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ARBOR DAY.

By proclamation of the governor, following a time honored custom, Friday, April 29, has been designated as Arbor Day and will in many places and many ways be celebrated by the planting of trees, with appropriate exercises in the schools, etc. If this day could be generally and appropriately observed in the judicious planting of trees, especially about the farm homes, the outcome could not help but be a general improvement in the beauty of the country and the appearance of the farm homes. That this fact is appreciated by organized, as well as individual, farmers in some sections of our fair state is proven by the first of the two accompanying illustrations, which shows a new Grange hall in one of the northern counties of the state, about which the members planted about 200 trees and shrubs last year. They will have a similar meeting on Arbor Day of the present year to further beautify the environment of their Grange home. Their example might well be followed by other organizations.

The second cut has an Arbor Day interest, as it shows the method of propagating forest trees in a nursery maintained for that purpose. The interest in practical forestry has increased to such an extent in recent years that millions of these forest tree seedlings are now produced annually for commercial planting. Surely if the growing of trees in a commercial way is proving profitable, as it is proving to be in many instances, it will pay doubly well to plant trees for the adornment of the home, the value as well as the comfort of which will be greatly enhanced thereby.

FARM NOTES.

White Grubs in Lawn and Field.

I would like to know how to get rid of the large white grubs which are killing all the grass in the lawn. Patches of grass four or five yards square are killed out, not a bit being left. They started to work last year.

Washtenaw Co.

M. HAMMOND.

These white grubs, in common with the larvae of similar insects, are difficult to eradicate, owing to the fact that they remain in the soil in the larval stage for two to three years. These grubs are the larvae of the May beetle, as it is termed in the south, or the June beetle or bug, as it is designated in the north. These beetles appear during the month by which they are designated, and the female soon deposits her eggs in the ground. These hatch in about two weeks, and the grubs live in the ground for from two to three years in their various stages before the mature insects into which they develop come forth. There are many different species of these pests, but practically all of them are more destructive during one or two years than during the intervening period of their life cycle, on account of the length of time required for their development to maturity, and as they are closely related in appearance and habits the same facts and methods of extermination will apply to all of them.

As the mature beetles fly only at night, they are not so familiar to the average observer as are the larvae, yet they help to make up the swarm of winged insects that buzz about trees and shrubs of an early summer night in such numbers as to cause the loud humming familiar to every reader. Occasionally one will stray into a room, attracted by the light, and profitably utilized in clearing cultivated fields of these pests, although no one would want to allow them access to the lawn for the purpose of eradicating these troublesome grubs. While they are as thick as described by this inquirer it may be necessary to remove the sod to eradicate them thoroughly and then renew the sward. Although this should not be re-



Home of Valentine Grange, of Kalkaska Co. From a Photo Taken in the Spring of 1909, when the Members Assembled for the Planting of Trees and Shrubs.

fly about, bumping against the ceiling in an equally familiar manner. As the eggs are deposited largely in old sod or weed infested places, they are as likely to be found in the lawn as anywhere and, unfortunately, this is one of the most difficult places to eradicate them. In open fields fall plowing is the most effective remedy, as with other similar pests. Pigs are very fond of these grubs, and it is generally in pursuit of them that they root up the sod in an orchard, or make unsightly holes in the lawn when they can gain access to it. Thus they may be

sorted to until other remedies have been found inefficient.

Lime has been found an efficient remedy for these grubs in some cases, particularly gas lime, or lime which has been used for purifying gas manufactured for illuminating purposes. This lime is thought to be more efficient than pure lime, owing to the crude gas which it absorbs and holds. It is claimed that gas lime, applied liberally in September has eradicated the white grubs from lawns. Sometimes, however, gas lime is poisonous to plant life and it would doubtless be

safer, especially at this season of the year to use air slaked lime, applying it to the surface of the lawn quite liberally. Another remedy which has been found effective against some species is kerosene emulsion, diluted about ten times and poured on the ground, preferably just before a rain, but this would hardly be practicable where a large lawn is to be treated. Probably about the best that can be done at this season is to apply lime as suggested, making a liberal application on and around the spots where the grubs appear to be working most, removing the sod and resodding those places if desired after working the lime into the soil, then making a heavier application in the fall.

The fact that little trouble will be had from these and similar insects in the cultivated fields where a short rotation of crops is used, is a strong argument for the use of a short rotation of crops in the farm practice. This fact, together with the fact that the fertility of the soil may be best maintained through the use of a short rotation is having a beneficial effect in bringing about a gradual change in the average length of the crop rotation on the average farm in favor of the short rotation. The clovers are not generally infested with these or other similar grubs, and the oftener clover is made a factor in the rotation of crops the better for the farm and its owner.

Be Sure of the Quality of Your Seed.

Reports of the poor germinating quality of seed corn are coming from several of the corn belt states of the central west. So serious has this trouble become that in one of these states it is reported that the ministers have been asked to preach sermons bearing on the subject, to the end that the importance of procuring good seed may be brought to the attention of as many farmers as possible. Similar reports from the states further north seem to indicate that this trouble is more or less general. While the corn crop in our own state was planted late last year, the very late and dry fall was favorable for bringing it to maturity and curing it out. Where the seed corn was properly handled after it was selected,

there is probably no grave danger regarding its vitality, but when the crib is to be depended upon for the seed this is not likely to be the case. The writer has observed a large number of moldy ears in a crib of corn carried over winter, that was well cured in the shock before husking. This indicates that the vitality of many ears which are apparently all right will be low and that many will not grow at all. Certainly under these conditions it will not be safe to depend upon crib corn for seed, and even the seed that was properly saved and cared for should be carefully tested to demonstrate its vitality. The ear test, many times described in these columns, by which several kernels from each ear are planted in numbered squares in a testing box, is the only satisfactory one, but even an old fashioned test of kernels selected at random is far better than none. If this work has not already been done it should not be longer neglected.



Growing Trees from Seed in a Forest Tree Nursery. Millions of these Seedlings Are Produced Annually.

on any Michigan farm. From other states, notably Ohio, considerable trouble from dry rot of potatoes is reported. This disease is indicated by dark streaks in the tubers. It is caused by a blight. The Ohio Experiment Station authorities report that they have found little evidence of this disease in samples secured from some parts of Michigan, but it will be a wise precaution to be on the watch for it when the seed potatoes are being selected and prepared for planting.

Potatoes are too plentiful and cheap this year to take any chances on poor seed, but the Ohio station has issued a bulletin giving instructions how to handle slightly diseased seed, by rejecting the half of potatoes from which the disease has penetrated, the disinfection of knives used to cut them before cutting healthy seed, and the treatment of potatoes for scab after rather than before cutting where this disease is present. But the main point emphasized is the warning to farmers to examine their feed to ascertain if it is safe to plant. This is a timely warning which should be also heeded by Michigan farmers.

SOY BEANS.

The soja or soy bean is a plant that is assuming a position of much importance. Originally a native of Asia, where it has been cultivated for centuries in China, Japan and India, it was introduced into the United States in 1854. Until quite recently the plant has attracted very little attention. The various kinds differ so greatly in their climatic requirements, in the length of time necessary to mature, in the yields of grain and forage, that growers obtaining a variety unsuitable to their conditions have been disappointed with results, consequently the plant has been looked upon with small favor until quite a late date.

The increased interest in the soy bean has grown out of the work done by the United States Department of Agriculture, which has been experimenting with this plant. The work of the Department has brought to light some surprising facts in regard to the soy bean. In Farmers' Bulletin 372, issued by the Department of Agriculture at Washington, D. C., we find it stated that soy bean hay is practically identical in feeding value with alfalfa hay; that soy bean meal is more valuable than cottonseed meal; that a bushel of soy beans is at least twice as valuable as a bushel of corn. In this bulletin we find the average analysis of seven varieties as follows: Protein 35.40; fat 29.35; nitrogen free extract 26.15.

We also find in this bulletin the results of a number of interesting experiments conducted by the various experiment stations. In one experiment at the Tennessee Experiment Station, dairy cows gave more milk and butter-fat when fed soy bean hay than when fed alfalfa hay. In a test made by the Kansas Experiment Station feeding hogs it was found that with corn meal 100 lbs. gain cost \$3.92; with corn meal and soy bean meal, \$3.73; with Kaffir corn meal and soy bean meal, \$3.57. For these computations the value of corn meal was fixed at \$14.00 per ton, Kaffir corn meal at \$13.00 per ton, soy bean meal at \$25.00 per ton, or 75 cents per bushel.

The Indiana Experiment Station conducted an experiment with pork. Upon comparing a ration composed of two parts corn meal and one part soy bean meal, with one composed of corn meal and wheat middlings in equal proportions, and with one composed of five parts corn meal and one part tankage, the soy bean ration produced the largest daily gains, and this with the smallest quantity of feed consumed for each pound of gain.

There is no plant whose varieties differ so widely as the soy bean, and in this fact lies the peculiar value of the plant. It may be used as a grain crop, as a hay crop, for silage, soiling or forage. It would be hard to tell in which capacity it is most useful. But it is absolutely necessary to plant a variety especially adapted to the purpose to which it is proposed to devote the crop, or dire failure and sore disappointment will result. It can probably be used over the widest area as a grain crop. The earliest varieties will mature in Minnesota and Ontario.

All kinds of stock relish both grain and forage and thrive on it. On our own farm all our stock love the grain as well as they do corn. We have but little trouble from indigestion among our animals. The beans are tonic and laxative in their action.

As stated before, soy bean hay com-

pare very favorably in feeding value with alfalfa hay, and it is eagerly eaten by stock. Even if the leaves are allowed to fall before the plants are cut, stock will eat the straw. Soy beans mixed with corn make excellent ensilage. These beans would be very useful to every farmer who is using wheat bran, cottonseed meal or oil meal, and would be much more profitable than any of these feeds.

There are at present seven or eight varieties offered by seedsmen. During the past few years several hundred new varieties have been brought from Asia and tested by the government. Many of these new varieties are so vastly superior to the old ones that we predict when they are grown in sufficient quantities to be offered for sale, the growing of this plant will be greatly increased, and will be much more profitable than it is at present.

About ten years ago the writer became interested in soy beans and began experimenting with them. For many years we grew the Ito San, with satisfaction to ourselves, and we still think that it is the best kind for extreme northern conditions. A few years ago we began trying some of the government's new varieties, and we have been both surprised and pleased with results. With the old varieties we ordinarily secured twenty bushels of grain per acre; with some of the new varieties we think it will soon be possible to secure about thirty bushels per acre.

As a hay crop we do not think the soy bean will ever supplant alfalfa or take the place of red clover, but we do think that it will rank close after these plants.

The soy bean is not hard to grow, but as with all new and unfamiliar crops we would advise farmers to begin in a small way until they become somewhat familiar with the peculiarities of the plant. The soy bean will grow in practically every state in the United States, with the possible exception of Maine, a part of Montana, and high altitudes in the Rocky Mountains. They will grow on any kind of soil, rich or poor, black, clay, or sand, limestone or freestone. They will grow on soils that are not perfectly drained. They will not do their best on soils where water stands for any length of time, but they will stand wetter soils than many of our crops. On fertile soils they tend to produce luxuriant plant growth and small yield of grain; on poor soils they tend to produce a large grain crop and a small growth of forage. For Michigan conditions we would recommend our old favorite, the Ito San. We hope that the readers of this paper will become sufficiently interested in this plant to try it in a small way this season, and think they will be well pleased if they do so. To us it is a most fascinating study to watch the development of this plant, and it has the additional advantage of being a most profitable one as well.

Ohio.

CHAS. B. WING.

PLOWING JUST PREVIOUS TO PLANTING.

Why is it the custom in southwestern Michigan to plow land immediately before planting. Would not Michigan soil bring just as good crops if plowed at any time during the spring, provided ground is put in good condition at planting time? Is it not best to turn under stable manure as early in spring as possible?

Van Buren Co.

W. B. M.

There are a number of questions to consider before adopting this system. If the season is just right, then this system works out all right; but if the season is not right, it is a failure. On the whole, I do not believe in it and would prefer to plow as early in the spring as possible and work the ground as thoroughly as possible, and from time to time before planting. For instance, if one is to plow down a clover sod for corn. If he delays the plowing until just before planting time, gets quite a growth of clover to turn under, which is a good thing because he adds vegetable matter to the soil. This works well if there is plenty of moisture. But, on the other hand, if the season is dry this clover is taking a vast amount of moisture from the soil, then when plowed down if the weather is dry and continues dry there is apt to be a lack of moisture to insure good germination and growth. I have seen this practice cause the absolute failure of a crop of corn, while on the other hand, had the clover sod been plowed early, say in April, and worked down from time to time, the dust mulch would have prevented the evaporation of the moisture from the subsoil and when planting time came there would have been sufficient moisture to in-

sure germination and rapid growth, and a good crop would have been the result. Since the farmer has no control over the supply of moisture, it seems to me that it is good judgment to take the safest farm practice under all circumstances. This principle would apply to any other crop like beans, potatoes, or even earlier to oats, although there is not as much risk with the oat crop as there would be with the corn and potato crop planted later in the season.

As to the idea, if it is not better to plow the manure down early in the spring, I am not so sure. My experience leads me to believe that we get good results from leaving manure on top as long as possible. In fact, some of our best farmers claim that top dressing is the only correct way to use manure. I notice where we spread manure on in the fall and winter and it lays on the top of the ground for a long time, that we invariably get better results from this manure than when it is spread on late in the spring and plowed down as soon as possible. The manure itself furnishes a mulch and helps conserve the moisture. Then again, the spring rains leach the soluble fertilizing parts of the manure into the soil and you get the benefit of them, while where the manure is put on late in the spring and plowed down immediately, there may not be moisture enough so that the fertility of the manure or the plant food in the manure, the nitrogen, phosphoric acid and potash, is dissolved and held in solution by the soil moisture so that the plants can get it. My practice is to cover a clover sod with manure during the fall and winter and spring and plow it down for corn and potatoes and I think, all things considered, this is the best way because it does not seem practical in my system of farming to always put the manure on top as a top dressing. I have no old meadows and it is not always practical on my kind of soil to get onto the new seeding very early, or to top dress the wheat, because the ground would not be in condition to run a manure spreader over it, while you can practically always get onto the clover sod and spread the manure. Then, too, I believe that nothing is lost by plowing the manure down. While you do not get as quick results, you get the results next year because nothing would be lost by plowing it down. You simply have to wait a little longer to get your returns.

COLON C. LILLIE.

COTTONSEED MEAL AS A FERTILIZER.

I have been told that cottonseed meal is a good substitute for commercial fertilizer. Kindly advise me through the columns of your paper as to its fertilizing value for spring crops.

Washtenaw Co.

L. S.

Cottonseed meal as a fertilizer is never used alone, but always mixed with other substances. It is rich in nitrogen but contains less than three per cent phosphoric acid and less than one per cent of potash, consequently would not be a balanced fertilizer used alone. Cottonseed meal is really a fertilizer ingredient. Fertilizer manufacturers sometimes use cottonseed meal as a source of nitrogen just the same as they use tankage as a source of nitrogen, or nitrate of soda, or sulphate of ammonia as a source of nitrogen. Then they mix acidulated rock and potash salts with it to get the desired formula. I do not think it would be a suitable fertilizer at all to use on spring crops because we need more phosphoric acid than we do nitrogen, as a rule, and this cottonseed meal would contain a very small amount of phosphoric acid.

COLON C. LILLIE.

COST AND YIELD OF FIELD CROPS.

The New Jersey Experiment Station has made some tests to determine just where the farmer "gets off," by producing field crops. The more successful soiling crops with their yield per acre in tons and their cost per ton for growing and harvesting, according to the New Jersey experiments, were as follows:

Rye, 6.38 tons at \$1.02 per ton; wheat, 5.3 tons at 79 cents per ton; oats and peas, 8.79 tons at \$1.41 per ton; Japanese barnyard millet, 7.05 tons at \$2.59 per ton; barnyard millet with silage, 6.95 tons at \$1.85 per ton; Thoroughbred White Flint corn, 10.5 tons at \$1.32 per ton; rowen (green) 78 cents per ton; cowpeas, 4 tons at \$2.94 per ton; and cowpeas and Kaffir corn, 2.75 tons at \$4.07. Oats and Canada field peas were regarded as the most successful forage crop except alfalfa.

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GRAIN DRILL FOR SOWING BEETS.

We are going to grow some sugar beets up here this summer and I should like to know how you sow your seed. I have a garden drill, but it would seem a pretty slow way to drill in three, four or five acres with that. Can we use a disc grain drill or is there any danger of getting the seed too deep in the ground with that, also when do you consider the best time to drill in the seed? Any information will be thankfully received.

Muskegon Co.

A. N. D.

When I first began raising sugar beets, I used a grain drill to sow the beets, and it worked very nicely. I presume probably there are more beets sown with grain drills than in any other way in the state of Michigan. A little later on I purchased a regular beet drill and it works a little nicer because you can govern the depth better; but I should certainly use a disc drill, or even a hoe grain drill for sowing the beets if I had an acre of beets to sow, rather than sow it with a garden drill. As you say, it represents considerable time and labor to sow any amount of beets with a garden drill. It is not the American way of doing things. There is some trouble in governing the depth in sowing beets with a regular grain drill. You are not as apt to get them too deep with a disc drill as you are with a hoe drill, but with either drill if the ground is properly prepared, there is not so much danger. Beet ground ought to be thoroughly rolled and packed with just an inch or two on top of fine mellow dirt. No deep tillage tools ought to be used in preparing land for beets, except in plowing. The plowing ought to be a good depth, but after that work the surface and thoroughly pack the subsoil. One man skilled in raising sugar beets says that the ground ought to be so thoroughly packed and prepared that when the horses walk over it in drilling, their feet ought not to sink into the ground. Now this means a lot. Just notice the next time you drill oats or wheat, or plant corn, and see on much of the mellow land how deep the horses' feet sink into the ground, and yet this ought not to be on the beet ground. It will do very well for corn, not so well for oats, or wheat. But for beets the ground is not in good condition when this happens. If you will work on the beet ground enough so that it is thoroughly packed, there will be very little trouble about getting the beet seed sowed too deeply. Every time you harrow over with a smoothing harrow, every time you roll, every time you go over the field it will help to firm and pack the subsoil and get it in this condition. In all of the later tillage of the soil I would not use a disc harrow or pulverizer, or a broad shoveled cultivator, nothing but the smoothing harrow and the roller. They both help to pack and firm the soil and keep the surface fine. That is just the condition you want.

There are followers made to put on the hoe or tooth of the drill to govern the depth. These are excellent and you can get them of almost any manufacturer. Have your dealer send to the manufacturer of your drill and get these follower wheels to govern the depth, and with these you can govern the depth as well as with a regular beet drill. A shoe grain drill is an excellent thing to sow sugar beet seed with.

COLON C. LILLIE.

LILLIE FARMSTEAD NOTES.

Extra Work.

For the last five or six years we have had an unusual amount of extra work on the farm, work that hindered us very much with our regular farming. First it was building over the barns and building a new one. Then it was an unusually large amount of tile draining, and so it has been every year. Last year I bought two small farms as additions to my regular farm. On each one was a barn. The barn is no particular good to me where it stands, and I have concluded to move these barns over near the main barn and make a heifer and young stock barn out of them. This is under way at the present time. I will connect the two together and put a basement stable under the whole. But this interferes considerably with our regular farming, although I have extra men to do the work. It cannot be done, however, without taking the teams from their regular work to get material and to assist in the moving, and everything of that sort. I am very fortunate in getting sufficient labor to handle these buildings without taking very much of the regular farm labor from their regular duties. On one of the farms purchased was also a very good house and I am moving that and placing it for an-

other tenant house, and then we have concluded to rearrange the three other tenant houses and put them all in a line on one of the private roads. This will make quite an extensive job and while we are moving I shall put them all on good cement block walls, give each man a cellar of his own and a cistern, and also a kitchen garden in connection with the house. While this necessitates a larger expenditure of money than I like, yet it ought to be done and might as well be done this summer as any other. If we can accomplish our regular farm work and do this work, we will be extremely fortunate. I anticipate that some of the farming will have to be sorely neglected, but perhaps I can get help enough and can manage them well enough so that all things will progress without very much detriment to them.

We are also at the present time finishing up the tile draining that we started last spring. We worked up until about the 7th or 8th of December at this work but then winter and snow came on and it had to stop and there is two or three hundred rods of tiling yet to be done this spring. This is well under way, however, at the present time, and a few more days will finish it. This practically completes the tiling of the entire farm. There is one or two fields that I would like to have a few short ditches put in and will when the proper crop comes in the rotation so that the tiling will not interfere too much with the crop. I am getting tired of this extra work and would like to see it completed and would like to have a year or two with just regular farming. One can do so much better work. It makes so much better work all around. It demands too much of my attention to oversee the whole thing. There is enough to do with the regular farming but this work has to be done and I am rushing it along so as to complete it and get it out of the way.

COLON C. LILLIE.

THE GUN ON THE FARM.

No farm can be considered well equipped unless one or more good guns are available for use when the same may be needed. There are numerous pests and crop thieves that you can eradicate better by this means than any other, and these are especially prevalent during the spring season when wild life is not sufficiently plentiful to become an easy prey for the marauders. Chicken hawks, weasels, rats and other marauders often prey upon the small chickens and all efforts to capture them in traps prove unavailing, where a good gun will often be of more assistance in ridding the farm of their depredations. Gophers, woodchucks, and even the smaller squirrels and rabbits sometimes become so plentiful as to be a nuisance and cause considerable damage to crops and small trees growing on the farm. Here, again, the gun may be brought into play with profit and satisfaction to the farmer. The cunning crows, which will soon infest the corn field, and even the sparrows, which are troublesome about the buildings and detrimental to other and more valuable birds during the nesting season, can be frightened away or reduced in numbers by the judicious use of the gun. The same gun will be a source of pleasure and pride to the farm boy when the open season for hunting game arrives and will, from these several standpoints, prove a profitable investment upon the average farm. Where but one gun is used a good shotgun will prove more valuable for the several purposes, but a small rifle will come handy for many of the uses above noted and will prove a source of recreation for target practice, especially with the young people, and there are many times when a good rifle is a valuable addition to the equipment of any farm as every reader will appreciate without their suggestion or enumeration. The guns used upon the farm should, of course, be of good standard quality, which will insure safety and efficiency in their use as well as a satisfactory period of service. Where one or more guns of this class are added to the farm equipment, but a small investment is required, and they will last practically a lifetime, while for farm use the matter of providing ammunition for them will prove but a small incidental expense. A good many farmers are still using the old muzzle-loading guns where one of the modern type would prove much more valuable and satisfactory and should be substituted for it, since the investment required is small in comparison with the greater satisfaction to be derived from the modern weapon.

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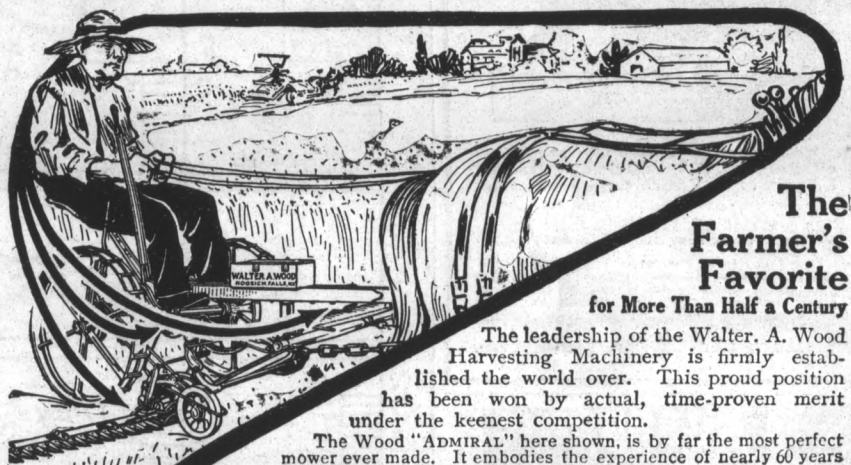
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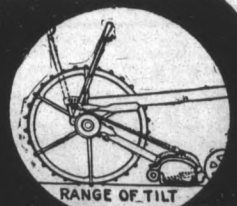
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DEPARTMENT OF ANIMAL
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GOMBAULT'S CAUSTIC BALSAM

Used as a Blisters
or Lotion.



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Thickened, Swollen Tissues,
Curbs, Filled Tendons, Soreness
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Pain. Does not blister, remove
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more milk and more flesh at less cost by scientific
feeding. Our Silo Book gives the information.
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to be worn as a mark of
enterprise, progress and
belief in modern meth-
ods of feeding. When you
answer, please say how
many head of cattle,
sheep or hogs you have.
Write quick.

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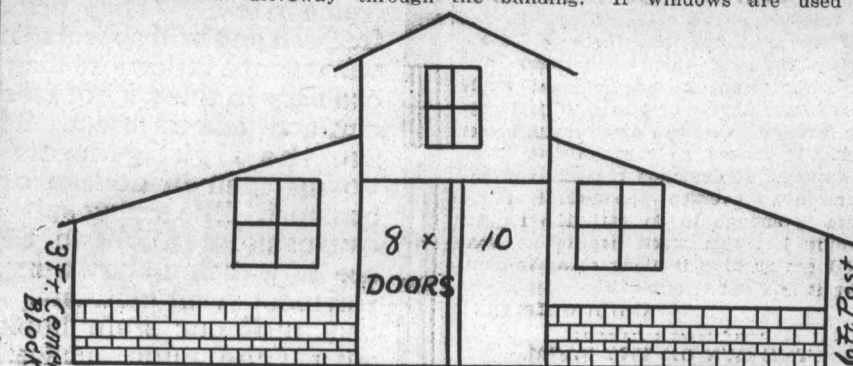


LIVE STOCK

BUILDING A HOG HOUSE.

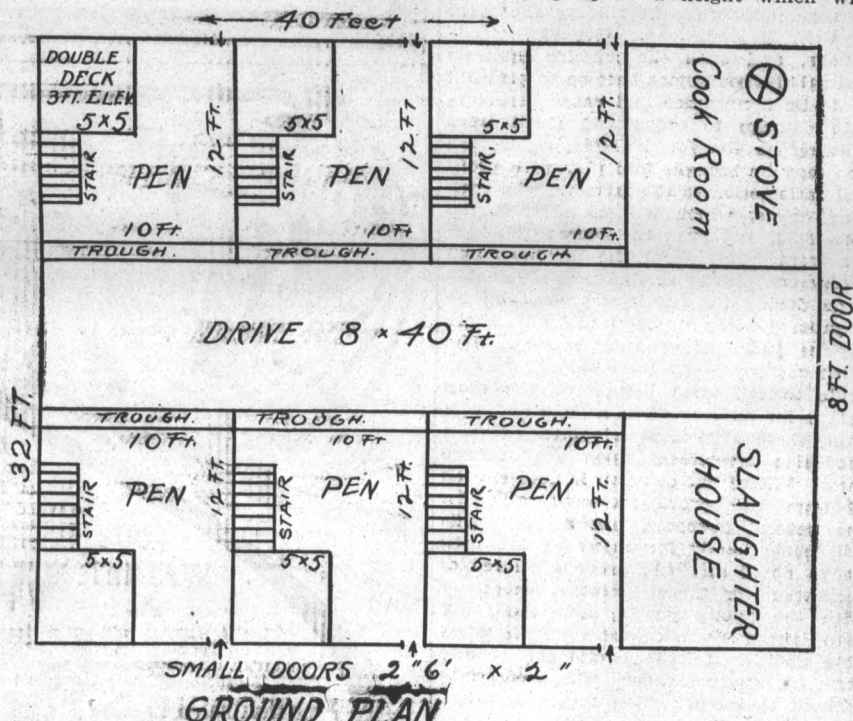
I am figuring on building a hog house which will mean quite an outlay of cash and material, and as mistakes are dangerous I would like to hear through The Farmer any comments or suggestions which will no doubt prove valuable reading for others. The south end will be 32 ft., making a cook and killing room 10x32, with 8-ft. doors at north and south ends and with 8-ft. driveway between pens to haul in bedding and manure out. Pens to be 10x12 ft., walls 3 feet of concrete above foundation wall and 3 feet of double boarding, making 6 ft. walls. Roof shingles or gravel; roof shed slope from outer walls to driveway, then a 3-ft. raise the full length in shape of a long cupola with windows on east and west side for light and ventilators. Cement floors and trough and for winter sleeping quarters for young stock, an elevated platform to rest on top of cement wall so pigs need not come in contact with stone wall only when feeding. There will be a stairway to each nest, also a railing around it. I have used these elevated nests before and like them much better than a nest on the floor level. This upper floor will be removable, as I think the cement would be cooler for hogs to lie on in summer. Any suggestions will be appreciated.

Bay Co. F. C. H.
The plan outlined above for building a hog house would seem to be a very satisfactory and convenient one. The provision for a central driveway through



32 Ft. FRONT ELEVATION.

which bedding and feed may be hauled in and the manure drawn out, is a very good idea. One must have a feed alley anyhow, and it will not need to be much wider to provide for this driveway than would otherwise be the case. While the central elevation or cupola would improve the appearance of the hog house to a considerable degree, yet, in the writer's opinion, it would not be as satisfactory a way of ventilating as would the King system which we believe should be installed in any new hog house of this size.



GROUND PLAN

The essential principles of the King system were described in our issue of April 2. This system of ventilation will insure much better air in the hog house than a less expense of temperature than can be secured by any method of ventilating it by opening and closing windows. As stated in the article referred to, if an outtake or ventilating flue 15 feet in height is used it should have a ventilating area of 26 square inches for each hog to be kept in the house. If the ventilating flue is 20 feet high, then a ventilating area of 22 square inches for each hog will be sufficient, and the combined area of the intake flues, of which several should be located at the sides of the building, should equal that of the main

ventilating shaft. The installing of this system of ventilation would dispose of the necessity of this cupola, as the building could be well lighted by windows placed above the cement blocks in the board walls of the sides and with large windows in the ends, the adequate lighting of the building would be well provided for and a better circulation of air could be secured during hot summer weather than would be possible through the cupola. As before noted, while the building would not have quite as good an appearance, the cost would probably be less, including the cost of installing the ventilating system, while the results would be more satisfactory.

The writer has never used the elevated nests but has heard a number of readers express preference for them. The plan of having them removable so that they can be used or not as desired, would seem to be a good one. The small doors to the outside yards should, of course, be equipped by some means by which they can be opened or closed from the feeding alley in the center of the building. This can be better done if sliding doors are used or, better still, doors that are hung on hinges at the top and provided with a latch to hold them securely closed at the bottom, which would interfere less with the light in case the windows were located above the doors in the sides of the building. If windows are used in



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BREEDING PURE-BRED SWINE.

Management of the Sow and Pigs.

The sow that carries a reasonable amount of flesh evenly laid on is usually the one that does the best with her litter. She will be quiet longer than the lean sow that is prompted by hunger to be up and looking for something to eat. Much of the danger that comes to the pigs at birth will be eliminated if the sows are kind and tractable, allowing all necessary help at farrowing time.

The quality of feed largely governs the amount of flesh that the sow may safely carry. The sow that has been fed a ration of forage and small amounts of grain foods may carry a large amount of flesh and still be safe to use for breeding. Many fail to appreciate the value of bulk and succulence in feeding brood sows during the period of pregnancy. During pregnancy two facts must be borne in mind. The first is that the sow is doing double duty. Not only must she keep up her own condition, but the development of the unborn litter is a constantly increasing drain upon her system. Feeding during this critical period should be liberal. Her condition should be good. It is a mistake to half starve pregnant sows, thinking that the reproductive organs are peculiarly liable to be transformed into masses of fat at the first sign of an appearance of fat upon her back and ribs. The use of the reproductive organs creates a demand of an unusual nature upon her system that must be met in the same way as that of a different character—such as growth, exercise, exposure to cold, etc., by providing liberal quantities of the right kind of foods. No sow can bring a litter of thrifty, well developed pigs unless she is fed liberal quantities of the right kinds of food during pregnancy. Given plenty of nourishing foods, abundance of bulk and succulence and pure air and exercise there will be little danger of overfeeding her.

Exercise and fresh air exert a counter-acting influence upon heavy feeding. Sows that are fed liberally must have exercise. The best feeders lay special emphasis on the condition of the bowels during pregnancy, particularly at farrowing time. A small amount of linseed oil meal fed with her slop has a laxative effect upon the bowels. All concentrated fat-producing foods, such as corn, should be fed very sparingly to brood sows during pregnancy. The winter time is the most critical period in handling sows and special attention will be needed to maintain her in a thrifty and vigorous condition, because of the scarcity of bulky and succulent foods and lack of exercise. Root crops are an excellent substitute for forage, care, however, must be exercised in feeding them, to avoid causing a profuse action of the bowels. Clover and alfalfa cut or ground and mixed with the slop affords both bulk and succulence and has a very stimulating effect upon the bowels and whole digestive system.

By keeping the sows separated in lots of from ten to twenty, it is safe to allow them to run together up to within two or three weeks prior to the farrowing period, then each sow should be removed to the farrowing house and given special food and attention, as the occasion may require, up to farrowing time. This gives her time to become acquainted with her new quarters and for the herdsman to study her disposition and cultivate her acquaintance. (A corn-cob acquaintance as many term it). It pays to be on friendly terms with the sows at farrowing time and means the saving of many pigs. Sows should be given plenty of material to make dry and clean nests, but not enough to make deep nests and holes for the pigs to crawl in and get tangled up and lost or crushed by the sow. Fenders should be placed around the sides and ends of the pen, about eight inches from the floor, to prevent the sow from laying on the pigs or crowding them up against the sides of the pen.

Experience, judgment and a knowledge of the disposition of the sows afford the only guide for a man to follow in handling his sows during the farrowing period. If the weather is cold it is many times necessary to stay with the sow and take the pigs as fast as they come and place them in a box or basket until the act is completed and then place them at the dinner table and see that each one gets its first feed. For the first few days after the sow has farrowed a litter she should be fed very sparingly. After this her food should be increased gradually until she is being fed all that she can digest and assimilate. When they are about three weeks old the pigs will begin

to look about for supplementary foods by going to the trough with their dam and nipping bits of forage and grass. At this period it is desirable that we fix a creep so that they can come into the alleyway and feed them a little sweet skim-milk and wheat middlings three or four times a day. In this way they will gradually wean themselves and by the time they are removed from the sow they will not miss her and the loss of condition will be reduced to a minimum at weaning time. When weaning a litter it is an excellent practice to leave two or three of the smaller pigs with the sow for a few days after the others are taken away and given them a chance to catch up with the other members of the litter. This is alike beneficial to both the sow and the pigs for she gradually becomes dry without danger of leaving her with a caked udder.

One of the hardest problems confronting the herdsman is to keep the young pigs free from indigestion and scours. A litter of pigs that are affected with this derangement will seldom recover and make as good development as those that are kept gaining rapidly. This complaint comes largely from unsanitary conditions and for that reason it is judicious to disinfect the nest and pens at least once a week and oftener when the pigs are very small and kept in the pen all of the time. All sour swill should be kept away from the brood sow while she is nourishing young. Sour swill is bad enough for the other hogs, to say nothing of feeding it to the brood sows while they are suckling a litter. After providing the sows and their pigs with sanitary surroundings and abundant room for exercise the question of feed is of importance.

Wheat middlings are an excellent grain food for brood sows and young pigs, although a little bran may be used to lighten them up a little during the first few days and a little digester tankage to add to their nutritive value during the period when the pigs are pulling down all the milk the sow is capable of giving. The feeder must use his own judgment as to the condition of the sow and her pigs and plan his feeding accordingly.

No man can tell just how much care and food a sow and her pigs will require. Constant attention alone will decide the question. Good care and rational feeding during this period has a marked influence upon the growth and development of the pigs that can be noticed until they are full grown and I am thoroughly convinced that the greatest mistake in growing breeding swine is made in caring for the sow and pigs in an indifferent manner. Start the pigs right, keep them growing every day from birth to maturity on a well balanced ration and they will make a uniform and rapid growth. Uniformity of size is an important factor in a lot of pigs.

The man who gives proper care and attention to his brood sows and pigs and gets them well started has solved about three-fourths of the problem of growing good breeding stock. It is by devoting close attention to every detail and feeding for the best possible growth and development that insures success in saving the litters at the time they are farrowed and getting them well grown and developed at an early age.

New York. W. MILTON KELLY.

CONDITION AND LOSSES OF FARM ANIMALS.

Reports from correspondents and agents of the Bureau of Statistics of the United States Department of Agriculture indicate that the general condition in regard to healthfulness of farm animals on April 1 was very nearly the average; horses and sheep were slightly lower in condition than a year ago and than their ten-year average condition on April 1, cattle were slightly lower than a year ago but above the average, and swine were above both a year ago and the ten-year average.

The losses of horses from disease during the year were 20 per 1,000, as compared with 18 the preceding year, and 19, the average annual loss per 1,000 in the past ten years.

The losses of cattle from disease were 21 per 1,000 head in the past year, compared with 19 the preceding year, and 21, the ten-year average; the losses from exposure were 17 per 1,000 in the past year, compared with 15 the preceding year, and 17, the ten-year average.

The losses of sheep (not including spring lambs) were about 27 per 1,000, as compared with 27 the preceding year, and 24, the ten-year average; the losses from exposure were heavier than usual,



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SANITARY BARN EQUIPMENT MAN

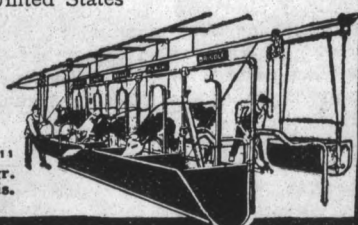
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Write to me and I will show you how I can save you money and tell you all about JAMES Cow Stalls and Stanchions, Feed and Litter Carriers and other Barn Equipment.

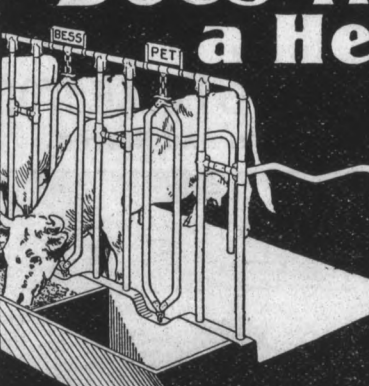
They are the standard among dairymen and stock raisers. Approved by experts, and representatives of the United States Bureau of Animal Industry.

Write for prices and full particulars regarding "JAMES" New Improved Aligning Stanchions and Sanitary Cow Stalls. Also latest catalog and prices on "James" Feed and Litter Carriers. A post card will do. Write today.

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Does the Cows a Heap of Good



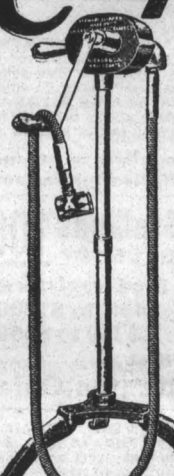
Cow comfort and cow sanitation result in more cow profits, and that alone should induce any farmer or dairyman to seek these conditions. Louden Sanitary Steel Stalls and Stanchions double the light and air in a barn and insure perfect ventilation, perfect sanitation—a result impossible with any wooden equipment. Yet

LOUDEN STALLS AND STANCHIONS

are actually cheaper. Louden stalls of heavy tubular steel, with malleable fittings, have no flat surfaces for dust to accumulate—easy to keep clean and almost indestructible. Louden stanchions give cows more comfort than other makes, yet keep them perfectly lined up. Throat chains prevent cows from lying down when milking. Simple and very durable. Latch easily opened or closed with gloved hand, but can't be opened by animal. Send today for free catalogue of sanitary, money-saving barn equipment.

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LIVE STOCK

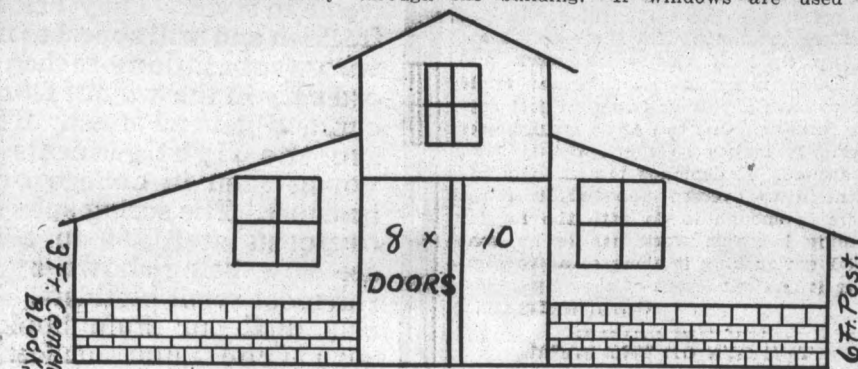
BUILDING A HOG HOUSE.

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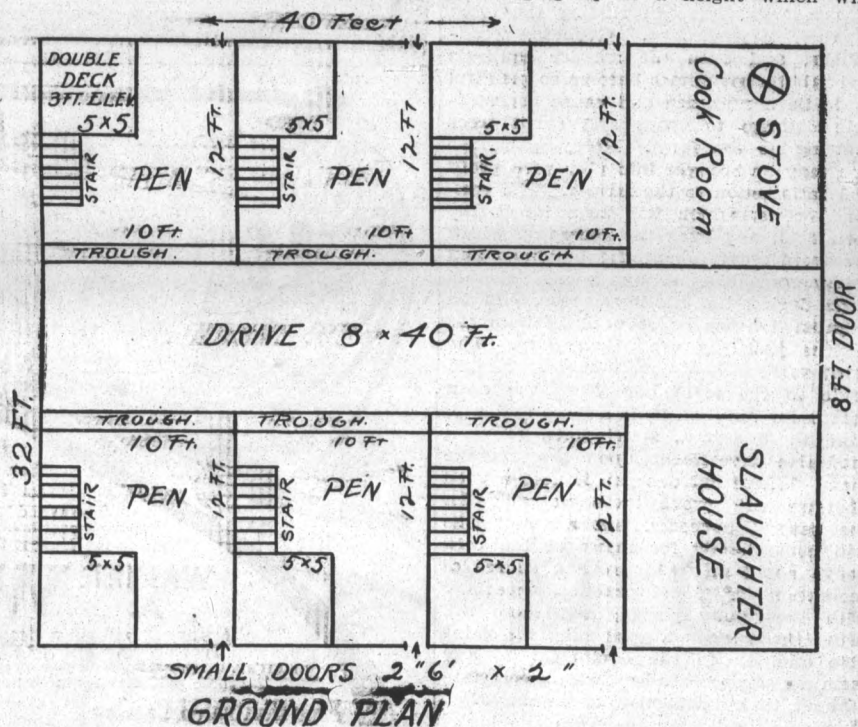
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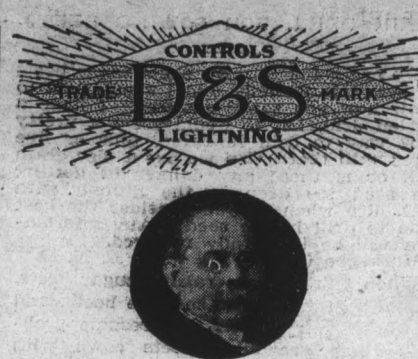
which bedding and feed may be hauled the sides of building instead of cupola
in and the manure drawn out, is a very
good idea. One must have a feed alley
anyhow, and it will not need to be much
wider to provide for this driveway than
would otherwise be the case. While the
central elevation or cupola would improve
the appearance of the hog house to a
considerable degree, yet, in the writer's
opinion, it would not be as satisfactory
a way of ventilating as would the King
system which we believe should be in-
stalled in any new hog house of this size.



The essential principles of the King sys-
tem were described in our issue of April
2. This system of ventilation will insure
much better air in the hog house at a
less expense of temperature than can be
secured by any method of ventilating
it by opening and closing windows. As
stated in the article referred to, if an
outtake or ventilating flue 15 feet in
height is used it should have a ventilating
area of 26 square inches for each hog to
be kept in the house. If the ventilating
flue is 20 feet high, then a ventilating
area of 22 square inches for each hog
will be sufficient, and the combined area
of the intake flues, of which several
should be located at the sides of the
building, should equal that of the main

allow the hogs to be driven under, should
occasion require it.

Some provision should also be made for
the easy loading of hogs into a wagon,
which, however, could be easily accom-
plished by the use of a portable chute of
the same width as one of the alley doors,
which could be placed for loading when
desired and the wagon backed up to it.
It would seem that the elevated sleeping
nests might profitably be increased in
size; 6x6 ft. would not seem to be too
large to accommodate the number of hogs
which might be kept in a pen of this
size, or 5x7 ft. might be even better as
it would encroach less upon the depth
of the pen, still leaving plenty of room
for a window and door in each pen.



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COMPANY, Wellington, Ohio.**

BREEDING PURE-BRED SWINE.

Management of the Sow and Pigs.

The sow that carries a reasonable amount of flesh evenly laid on is usually the one that does the best with her litter. She will be quiet longer than the lean sow that is prompted by hunger to be up and looking for something to eat. Much of the danger that comes to the pigs at birth will be eliminated if the sows are kind and tractable, allowing all necessary help at farrowing time.

The quality of feed largely governs the amount of flesh that the sow may safely carry. The sow that has been fed a ration of forage and small amounts of grain foods may carry a large amount of flesh and still be safe to use for breeding. Many fail to appreciate the value of bulk and succulence in feeding brood sows during the period of pregnancy. During pregnancy two facts must be borne in mind. The first is that the sow is doing double duty. Not only must she keep up her own condition, but the development of the unborn litter is a constantly increasing drain upon her system. Feeding during this critical period should be liberal. Her condition should be good. It is a mistake to half starve pregnant sows, thinking that the reproductive organs are peculiarly liable to be transformed into masses of fat at the first sign of an appearance of fat upon her back and ribs. The use of the reproductive organs creates a demand of an unusual nature upon her system that must be met in the same way as that of a different character—such as growth, exercise, exposure to cold, etc., by providing liberal quantities of the right kind of foods. No sow can bring a litter of thrifty, well developed pigs unless she is fed liberal quantities of the right kinds of food during pregnancy. Given plenty of nourishing foods, abundance of bulk and succulence and pure air and exercise there will be little danger of overfeeding her.

Exercise and fresh air exert a counteracting influence upon heavy feeding. Sows that are fed liberally must have exercise. The best feeders lay special emphasis on the condition of the bowels during pregnancy, particularly at farrowing time. A small amount of linseed oil meal fed with her slop has a laxative effect upon the bowels. All concentrated fat-producing foods, such as corn, should be fed very sparingly to brood sows during pregnancy. The winter time is the most critical period in handling sows and special attention will be needed to maintain her in a thrifty and vigorous condition, because of the scarcity of bulky and succulent foods and lack of exercise. Root crops are an excellent substitute for forage, care, however, must be exercised in feeding them, to avoid causing a profuse action of the bowels. Clover and alfalfa cut or ground and mixed with the slop affords both bulk and succulence and has a very stimulating effect upon the bowels and whole digestive system.

By keeping the sows separated in lots of from ten to twenty, it is safe to allow them to run together up to within two or three weeks prior to the farrowing period, then each sow should be removed to the farrowing house and given special food and attention, as the occasion may require, up to farrowing time. This gives her time to become acquainted with her new quarters and for the herdsman to study her disposition and cultivate her acquaintance. (A corn-cob acquaintance as many term it). It pays to be on friendly terms with the sows at farrowing time and means the saving of many pigs. Sows should be given plenty of material to make dry and clean nests, but not enough to make deep nests and holes for the pigs to crawl in and get tangled up and lost or crushed by the sow. Fenders should be placed around the sides and ends of the pen, about eight inches from the floor, to prevent the sow from laying on the pigs or crowding them up against the sides of the pen.

Experience, judgment and a knowledge of the disposition of the sows afford the only guide for a man to follow in handling his sows during the farrowing period. If the weather is cold it is many times necessary to stay with the sow and take the pigs as fast as they come and place them in a box or basket until the act is completed and then place them at the dinner table and see that each one gets its first feed. For the first few days after the sow has farrowed a litter she should be fed very sparingly. After this her food should be increased gradually until she is being fed all that she can digest and assimilate. When they are about three weeks old the pigs will begin

to look about for supplementary foods by going to the trough with their dam and nipping bits of forage and grass. At this period it is desirable that we fix a creep so that they can come into the alleyway and feed them a little sweet skim-milk and wheat middlings three or four times a day. In this way they will gradually wean themselves and by the time they are removed from the sow they will not miss her and the loss of condition will be reduced to a minimum at weaning time. When weaning a litter it is an excellent practice to leave two or three of the smaller pigs with the sow for a few days after the others are taken away and given them a chance to catch up with the other members of the litter. This is alike beneficial to both the sow and the pigs for she gradually becomes dry without danger of leaving her with a caked udder.

One of the hardest problems confronting the herdsman is to keep the young pigs free from indigestion and scours. A litter of pigs that are affected with this derangement will seldom recover and make as good development as those that are kept gaining rapidly. This complaint comes largely from unsanitary conditions and for that reason it is judicious to disinfect the nest and pens at least once a week and oftener when the pigs are very small and kept in the pen all of the time. All sour swill should be kept away from the brood sow while she is nourishing young. Sour swill is bad enough for the other hogs, to say nothing of feeding it to the brood sows while they are suckling a litter. After providing the sows and their pigs with sanitary surroundings and abundant room for exercise the question of feed is of importance.

Wheat middlings are an excellent grain food for brood sows and young pigs, although a little bran may be used to lighten them up a little during the first few days and a little digester tankage to add to their nutritive value during the period when the pigs are pulling down all the milk the sow is capable of giving. The feeder must use his own judgment as to the condition of the sow and her pigs and plan his feeding accordingly.

No man can tell just how much care and food a sow and her pigs will require. Constant attention alone will decide the question. Good care and rational feeding during this period has a marked influence upon the growth and development of the pigs that can be noticed until they are full grown and I am thoroughly convinced that the greatest mistake in growing breeding swine is made in caring for the sow and pigs in an indifferent manner. Start the pigs right, keep them growing every day from birth to maturity on a well balanced ration and they will make a uniform and rapid growth. Uniformity of size is an important factor in a lot of pigs.

The man who gives proper care and attention to his brood sows and pigs and gets them well started has solved about three-fourths of the problem of growing good breeding stock. It is by devoting close attention to every detail and feeding for the best possible growth and development that insures success in saving the litters at the time they are farrowed and getting them well grown and developed at an early age.

New York. W. MILTON KELLY.

CONDITION AND LOSSES OF FARM ANIMALS.

Reports from correspondents and agents of the Bureau of Statistics of the United States Department of Agriculture indicate that the general condition in regard to healthfulness of farm animals on April 1 was very nearly the average; horses and sheep were slightly lower in condition than a year ago and than their ten-year average condition on April 1, cattle were slightly lower than a year ago but above the average, and swine were above both a year ago and the ten-year average.

The losses of horses from disease during the year were 20 per 1,000, as compared with 18 the preceding year, and 19, the average annual loss per 1,000 in the past ten years.

The losses of cattle from disease were 21 per 1,000 head in the past year, compared with 19 the preceding year, and 21, the ten-year average; the losses from exposure were 17 per 1,000 in the past year, compared with 15 the preceding year, and 17, the ten-year average.

The losses of sheep (not including spring lambs) were about 27 per 1,000, as compared with 27 the preceding year, and 24, the ten-year average; the losses from exposure were heavier than usual,



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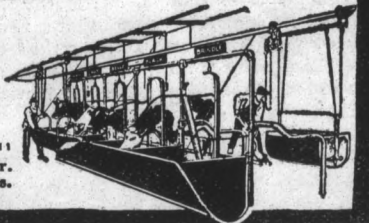
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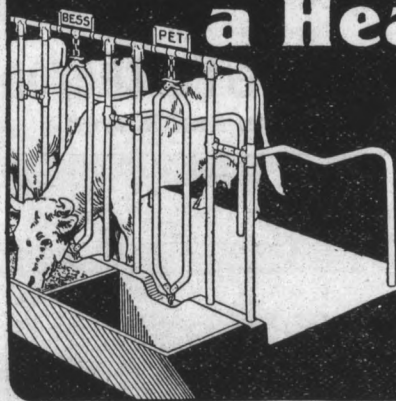
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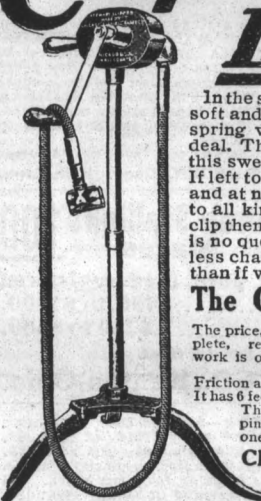
Cow comfort and cow sanitation result in more cow profits, and that alone should induce any farmer or dairyman to seek these conditions. Louden Sanitary Steel Stalls and Stanchions double the light and air in a barn and insure perfect ventilation, perfect sanitation—a result impossible with any wooden equipment. Yet

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In the spring when your horses are soft and you put them at the hard spring work they sweat a great deal. Their heavy winter coat holds this sweat and it dries out slowly. If left to stand they take cold easily and at night they chill and are liable to all kinds of complaints. If you clip them they dry off fast and there is no question but they stand much less chance of taking cold when dry than if wet. You would not like to

stand on a raw spring day or on a chilly spring night with a heavy wet suit on. Neither do your horses. It pays to clip them and blanket, if necessary on cold nights. Your horses dry off much faster, they feel better, rest better, get more good out of their food and do better work. They are better all around. Is it the humane and profitable thing to do. The quickest, least expensive and most satisfactory way to clip is with

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being 46 per 1,000, as compared with 28 the preceding year, and 32, the ten-year average.

The losses of hogs from disease were lighter than usual, being 44 per 1,000, as compared with 51 the preceding year, and 56, the ten-year average.

The number of breeding sows in the country is estimated to be about 8 per cent less than a year ago.

ECONOMICAL FEEDING OF FARM HORSES.

Horses that are worked steadily must be kept in good condition to do their best. They must have good appetites and good digestive powers. They need a liberal feed without overfeeding. They must be fed regularly three times a day and given food that is suited to their needs.

There are different feeds that can be given the work team which will give satisfactory results when judiciously fed. For a long time oats and timothy hay have been considered a standard ration for working horses, and I think that this ration has gained its popularity largely because of its safety as a feed rather than its efficiency.

As timothy hay is not a very palatable feed, horses are not likely to gorge themselves with it, and oats, having large, coarse hulls are bulky, and as a result they become more thoroughly mixed with saliva during mastication, and when they enter the stomach are more readily acted upon by the digestive juices.

Through the corn belt where corn is the principal crop it is also the principal grain fed to many horses with satisfactory results. Careful tests with feeding corn to horses do not show any extra danger from colic. A ration containing at least a part corn is as satisfactory as an all oat ration. At one time I fed oats almost entirely as the grain feed to my horses. Later I gave them corn, and after one season's trial I have continued to use half corn and half oats.

Pound for pound, corn is equal to oats for feeding mature work horses. Practical experience indicates that a ration of half corn and half oats is more satisfactory to the horse than either all oats or all corn. This gives the horse a variety of feeds.

Clover hay has suffered much criticism as being unfit to feed horses. Like corn it must be fed intelligently and judiciously. When it is used it should be of good quality and given in small quantity. Poor timothy needs be feared quite as much as poor clover if it were palatable, but since it is not, horses do not gorge themselves with it.

In an experiment conducted at the Illinois Experiment Station in fattening horses for the market it was found that clover is worth twice as much as timothy, pound for pound, in putting flesh on the animals. I believe its value will be more highly appreciated as a horse feed when corn forms at least a part of the grain ration than where all oats are fed. Clover hay, being rich in protein, renders it especially valuable for feeding young growing horses.

Illinois. W. H. UNDERWOOD.

LIVE STOCK NOTES.

The April hog report was construed by the trade as of a bearish nature, owing to the fact that a number of brood sows was estimated at 92.2 of the number of a year ago. It was expected generally that the number would be materially less. The condition of hogs was given at 95.4, compared to 94.4 a year ago and a ten-year average of 94.1. The report by states shows the large percentage of brood sows given was due very largely to the high percentages in a few states where but few hogs, comparatively speaking, are raised. In Nevada and some of the southern states, for instance, the percentage was placed approximately at 100, while the percentage was much less in some of the leading hog raising states.

There is no surplus of matured beef cattle in the country. The large receipts at Fort Worth in March were half-fat grassers in the main, but they brought higher prices than fat cattle have in recent years. Omaha's large March supply was mainly of cattle anything but matured, and Chicago's supply was on an average far from good in grading.

While the east was practically out of the sheep breeding and feeding business two years ago, it is back in it now, and sheepmen are in many instances increasing the size of their flocks, the industry being on a good paying basis.

Warm weather will from now on tend to stimulate the marketing of fat, heavy, long-fed cattle, which are usually discriminated against by killers during the warm period of the year. This year, more than ever, the dearthness of beef everywhere will act as an incentive to turn meat-eaters against the heavier cuts of beef, and the handy-weight cattle may be expected to meet with most favor from buyers, while buyers in the market will raise strong objections against purchasing lots that are "too heavy."

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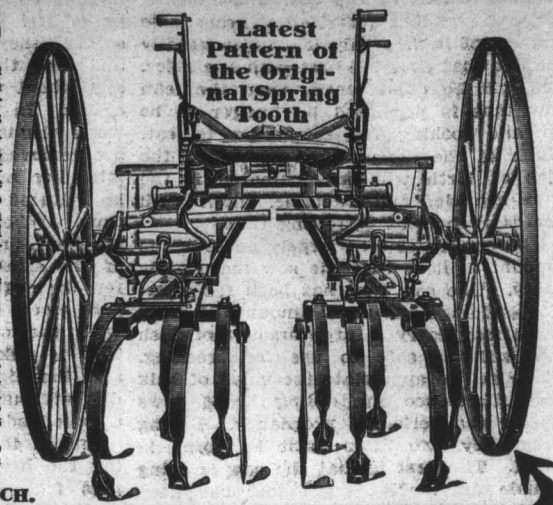
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BIDWELL STOCK FARM.

FOR SALE—10 Reg. Shorthorn Bulls. All good, reds and roans, from 12 to 24 months old, from the best of breeding at \$75 to \$125 each. Some of them Scotch and Scotch-topped, of the herd heading type. Also, young cows and heifers, all ages. Fifty head in herd. Farm—Two blocks from Lake Shore Station. L. I. BIDWELL, Tecumseh, Michigan.

DAIRY BRED SHORTHORNS—No stock for sale at present. Visitors welcome. J. B. HUMMEL, Mason, Mich.

SHEEP.

Oxford-Down Sheep and Polled cattle for sale. A. D. & J. A. DEGARMO, Muir, Mich.

PARSONS OXFORDDOWNS

also registered Hornless National Delaines and Black top delaines. Romeyn C. Parsons, Grand Ledge, Mich.

OXFORD DOWNS A few good field rams for sale. H. J. De GARMO, R. No. 1, Clyde, Mich.

SHROPSHIRE HALL STOCK FARM

Will import one hundred yearling ewes and 15 rams in June for Michigan and the same for Boise, Idaho, Branch of this Farm. Will make a fair price on yearling ewes or rams, also on some aged ewes with lambs at side, for 60 days. L. S. DUNHAM & SONS, Concord, Michigan.

100 HEAD of ewes and their lambs. All young ewes, black and white faces, mixed. Will be sold, worth the money if sold at once. J. B. GARDNER, Lock Box 437, Cadillac, Mich.

130 Reg. Rambouillet Ewes for sale, descended from the best flocks and bred to a pure Van Hommer and arranged by a Gilbert ram and imported dam. All in perfect health. In lots to suit buyers—none reserved. J. Q. A. Cook, Morrice, Mich.

HOGS.

LARGE ENGLISH BERKSHIRES.

Have a fine lot of spring pigs, both sexes. The type for profitable pork production. Vigorous and strong and of best blood lines. Satisfaction guaranteed. F. A. BYWATER, Memphis, Mich.

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WON 189 PRIZES IN 1909. Stock of both sexes and all ages for sale. Breeders of Guernsey Cattle, M. B. Turkeys, Barred Rock Chickens, Pekin Ducks. GEO. C. HUPP, Mgr., Drawer A Birmingham Michigan.

BERKSHIRES Unexcelled in breeding. Selected boars, sows and gilts. Choice fall pigs. T. V. HICKS, R. No. 11, Battle Creek, Mich.

FOR SALE—BERKSHIRES—Two choice Sept. boar pigs, and a few fall gilts, sired by Handsome Prince. A. A. PATTERLO, DeKerville, Mich.

BERKSHIRES of the most fashionable type and strains. C. S. BARTLETT, Pontiac, Mich.

NORTHERN GROWN BERKSHIRES.

ROYCROFT FARM, Sidnaw, Mich.

PURITAN HERD OF CHESTER WHITES

The peer of any in America. Spring pigs for sale. WILL W. FISHER, Watervliet, Michigan.

DAMS BROS. Litchfield, Mich., breeders of Improved Chester White and Tamworth swine. Pigs either bred, by 1st prize State Fair winners. Buff Rock, Buff Wyandotte—eggs \$1 per 15; W. Orpington \$3 per 15.

Improved Chesters—Bred sows all sold. A few young boars ready for service. Orders taken for spring farrow. W. O. WILSON, Okemos, Mich. (Both Phones).

DUROC JERSEYS. CARRY U.

Hastings, Mich. Nothing for sale at present.

WALNUT HILL FARM Herd of Durocs. Bred sows all sold. 35 fine fall sows, 15 fine fall boars ready for service. 100 spring pigs to date. Write J. C. Barney, Coldwater, Mich.

O. I. C. bred sows all sold. Have a few boars still on hand. GEORGE P. ANDREWS, Danville, Mich.

O. I. C.—A few bred sows. Orders booked for spring pigs from very choice stock, pairs not akin. S. J. COWAN, Rockford, Michigan.

O. I. C. REGISTERED PIGS, 10 to 12 weeks from World's Fair winners. Glenwood Stock Farm, Zeeland, Mich. Phone 94.

O. I. C.—Orders booked for spring pigs from State Fair winners. C. J. THOMPSON, Rockford, Mich.

30 P. C. Fall Pigs—by two champion boars. Book- ing orders for weaned pigs by 10 different boars. WM. WAFLE, Coldwater, Mich.

MULE FOOTED HOGS—Greatest vitality of all breeds. All ages for sale from 5 big boars, business Barred Rocks \$1 per 15. ROBERT NEVE, Pierson, Mich.

HEAVY BONED POLAND-CHINA PIGS at reasonable prices. Eggs from big, business Barred Rocks \$1 per 15. ROBERT NEVE, Pierson, Mich.

Prize Winning POLAND CHINAS. Japanese Pekin Ducks. Embden Geese and Buff Turkeys. Zach Kline, Three Oaks, Mich.

POLAND-CHINAS—Booking orders for spring pigs. Nothing else to offer. WOOD & SONS, Safford, Mich.

Large Improved English Yorkshires.

The hogs that make good. September gilts bred to farrow next August or September. Spring pigs of either sex. Pairs not akin. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

STOMACH AND TAPE-WORMS IN SHEEP.

The readers of the Michigan Farmer would doubtless be interested in knowing more about the history of the stomach worm and tape-worm that infest lambs. I lost thirty lambs last summer from this cause and several that I examined were infected with both stomach and tape-worms. I found three separate tape-worms in the small intestines and as near as I could determine they were each over twenty-five feet long. My lamb crop was ruined although the old ewes were apparently healthy. As a remedy I tried turpentine and gasoline and each instance the lamb died inside of thirty seconds. Later I kept wood ashes, sulphur and ashes before them and they ate it greedily at times, it certainly checked the death rate, but the lambs have received a set-back from which they never recovered. Now I would thank you to cover the following questions in your answer:

1. How does a field become infested?
2. How long does it remain infested after sheep which were diseased have been removed?
3. Do the worms ever trouble horses or cattle that may be running in the same pasture?
4. How does the worm and tape-worm propagate themselves and what are their habits of growth?
5. I have strong faith in sulphur as a remedy; how much dare I mix with the salt?
6. Would salt and sulphur have any injurious effect on horses and cattle if they had free access to it?

Ionia Co.

C. F. G.

The stomach worm matures in the body of sheep and passes out laden with eggs soon to hatch and the little ones seem to manage to get back in some way into the stomachs of the lambs. They may crawl on grass, or fodder, at all events they are picked up where the excrement of older sheep is dropped. The cold, frosty weather seems to either numb or destroy these worms so there is very little danger of lambs being infected outdoors during the winter months; however, in warm or mild weather these parasites seem to thrive anywhere. The stomach worm multiplies rapidly and the embryo seems to resist the frost of a mild winter. However, zero weather would perhaps destroy it. A field may be vacated for twelve months then not be safe to turn sheep on. Horses may become infected by grazing on infected pasture; however, cattle seldom do, unless it be calves. Sheep generally harbor one tape-worm, one fluke and several round worms, especially if they are kept on low, damp ground. Tape-worms are flat-bodied worms made up of small segments joined end to end and when fully grown vary in length from one inch to eighty or one hundred feet. The narrow end terminates in a small head with sucking discs and a nose encircled with hooklets; from the other end the ripe segments are continually detached and expelled from body and by close observation these flattened white objects can be seen passing over the soil and vegetables depositing millions of microscopic eggs with which they are literally filled. These eggs are taken in with the food and water and soon grow and develop into tape-worms. Of course, I do not wish to be understood that they all live. Tape-worm embryo resists both heat and cold fairly well. Therefore it is not strange that our animals should become diseased for one diseased sheep can spread a whole lot of infection. Horses and cattle do not suffer from tape-worm nearly so often as sheep. Sulphur is not a good vermicide and it has little effect in destroying or expelling tape-worm. Horses and cattle will often eat too much salt and sulphur if left to their own discretion. However, sheep are less apt to eat too much of it, but I fail to understand why they should be fed all the sulphur and salt they would eat, for if they ate too much it would certainly act as a poison and do them harm. Sulphate of iron is one of the least expensive worm destroyers for sheep you can give, or give your lambs powdered kamala or areca nut. I am told if sheep are fed pumpkins in the fall that they will seldom be troubled with worms the following winter. Try them next fall.

Ohio.

W. C. FAIR.

The Stuart Horse Clipping and Sheep Shearing machines manufactured by the Chicago Flexible Shaft Co., Chicago, Ill., are fully described in the new catalogues issued by the above company and expert instructions in their use are included in the catalogue devoted exclusively to sheep shearing machines.

VETERINARY

CONDUCTED BY DR. W. C. FAIR, CLEVELAND, OHIO.

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.

Indigestion.—I have a 5-year-old mare that has sick spells which our Vet. calls indigestion. B. V. V., St. Louis, Mich.—Mix equal parts ground gentian, ginger, cooking soda and charcoal together and give her a tablespoonful or two at a dose in feed three times a day.

Weakness.—I have a colt 20 months old that is very low in flesh and unable to get up without assistance. H. G. S., Crystal, Mich.—Your colt needs plenty of good food and a tonic. Mix one part ground nux vomica, three parts ground gentian and one part powdered resin and give him a teaspoonful or two at a dose in feed three times a day.

Contracted Hoof.—I have a driving mare that has a contracted hoof which causes soreness. C. T. B., Coldwater, Mich.—By standing your mare in wet clay two hours a day and applying lanolin to hoof twice a day it will relieve her. Blisters applied to coronet prove beneficial and if you blister, use cerate of cantharides.

Horse Hangs Tongue out when in Harness.—I am a reader of the Michigan Farmer and noticed in the Vet. column that tongue lolling horses are cured by wearing a spoon bit instead of a common bit, but our harness maker does not keep them in stock. Where can they be bought? H. N., Shiloh, Mich.—Your harness maker can secure one from any harness hardware dealer.

Laminitis (Founder) Convex Sole.—One of my mares was foundered which affected the fore feet causing the sole of one foot to drop; since this occurred she seems to be quite tender and lame, the hoof does not grow and is contracted, especially the toe. What line of treatment do you suggest for such a case? B. F. W., Ransomville, N. Y.—When your mare was foundered an effusion took place in the foot allowing the sole to drop. Now the best results will follow shoeing with a wide-webbed bar shoe, using a leather sole and stuffing bottom of foot with pine tar and oakum. By giving the shoe a rolling motion she will travel with less pain and by standing her in wet clay one hour night and morning it will help. Apply lanolin to hoofs daily. Mild blisters applied to coronet, if she is not worked, stimulates a healthy growth of horn. The cerate of cantharides or any good home liniment will answer.

Lumbago—Rheumatism.—I have a cow that has been ailing more or less all winter; when she lies down it is hard work for her to get up and some of my neighbors tell me her back is weak, but I am inclined to believe that it is weakness in her legs. Last fall she pastured in an apple orchard; this, I think, brought on this ailment, whatever it is. S. H. M., Decatur, Mich.—Your cow suffers from a acid condition of the blood which produces a rheumatic condition and no doubt affects her back and joints of legs. Give 4 drs. salicylate of soda at a dose three times a day. Also apply spirits camphor to back twice a day. Also give a teaspoonful powdered saltpeter at a dose in feed once a day.

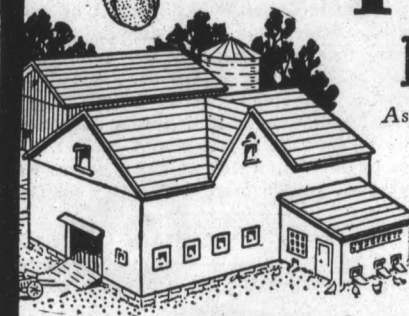
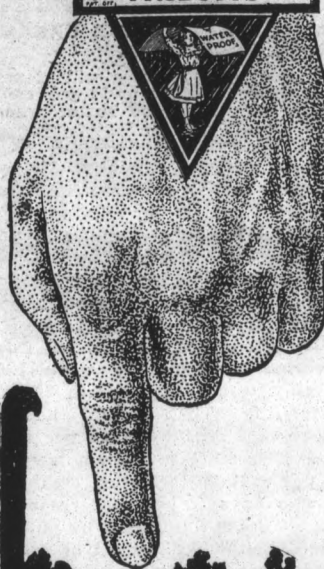
Anaemic.—I wish you would tell me what ails my sheep; one of them is troubled with a swelling under jaw; it is not hard; besides, several of my sheep are not in a thrifty condition. Several others of my flock appear to have a little swelling of the throat. What had I better give them? E. J. H., Bannister, Mich.—The swelling in throat is a result of other ailments, perhaps their food supply has been insufficient or unbalanced. Feed them ground oats, oil meal, with a little salt; also give each two sheep a teaspoonful of the following compound powder: Equal parts ground gentian, ginger and fenugreek, night and morning. Also apply tincture iodine to throat three times a week.

Chronic Cough.—Several years ago my mare had distemper which left glands of throat enlarged. Each spring she is worse, showing symptoms of heaves, but gets better as warm weather comes; this spring she is worse than usual. What had I better give her? D. A. J., Williamston, Mich.—Apply equal parts tincture iodine and camphorated oil to glands of throat once a day; also give 1/2 dr. iodide potassium, 1 dr. powdered lobelia and 1/2 dr. powdered opium at a dose in feed twice a day. Feed no clover, nor musty, dusty, badly cured fodder of any kind. Grain and grass is the best feed she can be fed.

Sow Ate Her Pigs.—I have a young Poland and China sow, which this spring went three or four days over her regular time for farrowing, and then was only able to deliver by the aid of a veterinary. The pigs were fully developed but came hind parts first and were dead upon delivery. I also had two pure-bred Duroc sows, each of which went over their regular time. One had seven pigs which were dead; the other one had six, two of them living and after these two were about three days old she ate them. I fed these sows chiefly on middlings. They had until within about two weeks time for to farrow, a good yard in which to run. I also fed them during the last few weeks prior to their farrowing some clover hay. They had all eaten ravenously up to the time of their delivery. Can you give me any information as to the probable cause of these results? B. W. A., Adrian, Mich.—Your sows may have met with an injury, causing them to give birth to dead pigs. The two pigs that lived three days

(Continued on page 167).

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ARE YOU BUILDING OR REPAIRING?

Our Building Counsel Department, whose experience extends over structures of all descriptions, is placed at your disposal. Give us full particulars of whatever work you have to do and we will gladly give you, free of cost, expert advice on all building and roofing questions.

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Years ago leading investigators recommended a flat lightning conductor, but never had such a cable been on the market until we began making National Flat Cable (patent pending). This combines all the essentials necessary to a perfect lightning conductor. Pure copper is proved the best conductor of electricity and its great conducting power is increased by flat construction, which also reduces impedance, tendency to side flashes and induced currents. By doing away with joints, all danger of resistance through parting is removed. We make round and flat conductors, using pure soft copper in both. Our guarantee, given in writing, is absolutely binding and our references assure you of our reliability. Ask your banker to look up our standing.

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is so made that water cannot work in and cut out your telephone. Every dealer who handles "National Cable" is an expert, thoroughly schooled by us, and not a foot of National Cable is installed by a man not fully qualified to do the work properly. Hence, we avoid the pitfalls which bring disaster, where untrained men do the work.

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Makes winter feed equal to June grass. THE ROSS will more than pay for itself in one season. Write today for catalog which gives facts that will save you money. Agents wanted.

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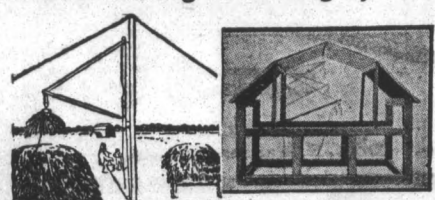
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One Schanz Hay Derrick will fit all of your barns and will do all of your stacking. Use it for loading manure, baled hay, barrels, boxes, etc. You can remove derrick from barn to stack in five minutes. This derrick will pay for itself in one day's work. Write for catalog and price today. Good lively agents wanted in every town, big commission to right man. Patent applied for.

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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

PER CENT OF FAT IN ICE CREAM.

What per cent of ice cream will 22 per cent cream make? What is 22 per cent cream worth per gallon for butter when butter sells for 28c per lb.

Ottawa Co. J. C.
If the pure cream containing 22 per cent of butter-fat was frozen into ice cream, nothing added in any way, it would make ice cream containing 22 per cent of butter-fat. Nothing would be lost in the freezing.

In making ice cream, however, about seven pounds of sugar has to be added to five gallons of cream, and besides this, some flavoring, consequently when this was frozen, it would not contain 22 per cent butter-fat. Then again, nobody makes ice cream containing 22 per cent butter-fat. The state ice cream law requires 12 per cent butter-fat in cream so the man who buys 22 per cent cream to make into ice cream, dilutes it by putting in skim-milk, either condensed or otherwise, besides, the sugar and flavoring reduce it all to about 12 per cent butter-fat, and then it is frozen. A gallon of cream will weigh in the neighborhood of eight pounds. If it contains 22 per cent butter-fat, then you would have 1.76 lbs. of butter-fat, which at 28c a pound would amount to 49c a gallon.

KEEP UP THE GRAIN RATION.

It is a great temptation for men not fully informed as to the outcome, to cut off the grain ration of the cows as soon as they are getting a fair amount of green feed. While the animals relish the tender grasses of the pasture lot, their bodies are not nourished to any considerable extent by it. This food taken into the alimentary canal being largely composed of water supplies a very small amount of feed for the maintenance of the bodies of the animals. So the grain is required. With it the cows will keep in good health, maintain their weight and at the same time increase the flow of milk. The grain ration is often modified in quantity as the grass increases in size and in the per cent of nutrients, but this modification should not be much and should never reach that stage where the grain is eliminated altogether. Economy of that kind is not the kind that will assist to make the dairy a success. Feed the cows grain and a little hay for some time; rather let the mistake be on the side of feeding these winter feeds too long than not long enough.

AN ENGINE, SEPARATOR AND WELL ROOM.

I have a gasoline engine to run the cream separator and wish to move it out by the barn pump and use it to pump water as well. There will have to be a house for it, of course, in order to protect the separator and engine. I want to build it so it will be fairly comfortable in winter. Should the house be built to inclose the pump, built over the well, or built with one side close to the well, or rather, close to the pump. I shall use what the manufacturers call a "back-gear pump jack." How large should the house be? I simply wish it large enough to accommodate the little two horse-power engine and the separator, with room to conveniently use the machines.

Tuscola Co. J. P.
Two years ago I built a building for this same purpose. I wanted room for the gasoline engine, also for the cream separator, for the vacuum pump for my milking machine and for a well house. Now, my idea was to have this room large enough so that I could have the well inside and also a good-sized storage tank for water. When the storage tank for water is outside it freezes in the winter time and bothers very much. I had gained that from former experience. I built my house 16x24 feet and built it out of lumber. If I was to build it again, I would build it even larger and instead of using lumber, would use cement blocks. I didn't sheet it up on the inside as I ought to. It is so cold that in the winter time we have to have a stove going all the while. You want to keep the gasoline engine where it is moderately warm. It don't run good in a zero temperature, neither will your separator run good where it is cold nor can you thoroughly wash the separator as it should be done. Now, my advice would be to build this building out of cement blocks, making it good and large. In mine, I made a cement water tank that will hold

about 30 to 35 barrels of water. It is a rectangular tank in one corner of the house. Then I have a smaller tank for storing cream in the other corner. We run water from the large tank into the small one in which we keep the cream, all water going through the small tank. Besides, these tanks have room for a stove, a table for washing dairy utensils, the milking machine, milking pails, the cans, separator and other necessary and convenient things. I also have two gasoline engines in this room. The small engine was not large enough to grind feed so I had to put in a larger engine. There is room for all these things; but it makes it just the least bit crowded, and for my purpose, if I was to build again I would construct the building 20x30 feet, build it out of cement blocks, and I think I should ceil it overhead. Then a minimum of heat in the winter would keep the building warm enough so that one could wash dairy utensils with comfort. Now, I don't know as I have thrown much light upon this subject for J. P., but my advice would be to build it larger than you think it needs to be. It comes handy and will be very convenient and will cost but little more when building.

WINDOWS IN THE COW STABLE.

Since the disadvantages of closely walled barns have made themselves known through many channels, we have begun to study the art of building. The dairyman has given the problem more attention than any other class of live stock men for the reason that he is compelled often to keep his animals housed much longer than the feeder.

Among the things he has learned about the art, the window is found to be important. The barns should be light for convenience sake. But the great benefit is the sanitary effect light has. We know how the sunlight will purify the milk pails and other dairy utensils. The same influence works to keep the stables that are well lighted, pure. Direct sunlight is superior as a sanitary agent than reflected light. It is well, then, in arranging windows to place them so they will allow as much direct sunlight into the stables as possible. The reflected light of the southern zenith is usually more effective in the destruction of germs than the light of the northern half of the zenith. For these two reasons it is better, where it can be arranged, to have the windows located as liberally as possible in the southern walls of the barn.

Men who have given the question study are of the opinion that tall windows are better adapted for accomplishing the ends mentioned above than wide windows of equal dimensions. Wide window ledges interfere with direct light and should be avoided where possible or made as narrow as is convenient with the construction of the building.

One is not likely to put in too many openings for light. He had rather err on that side than get the stalls dark. When the building is in the making, or, better still, while it is being planned, provision should be made for generous lighting as then it can be done cheaper and better than later. Other factors enter into the proper sanitation of dairy barns, but all advantages must be taken in these days of competition and for that reason it is well to have the importance of the windows before one while he is arranging the barn.

MICHIGAN EDUCATIONAL SCORING TEST FOR MARCH.

The Michigan scoring for March, which completes the fifth year of the contest, was held at Booth Cold Storage, Detroit, on Friday, April 8.

The butter was an unusually poor lot, the weather probably accounting for much of the poor quality. Such warm weather so early in the season, before farmers are prepared for it, and before creameries usually operate every day, caused the delivery of an unusually large per cent of poor cream. There is, however, little excuse for this. If creameries will grade their cream and pay more for sweet cream than they do for sour, there will not be so much poor cream. Most of the low scores were due, in the opinion of the judges, to poor raw material. Some samples were scored off on account of mottles and some on poor texture. There were only 22 samples of creamery butter and one of dairy butter, and three of cheese. Fifteen of the 23 samples of creamery butter scored 90 points or above and all the cheese went above 91 points.

Another Slap



Disks from one common separator.

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The Tubular is giving great satisfaction. Before buying the Tubular we had on trial two disk separators. Took about three times as long to wash them as to wash the Tubular. Would not take five times what we paid for the Tubular if we could not get another. Consider the difference in easy washing, alone, a whole lot. Disks are the meanest things to clean we ever attempted to wash. Made a test of the skim milk and found Tubular skimmed closest—also had best method of oiling and saving oil."

W. F. HUGENT."

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CEMENT BLOCK VS. BRICK FOR SILOS.

I want to build a silo the coming summer and want to know something regarding the relative merits and cheapness of a cement block silo as compared with steel or brick. I am rather inclined at present to build of cement as that material is convenient to get here, but I want to know if I would need to put hoops around it in order to make it strong enough to stand the pressure. It must be large enough to hold ensilage for 30 head of cattle, not, of course, depending entirely on this for feed but in connection with other feed. How much would such a silo need to cost in cement or other material? How would alfalfa do to put in a silo? This crop is not much raised here but is beginning to be grown some. Please give the dimensions of such a silo.

Alpena Co.

F. E. M.

As for the silo itself, I think a brick silo would be as good as a cement block silo, but no better. Both would have to be plastered on the inside to make a good job and have the ensilage keep well. Both would have to be supported with hoops on the outside or with wire laid in the building as it was being built. It must be reinforced in some way or it will not hold. I think I would prefer the cement block silo and think it would be cheaper because the cost of construction would be much less than the brick silo. You would have to have at least an eight inch wall of brick in order to lay it and it would cost much more to lay this wall out of brick than it would out of cement blocks after they were made, and I think the brick would cost much more than the cement blocks. Probably a cement block silo would cost you in the neighborhood of \$300 all complete.

Alfalfa or clover, or in fact any other green plant if cut and put into a good silo will keep, but people do not usually make alfalfa or clover into ensilage. They make this into hay because it matures at a time of the year when it is perfectly practical to dry it sufficiently so that it will keep, and we want some dry feed to feed in connection with the silage and it is better to cure these plants in the form of hay and feed them in that form rather than to make ensilage of them, and save your silo for the corn crop.

The corn crop matures at a time of year and is of such a nature that it is impossible to evaporate the moisture sufficiently so that it will keep like hay and not deteriorate in value constantly from the time it is cut until it is fed; hence, the silo is the best place to put the corn crop.

SHALL HE GIVE UP FACTORY WORK AND BECOME A DAIRYMAN.

I am working in a factory at the present time, but am thinking of buying a small farm near some city, putting in a small herd of Jersey cows and starting in the milk business, that is, peddle milk from a wagon in the city. Is there any secret in bottling the milk? What is the cost of license? What are the greatest drawbacks? What are the chances for success? I have had considerable experience in farming and some in handling cows.

Wayne Co.

F. H. S.

I do not feel competent, neither would I want to assume the responsibility of advising definitely, F. H. S. to give up his factory work, buy him a small farm, and produce market milk. It is such a radical change in one's business that one must know thoroughly the man and the conditions before he could give any definite advice. Even then I would hesitate about advising definitely on a proposition of this sort. If F. H. S. likes dairying, if he understands it, if he will study, and take the pains necessary to produce the best kind of milk, and place it before his customers, he can make a success out of dairying. He will be working for himself instead of someone else. But if he knows very much about the dairy business he knows that there is no eight hour day business here. If he is the proprietor of a dairy it will be nearer 16 hours a day than eight. There will be so many things that from necessity have to be looked after. In the production of market milk one should have certain qualifications. In the first place the person should be scrupulously clean. You want to hate dirt and filth, and then you must have energy enough to get rid of it. You must have a clean barn, your cows must be clean, your dairy utensils must be clean and everything in connection with the work must be clean to produce satisfactory market milk today. If you can do this, if you are willing to look after all the details, you can probably get a good price for the milk, though I must say that the price of market milk has not advanced in proportion to the price of other dairy products. In very many places people are selling milk for the

same old price, five cents a quart, when at seven cents a quart it is worth more per quart than good beefsteak is per pound for food. A man that will produce clean milk, certified milk, ought to have eight to ten cents a quart if he delivers it from house to house. It is worth it. F. H. S. must understand that dairying is a painstaking business. It is quite an undertaking just to run a dairy farm, just to produce the milk without putting it in shape for the market. The growing of the crops, their proper rotation and harvesting, the proper feeding and selection of cows, require thought and judgment. You should be a student and study all the while, you have got to keep your mind thoroughly on the business if you make a success of it. There must be no careless work about dairying from one end to the other if you want to succeed. Now, if you are willing to do that and can do that, you can make a success out of it. Whether you can make more money for yourself after paying expenses than you can working on a salary as a skilled workman in a factory, is a question that I am not able to answer. It depends upon your skill as a dairyman. I am satisfied that if you go out onto a small farm and by not thoroughly understanding this work, not applying all the attention that you ought to details, that you could work hard year after year and not make as much, or save as much money as you do in the factory. Many are doing this same kind of business now. This idea that everybody is getting rich farming nowadays is a very erroneous one. If we got the same old prices that we used to get, with our present expenses, we would go bankrupt.

There is absolutely no secret in bottling the milk. One ought to have a dairy large enough that an automatic bottler could be used. Otherwise each bottle has to be filled by hand and this takes considerable time. What you want is cold milk put into clean bottles. There is no secret about it whatever. You have to pay the state a license of \$1.00 a year for the production and marketing of market milk. Many cities also require a small license of about a dollar a year, but this amounts to nothing. The object of it is simply to keep dairymen in line for inspection so that both state and city inspectors can see to it that wholesome milk is being offered for good.

GRAIN AND MILK TO FATTEN CALVES.

I wish to ask what is the best to feed a calf with separator milk to fatten it, blood meal, corn meal, flaxseed meal or what?

Branch Co.

E. W. F.

I think without any question that flaxseed meal is the best kind of feed to feed in connection with skim-milk to fatten or grow calves. This meal contains about 30 per cent of fat and balances up a ration of skim-milk very nicely. We make flaxseed meal into a thin jelly or glue by cooking it in water and then we give about a tea cup full in his milk to each calf. You could gradually increase this ration until your calf had a sufficient amount to finish him.

NATIONAL DAIRY SHOW.

The 1910 meeting of the National Dairy Show will convene in Milwaukee, October 14-23. The auditorium management has agreed to improve the ventilation of the cattle quarters by installation of large motor driven fans and three, approximately, six by eight feet ventilation flues. They have also agreed to make certain minor improvements asked for by the dairy show directors. The interest shown in all branches of the industry suggests that the time is not far distant when this great dairy exposition will require the construction of buildings particularly adapted to its needs. With the recognition of this fact, the management has refrained from committing itself further than the next show.

The display of the latest developments in the machinery required in the industry, recognition of the breeders' work and the maker of yearly performance records, together with the educational features of this year's exposition will be the purpose of the management.

BOOK NOTICES.

Questions and Answers on Milk and Milk Testing, by Charles A. Publow, A.B., M.D., C.M., and Hugh C. Troy, B.S.A. This illustrated volume containing 100 pages, 5x7 inches, is a book that no student in the dairy business can afford to be without. No book of its size gives so much practical and useful information. It can be secured through this office at 50 cents per copy, bound in cloth.

IMPORTANT TO CREAM SEPARATOR BUYERS



Don't make the mistake of assuming that the inexperienced buyer can't see and appreciate the difference between cream separators.

You can't see the difference in results, in quantity and quality of product, ease of operation, cleaning and durability, of course, without comparative use of different machines.

But there is not a sensible man anywhere who in comparing the DE LAVAL and any other cream separator side by side—the design, construction, finish, assembling and unassembling of parts, simplicity, manifest ease of cleaning and all around practicability—cannot readily appreciate the superiority of the DE LAVAL to the other.

And when it comes to practical test, every responsible person who wishes it may have the free trial of a DE LAVAL machine at his own home without advance payment or any obligation whatever.

Then WHY think of buying any other make of separator without at least first seeing if not trying a 1910 IMPROVED DE LAVAL machine? WHY make so important an investment as a cream separator without being SURE that you are right about it when it need cost you absolutely nothing to be sure of it?

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POULTRY AND BEES

HIGH PRICES AND CO-OPERATION.

How Poultryman and Consumer Can Lower Prices to Mutual Advantage.

The following interesting paragraph is taken from a recent issue of a noted American weekly having a large city and rural circulation:

"A commercial traveler who lives in Indianapolis has formed a plan for beating the high prices for food charged in our city markets. He brings in every trip from the country, where producers' prices are low, such produce as he can carry, thereby saving much money."

The writer of the above was a bit hasty in giving credit for this plan to a "drummer," though he is entitled to a whole lot of credit for his business sense, and we may safely trust our commercial men to see advantages of this kind and grasp them. This plan, though, goes much farther back than our friend, the drummer, or than the writer remembers, although it is lately being more generally used than formerly. No doubt every reader of this publication remembers that our city relatives and friends have long desired shipments of eggs, poultry, potatoes, butter, etc., from friends in the country, and that they have always been willing to pay more for them than the producer could get in local markets. In many instances the producer has shipped the greater part of his produce to city friends and wondered why they were so anxious to get it at such prices. But when he is told that the prices paid for his product fresh from the farm are less than those asked by city dealers for goods of which no one knows the age, he readily understands and then wonders why more city consumers don't buy that way. They are doing so today in thousands of instances where five or ten years ago there were only dozens or hundreds doing it. Thus we see our commercial friend is only one of many, and not the first to operate this plan.

I note that the paragraph states two important facts, both worthy of every producer's and consumer's notice. First, "he buys where producers' prices are low." In order to fully understand this the consumer may follow the manner of handling some certain produce under the common system. Let us take eggs, for example. Today (March 26) our local markets in the country (New York) are paying poultrymen or farmers 22c in trade for eggs of any grade, size, or color at the stores or house. Most of our egg dealers are grocers in the country, and this price is allowed for eggs if groceries are taken in exchange. If cash is desired, only 20c per dozen is paid. Now let the city consumer compare this with the price he paid for eggs on the above date. Remember, too, that the producer of market eggs here in the country receives the same for small, dirty, white or mixed eggs whether one day or two weeks old, as he would if he offered nothing but fresh, clean, selected white eggs weighing 32 ozs. or more per doz. How about it when the consumer buys? Does he prefer guaranteed, full sized, clean, white eggs, or mixed? If he gets the latter what do they cost him, and I won't ask if they are guaranteed.

The Round-About System of Marketing.

Let's follow the eggs from the grocer in the country to the city consumer. In the New York market eggs were quoted on March 25 at 24@25c (wholesale) for selected fancy whites. Sometimes the country merchant ships his eggs in cases of 30 doz. to the city commission man once or twice a week. Oftimes he sells to a country jobber, who ships to the city. The commission man sells to a jobber for the highest bid he can get, and the jobber sells to the wholesaler, or to the retail man, who sells to the consumer. Now this is a round-about way, but it's the universal system today. It's a well known fact that when an egg is first laid it is in its best possible condition, though many dealers both west and east are seeking methods to improve it. We may have improved methods for keeping or handling eggs, but we most need better buying and selling methods. Every day an egg is handled and transferred from one place or hand to another its value decreases but its cost increases. Can this method be improved? That's the problem dealers all over the country are trying to figure out, and, most of all, it affects the producer and consumer.

The second fact to note in our paragraph at the head of this article is

"thereby saving much money." A casual reader of this would infer that this "saving" of money was simply because he bought of the producer for less money than at local markets. I desire to show that there is a saving of money aside from this lower first cost, and a saving of temper and worry besides. A friend of mine in the city related his experience with eggs bought in the local market at home, and from it you may readily understand why he appreciates eggs direct from the producer now. His wife went to her grocer and told him she desired a dozen "strictly fresh" eggs for baking; that unless he could assure her they were such she couldn't use them. He had a case "just from the farm," but he should have to ask 60c per dozen because they were select stock. She got a dozen and when they arrived she began preparations for a cake. The first egg was O. K. but the second was bad and spoiled the whole of the ingredients. Ten cents for eggs and as much more for other ingredients isn't much, but a woman's feelings toward such eggs "just from the farm" can't be expressed in twenty cents. Any farmer who desires to make his eggs yield him more than the country store price can easily do so by conscientiously grading and packing them in cartons containing one dozen each. His name, address and the dates on which they were produced and packed should be plainly printed or stamped on each package. If the contents are not perfectly satisfactory to the consumer, he knows where to go or write for an adjustment. However, if only such eggs as one is willing to guarantee are so packed there will be no complaints. If it is not feasible to ship direct to the consumer, they can be sold to the retail merchant, for merchants are finding eggs so packed and guaranteed very satisfactory as the time and labor required for handling them is reduced to the minimum. The returns to the producer, obviously, will be considerably better than if he chose to market them by the round-about system, and the cost to the consumer will be no greater, in fact, it should be less. This is my way of getting the best returns from the eggs I produce, and I know many poultrymen who are selling every egg they can spare direct to city consumers.

New York. O. F. SAMPSON.

WHEN DOES AN EGG CEASE TO BE FRESH?

Doctor Wiley, of the Department of Agriculture, at a recent meeting of a Congressional committee which is investigating the cost of food, explained and demonstrated practically an infallible method of telling when eggs are fresh. He had a big glass beaker about three-quarters filled with a 10 per cent solution of table salt. Into this he dropped eggs. All the absolutely fresh eggs immediately sank to the bottom while the eggs that weren't quite so fresh floated a quarter or a third out of the water.

He indorsed his method and said it was possible thereby to prosecute and convict any dealer offering cold storage eggs as the "strictly fresh" country variety. Doctor Wiley stated that he now has only two inspectors supervising cold storage methods, but with 25 of them he believes it possible to keep a close watch over the industry all over the country, and with the adoption of regulations prescribing the length of time allowed to food stuffs to remain in storage, the public would benefit thereby.

MICHIGAN BEE CONDITIONS AND PROSPECTS.

I believe prospects are good for a bumper crop of honey in Michigan this year. At least this is the impression one would gain from the reports that are coming in. In this county (Mecosta) bees have wintered extremely well and other indications are good. My own colonies wintered almost perfectly, the only losses being due to the fact that I was disabled and unable to look after them at a critical time this spring, and a few died from lack of stores before I could care for them.

Here are a couple of sample reports from this county: "Our bees have all wintered well. Not more than one empty hive in a cellar and this a queenless one that did not have bees of a suitable age to winter; 145 swarms that we had buried in Gratiot county came out with some loss of bees in each hive but not serious."

"The outlook for a honey flow from white clover here in Mecosta county and in Isabella county is much better than a year ago. The alsike clover in Gratiot

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Your buggy is an investment of good hard dollars. You can't afford to take chances on a vehicle you never saw. That's just what you do when you sign your name to a letter agreeing to receive a vehicle direct from the catalog house. Beware of getting promises of the "free trial," "return privilege," etc. When a mail order house sends you a vehicle, you become responsible for it, and they expect you to keep it; else why do they send it to you? They are not in business for health. Try to send a mail order vehicle back and see what trouble you'll have! People everywhere have been caught by the mail order evil. Avoid it!

Go to Your Local Dealer—See The Reliable Michigan Line

Quality for quality, your Reliable Michigan dealer will sell you a vehicle as low or lower than you get any vehicle by mail. You don't have any freight to pay when you buy of the Reliable Michigan dealer.

Your Reliable Michigan dealer—a man you know—is there all the time to come back to, in case you are ever dissatisfied. We authorize him to make good any defect of workmanship or material, not only in one year, but any time after your purchase.

Our vehicles are made of the finest woods, milled in our own leased forests under the supervision of master lumbermen.

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In the Reliable Michigan line you have a selection from 256 models—every type of horse-drawn pleasure vehicle made, and scores of our own exclusive design. So well equipped is our big factory to turn out special patterns that we can fill any customer's special order, through his local dealer, in the quickest possible time. Write us and we will send you our new Catalog "A," showing our newest types and patterns, the handsomest you ever saw.



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Double case all over; best copper tank; nursery self-regulator. Best 140-chick brooder. \$4.50. Both ordered together \$11.50. Freight prepaid. No machines at any price are better. Write for book today and save waiting. Satisfaction guaranteed.

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EGGS from pure Toulouse Geese 10 for \$1.75. Pekin Duck Eggs 11 for \$1.25. Mrs. Amy Southworth, R. D. No. 13, Allen, Mich.

BUFF COCHIN EGGS \$2 per 15 from birds of good quality. **M. A. BRAY, Okemos, Mich.**

SINGLE COMB WHITE LEGHORN eggs for hatching at following prices: 15 for \$1.00, 25 for \$1.50, 50 for \$2.50, 100 for \$4.50. **COLON C. LILLIE, Coopersville, Michigan.**

EGGS FOR HATCHING—Light Brahma, White Wyandotte and B. P. Rock. \$1 a setting; \$1.50 for 2 settings. E. D. Bishop, Route 38, Lake Odessa, Mich.

My S. C. Brown Leghorns Lay Eggs. Eggs for \$1.25 per 15. **WM. J. COOPER, Mt. Pleasant, Mich.**

WHITE LEGHORN COCKERELS R. or S. C.; R. C. Leghorns, Silver Spangled and Pencilled Hamburgs. Eggs \$1.50 to \$2.50 setting. **A. R. GRAHAM, Flint, Mich.**

WHITE WYANDOTTES—The unsurpassed business hen. Eggs \$1.50 per 15 or \$2.50 per 30. **A. FRANKLIN SMITH, Ann Arbor, Mich.**

White Wyandotte eggs for hatching from select breeding pens; \$1.00 for 15, \$1.50 for 25, \$2.50 for 50 and \$4.50 for 100. **COLON C. LILLIE, Coopersville, Michigan.**

KEITH makes a specialty of S. C. Brown Leghorns, Barred Plymouth Rocks and Pitt Games. Eggs \$1. per 15. **Albert Keith, Wyandotte, Mich.**

MRS. FLORENCE HOWARD, Petersburg, Mich. 45 choice White Rock or Rose C. W. Leghorn eggs \$2.50. Few W. Rock birds to sell. Extra layers. Bargains.

S. C. R. I. R. Eggs for sale—\$1.50 per 15; \$5 per 100. Bred to lay strain, **MRS. L. D. ARMSTRONG, Sunny Spring Farm, Stanton, Mich.**

THE best in S. C. White Leghorns, White & Buff Rocks and Columbian Wyandottes. Eggs \$1.25 per 15; \$5 per 100. **C. W. Hurd & Sons, Davison, Mich.**

R. C. and S. C. Rhode Island Red Eggs \$1.00 per 15, \$2.75 per 50, \$5.00 per 100. **BUELL BROS., Ann Arbor, Mich.**

"RINGLET" Barred Rocks. The Famous Winning Strain. Eggs \$1.50 per 15 from Select Matings. Stock for sale. **Plainview Stock Farm, J. W. Sallard, Prop., Romeo, Mich.**

STANDARD BRED R. I. REDS—both combs. Eggs \$1 per 15, from selected winter layers; \$3 per 50, or \$5 per 100. Satisfaction, and safe arrival guaranteed. **W. T. FRENCH, Ludington, Michigan.**

R. C. R. I. Reds—Stock selected from the best layers for years. Great egg record, Farm range. Eggs 15 \$1; 100 \$5. **F. M. Knapp, Berlin Heights, E. I. O.**

Rhode Island Reds and White P. Rocks Eggs For Sale. Satisfaction guaranteed. **HOWARD COLBY, Dentons, Mich.**

S. C. BROWN LEGHORNS—Eggs for hatching. Write for particulars. **LEWIS T. OPENLANDER, successor to Fred Mott, Lansing, Mich.**

40, \$2; 15, \$1—Smith select eggs, good measure from world's best strains, Bd., Wh. & Bl. Ex., R. & S. C. Reds, S. C. White, R. & S. C. Br. Legh's; Ph. Dks.; bred to win lay & pay. Strong baby chicks 15c each. Years of experience. Poultry my business & study. **Circ. W. J. CRAWFORD, R. 4, Frazzysburg, Ohio.**

EGGS—Eggs from my prize-winning Single Comb Brown Leghorns at easy prices. Cockerels, hens and cock birds for sale. **CHAS. W. RUFF, St. Clair, Michigan, Dept. M. F.**

HUPP FARM EGGS. Barred Rocks, Pekin Ducks, \$1.50 per setting, select strains. **Drawer A, Birmingham, Michigan.**

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S. C. Brown Leghorns—My method and farm range has developed layers with vigor. My eggs produce layers, one-third fancier's price and better layers. \$1.50 per 30; \$3 per 60; \$4 per 100; \$8 per 200. Prompt shipment. **J. E. McARTHUR, Enfield, Illinois.**

BARRED PLYMOUTH ROCK eggs for hatching from 15 for \$1.00, 25 for \$1.50, 50 for \$2.50, 100 for \$4.50. **COLON C. LILLIE, Coopersville, Michigan.**

Eggs From Haskins' Business Barred Rocks, White, Golden, Silver Wyandottes, Rhode Island Reds, S. C. and R. C. Buff, White and Brown Leghorns, Silver Spangled and Pencilled Hamburgs. Eggs \$1.50 per 15. Pure bred and free range flocks \$5 per 100. All varieties Duck and Geese Eggs, Turkey Eggs. **E. J. HASKINS, Pittsford, Mich.**

S. C. BLACK MINORCAS—Some choice cock-erels and a few yearling hens to spare. Eggs \$2 per setting of 15. **R. W. MILLS, Salina, Mich.**

Y. B. BRAND—S. C. W. Leghorns. Bred to lay. \$1. per 15; \$5 per 100. **C. W. YEETER, Alto, Michigan.**

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TRAINED FOX HOUNDS and Hound Pups for hunting fox and coons. Also Collies. Inclose 2-cent stamp. **W. E. LECKY, Holmesville, Ohio**

Collie Puppies sable with white markings thirty on hand, more coming. Write to-day for prices. **W. I. ROSS, Rochester, Mich.**

county was fair last year with a prospect of being somewhat better this year. In Charlevoix county the raspberry will be better than last year on account of its better growth since the fire of two years ago. It is hard to tell what to expect from willow herb this year, it is so very uncertain. Taking everything into consideration, we expect some more honey per colony this year than last."

This man has 700 colonies, located in four counties, his home yard being in Mecosta county.

Another report reads: "I never had bees winter as well as they have the past winter. There is a much larger acreage of alsike clover here than usual. Otherwise about an average prospect."

I have received nothing but good reports from this county. Clover is in fine condition in this locality. Raspberry made a good growth last year and should be at its prime this year. Willow herb should be at its best this season as the second year after a fire is usually its best year.

I have received reports from a number of other counties in different parts of the state, most of which indicate a prosperous season ahead for the bee-keeper. At least, that would seem to be the case now, although, of course, we are still dependent upon rains, etc. Here are a few reports from leading bee-keepers in their respective counties:

Allegan Co.: Bees wintered in cellars the best they have in many years. Prospects for a crop of honey very good.

Newaygo Co.: My bees wintered well; outlook for a crop good unless the season proves too dry.

Oscoda Co.: My bees wintered good; lost six out of 142 colonies. Prospects for a honey flow from clover is fine in this locality, much better than for several years.

Antrim Co.: Prospects look good for a honey crop and the bees appear to have wintered well. I haven't taken them all out of the cellar yet. (March 31). We are having very unusual weather. Soft maple is in bloom and I saw a dandelion blossom yesterday.

Cheboygan Co.: Commenced taking bees out of cellar this morning, (March 29), which is the earliest ever. They wintered in fine shape—little consumption of stores and no disease. This is due to their working late last year and the short winter. Of course, the outlook is good now for a good honey flow, but there is nothing certain about the crop as the fires and drouth two years ago and last year destroyed most of the wild red raspberry and white clover.

Southwestern Charlevoix Co.: I have reason to believe that the bees in this section wintered very well. I have not been into mine as yet, but bees are flying from practically all colonies. The prospects appear to be very fair for a crop. The only thing that will be lacking will be the red raspberry brush, but it will come on again. There will, however, never be as much brush as in the past, as it is being burned to make room for more farming.

Genesee Co.: My bees wintered well. Conditions are favorable for a fair crop of honey.

Jackson Co.: In answer to the first question, my bees have wintered perfectly, not having lost a single colony. To your second question, if answered three weeks ago, I should have said the outlook for white clover was good, as it was well seeded last season and replaced that which had been killed out previously by dry weather. I am unable to decide, as yet, what the result of this dry weather will be upon the young clover. Some of it is possibly injured already, but should we get rain soon it may prove all right.

One big bee man out in the thumb says: "I lost 50 per cent. Prospects very good for a honey crop."

From Ingham county, too, there comes a discouraging report. "The prospect for a honey crop this year is very poor indeed. Last August was too dry for clover. Bees did not winter well. Honey was poor and it was cold too long and too steadily. We have lost 12 per cent of all we packed and what are left are very weak."

Now again from Washtenaw county comes good cheer, the report saying: "My bees have wintered in good condition. Lost four out of 120 colonies from dysentery. The prospects for clover are good, I might say, extra good." Another Washtenaw man says: "Bees wintered well. Lost only two colonies out of about 80. Prospects good for a honey crop if white clover revives after the setback it received a year ago last winter."

Mecosta Co. L. C. WHEELER.

How they Fared in Ogemaw.

Bees have wintered well in this vicinity. Our winter was a steady cold one with plenty of snow, but the spring is earlier by a month than a year ago. Last year was a good one for honey, and our bees entered upon their winter with plenty of stores. The winter being a short one aided in this respect. While the winter was a cold one, we did not have so many nor so severe and long extra cold waves as usual, consequently most of our apiarists are reporting few losses.

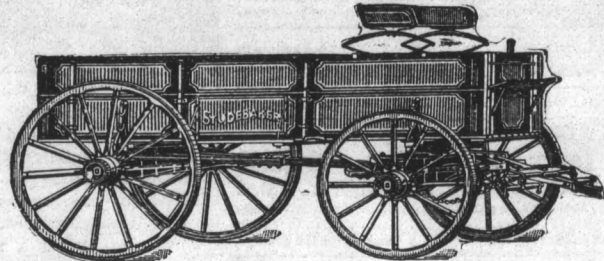
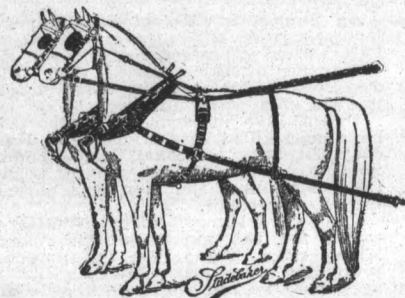
At this writing, (April 5), the bees are at work upon tag alder, willow, and soft maple. Fruit buds are nearly ready to burst. Thousands of acres of this north land, burned over by the forest fires of two years ago, grew up last year with red raspberry which this year will bloom in profusion. Barring late frosts or excessive droughts, which are unusual with us, we should have a bumper crop of honey.

H. B. FULLER.

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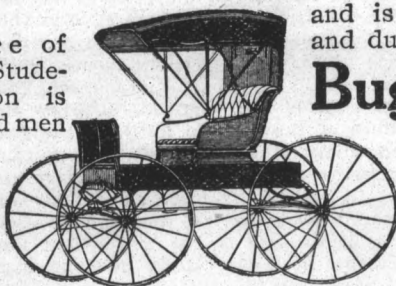
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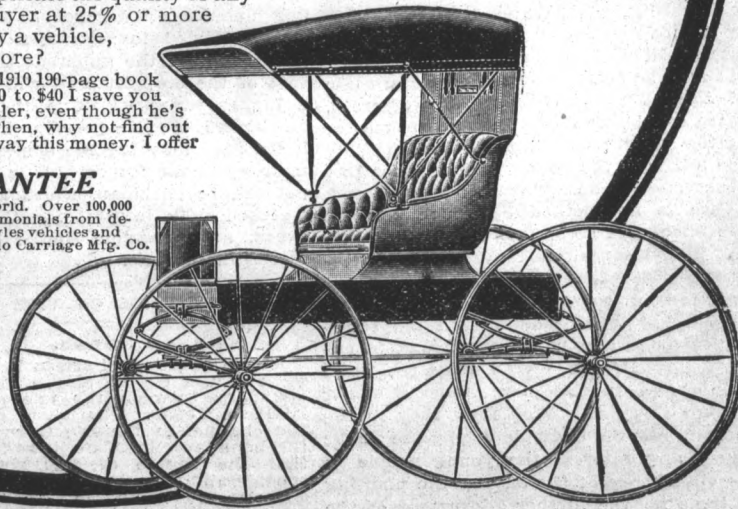
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DETROIT, APRIL 23, 1910.

CURRENT COMMENT.

In another column of this issue appears a brief history of the Arbor Day movement which, as noted, was inaugurated only a few short years ago and has now spread to every state in this country and some foreign nations. The sentiment which prompted the Arbor Day movement and which fostered it until it grew into a national observation, it has become a deep rooted one with the American people, but unlike the sentiments which lie behind the observance of our national holidays, Arbor Day sentiment does not find expression at the same time throughout the country. Owing to the differences in the proper season for planting trees, Arbor Day is celebrated upon different dates in the several states, a considerable difference being noticeable between dates of this event in the southern and northern portions of our country. In Georgia, for instance, Arbor Day, which has a permanent date, is celebrated on the first Friday of December, while Florida always holds Arbor Day on the first Friday in February, and Texas observes February 22 as Arbor Day. As the other extreme, Montana observes the second Tuesday in May as Arbor Day. A number of other states have a fixed date which is observed as Arbor Day, while in others, as in Michigan, the date is fixed each year by a proclamation of the governor.

Regardless of how much practical benefit may be derived from the setting aside of Arbor Day for the planting of trees, there can be no doubt that in the matter of the growth of a healthy sentiment in the minds of the young people, Arbor Day observance is accomplishing a great end. There is no method by which a noble sentiment can be so firmly implanted into the public conscience as through the influencing of the young mind. "As the twig is bent, so will the tree incline," and so the habits of thought and the sentiments formed in youth are bound to endure through life. Well may the older people join in the observance of Arbor Day to this end. Well may they in the home follow the example set by the public school and interest the young people in the observance of the day by the planting of trees for the further adornment of the home, or the beautification of the farm. The implanting of a sentiment of this kind in the mind of young America means

much for the future well-being of the country, and to aid and foster the development of that sentiment is the most fitting manner in which we can celebrate Arbor Day.

The unprecedented rise in the price of flaxseed which has occurred during the past year has caused a revival of interest in flax production in many sections and a number of inquiries have been received from Michigan farmers asking about the practicability of growing flax on the older soils of this state. This peculiar condition in the flaxseed market, which manifests itself to the average man most forcibly in the high price of linseed oil and oil meal, is worthy of consideration at this time, in view of the interest which has been exhibited in the matter of flax production by Michigan farmers.

First, let us for a moment consider the cause of this rise in the price of flaxseed from the usual price of from \$1.00 to \$1.50 per bushel to the present record breaking price of \$2.25 to \$2.35 per bushel, which now prevails in the Chicago market. Various reasons are ascribed, such as the failure of the crop to fill well last year and a great reduction of imports from foreign countries, particularly Argentina. But in reality the more careful investigators believe that the cause of the short crop of flaxseed is due to the fact that flax does not seem capable of being made a permanent crop in the agriculture of any community. It is subject to fungous diseases which have not yet been successfully combated and the plant appears to deteriorate rapidly where grown for long upon any soil or under any given local conditions. Thus, while a larger area is sown each year to flax in the Dakotas and Minnesota, the crop yields have fallen off to a marked degree.

As before noted in these columns, the flax crop has ever been a sort of pioneer crop in the development of new country. It followed the pioneers across the continent and many a family of their sturdy descendants still have some of the fine linen spun and woven by the good old grandmothers in pioneer days. But with the passing of pioneer days, the flax crop has largely passed to newer countries, partly because it gave place to other crops and partly because it failed to give satisfactory results as a regular factor in the crop rotation. Large quantities of flax have been produced in the Dakotas and Minnesota and at present large quantities are being produced and for some years will be produced upon the new prairie soils of Canada, which resemble those of the Dakotas and Minnesota not a little. It is also believed by those who have investigated conditions surrounding its growth and studied the requirement of this crop carefully, that it can be grown just as well upon any of the older fertile lands of the country as in the new sections which are being developed, provided it is not grown too often upon the same land and provided every precaution is taken to prevent the spread of the flax wilt and other fungous diseases which attack it. This may be done by selecting only good, plump, bright seed of a good variety and treating it with formaldehyde solution as grain would be treated for smut, sowing on well prepared ground that has not lately grown flax.

While the price of flaxseed is tempting it is probable that few Michigan farmers will undertake its culture, and it is just as possible that production might be augmented to an extent which may prove demoralizing to the flaxseed market in case there was a general attempt to grow flax upon our older soils. However, as well informed investigators believe that on account of the apparent transient nature of the crop flaxseed will continue at a higher range of value than formerly, and since it is quite possible that growing it for fibre may become a more profitable industry in the future, this is a crop, new yet old, to Michigan, which may well be watched with interest for the next few years, as a possible source of profit to Michigan farmers.

HAPPENINGS OF THE WEEK.

Foreign.

A controversy has arisen between Mexico and the United States regarding the boundary between the two countries at El Paso, Texas. The treaty of 1848 fixed the channel of the Rio Grande River as the boundary line, but it was later found that the course of this river changed considerably due to the fact that its bed was largely composed of sand, when other monuments were made to establish the limits of the two countries. Claims are now being made through private parties that property extended along the river for a mile and a half and varying

in width to about four city blocks, is really Mexican territory owing to a sudden change in the course of the river due to evulsion and not to accretion. The state department is now considering the question.

An unconfirmed report has just come to hand of a revolutionary outbreak in Guatemala. The attack is against the president of the Republic and the revolutionists is claimed to be well armed and have an effective organization.

A plan has been inaugurated for the establishment of an airship line from Lucerne, Switzerland, to several points of advantage in the Alps, the line being especially prepared for tourists. Two balloons have already been ordered—one that will carry eight passengers and the other 15.

Four occupants of the balloon Delitzsch belonging to a German aero club, were killed while passing through an electrical storm by being struck by lightning.

There is every evidence that another uprising like the Boxer trouble is at hand in China. Foreigners are leaving the interior and taking refuge in the ports wherever possible. The chief seat of the trouble seems to be at Chang-Sha where all the foreign buildings as well as those rented by foreigners have been destroyed. Riots also occurred at Hankow. The situation has been made worse by troops joining the rioters.

Demonstrations surpassing any that have yet been given in honor of Colonel Roosevelt in his tour through Europe, took place in Austria Hungary, where he was royally received.

The Lloyd expedition organized to ascend Mt. McKinley, of Alaska, and incidentally to confirm the discovery of Dr. Cook, reports that the summit was reached but failed to verify the route outlined by Dr. Cook. Measurements showed the peak to be 20,500 feet above sea level.

The American Ambassador at Mexico City, publishes a report that an intrigue against this government has been discovered there.

An important biological discovery is reported from the academy of sciences, Paris, when a professor of biology of the University of Bijon stated that he had developed tadpoles from frog's eggs by the aid of a platinum wire.

Twenty-five persons are reported to have been killed by a landslide at Kakou-cache, Quebec, a small place some 60 miles above La Tuque, where a ballast train containing the men was buried by the moving earth.

The American cruiser Chattanooga sailed for the mouth of the Yangtze-Kiang river, China, for the purpose of protecting American interests, as riots appear to be impending in that community, following outbreaks in other parts of the Chinese empire where foreigners are being subjected to the passions of the Chinese aroused by jealousies for their own traditions. Japanese are the chief sufferers.

There is little likelihood of saving the transatlantic liner, Minnehaha, which went on the rocks at Scilly Islands, Sunday. All the passengers were removed from the unfortunate boat and about a third of the cattle that were being carried.

British subjects are taking unusual interest in the proceedings of the house of commons while the controversy between the Irish adherents and the English Chancellor over differences in their accounts are being threshed out.

National.

Not only the city of Nashville, but the whole state of Tennessee has been aroused over the action of Governor Patterson in pardoning Col. Cooper from serving a 20 year sentence for killing former Senator Carmack. The affair is sure to open a political war between the different political factions in the state, which will be carried through the June primary. Mob threats are being made.

Six firemen were killed while fighting a blaze in the county jail at New Haven, Conn., last week.

President Taft will visit Michigan in the early part of June.

Twenty-two buildings were destroyed by fire Sunday, at Geneva, N. Y.

The House of Representatives is considering the administration railroad bill this week, while the senate is busy with the rivers and harbors measure.

Under the direction of Mayor Gaynor's orders the city of New York had the "lid on" last Sunday, so far as saloons were concerned.

The committee having in charge the street railway strike in Philadelphia, have agreed to the terms offered by the railway company and it is expected that settlement of differences will be completed soon.

The recent announcement of the Chicago commission men to the effect that they would hammer down the Elgin quotation for butter failed when the vote was made, Monday, the Elgin men continuing, therefore, to be the "makers" of the creamery quotations for the markets of the country.

Employees of the New York Central railway company and the operators are arbitrating their differences this week with the hope that a strike may be averted.

Senator Aldrich, of Rhode Island, announces that he will not run again for the office of United States senator. His departure from the conservative body of our federal legislature will withdraw a personality that has been a very influential factor in important legislative matters of the national congress for a long term of years.

It is asserted that cherries in the Grand Traverse district have been seriously affected by the recent cold wave. Apples and peaches were not far enough advanced to be damaged. Strawberries and nearly all fruits of the states to the south of Michigan are reported to have suffered and it is probable that the crop of fruit will be greatly shortened through the low temperature.

The American locks at the Soo are being repaired after the mishaps of last year's marine accidents. On account of the work all the traffic is going through the Canadian locks, and much congestion is resulting from the situation. It is ex-

pected that the American locks will be in commission by the first of May.

CROP AND MARKET NOTES.

Shiawassee Co., April 11.—Weather is colder with strong prevailing northwest winds. No rain; heavy frosts, but not effective enough to kill fruit. Wheat coming on in a fine condition although a few fields were injured by ice. Rye is looking good and promises a good crop. Oat seeding well under way. Few farmers have begun plowing for beans. Farmers are about discouraged with the potato crop. Very few hogs in the country. Horses are frequently changing hands at high prices. Lambs that were on feed have about gone to market.

Genesee Co., April 15.—A much needed rain fell today. Vegetation at least two weeks in advance of the season. Oats seeding about concluded, the earliest in years. Orchards blooming heavily, little damage reported from late frosts. Holders of last season's potato crop will lose heavily as the market is inactive. Farm help is scarce and wages high; farmers are doing the best they can with that labor they can command. Good roads construction under supervision of a county commission will be pushed on at least two main thoroughfares leading from the county seat, the present season, macadam being the material selected for the purpose. All varieties of farm stock very high. Cows sell from \$65 to \$95 each, the latter figure for one grade Holstein at a recent sale. The figure for farm horses \$335, which was paid for one on a similar occasion. Yearling colts bring \$150 to \$160. Many heavy sows going to the butcher, thus cutting down the spring pig crop. Every animal possible to dispose of is being marketed in altogether too many instances. Grass looks fairly well, as does wheat. The rain will help both immensely.

Eastern Oceana Co., April 13.—Our extremely hot March has cooled off into cooler April. So far we have had two or three light frosts, not enough to do any damage. Our cherry trees are now just coming into blossom, and promise a full crop. Wheat, grass and rye are all looking fine but are in need of a good soaking rain. Oat seeding is now nearing completion and farmers are turning their attention to preparing the ground for the corn crop.

Kalkaska Co., April 11.—March here, as all through the state, was the marvel of years; three feet of snow disappeared in a few days without any rain; there was no frost in the ground and vegetation started at once. Much of the stock around here is now out to pasture. Wheat and rye are looking well. A good many oats and contract peas are already sown. Prices of farm products remain about as a month ago, with beef cattle and pork very scarce. Potatoes, \$8@10c a bu; eggs, 18c; butter, 25c; horses being shipped in to supply the demand and very high in price.

Gratiot Co., April 16.—This date finds Gratiot fully a month ahead of the regular season. Despite the prophecies that we would get our March in April, extremely fine weather has prevailed. There have been three freezes on the nights of the 6th, 7th and 11th. Some fear is felt for fruit. Only three light rains have fallen since early March and with a few exceptions no cold winds. Many hesitated about sowing oats when spring opened, but for the most part oats have a good growth. Wheat never promised more at this date. It has scarcely seen frost since being sown, for the snow came early and remained until the cold weather was over. Pastures are good and feeding is practically over. New seedings were never better but old meadows do not make much showing yet. Many farmers who drew tile during the winter, began putting them in as soon as the frost permitted, but abandoned ditching to sow oats and the tile are still strung along the course of the intended drain or piled in the yard. Sheep shearing is well advanced and the clip is selling at 25c. Several farmers are holding their beans for the high prices of seeding time, but they are now \$1.80. The prospects are good for a heavy acreage of beans this season. Butter, 25c; eggs, 19c.

Allegan Co., April 8.—March was a very fine month as, also, is April so far. There has been very little rain, only one shower this spring that has been of any amount and it was not very heavy. Wheat and rye are looking good. Stock enjoying almost full pasture. Oats and early potatoes are being put in and some oats are up. Plum and cherry trees are in blossom and there is good prospects for a fine crop of fruit. There have been a large number of power sprayers purchased and much more spraying is being done than ever before. Quite a lot of potatoes have been marketed but some are still holding theirs. They are bringing 12 cents now. Wheat, \$1.10; oats, 40c; corn, 50c; hay, baled, \$12@14; eggs, 18c; butter, 20@24c.

Western Marathon and Eastern Clark Co.'s, Wis., April 15.—We had steady warm weather from the first of the month and an unusually warm March with only two or three frosts during the last half of the month. Seeding started about the 25th of March, (something that has not happened before, to my knowledge, for the last 25 years), and is all done by this time. Pasture is in excellent condition and the occasional warm rains make things look like the first of June. Rye and wheat wintered in good shape. Market quotations: Hay about all shipped out and brought from \$9 last fall to \$13 at the present time; oats, 38@40c; potatoes go begging at 15c per bu., and quite a lot are in farmers' hands; butter, dairy, 22@25c; eggs, 19c; good milk cows, \$45@55, and good farm horses very scarce.

Kalkaska Co., April 11.—Weather conditions have been remarkably fine since March 1. Much spring plowing done; not ground in fine condition to work; not commenced planting yet, except grass seed. Stock looking well; all produce high except potatoes; farmers feeding large quantities, which is depleting the stock rapidly. Pastures starting nicely; plenty of farm help.

THE FARMER'S SHARE IN THE INCREASED COST OF FOOD PRODUCTS.

Much has been said recently, and is being said now, about the increased cost of living. Many food products, and especially meat food products, are higher than usual and the consumer is much concerned. And he has a right to be, because it is not a pleasant idea to contemplate when meat products become so scarce and so high that the ordinary workman cannot afford to have meat at his table every day. Yet such is the case in many of the countries of the old world. Such has been the history of the human race and of nations. In a new country where land is cheap and abundant, food animals have been produced so cheaply that meat was within the reach of all and, in fact, nearly as cheap as any food product. But as a country develops, as population increases and there is a consequently greater demand for food, there has always been an increase in the cost of animal food products, so that eventually it was practically impossible for the common wage earner to afford meat upon his table three times a day. In fact, in some countries we are told that the laboring man can only eat meat once a day and in some instances once a week. Grain and vegetable crops are much cheaper and so he makes the most of his diet on these products. This will probably sometime be the case in the United States, and while this state of affairs is not pleasant to contemplate yet I expect we must face it, for this has ever been the trend of history.

At the present time many of the consumers of this country have an idea that the farmer is getting more than his share of the increased price of food products. The consuming public is prone to believe that the increased price is so much added profit to the farmer; but this is not the case. The farmer's expenses have increased in proportion to the increased price. The reason why beef and pork and eggs and dairy products are not as cheap as they formerly were is because the farmer has found out that he cannot afford to produce them at past prices. He must have an increased price or he cannot afford to produce them at all. All of this comes about from natural and not from artificial causes. If a farmer can make more by selling his corn and oats and other grain products direct as human food than he can in feeding them to meat producing animals, he is going to do it—it is only a matter of business. But the average consumer does not look at it in this way. He seems to think that there is some combination which is forcing up prices unduly, but I believe this is untrue. It is really amusing to read what the metropolitan newspapers and magazines print about these affairs. They seem to figure the gross receipts from the farm as net receipts. To read them, one would think that the farmer is getting wealthy, that he is simply rolling in wealth, while, as a matter of fact, we farmers know that the farmer is not getting so much for his share of the price of food products. One modern metropolitan magazine writer says that the crops produced on the American farms last year sold for the enormous sum of nearly \$9,000,000,000, more than three times the amount of money in circulation in the United States today, and he goes on further and says that if all the farmers in the United States could be made into one gigantic farmer, and you could turn him bottom side up and shake his pockets, that \$9,000,000,000 would fall out of them. Now, this is not so. The farmer would not have it. He figures that the farmer has all the money that his crops sell for. He figures gross receipts as net receipts. Now after this farmer has paid for the cost of production, he would not have nine billion dollars. I sell \$7,000 or \$8,000 worth of products from my farm in a year. That's the gross receipts, but after I pay for the labor, the taxes, the cost of repairs and the other expenses, and deduct that from the gross receipts, I assure you that I have no more money than I ought to have from my investment and my labor, and so after the legitimate expenses are paid from this production of \$9,000,000,000 worth of products, the farmers of the United States have no more than their share. Really, I do not believe they have their share yet. After the cost of production is deducted from this, and the resultant amount is distributed among the 2,500,000 farmers of the United States we find that the amount of money received by each one amounts to but little more than the average wage earner earns. While the average wage earner

earns this money alone by his own efforts, in a great many instances the amount received by the farmer is owned by the whole family, the wife and the children assist the farmer and they unitedly earn but little more during the year than the average city wage earner.

One good authority claims that of the dollar which the consumer pays, the farmer receives only 35 cents. This is, of course, on the average. So far as I know this statement has not been disproved, and if this is so, then I do not believe the farmer receives as much as he ought to. He is not getting his share instead of getting more than his share. In my opinion it would be more fair if the farmer received 65 cents for producing, than the 35 cents. It don't look reasonable that the farmer should receive only 35 cents of the dollar while the cost of distribution is 65 cents. Secretary Wilson, in discussing this question claims that it is costing too much in this country to distribute the food products which are produced on the farm. He says that where 19 men are now employed in such distribution, only one is necessary. Here, then, is one great cause for the increased cost of living in our cities. It is costing too much to distribute our food products. The farmer is not getting too much for his labor. In fact, he is not getting enough, but after the farmer produces it it is costing too much to get this product into the hands of the consuming public.

To be sure, the farmer is getting more than he used to, and he ought to. If the farmer is beginning to have his inning now, he has waited long and patiently for it. It is time that it is at hand. We all know that back in the 90's there were hundreds of thousands of bushels of the staple agricultural products of this country that were raised upon the farms of America and put upon the market at less than the cost of production if the farmer figured his time worth anything. He did it because he had to. There was no other way. He and his family practically worked for nothing. If it had not been for the development of the country and the increased value of his farm from this, the farmer would be worth no more today than he was a number of years ago, but the development of the country has increased the value of his property so that in this way he has made something, but not out of the legitimate business of farming. The farmer has never had anything to say about the selling price of his goods. He has simply produced them, and put them upon the market and the great law of supply and demand has fixed the price. If the time has come when the farmer can have something to say about the price which he is to take for his products it is no more than just and only places him on a par with other business men. Why should the farmer not add a certain per cent profit to the cost of production for the selling price of his goods the same as any other business man?

COLON C. LILLIE.

BOOK NOTICES.

Manual of Debate. By Ralph W. Thomas, A.M., Professor of Rhetoric and Public Speaking, Colgate University. A practical manual for the beginner in debate. It presents all the material required by the student in working up the debate, and it tells him just what to do step by step. Cloth, 12mo, 224 pages. Price, 80 cents. American Book Company, Chicago.

Cooper's Adventures of Pathfinder. Adapted for school reading by Margaret N. Haight. This is a very thorough abridgment of Cooper's famous story, in which all lengthy descriptions, tedious conversations, moral reflections, and other unnecessary details have been carefully omitted. Cloth, 12mo, 144 pages, with illustrations. Price, 35 cents. American Book Company, Chicago.

Picture Primer. By Ella M. Beebe, Critic Teacher, Detroit Normal Training School. This primer will prepare the child for any first reader. Cloth, 8vo, 112 pages, with illustrations. Price, 25 cents. American Book Company, Chicago.

The Study of Corn, by Prof. V. M. Shoemaker. To those interested in the improvement of their corn crop, this volume is invaluable. It is also adapted for corn schools, farmers' institutes and corn improvement associations. This volume contains 100 pages, 5x7 inches, is bound in cloth and can be secured at this office for 50 cents per copy.

Manual of Gardening, by Prof. L. H. Bailey, Dean of Agriculture of the Cornell University. This is a practical guide to the maker of home grounds and grower of flowers, fruits and vegetables for home use. The volume gathers under one cover information valuable to the commercial grower as well as the amateur. It is bound in cloth, contains nearly 550 pages and can be secured through this office at \$2.00 per volume. It is published by McMillan Company.

Enclosed find remittance for your excellent journal. I find I cannot keep house without the Michigan Farmer.—C. B. Headley, Shelby, Mich.

A Baby in the House

No joy or pleasure on this earth quite equals that which comes into the home when baby arrives. Who can describe the happiness of man and woman, joined in wedlock, as they look upon the delicate mite that is blood of their blood and flesh of their flesh? And who can depict the hopelessness and dejection that hover about the home where the wife is incapable of becoming a mother? Barrenness proceeds from some derangement of the distinctly feminine organs. Many of the common ailments known as "female troubles" cause it.



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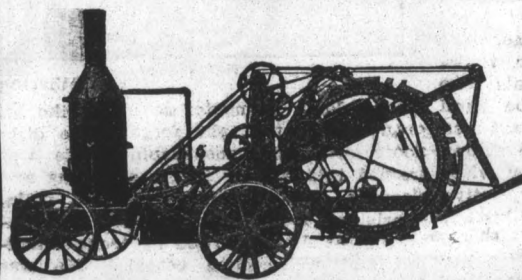
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70,000 Americans will enter and make their homes in Western Canada this year.

1909 produced another large crop of wheat, oats and barley, in addition to which the cattle exports was an immense item. Cattle-raising, dairying, mixed farming and grain growing in the provinces of Manitoba, Saskatchewan and Alberta. Adaptable soil, healthful climate, splendid schools and churches, and good railroads. For settlers' rates, descriptive literature, "Last Best West," how to reach the country and other particulars, write to Sup't of Immigration, Ottawa, Can., or to the Canadian Government Agent.

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WOMAN AND HER NEEDS

ARE YOUR CHILDREN HUSKY?

Try This Woman's Theory and They Will Be.

LIKE begets like," we are told, and the saying is proven true often enough to keep it alive. But it is just as often false, as the observing have noticed. For instance, have you ever noticed delicate children from strong, healthy parents and heard the parents wonder why their children were so puny? And seen strong, vigorous children from parents whose own vitality was below par, and heard all the neighbors wonder who the children "took after." In such cases apparently, "like did not beget like," much to the credit of the sickly parents, and to the everlasting shame of the strong ones.

Three generations of one family illustrate both sides of this. The grandmother is a strong, vigorous, robust woman, one of these women we describe as "a stormer to work." She is up at five and works until seven at the hardest sort of housework, and has worked this way all her life. Indeed, her proudest boast is that she churned, washed a two-weeks' washing for six people and scrubbed the kitchen floor the morning of the day her daughter was born, all by way of proving her own super-abundant vitality.

The daughter is a listless, lifeless sort of woman, one of these women who work just because they feel they must, but with no energy or enjoyment in the labor. She is always tired, and while never really down sick is in that half-dead half-alive state which is worse than sickness; a state of chronic weakness and lowered vitality, but without organic disease. The children are like the grandmother, vigorous, healthy, strong little animals who do not know the meaning of the word tired and who promise to be stalwart men and women. Why is it that the strong mother produced a puny daughter while the weak mother has such strong, active children? The daughter thinks she knows, and this is her theory.

Somehow she never liked to hear her own mother tell what marvels in the way of hard work she did before her children were born. The daughter always had an idea that those large washings and frequent scrubbing of floors of which her mother boasted, had much to do with her own lowered vitality. She mistrusted that she had been robbed of her birthright of strength and health by a dirty kitchen floor and soiled farm clothes. She believed, without actually knowing it to be true, that the strength her mother should have saved and given to the babies who were coming had been turned into the channel of hard manual labor. During the years she was growing into womanhood she thought a great deal about it and when at last she married and the experience of motherhood was coming to her, she asked the family physician what he thought of it, and if he thought by right living just now, she might be the mother of a strong, healthy baby instead of a weakling like herself.

The doctor instantly saw the correctness of her reasoning. He advised her as to dieting and bathing and resting and exercising and working. In short, the two drew up a plan of living by which they believed the baby might be given a fair deal. The mother absolutely refused to use the little strength she had in doing hard work, if thereby she was going to

rob the baby. The kitchen floor shocked the grandmother terribly, but the mother stubbornly insisted that it was better to live with a dirty floor than to rob a human being of its divine right of strength. She had not the strength to scrub floors and at the same time give strength to a growing child, therefore she would do the most important thing. Floors could be scrubbed any time, but a child could have but one chance for life and strength. The theory held good. The baby was a



Gathering Dandelions.

strong, lusty youngster so much like his grandmother that she forgave the dirty floors and lax housekeeping. He was trained into regular habits of eating and sleeping, fed carefully on good, plain, nourishing foods, milk and eggs predominating at first, followed by toast, crackers and well-cooked cereals. He was bathed daily and kept out in the open air with warm, loose clothing; slept alone in his own little bed, and was only cuddled when he showed he wanted it. Other children followed and received the same care. The delicate mother is proud of her four vigorous children. The neighbors wonder and talk and have finally concluded that it is only a reversion to type, the children have gone back to the stock of the grandmother and the mother is merely an incident.

But the mother smiles happily, for she knows it is her own wisdom and care which gave to her children their splendid vitality.

DEBORAH.

THE ESTHETIC AND THE USEFUL SIDES OF DANDELION.

BY LYDIA J. RYALL.

Wherever business may lead, or vagrant fancy entice, in and out among farms and villages that intersperse the average country-side, the observer is constantly greeted by that persistent little plant, the dandelion. A really beautiful floral product, its bright double blossom would be freely conceded as such but for its overabundance. However, since rarity forms one of the cardinal virtues sought

by plant fanciers, the dandelion falls under the ban, being too common to attract attention from any but the nature lover.

The fastidious lawn keeper anathematizes the dandelion, and much of his spare time is spent in digging out its spreading rootlets. But, so far from spurning this lowly plant, the nature votary dotes upon and delights to see its golden petals embroidering lane and foot-path and yellowing the green sward about his home. It appeals to sentiment not alone, but to appetite as well; and oft when hungry for a mess of pottage he plucks its pleasantly bitter leaves and converts them into "greens."

The prettiest lawns seen along one of the most exclusive streets of a town through which I recently passed were thickly covered with dandelion blossoms, and the suggestions of rusticity which they served to impart were pleasing and restful after the stiff grandeur of lawns

adjacent where such common things were not permitted. With morning dew still upon them, I saw, in the hands of school children, two large bouquets of dandelion blossoms and felt impressed with the beauty of their mission—that of brightening and blessing the wayside.

I once looked into the basket of a great man—great in good and useful deeds as well as in intellectual achievements. Masses of the rarest flowers lined the sleeper's satin couch and banked it deeply without; but the blossoms that lay nearest his heart was a simple yellow dandelion, placed there by a friend. While living this man had ever loved the simple and unobtrusive, and perceived beauty where others could not, hence the fitting character of the offering.

Considered in a purely practical way, the value of the dandelion cannot be over-estimated. Besides its use by pharmacists in compounding medicines, the plant figures as a culinary article of real importance, being used as such to greater or less extent in every community. Especially is this true in early spring, when cellar products have grown scarce and garden salads are still in embryo. This also is the season when spring fever conditions prevail, and a mess of dandelion tones the appetite and touches and fills a hungry spot that nothing in the family larder can reach. Sunny places around deserted farm buildings, about stumps and rotting logs, in fence corners, low bottoms, and wherever the soil is moist, rich, and loose are some of the spots where the dandelion first appears. The housewife knows best its lurking places under cover of last year's leaves. With a sharp knife she cuts each plant deep into the earth, thus to secure its tender, yellow heart, and deposits in her basket. Having been carefully picked over and washed through two or three changes of water, the forage is ready for use.

There are several ways of serving, German salad—a general favorite—being prepared as follows: After frying several slices of bacon or ham, remove contents, leaving about one tablespoonful of drippings in the pan. Place over the fire, and when hot pour in some good cider vinegar, weakened with a little water. Add salt, pepper, and a bit of sugar. With a knife, cut the dandelion fine as possible and turn it into the hot vinegar, stirring rapidly with a fork. A few seconds will suffice. When slightly wilted, dish up and serve at once. Too much wilting spoils it.

Another way is to make a thin flour gravy, adding vinegar, salt, pepper, a lit-

MISCHIEF MAKER

A Surprise in Brooklyn.

An adult's food that can save a baby proves itself to be nourishing and easily digested and good for big and little folks. A Brooklyn man says:

"When baby was about eleven months old he began to grow thin and pale. This was, at first, attributed to the heat and the fact that his teeth were coming, but, in reality, the poor little thing was starving, his mother's milk not being sufficient nourishment.

"One day after he had cried bitterly for an hour, I suggested that my wife try him on Grape-Nuts. She soaked two teaspoonfuls in a saucer with a little sugar and warm milk. This baby ate so ravenously that she fixed a second which he likewise finished.

"It was not many days before he forgot all about being nursed, and has since lived almost exclusively on Grape-Nuts. Today the boy is strong and robust, and as cute a mischief-maker as a thirteen months old baby is, expected to be.

"We have put before him other foods, but he will have none of them, evidently preferring to stick to that which did him so much good—his old friend Grape-Nuts.

"Use this letter any way you wish, for my wife and I can never praise Grape-Nuts enough after the brightness it has brought to our household."

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Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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Thrifty Plants of Dandelions Grow in Waste Places.

the sugar, and a hard-boiled egg sliced or chopped fine. It should be served while hot.

A handful of tender horseradish leaves, or of "Crowsfoot"—a peppery plant found in the woods—may be added to the dandelion, and the whole chopped fine. Served cold, with sugar, vinegar, and a bit of salt, this dish has a decided tone and is well suited to certain tastes.

The best and most appetizing way to prepare dandelion, however, is to boil with pork until tender. Thoroughly drain, butter, and serve with slightly sweetened vinegar. The addition of yellow, or narrow-leaved dock, horseradish leaves, wild mustard, and "lamb's quarter" makes a further improvement. Pared potatoes may be boiled with the greens.

In nearly every family through many sections of the country the plant forms a staple article and is used daily, not alone in spring, but to a limited extent the summer through. Young plants come up from the seed later on in the season—through the orchard and in other shady, moist places. These remain tender until fall.

A novel feature, often seen, is the cultivation of dandelion in gardens where it is planted in rows and carefully tended. The plants grow rapidly and are more tender than the wild ones. Convenience of access is another point in favor of this plan.

A FOOD RICH IN NOURISHING PROPERTIES.—No. 12.

BY MRS. ALTA L. LITTELL.

PERHAPS no class of food is less understood by the average housekeeper or less utilized than leguminous foods, beans, peas and lentils. Indeed the last named is never used here at all, or only as a most unusual dish to be regarded more as a curiosity than as a regular article of diet, and yet lentils contain twice as much protein as bread and three per cent more than beef. Beans, too, contain 23 per cent protein and dried peas 22 per cent, while the starch in all three is over 50 per cent. No other foods contain such a high per cent of both starch and protein which is needed for the human system, and there would be no cheaper nor better food for man than these legumes, if they were more digestible.

Unfortunately, these foods are difficult to digest, the casein or legumin, which forms the protein, being the most difficult of all proteins to digest. Indeed, people with weak powers of digestion can scarcely digest beans and peas at all. If they could, the question of high-priced meat could be settled over night, for well-cooked beans or dried peas would supply the protein necessary for subsistence. People who are not troubled with indigestion, however, can not find a more nourishing food, and for hard workers, especially those who work out doors, there is no more nutritious food. As this nourishment is packed away in a small bulk, and the dried beans and peas will retain their nourishing properties for years if properly cared for, there is no cheaper food of the same bulk to be found.

Beans should be well cooked, and a little cooking soda added to the water softens the casein and makes it more digestible. Split peas, or dried peas, are not quite so digestible as beans. They, too, should be boiled long and carefully, and are best used in a soup.

In cooking young peas and beans, do not throw away the water in which they are cooked and serve them with milk or white sauce as is usually done. The water should always be served with the vegetables as it contains minerals which are of great value to the body, and which cook out in the water. Put them in just a little boiling water, so there will be only a tablespoonful or so left when the vegetables are cooked.

We all talk of Boston baked beans, but few of us know how to bake them. The beans should be soaked over night in cold water, and in the morning drained and put to boil with enough cold water to cover. Keep the water just below the boiling point, thus cooking the beans slowly, until the skins burst. Then drain the beans, put a slice of pork in the bottom of your bean pot, if you haven't one a covered pail will do, add the beans, put in the center a piece of pork, which has had the rind cut through in several places, and pour over the beans and pork a teaspoonful of salt, a tablespoonful of molasses and three of sugar, mixed with a cup of boiling water. If this does not just cover the beans, add enough more

boiling water to cover. Then cover your bean pot or pail and bake very slowly for six hours, removing the cover the last hour to brown.

SHORT CUTS TO HOUSEKEEPING.

This department is opened as a means of exchange of new and successful ideas in homemaking. If you have learned something in cooking, sewing, child raising, fancy work, economy, anything which is helpful, and new, send it in. Twenty-five cents will be paid for every article used, but none will be returned. Keep your suggestions short.

For your creeping baby make a pair of black sateen bloomers, or of any dark goods, run an elastic in the top and slip on over his clothes.—Mrs. G. A. R.

When you wash men's overalls and shirts lay them on the washboard and take a scrub brush to them with plenty of soap. You will be surprised how easily they come clean.—Mrs. G. A. R.

When preparing chopped raisins for your cooking, try clipping them with your shears. It is so much quicker and saves dirtying up a chopping bowl and knife.—Mrs. G. A. R.

Instead of darning heels in stockings I crochet them. Chain around the hole, then double one and miss one until closed. When cutting the yarn leave about six inches and darn back and forth to close any small opening this; makes a very neat and quick darn, worth trying.—Mrs. C. S.

When washing fruit jars, wash in hot soap suds. Do not dry them, but drain on stove shelf. The result will be a bright jar, and quick work.—Mrs. C. S.

GOOD TASTE IN DRESS.

BY E. E. R.

To dress with good taste a woman need not necessarily be possessed of a fat pocketbook. The simplest attire may express this quality which is sometimes entirely lacking in one representing ten times the amount of money.

Good taste means not alone being becomingly gowned but appropriately as well. A plain tailored suit for nine occasions out of ten will be in keeping, where the elaborately trimmed gown would mark its wearer as over-dressed.

It is always safer to depend on one good garment rather than on more than that number of inferior ones, if the supply must be limited. Such a garment will hold its shape and color better, while cheap goods are never entirely satisfactory in this respect. With several shirtwaists to afford a change a single jacket and skirt can be worn for a long time without attracting attention to the sameness of this part of the attire.

Neatness is the first requirement of good taste in dress. Loose buttons, missing hooks and dangling braid are positively repelling, as are spots and stains which betray a carelessness not at all attractive.

Good taste is shown nowhere more conspicuously than in hats. In selecting one for general wear it should be suitable to the demands made upon it and not out of harmony with the rest of the attire. Black, while a stand-by, shows dust badly and some different color might be more satisfactory, for wear on country roads. Freak shapes may be successfully worn in occasional instances, but something less conspicuous is certainly in better taste for the average person. Cheap trimmings soon grow shabby and in their latter estate are inexpressibly less inviting than when fresh.

Neckwear, gloves, shoes and hosiery as well as underclothing, all call for taste in selecting. The girl or woman who would follow this guidon remembers that neatness is demanded at all times, and that a fresh linen stock above a shirtwaist both immaculately laundered, goes far toward excusing even a shabby skirt if the latter is free from spots and nicely pressed.

Lastly, to be on the safe side, it is well to adhere to the one-tone scheme as far as convenient. The woman who selects the color most becoming to her and makes that the chief note in her dress will secure an effect in the long run superior to that obtained by non-observance of such a rule. Good taste means harmony and different garments in the same general tone do not clash as do contrasts of color.

We have all heard of the fortunate woman who looks well whatever she has on, and possibly envied her. Such women it will be observed, possess a natural taste

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THE NEW HOME SEWING MACHINE Co., Orange, Mass., for Catalog No. 4.



Here Is Something New From Kalamazoo

Prove for yourself in your own home, that the Kalamazoo is the most perfect—most economical—most satisfactory range for you to use—Your money back if it's not.

Send for Catalog No. 113 with special terms and compare Kalamazoo prices with others

Cash Or Time Payments

We want every housewife to know the comfort and convenience of a Kalamazoo in her home. You can buy on easy time payments or pay cash if you like. Either way—you save \$10 to \$20 on any stove in the catalog. We make it easy for responsible people to own the best stove or range in the world.

We Pay the Freight

Kalamazoo Stove Co.
Kalamazoo, Mich.

**"A Kalamazoo
Direct to You"**

ITCH-ECZEMA FREE TRIAL

(Also called Tetter, Salt Rheum, Pruritus, Milk-Crust, Weeping Skin, etc.) ECZEMA CAN BE CURED TO STAY, and when I say cured, I mean just what I say—CURED, and not merely patched up for awhile, to return worse than before. Now, I do not care what all you have used, nor how many doctors have told you that you could not be cured—all I ask is just a chance to show you that I know what I am talking about. If you will write me TODAY, I will send you a FREE TRIAL of my mild, soothing, guaranteed cure that will convince you more in a day than I or anyone else could in a month's time. If you are disgusted and discouraged, I dare you to give me a chance to prove my claims. By writing me to-day you will enjoy more real comfort than you had ever thought this world holds for you. Just try it, and you will see I am telling you the truth.

Dr. J. E. Cannaday, 1118 Park Square, Sedalia, Mo.

References: Third National Bank, Sedalia, Mo.

Could you do a better act than to send this notice to some poor sufferer of Eczema?

YOUR CHOICE FOR ONLY \$1.25

We are taking an equal number of our 75 cent razors and \$1.50 razors and \$2.00 razors, mixing them up in a bag and will pick them out unseen, just as they come and make the price \$1.25 for a pick. Those who call at our office for one may do their own picking. Orders received by mail will be picked as the order reaches us.

You may get one of our \$2.00 razors, which sell for \$3.00 in any store, "Bo-ker's Red Injun," the best they or anyone else makes or can make. The \$1.50 razor is one of Henkell's best and barbers pay \$2.50 for them. The 75 cents razor is cheap at \$1.25 to \$1.50 in stores. We import them.

You can have your choice for a while for only \$1.25. We send them postage paid. If you want them registered, send 10 cents additional. The first one may get one of the highest-priced ones—so may the last.

THE MICHIGAN FARMER, Detroit, Mich.

in dress which never deserts them, something hard to describe yet easy to recognize whenever or wherever found.

HOME QUERIES EXCHANGE.

Dear Editor:—I saw in the Michigan Farmer that Mrs. D. H. would tell how to make soap. I wish she would write and tell how. I had good soap grease and lye strong enough to carry an egg but it would not become hard. I would like to know how to make it hard and how much salt to use to the gallon.—Mrs. P. J. D., Ida.

Dear Editor:—I saw your kind offer to answer questions in the Michigan Farmer and would like to ask what your advice would be about my baby. She is ten months old, weighed eight pounds at birth and now weighs 14 pounds. Has weighed 14 pounds most of the winter, does not gain. She has only two teeth, seems well, is very bright and plays like any other child of her age. For the last month we have been giving her cow's milk, half water, thinking perhaps my milk was not nourishing enough for her. But she does not gain. She has always been very constipated. The doctor said to give her glycerine injections and that is what we use. I don't know why she is constipated as I am not troubled that way at all, and our other child, who is five, was never bothered. The baby seems to have the colic a great deal, especially at night. I am very careful what I eat. She takes about half a pint of cow's milk in a day now besides what I have for her. Would you please advise me what to do about her food and what to feed her? Should I wean her next month when she has only two teeth. I am a large woman and very, very nervous and sometimes I think that affects her. I do my own work for a family of four and take care of the milk of three cows and tend the chickens, so you see I keep busy. Thanking you in advance.—Mrs. V., Covert.

The fact that the baby does not grow shows she is not getting enough nourishment, while the fact that she seems well and bright shows that what she does get agrees with her. I should wean her next month by all means. Every baby should be weaned at ten or eleven months, as after that the mother's milk is not good for them. Begin feeding her toast, eggs, crackers, well cooked rice, farina, tapioca and other starches. As she is constipated, oatmeal would probably be good for her, as oatmeal is loosening, while rice is binding. Start feeding her half an egg in the morning and half in the afternoon and gradually feed more until she takes two eggs a day. Give her the toast dry to chew on and it will help her teeth to come through. A half pint of milk a day is not nearly enough. Many children at her age take a quart, but, of course, you should not make such a decided change at once. Give her a little bit more each day, not more than two or three teaspoonfuls a day, until you can tell by her condition she is taking all she can digest. Your physical condition will of course, affect the baby. If you are very nervous it will affect your digestion and so act on the baby.

A BETTER CURE FOR SENSITIVENESS.

Dear Editor:—As I read the article, "The World Cure for the Sensitive Woman," I am convinced of its truth and its error. In the first place we must divide the sensitive women into two classes. There are those who are selfishly sensitive and those who are really of a sensitive disposition. For the first class I should prescribe "The World Cure," but let me tell you that for the truly sensitive soul there is something better than a cure and I might say the only successful method, it is prevention. I wonder how many people who are not so tried ever questioned what made the sensitive woman weak? To the strong, dauntless person this failing may seem almost ridiculous, but remember it is a real problem stern and severe, to the suffering individual.

Sensitive natures may be either natural or cultivated, or both. Whichever the case may be, correction cannot be made too soon. Better build up the character from infancy than to try to repair it in later years. It is much easier, and more gratifying to the true heart to lend a kind word or a thoughtful act here and there than to shock that overwrought nervous system by ridicule. And who of us mortals are so unerring in judgment that we may wisely chastise another mortal? O, we do not know how deeply or how fatally our scorn or ridicule may wound another soul!

I have taken pains to note the causes which lay the foundations of sensitiveness and this is what I have observed: Besides disease, it sometimes occurs from overmuch attention paid to more comely relatives or playmates; to unkind comments about defects of the manner or

person; sometimes to poverty or lack of advantages; but above all other things, it is too often due to a very disagreeable habit, on the part of parent or caretaker, of critiquing, picking out this individual or that one and sometimes every one and analyzing them, either favorably or unfavorably before the younger members of the family. This is sure to ruin any child. The one that is naturally self-reliant at once takes the judgment seat and sits in judgment upon his fellows while the timid, and often more conscientious ones begin to analyze their own faults and wonder how others are critiquing them. They begin to look for indications of approval or displeasure from every one they come in contact with. They gradually become apt in the art of discerning and each success unduly flatters them as each censure depresses them. Finally they find themselves the slaves of self-consciousness. They become despondent and even remorseful as they see others of less, or no more, capability out-stripping them in the race of life, simply because they can fearlessly wield their powers of intellect.

Much tact is needed in training such children for not only their happiness but their success and health depend upon it. Watch the weak places in the character and guide the trembling foot over the slippery places. Study the child; if it is not perfectly happy there is either sorrow or ill health or ill temper which must be checked by a loving hand, not by petting or scolding but by making them unmindful of their ills. If they are bashful, give them a little attention and draw out their best thoughts for others to observe and it will give them courage and pleasure to feel that they have something to offer that will help to interest others. However, do not fuss, for fussing is just as detrimental as lack of attention for it makes them dependent. See that they have some associates of their own age, to spend a little time with now and then. If some one has been unkind enough to make remarks about them let them know that you are sorry, but that it is not of so much consequence after all, as only the ill-bred are guilty of such rudeness. Tell them we should never take notice of others' defects as we see that it may wound their feelings.

If they are neglected by some more favored acquaintance, teach them to find happiness in the fountains which the world can not foul, in useful labor, in art, in music, in drives, visits to the parks or woods and in the companionship of relatives and in the beauty of flowers and by visiting the sick and afflicted. Keep them busy and interested and they will not take so much notice of slights.

Mothers and fathers, let your children know that you love them. Do not spare all your affection to lavish on them after they have felt the bitterness of blasted hopes. Children are far more jealous of the parents' love than their proud little hearts will admit. Make them your confidants. Make them feel that all the treasure, all the love and all the knowledge you possess is freely theirs as they need it, that they need not feel driven to strangers for attention, for love, for information or companionship, and the sensitive child will not prove a failure.

Even if your earthly store is small you can give her a reasonable education, you can teach her in all of the necessary pursuits of life and faithfulness to duty. Then if she must shift for herself see that she has a position which she can, with perseverance, successfully fill. If she has been properly instructed in regard to what the world may expect of her, and taught to act independently of the influence of others, our sensitive girl will put her foot upon the threshold of life and business to enter the world a conqueror. The ways of the world will strengthen her and she will prove indispensable even to that unheeding mass of humanity. But God pity the sensitive wage-earner with no loving hand to guide her steps and no protection to which she may flee.

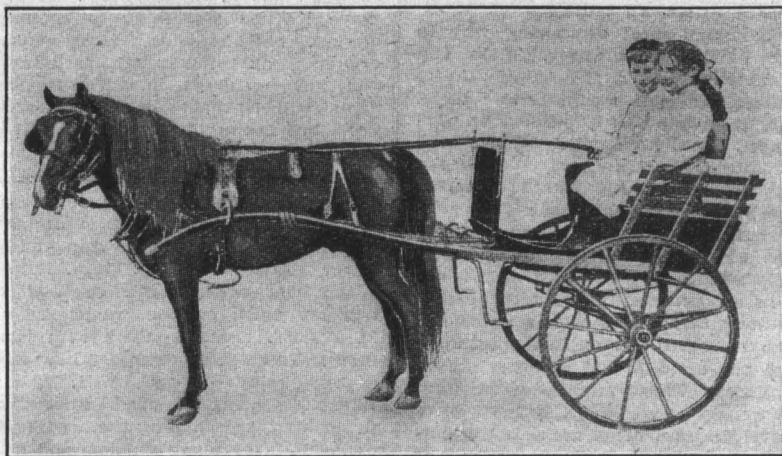
GRIZELDA LEE.

Selections from Early German Literature. By Klara Hechtenberg Collitz, Ph.D., formerly of the Department of Germanic Philology in Smith College and in Oxford University. A reader designed to acquaint students of German Literature with the chief authors of the Old and Middle High German periods. Cloth, 12mo, 285 pages. Price, \$1.00. American Book Company, Chicago.

German Literature, Land and People. By Franklin J. Holzwarth, Ph.D., Professor of the Germanic Language and Literature, Syracuse University. This volume while not purporting to be a complete history of German literature, is intended to give a very concise view of the German people, their land and literature. Cloth, 12mo, 245 pages. Price, \$1.00. American Book Company, Chicago.

ONE WEEK MORE

In which to win "Beauty," Cart, Harness, Saddle and Bridle. It is quite evident that we are not going to take in near enough to pay for this Outfit but, as we promised, we are going to ship it, all charges prepaid, to the boy or girl who has the greatest number of points to their credit on April 30, if it is only 10.



This is the Pony, Cart and Harness. The Saddle Appeared in a Previous Issue.

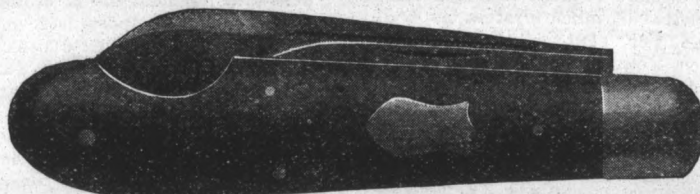
WE PAY YOU

For your work in cash or premiums so do not be afraid to put forth your best efforts between now and April 30. You may think you have not enough time between now and then to win but we know you have as we have noticed in all our contests that the winners were usually those who made a special effort during the last few days of the contest. So get out at once and "hustle" for the next few days and be sure and mail your subscriptions before midnight April 30, so that they will count in the contest.

Here are a few of the premiums we are going to give away to all contestants who do not come first. Additional premiums illustrated in April 2nd and 9th issues of the Michigan Farmer. Will send these issues to you if you ask for them.

High Grade Pocket Knife

EASY OPENER.



Will give the user entire satisfaction. Brass lined; blades are made of the best English cast steel, hardened and tempered by experienced workmen and are sent out ready for use with instructions how to keep them in condition. Can send Stag Horn handle knife if preferred. It is without the easy opener feature but otherwise is of same material. These knives retail at all dealers for 75c and up. Our price 45c, or 8 points.

Base Ball Suit

COMPLETE

with Cap and Belt.
Padded Trousers,
(Double padding)
Plain Gray with
red or blue trim-
mings, as preferred.
Sizes 6 to 15.

Cash price \$1.75
or 30 points.



Post Card Album



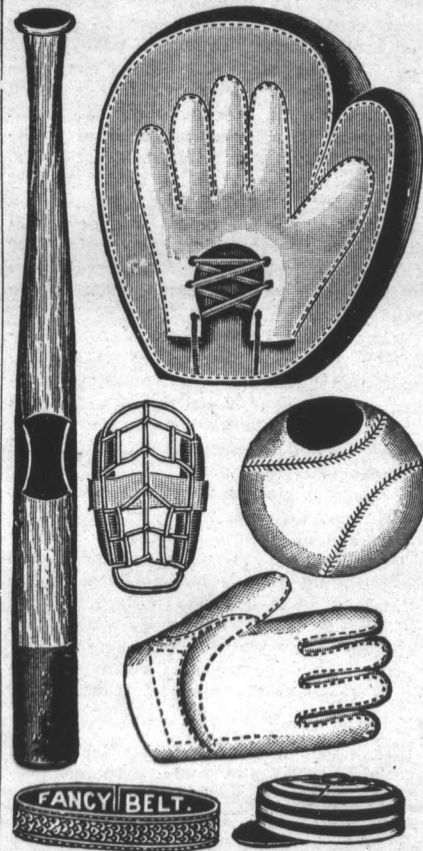
Holds three hundred cards. Has handsome black alligator grained paper cover; title is embossed in gold; has reinforced binding, stitched and stuffed to prevent bulging. Leaves are of heavy black crash paper, machine perforated, holding three cards to a page, two horizontal and one vertical. Any card can be removed without disturbing the others. Size nine inches wide by 11 inches long. This is a very superior album and will certainly please every post card collector. Cash price 50 cents, or 10 points.

PEN KNIFE.



Two razor steel blades; brass lined. Handle is three inches long, flat and very thin. Length, with blades open, 6 1/4 in. Mention knife No. 109. Retail at 50c. Our price, 35c, or 5 points.

Baseball Outfit.



The above outfit, glove, mitt, mask, ball, bat, cap and belt. A splendid outfit for any boy. All of the pieces in this outfit are of good material, and will please you. Given for 40 points.

Last order must be mailed before midnight of April 30. Address

PONY CONTETT DEPT.,
MICHIGAN FARMER, Detroit, Mich.

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—B. A. Holden, Wixom.
Vice-president—Mrs. C. A. Mathews, St. Johns.
Secretary—Mrs. C. B. Johnson, Metamora.
Treasurer—Henry T. Ross, Brighton.
Corresponding Secretary—Clayton Cook, Owosso.
Directors—T. B. Halladay, Norvell; E. C. Hallock, Almont; A. R. Palmer, Jackson; Wm. H. Marks, Fair Haven; C. L. Wright, Caro; E. W. Woodruff, Blanchard.

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

YEARLY PROGRAMS.

Columbia Farmers' Club.

One of the latest of the printed yearly programs to come to the editor's desk, is that of the Columbia Farmers' Club of Jackson county. It is a neatly prepared booklet containing simply the name of the club and the year for which the program is to serve, upon the outside of the cover. On the title page in addition to the year for which the program is to serve, appears the year in which the club was organized, which was 1887. On the following page is an announcement of the date of meetings, which, from October to and including April, begin at 10:30 a. m., and from May to September at 1:30 p. m., on the second Saturday in each month. The next page contains a list of the officers and the executive committee of the club, while the following page is devoted to the order of business which is followed at the various meetings. The succeeding pages are devoted to the monthly meetings for the fiscal year, beginning with March and closing with February, one page for each meeting. Farms of the members are named and the farm name appears with that of the host in each case. At practically every meeting throughout the year, the ladies are represented on the program either with papers or in the discussion of some practical subject relating to the farm home life. The musical numbers are not announced on the program, being provided by a committee appointed for the purpose. The special features for the year are a home-coming meeting in August, an annual fair in October, and a special corn day in November. A vacation is taken during July, no meeting being held during that month. Roll call is answered in a variety of ways, including the names of native birds, the naming of our national heroes, quotations, reminiscences, mention of leading events, timely topics, etc. The range of subjects which are discussed is broad, and altogether the program is one which appears to be of a particularly complete and interesting nature.

CLUB DISCUSSIONS.

Crop Reports a Feature of Club Work.

The Looking Glass Valley Farmers' Club closed its year's work with a monster sugar social at the home of Mr. and Mrs. Wm. Bush, April 8, over 150 being present. The president, A. B. Niles, and wife, are moving away, and the club, to show their appreciation of their faithful work presented them a silver bread tray. The vice-president, H. S. Bliss, and wife, having recently lost their home by fire, were presented with a dinner set. Fine music and recitations made up the program, with a resume of the year's crop reports as follows: Profit on oats per acre, \$14.50; corn, \$16; potatoes, \$39; beans, \$16; cloverseed, \$19; hay, \$17. Profit on cows per head, \$45; sheep, \$5.80; hogs, \$8.50. Programs for the new year were distributed. These include reports of crops and live stock and an effort will be made to use a uniform rate of land rent, and estimate of labor.

The March meetings of the club included the reports on cloverseed and hay. Also a fine local option lecture by Judge Newkirk, of Ann Arbor. Mrs. Helen Rowe, of Mt. Pleasant, furnished several beautiful vocal solos at the meeting of March 24. Altogether, we feel that the meetings have furnished not only pleasure and profit to all, but have given a pronounced moral uplift to our community.—Bel Maier, Reporter.

Discuss High Prices.—The Odessa Farmers' Club met with Mr. and Mrs. John Klahn, Saturday afternoon, April 9. The meeting was called to order by Vice-President Henry Stinchcomb, and opened by singing by the young people. Mrs. Zeno Carter read a nicely prepared paper on the subject, "Our Club—its ideals and possibilities." The reading was followed by a general discussion. Marquis Foght took as a subject for his talk, "Is the increase of population the cause of high prices?" This, too, was well discussed and was decided in the negative. Miss Brown gave an instrumental solo. Mrs. Klahn and her helpers served a nice supper and the meeting was adjourned to meet the second Saturday in May with Mrs. and Mrs. C. S. Lawrence.—Lottie M. Durkee, Reporter.

Organization and Its Benefits.—The Summit Farmers' Club met in March at the pleasant home of Mr. and Mrs. Vredenberg. After the business and dinner was disposed of we listened to the general discussion of the topic, "Is organization of any benefit to the farmer?" led by F. M. Ellison. "I believe in organization for social and intellectual purposes, but not to form a trust. Everything but potatoes brings fair prices. We must not lose sight of the fact that supply and demand regulates the prices." G. E. Mount, who led in favor of organization, said: "Farmers are an indispensable class, the backbone of the nation. We are the producers and people live by what they eat. Trusts make the prices for us, whether we buy or sell. If farmers would organize they could have things things just about their own way, and they like to boss a little once in a while, but in order to be successful they would need to have higher ideals than the trusts that predominate today. The agriculture of the country must be developed in order to feed the world. Let us organize, not to rob, but to feed; not to be extortioners, but benefactors. Would the farmers stand? Think they would not on the start; would probably make some retreats, but the boys in jeans could be taught that they had a mission and educated to stand." J. McDevitt: "The trusts manage all the things we need. Do not believe in organizing to form a trust, but for protection, and to buy the things we need in a business-like manner." F. M. Ellison: Do not believe organization would benefit the farmer only for social and intellectual purposes." G. E. Mount: "It takes money and resources to feed the country. Because farmers in the past did not stand together is no reason why they cannot be educated to stand, and if they organize to better conditions they will stand." At our next meeting the question for discussion will be, "Should farmers ask for the passage of the parcels post bill now before congress?" to be led by J. L. Berry and W. Blake.—J. Loine Eddy, Cor. Sec.

Hold Enthusiastic Meeting.—The March meeting of the Maple River Farmers' Club was held the last Thursday of the month at the pleasant home of Mr. and Mrs. E. J. Cook and family. The meeting was largely attended by both club members and invited friends from the city and other clubs. The meeting was called to order promptly at eleven o'clock and business matters concerning club work were discussed. The meeting then adjourned for dinner which was a prominent part of the social gathering. The local option outlook was a theme for earnest discussion by the members who are strongly temperance in sentiment. "Sister of St. Patrick's Day" was very entertainingly presented in an excellent paper by Mrs. William Scranton who reviewed the history of St. Patrick's family and his influence upon his home church. His work was principally confined to Ireland and under his management one of the most famous schools of the dark ages was built up and maintained.

"Managing a Wife" was ably presented by Ira Snyder, who found his subject rather difficult to approach. He had found that it was not an easy question to master. He advocated co-operative sentiment in the family when such could be sustained. Mr. Snyder thought that it was just as well to let the wife do her own figuring as far as possible only at times interceding simply in the capacity of a sign board.

Highways vs. Waterways.—"Resolve that government aid would be of more benefit to our people if placed upon our highways than our rivers and harbors," was the subject of a debate presented by C. B. Cook and A. L. Chandler. Mr. Chandler being absent Mr. Cook took up the general discussion of the question and brought out many helpful thoughts. Mr. Cook thinks that while we must maintain our water means of transportation we must not lose sight of the vital importance of giving more aid to highway improvement. Amos Parmenter favors a better system of road making whereby the roads may be uniformly improved. He favored a county road system for road making. Mr. Parmenter took the opportunity to score Owosso Grange on the position it took on this important question and believes if re-submitted to the people would receive more careful consideration.

The Farm Horses.—The Howell Farmers' Club was pleasantly entertained at the home of Mr. and Mrs. Jay Marr of West Howell, Thursday, April 7. It being a fine spring day a good attendance was present and a very profitable meeting was the result. An unusual occurrence was most pleasing to the president and secretary, as all who were on the program were present and responded. President S. H. Munsell called to order and after singing America, and roll call, Frank Crandall then gave a splendid talk on the subject assigned, "Care of farm horses." Mr. Crandall had much sympathy for the horse and thought them the most abused of all farm animals. Horses' feed should be regulated according to the amount of work done. He recommended ground feed of equal parts of corn, oats and bran, also one should use much caution in regard to horses' shoulders, collars well fitted, and harness should fit collars. Mr. Ellsworth and others followed in discussion and gave many good thoughts.

Signs of the Times.—Mrs. R. R. Smith gave a short talk on the "Signs of the times." She could agree with Dorothy Hudspeth in an article in the Michigan Farmer entitled "The Unrest." That the new had outgrown the old and a change spiritually, industrially and politically. Spiritually, God was the same but man's ideas change in religion, the ceremonial will be done away with. Industrially, the logic of events would force it. Politically the change would be a completed democracy and the signs of the times, as a whole, were good. After the completion of a good program the club adjourned to meet with Mr. and Mrs. H. Bohm the first Thursday in May at one o'clock.

GRANGE

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

THE APRIL PROGRAMS.

Suggestions for Second Meeting.

"There is a perfection of the hedgerow and cottage, as well as of the forest and palace."—Ruskin.

Farm Business—V. The coming census: 1. Why a farm census is good business policy. 2. What questions will the government ask?

Select reading, "A Tree."

What kind of trees, shrubs and vines shall we plant on Arbor Day, and where can they be obtained?

Roll call:—How make our home and school grounds more attractive or healthful this spring.

THE GRANGE AND RURAL LEADERS.

—IV.

In this concluding homily on leadership, let us tie a few ends of the strands we hold as essential in the making of a progressive rural life. I hope it has been sufficiently emphasized that the very spirit of a true leader seeks the good of all. A person may take so prominent a part in his community that his name is on every tongue; when any undertaking is proposed everybody turns instinctively to him to plan and carry it out. He dominates the community, overshadowing all others. Outsiders know the neighborhood by this one personage. Perhaps his name is attached to the post-office or four corners. In a way this must be true of any truly great person, but there are really two classes of so-called "leaders."

In the one place, the "leading" man is truly the mover of all, but other persons are his puppets and simply do his bidding. His work is not vital; it is from without and has no heart, pumping life-blood from the center. It is a thing detached and brought out upon occasion. It poses as leading without possessing leadership qualities. It commands a subservient and blind following without taking others into its counsel and stimulating self-reliance and initiative in them. In the other case, the work of the "leader" is organic, having power of growth within itself. It grows from within outward. It is the motive power that enlivens and sets other forces in operation.

In the one case, when the head cannot or does not act, community interests lag while individuals stagnate and grow sluggish or hopeless; and, should others venture to propose new movements or changed methods in old ones, their projects are discredited or supported with a lukewarm co-operation that amounts to the same. In the other instance, if even the humblest helper makes a suggestion or shows inclination to originality, he receives stimulus to correct its defects and enlarge upon its merits. In this latter manner younger men are continually being brought forward and trained to later take the places of older. Thus the community life renews without stultifying itself. Thus the stream of its activities are varied and constantly changing. The Grange, and other organizations in the midst, retain their freshness and vigor and extend their leadership influence into whatever fields their members afterward enter.

JENNIE BUELL.

LENAAWEE COUNTY PATRONS DISCUSS LIVE TOPICS.

Lenawee Pomona's last meeting, held with Cadmus Grange on April 7, was an exceptionally good one. Patrons were in attendance from Tecumseh, Rome, Sugar-town, Hudson Center, Fruit Ridge, Madison, Raisin, Vicksburg and Palmyra Granges. The afternoon session was an open one and those farmers who took advantage of this fact heard some good papers and discussions.

"How to Use Phosphate" was the subject of a paper by C. P. Hall, which focussed attention upon the important part which fertilizers in general must assume in maintaining soil fertility and bringing about that increase in production which the consuming world is just now demanding. The discussion brought out the fact that there are practically only three things to buy in buying fertilizer—nitrogen, phosphoric acid and potash—and a fertilizer that contains a high percentage of these ingredients with as little filler as possible, is the cheaper one to buy. It was claimed that South Carolina rock treated with acid is not a very good phosphate to use on our soils, although this same rock, by being purchased in the fall and scattered through the manure during the winter, will become soluble by the action of the acids in the manure and become a very valuable product to apply to the soil. It was stated that about the best phosphate one can use for all grain crops is made from bone and blood, having from one to two

per cent nitrogen, eight to ten per cent phosphoric acid and two to four per cent potash, using about 200 lbs. per acre. Several told of the good results following the use of phosphate.

"Would reforms come about more quickly if women were allowed all the political privileges that men now enjoy?" was the somewhat lengthy title of a well-written paper presented by Mrs. Rose Helme. After picturing present political conditions, she declared that the effect of giving woman the ballot would be that she would begin to ask questions and demand answers; she would insist on getting a peek at the inside workings of politics and the light would be turned on. She held that man views politics largely from a commercial or business standpoint. Woman, being a creature of the home and the heart and the school, views it more from the human standpoint. The reforms that would engage her attention would be the ones from which she could get results in her home, in her family, in the school and in society, which are the sort of reforms that really count. Woman is by nature reformatory and aggressive and progressive. It is the most natural thing in the world for her to want to help in some way, help to bring comfort to the unfortunate, and help improve conditions to Ida Tarbell, Jane Addams and others who are carrying on some reforms for the betterment of humanity, as well as referring to Australia and New Zealand where equal suffrage has had chance to develop its strong points and to show results. She declared that it is to the men of the Grange and to their wives (but mostly to the men, because they hold the ballot) that we must look to bring about this particular reform. The Grange stands for equal suffrage in practice as well as in theory.

The next paper, presented by Geo. A. Smith, dealt with the great tax reform movement which is now stirring England. In reciting the progress of this movement Mr. Smith stated that 750 landlords own two-thirds of all the land in England although the country's population aggregates 42,000,000. Something like 40,000,000 of her people are tenants, and yet her system of taxation is such that these have for years borne the major part of the burden. In the new tax budget introduced by Lloyd George was included a tax on land values, that is, a tax on land exclusive of all improvements, by placing an annual rate of one-fifth of one per cent on its capitalized land value and 20 per cent on its future increase. The House of Lords rejected this budget last November, parliament was dissolved and a new election took place in which the Lloyd George budget was sustained by the people.

Mr. Smith held that this taxation fight is of peculiar interest to our own country for the reason that, under our present system we, too, will soon be a nation of landlords and tenants. Our government has natural resources on sale now at \$10 per acre whose capitalized land value is estimated at \$25,000 an acre, and under the Lloyd George budget would yield a tax of \$50 an acre per year.

Before closing, the Grange discussed and unanimously adopted resolutions declaring that "while contract labor in state penal institutions is deemed justifiable and advisable, and while we favor a policy of contract labor at all our prisons and reformatory institutions, we condemn as unjust and unfair the employment of prisoners in the lines of agricultural production so long as so-called free labor is to be favored by the abolition of the contract system, insofar as it comes in competition with the products of common manufacture and labor."

NEW GRANGES FOR FIRST QUARTER OF 1910.

The number of Granges organized and reorganized from Jan. 1 to March 31, 1910, both inclusive, is reported by National Secretary Freeman, as follows:

Organized.

Colorado	7	Missouri	5
Idaho	4	New Hampshire. 1	
Illinois	1	New Jersey 1	
Indiana	2	New York	14
Iowa	9	Ohio	10
Kansas	7	Oregon	8
Kentucky	1	Pennsylvania 19	
Maine	3	South Dakota ... 2	
Maryland	8	Vermont	6
Massachusetts .. 3		Washington	50
Michigan	17	Wisconsin	1
Minnesota	3	Total	184

Re-Organized.

Colorado	1	Ohio	4
Kentucky	1	Pennsylvania 3	
Maine	1	Washington 1	
Massachusetts .. 1		W. Virginia 1	
Michigan	1		
New York	1	Total 15	15

Plainfield Loses a Faithful Patron.—Bro. Will E. Sharp, corresponding secretary of Plainfield Grange, of Livingston Co., sends notice of the death of Bro. William Elbert Smith, one of Plainfield's first and most faithful members. Bro. Smith was born Aug. 20, 1863, and died April 1, 1910. He was a charter member of Plainfield Grange, and as a tribute to his devotion to the order his Grange last year sent The Farmer a group photo of Bro. Smith and his son and daughter, a reproduction of which appeared in this department Sept. 4, 1909. His fellow Patrons will long cite his record for faithfulness as a worthy example, he having missed but one Grange meeting in seven years.

COMING EVENTS.

Pomona Meetings.

Oceana Co., with Weare Grange, Saturday, April 23.
Gratiot Co., with Star Grange, Saturday, May 21. L. W. Oviatt, state speaker.
Benzie Co., with Thompsonville Grange, Tuesday and Wednesday, May 31 and June 1.
Western (Ottawa Co.) with Conklin Grange, Saturday, June 11.

MARKETS

DETROIT WHOLESALE MARKETS.

April 20, 1910.

Grains and Seeds.

Wheat.—The past week has been altogether a bear week in the wheat trade, and in the grain markets in general. The continued long drought that extended over the entire country was the basis upon which the bulls had founded their support, but when the rains came in such quantities as to leave no doubt that the plants were getting enough water not only for the present, but for some weeks to come as well, the bottom fell and let prices down to a different level, as will be seen from the figures for the week given below. The flour situation is also bad from the standpoint of the bulls, as manufacturers were, during the late winter, pushing the flour sales until the dealers were filled up with orders, and now there is no demand for the manufactured article and millers are selling their wheat instead of grinding it. From Liverpool there was news of strength but it proved of little importance here. One year ago the price for No. 2 red wheat was \$1.39 per bu. Quotations for the past week are:

	No. 1	White.	May.	July.
Thursday	1.10	1.10	1.10 1/4	1.04 1/4
Friday	1.09	1.09	1.09 1/4	1.04 1/4
Saturday	1.08	1.08	1.08 1/4	1.03 1/4
Monday	1.06	1.06	1.06 1/4	1.02 1/4
Tuesday	1.06	1.06	1.06 1/4	1.01 3/4
Wednesday	1.06	1.06	1.06 1/4	1.01 3/4

Corn.—The weakening of the wheat deal has taken the stiffening out of this trade and values are lowered from the standard of a week ago. The rains improved the grass situation which takes the place of corn to a limited extent in the feeding operations on farms. Early advantages in spring work which were made possible by the weather conditions, have also encouraged the bears to think that a better chance exists for a good crop this fall. Present rains are sure to fill the ground with moisture and, if the conditions later are favorable, the new crop cannot help being in a better position for growing than without the rains. One year ago the price for No. 3 corn was 72c per bu. Quotations for the week are:

	No. 2	Yellow.
Thursday	59 1/2	60 1/2
Friday	59 1/2	60 1/2
Saturday	59 1/2	60 1/2
Monday	59	60
Tuesday	58 1/2	59 1/2
Wednesday	58	59

Oats.—Early seeding gives farmers hope of a good crop and the improved pasture brought along by the present rains is enabling many to stint in the way of feeding oats where a full ration was necessary without the grass. The influence of wheat and corn was also a bearish feature of the deal. The market is quiet with no material change in the visible supply. One year ago the price for No. 3 oats was 57 1/2c per bu. Quotations for the week are:

	Standard.
Thursday	45
Friday	45
Saturday	44 1/4
Monday	44 1/4
Tuesday	44
Wednesday	44

Beans.—Although the time for securing beans for planting purposes is drawing nigh the price for cash beans as given out by the local board is declining. No trading is being done here. Nominal quotations for the week are:

	Cash.	May.
Thursday	\$2.05	\$2.08
Friday	2.05	2.05
Saturday	2.05	2.05
Monday	2.05	2.05
Tuesday	2.03	2.05
Wednesday	2.06	2.05

Cloverseed.—There is a fair demand for cash seed and the market is active. The quotations for the week are comparable with those of the previous period. October seed is steady and alsike is unchanged for the past few weeks. Quotations for the past week are:

	Prime.	Spot.	Oct.	Alsike.
Thursday	\$7.00	\$6.50	\$7.00	
Friday	7.00	6.50	7.00	
Saturday	7.00	6.50	7.00	
Monday	7.00	6.50	7.00	
Tuesday	7.00	6.50	7.00	
Wednesday	7.00	6.50	7.00	

Rye.—Grain scarce and firm. The new crop is looking well, the national report giving the condition as 92.3 as compared with a ten-year average of 89.5. No. 1 is quoted at 80c per bu., which is 1/2c above last week's quotation.

Visible Supply of Grain.

	This week.	Last week.
Wheat	29,495,000	29,211,000
Corn	12,774,000	13,444,000
Oats	9,973,000	10,048,000
Rye	595,000	607,000
Barley	3,236,000	3,079,000

Flour, Feed, Provisions, Etc.

Flour.—Flour market 15@20c lower than last week and slow. Quotations as follows:

Clear	\$5.55
Straight	5.65
Patent Michigan	5.95
Ordinary Patent	5.75

Hay and Straw.—Prices are generally lower. Quotations are: No. 1 timothy, new, \$17@17.50; No. 2 timothy, \$16@16.50; clover, mixed, \$16@16.50; rye straw, \$7.50@8; wheat and oat straw, \$6.50@7 per ton.

Feed.—Prices have declined since last week. Carlot prices on track: Bran, \$26 per ton; coarse middlings, \$27; fine middlings, \$29; cracked corn, \$25; coarse corn meal, \$25; corn and oat chop, \$24 per ton.

Potatoes.—Market dull at unchanged prices. Easy demand and offerings numerous. Michigan grown are selling in car lots at 25@30c per bu.

Provisions.—Family pork, \$27@28; mess pork, \$26; medium clear, \$26@28; pure

lard, 14 1/2c; bacon, 19@20c; shoulders 14 1/2c; smoked hams, 17 1/2c; picnic hams, 14c per lb.

Hides.—No. 1 cured, 11c; No. 2 cured, 10c; No. 1 green, 8c; No. 1 green calf, 14c; No. 2 green calf, 13c; No. 1 cured calf, 15c; No. 2 cured calf, 14c; No. 1 horsehides, \$3.50; No. 2 horsehides, \$2.50; sheepskins, as to wool, 50c@52.

Dairy and Poultry Products.

Butter.—There has been a lack of high class butter and dealers predicted that advances would be made before the flush of the early summer supply came. This week the Elgin board of trade advanced the quotation one cent and as a result most of the markets of the country advanced accordingly. This market shows a similar change. Extra creamery is quoted at 32c per lb; first do., 31c; dairy butter, 21c; packing stock, 20c.

Eggs.—Packers have not been active buyers of eggs the past week, which enabled the dealers to keep up pretty well with the demand. With other food stuffs coming at such unusually high prices as prevail this spring, eggs are a popular product for substitution and as the result of this extra demand the values are keeping up better than former years. The price is, however, off a half cent from the quotation of last week and is now given as 20 1/2c per dozen for fresh receipts, cases included.

Poultry.—All grades are steady and firm except chickens; they are not plentiful but the inquiry for them is constant and dealers are hardly able to meet the requirements. Quotations as follows: Live. —Spring chickens, 18c; hens, 19@20c; old roosters and stags, 12@13c; ducks, 16@17c; geese, 13@14c; turkeys, 17@18c.

Cheese.—Michigan, late made, 15@15 1/2c; Michigan, fall made, 16 1/2@17c; York state, 18 1/2c; limburger, Wisconsin, 18c, New York, 19c; bricks, 18 1/2@19c; Swiss, domestic block, 20c; Swiss loaf, 21@23c.

Calves.—Lower. Choice to fancy, 11@11 1/2c; ordinary, 9 1/2@10c.

Fruits and Vegetables.

Apples.—Market active and unchanged. Spy, \$4@4.50; Baldwin, \$3.50@4; Steel red, \$5; Greening, \$4@4.50 per bbl.

Onion Sets.—Tops, 75c@1; white, \$1.75@2; yellow, \$1@1.25 per bu.

Onions.—Domestic, 80@85c per bu; Spanish, \$1.90 per crate.

Cabbage.—Higher. \$2.25@2.50 per bbl. **Vegetables.**—Beets, 60c per bu; brussels sprouts, 25c per qt; carrots, 50c per bu; cauliflower, \$2.25@2.50 per bu; celery, 45@50c per doz; eggplant, \$2@2.50 doz; green onions, 10@12c per doz; lettuce, hot-house, \$1.50@1.75 per doz; mint, 25c per doz; parsley, 25@30c per doz; radishes, 25@30c doz; spinach, 90c hamper; turnips, 50c per bu; watercress, 40c per doz; wax beans, \$4.50 per bu; pieplant, 35c per doz.

OTHER MARKETS.

Grand Rapids.

Wheat is 4c lower, the mills paying \$1.03 this week. Other grains are steady, as follows: Corn, 59c; oats, 44c; rye, 70c. The bean market is very quiet, white pea quotations on a \$1.75 basis and red kidneys at \$2.60. The live poultry market is firm, with fowls, chickens and ducks at 16c, an advance of 1c. Turkeys are quoted at 16c; geese, 8@10c. Dressed hogs are about 1c lower than last week, farmers getting 11c now. Dairy butter is steady at 25c, creamery 1c higher, bringing the price paid producers to 32c. The city produce market has opened and the gardeners are getting the following prices for green stuff: Onions, 10c doz; home-grown asparagus, 90c doz; water cress, 20c doz; vegetable oysters, 20c; pieplant, 75c bu; spinach, 50c bu; lettuce, 7c lb; radishes, 20c doz; parsley, 10c per dozen bunches; parsnips, 25c bu. Farmers are getting \$14@15 per ton for hay. Clover and timothy seed are unchanged.

Chicago.

Wheat.—No. 2 red, \$1.08@1.10; May, \$1.06 1/2; July, \$1.00 1/2.
Corn.—No. 3, 55@55 1/2c; May, 57 1/2c; July, 60 1/2c.
Oats.—No. 3 white, 41 1/2@42 1/2c; May, 41 1/2c; July, 39 1/2c.

Butter.—Market ruling steady for creameries despite the advance at Elgin, while dairy goods are lower. Quotations are: Creameries, 26@31c; dairies, 22@25c.

Eggs.—Practically last week's basis is being maintained. Receipts are heavy but storage men are in the market for supplies. Prime firsts, 21c; firsts, 20c; at mark, cases included, 17 1/2@19 1/2c per doz.

Hay and Straw.—Market is weak. Quotations are: Choice timothy, \$17@18; No. 1 timothy, \$15.50@16.50; No. 2 do and No. 1 mixed, \$14@15; No. 3 do and No. 2 mixed, \$9@13; rye straw, \$8@9; oat straw, \$6@7; wheat straw, \$6@6.50.

Potatoes.—The heavy receipts of old potatoes and the increased offerings of new has depressed prices. Fancy and choice stocks are selling at 23@25c per bu., while fair to good grades are quotable at 20@22c per bu.

Beans.—Market is quiet and steady. Choice hand-picked are quoted at \$2.13@2.14; fair to good, \$2.10; red kidneys, \$2.75@3.10 per bu.

Wool.—Prices are holding steady with former quotations. The attitude of the eastern houses does not influence buyers here. For fine unwashed delaine, 25@27c is being paid.

New York.

Butter.—High grades of creamery hard to get. Quotations higher. Western factory firsts, 22@23c; creamery specials, 35c per lb.

Eggs.—Heavy receipts of eggs have given the market a little easier tone. There is not a great deal of activity in storage circles. Fresh receipts quoted at 23 1/2@25c per doz.

Poultry.—Live, firm. Fowls, 22c per lb. Dressed chickens higher, turkeys steady. Prices on a par with those of a week ago. Western fowls, 15@19c; turkeys, 17@23c.

Boston.

Wool.—Sheepmen have been encouraged in their stand for higher values by the action of the market here, when, after an attempt to put prices down, the manufacturers came around immediately

and wanted the wool in store at the reduced values. This action stiffened values, although the situation may not be said to be as strong as it was when the attention of the brokers and manufacturers was less given to the west where the wool is being clipped. The holders of old stock are now setting their prices slightly above the bids of the manufacturers and holding for the difference. A fairly large movement of Ohio and Michigan quarter blood fleeces was reported the past week, the former going at 30c and the latter at 29c per lb. It is expected that a revival of business will clean up last season's clip which will clear the road for the present offerings from farmers.

Elgin.

Butter.—Market firm at 32c per lb., which is an advance of 1c over the quotation of a week ago. The sales for the week amounted to 519,400 lbs., compared with 479,300 for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

April 18, 1910.

(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of sale stock here today as follows: Cattle, 165 cars; hogs, 12,000; sheep and lambs, 20,000; calves, 2,300.

Receipts of cattle on this market today 165 cars, and with 26,000 reported in Chicago; our market opened dull and slow, and 25c per hundred weight lower on all the good cattle of 1,200 lbs. and up; all other grades were fairly active, and sold from barely steady with last week to 10 to 15c per hundred weight lower; in fact, we think all the good bulls and the good fat cows sold steady at last week's prices. Market closed steady with everything sold early.

We quote: Best 1,300 to 1,450-lb. steers, \$7.75@8.50; good 1,200 to 1,350-lb. do., \$7.25@7.75; best 1,100 to 1,200-lb. shipping steers, \$7@7.50; medium butcher steers, 1,000 to 1,100 lbs., \$6.50@7; light butcher steers, \$5.75@6.25; best fat cows, \$5.25@6.25; fair to good cows, \$4.50@5; common to medium do., \$3.25@4.25; best fat heifers, \$6.50@7.25; good fat heifers, \$5.75@6.25; fair to good do., \$5@5.75; best feeding steers, \$5.75@6.25; medium to good do., \$5.25@5.75; stockers, all grades, \$4.50@5.50; best bulls, \$5.75@6.50; bologna bulls, \$4.50@5.25; best milkers and springers, \$5.50@6.50; common to good do., \$2.50@4.50.

With 33,000 hogs in Chicago today, and 75 double decks here, our market opened from 30@35c per hundred lower than Saturday's best time, and closed about steady with the opening, with a fair clearance. Chicago quoting hogs today at \$9.60 made our packers very bearish; it also makes the prospects look lower here.

We quote prices as follows: Mixed, medium and heavy, \$9.90@10; yorkers, \$9.90@10; pigs, \$9.90@10; roughs, \$8.90@9; stags, as to quality, \$7.75@8; few choice, \$8.25.

The lamb market opened up slow, with best handy wool lambs selling from \$10.25@10.35, and best clipped lambs \$9.35@9.40. The market closed firm on handy lambs, and dull on heavy ones, with three loads of wool lambs and five loads of clipped lambs holding over. Look for steady prices balance of week, unless we get an oversupply. Sheep were in strong demand.

We quote: Best wool lambs, \$10.25@10.35; handy clipped lambs, \$9.35@9.40; heavy do., \$9@9.15; clipped wethers, \$7.75@8; clipped ewes, \$6.75@7; clipped yearlings, \$8@8.50; clipped cull sheep, \$3@5; veals, choice to extra, \$9.25@9.50; fair to good, \$8.25@9; cull to common, \$7@8; light thin calves, \$5@6.

Chicago.

April 18, 1910.

Cattle. Hogs. Sheep.
Received today 26,000 38,000 12,000
Same day last year..... 21,665 21,552 19,978
Received last week 49,068 88,779 60,541
Same week last year..... 42,143 117,538 62,781

A new week opened today, and one of the most sensational hog markets ever experienced was witnessed, prices taking a tumble of 40@50c or more. There was an early sale to a speculator at \$9.65, but buyers refused to pay anywhere near that price, and after a quick fall to \$9.50 there were further breaks until choice droves were being taken around \$9.25@9.35.

Buyers refused to touch any but choice lots, and there was every indication that as many as 10,000 hogs would be carried over at the close. On the preceding Saturday hogs sold at \$9.60@10, and on Monday a week ago sales were made at \$10.15@10.60. It was difficult to quote common hogs, but they would naturally be quotable not much above \$9.15. Hogs received last week averaged 229 lbs., compared with 226 lbs. a week earlier, 220 lbs. two weeks ago, 209 lbs. the first week of February, 211 lbs. a year ago, 222 lbs. two years ago and 235 lbs. three years ago. Cattle had a good outlet at steady to 10c lower prices, there being a large supply. Sheep and lambs were active and firm to 10c higher, woolled lambs being salable at \$7.50@10.20 and shorn at \$8.50@9.80. Shorn wethers sold at \$7@8.35 and ewes at \$7@7.75. These prices followed advances of 10@15c in sheep and lambs last week.

Cattle were in extremely small supply week before last, and although the requirements of the beef trade were no larger, prices advanced enough to bring the receipts last week up to normal proportions. The depleted stocks of beef in coolers compelled killers to enter the market and buy cattle, and Monday receipts of 26,000 head enabled them to stock up at a decline of 15@25c. On subsequent days the arrivals were so much smaller that the tide turned, and prices moved up 10@15c, with a good general demand. Beef steers sold at \$5.60@6.85 for inferior to fair light-weight killers; \$7@7.50 for medium grade lots; \$7.60@8 for good lots and \$8.10@8.65 for choice to extra lots. The unusually early appearance of warm weather impelled stockmen to hurry their heavy cattle to market, and there was

an unusually large showing of choice, fat steers of strong weights. On the whole, they sold very well, but buyers were turning more to the fat cattle of lighter weights. Comparatively moderate offerings of butcher stock met with a lively demand at extremely high prices, cows and heifers finding purchasers at \$4.65@8, with sales of canners and cutters at \$2.50@4.60, while bulls were active at \$3.75@6.65. Calves had quite a slump in prices under extremely large offerings, 7,569 head arriving on Tuesday, "calf day." They sold all the way from \$3@8.25 per 100 lbs. Stockers and feeders were in limited supply and in only moderate country demand at steady prices, stock steers selling at \$4@6 and feeders at \$5.50@6.60 for common to prime lots. Milkers and springers were in light supply and in fair demand at \$30@65 per head, eastern buyers wanting only the better class of cows. South Dakota furnished a consignment of 14 fancy 1,607-lb. Hereford beef steers on Monday that topped the market at \$8.65.

Hogs took a downward course last week that was a complete surprise to many people who had taken the ground that the great shortage would send prices higher than ever. Consumption of fresh and cured hog products had been curtailed so much by their dearthness, however, that killers refused to operate except on a much lower basis. As values declined buyers purchased more freely and after the great drop to a point where packers were able to buy hogs freely below \$10 for the first time in about six weeks there was a ready outlet, but buyers were wondering whether stockmen would continue good sellers at the prevailing figures. The receipts were remarkably good in quality, the offerings being nearly all barrows, and it was easily seen that the splendid weather had resulted in the hogs growing unusually rapidly in recent weeks. Provisions shared fully in the breaks in hog prices, and packers were free sellers on the Chicago board of trade, sensational declines in pork and lard taking place. An important weakening factor was the great average increase in the weights of the hogs compared with a short time ago and with recent years. Light weights and pigs had an advantage, as shippers wanted light hogs, and 195-lb. hogs were apt to top the market.

Sheep and lambs performed several lightning changes in prices last week, advancing sharply and declining just as sharply, the market being largely influenced by the market reports from Buffalo and other eastern points. Sheep formed a small share of the daily supplies, and on some days practically all of the choice fat sheep were shorn Ohio fed westerns. Light lambs were greatly favored by buyers, lots weighing under 90 lbs. being much preferred, and offerings that averaged 100 lbs. or more were strongly discriminated against. Woolled muttons were scarce and not wanted, and Colorado clipped lambs made up the great bulk of the daily receipts, fat little Mexicans continuing to top the market. Spring lambs were very scarce and dear, a few head selling at \$15. Despite any declines in prices for sheep and lambs that take place from time to time, sales continue to be made very much higher than in former years and sheepmen have been reaping unexpectedly large profits.

Horses have continued to sell extremely well, especially those of superior quality, with an excellent general local and shipping inquiry and receipts most of the time running well behind those of a year ago in volume. Sales of fancy drafters are brisk at \$270@375 per head when any are offered, but such animals are usually hard to find. The general run of draft horses go at \$175@250, while expressers and feeders are having a good outlet at \$165@220. Plain, light, second-hand city horses and work-worn farm mares are just now slow sellers at \$75@150, but fresh, sound animals are sold without any difficulty, and there is a fairly large trade in drivers at \$150@300. Horses will average at least \$10@15 per head higher than a year ago, and high prices seem assured for a long time, as there is no oversupply in breeding districts of the country. Wagon horses are having a good sale at \$150@200.

LIVE STOCK NOTES.

Nearly 7,600 calves were unloaded on the Chicago market on a recent Tuesday, which is known at the stock yards of that city as "calf day." Every spring sees great numbers of these "bawlers" shipped in from the dairy districts of Wisconsin, Illinois and other states. These big supplies have caused a lowering of prices, despite the good demand for vealers and stockers, and at times the market has experienced a drop of from \$1 to \$1.25 per 100 lbs. in the course of a single day. Good fat veal calves have been in good demand by slaughterers, while there has been a good outlet to the country for desirable stock calves.

Forty-seven head of Shorthorn cattle sold for a total of \$23,420, or an average of \$500 per head, at the recent sale at Waukesha, Wis. Buyers were present from New York, Virginia, Ohio, Illinois, Iowa, Nebraska, Colorado, Wisconsin, Minnesota, South Dakota and Manitoba, evidencing a widely extended demand for good breeding cattle. The best bulls were purchased at \$1,025 to \$1,125 for shipment to Iowa and Virginia, while the best females were taken at \$1,025 to \$1,350 for shipment to Manitoba and Illinois.

A splendid car load of draft horses from Kansas was sold on the Chicago market in recent day, not a single animal in the consignment weighing less than 1,800 lbs., while a few of the horses tipped the scales at 2,000 lbs. The twenty head were purchased on a special order at \$6,000, and were forwarded to a large dealer at Detroit, Michigan. They comprised the best average single load that has been sold on the Chicago market thus far this year.

Chicago slaughterers have been giving woolled lambs a cool reception for some time, and most of the supplies have consisted of clipped stock.

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.

April 21, 1910.

Cattle.

Receipts, 1,378. Cow stuff, bulls and medium butchers 15@25c higher; all other grades steady.

We quote: Extra dry-fed steers and heifers, \$7.25@8; steers and heifers, 1,000 to 1,200, \$6.75@7.15; steers and heifers, 800 to 1,000, \$6@6.50; grass steers and heifers that are fat, 800 to 1,000, \$5.50@6; steers and heifers that are fat, 500 to 700, \$4.50@5.50; choice fat cows, \$5.50@6; good fat cows, \$5; common cows, \$3.75@4.25; canners, \$3@3.50; choice heavy bulls, \$5.75@6.50; fair to good bolognas, bulls, \$5@5.50; stock bulls, \$3.75@4.50; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Roe Com. Co. sold Mich. B. Co. 10 butchers av \$65 at \$5.25, 1 bull weighing 1,250 at \$6, 1 cow weighing 610 at \$3; to Graves 1 bull weighing 1,450 at \$6.50; to Sullivan P. Co. 4 cows av \$67 at \$5, 2 do av \$60 at \$3.50, 2 do av 1,340 at \$6, 3 do av \$73 at \$4.50, 2 do av \$40 at \$4, 1 heifer weighing 400 at \$5, 6 steers av \$71 at \$6.85; to Newton B. Co. 10 do av \$75 at \$6.40, 18 do av \$68 at \$6, 4 do av \$50 at \$5; to Hammond, S. & Co. 29 do av \$71 at \$6.75; to Schlicher 15 butchers av \$75 at \$6.35; to Sullivan P. Co. 20 steers av 1,017 at \$7.25, 2 do av \$80 at \$6.50, 1 bull weighing 1,260 at \$6.50; to Newton B. Co. 1 cow weighing 1,000 at \$3.50, 7 heifers av \$71 at \$6.50, 4 steers av \$55 at \$6.85, 12 do av \$11 at \$6.35; to Hammond, S. & Co. 1 cow weighing 950 at \$5, 4 do av \$47 at \$4.

Bishop, B. & H. sold Bresnahan 3 cows av 1,010 at \$4.75, 1 canner weighing 670 at \$3.25; to Sullivan P. Co. 1 cow weighing 1,000 at \$4.75, 3 steers av \$80 at \$6, 18 do av \$89 at \$7, 18 do av \$96 at \$7.25, 5 do av 1,050 at \$5.50, 18 do av \$93 at \$7.25, 2 bulls av 1,040 at \$5.25, 1 do weighing 1,000 at \$4.50, 1 do weighing 1,180 at \$5.50, 6 butchers av \$75 at \$5.75, 5 do av 1,016 at \$6, 1 bull weighing 1,180 at \$5.50, 3 do av 1,223 at \$5.25, 2 steers av \$70 at \$6.25, 18 do av 1,095 at \$7.25, 19 do av 1,046 at \$7.10, 1 bull weighing 950 at \$4.75, 1 do weighing 1,500 at \$5.75, 9 butchers av \$64 at \$6.25, 13 do av \$11 at \$7.10, 1 bull weighing 1,600 at \$5.50; to Newton B. Co. 4 steers av \$55 at \$6.85, 12 do av \$11 at \$6.85, 1 cow weighing 880 at \$3.50, 4 steers av \$92 at \$5.75, 2 do av \$90 at \$5, 13 do av \$71 at \$6.50, 2 cows av 1,065 at \$5, 7 steers av \$57 at \$6.75, 2 do av \$60 at \$5.50, 1 cow weighing 630 at \$3.50.

Spicer & R. sold Sullivan P. Co. 2 bulls av 1,065 at \$5.35, 1 do weighing 1,520 at \$5.50, 3 cows av \$70 at \$5.50, 1 do weighing 1,030 at \$4.50; to Thompson Bros. 10 butchers av 1,005 at \$5.25, 2 do av \$50 at \$4, 3 do av \$60 at \$6, 3 cows av \$40 at \$3.25; to Breitenback Bros. 14 steers av 782 at \$6.50; to Bresnahan 7 do av \$43 at \$5.50; to Graves 1 bull weighing 1,700 at \$6; to Hammond, S. & Co. 17 steers av \$85 at \$6.90; to Sullivan P. Co. 22 do av \$80 at \$7.10, 19 do av \$46 at \$6.60; 1 cow weighing 900 at \$5.50; to Newton B. Co. 18 steers av \$86 at \$6.90; to Kamman B. Co. 19 do av 1,025 at \$7.15; to Hammond, S. & Co. 18 do av \$55 at \$6.75, 19 do av \$78 at \$6.70, 1 bull weighing 1,220 at \$5.50, 1 bull weighing 1,320 at \$5.50, 1 cow weighing 1,050 at \$4, 1 do weighing 1,100 at \$5.50; to Farmer 3 stockers av \$93 at \$5.

Haley & M. sold Mich. B. Co. 1 cow weighing 1,300 at \$4.75, 4 do av 1,085 at \$5.25; to Bresnahan 3 heifers av \$77 at \$6.10; to Hammond, S. & Co. 1 cow weighing \$90 at \$3.65, 1 do weighing 1,080 at \$5.75, 1 do weighing 1,080 at \$4.25, 2 bulls av \$50 at \$5.25, 21 butchers av \$90 at \$7.05; to Newton B. Co. 14 do av \$72 at \$6.50; to Kamman 7 do av \$74 at \$5.10; to Sullivan P. Co. 1 bull weighing 1,200 at \$5.75; to Fromm 2 steers av \$75 at \$5.25; to Breitenback Bros. 5 steers av \$74 at \$6.

Weeks sold Michigan B. Co. 14 butchers av \$82 at \$6.25, 3 cows av \$70 at \$4.50. Sharp sold same 2 bulls av 1,360 at \$5.50, 1 do weighing 950 at \$5.25.

Weeks sold Thompson Bros. 7 steers av \$80 at \$6.75, 7 do av \$44 at \$6.15, 1 cow weighing 820 at \$3.50. Johnson sold same 4 cows av 10,50 at \$5.40.

Weeks sold Graves 4 cows and bulls av 1,095 at \$5.40. Sharp sold Sullivan P. Co. 7 steers av \$21 at \$6.50, 5 do av 1,000 at \$5.75, 3 cows av \$23 at \$4.

Johnson sold same 12 steers av 746 at \$6.

Wilson sold same 6 steers av 1,160 at \$6, 4 do av \$50 at \$6.50, 3 bulls av 1,250 at \$5.50, 1 cow weighing \$70 at \$4, 2 do av \$80 at \$5, 7 butchers av \$60 at \$5.50.

Sharp sold same 18 steers av \$50 at \$6.75, 2 do av 1,135 at \$6.75, 6 do av \$46 at \$5.90.

Veal Calves.

Receipts, 1,147. Market 25@50c higher than last week. Best, \$8@8.50; others, \$4@7.50; milch cows and springers steady.

Spicer & R. sold Mich. B. Co. 5 av 125 at \$8.10; to Nagle P. Co. 8 av 115 at \$8; to Newton B. Co. 4 av 145 at \$8.50.

Haley & M. sold Mich. B. Co. 20 av 125 at \$7.75; to Sullivan P. Co. 21 av 130 at \$7.50; to Mich. B. Co. 9 av 150 at \$7.85; to Goose 19 av 120 at \$7.25; to Hammond, S. & Co. 6 av 125 at \$8, 8 av 95 at \$8, 32 av 125 at \$7.50; to Breitenback Bros. 9 av 170 at \$5; to Nowhiser 10 av 124 at \$7.50; to Nagle P. Co. 42 av 140 at \$8.40; to Sullivan P. Co. 5 av 135 at \$8.25.

Roe Com. Co. sold Mich. B. Co. 44 av

130 at \$8.10; to Barlage 2 av 250 at \$5, 13 av 105 at \$6.50, 4 av 155 at \$8.50.

Waterman sold Thompson 14 av 130 at \$8.

Jedele sold Newton B. Co. 3 av 140 at \$8.50.

Bishop, B. & H. sold Strauss & A. 12 av 130 at \$8.25; to Sullivan P. Co. 2 av 130 at \$8.25, 3 av 125 at \$7.50; to Parker, W. & Co. 26 av 120 at \$7.75, 25 av 130 at \$8.25, 20 av 135 at \$8.50; to Newton B. Co. 31 av 128 at \$8; to Strauss & A. 2 av 140 at \$8.50, 9 av 135 at \$8.25, 4 av 100 at \$6, 2 av 145 at \$8.50, 1 weighing 150 at \$8.50, 4 av 140 at \$8.25, 1 weighing 120 at \$6, 17 av 135 at \$8.25, 3 av 100 at \$6, 11 av 140 at \$8.50.

Cheney & H. sold Sullivan P. Co. 12 av 130 at \$8.35.

Fenton sold Burnstine 9 av 145 at \$8.

Truce sold Marx 1 weighing 100 at \$7.50, 3 av 160 at \$8.50.

Sheep and Lambs.

Receipts, 3,697. Market steady at last week's prices. Quotations are for clipped stock. No wools on sale.

Best lambs, \$8.50; fair to good lambs, \$7.50@8; light to common lambs, \$5.50@6.50; spring lambs, \$12; fair to good sheep \$6@6.50; culs and common, \$2.50@4.50.

Bishop, B. & H. sold Sullivan P. Co. 28 lambs av 75 at \$8.65, 55 do av 76 at \$8.35, 17 sheep av \$5 at \$6; to Breitenback Bros. 29 lambs av 72 at \$8.50, 16 do av 60 at \$8.40; to Sullivan P. Co. 21 sheep av 90 at \$7.25, 27 do av 65 at \$6; to Nagle P. Co. 466 lambs av 73 at \$8.50; to Eschrich 10 sheep av 52 at \$6.50; to Fitzpatrick Bros. 4 do av 95 at \$6, 19 do av 75 at \$5, 6 do av 105 at \$5.75, 9 lambs av 65 at \$8.25, 9 spring lambs, av 50 at \$12; to Thompson 10 sheep av 100 at \$6; to Sullivan P. Co. 50 lambs av 58 at \$8.25.

Spicer & R. sold Sullivan P. Co. 46 lambs av 75 at \$7.60.

Haley & M. sold Mich. B. Co. 57 lambs av 75 at \$7.85, 18 sheep av 80 at \$5; to Eschrich 19 do av 60 at \$5; to Sullivan P. Co. 48 lambs av 80 at \$8.50.

Sharp sold Sullivan P. Co. 20 sheep av 75 at \$6.50, 6 do av 95 at \$5.

Wickman sold Thompson 13 sheep av 72 at \$5, 34 lambs av 67 at \$8.25.

Same sold Mich. B. Co. 99 lambs av 70 at \$8.50.

Roe Com. Co. sold Hammond, S. & Co. 29 sheep av 70 at \$6.75; to Nagle P. Co. 62 lambs av 70 at \$8.35; to Barlage 29 do av 65 at \$8, 16 sheep av 70 at \$5.

Hogs.

Receipts, 3,672. Market 70@75c lower than last Thursday. Good grades 5 cents higher than on Wednesday this week.

Range of prices: Light to good butchers, \$9.25; pigs, \$9; light yorkers, \$9.10@9.15; stags, 1/2 off.

Spicer & R. sold Sullivan P. Co. 143 av 190 at \$9.25, 220 av 170 at \$9.20, 125 av 160 at \$9.15.

Roe Com. Co. sold same 343 av 190 at \$9.20.

Bishop, B. & H. sold same 30 pigs av 115 at \$9.10.

Haley & M. sold Hammond, S. & Co. 133 av 190 at \$9.25, 340 av 175 at \$9.20, 130 av 150 at \$9.10.

Bishop, B. & H. sold Parker, W. & Co. 250 av 200 at \$9.30, 573 av 180 at \$9.25, 264 av 170 at \$9.20, 195 av 160 at \$9.10, 149 av 175 at \$9.15.

Friday's Market.

April 15, 1910.

Cattle.

Receipts, this week, 1,771. Market steady at Thursday's prices, run very light.

We quote: Extra dry-fed steers and heifers, \$7.25@7.50; steers and heifers, 1,000 to 1,200 lbs., \$6.75@7.25; steers and heifers, 800 to 1,000 lbs., \$5.75@6.50; steers and heifers that are fat, 500 to 700 lbs., \$5.25@5.75; choice fat cows, \$5.25@5.50; good fat cows, \$4.50@5; common cows, \$3.50@3.75; canners, \$3; choice heavy bulls, \$5.50; fair to good bologna bulls, \$4.50@5; stock bulls, \$4; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Veal Calves.

Receipts, 1,577. Market steady at last Thursday's prices. Best, \$7.75@8; others, \$4@7; milch cows and springers steady.

Receipts, 5,087. Market steady at last Thursday's prices; quality common.

Best lambs, \$8.25@8.50; fair to good lambs, \$7.50@8; light to common lambs, \$5.50@6; wool lambs, \$9.25@9.75; fair to good sheep, \$6@7; culs and common, \$2@4.

Hogs.

Receipts, 6,640. Market dull, 5@10c lower than Thursday's close.

Range of prices: Light to good butchers, \$9.90@9.95; pigs, \$9.75; light yorkers, \$9.80@9.85; stags, 1/2 off.

A recent reviewer of the feeding situation writes for a Chicago paper as follows: "Farm operations have been in full blast, comparatively little corn has been marketed at country stations, and pasture bids fair to develop easily a month to six weeks earlier than a year ago. This will save much feed to growing stock, although it will not tend to save any from hogs and cattle that are being fattened, as at the present basis of meat, feeders can realize all the way from \$1 to \$1.30 per bushel for their corn. There is the important feature, however, that there is a plentiful supply of corn, but a very small supply of live stock."

Stocks of meats in Chicago, Omaha, Kansas City, St. Joseph and Milwaukee April 1 aggregated 153,919,351 lbs., compared with 170,293,332 lbs. a month earlier and 330,254,941 lbs. a year ago. There was a decrease of 11,373,981 lbs. during March, while in March a year ago there was an increase of 5,580,536 lbs.

The unusually early appearance of warm weather this spring, an increasing supply of fresh vegetables in the city markets and big supplies of prime lower-priced eggs have been operating to the disadvantage of sellers of live stock in recent weeks. The March boom carried prices to abnormally high figures, and the reaction that followed was practically inevitable.

VETERINARY.

(Continued from page 455).

only were perhaps infected at birth. It is quite difficult to tell why sows should eat their own pigs; however, it is usually the result of fever, causing delirium and the sow not being conscious of what she is doing when she eats them.

Feeding Question.—Will oats make safe pasture for brood mares? I am told it might have the effect of producing abortion and if so I do not care to run the risk of losing our colts. A Reader, Sheridan, Mich.—Fresh young oat pasture is apt to purge live stock and when pregnant mares are purged much they are more likely to abort than if the bowels are costive or moderately so. All things considered, I advise you to feed your mares sparingly on such feed for fear of it producing too much bowel action.

Heifer Gives Bloody Milk.—My three-year-old heifer came fresh in February; she gave a nice flow of milk until one quarter of her bag became affected; since then she gives bloody milk. I have given her aconite and niter but it fails to help her. What can be done for a case of this kind? W. C. S., Bancroft, Mich.—Your heifer has perhaps injured her udder, which is generally the case when cows give bloody milk. If you can ascertain the cause and remove it then she will soon give milk free from blood; besides, careful milking has a good effect. Dissolve 1 oz. sugar of lead in 1 qt. of cold water and apply to injured quarter three times a day. If her udder hangs low don't allow her to step over fences, out of ditches or over high door sills.

Film on Eye.—A short time ago a film came on the eye ball of my nine-year-old horse which dims his eyesight somewhat. What can I do to remove it? T. D., Rushton, Mich.—Dissolve 20 grs. of alum in 4 ozs. of clean water and apply to eye twice a day and if this medicine does not clean the eye blow a small quantity of calomel into eye once daily.

Navicular Disease.—Contracted Foot.—I have a mare that our local Vet. thought had laminitis; she went lame last December and has continued to limp ever since. One fore foot is considerably contracted and feverish. The Vet. also thought there might be pus in foot. What had I better do for her? H. B. S., Lakeview, Mich.—Your mare suffers from coffin joint lameness and as a result the hoof has contracted. Blister coronet with cerate of cantharides once a week and stand her in wet clay one hour night and morning.

Diseased Udder.—What shall I do for a cow that has a diseased udder? One week after she came fresh she injured one teat and since then I applied an ointment which healed the wound, but what comes from the quarter has an offensive odor. Is milk of this kind proper food for a calf? I forgot to say that the milk is tinged with blood. A. W. B., Mt. Morris, Mich.—Milk of this kind is not wholesome food for calves; besides, the quicker you dry the diseased quarter and discontinue milking her the better, for it will eventually become worthless so far as secreting a good quality of milk is concerned. Apply camphorated oil three parts and tincture iodine one part, once a day, and give one ounce hypo-sulphite soda at a dose in feed night and morning.

Wounded Teat.—One of my cows cut her teat on a barbed wire, making a nasty wound, which I succeeded in healing. However, it has broken open and the milk comes from side of teat. How should a case of this kind be treated? S. W. D., Swartz Creek, Mich.—First of all you must insert a self-retaining milking tube and leave it in the teat until the wound heals. Of course, the tube should be taken out, cleaned and boiled for a few minutes or dipped in carbolic acid and water, one part to 30. The edges of the wound should be made raw, stitched closely together, and apply peroxide of hydrogen twice daily, and ten minutes later apply boric acid.

Chronic Garget.—I have a cow that had garget last year, and was inclined to believe she might be all right when she came fresh this year. However, she is worse than ever and I would like to know of a remedy. G. H. G., Pierson, Mich.—Your cow is wholly unfit for dairy purposes and should be dried and fatted. Feed her dry fodder that is not very nourishing and she will soon cease giving much milk. It is not necessary to drug her.

Ox has Indigestion.—I have an ox that does not seem to eat grain as well as he should, but eats roughage well. He is fond of grass and is growing thin. What I have done for him fails to do a bit of good. One of my other oxen seems to be going the same way. C. F., Bellaire, Mich.—It is possible that both of your oxen have tuberculosis and if they do not improve in condition soon, have them tested with tuberculin. They may only have stomach trouble and if so grass will be the best food for them. Give each ox one oz. ground gentian and one dr. ground nux vomica at a dose three times a day. Feed them some oil meal and vegetables.

Nervousness.—I would like some advice regarding a mare that seems to fret continually when working. She is unpleasant to work on drag or plow and although in foal she is equally as bad as she was before being bred. T. P. C., Genesee, Mich.—I know of no better plan than to put a nice smooth bar or snaffle bit in her mouth, treat her kindly, work her with a free horse that requires no urging, feed her well and work her long hours and every day. I have owned and driven hundreds of the kind you speak of and have never failed to tame them; however, it takes time and lots of patience to subdue them; but if you keep right on as I have suggested you will not fail to accomplish results that are satisfactory.

Liver Disease.—We are having trouble with our sheep and those that have died had liver disease. The sheep seem to eat up to a few hours before death. G. E. N., Bellaire, Mich.—Give each sick sheep a teaspoonful of phosphate of soda in hot water once a day as a drench.

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HORTICULTURE

SPRAYING THE PLUM TREES.

We are in receipt of many queries asking about the time the plum trees should be sprayed and the mixtures to be used.

There are a large list of troubles that attack plums. Chief among them are the plum rot, shot-hole fungus, black-knot and curculio. The treatment for these pests is usually sufficient to keep others in control. Certain localities and certain seasons when conditions are favorable for the rapid multiplication of some secondary species of fungus or insect, may require particular attention but in the main if the following directions are carefully executed the grower will be almost certain to protect his trees and fruit from damage.

The black-knot should be cut out as soon as discovered, and burned. Sometimes the trouble spreads very slowly while again it goes through a tree and neighboring trees very quickly, infecting the larger as well as the smaller branches and thereby threaten the whole tree because of the heroic methods required to cut it out. It is economy and prudence therefore, to remove black-knot immediately when it is found. Thorough spraying with Bordeaux mixture tends to keep the black-knot in check, but is only preventive and will do no good where the fungus has become established.

The curculio is fought by giving the orchard clean culture since the pest winters in the grass and rubbish, by giving hogs freedom to the lot when the fruits are falling that they may eat the windfalls and thereby destroy the young grubs and by spraying with Paris green or arsenate of lead.

The sprays required for the season's operations are copper sulphate, both the weak and strong solution, Bordeaux mixture and an arsenical spray. The methods of making these were described in issue of April 9, so repetition will not be made here. See page 411 of that number under the head, "Spraying Cherry Trees."

The first application should have been made before the buds open with copper sulphate, using the stronger mixture. The second application immediately following the falling of the blossoms with Bordeaux mixture and an arsenical poison. The third should consist of the same mixture and be given some 10 days or two weeks later and this may be repeated if the season is favorable to the pests after another two-weeks' period. If the rot should appear, and it is generally wise to presume that it will, an application of weak copper sulphate should be made about the time the fruit begins to color.

Make the applications thorough for carelessness will nullify the effects of the sprays.

HORSERADISH CULTURE.

I saw an article in the Michigan Farmer of March 19, on horseradish culture. I would like to know how to prepare it for market, and where I can find a market for it. What size cans would you use? Any other suggestions that would be helpful to a beginner would be appreciated.

Barry Co.

M. S. M.

Horseradish is prepared for market by thoroughly washing the roots and grinding them either through a regular machine made for the purpose, or one can grind it through a food chopper or sausage grinder; bottles holding about half a pint are usually used for putting it up, the bottle is filled about half or two-thirds full of the ground horseradish, the remaining space being filled with cider vinegar; use good clean corks and dip the top of cork in melted sealing wax, to insure an air-tight seal. Of course, one could use pint cans, glass fruit jars with any kind of air-tight top would answer nicely. As the cost of the jars would be considerable you should have at least 25 cents per jar. The small bottles usually retail at 10 cents. You could probably arrange with grocers in your nearest town to handle the goods on commission, usually a ten per cent rate. This presupposes you have a crop on hand, to dispose of this spring. If one is planting the sets to grow a crop during the summer the roots are dug in the fall and sold to table manufacturers or stored in pits like potatoes or they may be stored in sand in cellars and sold at any time.

Wayne Co.

J. E. MORSE.

A SWEET PEA HEDGE.

There is nothing we get more enjoyment out of as a family than our sweet pea hedge. Between the lawn and the garden is a woven wire fence, and each year on both sides of the fence we plant sweet peas, and train them up the wire, and they are a truly beautiful sight, besides sending their delightful fragrance out upon the air for rods around. Anyone can make a hedge out of the woven wire whether they have a fence or not. From this hedge we pluck great bouquets of the dainty blossoms for the cemetery, for the church, for the sick-room, and for the neighbors in general; and besides, decorate our own table and house profusely; for the sweet pea is one flower you cannot afford to be selfish with if you choose, for the more you pick the more freely will the vines bloom, and the longer will they retain their vigor. This is a case when the withholding tendeth to poverty. There are no flowers that are quite so nice for bouquets, and for the cemetery we find them indispensable, and their influence in the sick-room and in the home is equal to the roses. Sweet peas never look well combined with other flowers in a bouquet; they should never be massed together, for the airy blossoms will look so much better arranged loosely

and naturally. We usually use wide-mouthed vases, rose bowls or small jardinières in which to arrange them. If you desire some green among them use a bit of the vine and tendrils. Different colors can be mixed in one bouquet or they can be separated and one color arranged by itself or sometimes two colors make a pretty combination.

If one wishes to try any of the new varieties it is a good idea to plant them off some place by themselves. Some of the high-priced, recent introductions are truly wonderful in the brilliancy and delicate coloring of their blossoms, but they do not prove satisfactory to the amateur, or at least, very seldom do. We always like to experiment with a few of these and sometimes get fine results; but for a hedge we find the old standard varieties, obtained from a reliable dealer, the most satisfactory, and are lovely as well.

Now, as to the culture, for many of our neighbors complain that they cannot get the same satisfactory results that we have obtained, and I think there are three principal reasons for this. Either the seed is not planted deep enough, early enough, or else the soil is not of the proper kind. Sweet peas should be planted in the spring as early as the soil can be prepared, which will differ in different states. If the soil is light the seeds should be planted at least six inches deep; but if the soil is heavy four or five inches will be sufficient. They will do much better in a heavy, stiff loam, that is, moist and cool; if the soil is light and sandy it should be mulched with well-rotted cow-manure, and with lawn clippings. If the soil is not as rich as it ought to be then dig in with the soil some of the well-rotted cow-manure. We usually have the soil dug to the depth required, plant the seed, then fill in the earth two or three inches, then after the plants have come up fill in the rest of the soil by degrees. After the soil has been filled in to the level of the ground, and the plants are a few inches above the earth the soil should be stirred frequently if not mulched. If the season is a dry one they should be watered regularly, and the grass clipping raked around them to hold the moisture.

Of late years so many varieties of the sweet pea have been produced that it is difficult to make a selection; but we always find that the Eckford varieties prove satisfactory. The blossoms are expanded, and each stem usually bears from four to five blossoms. The Henry Eckford is a soft flaming orange, deepening slightly in the center; Lottie Eckford bears large silvery-white flowers, beautifully edged with lavender; and the Emily Eckford is a light rosy purple with wings of deep blue. Among the dark, richly colored varieties Stanley perhaps takes the lead, being a dark, rich, chocolate maroon of burnished tint, and the glossy flowers are of a large size; the Midnight is perhaps the darkest maroon, being al-

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The Early Blossoming of Fruit Trees is Creating Anxiety Among Horticulturists.

most black, and the flowers are in hooded form. Firefly is a strikingly rich sweet pea of glowing crimson scarlet. Among the blue we would mention the Navy Blue which has large blossoms, having the effect of dark navy blue, and Romolo a true violet blue. We always have a partiality to the mottled and striped varieties, and Aurora is one of the most charming on the list, it has a creamy white ground flaked with bright orange-salmon. In the Senator we have a fine specimen of the striped sweet pea—a white ground striped with purplish maroon. Prince Olaf is a very profuse bloomer and is mottled and striped bright blue on a white ground. Blanch Ferry is a bright rosy pink and is one of the earliest sweet peas. There are many other varieties equally desirable, but these are typical. I find that every twenty-five or thirty feet of hedge will take an ounce of seed and sometimes more.

Ohio.

M. M. WRIGHT.

PROTECTING SQUASHES.

I would like some information through your paper in regard to raising squashes. Last summer the vines were well started when the squash bugs came thick. I put on liquid manure or manure-water and that seemed to drive them away. They were growing nicely when all at once something seemed to be at the roots and they wilted in a day. We are very fond of squash and I would like to raise some if possible. Can you tell me what I can do to make sure of them?

Monroe Co.

Mrs. J. P.

There is no scheme whereby one can insure a crop of any kind. Too many factors enter into their production. However, the chances can be greatly increased by a thorough understanding of the plants, their requirements and the pests which infect them.

The squashes of Mrs. J. P. were first attacked by the squash bugs, and then later by the squash-vine borer. The application of the liquid manure is very commendable; while it may not have been directly responsible for the departure of the squash bugs, it greatly aided the plants in overcoming the damage done by those insects. This is one of the secrets of successful gardening—to feed the plants so that their growth is vigorous and constant from the beginning. Like a well person, a vigorous plant is far more able to throw off disease and overcome wounds made by insects than a plant that is dwarfed or has become weak through some fault of its environment.

The squash bug is usually resistant to the ordinary insecticides. A spray that is strong enough to kill the matured insect, is very apt to destroy the vine and thereby nullify the objection of the spray. One of the most commonly practiced schemes for controlling the bugs is to trap the matured insects by placing boards about the garden, under which the bugs will seek shelter and protection during the cool of the night where they can be captured and destroyed early in the morning. The boards should be inspected in extreme cases, every morning while the insects are most plentiful and active. The eggs are laid upon the leaves of the squash vine, and whenever found should be destroyed. These can be readily discovered as they have a metallic brown or bronze appearance and are flattened on three sides. The young when just hatched may be killed by an application of kerosene emulsion. Still another practical scheme which can be worked with the others and usually is, consists in planting pumpkins and other vine plants between the rows of squashes which the bugs will also attack, thus diverting the attention of the pest from the squash vines to the other plants. This provision can be made more effective by planting the squash vines a little later than the others. These temporary plants are removed when the main crop demands the space.

The squash vine borer was probably the second pest that attacked Subscriber's vines. The work of these insects are not apparent usually until they have gained access to the vines and the plants begin to wilt. By close observance, however, their work can be detected by a yellowish powdery excrement which it forces from its burrow in the stem and which usually accumulates on the ground beneath. But the sudden wilting and dying down of the leaves is usually the first indication that the ordinary gardener has of the presence of this insect. There is little to be done with this pest after it has once gained entrance to the plants. About the only method is to go over the vines carefully and, with a knife, cut out the insect by making a longitudinal incision. The planting of

other squash vines, as were recommended above for the squash bug, can also be used here. For this insect, however, it is necessary to plant the temporary plants much earlier than the others so that they will attract a large per cent of the insects before the late crop makes its appearance. This leaves a smaller number of insects to deal with the main crop. As soon as the early crop is harvested, if it can be left long enough to mature, the vines should be raked up and burned. The same treatment should also follow the gathering of the main crop later in the fall. It is also a wise precaution to harrow the ground after the late crop has been removed, so as to expose the cocoons to the elements. Then by plowing in the spring early to a uniform depth the pest will be greatly reduced in numbers. A rotation of the squashes with other crops is helpful in keeping this insect under control. Clean premises are also of great assistance since the pests harbor under rubbish and other places.

THE FARMER'S GARDEN.

There is nothing on the farm that combines more profit and pleasure than the garden. If the soil is prepared early and the ground planted in good season, the vegetables, greens and other spring delicacies will come at a time when they will be most appreciated.

If strawberry plants have been set out in the fall, the delicious fruit will afford a fine dessert on the thrifty housewife's table. Peas that are sown early mature at a time when they are better appreciated than when sowing time is delayed. It is nice to have green peas all summer. To do so, have several successive periods of sowing the seed. Select a moist, rich soil from which peas have not been harvested two years in succession. The yield will be much better while the number and size of the peas in the pod will be larger than when grown on a spot which has been devoted to raising peas year after year. Energetic gardeners plan to have new potatoes and peas for the Fourth of July.

Black wax beans, when planted in time to be out of the way of the frost, will later furnish the table with a nourishing dish.

Happy is the busy farmer's wife who has a long row of pieplant stems from which to supply the family with sauce, pies, puddings and jelly. If the "guid maun o' the hame" has kept up the asparagus bed and the horseradish bed, and has sown the kale seed, no one of the family who is a lover of greens will be slighted. Plant many onions. They have a medicinal value. In some localities sweet corn can be planted very early without danger of being cut down by the frost.

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Pa.

L. J. H.

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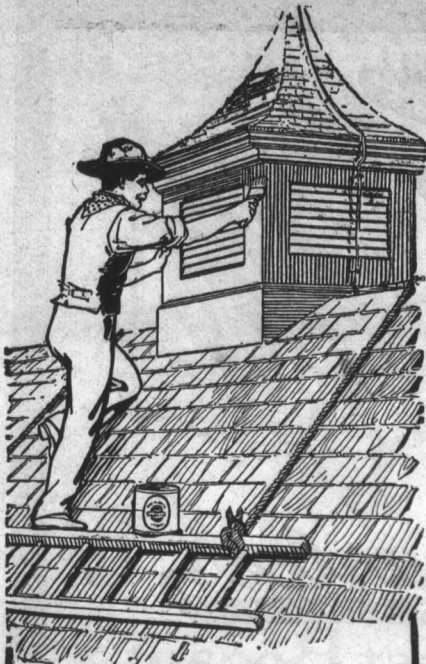
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HOME AND YOUTH

THE APPLE TREE.

What plant we in this apple tree?
Buds, which the breath of summer days
Shall lengthen into leafy sprays;
Boughs, where the thrush with crimson breast,
Shall haunt, and sing, and hide her nest;
We plant upon the sunny lea,
A shadow for the noontide hour,
A shelter from the summer shower,
When we plant the apple tree.

What plant we in this apple tree?
Sweets for a hundred flowery springs
To load the May-wind's restless wings,
When, from the orchard row he pours,
Its fragrance through our open doors,
A world of blossoms for the bee,
Flowers for the sick girl's silent room,
For the glad infant, sprigs of bloom,
We plant with the apple tree.

What plant we in this apple tree?
Fruits that shall smile in sunny June,
And redden in the August noon,
And drop, when gentle airs come by,
That fan the blue September sky,
When children come, with cries of glee,
And seek them where the fragrant grass
Betrays their bed to those who pass,
At the foot of the apple tree.
—William Cullen Bryant.

THE ORIGIN OF ARBOR DAY.

In Spain there is said to have existed for centuries a saying to the effect that the man who plants a tree on the public highway has performed an act which entitles him to great credit and distinction. In our own land a half century ago an act of that character would have passed unnoticed. Indeed, while cognizant of the fact that millions of trees were disappearing annually, no one at that time stopped to consider that the day must speedily come when extensive planting would become necessary.

Public attention was first drawn to this need in 1872 when J. Sterling Morton, at that time a member of the Nebraska State Board of Agriculture, brought before that board a resolution providing "that the tenth of April (of that year) be set apart and consecrated for tree-planting." The idea proved popular and spread rapidly. Since that time hundreds of thousands of acres have been planted to trees in that state alone, and Mr. Morton will always be known to history as the "Father of Arbor Day."

From Nebraska the practice of annually designating a day for tree-planting quickly spread to Kansas, Iowa, Minnesota and Ohio. The last named state claims credit for first enlisting the aid of public school teachers and pupils in the observance of the day. In place of trees being planted merely as screens from the wind, fruit trees and beautiful shade and ornamental trees were set out. These were named in memory of important historical events, or for famous poets and authors, soldiers and statesmen. The school children studied about these events, and these famous personages, and Arbor Day became a very interesting occasion. Teachers and children liked to keep the day, and through the public schools the observation spread over the country. In twenty years from the beginning in Nebraska this day was observed from Maine to Oregon, and from Minnesota to the Gulf of Mexico. It has likewise spread to the Old World, and is celebrated now in England, Scotland, France, Italy, Australia and even in South Africa.

HOW VEGETATION IS PROTECTED AGAINST EXTINCTION.

BY WM. F. PURDUE.

How many are aware that if certain species of plants did not have some means of protecting themselves they would soon be wholly exterminated? This is true, nevertheless.

This protection is obtained in various ways. Some plants which are utterly worthless so closely resemble useful plants that they quite frequently escape notice when they grow in close proximity to the plants which we cultivate. For instance, young ragweeds closely resemble young tomatoes. I have been puzzled myself many times, when hoeing in the garden, to determine whether a certain plant was a tomato or a ragweed, and quite likely some of the ragweeds would escape my hoe did I not examine them closely in order to make sure that they were not what they seemed. The narrow-leaved dock in a bed of beets is another instance of like nature, of which the gardener can recall several.

Some plants are protected because of their seed not being easy of detection by their natural enemies. Some seeds are

of the same hue as the soil upon which they fall, and so escape the notice of birds which might otherwise pick them up. Other plants, as the dandelion, send their seed forth with wings to be scattered to the four winds of heaven. More of these seeds will likely survive than will the seeds of a plant that all fall directly to the ground in one spot, in which case if one is destroyed all may be destroyed.

Another way in which plants may be protected because of their seed is cited by Prof. Beal, of the Michigan Agricultural College, in the following:

"In portions of Washington rattlesnakes are very abundant, and are much dreaded by cattle and horses which graze over large portions of the state.

"In this region grow large quantities of the Iris Missouriensis, and, when ripe, the rattle of the seeds in the pod closely resembles the rattle of the snake. Grazing animals invariably step back after hitting these pods, and thus the green leaves of the plants are spared to work for future crops of seed."

Then there are plants that are soldier-like, and carry with them all the implements of war to protect themselves. The hawthorne and the locust are armed to the teeth with savage spears, which they stick into the enemy that seeks to destroy them. The gooseberry bush is full of needles, and the sword grass of the swamps carries sharp knives with which to cut any animal rash enough to try to eat it.

Then there are the cactus and the thistle, armed with ugly looking barbed spears. The cactus family, which to a certain extent is a desert plant, are all armed with long or short tough spines that can penetrate the thickest boot. Most of the other desert plants besides the cactus are armed in one way or another. Some exude poisonous sap, others give off nauseating odors. A plant with which we are familiar—the Jimson weed—sends forth a vile odor whenever disturbed, which probably is a great protection to it.

Of all the soldier plants, perhaps the most interesting is the nettle, for it arms itself with poisoned arrows. When it enters a vacant lot and begins to grow in thick clumps, choking out other weeds and grasses, the cattle let it entirely alone. They know how warlike it is; so do all persons who have ever been nettled, and they also leave it alone.

The nettle plant is like the porcupine in the fact that it carries millions of arrows which it is ready to use whenever an enemy appears. Each arrow is poisoned, and whenever the small boy, or any one else, comes in contact with one of these arrows he speedily receives a charge of poison. All of which causes much discomfort to the person stung, and insures to the nettle an existence free from disturbance.

Water plants are a class of vegetation that derive much protection from the fact that they grow in water. They root at the bottom and the leaves and blossoms float on the surface of the water or rear above it. Thus they are out of reach of animals that might be tempted to nip the plants.

One of the strangest of ways in which plants are protected is illustrated by a sensitive plant of Nicaragua. A standing army of ants for defensive purposes is kept and provided with food by one plant. In this acacia there are two large thorns at the base of each leaf inhabited by colonies of ants which bore into the thorns and make a home for themselves by eating out the soft inner tissue. On the leaf stalks there are honey glands and at the tip of each leaflet there is a sausage-shaped body, about as large as a pin's head, consisting of albuminous food. The ants sip the nectar and eat the food besides, and, being contented with their lot, remain on the plant without doing it any injury.

When the plant is threatened by an invasion of leaf-cutting ants, which would damage it, the ants composing the plant's army or police force rush out and repel the intruders. Plants of the same species which do not happen to be inhabited by ants fall an easy prey to leaf-cutting kinds of ants, which are very plentiful in the tropics.

Many similar arrangements exist in tropical plants. In one remarkable ant plant the female ant bites a hole in the stem and brings up her brood inside it. By a singular arrangement the plant bears food bodies which are eaten by the ants. As the old food bodies are eaten new ones are formed, thus keeping the ants, which are of a fierce disposition, in the plant's employment.

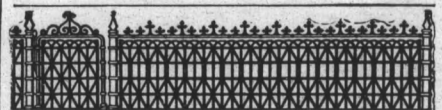
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THE WEED-BED.

BY CORA A. MATSON DOLSON.

We have a weed-bed in our yard.
In our back yard, the nicest spot,
Fern, frond and aster, orchard sward,
Swamp pink and brook forget-me-not.

When they are blossomed they're not
weeds.

But prettiest of pretty things;
The thistle bird looks here for seeds,
Her mate, our wild canary, sings.

Frost-grapevine makes a latticed seat,
A swing where we in summer sway;
Above, where grape and woodbine meet,
The winter birds feed day by day.

If half the joys our wildlings yield
I could unfold and show to you,
You'd start a search through wood and field
To plant yourself a weed-bed too.

BABY DAYS IN THE ORCHARD.

BY FRANK H. SWEET.

Robin was only three days from the nest; but in that time he had learned a good many things, for his eyes were bright and his mind curious about these odd things around. The first day, after his dizzy half-tumbling fall from the nest, he had remained on the little branch which he had clutched desperately just before reaching the ground, too tremulous to attempt another journey, even to the grass six feet away.

He had to depend upon himself now, for there was no mother close at hand to explain about the things he saw and tell him what were safe and what he should avoid. He had to study them out, with his head cocked a little on one side and his bright eyes regarding them thoughtfully, and then decide for himself. He was a wise little bird, however, and though he sometimes made a mistake, his conclusions were generally pretty near the truth.

Redbreast and Cheerup were still in the nest, and of course his mother had to look after them. Rusty, the other brother, was clinging to a branch on opposite side of the Baldwin, thirty feet away, to which his mother had urged him soon after Robin's tumble. By twisting his head a little to the right, Robin could see Rusty through the foliage, and the two babies kept up each other's courage by frequent chirps of recognition and inquiry. Cowby, the foster-brother, was nearer; but Robin tried not to look at him. The big baby was crying and carrying on so it made him feel ashamed.

However, Madam Robin did not leave them wholly to their own resources. After she had given Redbreast and Cheerup their dinner, she took a big, white grub to Cowby, because he was wailing so vociferously, and then carried one to Rusty; at last she came to Robin. But Robin did not mind now. He believed that he was beginning to understand his mother.

So he opened his bill smilingly, as if he would say, "It's all right mother. I don't mind waiting a bit. You must feed the babies first." And his mother, with one quick glance at him, actually smiled in return. She had expected that of Robin, but felt a sudden relief and pride in him that it was so. Instead of flying off at once, as she had done from the other babies, she took a perch on the branch beside him.

"Robin," she said, "I think that you will be able to take care of yourself now. But you must remember what I have said about the friends and enemies you will meet in the orchard. Always be on the lookout for the soft moving animal with the long tail and big eyes; its claws mean death. Never stop to listen to its gentle purring, but fly up as high as you can among the branches. And there is another animal, called a skunk, which would be dangerous if you slept on the ground; but as it only prowls around in the night and cannot climb, all you have to do is to sleep high. The calves and cows and horses which are often turned into the orchard will be good friends if you keep away from their feet; when you are a little older you may get on their backs and ride. They like it, and you will find it fun. And there are enemies among our own people, Robin," her voice becoming graver, "which are even more dangerous, for they can fly like ourselves. Always keep a lookout overhead for the hawk, and at night sleep where there are plenty of leaves for the owl will be out with his big eyes. Then there is the butcher bird that I pointed out to you the other day; beware of him. Tonight you must fly up one branch higher. There are grubs in the bark, and at sunset small insects will be buzzing among the leaves; if you are quick and careful you can get enough to eat. Tomorrow you

may fly down to the grass for a little while and catch some of the delicious grasshoppers and crickets; but do not stay long, and keep a careful watch for enemies. Now," abruptly, "do you think you can remember all this and be able to take care of yourself, or shall I bring food to you for a few more days?"

Robin caught his breath with a mingling of gratification and dismay, gratification that neither Rusty nor Cowby were to be left to their own resources, and dismay at some of the things she had outlined. She had chirped quietly of his going to a higher branch before dark, and flying down to the grass for a while in the morning; and as yet he had not even dared to slip along the branch which he had clutched so desperately on his descent from the nest, for fear of toppling off. But he forced himself to answer steadily: "Yes, mother; I can take care of myself all right. You needn't bring me anything more. Only I—I—won't I see you any more, mother?"

"Of course you will, dear. I shall be up in the branches, or hunting for food somewhere about the orchard, and will keep you in sight. If you find anything that you do not understand, or are not able to do by yourself, come to me. When you are a little older we will go for a fly round the country outside the orchard, and I will point out other things that you will be ready to learn then. Now good-bye, and be a good boy."

With this in his mind, and the remembrance of her confidence in him to take care of himself while yet the much larger Cowby and Rusty were being looked after, he straightened up from the branch upon which he had thus far been crouching, and looked sturdily at the limb above. It was a long way off, as much as four feet, but he spread his wings determinedly and bent his legs into as strong a spring as he could give, and the two would have carried him up all right only as he started and realized the depth below he involuntarily closed his eyes. Instead of securing a clawhold upon the limb as he hoped, he went completely over, and even missed his own branch as he dropped down the other side, clawing and beating the air helplessly with his feet and wings.

For some moments he lay dazed; but the grass was thick and soft, and at length he opened his eyes and struggled disgustedly to his feet.

His first act was to glance toward the top of the next tree. But his mother was not in sight, and he regained some of his composure. His next act was to look critically at the branch. He must reach that at once, and then fly to the limb above. It would never do for his mother to find out; she would lose confidence in him and insist on his sharing her care with the other babies. Sometime he would tell her about it, of course, but not until after he had learned how to fly.

But he was still tremulous from the excitement of the fall, and when he spread his wings he could only rise a couple of feet or so. After the third attempt and failure he dropped back into the grass to consider. He must gain the branch, of course; and of course he could not do it until he got stronger. Well, he had already discovered the best way to get strong was to eat. His mother had advised him to fly down to the grass the following day and eat some of the delicious grasshoppers. As he was already down he would eat them at once; perhaps they would make him strong enough to fly back.

Young Robin promptly forgot his mortification in an eager pursuit of insects. But catching a grasshopper one's self and having it dropped into the open mouth by one's mother are two altogether different things, as Robin soon found. At the end of half an hour he was still plunging and tumbling about in vain pursuit of some light-winged or nimble-footed insect; and at last, hungry and discouraged and out of breath, was forced to content himself with a common angle worm, one end of which he found showing from under a stone, and which he pulled from the earth with vicious little tugs.

But as soon as he was somewhat rested he began at the insects again, adopting different tactics this time. Instead of exerting his utmost strength in reckless pursuit, he looked about to see where the insects were thickest and stationed himself in the grass at that point, remaining almost motionless, but with eyes and bill alert. Perhaps the insects came to regard him as only a part of the surroundings, for soon they were hopping and flying about in utter disregard of his presence.

It was not long before a tiny grasshopper attempted to cross the very point of



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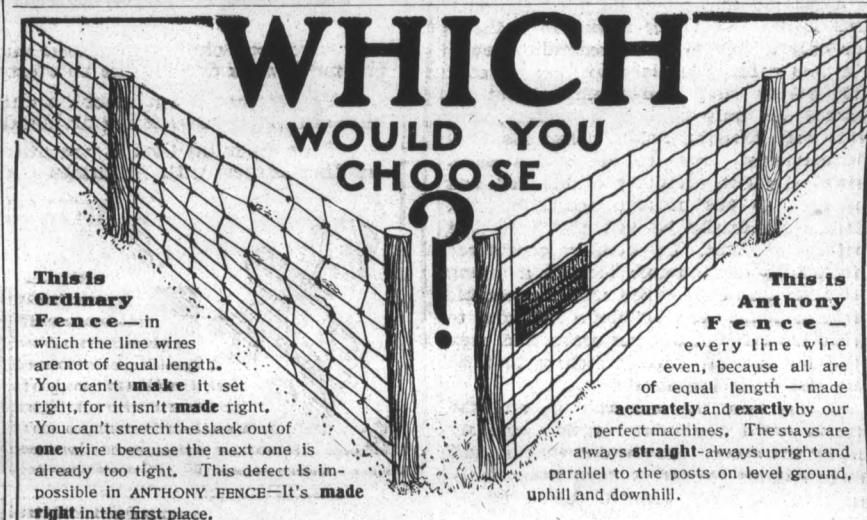
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his bill. This was Robin's opportunity. He made a quick stroke, and the grasshopper served as the beginning of his supper.

After this there were some successes and a good many failures; but altogether it was an afternoon of great fun and excitement. Only when the thicker shadows in the grass sent the insects skurrying toward their homes did Robin realize that it was near night, and that he was still upon the ground.

His apple tree was thirty feet away, and he went to it on the run. But when he launched himself hurriedly into the air his wings would only bear him high enough for his bill to just graze the lower side of the branch. Perhaps he had eaten more insects than he thought, and his body had grown heavy; or perhaps he was not old enough yet to fly so far. At any rate, he could not reach the branch tonight, as a second and third attempt soon proved. For a moment he felt like crying out in his terror, but controlled himself with an effort. He must not get excited now when he needed every faculty to provide for his safety. There was that terrible monster, the skunk, which his mother had chirped of as prowling in the night. She had warned him to sleep high, and here he was unable to leave the ground. He must find some place to hide.

But the grass for twenty feet around was searched in vain. Then he went to the trunk itself. He had seen Mr. Downy Woodpecker walk unconcernedly up and down that trunk not an hour before. However, Downy was made to walk that way and he was not. If only he could exchange claws with Downy for a few moments everything would be all right.

Near the ground a limb had been improperly cut off years before, and this place, cut so that water could remain in the crevices of the fresh wound, had decayed almost to the very heart of the tree. Robin looked at it speculatively, but with a good deal of disgust in his eyes. The hole was not large enough for him to enter, but inside and around it was a soft mass of decayed wood fibre. Robin set energetically to work clearing some of this out, and soon had a hole large enough for him to crowd into. Then with his bill and claws he piled the soft stuff into the opening again until there was only a tiny hole to breathe through.

It was a horrible place to stay in, soft and sticky and bad-smelling; but it seemed his only chance for safety, and with that thought Robin closed his eyes determinedly. But he did not sleep a wink all night, thinking of his bed and listening to the strange noises outside. And when finally he left the hole, just before daylight, he rightly considered himself as disreputable looking a young robin as had ever called that respectable orchard home. It took him a full hour to make his toilet in the wet grass, and even then he had an uneasy feeling that he was not quite presentable.

By this time the sun was up, and the insects were beginning to hop and fly among the grass. He decided that he had better eat his breakfast now, before trying to regain the branch. Food might not be so plentiful up there, and he certainly would not care to fly down to the grass again today. One night in that hole was enough. But he was careful to make his breakfast frugal; he could not risk any more chances.

At length he was ready for the attempt, and he examined the branch critically. Half way out from the trunk was a slight depression, scarcely noticeable; but Robin's keen eyes thought it would afford a better clawhold. Taking a stand near the trunk he made a few quick hops forward and spread his wings. And this time he did not close his eyes. A second later he was balancing himself on the branch, and already raising his bill toward the limb above. That was only four feet away, and without hesitation he selected what he thought would give the best clawhold, and again spread his wings.

Ten minutes later his mother flew to a branch overhead and looked down.

"All right, Robin?" she called.

"Yes, mother," he answered cheerily.

"Never felt better in my life."

"That's nice. Shall I bring you some breakfast?"

"No, thank you. I've just come up from the grass, where I had seven grasshoppers and a cricket."

Madam Robin stared a moment, and he heard her chirp an involuntary note of astonishment. But all she said as she flew away in search of breakfast for the babies was, "You'll do, Robin."

That more than repaid him for his night in the hole.

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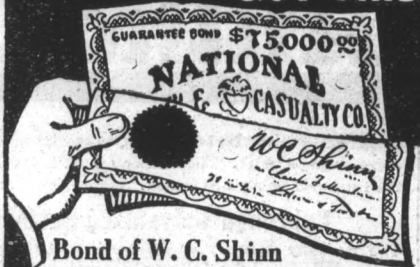
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