower call for farm horses at \$100 @200 per head. Not many horses were prime enough to fetch \$250 @275 per head, with inferior animals selling around \$5 @125 and 1,250 to 1,450-lb. chunks at \$150 @200, while light drafters that weighed 1,550 to 1,650 lbs. brought \$175 @225. As usual, there were too many common horses and not enough prime horses.

LIVE STOCK NOTES.

The Interstate Commerce Commission has issued an order requiring western rail carriers to put into effect and maintain for two years from June 13, 1912, the rates on feeder cattle and sheep defined in the report of the commission on March 12. In effect, the order retains the rates on stock cattle and sheep, which have been in force for a long period, the cancellation by the railroads of the lower rates on such live stock by the railroads being held by the commission as unreasonable. The railroads had contended that the rates on stocker and feeder cattle and sheep should be the same as for fat stock, an increase of 33½ per cent on such shipments.

Not long ago George Leigh, the widely known Hereford breeder, of Illinois, sold on the Chicago market 26 head of extra prime heifers that averaged 661 lbs. at \$8.15 per 100 lbs., it being the highest priced lot of heifers sold on that market since 1902. They were mostly pure-bred yearling Herefords of his own breeding and raising. This was the highest price he ever obtained for female beef cattle.

There is a great scarcity of heavy beefs in the markets of the country. High-priced feed is discouraging long feeding, and baby beef is mainly grown.



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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 30, 1912.

Cattle.

Receipts, 575. Market steady at last week's prices on all grades; trade active. We quote: Extra dry-fed steers and heifers, \$8@8.35; steers and heifers, 1,000 to 1,200, \$7.25@7.75; do. 800 to 1,000, \$6.75@7.25; grass steers and heifers that are fat, 800 to 1,000, \$6.25@6.75; do. 500 to 700, \$4@6; choice fat cows, \$5.50@6; good do., \$4.25@4.50; common cows, \$3@3.75; canners, \$2@3; choice heavy bulls, \$5.75@6; fair to good bolognas, bulls, \$4.50@5.25; stock bulls, \$3.50@4; milkers, large, young, medium age, \$40@55; common milkers, \$25@35.

Spicer & R. sold Bresnahan 2 cow and bull, av 900 at \$5.50, 2 cows av 1,110 at \$4, 1 do weighing 1,080 at \$3.50, 1 do weighing 1,000 at \$6, 1 do weighing 800 at \$3, 1 bull weighing 720 at \$5; to Sullivan P. Co. 3 cows and bulls av 1,017 at \$5.25, 1 cow weighing 950 at \$6, 8 do av 1,055 at \$5.75, 1 bull weighing 910 at \$5.75, 17 steers av 1,040 at \$8.25, 1 do weighing 840 at \$6.50; to Mich. B. Co. 4 do av 1,000 at \$6.80, 1 do weighing 880 at \$6.80, 3 bulls av 970 at \$5.70, 2 do av 675 at \$5, 2 cow and bull av 695 at \$5, 9 butchers av 650 at \$5.50, 2 cows av 825 at \$3.50, 2 do av 985 at \$4.50, 2 steers av 915 at \$6, 1 bull weighing 1,010 at \$5.25, 2 steers av 890 at \$6.50; to Kamman 2 cows av 915 at \$4, 1 do weighing 750 at \$3.25; to Donovan 6 stockers av 440 at \$4.50, 4 do av 532 at \$5.25, 1 cow weighing 860 at \$4, 1 do weighing 660 at \$4, to Regan 1 steer weighing 350 at \$4.25; to Donovan 1 do weighing 740 at \$6; to Fry 2 bulls av 705 at \$4.50, 1 steer weighing 770 at \$6.25; to Applebaum 2 heifers av 415 at \$4.50; to Rattkowsky 3 cows av 960 at \$5; to Strong 4 stockers av 660 at \$5; to Mich. B. Co. 2 steers av 995 at \$6.50, 2 do av 820 at \$6.50, 1 bull weighing 990 at \$5.25.

Bishop, B. & H. sold Hammond, S. & Co. 2 cows av 770 at \$3.25, 1 do weighing 1,020 at \$5.75, 1 do weighing 1,050 at \$4.50, 1 do weighing 1,200 at \$4.25, 1 bull weighing 1,230 at \$5; to Bresnahan 1 heifer weighing 660 at \$5, 1 bull weighing 860 at \$5, 1 do weighing 580 at \$5; to Parker, W. & Co. 5 cows av 722 at \$2.90; to Breitenbeck 19 steers av 800 at \$6.25; to Goose, 11 butchers av 763 at \$5.10; to Kamman B. Co. 5 do av 768 at \$6; to Newton B. Co. 2 bulls av 535 at \$4.50; to Schuer 2 cows av 765 at \$3.25; to Mich. B. Co. 4 butchers av 880 at \$4.75; to Schuer 1 cow weighing 800 at \$3.25, 2 do av 815 at \$3.85; to Parker, W. & Co. 2 do av 1,025 at \$5.25, 9 butchers av 736 at \$6; to Rattkowsky 2 cows av 830 at \$5; to Marx 7 steers av 914 at \$7, 1 do weighing 780 at \$6; to Sullivan P. Co. 3 do av 1,033 at \$7, 5 cows av 1,036 at \$5.90, 2 do 965 at \$4.50, 1 bull weighing 1,550 at \$5.75, 2 do av 1,020 at \$5.50; to Hammond, S. & Co. 4 cows av 992 at \$5.55, 2 steers av 915 at \$7.60, 10 do av 1,037 at \$8.15, 1 cow weighing 1,200 at \$6, 4 steers av 990 at \$7.65, 5 cows av 1,096 at \$5.25, 2 bulls av 1,330 at \$5.75; to Mich. B. Co. 2 steers av 1,035 at \$6.50.

Wilson sold Kamman 2 cows av 975 at \$4.25, 1 steer weighing 940 at \$6.50, 1 cow weighing 1,330 at \$7.

Weeks sold Bresnahan 3 butchers av 500 at \$5.

Schuer sold same 2 cows av 865 at \$3.60.

Roe Com. Co. sold Newton B. Co. 13 cows av 993 at \$5; to Parker, W. & Co. 11 butchers av 880 at \$6.25; to Mich. B. Co. 2 cows av 845 at \$4, 4 do av 952 at \$4.75; to Newton B. Co. 4 bulls av 645 at \$4.50, 9 cows and bulls av 881 at \$4.50; to Fish 1 feeder weighing 790 at \$5; to Sullivan P. Co. 1 bull weighing 1,480 at \$5.50, 1 steer weighing 1,070 at \$7.50.

Haley & M. sold Applebaum 1 cow weighing 740 at \$3, 4 do av 920 at \$4.50; to Lachalt 3 steers av 777 at \$6.75; to Sullivan P. Co. 1 cow weighing 1,140 at \$6.50, 6 do av 971 at \$5.70, 1 do weighing 1,000 at \$6, 1 heifer weighing 630 at \$5; to Mich. B. Co. 1 cow weighing 1,110 at \$5.50, 1 bull weighing 1,040 at \$6, 2 cows av 1,105 at \$6, 1 do weighing 960 at \$5.65; to Fish 1 do weighing 860 at \$4, 2 do av 900 at \$4.25; to Kamman B. Co. 6 steers av 766 at \$6.85; to Rattkowsky 1 bull weighing 1,320 at \$5.35, 1 do weighing 810 at \$5, 2 cows av 870 at \$5; to Bresnahan 2 canners av 960 at \$3.10, 1 do weighing 960 at \$2, 1 cow weighing 900 at \$3.50; to Kull 4 steers av 700 at \$5.50, 2 do av 790 at \$6.15; to Bresnahan 1 cow weighing 1,270 at \$6.25; to Lachalt 1 heifer weighing 740 at \$5, 1 cow weighing 960 at \$5, 3 butchers av 810 at \$6.50; to Cook 5 do av 900 at \$6.85.

Veal Calves.

Receipts, 1,714. Good grades 25@50c higher than last week; common steady. Few choice, \$9; Best, \$8.75; common, \$4@7.

Spicer & R. sold Applebaum 19 av 125 at \$6.25; to Goose 4 av 210 at \$5.25, 10 av 178 at \$7, 4 av 215 at \$5.50; to Hoffend 15 av 115 at \$6.75, 5 av 120 at \$7; to Burnstine 33 av 135 at \$8, 11 av 140 at \$8.25, 3 av 135 at \$8; to Thompson Bros. 4 av 125 at \$8; to Sullivan P. Co. 19 av 115 at \$6.25; to Parker, W. & Co. 3 av 140 at \$7.50; to Rattkowsky 13 av 130 at \$6.75; to Newton B. Co. 2 av 135 at \$6.50, 2 av 140 at \$8.50, 7 av 140 at \$8, 10 av 144 at \$8.50, 2 av 105 at \$6.50; to Mich. B. Co. 18 av 140 at \$8.35.

Bishop, B. & H. sold Parker, W. & Co.

15 av 135 at \$8, 17 av 130 at \$7.75; to Nagle P. Co. 105 av 135 at \$7.50; to McGuire 2 av 135 at \$7, 19 av 130 at \$8.75; to Mich. B. Co. 1 weighing 210 at \$5, 40 av 140 at \$8.50, 29 av 130 at \$8; to Newton B. Co. 5 av 115 at \$8.50, 26 av 130 at \$8.50, 2 av 120 at \$7, 15 av 145 at \$8.75; to Parker, W. & Co. 53 av 130 at \$8.65; to Sullivan P. Co. 22 av 140 at \$8.25; to Hammond, S. & Co. 3 av 110 at \$6.50, 28 av 133 at \$8, 9 av 140 at \$8.75, 19 av 150 at \$9, 10 av 147 at \$8.75, 19 av 135 at \$8.50; to Sullivan P. Co. 45 av 130 at \$7.75; to Nagle P. Co. 48 av 140 at \$8.50, 4 av 120 at \$6.50, 13 av 125 at \$7.50, 27 av 143 at \$8.25, 5 av 95 at \$5; to Hammond, S. & Co. 31 av 140 at \$8.75, 7 av 135 at \$6.50.

Haley & M. sold Costello 15 av 135 at \$8.25, 1 weighing 170 at \$7; to Newton B. Co. 15 av 125 at \$6.25, 27 av 140 at \$8; to McGuire 3 av 100 at \$7, 14 av 130 at \$8.50; to Mich. B. Co. 12 av 135 at \$8, 1 weighing 250 at \$6; to Newton B. Co. 4 av 155 at \$8.50, 9 av 150 at \$8.75; to Applebaum 2 av 130 at \$7; to Palzuskus 36 av 135 at \$8; to Parker, W. & Co. 5 av 120 at \$6.50, 29 av 140 at \$8; to Nagle P. Co. 18 av 140 at \$8, 5 av 125 at \$6, 20 av 133 at \$7.50; to Goose 17 av 140 at \$8.25; to Barlage 3 av 140 at \$7.50; to Kull 9 av 150 at \$8.50; to Rattkowsky 21 av 120 at \$7.90.

Roe Com. Co. sold Goose 6 av 130 at \$5, 21 av 120 at \$7; to Thompson Bros. 17 av 135 at \$8; to Sullivan P. Co. 8 av 140 at \$8; to Goose 4 av 150 at \$4, 8 av 120 at \$7; to Burnstine 1 weighing 170 at \$5, 10 av 170 at \$9; to Hammond, S. & Co. 2 av 145 at \$6.50, 11 av 140 at \$8.25.

Sheep and Lambs.

Receipts, 3,189. Market 25c lower than on Wednesday; steady with last week; common grades very dull. Best lambs, \$8@8.25; fair to good lambs, \$6.50@7; light to common lambs, \$4.50@5.50; fair to good sheep, \$3.50@4.25; culls and common, \$2@2.50.

Haley & M. sold Newton B. Co. 5 spg lambs av 57 at \$9, 30 lambs av 70 at \$6.50; to Barlage 38 do av 65 at \$5, 32 do av 60 at \$7.50, 17 do av 82 at \$6.50, 13 spring lambs av 50 at \$9, 14 sheep av 90 at \$4.25; to Patorowsky 11 do av 70 at \$2.50, 2 do av 150 at \$3.50, 11 lambs av 80 at \$7.

Spicer & R. sold Newton B. Co. 11 lambs av 70 at \$7, 12 spring lambs av 55 at \$11; to Young 57 do av 60 at \$6; to Fitzpatrick Bros. 15 spring lambs av 55 at \$10.50; to Vars 9 do av 70 at \$5, 9 do av 67 at \$6.

Roe Com. Co. sold Barlage 40 sheep av 90 at \$4.50; to Patorowsky 11 do av 80 at \$2.50; to Sullivan P. Co. 10 spring lambs av 49 at \$8.50, 19 sheep av 100 at \$3.50.

Bishop, B. & H. sold Sullivan P. Co. 42 lambs av 50 at \$6, 249 do av 70 at \$8.35, 18 do av 52 at \$6, 13 sheep av 110 at \$3, 7 do av 90 at \$2, 13 do av 87 at \$3, 18 do av 125 at \$4, 15 mixed av 75 at \$5, 21 sheep av 97 at \$3.50, 5 yearlings av 120 at \$6; to Newton B. Co. 283 lambs av 62 at \$8.25; to Harland 4 spring lambs av 48 at \$10.50, 33 lambs av 68 at \$7, 8 spg lambs av 67 at \$11; to Parker, W. & Co. 218 lambs av 81 at \$8.50; to Thompson Bros. 40 sheep av 80 at \$3.50; to Hammond, S. & Co. 276 lambs av 82 at \$8.50, 27 do av 75 at \$6.50, 2 spring lambs av 60 at \$11; to Young 23 yearlings av 80 at \$5.50; to Wilson 111 lambs av 70 at \$8.25, 6 sheep av 130 at \$4.50; to Fitzpatrick Bros. 21 do av 120 at \$3.50; to Wilson 282 lambs av 67 at \$6; to Fitzpatrick Bros. 30 do av 70 at \$7.50, 10 sheep av 79 at \$3.

Hogs.

Receipts, 7,148. Market very dull; pigs steady; others 25@30c lower than Thursday.

Range of prices: Mixed butchers, \$7.30@7.35; pigs, \$6.75; light yorkers, \$7.10@7.20; stags one-third off.

Roe Com. Co. sold Sullivan P. Co. 66 pigs av 125 at \$6.75, 154 hogs av 190 at \$7.35, 48 do av 150 at \$7.25, 51 do av 175 at \$7.30.

Spicer & R. sold Hammond, S. & Co. 73 av 220 at \$7.40, 240 av 190 at \$7.35, 421 av 180 at \$7.30.

Haley & M. sold same 340 av 190 at \$7.35, 430 av 170 at \$7.30, 125 av 150 at \$7.25.

Bishop, B. & H. sold Parker, W. & Co. 1,210 av 190 at \$7.35, 1,470 av 170 at \$7.30, 525 av 150 at \$7.25, 150 av 150 at \$7.20, 100 av 140 at \$7.15.

CROP AND MARKET NOTES.

Ottawa Co., May 21.—The prospect for farmers in this section does not look very bright at present, on account of so much rainy weather. There is quite a large amount of plowing to be done for corn yet, and the ground is so wet that nothing can be done for several days, so it does not look as though much corn can be planted before June. Oats are growing very slowly, and in some fields the wireworms are doing great damage. Wheat as a general thing looks rather poor. So much wet weather is causing it to grow up rather spindling, so it is not stealing good. Meadows are doing fairly well, and there is a good catch of clover that was sown this spring. A few early potatoes have been planted, but there is great danger that they will rot. Apple trees are blossoming well and most farmers have sprayed their trees with lime and sulphur. The canning factory that is being built at Coopersville is nearing completion, and it is expected this will be a great help to the surrounding country.

Lapeer Co., May 25.—Orchards profuse with blossoms. No rain for the past four days. Meadows and pastures booming, although the hay crop for 1912 will not be heavy and pastures will be limited. The planting or drilling in of fodder crops looks gloomy and the wheat indications promise only about 40 per cent of an average yield. Corn planting seems to be the latest order; some fields are planted while other fields are being fitted for planting next week. Some potatoes are already planted, while some are plowing for potatoes which will probably be planted

ed the first week in June. Prices of potatoes are around \$1. Spring pigs slow sale at \$2 each. Corn too expensive to buy for pigs or any other kind of stock. Cattle and horses command good prices. Butter remains at about 26c.

Ogemaw Co.—The continued rains have almost put a stop to farm work in this county, although the average acreage of oats is sown and the crop is doing nicely. The ground, however, is too full of moisture to be fitted for corn and late potatoes. The excessive rains have also taken out several dams and bridges and a large number of small culverts throughout this section. Butter brings 25c at stores and eggs 16c. Wool is coming in quite freely and brings 23c.

Southern Clare and Northern Isabella Co.'s, May 23.—Wet, with farming at a standstill. No crops in the ground to speak of except oats and not much prospect of putting in any more for ten days yet, as the ground is saturated with water. Grass and oats are doing well where the ground is not too low. Potatoes are scarce and high. Wheat looks as if there would not be 20 per cent of a crop. The acreage of corn will be cut down one-half owing to the lateness of the season. Not as many beets sown as in former years. Wool is selling from 23@25c; cows selling well; pigs scarce and high.

Ohio.

Carroll Co., May 27.—Most farmers got their corn in too early this spring and as the weather stayed wet for a few days the corn rotted. But it has been replanted and as we had a few days of warm weather lately it is coming up. Oats look well. The grass is just fairly good. Most farmers are about out of feed. Some farmers are shearing sheep.

Wayne Co., May 27.—After a cold rainy spell we have had a week of fine weather and farmers are very busy. Oat sowing just completed about May 15. Some corn planted but a great deal to plant yet. Apples will be very scarce in this section as there were very few blossoms, and peach trees are nearly all frozen dead and what still are living have no blossoms. Cherries will be quite a plentiful crop. Hay crop, new seeding, looking very favorable. Old meadows making poor progress, the grass being quite short. What little wheat there is is shooting for head, being very short in straw. Butter is 25c; eggs, 16c.

VETERINARY.

(Continued from page 616).

tion at a dose in feed three times a day. Collar Gall.—Have a horse that is getting a bunch on shoulder, but it is not painful. W. B., Ellsworth, Mich.—It is needless for me to say how important a good fitting collar is in this kind of a case. Dissolve ¼ lb. sugar of lead, ¼ lb. sulphate of zinc in a gallon of water and apply to bunch five times a day. If the bunch is hard cut it out.

Cow Leaks Milk.—I have a cow that leaks milk and would like to know how to prevent it. E. S. B., Greenville, Mich.—Use teat plugs and if you are not supplied the Lawrence Publishing Company can supply you.

Periodic Ophthalmia.—I have a horse that is troubled with sore eyes occasionally and part of time his eyes are almost closed. His appetite is not good, he acts dull and dumpy and weak. B. A. S., Blanchard, Mich.—Dissolve ½ oz. boracic acid in a quart of water and apply to eyes three times a day; also give him ½ oz. Fowler's solution at a dose in feed two or three times a day.

Indigestion—Irritation of Kidneys.—Have a 1,300-lb. five-year-old mare that is inclined to be nervous, but lacks strength, is usually behind mate although of nervous temperament; she urinates five or six times a day and water is high colored. A. J. S., Sparta, Mich.—Give 1 dr. ground nux vomica, ½ oz. ground gentian and 2 drs. powdered buchu at a dose in feed three times a day.

Bone Spavin Lameness.—I would like to know how to treat a 16-year-old mare that is quite lame, caused by bone spavin. When standing still she holds foot off ground, but after working her a few minutes she is much less lame. I am obliged to use her and I would like to know how to kill this spavin. W. G. P., Saugatuck, Mich.—It is rather unreasonable to expect a horse to recover from bone spavin, unless the cause is removed; therefore, if work or fast driving brought it on, then in order to bring about a recovery the animal should be given absolute rest in order that the diseased portion of joint might become ankylosed or grown into a solid mass. This must occur before a horse is relieved of spavin lameness. You can safely use any of the spavin remedies that are regularly advertised in this paper or you may apply one part red iodine mercury and eight parts cerate of cantharides every week or ten days. I might say that a 16-year-old horse is not easily cured of spavin lameness.

Chronic Garget.—I have a four-year-old cow that came fresh two months ago; her bag is caked badly and has been in this condition ever since she came fresh. I have applied different applications, but none of them seem to do her any good. F. S., Howell, Mich.—Apply one part iodine and eight parts lard to caked portion of udder every day or two. Give her 2 drs. iodine potassium at a dose in feed three times a day. Perhaps you had better have her tested for tuberculosis, using fresh active tuberculin.

Spinal Paralysis.—I am an interested reader of the Michigan Farmer, and especially of the veterinary department. I have a 15-year-old mare that first showed a little lameness in one hind leg, got down, was unable to get up without help, a few days later showed some lameness in opposite hind leg and when standing is inclined to lean against wall or stall partition. When walking she moves prettily well in line, but when down has considerable trouble to get on feet. C. McC.,

Ann Arbor, Mich.—Give her 2 drs. of ground nux vomica and 2 drs. iodine potassium at a dose in feed three times a day. Allow sun to shine on back, for this will do her a whole lot of good; furthermore, her bowels should be kept open and this is best done by feeding her grass.

Vertigo.—I have a horse that occasionally falls when only exercised moderately and occasionally he has fallen down when moved less than 20 rods. J. T. B., Flat Rock, Mich.—Your horse suffers from vertigo, an incurable ailment unless it is brought on by an exciting cause that can be removed.

Mule Coughs.—We have a mule that was left out all night some two weeks ago and the result was, he caught cold and has been coughing ever since. All the treatment he has had is molasses and vinegar three times a day.—Give him 1 oz. powdered licorice and ½ oz. ginger at a dose in feed three times a day. Apply camphorated oil to throat once a day.

Bursal Swelling.—My yearling colt sprained hind leg causing a soft bunch to come on inside of hock joint and I would like to know what can be done to take it off. J. E., Fife Lake, Mich.—Apply equal parts spirits of camphor and tincture iodine to bunch every day or two.

Looseness of Bowels.—My two-year-old colt has been troubled with a looseness of bowels for the past four weeks and I might add he is inclined to gnaw manes and tails of other horses. J. B., Coopersville, Mich.—Give colt 25 grains salol at a dose three or four times a day.

Indigestion.—My 17-year-old horse has been troubled with indigestion for the past few months, but for the past 12 months his bowels have been rather loose. He is fed good hay, oats, corn and bran. His teeth have been floated. L. E., Mancelona, Mich.—Give him 1 dr. of ground nux vomica, ½ oz. gentian, ½ oz. ginger and 1 oz. bicarbonate soda at a dose in feed two or three times a day. Feed oats and timothy.

Indigestion.—Calf three weeks old passes white mucus instead of excrement and I would like to know what to give him. J. A. W., West Branch, Mich.—Sterilize milk fed to this calf and give 5 grs. salol at a dose three or four times a day. I do not believe you should feed calf any corn meal until his bowel trouble ceases.

Warts on Teats.—Ever since the early part of last winter warts have been coming on my cow's teats, now I must do something to get rid of them. L. W., Amble, Mich.—Cut off those that have necks and apply acetic acid to flat ones once a day. Castor oil is useful in the treatment of flat ones.

Septic Infection.—My lambs first show lameness in one leg then in another and then a large swelling takes place near shoulder and lamb dies in two or three days. What is the cause of their death? M. S. G.—I am somewhat inclined to believe your lambs die of septic navel infection and when blood poison sets in very little can be done to relieve them. Give ¼ gr. quinine, 15 drs. fluid extract gentian and ¼ gr. sodium salicylate at a dose three times a day. The navel should be treated twice a day. Apply one part carbolic acid and ten parts glycerine twice a day.

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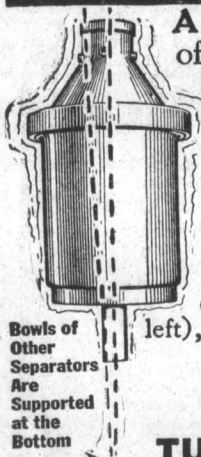
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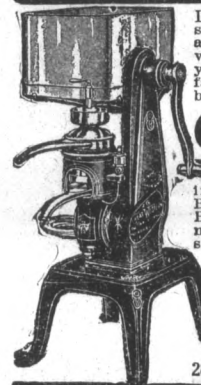
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THE DAIRY

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ECONOMICAL FEEDING.

Much has been written upon the feeding of the dairy herd and many things have been said over and over again. I do not hope to say much upon the subject of dairy feeding that is new. But the value in things does not always consist in their novelty and indeed most truths have to be told many times before they greatly influence practical living.

The three things that have most to do with the success or failure of any dairy enterprise, are the cow, the feed, and the man. I am not sure that they are stated here in the order of their importance, nor do I think that that matters much. It is true, however, that success in dairying depends principally upon these three items. There are many cows that will absolutely not pay for what they eat, no matter how carefully they are fed. There is but one thing to do with such animals and that is to get rid of them and stop the waste. It is never wise to be hasty in condemning a cow though, for the best of dairy animals have times in which they do not produce well, and the good dairyman will ever be mindful of this fact. A great deal of time, patience, and good judgment are required to build up a superior herd, but it is possible for any one to do so, who will really apply himself to the task.

In providing the food for a dairy, we should preserve the proper balance between grain and roughage. The ratio may be altered somewhat to conform to changing conditions, but we must never lose sight of the fact that the cow has been formed with a large capacity for storing bulky food, and nature intended that she should use it. Roughage is usually plentiful on the ordinary farm, and the cows should be given all of it that they will eat up clean. Ensilage is the best and cheapest roughage except alfalfa, and in these days of wonderful dairy performance, every man who keeps cows should have a silo.

The grain ration should contain sufficient protein, it should be palatable, and should be of the kind that can be purchased in the market, at the lowest figure when considered in respect to its food content. It would be well if every dairyman could grow his own feed, but this is often impossible, and so we must consider the market value of the ration, whenever we speak of the matter of economical butter production. We can economize in the cost of the dairy ration as we come to grow more alfalfa as when the cows are given plenty of alfalfa they require much less protein in their grain.

The question of feeding grain when the cows are on pasture, is often considered by the men who are beginners in dairying, but the older dairymen have settled it to their own satisfaction, at least. They will feed grain even though the pasture is good, as long as the cows will eat it with a relish.

It is required first in the man who is an economical feeder, that he should have "common sense." No amount of dairy literature will make him successful without this quality. He must use it, too, every day, and sometimes oftener. He must know and feed his cows as individuals, and this will require a great deal of study on his part. He must be able to tell when they are being fed all that they will pay for and to do this, he must rely on the scales. Guesswork is not good enough for the economical feeder. Good dairymen often feed a certain class of cows too much. There is just one way to prevent this, and that is to weigh and test the milk and know what you are getting for your feed and labor. It will take a little time but it will pay a handsome return, and will prove a means of encouragement to anyone who will continue the practice.

The economical feeder will not neglect his cows when they are dry. It is an oft repeated blunder to allow the dry cow to shift for herself and live on a short ration. True, she may not be quite so liable to milk fever if she is under fed, but milk fever is so successfully treated now that it is not worth while to starve the cow and permit her to enter upon the year's work with her vital energy lessened simply for fear of a disease that is not very likely to trouble her, and which if it should come, can be successfully handled in most cases. No grain is more economically fed in reasonable amount, than that which is fed to a dry cow.

The cow that freshens in good flesh, has deposited to her credit a fine store of fat, and vital energy upon which she will continue to draw throughout the most of the year following. Her milk will test higher, on account of the fat she carries when she comes fresh, and she will give more of it, and the flow will continue longer. I have two cows now that are good illustrations of this truth. One of them is quite well on in years, but when she came fresh last fall, she was in unusually good condition, and this has been the best year of her life. The other has been giving milk for over seven months, and is giving practically as much now as when she came fresh.

I used to fear milk fever, and kept the cows on too short rations during the dry period, but I have concluded that it does not pay. Hereafter they will get a good liberal ration at this time, and I shall expect more from the grain fed at this time than at any subsequent period.

But the economical feeder will consider the prices of grains in compounding his ration, e. g., a few years ago oil meal was plentiful and could be had at a price within reason, but now it is so high that it is a question whether we can longer feed it to advantage or not. I said it has become a question with the economical feeder, I do not think there is any question. He can not afford to feed it. Gluten feed and cottonseed meal are much cheaper sources of protein, and should be fed in liberal quantities while the prices of other feed stuffs remain as now.

Lastly, the economical feeder will buy the grains which he needs and cannot raise, at the wholesale price. It is seldom that he sells his butter-fat at retail and it is hardly good business to buy the raw material at retail out of which he expects to realize his profit, and then sell his finished product in the wholesale market.

We should unite and buy our grain which we do not raise, in car lots. This will give us a decided advantage over buying in small quantities from time to time, and the result will encourage us to still better work.

It is by careful attention to these things and to others of which I might speak, did time and space permit, that economical feeding is made possible, and the dairyman wins out, thus becoming an example to his neighbors, and demonstrating what may be done when the right man and the right herd get together.

Oceana Co.

W. F. TAYLOR.

BUILDING A SILO IN BARN.

I have been thinking of building a silo inside my barn and on account of room I am unable to erect a round one. Now could you give me a plan to build a square one out of 2-in. matched plank? Do you know of any that are built square and have proved successful? If so could you give me the plan on which they are built? If you don't know of any square ones, could you show me how to build one that would prove successful? What would you think of this idea: Use 4x4's for girts on the outside then line it with 1-in. dressed boards on inside then cover with heavy roofing paper, then layer of boards over that by breaking joints? I would have the girts 3 ft. apart. Do you think the paper between the boards would become so hot as to rot the paper?

Kent Co.

A. D.

You could get 2x6 dressed, tongued and grooved and make a square silo inside the barn that will do very well. We used to make silos in this way before the advent of the round silo. Silos were all square or rectangular or in the shape of an octagon. The 4x4 studding would do very well if you got them close enough together, but you would want them every two or three feet, especially at the bottom because of the pressure. In the corners you could have a 4x4 split cornerwise and nail this right in the corner. Also, you could build a silo as you suggested by double boarding it on the inside with tar paper between. Many of the early silos were built in this way. The paper will last as long as the inside coating of board. All you want is a well constructed air tight receptacle and you can keep silage.

However, I would like to discourage A. D. from building a silo in the barn, and also from building a square silo. You will make a mistake by building it in the barn and by building it square. Experience has proven that both of these ways are wrong. You don't want a silo in the barn. It will warp your barn all out of shape. The pressure is more than you have any idea of. I have built four different silos in the barn and finally tore them all out after they warped the barn out of shape. Then, too, if you will think of the matter carefully you will not build

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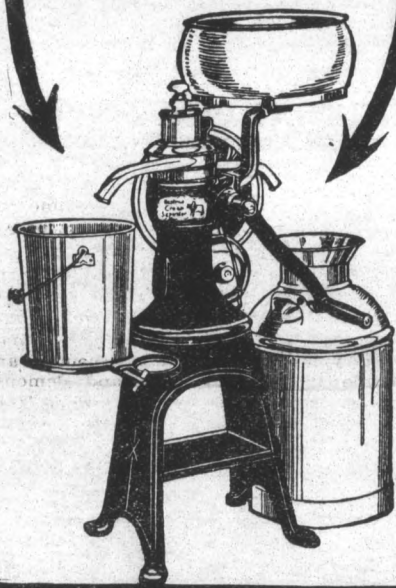
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a square silo when you can build a round one cheaper, and make it better. The trouble with a square cornered silo is that you cannot pack the ensilage in the corners so tight but what it will mould. In a round silo there are no corners. It is much less expensive to build a round silo than a square one because you can put iron hoops around the round silo and make it perfectly safe so far as strength is concerned, while with a square silo you have to use heavy timbers and put them close in order to get them strong enough to stand the pressure, and then the sides will bulge out.

You will need all the barn room you have got, and more too. I never saw a farmer with enough barn room yet, and it would be much better to build a round silo outside of the barn close to one end of the feeding alley and connect it to the barn with a silo chute. Now investigate this matter carefully. Do not make this mistake. We used to make these mistakes in the early days of the silo but we did not know any better then. Now we have learned from experience, and we have profited by it. You could well afford to go to a little expense in studying silos rather than make a mistake like you have planned.

FERMENTED MILK A HEALTHFUL FOOD.

Several years ago Dr. Metchnikoff, of the Pasteur Institute, startled the world by announcing that he had discovered a means of materially lessening the common ills to which the human body is subject and of actually prolonging life itself. The discovery was nothing more or less than the fact that certain acid producing bacteria of milk had the power of counteracting or destroying the putrefactive and other obnoxious kinds of bacteria in the intestinal tract.

The particular species of acid producing bacteria to which Metchnikoff directed special attention was called by him *Bacillus Bulgaricus*. This species of bacteria is indigenous to Bulgaria, where Metchnikoff found people to live to an unusually old age. Investigation proved to him that the regular indulgence in a drink, Yogart, (a sourmilk drink), containing the *Bacillus Bulgaricus*, was largely responsible for the good health and longevity of Bulgarians. He demonstrated that the Bulgarian and other lactic acid bacteria are antagonistic to putrefactive and allied organisms and that by virtue of this, when taken into the system, will check putrefaction in the intestines and thus prevent the formation of toxic substances which give rise to a retinue of intestinal and bodily disorders.

These bacteria are now supplied by most milk dealers in the form of sour milk preparations, commonly known as cultured or fermented milk. From what has already been said, it is evident that the therapeutic value of cultured milk rests upon a sound scientific basis.

Foods, after going through the usual course of digestion, are temporarily stored in the colon or large intestine, where putrefaction and other undesirable forms of fermentation always take place before the undigested material is finally eliminated from the body. Such fermentations always undesirable, and when carried to excess, cause auto-intoxication or ptomaine poisoning. In mild cases, such poisoning may produce only headaches and general discomfort or indisposition, but in aggravated cases, severe sickness and even death may be the consequence.

Well made cultured or fermented milk is a palatable product, highly relished by most people. It is also rich in nutrients, one and one-half quarts having fully as high food value as one pound of beef steak. These qualities, combined with its high therapeutic value, should make this a universal drink.

Wisconsin. JOHN MICHELS.

MANY CALVES ARE BEING SOLD.

The receipts of calves at the Chicago stock yards during the month of April aggregated 80,588 head, being the largest receipts ever recorded in a single month, and comparing with 68,722 for April last year. Many calves were slaughtered that would have had made choice beef, this being true of both steer and heifer calves.

MICHIGAN JERSEY CATTLE CLUB MEET.

E. S. George and S. D. Waldon will en-Dairy Cattle Club and Jersey breeders of certain the members of the Michigan the state at Fisherton and Erdenheim Farms, Pontiac, Mich., on Wednesday, June 5, 1912. Luncheon will be served at Erdenheim. Talks by noted breeders will feature the program.

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Every sensible person wants the **best** of everything, but in many things the best is beyond their means and they must necessarily be content with something less.

In the case of the Cream Separator, however, the **best** is fortunately the **cheapest** as well, and it is of the greatest importance that every buyer of a separator should know this.



Moreover, the **best** is of more importance in the case of the Cream Separator than in anything else, since it means a saving or a waste **twice a day every day in the year** for many years.

It is true that DE LAVAL Separators cost a little more in first price than some inferior separators, but that counts for nothing against the fact that they **save their cost every year over any other separator**, while they last an average twenty years as compared with an average two years in the case of other separators.

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HORTICULTURE

A FEW OF THE INSECT PESTS OF THE GARDEN.

The cabbage maggot is the larva of an insect which resembles the house fly although it is somewhat smaller in size. The eggs are laid near the young plants while in the seed bed. After hatching the larva eats its way into the root which seriously interferes with the growth of the plant. When the weather is hot and dry the cabbage either dies or becomes badly stunted but if the opposite conditions prevail it will often send out new roots above the point of injury and continue its growth.

With us this insect does very little damage. I ascribe our immunity to the fact that we never have attempted to raise our plants on sandy land for one grower, whom I know, had to quit raising his own plants simply because he had no clay land and the maggots worked so badly in sand.

The cabbage aphid or louse, is a sucking insect that attacks the leaves. Generally it is not very troublesome and we have never had to spray for it. Kerosene emulsion diluted eight times, together with one ounce of pyrethrum for each eight gallons kills all lice that it comes in contact with. Cabbage leaves are covered with a "bloom" which repels the spray if it is at all coarse. This makes it necessary to use a fine nozzle and to quit spraying before dripping begins, or practically all of the spray will run off.

If one has good eyesight or a pocket lens it is easy to discover, stuck to the leaves, dead lice, each with a round hole on the upper surface of its body. A small parasite which developed inside the louse has escaped through the opening.

The most serious cabbage pest in this latitude is the cabbage worm. The adult is the common white butterfly which may nearly always be found flying about a field where cabbages are grown. The eggs are attached to the leaves, sometimes only one on a plant but not infrequently as many as six. The worms commence feeding as soon as hatched and when there are more than two on one plant they soon riddle it. Since a wet spray rolls off of cabbage so easily we rely upon Paris green applied with a powder gun while the dew is still on. The worm is a hearty feeder and is easily killed so it is unnecessary to apply large amounts of the poison. The idea is to dilute it four or five times with some finely pulverized material such as flour, air slaked lime or road dust, and put it on thinly but evenly.

Arsenate of lead can now be purchased in powder form and while it is advisable to use it on some vegetables, cabbages are not affected by Paris green when applied strong enough to kill the worms.

Some people object to using a poison upon cabbages for fear that it will be retained in the heads by the leaves folding over it. The fact is the head is formed from the center and the tendency is for the leaves to open up instead of to fold up. I have cut and trimmed quite a few cabbages but have never yet seen a trace of Paris green in the head.

Small bunches of what appear to be yellowish colored eggs are often found attached to the cabbage leaves. They are cocoons of insects which prey upon the cabbage worm and should not be destroyed. If a worm, whose skin appears to be too large for him, is broken open quite often you will find a number of small larvae inside. They feed upon the body fluids of their host and when full grown they bore their way out and spin the cocoons mentioned above. Sometimes this takes place when the worm is in the pupal stage and at other times before the worm has become full grown. At any rate the worm is prevented from becoming an adult and is unable to do anything toward perpetuating the species.

Last season one of our neighbors had his seedling cabbages injured considerably by the cabbage flea beetle. This is a little black beetle about one-tenth of an inch in length with a narrow yellow strip on the outer edge of either wing cover. This season is the first that we have been troubled and I think that it is due to the fact that the cabbages are planted in a garden where horse radish grows freely. The beetles feed on it but prefer the young cabbages and table radishes. The weather has been quite rainy the last ten days and they are not now very much in evidence. To find them you must look quite closely on a warm sunny day,

at other times they hide in the loose earth. Since they are leaf eaters I shall spray with an arsenical if they become troublesome in our main patch of seedlings.

Wayne Co.

W. POSTIFF.

GRAPE PESTS CONTROLLED.

The following communication to us from Secretary A. M. Loomis of the Chataqua and Lake Erie Fruit Growers' Association, will be of unusual interest to Michigan grape growers. His information is the result of experimental work done at the Fredonia station by the state's experimenters.

The control of the dreaded *fidia viticida*, (the grape root worm), was accomplished in the second season's work in a co-operative experiment on the farm of Sherman J. Lowell, now overseer of the New York State Grange. They found that by sweetening a plain solution of arsenate of lead it attracted instead of repelled the root worm beetle. All other tried poisons had repelled these light feeding insects, and hence failed to kill them in sufficient number to form any protective remedy. The sweetened poison spray, however, "turned the trick." Today there is no doubt in any vineyardist's mind that this pest is under control as effectively as the Colorado potato beetle is under control in our potato fields.

The next pest to engage the attention of Entomologist Hartzell, one of even greater danger in many seasons than the *fidia*, was the "leaf hopper." I think Michigan growers know this pest. In some years and in some sections the vineyards are infested with millions and tens of millions of these little flying thrips, which literally suck the life blood from the leaves, leaving them to dry and brown in the August sunshine and leaving the clusters of fruit to shrivel and turn red before the ripening date. This insect is of the thrip family, closely allied to the rose thrip, and in the adult stage in particular is very active, hard to hit by a spray, and being a sucking insect is not amenable to control by ordinary poison sprays. All last year Prof. Hartzell worked on this problem, first to find the proper contact spray, then to determine when to most effectively use it, and still further to devise the apparatus to use in applying. All this he succeeded in doing, and the results are now published in a circular issued in April from the press of the Geneva Experiment Station, Bulletin No. 344, N. Y. Ag. Exp. Sta., Geneva, N. Y., "The Grape Leaf Hopper and its Control," by F. Z. Hartzell. Every grape grower should have this bulletin.

Summarizing it very briefly it was found that the nicotine solutions are most effective and economical. The black leaf tobacco extract (a 2.7 per cent solution), is recommended diluted so the spray mixture contains .02 of one per cent nicotine that is one part to 150 of water. This must be used freely, to drench the vines, and at a time when the maximum number of leaf hoppers are on the vines. The pressure must also be high, and the nozzle set to throw a coarse spray. The mist spray will not do the work. A pressure of 125 to 150 pounds was found absolutely necessary. Failure to maintain pressure, and throwing a mist spray was found to nullify all good results. This nicotine spray is disagreeably to handle, causing even severe sickness if used by the trailing hose method, and so a fixed attachment of framework and booms to carry a protected nozzle and at the right height and angle close to the foliage, has been devised by Prof. Hartzell. All is explained and can be made at home by any vineyardist who has the bulletin. It is not patented.

The control of this insect marks the way past the two insects which five years ago threatened to wipe out profits in the New York state grape belt.

IMPRACTICAL PLANTING OF FRUIT AND ORNAMENTAL TREES.

So much impractical work is being done in the way of planting fruit and ornamental trees that I feel impelled to write a little about it. I might say in the beginning, that most of this kind of work that has come to my notice is being done on country places by city owners. It may seem to some a loss of time and space to point out errors to the city man through a farm paper, but I have noticed that many city men are subscribers to farm papers, and this article may reach some of them. Again, some farmers are making just as bad errors in respect to planting as the city man.

There are three principal reasons for

this injudicious planting. First, ignorance of requirements of the mature plant. Second, ignorance of scientific treatment for diseases and pests. Third, a wrong ideal to work to.

Requirements of a mature tree are vastly different from those of a little plant. For example, the proper distance for large growing apple trees is about 40 feet apart. Little sprouts of trees 40 feet apart look decidedly ridiculous to the untainted city mind. And, not knowing about early maturing plants which could be used as fillers, group the large growing trees in such a way as to make the tops one solid mass when the trees are matured. I have in mind one city man that has planted, this spring, some crab apples right close to his house just because he so much admired the blossoms of crab apples. This was his country place, he comes to the country about the middle of June and leaves the middle of September. Now, what reward will he have? The blooming time will be past when he comes in late June, during June and July he will have nice foliage if the apple scab does not spot the leaves too badly for the trees are so close to the house they cannot be sprayed without injuring the paint and, after July the fruit will begin to fall and the ground will be covered with decaying fruit, unless he furnishes someone with a daily job of picking up the apples. So much for the crab apples. This same man has scattered plum, cherry, quince and peach trees promiscuously through his grounds in such a way that they can never be cared for without injuring the lawn. I will guarantee that he will never produce enough first-class fruit to pay for the original cost of the trees.

Another case I have in mind is where there are eight maple trees, six apple trees and ten white pine trees on a piece of ground 75-by 120 feet. The apple and maple trees shaded the ground completely and still the pines were set under these.

Again, I know of an orchard that was set in the sod and this sod was never broken until the trees had been set three years. There are at present about 25 per cent of the trees alive and today I would rather have two-year-old trees direct from the nursery than any of those trees now living. I believe I could make profit producing trees of the latter kind in less time than I could of the former.

There seems to be a kind of a standing joke among nurserymen that a large per cent of the stock they put out will never reach maturity, not through fault of the stock but through impractical setting and poor care which almost invariably follows such impractical work.

Labor that does not produce satisfactory results must be dispensed with. As soon as these people learn that they are doing impractical work in planting trees they will stop. But the time for maturing trees is so great and so many other things work in to distract attention in the meantime that the lesson, which nature tries to teach, is lost and the same impractical work goes on. Too much definite knowledge cannot be had about trees and the conditions for successful growth.

Berrien Co.

R. G. THOMAS.

ARE APPLE ORCHARDS AS VALUABLE AS CHESTNUT GROVES?

This is a question which the Ohio Experiment Station is asking. While that station does not wish to reflect unfavorably upon the value of chestnut groves, it wishes to call attention to the necessity for as much concerted action in saving the apple orchards as has been taken recently by a number of states in combating the dreaded chestnut bark disease.

For apple orchards of bearing age the blister canker of the apple tree is approximately as dangerous in a number of states as the chestnut bark fungus is to the chestnut in the east. This blister canker fungus has gained a firm foothold in older apple orchards in the whole of southern and eastern Ohio. It is only a question of a few years until, in the natural course of affairs, these orchards will be exterminated unless the spread of the parasite is checked. This can be done if the orchard owners will take counsel and practice sanitary measures against cankers. These measures consist in determining the presence of the disease, in pruning off and burning diseased parts, and in applying such protective dressings to pruning wounds as will prevent additional infection. Existing cankers and injuries resulting from them had their beginning in infection by spores which gained entrance through some wound.



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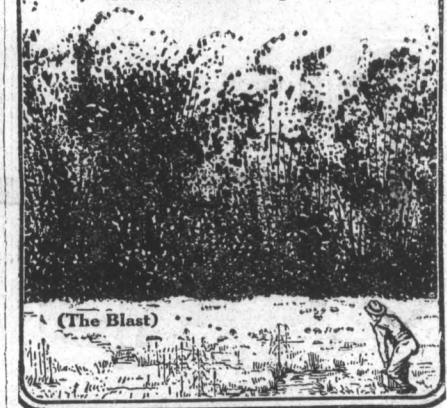
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GRANGE

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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.
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Fancy drills, motion songs, recitations, etc., by children.

Refreshments, served with children as the special guests of honor.

Suggestions for Second Meeting.

Music.
Discussion—Canning vegetables.
Importance of getting our crops well started. How shall it be done?

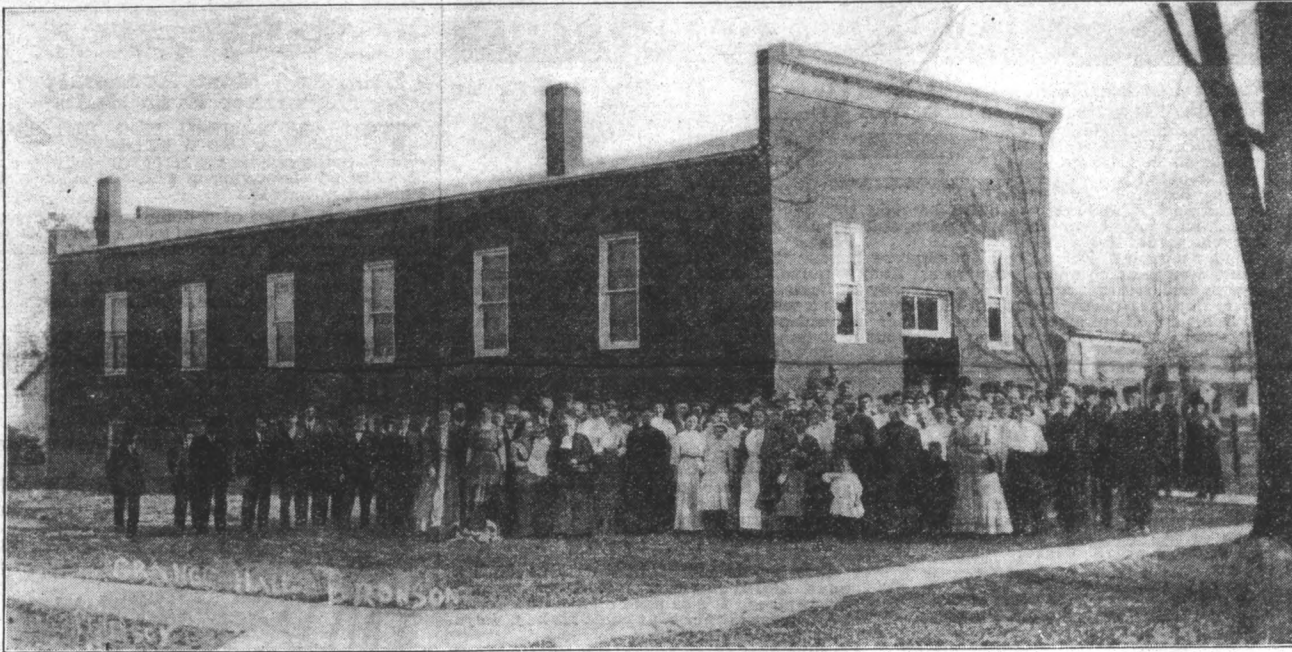
Exhibit of political cartoons, collected, arranged and explained by a member.
Quartet.

Talk—Making first grade hay—cutting, curing, cost.
Recitation.

The pros and cons of making Saturday afternoon a half holiday. 1. The advantages. 2. The objections.
Songs by the Grange.

BRONSON GRANGE AND ITS CONTEST.

Bronson Grange, No. 91, was one of the earliest in the state, as is shown by its number. It belongs in the county of



The New Home of Bronson Grange of Branch County, and its Builders.

Branch which has given to Michigan many staunch and widely influential Grange workers, notably Governor Cyrus G. Luce. Bronson is the home Grange of our present State Grange Treasurer, Frank Coward, who is also master of Branch Pomona. Bronson is a Grange that has cultivated high ideals, indulged in healthy ambitions and had the courage of its convictions, as has been abundantly proved in recent history by its accomplishments. On December 3, 1910, it dedicated a fine new hall; through the early spring of this year it vigorously waged war against the liquor traffic and contributed its share to Branch county's splendid majority upon the dry side; and, immediately following this, the Grange engaged in a contest which added \$4 to its membership, making the total of 225 paid to date.

This Bronson hall presents a particularly pleasing effect, being 28x70 feet in size and covered with stucco, stained dark green. Inside, the hall proper has a seating capacity for about 250 people and the dining room easily accommodates 120 at a time. Its interior is finished in quarter-sawn sycamore, making it one of the finest finished halls in the county.

As I had occasion to say in a recent article upon Grange contests, there are many different plans for conducting them. The Bronson plan has some features not commonly found in contest schedules, while embracing the best points of other plans. To begin with, the contest lasted only over two meetings. When you recall the number of new members added during that time, and know that \$300 was added to the treasury, you at once understand that, whatever the character of the plan, it was a plan that was well worked.

This is also shown by the fact that Capt. Alma Burghdoff's score of 67,475 exceeded the score of Capt. Edward Keyes by scarcely 50 points. The forfeit, a dinner, was paid by the losing side at the next meeting following the close of the contest.

The following list of points governed in this contest and is worthy of careful examination by other Granges:

New member	500
Reinstated member	300
Member absent deducts	75
Each member present at meeting....	100
Present each meeting during contest..	400
Dues to March 31.....	150
Dues to June 30.....	200
Dues to September 30.....	250
Dues to December 31.....	300
Recitation	100
Song	150
Violin and organ	150
Paper	50
Select reading	20
Quotations	25
Original poem	200
Instrumental music	150

JENNIE BUELL.

AMONG THE LIVE GRANGES.

Plymouth Grange Prospers.—While reading the Grange notes this morning, I see Capitol Grange, of Ingham county, says "The biggest and best Grange in Michigan." Well, we are glad they think so but there are others. Down here in Wayne county is the Plymouth Grange, which cannot be downed by any other in the state. Of course, we have not been heard from very often but have been so busy keeping account of new members, programs, and the many other things to be seen to, that we have neglected to keep The Farmer posted on what we are doing. Since January 1 we have initiated 50 new members, entertained the Pomona, also the Belleville Grange, and had six meetings that were so interesting we almost forgot to go home. Among the

FARMERS' CLUBS

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

SOME ADVANTAGES OF BELONGING TO A FARMERS' CLUB.

There are in every farm community in the state, where a Farmers' Club exists, many persons who have at one time or another been asked to attend the meetings of the Club and identify themselves with the organization. Some of these have taken advantage of the opportunity thus offered to become members of the organization. In fact it is in just this way that the membership of the Clubs throughout the state has grown to its present proportions. These persons have, through their own experience as Club members, become acquainted with the advantages and benefits of being a member of such an organization. But there are others who have, for one reason or another, failed to respond to such invitations and who have thus remained in ignorance of the very great advantages which would accrue to themselves and their families through affiliation with such an organization as a live Farmers' Club. There are still others who have not had the opportunity to so easily acquaint themselves with the advantages of a membership in such an organization for the reason that no Club has been organized in their immediate neighborhood. It is then, for the benefit of the two last

at the pleasant home of Mr. and Mrs. Frank Rush. This being a busy season of the year for the farmers, several families were kept at home on account of their work. Following the opening exercises dinner was announced. A social hour followed the dinner after which the business part of the meeting was taken up. During the progress of the program several questions were discussed, among them the following: "If the people rule, why don't they have the kind of laws they want?" This question had been given to Mr. Putnam. He was absent, and several others spoke on the subject. It was thought we have too many laws now and that every time the primary has to fix a different law, and it was thought that it would be better to have less legislators. "Would it pay to sow phosphate broadcast on corn ground?" Mr. Garber thought it best to sow it with the corn. "Requirements of modern politicians." This question was given Mr. Peterson who defined the meaning as one versed in the science of government and the art of governing, one devoted to politics. Thought a modern politician should be honest, upright, and a good moral man. "Should we have parcels post and why?" This question was discussed by several who were all in favor of it.

The Farm vs. the Factory.—"What is the comparative net earning capacity of the man working on a farm or working in the factory under general conditions?" This question was given Mr. McBride; he being absent, others talked on the subject. They thought the farm wages as good as the factory; that there are more ways of spending money by working in the town and at the end of the year, the man working on the farm would save more as the expenses are more, living in town. It was thought that the chores on the farm had something to do with men leaving the farm, as the farmer usually puts in more hours, but they are changing their plans and working less hours.

The Club Meetings.—"Do you think our Club meetings are as interesting, our members living so far apart, as they would be if the members lived near together?" Mr. Potter thinks they are more interesting, enjoying the ride through the country and seeing what others are doing and enjoying meeting in the different neighborhoods. We also form wider acquaintances. It was suggested that each family entertain in order of the roll call. The next meeting will be with Mr. and Mrs. G. Potter the first Thursday in June.

The Training of Children.—The Odessa Farmers' Club met at the pleasant home of Mr. and Mrs. J. W. Brown, Saturday, May 11. On account of the excellence of a paper read by Mrs. A. L. Jones at a recent W. C. T. U. meeting, she was requested to read it before the Farmers' Club. Her subject was, "The training of children for good citizenship." She laid special stress on the responsibility of the parents in training their children. This paper was so full of excellent thoughts every sentence being a gem, that we cannot attempt to condense it here but will say that it would well repay everyone, especially young parents, to read it.

The Mother's Work.—In the absence of Mrs. J. L. Carter, Mrs. Augst discussed briefly her subject, "Does the mother ever get pay for her work?" She said, in part: "If you look at it from a financial standpoint, no; if when the children are grown up they are good, honest men and women, the mother has her pay, and more too. If a woman neglects her children and they grow up to be disreputable men and women she certainly has her pay, for she is reaping what she has sown. Mrs. Augst then gave a reading on the loss of the Titanic as compared with the loss of life through intemperance. We shudder at the former but try to find an adequate excuse for the latter which is equivalent to such a loss as that of the Titanic every two months. That is putting it very liberally and mildly, too. After a bountiful supper served by the hostess the members departed for their homes, feeling that the meeting had been a profitable one. The next meeting will be a children's meeting held at the home of Chas. Lepard.

Discuss Parcels Post.—The Columbia Farmers' Club held the May meeting at the home of Mr. and Mrs. O. A. Griffes, Saturday, May 11. Mr. and Mrs. Wm. Palmer assisting in the entertainment. This being the first afternoon meeting of the year, the president, W. G. Reading, called to order at 2:30, with singing by the Club from the new song book. The first subject for discussion, "Parcels Post," was introduced by Sumner Ladd, who said that our country is the only one of the great countries that does not have a parcels post. Parcels can be sent to foreign countries at less expense than to small places at short distances in our own country. Express companies oppose parcels post, and local merchants also oppose it thinking it would be detrimental to them. Mr. Ladd is in favor of a modified parcels post. Bill has passed the house and is now before the senate. L. E. Palmer thought it a good thing for the benefit of the community and Club. W. C. Weeks can't see why it should harm the merchants, it would be a great help to the farmers. Mrs. Peterson thinks that senators would be more apt to help pass the bill before election. Dr. Palmer is in favor of the present bill; if it passed the mail carriers' salary would be increased. Motion made and carried that the president appoint a committee to formulate a resolutions to send to the senate. Committee, Sumner Ladd, W. C. Weeks, and Dr. E. N. Palmer.

The Good Play and its Mission.—"What a good play really is" was the subject introduced by May Crego, who said a play, whether literary or drama, if finely written and true to life, well acted and of good morals, was considered a good play. Mrs. Sidebotham said if the moral is good and the acting full of inspiration the public is interested and will profit by it. The program was interspersed with both vocal and instrumental music.

named classes that this brief article is written.

Perhaps the most common reason given by those who have the opportunity to affiliate themselves with a Farmers' Club for not improving it, is that they cannot afford to take the time to attend the monthly meetings. There is no doubt that this is a mistake. In fact, even from a purely business standpoint, there can be no doubt that no farmer who has the opportunity to join such a Club can afford to neglect it. In visiting the homes of other members on the occasions of the monthly meetings and looking about their farms and buildings, he will certainly gain ideas of value to him in the successful conduct of his own business, and in conversation with the other men present he will gain more valuable ideas, to say nothing of such as may be presented to him in the discussions and papers which are a part of the meeting proper.

CLUB DISCUSSIONS.

A Good Meeting with Small Attendance.—The South Leoni Farmers' Club met at the pleasant home of Mr. and Mrs. A. N. Sova, Thursday, May 9. The meeting was called to order by the president, D. M. Hunter. Following the opening exercises the minutes of the last meeting were read and approved. The busy season had a marked effect on the attendance, but simply increased the interest of the plucky number. None of the parties on the program were present but Mrs. Cook who gave us a fine paper on the subject for discussion, "The wife for a partner, and how about it?" It was ably discussed by Rev. Reeve, Rev. Blunt and several ladies. Supper was served at five o'clock to about 40. The Club adjourned to meet at the home of Mr. and Mrs. W. B. Webb, June 13.—Mrs. C. Bunker Rep.

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.

Wayne Co., with Huron Grange, Friday, June 21. Miss Jennie Buell will speak.

Montcalm Co., with Crystal and Butter-nut Grange, Thursday, June 6.

MICHIGAN RANKS HIGH AS A PEAR STATE.

The 1910 census should create a feeling of optimism in the minds of those who are growing and those who intend to produce pears, since a substantial decrease in the number of bearing trees is shown. Decrease in Number of Trees of Bearing Age.

At the census of 1900, taken as of June 1, there were reported 17,716,000 pear trees of bearing age, as against 15,172,000 trees in 1910 (taken as of April 15), a decrease of 2,544,000 trees, or 16.8 per cent. In 1910 there were 1,276,366 farms reporting the growing of pear trees, or 20.1 per cent of the total number of farms in the United States. The average number of trees per farm reporting is given as 12. No report was received in 1900 showing the number of farms reporting.

The returns of the 1900 census, likewise, did not secure the number of trees under bearing age. In 1910, however, 611,788 farms (or 9.6 per cent of the total), had 8,804,000 trees not of bearing age, or an average of 14 per farm.

The present census shows that in 1909 there were produced in the United States 8,841,000 bushels of pears, having a total value of \$7,911,000. The production at that time was somewhat greater than it was ten years previously, when 6,625,000 bushels were gathered.

Number of Pear Trees and Production, by States.

Among the several states, New York, California, and Michigan, together contained in 1910 over 30 per cent of all pear trees of bearing age in the United States.

The number of such trees in New York at the census of 1910 was 2,142,000, this being a decrease during the ten years of 42,000 trees. The production of pears in 1909 amounted to 1,343,000 bushels, while in 1900 it was only 960,000 bushels, a gain of 383,000 bushels. The value of the 1910 crop was \$1,418,000.

California reported 1,411,000 trees of bearing age in 1910, against 2,513,000 trees in 1900. This state alone produced more pears in 1909 than the entire east north central division, 1,928,000 bushels, valued at \$1,661,000. In 1899 a crop of 1,913,000 bushels was gathered.

In 1910 there were 1,136,000 trees of bearing age in the state of Michigan, while in 1900 the number was 1,187,000 trees. A total of 666,000 bushels of pears were produced in 1909, against 171,000 bushels in 1899, an increase of over 495,000 bushels. The value of the 1909 crop was \$536,000.

EARLY THINNING OF GARDEN CROPS.

It is a mistake to allow the garden crops to grow too long before thinning out those plants not needed to make mature or usable products. It is sometimes easier to thin when the plants get large so as to be easily secured by the fingers, but the plant food and moisture required to make them of such size should rather have been left for the use of those to remain. Then, too, when the roots of the plants spread out and intertwine each other, more disturbance is caused upon the pulling of a part of them. The removal of little plants conserves plant food and energy by lessening the injury that would be caused through the pulling of the plants later. For these reasons thinning the rows as early as the size of the plants will permit is the best practice to follow.

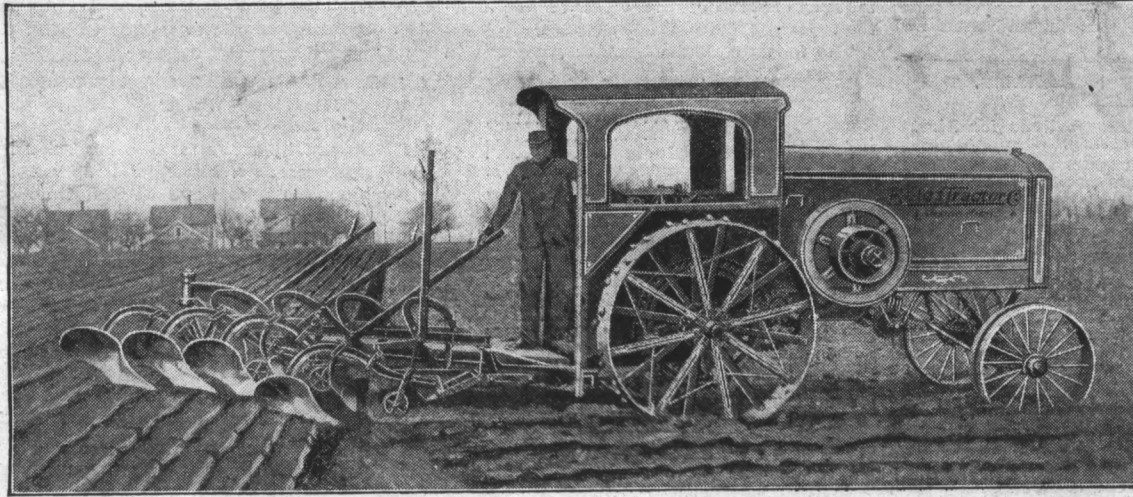
For identically the same reasons the weeds that start among the garden crops need to be pulled, hoed or raked out early. They use moisture and plant food, and disturb the root systems of the plants left, especially when allowed to attain any considerable size. Permitting only the crop plants to grow is a practice of conservatism that should be more universal.

CROSS-BRED PLANTS YIELD MORE THAN PURE-BRED.

A test repeated for four years at the New York Agricultural Experiment Station, Geneva, shows a decided gain in yield by growing tomato plants from seed produced by crossing two varieties. The first generation of crossed plants out-yielded the parents in every case, the average gain being about 3½ tons of tomatoes to the acre. The advantage was greatly less in plants of the second generation and disappeared entirely in subsequent generations. The station horticulturists believe that the growing of this first generation crossed seed is a commercially profitable undertaking.

You Can Back Up and Turn Square Corners With this Plowing Outfit

As Shown in Cut.



The progressive farmers of Michigan have been waiting for a plowing engine with plows attached, suitable for farms of 120 acres or more. **Here it is—A Perfect Success.** The plow carriage is so arranged that the plows can be **backed into the very corner of the fence.** You can turn square corners and plow a field and finish complete without the aid of horses. You can plow in lands or around the field your usual way and turn over from 8 to 12 acres per

day and do a better job than plowing the old way. Plow detached from the engine in a minute all ready for discing, seeding, rolling and all other work on the farm.

We want every farmer to write us at once if interested and we will arrange for field work or tell you where you can see the **Bates All Steel Tractor** and four-bottom, one-man, gang plow in operation.

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Enclosed cab.
Easily operated. Guaranteed more draw bar H. P. than any other Drivers 18 in. & 24 in. wide. Dependable.

A Hay Press That Carries Its Own Power Plant

Combination Solid Steel, Big-Capacity Press With Gas Engine Mounted on Same Truck

This sensational Money-Making Hay Baling Outfit, which we introduced in 1910, has just about doubled the profits of the hay baler. Many balers cleaned up \$10, \$12 and even \$15 a day right along. Hay now commands a big price, and everyone wants theirs baled.

It's a compact, big-capacity, all-steel press, handling 2½ to 3½ tons per hour. Carries its own power plant, completely equipped. Easy to move. Coupled up short, you don't need a 40-acre field to turn it around. Always ready for business. You can get in a big day's work every day. The press has a big feed opening. It's a self-feeder, too! Feeds direct from fork. Friction clutch sprocket on press. Lever convenient for feeder; starts or stops press instantly. No condenser box, no dangerous foot tamping, no balance wheels, no complicated gears, no high-speed machinery. Simple block dropper. Extra-length tying chamber. **Lever brake. IT'S A WONDER FOR WINDROW WORK.**



A Wonder for Windrow Baling

Sandwich Motor Press

Engine is the very best quality. Hopper-cooled type—requires little water. Has both batteries and magneto. Heavy steel roller, chain drive. No belts to lose power or cause trouble. Chain delivers full power of engine.

Comes completely and fully equipped. Engine can be removed for other work. Can furnish outfits with 4, 5, 7 and 9-horsepower engines.

Both press and engine are of the very best quality—made for hard, continuous service—yet the cost of the outfit is very reasonable.

Horse-Power Presses, Too!

We make a complete line of hay presses—not only motor presses, with which we furnish engine (or you can use your own en-

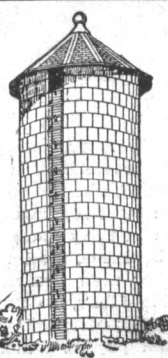
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gine), but horse-power presses of the very latest type—steel frame or wood frame—small or large capacity.

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Few people realize how well hay-baling pays. Baled hay is in tremendous demand every place. It's shipped all over the world. Pays every farmer big to bale his hay. Pays you big to do the baling!

Send us your name and address on a postal TODAY, stating whether you wish a motor, belt or horse-power press, and we will send you our latest catalog showing the complete line of Sandwich Presses. The catalog will also give you a good idea of the big profits in hay-baling.



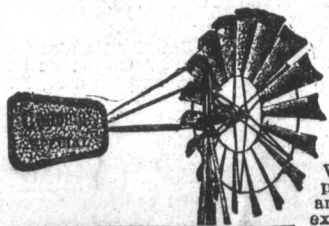
Avoid continual expense for silo repairs and spoilt ensilage. Have a silo that's PROOF.

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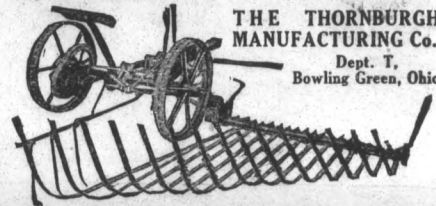
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