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Some Phases of the Haying Problem.

YEARS ago, when natural grasses and timothy furnished the main supply of hay, the harvesting of the crop was a simple operation with small exposure to the weather. But since the more general growth of clover and alfalfa plants for hay, farmers are finding it far more perplexing to secure the crop without damage. Hay from clover and alfalfa cut green and properly cured, is more palatable and nutritious than hay dried before it is cut, and is worth working for. All kinds of stock relish clover and alfalfa hay, and properly used it reduces the cost and adds to the efficiency of the ration. Add to this the larger yield and the permanent enrichment of the soil by the growing of these nitrogen gathering plants, and we can readily understand why the farmers of America must gradually turn their attention more and more to the production of these proteinaceous hay crops and grow fewer acres of grass for winter feeding.

Abundant preparations should be made for securing the hay crop. The man who stands his mower in a fence corner from July to June never knows whether it will run through another season or not. Whatever shelter the mower has had, it needs an overhauling before going to the field. The boxings, bolts and screws should be examined, everything loose should be tightened and anything bent or sprung out of line should be adjusted. A few hours spent in getting the mower ready for the field is cheap insurance against ruinous delays for small repairs and heavy expense for serious breakage. Get the machine tuned up so that the only noise it makes is a droning hum. All the power and wear that goes to make a riotous noise when the machine begins to cut soon eats its life away until the noisy thing is choked into protracted silence. Rakes, tedders and self-loaders all need a general overhauling before going to the fields. It is a waste of time and money to attempt to harvest a heavy crop of hay with a lot of old, ramshackle tools.

Cutting should start as soon as the most advanced fields are mature enough to make good hay. If one has a large acreage the work should be started before the field is in full bloom so that the bulk of the crop will be cut in full bloom before the heads begin to turn brown. Alfalfa is even more exacting about the time

it should be cut. If it can be cut when the little shoots have started out about an inch from the crown, it yields a better hay and grows up again more readily than if cut at any other time. This brings the first cutting a few days ahead of the first cutting of clover. It pays to cut these crops early so that a vigorous second growth will start up rapidly. Many farmers sacrifice the real value of their hay for the ease and satisfaction of cutting and hauling it to the barn the same day. Others go to the extreme of cutting it when its chief asset is water and an expanding root system capable of gathering and storing great quantities of animal food if allowed to stand a few days longer. If we have a large acreage we must begin cutting early before the grass is just right, but it is wrong to cut half-grown clover and alfalfa.

It is always a perplexing problem at haying time to keep up the other activities on the farm so that the crops and stock will not be neglected. The efficient farm manager aims to

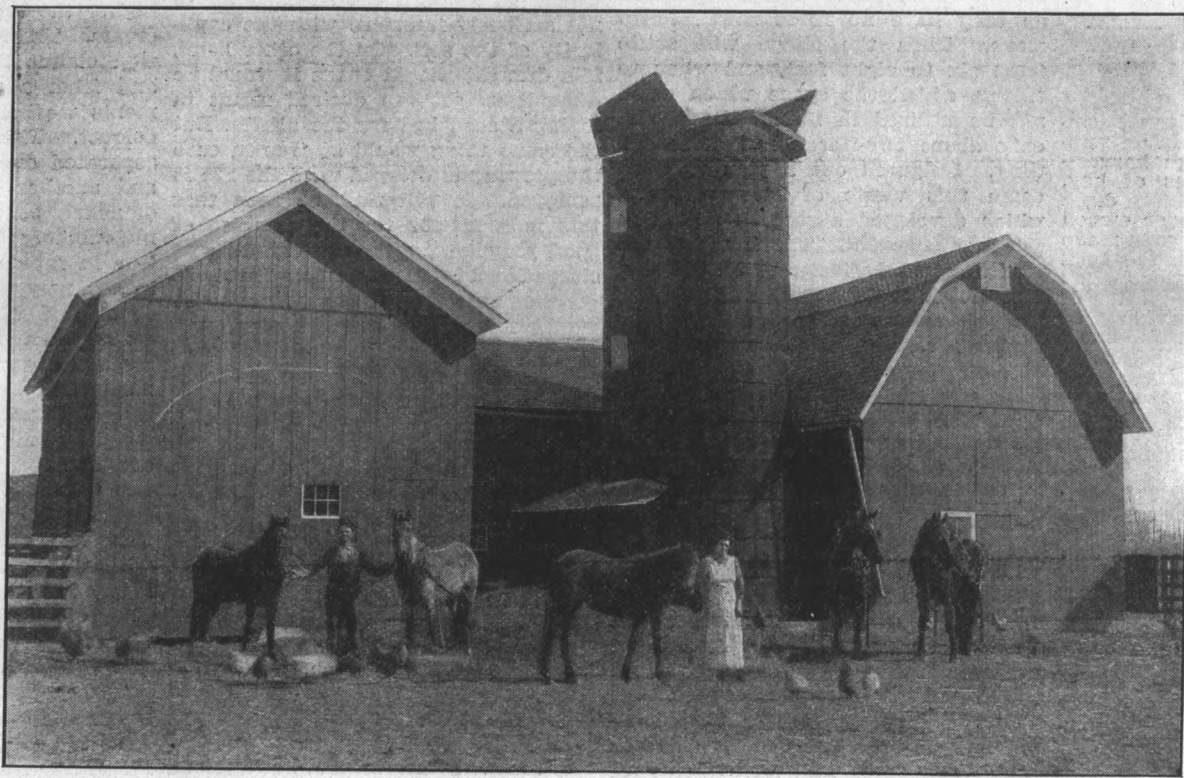
planted. The interference of haying with these cultivated crops is very frequent and disastrous. It is a situation where one must weigh the value of his hay and cultivated crops against the wages of extra men and get them if he can. As a rule, it pays to hire extra hands early and get the work in shape so that the haying may be rushed to the limit when the great crush of work comes. It is far easier to rush the work of securing the hay crop than it is to have the work rush you.

In the eastern and middle-western states precautions should be taken against an undue exposure of the hay to weather hazards, especially in the early summer. At best it requires skill and sound judgment to make hay during catchy weather, for in these localities early haying comes at a time when the weather is uncertain. It is easy to tell how to make good hay when the sun shines and to criticize good judgment that has been thwarted by rainy weather, but it is beyond the power of any man to make

cocks, escape drying to brittleness and breaking off from the stems. Opened up the morning of the third day the moisture having gone from the stems to the leaves during the sweating process quickly evaporates and the hay is ready to haul to the mow immediately after noon.

Hay cocks and covers are essential to the proper curing of the first cuttings of clover and alfalfa. Clover and alfalfa cocked and covered with cloth covers, so far as immunity from water soaking is concerned, has a great advantage, but the reason so many farmers object to this method is because it precludes the use of the hay-loader. The additional expense of curing the crop in the cock will amount to nearly seventy-five cents a ton, but it is easy to see that much difference between bright, clean hay with the leaves on, and a mass of bleached, naked stems. Clover and alfalfa leaves are about as valuable pound for pound as wheat bran, consequently every effort should be made to save them in a palatable and nutritious form. The deterioration from exposure and the risk of the hay heating in the mow will more than repay the cost of the hay covers the first season they are used.

The hay tedder improves the quality of the hay when the yield is heavy. It hastens the curing and enables us to save many tons that would otherwise be left out in the field exposed to the sun and water. The tedding of clover and alfalfa must be started soon as the plants are thoroughly wilted and stopped before the leaves get dry and the hay thrown into windrows. After going over these crops once more with the tedder it is best to turn the windrows with a side-delivery rake, simply rolling them over and exposing



Convenient Type of Silo Roof Designed by Oscar Olmstead, Shiawassee Co. (See Page 602).

have plenty of help and horsepower available so that the cultivated crops will not suffer at haying time. The number of acres of hay one has to harvest sets a limit to the acreage of corn and potatoes one should plant. Not all of the farmer's time is required to cultivate the corn and potatoes, and he can, therefore, sandwich the work together to keep all hands busy without slashing down hay promiscuously when the weather looks catchy. Beyond this limit, however, the haying and cultivated crops conflict and require considerable labor from outside sources or a reduction in the area of corn and potatoes that can be

first-class hay during wet weather. If the hay is cut there is no turning back. A rain means extra work and damaged hay. There is no escape from labor in extra handling of the early cut hay that must lie in the cock two or three days before it can be hauled to the mow.

One practice I have always found safe is to cut only what can be handled the same day. Cut in the morning and shake out with the tedder in the afternoon and rake and put in cocks before the dew gathers in the evening. If it is protected in this manner, the leaves being comparatively dry when the hay is put into

ing all sides to the free circulation of the air and sunshine. This reduces the loss of leaves and the hay is rapidly cured.

The drier air and soil of late summer makes the harvesting of timothy less hazardous. The handling of timothy or mixed hay is less difficult, for the hay is ready to go into the mow in a short time if the days are hot and the sun shines brightly. Timothy had best be cut when in full bloom; the best time to cut is in the afternoon when the plants contain less moisture than at any time of the day. When it is cut in the afternoon a rain the same day will not do any

serious damage, especially if the tedder can be started early the following day. The sooner we loosen the swath and allow the air to dry it the sooner it will be ready for the mow. After it is tugged a few times it may be raked into windrows and tugged two or three more times.

If the weather is right it should be ready for the mow the next afternoon after it is cut. It should be coked only when there is danger of rains. When placed in the mow care must be taken to keep it well spread and tramped down, especially when a horse fork is used in unloading.

The time for cutting timothy should be governed largely by the animals that are being fed and the uses that are to be made of it. Cows that are giving milk will thrive best on early cut hay. Horses that are being worked hard will thrive fully as well on hay that is cut a little out of bloom. Thus the first cutting will make better cow hay and the later cutting good horse hay. Many still cling to the idea that because late cut hay will analyze better than early cut hay it has a higher feeding value, but it is wrong to view the matter in that manner.

If we feed late cut hay to young stock in the winter they will become thin; then turn them out to pasture and they will shed off their old hair and begin to look fat and sappy. How is this to be accounted for? Not because the grass contains more protein or that it is a better balanced feed. It is due to its better mechanical condition, which enables the animals to get more nourishment from it. It is green and succulent and easier to digest and assimilate. Grass is nature's stock food and the more nearly we can approach to saving it in its natural condition the nearer we will come to having an ideal feed for our stock. If we preserve that rich succulence that nature puts into our grasses we will secure the highest development that our animals are capable of reaching.

New York. W. MILTON KELLY.

HAY CAPS.

I have read in the Michigan Farmer several articles by Mr. Lillie relative to hay caps. Although harvesting annually over 60 acres of hay, and this year having in addition eight acres of alfalfa, I have never owned any hay caps. We have always made a practice of curing hay in the cock and in a season of catchy weather as this promises to be, it is a matter of some skill to secure clover hay in decent condition. I want to know what he uses for caps. It seems to me as if I have read his advocacy of factory cotton. It seems incredible to me that such sleazy stuff should have the ability to turn water, but if I hear favorably I shall believe it. Does he varnish the factory? What size does he make the caps? About what is the cost per cap? How many do you think best to have with my acreage of hay? I think I know how to fasten weights to corners. How should I store them to protect them from mice in the winter?

New York. J. H. W.

There isn't any question but what, in a catchy season, hay caps are of great value. They enable one to save the hay in a wet season and secure it in good condition. It costs a little something to get the caps, and is some little bother to take care of them and to apply them, but they assist wonderfully in saving a crop of hay in a bad season.

The first hay caps we had were made out of eight-ounce ducking with brass eyelets in the corners to attach the weights, but since then we have simply gone to the store and bought common cotton cloth 40 inches wide, and we tear this into squares, making hay caps 40 inches square. It would be better if they were a little larger, but this is as wide cloth as we could get, and they answer very well. It is the rain that gets in the center of the cock of hay that does the damage. That which is simply on the outside of the cock soon dries out. It doesn't

seem that the common cotton cloth would shed the rain, but it does. A day after the rain, if you put your hand under the cotton cloth you will find the hay is dry. It sheds the water. You do not need any oil or varnish of any kind on the cloth. You can make weights of cement and have a fence staple in each weight and you can attach these weights to the cap by a fine copper wire. In this way your caps will only cost you 10 or 12 cents each.

Before storing these caps over winter they should be thoroughly dried. If not they will mildew. Then you can lay them over a pole, smoothing them out, and put as many on top of each other as you desire. They can be put up in the wagon shed or any convenient place. If they were all arranged on the pole and it rained on them it would do very little damage. It would not wet through the first cap. It is some bother to put the hay caps on and to take them off, but they will keep the hay from getting wet. The number of caps you will need will depend on how you make hay. If you cut down a small amount and get that in before you cut any more, you can get along with a few caps, but if you cut down a large acreage and coked it up, then, of course, you will need a good many caps. I advise you to start in with 200 or 300 and try them out and see how you like them and this experience will tell you better than I can how many you will need.

COLON C. LILLIE.

A CONVENIENT AND PRACTICAL SILO ROOF.

I erected the silo shown in the first page illustration, last summer, and as I could not secure a carpenter to do the work, I designed and put on the roof myself. The plan works so satisfactorily that I thought best to pass it on to other Michigan Farmer readers.

When one is filling a silo with an ordinary roof, the men on the inside cannot utilize all the space for silage, as they have no room in which to work. Then the silage will settle from six to eight feet, and when to this is added the space which could not be utilized in filling, the silo is only about two-thirds full after settling. I figured out a plan to overcome this waste of storage space, which developed a roof as shown in the first page cut. The frame of the roof is securely fastened to the silo, with about an 18-inch rise in the center. No rafters are used, and the only timber across the silo is a solid ridge pole in the center. The opening is covered with doors, the one next to the chute being divided so it would handle easily. The doors are held open in the position shown, by ropes which fasten them securely. When filling there is no obstruction above the men who work inside the silo, which can be completely filled and the silage crowned up three or four feet inside the doors. The farmer can then go up every day to tread down and in a few days can close the doors which make a satisfactory roof. He will also have a full silo when commencing to feed, and can open one or all of the doors and have plenty of room to work in throwing off the spoiled silage on the top, or such material as he has put on to seal it. This is a great saving of labor compared with throwing it down the chute and then removing it at the bottom.

Shiawassee Co. O. OLMSTEAD.

FARM NOTES.

Making Hay from Winter Vetch.

Will you kindly advise me as to the time for cutting and manner of curing winter vetch for hay?—E. D. J.

Those who have had most experience in making vetch hay advise cutting the crop when the vetch commences to bloom. Where sown in combination with rye, as is the usual practice, comparatively early cutting

makes the rye of greater value for feed, which is an additional reason for early cutting. Vetch hay, like that made from other legumes, is more difficult to cure properly than is hay made from grasses, and best results are secured by curing it partially in the cock, the same as would be done in making the best quality of clover or alfalfa hay.

Plowing Down Rye for Alfalfa.

I am writing for information regarding a piece of ground I am preparing for alfalfa. Last fall I sowed rye, intending to plow it down this spring, sow lime and work the land down in proper shape and sow to alfalfa the middle of July. I have been unable to get time to plow it so far this spring, and now when I am ready to do so I find it is so tall and heavy that I am fearful that I won't be able to work it into the land so as to make a good seed bed by the time the alfalfa would be sown. Would it be better to cut the rye, apply barnyard manure and commercial fertilizer and sow the alfalfa, or would it be safe to follow the original plan? The land has a fair amount of humus.

Lapeer Co. H. F. S.

So many factors enter into the proper solution of this problem that it is difficult to advise as to the best course to follow. It is not only essential that a heavy green-manure crop should not only be plowed down when it is in a proper condition to hasten decomposition, but as well when soil and weather conditions also favor this process. In view of our absolute lack of control over weather conditions, and the fact that this soil is fairly well supplied with humus, it might be a safer proposition to remove the rye and plow down the stable manure as suggested in case it is available. On the other hand, where the soil is well supplied with moisture at the time of plowing and an interval of four to six weeks is available in which to work the soil before seeding the alfalfa, it is probable that with a normal rainfall during that time, the soil could be gotten into excellent condition for sowing the alfalfa and that the rye, which still contains a large amount of moisture, would be so well decomposed as to not seriously interfere with the capillarity of the soil. On the other hand, if a drought should ensue it would be difficult to get the desired result in fitting a seed bed for the alfalfa. But the same thing would be true in case the plowing is delayed until the rye is removed. It will thus be seen that this is a matter for the exercise of good judgment, after the careful consideration of all the factors involved. If the case were the writer's he would follow the original plan, provided the field can be plowed at once and contains a liberal amount of moisture when plowed. It would be an interesting and profitable experiment to try out both plans in this field and note results. This is really the only way to arrive at accurate knowledge of problems of this kind, and even then a method which will give excellent results under given conditions may fail another season.

Vetch vs. Alfalfa.

I would like to know some things in regard to sand vetch, i. e., what time of year to sow; how much seed per acre; how often it can be cut; how to cure it; on what kind of soil does it do best, etc.? My soil is a clay loam. I have alfalfa, but a friend thinks it a better crop to grow than alfalfa, and he has both.

Hillsdale Co.

F. S.

The most useful purpose of vetch in Michigan agriculture is served by seeding it on poor sandy land that will not grow profitable crops of clover or alfalfa with certainty. On land that can be successfully seeded to alfalfa, however, vetch has no proper place in the crop rotation. It should not be sown on good soils where wheat is grown in the regular crop rotation, on account of its propensity to become a weed in the wheat fields. It should be sown as soon after the middle of August as practical, using about 30 pounds of vetch seed and three pecks to a bushel of rye per acre.

Practical Science.

THE VARIATION IN TEST IN MILK AND CREAM.

BY FLOYD W. ROBISON.

(Continued from last week).

Separator Should be Operated Uniformly at Full Speed.

In the first place, probably one of the factors influencing the test in the highest degree is the uniformity with which the separator is turned. This will apply more especially perhaps, to hand separators. It makes some difference as to the total amount of fat removed from the milk, whether the separator is run at full speed, and uniformly so. Experimental results show that when the separator is operated at full speed the skim-milk will contain the smallest percentage of milk fat and the cream will be the richest in butter-fat. With the separator running at half-speed a little more butter-fat is lost in the skim-milk and the cream has a lower percentage of butter-fat. However, while the cream has this lower content of milk-fat it is caused not by the fact that a good deal of fat is lost in the skim-milk, but by the fact that a great deal of what would otherwise be skim-milk is run in with the cream, and we thus have a much greater quantity of cream with a lower test. If, then, we were to compare the butter-fat in cream from a separator operated at full speed with the butter-fat in cream from a separator operated at half-speed, we would find the total amount of fat practically the same, but one might test not more than half as much as the other and there be twice as much cream.

Temperature Has its Influence.

Another condition which affects the percentage of fat in the cream is variations in temperature from day to day. It has generally been considered that within reasonable limits the higher the temperature the richer the cream. The Missouri Experiment Station claims the reverse is the case, and from a perusal of their experiments we believe their results to be correct. Therefore, if the cream is separated one morning at 70 degrees and another morning at 90 degrees, or nearly body temperature, there will undoubtedly be a considerable variation in fat content, although the separator may be operated at the same speed and without any readjustment.

Dairymen must expect a certain amount of variation in fat in the milk from their herd from day to day. If they will take into consideration the weight of milk at the same time they are considering the test, or if they will take into consideration each time the weight of the cream at the time they are considering the test, they will, we believe, arrive at a clearer idea of the exact daily fat content of their cream, than in any other way.

Method of Sampling Has an Important Influence.

The method of sampling in a great many creameries is not the most satisfactory method. It is difficult to get an average sample of cream or milk from the original can in which it is delivered. The milk should be poured into the weighing can or weighing vat before the sample is taken for testing. In this way when the milk is poured from the milk can into the weighing can, the agitation during the pouring will do much toward giving a uniform mixture to the milk or cream. If there is any appreciable variation from day to day in either the weight of the cream delivered from the same herd or in the fat content as shown by the Babcock test, it would be preferable in the interests of accuracy to have a daily test of the cream instead of making a composite test. It may be readily seen,

(Continued on page 616).

Horticulture.

Fighting the Apple Worm.

THE apple worm destroys, annually, about ten million dollars worth of fruit. Each apple he enters he lowers to the humble position of a cider apple, and the middle of the barrel has become a place of suspicion mainly on his account. He has made apple growing a specialized business.

His line of lineal descendants is one that would make envious owners of large family trees. Two hundred years before the Christian era Cato mentions the apple and the apple worm. Since then Mr. Apple Worm has been frequently mentioned in the records of the human family, but it was not until about forty years ago that we seriously considered warfare against him.

Old Method of Fighting the Moth.

At first we tried to scare him by hanging moth balls in the tree, or fight him with smudges of ill-smelling compounds, using lanterns set in pans of oil as traps, by plugging trees with substances supposedly detrimental to the worm, and baiting him with such delicacies as vinegar and molasses. All of these antics of wise men must have made the apple worm, in all of his incarnations, grin with delight, for they had no other effect.

It was not until, in the eighteen seventies, that Dr. Riley, U. S. Entomologist, found that we could kill this adversary by putting poison on his food. Paris green was the dope that made our battle an aggressive one, and since then spraying has evolved from a pail of poisoned water and a broom, to efficient power sprayers capable of throwing fine sprays of improved poisons.

Printed Directions Not Absolutely Accurate.

All the state experiment stations issue spray bulletins now, in which the directions are down to the fineness of a doctor's prescription. Mix



Showing Band on Tree.

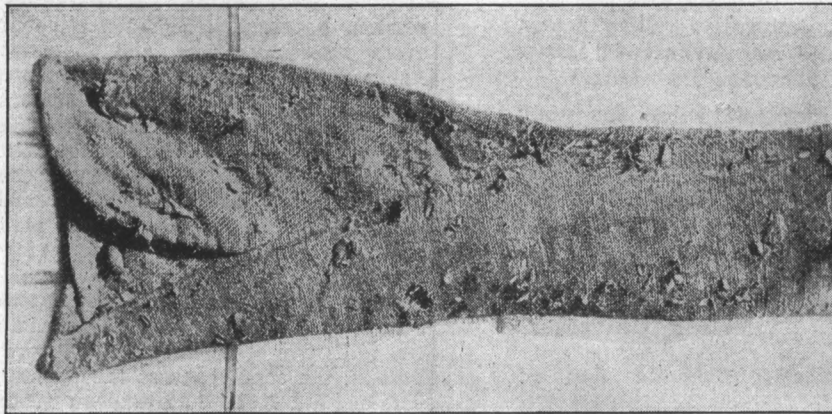
such and such dope in such a way, shake well before using, and use every so often, sounds both entomological and medical. These prescription-like directions for spraying, have been of great help to the fruit grower, in fact, they have revolutionized the fruit-growing business. It has, however, to some extent placed the fruit grower in the same position as the

patient. The work was done more through faith than through knowledge. In most cases he knows little or nothing of the insects and diseases he was fighting.

While the spray bulletins give the time for spraying as accurately as it is possible to give in printed directions, they can not make allowances for variations in the development of conditions due to weather and local conditions. To get accurately the time for spraying for the apple worm, is a thing for the grower to determine.

Method of Putting Bands On.

The method of determination is a simple one, and while it deals with the codling moth or apple worm it



Inside of Band Showing where the Cocoons were Attached.

self, one need not be an entomologist to use it. A half dozen burlap sacks, each folded lengthwise so that it is about six inches wide, and then cut just long enough to go around the trunk of an apple tree, and lap over about an inch, and fastened as bands to the trunks of trees in various parts of the orchard, will make a good start in the work. One headless nail for each band should serve to fasten them to the tree. After drawing the band fairly snug about the tree the nail should be driven in where the ends overlap. The band can then be readily taken off for examination and replaced without removing the nail.

This band will be used by the worm as a hiding place under which it will spin its cocoon. These cocoons which are greyish brown in color, and about three-quarters of an inch long, and a quarter of an inch wide, will be found fastened to the bark under the band or to the burlap of the band itself. They should be gathered and placed in a trap or a place for observation. To gather them without injury the piece of bark or burlap to which they are attached should be cut off with them.

An Efficient Observation Cage.

A simple and efficient trap may be made of a dish of earth slightly moistened, over which a lantern chimney is set. Over the upper end of the chimney a piece of cheesecloth should be fastened. The cocoons should be placed on top of the earth in the dish. This trap should be in a place where the temperature is equal to that outdoors. If it is outdoors it should not be in a position where the sun will have undue action on it. We have found that by placing the cocoons on a shelf in an unheated room, we had satisfactory results and when the moths emerged we noticed them flying about the room. The trap is most more satisfactory, however.

The proper time to spray is determined by the emergence of the moth from the cocoon. Two days after she appears, she lays her eggs, which

hatch in about eight to twelve days, depending upon the temperature. So from ten to fourteen days after the moth makes her appearance is the proper time to spray. The longer time intervening between the appearance of the moth and the spraying being used for the spring, or first brood, of the moth because the days are colder and the eggs do not hatch as quick.

Appearance of Codling Moth.

The moth of the apple worm is a little over a half-inch long and about an inch wide with wings spread. She is of an unpretentious grayish brown color, and flies only at night unless disturbed. In the trap she will be noticed trying to get up the sides of the lantern chimney.

To determine the time to spray for the first brood the bands should be put on the tree during September of the preceding year, and the cocoons collected during the next April. For the second brood the bands should be put in place by the middle of June or earlier. Examinations for cocoons should be made early in July and

should continue about once a week until they are found.

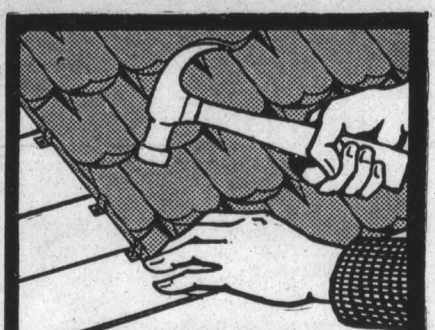
We have found by this method that there are great variations with seasons in the appearance of the moth. For instance, one year we found the proper time to spray for the second brood to be July 25 instead of August 1, as stated in the spray calendars. The following year, however, it was found to be August 15. We have also found differences in the appearance of the moth, and therefore differences in the time of spraying with reference to locations. A place fifteen miles from Lake Michigan was a week earlier than one at the lake, and a place a mile inland, and high, was three days earlier. These differences are all due to temperature influences. Abnormally warm weather will cause the moth to hatch earlier than usual, and abnormally cool weather will make its appearance late.

Increased Efficiency in Spraying by Use of Method.

Those who have taken advantage of this method have greatly increased the efficiency of their spraying. Equal success can be had without the use of the method, but to insure it requires an expensive hit-and-miss procedure. Numerous sprayings at frequent intervals, one of which hits the right time are necessary.

The banding method insures both efficiency and economy as the minimum number of sprayings at the proper time will give maximum results. By its practice we also gain an intimate knowledge of the insect we are fighting that we would not gain otherwise. It is seldom that we can use an enemy we are fighting to as great advantage as we do in this method. We learn from him when we can fight him to greatest advantage and he further obliges us by giving us a ten to fourteen days' notice in which we can prepare ourselves.

Don't forget the second spraying after the blossoms. It will be a good investment.



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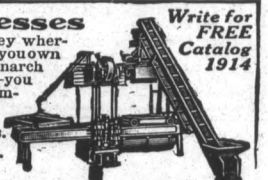
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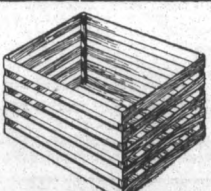
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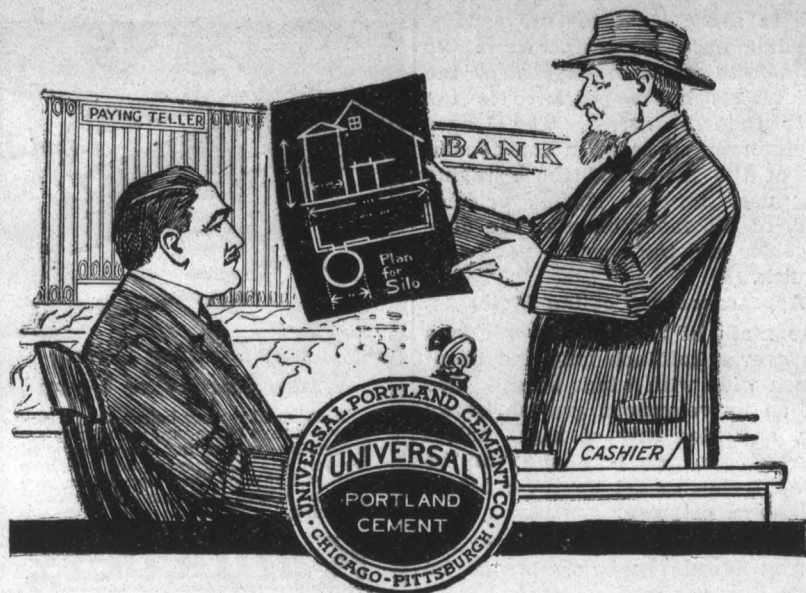
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Live Stock.

National Sheep and Wool Conference.

THE sheep industry of this country is on the decline. The number of sheep on farms and ranges decreased about 15 per cent in the ten-year period between 1903 and 1913. There was a corresponding decrease in production of wool, and the generally unsatisfactory prices and systems of selling have discouraged improvement methods until the quality of wool is admittedly deteriorating in large areas of the country. These were some of the prime reasons for calling the National Sheep and Wool Conference which convened at Washington, D. C., June 2-4. The conference was called by the Department of Agriculture and was presided over by Prof. Rommel, of the Bureau of Animal Industry.

The attendance was not large, probably not exceeding 100 persons at any session, but it was representative of every branch of the wool industry. There were growers present from all the leading wool states, wool dealers and representatives of large woolen manufacturers. The growers showed serious concern in the decline of the industry and looked to the conference to bring about some constructive plan of improvement. It was a distinct disappointment to them that Secretary Houston did not find it convenient to attend any sessions of the meeting. Dr. Galloway briefly outlined the purpose of the conference at the opening session, but from that time on growers, dealers and manufacturers were practically left to fight out matters for themselves and among themselves.

The purpose of the conference, as announced in the call, was to discuss all questions relating to the handling of wool and the raising of sheep in range and farm states. This discussion early resolved itself into a diagnosis of the causes of the general decline in sheep and wool production, and an effort to arrive at some basis for mutual effort at improvement. The causes, as brought out in the discussion, were varied, some general and some dependent upon local conditions. Low prices for wool and lack of a satisfactory system of selling, both resulting in meagre profits to growers and lack of stability, owing to frequent tariff changes, were factors in all sections. In addition the ranges were feeling the effect of uncertainty as to pasture privileges, loss through predatory animals, injustice of contract system of buying, and curtailment of range area. The special farm state problems centered in damage by dogs, absence of discriminating market, and encroachment of other systems of farming.

Range Problems.

Much of the time was given to the discussion of special range problems not of particular interest to sheep men of our section, but entering largely into the industry as a whole. Mr. J. E. Cosgriff, of Utah, who has done a great deal of personal work in the improvement of sheep and methods of preparation of wool for market, discussed the improvement of wool on the range, in which he covered the principal range problems. It is of interest to note that Mr. Cosgriff is the man who is responsible for the introduction of paper twine in tying wools. He conducted an investigation of the adaptability of various kinds of twine and first put it into use in 1909. This innovation, so generally approved and so vigorously endorsed by the manufacturers, was thus brought out and put into use by the growers.

Mr. Cosgriff declared that sheep are decreasing in numbers throughout the

entire west, and western wool is deteriorating in quality because net profits in wool growing are decreasing. Competition with foreign wools is the most frequent cause of decreased profits, but the system of buying western wools has milked the profits out of the business. There is no such thing as preparation of western wool for market; it is merely preparation for sale, and this year preparation for delivery. As long as all wool of a section is bought at one price, there can be no preparation or improvement. Wools worth from 12 to 24 cents per pound are all purchased at one price, and as the entire clip is usually purchased on the sheep's back, frequently months before shearing time, there is no inducement for growers to attempt improvement of quality, or better preparation of fleeces. The principle in the west, fostered by their system of buying, is that the heaviest fleece brings the most money whether the weight is made up of fibre or dirt. Growers are as anxious for a change as anyone. They will change the system as soon as they are paid for their wool according to its quality. He advocated skirting fleeces, sorting as to grade and baling by grades at the ranch and selling upon quality basis. As far as growers are concerned, cost of such work would be saved in freight, as baled wool can be shipped for 15 per cent less than bulk wool, giving a difference of about two cents per fleece.

Australian Clipping System and Costs.

W. T. Rich, of Australia, gave a very complete description of the Australian system of shearing, sorting, classing and marketing wools, and discussed the adaptability of the system to American conditions. The principal interest in his discussion, from the farm flockmaster's standpoint, lay in matters of cost. The work of shearing, grading and packing is all done by contract, at a cost to the sheepman of 13 cents per head in Australia and 12 cents in New Zealand, where fleeces average about 10 pounds each. Shearers average about 200 sheep per day. A shearing outfit carrying 22 shearers consists of 50 men, including rustlers, pick-up men, skitters, graders, etc. The graders are especially trained men, usually certified by agricultural or technical colleges. All fleeces are skirted, which takes off from 10 to 20 per cent of the fleece. Wools are sold at auction on grading done at time of shearing; wool brokers charging one and a quarter per cent on the first 500 bales and one per cent on all in excess for selling.

As to the feasibility of skirting domestic fleeces for the home markets, the manufacturers present were inclined to feel that it would not pay the growers. They contended that, due to cost of labor and knowledge of requirements, it was cheaper to sort wools in the big wool markets than at the source of production; and further that there was little demand for grading of domestic wool. Frequently Ohio Merino fleeces, for example, went into the mills without any treatment, and any sorting and skirting done by inexperienced graders would result in a loss to growers. The tendency of the discussion on this point was to indicate that the manufacturers and dealers were very well satisfied with wools as they are receiving them, and that they did not desire much change in the way of sorting, grading or trimming. It is only fair to say that the manufacturer (Continued on page 606).

Dairy.

CONDUCTED BY COLON C. LILLIE.

SOILING VS. SUMMER SILAGE FOR COWS.

The report of a careful experiment conducted at the Wisconsin Experiment Station, where the system of growing and cutting green soiling crops to feed cows in the summer time to supplement pasture was compared with corn silage, brings vividly to my mind my own personal experience several years ago with this same proposition. I read several articles on soiling crops, and also read a book on this subject in which this system of feeding cattle in the summer time, especially to supplement a pasture, was very vividly presented. For two seasons I gave this practice a thorough test, but they were hardly normal seasons. One was unusually dry and the other unusually wet.

The two years which I practiced the soiling system of feeding the cows in the summer time we had plenty of red clover. Then I sowed peas and oats and cut them, an early crop, and a little after that another crop so as to have them come in succession. I also had two plantings of early sweet corn, and two of the late. I figured that I had prepared the crops to give them something green and very palatable through the summer time to keep up the flow of milk. Now the theory is all right, but in practice this didn't work out to advantage. Since then I have used the summer silo and my judgment is that to have silage to feed in the summer time is far ahead of depending upon soiling crops.

The First Year.

The first year that I practiced this system there was an abundance of moisture. There was a splendid growth of clover, the peas and oats grew luxuriantly and so did the corn. We got along all right with the clover but when it came to harvesting the oats and peas the ground was very soft and to cut and haul them was a difficult job. We did manage, however, to harvest the crops and feed them to the cows. This, however, comes right at the time of the year when you have more than you can do on the farm.

The next year was a dry one and the oats and peas didn't grow so well. The second sowing that we put in didn't do well at all, as the ground was so dry when they were planted. It was the same way with the second planting of corn. My theory was to plow the ground where the first sowing of peas and oats was and put this into early corn. The first year, as I say, there was an abundance of moisture and this system worked well, but the second year when we come to plow the ground, the ground was so dry, and what little moisture there was was liberated when we plowed, that the corn did not come up well and we didn't get very much of a crop, and as a result we lacked a sufficient amount of feed to give best results.

Result of Two Years' Trial.

These two years' experience with this system convinced me that it was not what some people pretended it to be. It is so unreliable and it costs so much money to harvest the crops at that time of the year. This, of course, was before I built the summer silo. I resolved then that if I had to depend upon soiling crops for cows that I would go out of the cow business. But if everything works well with soiling crops, of course you can keep more stock on a given area of ground than you can with pasture, but things don't work right. You can't tell how they are going to work. You can't depend

very much on pasture, and you can depend less upon soiling crops than you can upon pasture; that is, that was my experience upon my soil. With soils better adapted to soiling crops the system might work out better. For instance, a rather light sandy loam, or something of that sort.

Then I built the summer silo and since then we had a great deal better success carrying the cows through the dry weather of the summer. The same area of land that was formerly used for soiling crops is planted to ensilage corn at the proper time of the year and harvested at the proper time of the year and put into a good silo, will keep more cows for a longer time than the crops cut green, even though you can double on some of the crops. For instance, on the early sowing of peas and oats, when the season was suitable, you could plow this and planted it to corn and got a good fair growth. Even in an instance like this, a good crop of ensilage corn would feed more cattle than the soiling crops. Now we plant the corn in the spring at the proper time, and properly care for it. In fall we harvest it when it is mature and put it into the silo, and that is the end of it. There is no going out into the rain after soiling crops. There is no such thing as not getting enough on Saturday to last over Sunday and have to go out on Sunday after soiling crops for the cows. Your feed is right in the silo close to the barn, handy to feed, there is plenty of it. Cows eat it with relish. I don't know as there is any way of telling whether they like it just as well as they would green clover or green corn or green peas and oats, or not. They will eat both of them and seem to relish corn silage just as well as they do the soiling crops, and you can do it with far less labor. One man can do the work with silage, where it would take two with the soiling crops. When you harvest the corn in the fall when you have made preparation for it, it can be harvested a good deal cheaper than it can be in the summer time, and a little at a time.

An Important Factor in Summer Ensiling.

One thing should be remembered, and that is in feeding silage in warm weather one ought to have a silage of smaller diameter than is necessary for winter feeding. If one has a large herd of cows, 40 to 50 cows, the size of the silo is not so important. With 35 to 50 cows you can feed in the summer time from a 15-foot silo and not have any spoiled silage, but where you have a less number of cows, then it is necessary that you have a silo of smaller diameter so that you can take off more of the silage every day, else the hot weather causes the silage to ferment and you are all the while feeding silage that is not of the very best quality. I don't know as its food value is lessened as much as its palatability, as cows don't like it so well. Great is the summer silo. Every dairyman should have one. If he hasn't made arrangements to put one up this year he certainly should. It is not too late. Don't forget it.

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DETROIT, JUNE 13, 1914.

CURRENT COMMENT.

According to a recent announcement, when the school year opens next September some 40 high schools in the state will be offering regular courses in agriculture with specially trained teachers who are graduates of agricultural colleges. Most of these schools will offer four year courses, or have that object in view when the work is fully developed. The importance of this work to the agriculture of the state can be better appreciated when it is considered that it is reaching directly about 1,000 young men, and indirectly as many farms. While the practical work gotten in the high school course, with the field work done on adjacent farms is of no small importance, undoubtedly the greatest benefit which will accrue to our agriculture through the introduction of agriculture into the high schools of the state will be the incentive which this work will give to the young men who take it to make a thorough study of scientific agriculture and a practical application of the resulting knowledge of the business. Statistics resulting from farm surveys in different sections of the country show that the young men who have had high school training make a greater success on the farm, as a class, than do the young men who have not had that advantage. When a good beginning toward an agricultural education is added to that training they should make a still greater success of their work. While high school courses in agriculture were primarily inaugurated in Michigan with a view of providing teachers qualified to teach agriculture in the primary schools, it seems likely that the direct benefit to the agriculture of the state through the technical instruction of farm boys along vocational lines will be an even more important development of the work.

In order to afford a practical test of a new idea the rural organization service of the U. S. Department of Agriculture aided the people of an Alabama county to organize for the purpose of employing a visiting trained nurse and meeting her salary and expenses. An organization was completed and funds raised by the co-operation of the county and the schools and the donations of private individuals. A trained nurse was employed and works under the direction of a committee of public officers. Her work will be as follows: First, to

visit every rural school in the county as opportunity offers and inspect pupils for signs of contagious diseases and to discover defects in teeth, presence of adenoids, diseases of the eyes or other physical defects calling for medical attention. In addition she will inspect the buildings and grounds with special reference to sanitation in its relation to the spread of disease. While at the schools lectures are given to teachers and pupils on methods by which communicable diseases are carried or spread. Second, mothers' meetings are held as opportunity offers, at which the nurse lectures and gives demonstrations on the care and feeding of infants, home sanitation and hygiene, etc. Third, in special cases where rural patients are dangerously ill the nurse, at the request of doctors, may visit the home and assist them through the crisis.

This is a new idea in rural community work, the future development of which may fill a hitherto unsatisfied need, especially in the schools. Reports from the county in which the work was organized state that although it has been under way little more than a month, it is meeting with favor from officials and laymen alike.

Many epitaphs have been written which, in a few words, paid worthy tribute to the characters of the men who inspired them and in whose memory they were penned. Few, if any, such tributes have expressed more in fewer words than the title of this comment, which is the quoted title of a personal tribute to the late Charles W. Post, written by a personal friend. The tribute of which the above quoted expression is both the title and the closing words, is eloquent with feeling appreciation of the worth, the strength, the justice and withal the gentleness and brotherly kindness of the man to whom this expressive definition of character is so feelingly applied. That this sentiment, as well as a keen appreciation of the work undertaken and accomplished for the benefit of the community in which he lived, is shared by his fellow townsmen is attested by the establishment of a C. W. Post Memorial Sunday as an annual affair in Battle Creek, the first tribute of the kind to be paid in a memorial service at the S. D. A. Tabernacle, the largest auditorium in the city, on June 14. In his larger relations with the business world, the strong traits of Mr. Post's character as above indicated, were equally in evidence. Here, too, he was "A Gentleman Unafraid." Truly, those of us who shall merit an equally complementary epitaph will have lived to good purpose.

NATIONAL SHEEP AND WOOL CONFERENCE.

(Continued from page 604).

ers and, possibly, more particularly the dealers, did not show a willingness to meet the growers half way on improvement methods. The promise of improvement in price or proper recognition of careful packing and tying was not sufficient to greatly encourage the growers in such work.

Farm State Problems.

The discussion on wool production in the farm states centered largely in the matter of marketing. While the contract system of buying, so common in the west, is not a factor here, the practices of paying one price for all wool of a community and selling through junk dealers and jobbers are equally discouraging to those who seek to improve their wool profitably. Various phases of marketing were discussed. Two instances in which the growers have united for improved conditions along lines which promise favorable results were reported from Wisconsin and Minnesota.

Mr. P. J. Stevens, of Wisconsin, represented the wool growers' branch of the American Society of Equity of that state. He described the efforts of the farmers of his state to develop the best wool possible to grow, only to find that quality was not recognized and prices remained at low levels. They then organized to market their own wool. They now have ten wool

warehouses scattered throughout the wool-producing sections of the state. Here wool is collected and graded, a warehouse certificate being issued to the grower upon receipt. These certificates are accepted at some of the banks as security and the growers are able to borrow money until the wool is sold. The stored wool is held until prices are right or acceptable offers are made from dealer or an individual mill. Selling thus in carload lots, the association has been able to make very satisfactory sales for its members. The organization has enrolled about 45 per cent of the wool growers of the state and prices secured have ranged from three to six cents per pound above those secured by growers outside of the organization. In 1913 the association sold its wool at a rate of 2 1/2 cents per pound, while the open market price to people outside the organization was from 14 to 16 cents per pound. The Wisconsin growers sell where the best price is offered, but they hope to develop the association until they can sell directly to the manufacturers.

The Minnesota farmers have progressed along different but equally interesting lines. Mr. Magnus Brown, representing the Minnesota Wool Growers' Association, told how his association was first organized for the purpose of improving the quality of wool; how their state was ranked as producing the poorest quality of any of the wool states and prices paid being based upon that rating. As improvement in quality was developed, the price was not varied. The growers could get little information from the dealers or manufacturers as to what was wanted in improvement, and prices remained at about 18 cents per pound. Finally the association conducted a test of cost of production and found that it was costing them approximately 26 cents per pound to grow wool. They then decided to market through mills and finally have turned to making up their wool into products.

The Minnesota Association receives \$300 per year from the state for experimental and development purposes. In addition it has formed a stock company, capitalized at \$25,000, to operate a fireproof warehouse in connection with the association. It can store 350,000 pounds of wool at a handling cost to members of three mills per pound; there is no charge for storage. The wool is sold from storage when prices are favorable. A portion, which is steadily increasing, is being sent to mills for manufacture into blankets, trousers, shirts, Mackinaw coats and wool comfort bats. Wool thus handled is accepted from the growers at 36 cents per pound and turned back in products at list price of goods, less cost of manufacture. About 20,000 pounds of wool is used annually in the manufacture of such products. The association is now arranging for distribution of such products through labor unions and is meeting with success. It plans to eliminate the dealers as much as possible and deal directly with the mills. So far the organization is small in actual membership, but all growers of the state are profiting by increased prices secured.

An experience along the same line, but on a small scale, was reported from Virginia. A farmer made a test with 17 fleeces for which he was offered \$6. He sent it to a mill and had it made in 45 yards of woolen flannel cloth. The \$6 offered would have bought eight yards of flannel of same quality.

Standardization.

Despite the discouraging note left by the manufacturers on the matter of standardizing of wool and selling by grade, the growers refused to be discouraged. While it was admitted that the individual grower could hope to secure slight return for care in grading and preparation, the return would be cumulative and the community that established a reputation for its wool upon this basis must eventually profit thereby. Further, it was felt that if standardization was persisted in, and especially if a federal standard could be established as is being worked out for cotton, the dealers and manufacturers would have to change their system of buying and pay upon a basis of quality. Until such standards are established the problem is one for the growers to work out in organized effort in states or communities. This effort should be accompanied by seeking a market with mills direct as much as possible.

Dogs.

The depredation of dogs was recognized as a universal problem in farm states. The subject came in for generous discussion, but little of a new or constructive nature resulted. A survey of dog laws in various states showed that excellent protective laws are now in existence in most sheep states, but they are not enforced except in such states and such communities as have a sheep population sufficient to influence public sentiment against the dogs as against the sheep.

Where there are but a few, isolated flocks of sheep, public officials will incur disfavor with sheep men rather than with dog owners, and vice versa. The dog problem is also largely a local question where federal or even state laws have little influence.

General Conclusions.

The general trend of the discussion was not especially favorable to the future of the industry. Sheep men are not optimistic and especially so where wool is regarded as the primary crop. The farm state sheepmen have an outlet in mutton which gives best promise of the future. This will necessitate crossing fine-wool sheep with the mutton breeds, more care in feeding with use of forage crops through the summer, keeping enough sheep to make their care of prime interest, and a determined fight against the stomach worm. For men who will follow these suggestions the industry promises profits comparable with other lines of farming.

It is difficult to estimate the value of the conference in the solution of the problems for which it was called. Its result can only be measured by time. Perhaps its greatest value lies in showing the growers that improvements must be worked out by themselves with such assistance as the Department of Agriculture is able to give.

HAPPENINGS OF THE WEEK.

National.

A clash between the United States and General Huerta, of Mexico, seems imminent since the latter has ordered his war vessels to blockade Tampico to prevent the rebels now occupying that city from importing guns and other munitions of war, while on the other hand Secretary Daniels, of the United States, has declared that Tampico shall remain open to all commerce. On Sunday reports came that the Mexican Dictator's gunboats were on their way to Tampico and would arrive there early this week. Should General Huerta persist in blockading the port it will probably end the mediation effort at Niagara Falls, Canada.

Early this week the United States Senate will vote upon the repeal of the law which allows coastwise boats to pass the Panama Canal free. It is expected that the repeal motion will prevail. Last week the House passed three anti-trust bills, one of these provided for a trade commission to look after interstate trade, somewhat after the fashion that the Interstate Commerce Commission is supervising the railroads; a second called the Clayton bill, contains most of the provisions for regulating the trusts, while the third gives the Interstate Commerce Commission supervision over the issuance of railway securities. These bills will likely be next on the program of the Senate, where they are expected to occupy considerable time. If the program is carried out Congress will have to continue in session through July at least.

The general federation of women's clubs gathers in Chicago this week for their biennial meeting. An effort will be made on the part of the women of Illinois to have the convention endorse women suffrage.

Colonel Roosevelt, who recently returned from South America where he discovered a river in the upper Amazon region, is now in Europe to attend the wedding of his son Kermit, at Madrid, Spain.

Former Governor Osborn, of Michigan, has returned from a seventeen months' trip through Africa and Asia.

Because of the financial difficulties that have recently hampered the plans and work at the Michigan Agricultural College, the proposed work of reconstructing College Hall, the oldest building in the country devoted to agricultural educational purposes, will be postponed a year.

Foreign.

Now that the rebel forces have conquered a large portion of Mexico from Huerta and carried the campaign to where it seems that they would be in full control of that country before long, trouble is developing among the leaders of the rebel cause. There seems to be considerable jealousy toward the military success of General Villa and Chief Carranza and his followers are now planning on ridding themselves of Villa. The latter, it is reported, defies his former chief and seems determined to go ahead with the campaign against Zacatecas. General Carranza has appointed Gen. Natera to lead the rebel forces but Villa will ignore this change.

Last year the railroads of England were allowed to increase their rates four per cent to meet higher wages, and other demands, but after the year's trial it has been found that the advance was not sufficient to overcome the added expenses and the companies are now contemplating another appeal to the public for a permit to make another advance in rates.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK*
PUBLISHED WEEKLY.
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ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

A Glimpse at Egyptian Agricultural Practices.

By PROF. ALFRED VIVIAN.

THE agriculture of Egypt is the oldest in the world of which there is any existing record. In the hieroglyphics found on the monuments and tombs, which are at least 5,000 years old, may be traced a description of the agriculture of that

most wonderful properties. At full flood when it runs red with mud these people drink copiously of its water, for it has marvelous virtues in that it destroyeth many evil humours and hath great power to rout out divers demons! It is easy to laugh at the superstitious awe with which these ignorant people regard the river, but after being here the visitor can better understand why the early inhabitants considered the Nile as sacred, for without it there would be neither corn nor millet to make into bread; no berzeem to feed the kine and the goat; and where now flourishes the stately date palm there would be nothing but a dreary, trackless waste.

The agriculture of Egypt, for the most part, is about as crude as can well be imagined, and much of the work is left to Allah, who, fortunately for the Arab, is more kind to him than he deserves. As has been said, the farmers must depend entirely upon the Nile for the water required to produce the crops. Annually, beginning in August, the river rises in flood until it reaches a height varying from 10 to 30 feet above low water level, depending upon the width of the valley, which, by the way, varies from less than a mile to 10 or 12 miles. After reaching its maximum the river quickly subsides until, some time before the first of November, it is again within its banks. During the time of the inundation the Nile is red in color owing to the enormous amount of mud held in suspension, and which is responsible for the high fertility of this valley.

The flood water of the Nile is utilized by the farmers in a variety of ways. The older method still quite common in Upper Egypt is to depend entirely upon the natural overflow or "flood irrigation" as it is sometimes called. During the flood the water reaches back to a considerable distance, depending upon the height of the flood and the rise of the land in the different parts of the valley. As the water recedes it leaves a deposit of silt upon the saturated surface of the ground, and the farmer follows the water foot by foot, planting the grain in the ooze, and stirring it in with his rude hoe, or in some cases even covering it by driving sheep or cattle over the soft soil. Usually the grain or clover receives no further attention, and in a good year the soil stores sufficient moisture to mature the one crop. As the soil dries out it cracks, sometimes with openings several inches in diameter. This results in large losses of moisture by evaporation. The Department of Agriculture is now trying to induce the farmers

to practice inter-tillage to conserve moisture, but it is uphill work to introduce any such innovation.

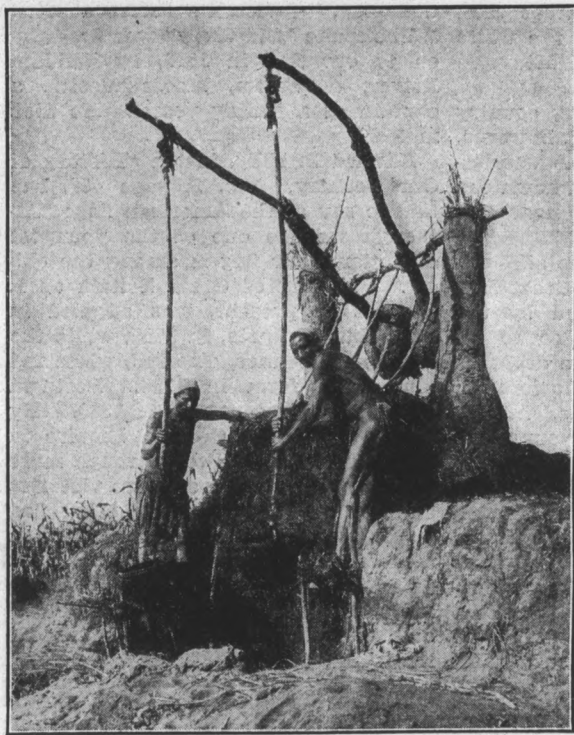
A large part of the cultivated land in Egypt is under what is known as "basin irrigation." In this system the land is divided into a number of level areas by means of dikes several feet in height. Flood gates are located in these dikes to admit and discharge the water. When the river is highest and "the water is red" (i. e. very muddy), the gates are opened and the basins allowed to fill to as great a height as possible with the silt-laden water. The gates are then closed and the water remains in the basins for from 30 to 40 days to deposit the greatly prized Nile mud, and to enable the thirsty soil to drink in as much as possible of its life-giving moisture. By this time the flood has fallen and the gates are cautiously opened allowing the excess of water to run slowly back into the river. Sometimes the seed is planted in the soft mud but more frequently it is scattered over the dried surface of the ground and covered by means of the plow.

The plow used by the Egyptian farmer is of the same form as that used by his ancestors 5,000 years ago and its pictures may be easily recognized on the old monuments of that period. It consists of a pole about six feet long attached to the yoke for the animals which draw it, while at the other end a piece of wood is fastened bent inwards at an acute angle, and shod with a three-pronged piece of iron. Connected with the pole is a stick used in guiding the plow. This implement does not turn a furrow but merely scratches the ground for a couple of inches deep. Our observations indicate that fully one-third of the soil is not disturbed at all in going over the field with this crude

camels; a camel and a bull; a camel and a cow; camel and donkey; two bulls; two cows; cow and buffalo; bull and donkey. A more ungainly combination than the camel and cow would be hard to find, but strange to say the two animals moved in harmony and kept pace better than is often done by two horses working together. A horse, by the way, is seldom seen on a farm in Egypt.

The most efficient tillage implement possessed by the Arab farmer is the heavy hand implement which is a cross between a hoe and a mattock. Occasionally was seen an entire field prepared by a line of men using these hoes. The soil prepared in this way is in much better condition than that which is plowed, and man power is so cheap that the cost of such preparation is not much greater than plowing.

The basin system, like the older flood system, permits of only one crop a year, but so much more mud is deposited in the basins, and the subsoil is so much more thoroughly saturated with moisture, that the crop produced is larger than was possible with the other method. For many centuries the farmers favorably located near the Nile or the canals have practiced irrigation to increase the crop, or to permit of an extra crop being produced during the year. The methods they use to raise the water are interesting. Almost anywhere along the river may be seen men, with no clothing but a breech cloth, lifting water for the crops by means of a "shadoof." This is an apparatus very much like the old-fashioned well sweep, which many of our readers will remember. On the short end of the sweep is fastened a heavy ball of clay, and on the other a stick carrying a queer basket-shaped bucket often made from a goat skin. The ball of clay is sufficiently heavy to raise the bucketful of water, and the man works there by the hour pulling down the sweep until the



Raising Water for Irrigation with a Shadoof.

day. Here are represented the plowing, sowing and harvesting of the grain, as well as the manner of threshing, winnowing and preparing it for consumption, and the interesting feature of it all is that the implements used and the methods of procedure followed 5,000 years ago in the Nile Valley are exactly those in vogue with the peasants of today. Customs change but slowly in the Orient.

The Egypt of the map covers an area of 400,000 square miles—a territory seven times as large as the combined areas of the New England states. The real Egypt—that part capable of producing food for man and beast—covers only 12,000 square miles, a tract of land not equal in extent to the states of Massachusetts and Connecticut and less than one-third of the area of Ohio. In other words, while Egypt has the tremendous area first mentioned, nearly all of it is desert, and the only part capable of sustaining life is the narrow strip known as the Valley of the Nile. No rain falls in Egypt—or practically no rain—for the total annual rainfall rarely amounts to as much as one inch. If it were not for the waters of the Nile, which are due to rainfall wholly outside of this country, even the 12,000 square miles which make the real Egypt would be barren. No other country depends for its agriculture upon water borrowed, so to speak, from its neighbor.

Perhaps no river in the world has been so apostrophized in prose, poetry and song as has the Nile. For hundreds of centuries it was worshiped as a god and even today a population which pretends to worship the one God, in reality looks upon the Nile as sacred, and ascribes to its waters



Plowing with a Camel and a Cow in the Valley of the Nile.

plow, and that the ground which is turned is left in large, hard lumps which often remain without the least attempt at pulverization.

The farmer plows with whatever animals he chances to possess, and many strange combinations are seen. During one day's ride into the country the following teams were observed at work plowing in the fields: Two

bucket fills with water, allowing the weight to raise it, and then emptying the bucket into a trough from which it runs into the little ditches which distribute it over the field. One shadoof permits of raising the water only a few feet, and it is not unusual, where the level of the water is much below the field, to see two, three, or even as many as four shadoofs in use

Although the clock was long since removed from the Pittsfield house, the place is still hallowed by association with Longfellow's poem. A family of famous singers, the Hutchins,

THE GLORIOUS FLAG.

BY Z. I. DAVIS.

Unfurl the flag, red, white and blue,
 Choice pennant of our home land
 free,
 Thrill every heart and true,
 Oh, emblem of our Liberty!
 The cynosure of every eye,
 Its stars have never trailed the dust,
 But ever floats against the sky,
 Affirming that in God we trust.
 We think of noble Washington,
 Of Valley Forge, those days of old,
 Of unseen battles bravely won,
 That wrought out courage strong
 and bold.
 Loved legacy of years gone by,
 As pledge of victory, still wave,
 Where soldiers live and soldiers die.
 On plains of Peace and battlefield,
 There blaze the way for marching
 feet,
 And never to the foemen yield,
 A hero's shield and winding sheet.
 Three cheers for all the conquests
 won,
 Columbia united stands,
 The greatest nation 'neath the sun,
 God's chosen leader for all lands!

sons, had the poem set to music, and once while, in Pittsfield they sang it in the old house, near the spot where the famous clock had once stood. In the absence of all its old inmates, how tenderly pathetic must have sounded, in the old Appleton house, the words of the song:

"All are scattered now and fled,
 Some are married, some are dead;
 And when I ask with throbs of pain,
 Oh, when shall they all meet again,
 As in the days long since gone by?
 The ancient timepiece makes reply,
 'Forever, never!
 Never, forever!'"

Of the beautiful and historical old house of the Appletons, at Pittsfield, which still stands on a low eminence on East street, "Elm Knoll," Longfellow wrote:

Somewhat back from the village street
 Stands the old-fashioned country seat.
 Across its antique portico
 Tall poplar trees their shadows throw;
 And from its station in the hall
 An ancient timepiece says to all,
 'Forever, never,
 Never, forever!'"

The house was built by Thomas Gold, a prominent lawyer, about the beginning of the nineteenth century. The Appletons sold it to Mr. William Plunkett, who is still its owner. It was when Longfellow came to visit his wife's parents, immediately after his marriage with Frances Appleton, that he saw and was impressed by the stately old clock standing on the landing of the stairs, which still lead, as in days of yore, from the lower to the upper hall of the historic house.

EARNING MONEY IN VACATION.

BY M. PELTON WHITE.

The chug-chug of the motor is heard on nearly every navigable body of water in settled portions of the country. Also, campers are prone to seek the banks of lake or stream for the summers outing.

Last year a young friend of mine took advantage of these two facts to the extent of earning a sum sufficient to pay his way through college the next year. Having often camped in his early boyhood days he knew that the most vexatious question his mother and other housewife campers had to solve was how to dispose of the family washing. In even a small camp the work of carrying water from river or spring for cooking, dish-washing and personal use is quite hard enough, especially if the masculine contingency doesn't arrive at camp until after the day's work in the city, without the addition of carrying wash water. Besides the task of boiling clothes in a coal oil can (the usual make-shift for a wash boiler) over a camp stove, or camp fire, is no easy matter.

My friend was familiar with boats and gas engines. He hunted over the boat houses in early spring and at last succeeded in finding a small launch, 25-footer, that suited his purpose. It wasn't much for looks, but it was staunch, sea-worthy, had can-

vas curtains and a canopy top and its engine was in working order. The owner was willing to rent it week days, reserving the right to use it evenings and Sundays. My friend discovered that many owners of small pleasure boats who were not at liberty during the week days were only too glad to let their boats and let them very reasonably, too, thereby cutting down their own running expenses.

After the boat question was settled my friend made arrangements with a first-class laundry to do the work and allow him a certain per cent. One of the wagons was to meet his laundry boat at the dock certain days of the week. Then as soon as the camping season opened on the lake he solicited work from the campers, stating prices, and time of collection and delivery of laundry. He had work enough to keep him hustling the whole summer. Not only did he run a laundry boat, but the campers often found it most convenient to send to the city by him for supplies.

SPORT'S PROMPTNESS.

Mr. Reading taught his dog Sport to carry his basin whenever he was to be fed. When Mr. Reading milked, he taught the dog to hold the pan while he milked his supper into it. One day he was later about his chores than usual, and when he went into the cow-stable, there stood his dog, holding his basin up under the cow, waiting for his portion. It is needless to say that it was an unusually generous portion that day.—Miss Clara A. Baker.

WHEN LILACS BLOOM.

BY ALONZO RICE.

When lilacs bloom, their purple
 sprays
 The garden's drowsy depths per-
 fume
 Through all the golden summer days,
 When lilacs bloom.
 And darting through the fragrant
 gloom,
 The humming bird, with breast
 ablaze,
 A shuttle swift, threads summer's
 loom!
 Now with their wealth my love ar-
 rays
 Her sunny locks, while I assume
 A lover's guise! We seek old ways
 When lilacs bloom!

A RAZOR SNAP.

A good imported German Razor at 35 cents sounds impossible, but while the present supply lasts The Michigan Farmer makes this remarkable offer.

The razors are made of the best German steel, five-eighth-inch blade, and black handle. We will not say just what these razors ordinarily retail at, as prices on razors vary with each dealer, but we have seen razors no better sold at \$1.25 and \$1.50.

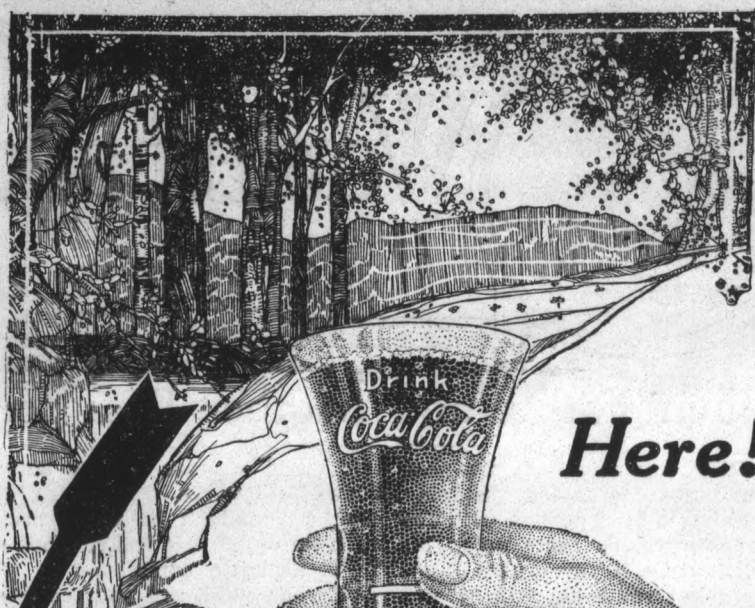
Every man who shaves ought to have at least three razors as it is a proven fact that giving a razor a rest is beneficial to it, and here is your opportunity to get a supply at very little cost.

So, only while our present supply lasts the price is 35 cents each, postpaid, or a half dozen at \$1.70, postpaid.

A Strop Bargain, Too.

We also have a quantity of Presto All-in-One razor strops that dealers sold at \$1.00 each. These strops are made of finest horsehide leather and one side is treated with All-in-One solution which makes it possible to put a hair splitting edge on the dull-est razor. It combines the strop and hone in one.

The special price on the strop alone while the supply lasts, will be 35 cents, postpaid, but if ordered together with one of the above razors the price of both will be only 65 cents postpaid. Here is your chance to get a good razor and strop at less than half price. Send orders to The Michigan Farmer, Detroit, Mich.—Adv.



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Tom Profit Discusses Blades

—like a pocket knife that a fellow
 can tote around for years, an' love
 because it's old an' tried an' true.

I like to know that the steel in the blades
 is a stayer an' a good reliable bit of metal.
 I've carried a Keen Kutter Pocket Knife
 now for ten year an' it's a good bit worn
 from a good many rubs—but even ten
 years hasn't rubbed the gumption out of my

KEEN KUTTER

knife. 'Bout five year ago I started to
 usin' a Keen Kutter Junior Safety Razor
 an' now I wouldn't use any other kind for
 hire. No, sir! I keep my blades as sharp
 as frost on a Keen Kutter Automatic
 Stropper an' there's no man wears a smoother
 face than I do. He couldn't. Keen Kutter
 blades, knife or safety, are right. If they
 ain't, the dealer is authorized to hand back
 the price. But you'd rather have
 the blades. Yes, sir!

Tom Profit.



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 Junior
 Safety
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 with
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 of
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 and
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 \$1.00

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 with
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Woman and Her Needs

At Home and Elsewhere



When Father and Mother Disagree.

JOHNNIE, my neighbor's five-year-old, defied his father yesterday, and after a brief session with dad in the basement, he came up to his mother, howling for sympathy.

"Why didn't you mind father?" was his consolation. "If you had he would not have spanked you."

"Why didn't you say, 'Aw, leave the kid alone,'" flashed back Johnnie. "I thought you would."

With which illuminating side light on inside family history he howled afresh.

Johnnie's plight reveals all too clearly the condition in many American homes. Instead of a settled policy of discipline to be adhered to by both parents, father and mother have theories as widely separated as the poles. Mother leans to modern methods of suasion and putting the child upon his honor, while father insists that sparing the rod means spoiling the child, or vice versa. However it is, instead of discussing the matter out of the hearing of the child and agreeing on certain things, they settle each controversy the minute it comes up, without regard to the possible effect on their offspring of these family squabbles.

Johnnie comes in and asks mother if he can do something. She, for some reason best known to herself perhaps, refuses permission. Instead of letting it go at that, or calling mother out of the room to take it over, father demands to know why she "never lets the kid do anything he wants to?" and tells Johnnie he can do as he likes. Next time Johnnie probably does not wait to have father tell him to disobey mother. He follows his own sweet will, trusting to luck to have one or the other of his parents save him from the consequences.

It seems queer that so many parents can not see how ruinous such a course must be, not only to discipline now but to their own chances of happiness with the child later. Many a mother who is today mourning the ruin of her son, has only herself to blame. When he was little she thought him much too wonderful to receive discipline every human being needs, and constantly interfered to shield him from justice as it would be meted out by father or teacher. Naturally, as he grew older he had the idea that he was a superior being who could do about as he pleased and escape the consequences. But there came a time when mother's interference could not save him, and he had to submit to the discipline which should have been over with years before.

Mothers are so foolish to stand between father and child, unless the father is an acknowledged brute. They never gain anything by it, not even the respect of the son they try to shield, for boys have a sure sense of justice which makes them despise the person who babies them, and respect the one who gives them their deserts. The modern boy is all too prone to despise "petticoat government" anyhow. Why help him along by encouraging him to think he can always pull the wool over mother's eyes?

Granted your four-year-old is the most marvelous child ever born into

this world of tears. He is naturally bound to deserve a spanking sometime, he wouldn't be worth bringing up if he didn't. Let father alone when he is about to administer it. Don't spoil your child, and your chances of future happiness, by saying, "Oh, let the child alone." DEBORAH.

HOME-MADE CHEESE.

In response to an inquiry for directions for making cheese at home, I submit the following, which was the modus operandi used in the home of our childhood.

At night the milk, as soon as drawn should be strained and cooled to about 60 degrees. Add the morning's milk, stir thoroughly and heat to 84 degrees; then put in the rennet and stir for about ten minutes. Remove the boiler from the range and cover closely so as to retain the heat.

Enough rennet should be used to cause the milk to begin to curdle in 20 minutes. As soon as the curd is firm enough to break clean, that is, not look milky, when lifted on the finger, it is ready to cut. Cut the curd in checks half an inch square. If one has a horizontal curd knife the curd may be cut in cubes; if not, diagonally. The curd should be allowed to settle a few minutes, then place the boiler over a slow fire and raise the temperature at the rate of two degrees in five minutes; stirring carefully with the hands or with a curd rake, and cutting the larger pieces so that all the curd will be cooked alike. When 98 degrees is reached arrest the heat and hold the temperature at that point for 15 or 20 minutes, or until properly cooked, when it will have a peculiar springy feeling when squeezed in the hand. Care should be used in determining the time of cooking, as, if cooked too long the cheese will be hard and dry, if not enough it will be wheyey and will not keep well. The curd should be allowed to settle, then dip the whey down to the curd and cool to 90 degrees. Dip off the remainder of the whey, drain the curd as dry as possible in a curd basket or on a cloth stretched over a hoop; break carefully into pieces about the size of a hickory nut and salt at the rate of one ounce of salt to two and a half pounds of cheese. The curd may be allowed to stand in a warm place until slightly sour or it may be cooled at once to 82 degrees and put to press.

The Pressing Process.

When the curd is ready for the press, place a square of white cloth, wrung from the whey, in the hoop. Put in the curd and fold over the corners of the cloth. Put on the follower (a wooden cover fitting closely inside the hoop) and press down lightly, afterwards gradually increasing the pressure. At night take the cheese out, bandage with cheese-cloth and replace in the hoop, putting a cloth under and another over the cheese and press tight. In the morning turn the cheese over again, using fresh dry cloths in place of the damp ones, and increase the pressure still more. Let it remain in press till the next cheese is ready to take its place.

When it is taken out, rub with a

dry cloth, grease thoroughly with soft butter and place on a shelf in the curing-room. In warm weather the temperature of the room may be lowered considerably by sprinkling the floor with cold water and hanging up wet sheets. The cheese should be turned over and rubbed every day, using a little butter, till they are at least a month old, when they should be ready for use or for market.

A richer cheese can be made for home use than is practicable in a cheese factory. In many factories the acid is allowed to develop in the curd before drawing the whey. It is claimed that this makes a firmer cheese, which may be the case, but it surely detracts from its richness.

SUBSCRIBER.

CLEANING A SMALL HOUSE.

BY VERA T. WONSER.

There is any amount of good advice as to housecleaning, for the woman with a nice large house and plenty of money, but we seldom read anything that is of much use to the woman who does her work alone, whose strength is limited, and whose home consists of three or four rooms. Usually the order is for paints and varnishes and all the modern implements, among the best of which is the vacuum cleaner. Those things are all right, but there are any number of home makers to whom those things are an utter impossibility.

These home-makers love cleanliness and daintiness as well as their more fortunate sisters. When one is strong and well, cleanliness is easy, but when one's health isn't good, housecleaning is a dread.

A small house isn't as easy to clean as many people think, for the reason that the rooms are pretty well packed and are in constant use. Let us begin with an upstairs sleeping-room. First, move things over and begin at one side to take up the carpet. After removing tacks fold carpet over very carefully. If there are papers under it, lift gently one by one, laying one on top of another, roll up tightly and lay one side. Should there be straw under it sprinkle lightly and take up in a basket. Sweep the floor carefully, being careful not to raise a dust, mop or wash with a cloth, set the things over onto the clean floor and proceed in like manner with the rest of the carpet. The papers rolled tightly can be burned in the heater without danger of setting anything afire. Now perhaps with the everyday work to do this is a good place to stop. Each one should use her own judgment as to when to stop, but it is the hardest thing of all to learn, just when you've done enough. Don't be silly and keep going on lest someone think you lazy. There is no one knows just how much you can do as well as yourself, and you don't always know.

The next thing is the bed. Put all the bedding out on the line. If you have help to get the mattress out doors, all right, but if not, open the windows, pull the bed out into the draft and whip the mattress, turn and whip. Cover mattress, and clean the walls. Remove mattress and clean bedstead. Bring in bedding and make the bed if you wish.

Clean pictures and furniture, being careful not to make a bit of dust. Furniture may be cleaned and partly

dried, but anything that water won't injure I prefer to clean with a cloth wrung out of water. Wash windows and woodwork, put down carpet as you took it up, that is, put down one side or corner and move things over and put on the finishing touches.

You have been able to stop at any time. You could be one day or four at it, and you have not disturbed any other part of the house. The one thing on which success depends, is being careful about stirring up dust. Some people seem to think they are not doing good work unless they kick up a big dust, one of the greatest of mistakes.—Hope.

THE CLOVER MITE IN THE HOUSE.

I have been troubled about this time for two or three years in one or two rooms with a little red bug, or spider, not much larger than a point of a pin, in the windows first, and on an upholstered green plush divan and one on carpet. I have tried everything I can think of. They will last about a month or six weeks, and I will not see anything more of them until the next spring.—A Household Reader.

The creature described by A Household Reader, can be nothing other than the clover mite, that feeds on clover and most anything else, and which, in the spring and fall, is often driven into dwellings, to the confusion of the inhabitants. This has been particularly bad all over the state this year. Its distribution is somewhat uneven since it appears here and there in various places without any apparent reason or rule for so doing. The only way to avoid the nuisance is to provide barriers, or to use some spray which will kill them on their way into the house. Dilute solution of nicotine or kerosene emulsion spray on the foundation walls of the dwelling outside will do the work temporarily, but it must be repeated from time to time since, when it evaporates it is, of course, gone. Another way is to put a half-inch band of tree tanglefoot, or other stick mixture, on the foundation walls or water-table, all around the dwelling. This will prove a barrier all right, but is objectionable because it may get on the clothes, especially if children play in the vicinity. As the season advances, these creatures gradually disappear. We have had them on the Campus several times, although they have not been troublesome here this year. They may appear again in the fall; in fact, one would rather expect them to.

Mich. Ag. Col. R. H. PETTIT.

EMERGENCY PLATES.

BY MRS. JEFF DAVIS.

Some days when the work has been unusually heavy, the housewife is very tired by the time for preparing the evening meal. At such times clearing away the dishes and washing them seems almost an impossible task. This work may be saved in these times of trial by using paper plates to eat from, and also as vegetable dishes. The housekeeper may then spend the evening pleasantly with the rest of the family instead of washing dishes in the kitchen. These paper plates may be bought, at a nominal cost, by the hundred, and saved for emergencies. They are also splendid to have to use at picnics, or any out of door festival.

Poultry and Bees.

GENERAL CARE OF GUINEA FOWLS.

The thing that prompts me to write upon this subject is because very recently countless numbers of cases have been reported of heavy losses of chicks from crows and hawks. We have found that the best solution to this problem is to keep a small flock of guinea fowls. There is nothing that will give warning quicker when anything threatens the poultry yard than guinea hens. Many a time the guinea hens have scared the crows and hawks when they were about ready to steal some of the most promising ones which are always the ones to venture the farthest away from home. Some object to the noise of the guinea fowl and it must be admitted that there are good grounds for such objections. At the same time, just on account of this noise they may pay for their feed in a very short time in the many chicks they will save.

Good to Scare Enemies of Poultry.

Farmers should at least try them to scare crows and hawks, to see whether they can be profitably kept just for this one purpose or not. According to the writer's experience, they most certainly can. One of the greatest reasons why these fowls might be kept in small numbers on every farm, is because of the most excellent flesh that their carcass furnishes for the table. The flesh of the guinea fowl possesses a very good gamy flavor, and for this reason is relished by many.

For the farm only a few are recommended, especially for a start, say four hens and one male. Do not allow more than the above number of hens to a male, otherwise a large percentage of the eggs will be infertile. I have seen as many as thirty on one farm and they were doing well and were paying for their keep by a large margin. Their breeding season begins in April and May and they usually lay all the rest of the summer. As an average, about 50 to 60 eggs can be expected from one hen, although instances have been reported where as many as 100 were laid by one hen. As a rule, they do not lay in the winter, although some guinea enthusiasts claim that they can be bred to lay during cold weather.

Not a Good Sitter.

As a sitter the guinea hen amounts to but very little, because they are naturally restless and wild. The best way of hatching guinea hens is by placing them under ordinary hens and allowing about 15 eggs to a hen. As guinea eggs, as a general rule, are very fertile, a good hatch can be most always expected.

Guinea chicks, when just hatched, are about half the size of ordinary chicks, but they are more active than chicks of the same age. For the first week it is advisable to keep the small guineas confined, or they will wander away and get lost. After that, when the weather is good, they do better when allowed free range with the mother hen.

Small guineas, like young turkeys, are very sensitive to cold and dampness. Their quarters should always be dry and sanitary. Do not try to keep either the old or young in confinement much, because they will invariably not do well under these conditions.

Feed the young guineas the same as you would small chicks. A variety of suitable grains for guinea fowls is recommended. They are, corn, barley, oats, buckwheat and wheat. Green food and grit, with plenty of fresh

water are, of course, necessary, and should always be supplied.

Cost of Keeping Slight.

If they are allowed free range, which is advisable, the adult guineas pick up most of their feed, and the only feeding they need is at night, which is given chiefly to keep them roosting at home rather than in the woods. Guinea hens eat and destroy a large majority of insects.

One of the best ways of getting a start is to buy a setting of eggs and place under a common hen for incubation. If mature stock is bought, and not closely confined for a period, they will wander away and may never return.

The first few eggs laid by guineas, as a rule, are the most fertile, and produce the strongest chicks.

New York. F. W. KAZMEIER.

LATE-HATCHED CHICKS.

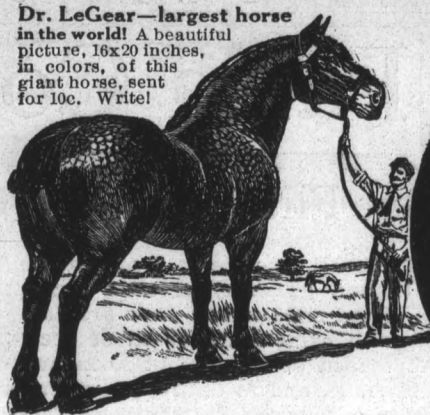
Though the natural hatching season usually ends before the middle of June, still many chicks are hatched out after that date and when they are given the proper care these will usually do very well. The idea that summer-hatched chicks sleep themselves to death is quite prevalent among those poultry raisers who have never attempted to rear any summer chicks, or who, having attempted it, have neglected to give them the care essential for success at this season. But those who are prepared to manage the late broods properly will find them no more trouble than the early broods and the losses should be no greater.

The main advantage for the farmer in early hatches is for winter layers and for market as fliers when prices are at their best. But it will pay to hatch late chicks for the home table as they can be disposed of at any time after large enough for use. But with the small breeds of fowls, it is by no means true that the pullets hatched in July will not develop into winter layers. Leghorn pullets have been known to lay at three months of age; at four months old, egg production with them is not uncommon; and at five months, even the more slowly-maturing individuals will be producing eggs in paying numbers. So the latter should be ready for laying before the season of settled cold weather arrives, if hatched in July, supposing that winter arrives with the first of December, which is not always the case. Even with breeds of medium size, as Plymouth Rocks or Wyandottes, there is a fair chance of securing well-developed chickens before the arrival of real winter weather. Of course, the large breeds, Brahmas or Cochins, which require, as a rule, seven or eight months of growth before egg production is begun, cannot be hatched yet this season and developed into winter layers. For pullets which do not begin to lay before real winter weather, will not lay, at least profitably, until the approach of spring. But the farmer who has not already hatched a full quota of chickens of the small or medium sized breeds need not hesitate about hatching in July, for there will be ample time to secure profitable development.

Indiana. W. F. PURDUE.

Eggs should be collected daily and should be cooled as quickly as possible. A sweet, fresh basement which is cool, or a cyclone cellar, makes a satisfactory place to store eggs. They may also be kept cool by placing them in a bucket lowered into a well. Avoid storing them in musty basements and keep them away from flies.

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POULTRY.

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PLYMOUTH Rock cockerels 5 to 11 lbs., according to age, hens 5 to 8 lbs., 15 eggs \$1; Mammoth Bronze Tom Turkeys 8 to 35 lbs., according to age. Price \$8 to \$25. 10 eggs \$3. A. E. OHAMTON, Vassar, Mich.

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Farm Commerce.

But First May We Cast Out the Beam.

THERE has been much wailing and gnashing of teeth against the middlemen. They are charged with extortion, accused of deceit, impeached of an attempt to monopolize trade, and to destroy or obstruct other avenues of distribution. These men have, in fact, been the object of incessant vituperation, and much of the railing has not been without foundation. But are they alone guilty of the marketing evils now confronting the farmers of the country?

What has been the great complaint of the buyers? Have they not found fault these many years with things for which the producers are responsible? Have they not been imposed upon to no small degree by sellers who practice shrewd schemes of grading, packing, padding, etc.? Is it not probable that by the correction of many of the things that lie within reach of the producer that a much better feeling would prevail between the farmer and the man who buys his produce; that they would share more of the spirit of co-operation looking toward an improvement of the service both are trying to render the public?

There is no Excuse.

The writer is not unconscious of the excuse that schemes have developed to even up the unjust demands made upon the business by the middlemen, and, in instances, to make it possible for the producer to make a living from his farming; but cheating is wrong, and it can never be expected that the marketing ills will be remedied or greatly improved until the product is started on its mission properly graded, honestly packed, and correctly labeled. First cast the beam out of our own eye and then perchance we can get the mote out of the eye of the middlemen.

Perhaps the largest beam is that of improper packing. The sheepman puts taggings in the center of the fleeces and the apple grower takes pains to get inferior fruit where the buyer is not likely to see it. Both make conscious efforts to get money under false pretenses. It is likely that, if our courts had taken a stand for righteousness on this matter many years ago, the situation would not have developed into a problem.

The Short Measure.

Then, too, there is the short measure. On this page is an illustration of a hamper, the construction of which was such as to cause a buyer to believe that he was getting more than he actually did. The bottom which carries the contents is a few inches above the one that rests upon the ground and the sides have a space that is not occupied with the product being handled. Then we have berry boxes with the bottom fixed quite near the middle of the sides, the short bushel basket, and a variety of containers that are designed to deceive the buyer. These things ought not to be.

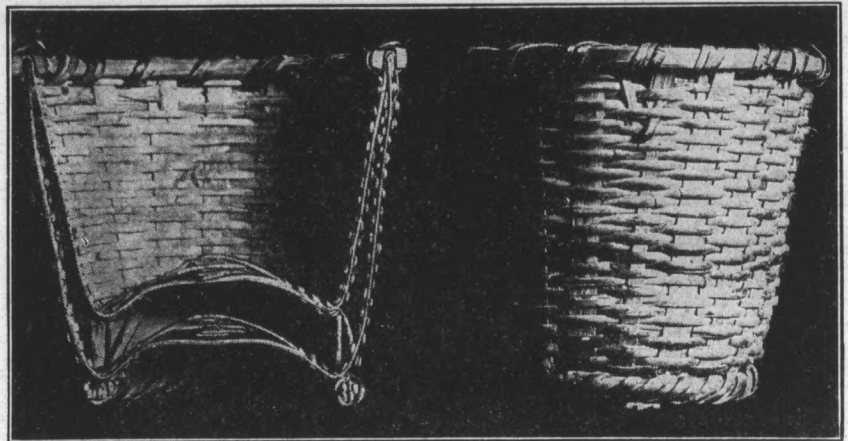
And let us not put too much blame on the manufacturers of containers. They are serving those who buy their wares. If they are in the habit of making short measures it is largely because there is a demand for measures that do not come up to the standards. It would be foolish business to make small baskets when standard ones were wanted. The man who uses baskets is the one who dictates the kind.

Government and State Aid.

It is most fortunate that the legislatures of the several states, and the federal government, are taking a hand in the elimination of this practice of giving short measure. It is also a matter for congratulation that there is

a large class of producers who desire to do the right thing. They are honest and stand ready to support any and every movement destined to bring improvement in marketing conditions. The government and this class of citizens will need to work hand in hand to secure the speediest results.

Whether a man is honest or not in regard to these things, the question is a matter of his concern, for honest men must bear the tax the community pays when a dishonest neighbor sends out of that community a barrel of apples with inferior fruit in the center, or one that is improperly stamped. Associations in many places are real-



The Use of Such a Hamper as this is Apt to Disappoint Customers.

izing this and are spending energy to formulate a system that will guarantee the products sold, out of the community to be as represented.

The Practitioners Lose.

But however much the state, the local associations and innocent men may be interested in the movement for more uniform packing and honest methods of dealing, the individual who allows himself to do those things that are dishonest suffers most from it. His tax exceeds that of any other. Temporarily he may add to his receipts, but some time in the future he is certain to lose what he has gained, and more. His goods will find him out and when they do those who bought in good faith will now avoid his wares only to make it necessary to sell at a price that will cover possible chances of losses through misrepresentations.

So while the din of extortion on the part of the middleman is being echoed, every farmer should take more than ordinary pains to put his goods on the market honestly, and by so doing clear his vision for the work ahead, since there is evidence that the new marketing plan will rest more firmly on the merits of the goods sold than does the present system.

POTATO GROWERS WILL CO-OPERATE.

Michigan promises to produce more potatoes than ever before, this year, but the tubers will be better graded, sorted and packed for market and will bring better prices. More attention will be given to spraying, culture and to marketing methods. Michigan has a state association and now the counties are organizing local associations. Wexford county is in line and is working especially for purity and uniformity of seed. Grand Traverse is active, with one of the Traverse City banks assisting in a campaign with more intensive culture in view and the raising of better potatoes. St. Clair is a leader with a strong organization of growers. Montcalm, Barry, Kent and other counties are waking up, but the big "noise," to use a slang

expression, is in the upper peninsula.

A potato congress will be held at Menominee, October 20-23, made up of growers from each of the 15 counties of Cloverland, and of buyers from Chicago, Milwaukee and other cities. The grower and the buyer will be brought together, the grower having from two to five bushels of stock, a sample of his crop, and the buyer will look over the same and place his order. Farmers are urged to grow standard varieties, the Sir Walter Raleighs, Rurals and Irish Cobblers being recommended, so that buyers may purchase carloads of one variety without necessitating mixed cars and lower prices. Again, the growers are asked to sort and pack in boxes attractively. Col. Mott, of the Upper Peninsula Development Bureau, suggests the use of a uniform label, as follows: Cloverland Potatoes of Quality, from John Brown's Sunnyside Farm. P. O. _____, State _____. Where is Cloverland? It is in the

Upper Peninsula of Michigan." There are 60,000 farmers in Cloverland and if each one were to use such a label the advertising power would be tremendous.

Houghton county growers are organized and it is estimated the county will raise 50,000 bushels of pure-bred potatoes this year. Leo M. Geismar, head of the farm bureau, has been working hard to secure pure-bred and free from disease potatoes for planting and out of 600 samples submitted by growers in seven states he was able to obtain only one car of seed not infected by diseases. The county is making an effort to secure pure-bred stock for seed purposes. The "Congress" will be held immediately after the county fairs and prizes will be offered. Farmers making entries will be required to state with his entry the amount of that particular kind of potato he has for sale, also his nearest shipping point. Much of this information will be secured weeks in advance so that officials may advertise the number of bushels to be offered, the kind, etc., in order to draw the buyers there.

Iron county is planting over 1,000 bushels of pure-bred seed potatoes this season.

The co-operation of the Chicago & Northwestern Railroad has been secured and the road will plant this spring at each of its upper peninsula stations a potato patch 30x200 feet, accompanied by signs which will read: "C. & N. W. Ry. Experimental Station. Cloverland Potatoes, Watch them Grow."

Kent Co.

ALMOND GRIFFEN.

BUTCHERING COWS IN DEMAND.

In the Chicago cattle market the demand for fat butchering cows and heifers has been especially good for several weeks, and they have sold more readily than beef steers, with only moderate offerings much of the time. With such extremely good grazing conditions everywhere, female cattle are not likely to be hurried to market, and many farmers are reserving them for breeding purposes. The packers complain that many cows are proving higher-priced in the beef than middling grade steers.

Grange.

AMONG THE LIVE GRANGES.

Woman Suffrage was the chief subject at the first evening meeting of Ganges Grange, and proved decidedly interesting to a good-sized audience. The question, "Why was woman suffrage defeated at the last election?" was answered briefly. Two reasons were given, viz: the unfavorable effect on our people of the militant attitude in England, and the death-grapple hostility of the wholesale and retail liquor interests. They recognize their enemy and realize that the day that women obtain the ballot the saloon must go. Arguments for or against equal rights for women seem to have little effect upon the ordinary man, for the old maxim is still true, "convince a man against his will and he will hold the same opinion still." But when you hit him with cold facts as to the working of equal rights where it is in operation, no reply is possible. The votes of the women kept Judge Lindsey in office, when both political parties were arrayed against him in Denver. Colorado gave votes to women in 1893 and since that time practically every public man in the state has placed himself on record as commending the measure, while not six persons of standing have been induced to assert over their own signature that woman suffrage has brought one single evil or even that it has failed to effect improvements. In 1889 the Colorado legislature passed, by a vote of 45 to three in the house, and 30 to one in the senate, a resolution declaring that during the time that equal suffrage had been in operation—six years—women had used the ballot as generally as men, with the result that better candidates had been selected for office, election methods had been purified, the character of legislation improved, civic intelligence increased, and womanhood developed, and recommending the adoption of the measure, by all the states and territories of the Union. The more recent effect of the votes for women in Illinois where 1000 saloons were voted out of existence in one day, is the "handwriting on the wall" for Michigan liquor dealers. Kansas has a record to be proud of, due to woman suffrage and prohibition. She has 105 counties with poorhouses empty in 38 counties; jails without an occupant in 53 counties; 87 without a single insane person and 96 without a drunkard; death rate lowered from 17 in 1000, to seven; one pauper to 3000 population. The state financially \$200,000,000 to the good; dry since 1881.—M. W. K.

ASHLAND GRANGE ENTERTAINS POMONA.

The quarterly meeting of the Newaygo County Pomona Grange, No. 11, was held Wednesday and Thursday, June 3-4, with Ashland Grange, which proved to be a very good host. The following program was interesting and instructive and brought considerable discussion:

Wednesday, 2:00 P. M.

Song.
Recitation.

"What is the most practical power available to farmers in this vicinity? What are its difficulties and expense?"—Roswell M. Hall.

Discussion, Arthur Rich.

"What tools are needed and what cost is a man on a small farm warranted in putting into them?"—Homer Handy and A. C. Flint.

"What utensils and mechanical helps does a woman on a small farm need, and what cost is she warranted in spending for them?"—Mrs. Handy and Mrs. John McKinley.

Paper, Mrs. Flora Flint.

"The Junior Agriculture Club—what is its mission?"—H. B. Blandford and Geo. R. Warren.

Question box.

Thursday, 9:00 A. M.

"How do farmers co-operate? What is the good word today on Grange co-operation?"—James Caldwell and Carl Kimball.

"Co-operation in Grange Fire Insurance—what is our company doing?"—Wm. Robertson and J. H. Edwards.

"What would I do if I had two weeks in which to do whatever I pleased?"—Mrs. F. S. Hillman and Mrs. Jenny Dunworth.

Music, Mr. and Mrs. Clark Mills.

"What is the outlook for marketing the apple crop this fall?"—Neil McCallum.

Paper, Mrs. Geo. Warren.

"Are the patrons of district schools doing all they should to bring them up to the standard?"—Miss I. M. Becker.

A surprise feature by Ashland Grange.

Farmers' Clubs

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

CLUB DISCUSSIONS.

Will Hold Special Children's Day Meeting.—The Hadley and Elba Farmers' Club were very pleasantly entertained at the home of Mr. and Mrs. E. J. Hemingway. Dr. Stewart gave a fine paper on "Eugenics," which was enjoyed by all. Meeting on June 18 will be held in the afternoon; everyone come, as it is children's day—at the home of Mr. and Mrs. Lewis Riley, Delaware Farm.—Flora Pierson, Secretary.

Adopt Rules for Corn Contest.—The June meeting of the East Nankin Farmers Club was held at the home of Mr. J. J. Lathers, on June 2. Seventeen members responded to roll call, and after the reading of the minutes of the last meeting a very interesting question box was opened. The corn contest committee reported that they had decided to fix half an acre as the size of plot to be entered. This could be selected out of a large field or planted by itself, as the contestant might wish. They also decided to hold a separate contest on the best ten ears selected from any part of the contestant's crop. Two very interesting papers were read, one by Mrs. R. J. Lathers, on "Why we work so much harder, with all the labor-saving machinery, both indoors and out, than people used to work 50 years ago," and one by Mr. H. J. Lathers, on "The purposes and methods of cultivation." A committee was appointed to arrange for a Fourth of July celebration. Refreshments were served, after adjournment.—Cyrus J. Lathers, Secretary.

Will Exhibit at County Fair.—The May meeting of the Essex Farmers' Club was held on the 28th, with Mr. and Mrs. N. S. Foss, at "Woodbine Home." Autos and carriages, in goodly numbers, brought members and guests from near and far to enjoy the hospitality of the pleasant home and to share in the duties and pleasures of the occasion. The president being absent, Vice-president Mrs. J. Ble-master, presided. The Lord's Prayer was recited, reverently, in unison by the entire company, after which the minutes of the previous meeting were read. Under the head of miscellaneous business, the Club year was changed and will hereafter begin with the January meeting, instead of the October meeting. This was done at the request of State Secretary Mrs. C. P. Johnson, whereby the annual list of officers will be received at a more convenient time by the state secretary. The Club is making arrangements to exhibit its products, agricultural, at the next County Fair, having been invited to do so. "Is it possible for a man who is strictly honest, to succeed in business at the present time?" was the question next considered, its discussion being opened by Hon. D. S. Morrison, who said no permanent success can be secured without honesty. The importance of getting the right definition of "Honesty" and of "Success" was emphasized in the general discussion. The truly honest man will live the "Golden Rule." He will be honest with himself and with his followers. Many other helpful thoughts were brought out. The announcement of adjournment for dinner was the pleasant sound which next greeted the ear, and brought visions of general sociability and other "good things" in great abundance. The afternoon exercises were opened with a solo by Miss Gladys Lowe, who sang very sweetly, "There's a Land Beyond the River." Roll call was responded to with conundrums and other surprises. A recitation by Mrs. J. Ble-master, "The Two Sinners," gave food for thoughts serious. "How does the county road system work out in Clinton county?" was the question next considered, and though not having yet been fully tried, being so lately adopted, views were expressed as to its probable results, some members doubting the wisdom and value of the contemplated highway improvements, as compared with less expensive methods. The next number was a humorous reading by Mrs. D. S. Morrison, "A Warning," in which the tribulations of a country dame were graphically shown, as she sought to purchase family supplies in a department store in the city. A recess of 15 minutes was followed by the question box being called on and several practical questions were discussed, among them that of the desirability and right conditions for harrowing the young corn plant. June meeting of the Club will be held with Mr. and Mrs. Elbert Matter on the fourth Wednesday of the month.—J. T. Daniells, Cor. Sec.

PUBLIC SALE RIVERSIDE FARM, PENINSULA, SUMMIT COUNTY, OHIO, on MONDAY, JUNE 22nd, 1914

BEGINNING AT 10:00 A. M.

90 Head Registered Holstein Cows, Heifers and Heifer Calves

Many that are very choicely bred, and all in the pink of condition. All animals over six months of age tuberculin tested.

Peninsula is located on the B. & O. Ry., 12 miles north of Akron and 22 miles south of Cleveland. Trains leave Cleveland at 6:50 and 10:35 A. M., and Akron 6:25 and 8:00 A. M. A. B. & C. Interurban Cars leave Cleveland and Akron every hour. Off at stop 60, three miles from Peninsula. All cars will be met from 7:00 A. M., up to and including the 12:00 M. car, on day of sale. Good hotel accommodations for those who wish to come the day before. All inquiries answered. CATALOGUE ON REQUEST. COL. D. L. PERRY, Auctioneer.

D. A. ELY, B. E. TOTTEN.

BREEDERS' DIRECTORY.

CATTLE.

Aberdeen Angus Cattle

We have just received a wire to ship all our surplus young bulls of serviceable age to Minnesota. With grade Angus yearlings selling at \$125.00 to \$150.00, these young bulls, closely related to five International Grand Champions, should be worth \$200 to Michigan farmers with a dozen or more grade cows. Wire, phone or write at once for reservation.

GEO. B. SMITH

Addison and Somerset, Mich.

ABERDEEN-ANGUS

HERD FOUNDED IN 1900.

Strains represented consist of Trojan Eras, Blackbirds and Prides, only. Black Quality It, a bull of rare individuality and merit, heads the herd.

WOODCOTE STOCK FARM, Ionia, Mich.

FOR SALE—2 Reg. Guernsey bulls 2 and 4 years old 2 bull calves best breeding. Pedigree off spring show. Berkshire swine either sex. JOHN EBELS, R. R. 10, Holland Michigan.

HEREFORD BULLS 2 six months old 1 18 months old. ALLEN BROS., Paw Paw, Michigan.

GUERNSEY BULL—Coyne No. 27390; Heifer Lena B of Coloma No. 48850, at a bargain. G. A. WIGENT, Watervliet, Mich.

We have for sale a number of pure Guernsey cows, heifers and bulls, also Berkshire hogs. VILLAGE FARM, Grass Lake, Michigan.

\$225 Buys a registered heifer 8 mo. old and registered bull 7 mo. old, both ½ white, no not akin. B. B. KEAVEY, Akron, Michigan.

Upsland Herd—Offer bull calves, choice A. R. O. breeding, \$100 and up. COLE BROTHERS COMPANY, Ypsilanti, Michigan.

Holstein Bull Calves for Sale

Very Nicely Marked.

Large Boned and Fine Lines in Every Way.

FOREST SIDE STOCK FARM,

M. H. CHAMBERLAIN, Jr., Proprietor.

R. F. D. No. 3. - Romeo, Mich.

HOLSTEIN BULLS AT FARMERS PRICES

Sired by one of the best bulls of America. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

HOLSTEIN FRIESIAN CATTLE BREEDERS of high record cows. Young bulls at farmers prices. JONES & LUTZ, Oak Grove, Michigan.

ESPANORE FARM, LANSING, MICH.

Register'd Holsteins

Bull Calves \$50 to \$200.

An absolute guarantee with each purchase. CHASE S. OSBORN, Owners, L. M. HATCH, ADAM E. FERGUSON, Supt.

Holsteins—11 High Grade Holstein heifers from Heavy Milk. Also Registered Bull. Price for the bunch \$1000 F. O. B. J. C. BARNEY, Coldwater, Mich.

BIGELOW'S HOLSTEIN FARMS

Breedsville, Michigan.

Breeder of high class

Registered Holsteins.

A. R. O. HOLSTEIN COWS FOR SALE.

6 very fine A. R. O. cows, bred to Johanna Concordia Champion, and Duke Ormsby Pietertje DeKol. Price \$1850. Service bulls and bull calves. Kindly write me just what you want. L. E. CONNELL, Fayette, Ohio.

Holstein Bull—30-lb. dam, 125 lbs. in 30 days. 2 yrs.-old, mostly white and a beauty. Write for photo, etc., or come and see him. HOBART W. FAX, Mason, Michigan.

—Eight choice registered Holstein yearling heifers, some are bred. Also four cows. E. A. BLACK, R. No. 6, Lakeview, Michigan.

MICHIGAN HOME AND TRAINING SCHOOL

LAPEER, MICHIGAN.

Breeder of High Grade Holstein Cattle. Lists and prices upon application.

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

SIX Choice Holstein Friesian bull calves from one to twelve months old for sale. MICHIGAN FARM COLONY FOR EPILEPTICS, Caro, Michigan.

Holstein Friesian Cattle Herd Headed by Albina Bonte Butter Boy No. 93124. Average for dam and sire's dam A. R. O. at 4 yrs. butter 7 days 28.37 lbs. No stock for sale. W. B. Reader, Howell, Mich.

"Top-Notch" Holsteins.

Choice bull calves from 1 to 7 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. McPHERSON FARMS CO., Howell, Michigan.

Purebred Registered HOLSTEIN CATTLE The Greatest Dairy Breed Send for FREE Illustrated Booklets

Holstein-Friesian, Assn., Box 164, Brattleboro, Vt.

JERSEYS—Bull calves nearly ready for service. Sired by Jacobus's Fairy Emission 107111. SMITH & PARKER, Howell, Michigan.

MAPLE Lane Register of Merit Jersey Herd—Tuberculin tested by U.S. Government. Bull calves from cows in R. of M. test. Heifer calves whose dams, grand-dams, and great grand-dams are in the Register of Merit. IRVIN FOX, Allegan, Michigan.

Lillie Farmstead Jerseys

(Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

Jersey Bulls Yearling and two-year-old. Eligible to register. Splendid breeding. Price right. Address LEWIS RILEY, Metamora, Mich.

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

BUTTER BRED JERSEY BULLS

CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

FOR SALE—14 Polled Durham & Shorthorn Bulls from 4 to 24 months old. O. CARLSON, LeRoy, Mich.

Shorthorn Bulls For Sale—One roan 3-yr-old weighing a ton. Price \$250. Also 3 calves 6 mo. old, from good milking cows. M. A. BRAY, Okemos, Mich.

DAIRY BRED SHORTHORNS of best Bates strains, all sold. J. B. HUMMEL, Mason, Michigan.

Shorthorns \$500 buys two cows three and four yrs., one yearling heifer and two calves six months. A. A. PATTULLO, Deckerville, Michigan.

Shorthorns—Bulls and females, all ages. Tell just what you want. Also P. C. Hogs, Oxford Sheep. C. W. Crum, Sec. Cent. Mich. Shorthorn Ass'n., McBrides, Mich.

SHORTHORN CATTLE

W. W. KNAPP, Howell, Michigan.

SHEEP.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Sheepman of the East." I sell and ship everywhere and pay express charges. Write for club offer and price list. Oxford, Shropshires and Polled-Delaines. PARSONS, GrandLedge, Mich. R. L.

HOGS.

Durocs & Victorias—A few extra Sept. Boars and bunch of Gilts for 1st of April farrow. M. T. STORY, Lowell, Mich., Citizens Phone 55.

BERKSHIRE—Choice fall Boars and Gilts of select breeding, also spring pigs. Priced to sell. WHITE OAK FARM, R. No. 4, Brown City, Mich.

BERKSHIRES Choice spring boars and gilts priced to move quick. Farmer's stock. ELMHURST STOCK FARM, Almont, Mich.

Chester Whites—Reg. Bred Gilts—Orders taken for spring pigs and Collie pups. Holstein Bulls at Bargains. FAY B. FARHAM, Bronson, Mich.

CHESTER WHITES—The long type, prolific kind. MEADOW VIEW STOCK FARM, Holland, Michigan.

O. I. C's—Spring pigs, get my price before you buy elsewhere. CLOVER LEAF STOCK FARM, R. No. 1, Monroe, Michigan.

O. I. C's—I HAVE A NICE LOT OF HAND. OTTO B. SCHULZE, One-half mile west of Depot, Nashville, Michigan.

O. I. C.—Take orders for spring pigs. One 8 mo. fine type Jersey Bull. Price reasonable. N. H. Weber, Oakview Farm, Royal Oak, Michigan.

O. I. C.—Sows bred for June farrow. We are also taking orders for spring pigs. JOHN BERNER & SON, Grand Ledge, Mich.

O. I. C.—Bred sows and spring pigs, large and growthy. Pairs and trios, not akin. Write your wants. GLENWOOD STOCK FARM, Zeeland, Mich.

O. I. C.—gilts bred for June and July farrow. Also Spring pigs. Serviceable boars all sold. I pay express. G. F. ANDREWS, Dansville, Mich.

O. I. C's All sold. Would be pleased to book your order for spring pigs. C. J. THOMPSON, Rockford, Michigan.

O. I. C.—Three September Boars, four orders for spring pigs, they are extra good ones. NEWMAN'S STOCK FARM, R. No. 1, Marlette, Mich.

O. I. C's—Large boned, shipped on approval, pairs not akin, registered, free. J. W. HOWELL, Elsie, Michigan.

O. I. C's—Spring pigs, pairs and trios, not akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Michigan.

O. I. C.—Boars six months old, spring pigs, gilts. Satisfaction guaranteed. A. R. GRAHAM, FLINT, MICHIGAN.

O. I. C. Swine—May I have the pleasure of receiving your order for a pair or trio, not akin, of April and May farrow. They are bred right. Satisfaction guaranteed. A. J. GORDEN, R. No. 2, Dor, Mich.

DUROC JERSEYS—Fall gilts of the large, heavy boned type, bred for Aug. and Sept. farrow. Also spring pigs, not akin. F. J. Drott, R. 1, Monroe, Mich.

DUROCS—A good growthy fall pig immuned and bred for August farrow will make you money. Give me your order now for May shipment. Also fall boars ready for service. KOPE KON FARM, Kinderhook, Michigan.

FOR SALE DUROC JERSEYS—College Boy 138567 farrowed Sept. 7, 1911. Spring pigs after June 1, 1914. J. H. BANGHART, Lansing, Michigan.

Fancy bred Duroc Jerseys—Boars & Gilts of spring & summer farrow. Good individuals at reasonable prices. John McNICOLL, Station A, R. 4, Bay City, Mich.

KORN-EL STOCK FARM now offer Duroc Jersey pigs of either sex at reasonable prices. E. R. CORNELL, Howell, Michigan.

DUROC JERSEYS—Spring pigs either sex at reasonable prices. S. O. STAHLMAN, Cherry Lawn Farm, R. 2, Shepherd, Mich.

Breeders' Directory continued on page 615.

Markets.

GRAINS AND SEEDS.

June 9, 1914.

Wheat.—The surprising thing about the wheat market is that the bulls are able to hold prices at the present level in face of the great crop outlook which, according to the government report, will be the largest ever harvested in this country. But there is a good cash demand, millers and foreigners are anxious for the grain and farmers have practically cleaned up their bins. One year ago the price for No. 2 red wheat was \$1.03½ per bu. Quotations are as follows:

	No. 2	White.	July.
Wednesday	97¼	96¾	88½
Thursday	96¾	96¾	87¾
Friday	96¾	96¾	87¾
Saturday	96¾	96¾	87¾
Monday	96½	96	87¾
Tuesday	95½	95	86¾

Chicago, (June 9). No. 2 red wheat 94c; July 85½c; Sept., 83½c per bu. **Corn.**—A shortage of stocks and a good demand has advanced corn values. The market is firm. Argentine shipments are small. A year ago the price for No. 3 corn was 59c per bu. Quotations for the past week are:

	No. 2	No. 2	Mixed.	Yellow.
Wednesday	73½	75	73½	75
Thursday	73	74½	73	74½
Friday	73	74½	73	74½
Saturday	73½	75	73½	75
Monday	74	75½	74	75½
Tuesday	74	75½	74	75½

Chicago, (June 9).—July corn 71¼c; Sept., 68½c; Dec., 59½c per bu.

Oats.—Prices hold steady, with conditions favorable for a fair crop. Illinois and Missouri report some damage to the grain. One year ago the price for standard oats was 41c per bu. Quotations for the past week are:

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

Chicago, (June 9).—July oats are 46¼c; Sept., 38¼c per bu.

Beans.—Easy and dull. Quotations: Immediate and prompt shipment at \$2.05; June \$2.07 per bu. Chicago reports quiet trade. Pea beans, hand-picked, choice, are steady at \$2.20@2.23; common \$2@2.15; red kidneys choice \$3.20@3.25.

Rye.—This cereal is lower. No. 2 is quoted at 66c per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs. as follows. Best patent \$5.30; second \$4.90; straight \$4.50; spring patent \$5.10; rye flour \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$28; standard middlings \$28; fine middlings \$32; coarse middlings \$31; cracked corn \$32; corn and oat chop \$28.50 per ton.

Hay.—Market is strong; offerings limited. Carlots on track at Detroit are: No. 1 timothy \$16.50@17; standard \$15.50@16; No. 2, \$14@15; light mixed \$15.50@16; No. 1 mixed \$13.50@15; No. 1 clover \$13@13.50.

New York.—Market steady. No. 1 timothy \$22@22.50; No. 3 to No. 2, \$17.50@21.

Chicago.—Market is steady and demand good. Choice timothy quoted at \$18@18.50 per ton; No. 1 \$15@16; No. 2, \$13@14.

Straw.—Steady. Rye \$8@8.50; oat straw \$7@7.50; wheat straw \$7@7.50 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market is firm with prices unchanged. Extra creamery 25½c per lb; firsts 24½c; dairy 18c; packing stock 15c.

Chicago.—Market easy, with prices unchanged. Extra creamery 26½c; seconds 20@21c; packing stock 17@18c.

Elgin.—Market is firm at 26½c per lb., which is ½c higher than last week.

New York.—The market is steady. Prices slightly lower. Creamery extras 26¼@26¾c; firsts 25@26c; seconds 23@24½c; packing stock 17@17½c.

Eggs.—Market is active, with fresh stock selling at 19¼c per dozen.

Chicago.—Market is easy at prices averaging ¼c lower than last week. It is not easy to effect sales and anything but the best are dull. Miscellaneous lots, cases included 16@18¼c

per dozen; ordinary firsts 17@17½c; firsts 18@18¼c.

New York. Market steady. Prices are higher. Fresh gathered extras 23@24c; firsts 20@21c per dozen.

Poultry.—Market is quiet and prices are slightly lower. Live—Springs 15c; broilers 28@30c per lb; hens 14@15c; geese 14@15c; ducks 17@18c.

FRUITS AND VEGETABLES.

Potatoes.—Old potatoes steady with prices considerably advanced. Holders are optimistic. Quotations are: 88@90c per bu in sacks. At Chicago the market was strong and prices advanced considerably. Good Michigan round white quoted at 85@90c per bu.

Strawberries.—In good demand; Michigan 16-qt. cases quoted at \$1.75@2. At Chicago berries are arriving soft and many are showing scald, even from Michigan. Ordinary to good Michigan berries are quoted at \$1@1.50 per 16-qt. case.

WOOL.

Market is more active and competition keen at higher prices. Fleeces are now going forward with prices to farmers ranging from 20@24c per lb. Conditions abroad are even more bullish than here. At Boston, Michigan unwashed delaines are quoted at 26@27c; do combing 23@27c; do clothing 22@26c per lb.

DETROIT EASTERN MARKET.

Offerings are meeting with good demand. Lettuce plentiful, common 25@30c and head 50@60c per bu; spinach 15@20c per bu; potatoes \$1; strawberries \$4.25 per 24-qt. crate; loose hay \$17@20 per ton.

GRAND RAPIDS.

This is the real opening week for home-grown strawberries, the hot weather having pushed the crop forward rapidly, the berries are selling around \$2 per crate and a big yield is promised. In the poultry line spring broilers have been in great demand during the past month and poultrymen have been paid up to 55c per pound for birds averaging two pounds or better. An increase in broiler raising for this market may be looked for next season. Dressed hogs are bringing around 10½c. The egg market is quiet at 17½@18c. In grain wheat is quoted at 92c; oats 41c; corn 72c; hand-picked white pea beans \$2.

THE LIVE STOCK MARKETS.

Buffalo.

June 9, 1914.
(Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts of stock here today as follows: Cattle 155 cars; hogs 120 d.; sheep and lambs 12 d. d.; calves 1700 head.

With 155 cars of cattle on our market here today and Chicago reporting 19,000 and shade lower, our best heavy cattle sold from 10@15c per cwt. higher, according to quality, but there were 20 loads of cattle here today that showed the best quality of any seen here in the past 30 days. The light butcher cattle all sold about steady, also the cows and heifers, with last week. A few loads of very prime yearlings sold for 9c a pound. At the close about everything was sold and the feeling was steady.

We had a liberal supply of hogs today, about 120 double decks, and with lower markets all over the west today, our trade was quite dull and prices generally 10c lower than Saturday's average. Anything decent sold at \$8.55; pig weights generally \$8.40; roughs \$7@7.30; stags \$6@7. Late market was quite dull, especially on light hogs, and it looks very much like easier trade the balance of the week and would advise buying to sell at lower prices.

The market was active today on lambs and sheep. Prices half higher than the close of last week. Choice handy clips selling mostly at \$8.50@8.75. We look for steady prices last of week, with moderate receipts.

We quote: Spring lambs \$9.50@10; yearlings \$8.50@8.75; cull to fair \$6.50@8.25; bucks \$3.50@4.50; hand ewes \$5.25@5.50; heavy do \$4.35@4.50; wethers \$6@6.35; cull sheep \$3@4; veals, choice to extra \$10.50@10.75; fair to good \$8.50@10.25; heavy calves \$5.50@7.

Chicago.

June 8, 1914.
Receipts today..19,000 45,000 15,000
Same day 1913..19,315 53,068 13,290
Last week37,291 117,725 66,153
Same wk 1913..45,277 155,176 96,710

This is an extremely hot Monday, and cattle drink so freely that buyers are late in beginning business, as is usual at such times. Butcher stock

sells very well, but at a late hour trade was just starting up in steers, and they promised to be barely steady. Hogs are off a dime because of the big supply, sales ranging at \$7.80@8.25. Packers received some 10,000 hogs from other markets, these being included in the receipts as given above. Hogs received last week averaged 235 lbs., or one pound more than a week earlier. Spring lambs are scarce and a dime higher for the best, with a \$9.85 top, sheep ruling firmer. No strictly prime clipped lambs showed up, but they were quoted nominally higher.

Cattle receipts here last month were nearly 17,000 less than a year ago, receipts for the expired five months of the year falling off nearly 50,000 head, while the receipts for the six leading western markets for the past five months ran 265,000 behind those for a year ago. With such a showing, it is not strange that sales of beef steers should be at a range of \$7.25@9.25, compared with \$7.10@8.75 a year ago. Last week's sales were largely at \$8@9, with the top a dime lower than a week earlier, none going over \$9.25, while top yearlings sold at \$9.15. Good steers, whether yearlings or older cattle, sold at \$8.60 and upward, with choice heaves at \$9 and upwards. Inferior to fair light weight steers brought \$7.25@8.25, a medium class of steers fetching \$8.30@8.55, and a good many yearling steers and heifers mixed sold at \$8@9. There was the usual animated demand for butchering cows and heifers at \$5.15@8.75 for common to fancy kinds, with cutters at \$4.60@5.10, canners at \$3.50@4.55 and bulls at \$5.40@7.90.

Hogs have been marketed for a week past in such small numbers as compared with recent weeks and a year ago that the packers experienced no little difficulty in bringing about declines in prices, and some good advances took place. Published returns show that the combined receipts in the 11 leading markets of the country for the first five months of the year were 476,000 hogs less than a year ago, and the decrease in May was very pronounced.

Sheep and lambs have sold much higher recently than a short time earlier, with greatly reduced receipts and a scarcity of yearlings. Some belated Colorado woolled lambs brought \$9.60 per cwt. last week, the highest price paid since May, 1913, being the last of the season, and clipped lambs and wethers have been doing better for sellers, with a good demand from local buyers and eastern shippers.

CROP AND MARKET NOTES.

Michigan.

Branch Co., June 4.—Corn is not all planted, as several hard rains has kept farmers off the ground, but the rain gave oats, meadows and seeding a good start, and they are looking well. Wheat is looking hard in many places. But little spraying has been done. Wheat 94c; oats 38c; potatoes 50@75c, and in good demand; butter 16c; eggs 17c.

Arenac Co., June 3.—The recent rain was very welcome, as the ground was very dry. About 20 per cent more corn is being planted in this vicinity this year than ever before, also more potatoes and a larger acreage of onions is being put in. Of beans, the farmers' "cash crop," the acreage is being doubled this year. Hay will be short; oats are looking well. Wool 23@26c; eggs 17c; butter 18c; butter-fat 21c. Cattle are high and buyers are numerous.

Gratiot Co., June 4.—May was a dry month up to the 20th. The last ten days there were several heavy rains, which were much needed, as the meadows did not look promising, but they are now much improved. Wheat is excellent, and oats are also doing well. Corn planting has been delayed; much corn is being sown in drills to use as silage. No great acreage of potatoes is being put out here. Although many beans were damaged by disease last season, the acreage will be nearly as large this year. A quantity of northern grown seed was shipped in, for which the farmers are paying \$2.75 per bushel for seed. Apples and small fruit are well set. There is but little spraying being done. Reports from various parts of the county show a heavy loss of spring pigs. The bulk of the wool clip went to market at 23c; buyers are now paying 24c. Eggs 16c; butter 17c; beans \$1.90; oats 39c.

Hillsdale Co., June 5.—Rain has fallen in this section, whenever needed, so far, and crops of all kinds are looking fine. Corn came up quickly, and is growing rapidly. Oats never looked more promising. The earliest strawberries are ripening, with prospect of a big crop, few, if any, blossoms having been killed by frost, and the vines not having suffered from lack of moisture. The promise for all kinds of fruit seems good. Early gardeners are well advanced and owners are realizing returns for their labor

and enterprise. Eggs 18c; butter 18@20c; wheat 93c; rye 62c; oats 38c; cloverseed \$7.25; live chickens 14c; heavy hogs and yorkers \$7.75; potatoes 50@65c.

Indiana.

LaGrange Co., June 3.—We are having ideal weather for all crops. The pig and lamb crop was normal. Not very many hogs in this section on account of the loss from hog cholera last year. Wool is selling at 22c and lots of it for sale. The wheat fields look very poor and are being injured by the Hessian fly. Meadows and pastures are in fine shape. The hay crop will be very heavy this year. Fruit prospects not very good; few farmers practice spraying in this section. Potatoes are selling at 80c; corn 70c; eggs 18c; butter 18c; hogs \$7@7.50; cattle \$7@7.50.

Laporte Co., May 30.—Heavy rains the 27th and 28th improved the crops here, as corn, wheat and oats needed moisture badly. So far corn is a good stand and the prospects are above the average. Stock of all kinds doing well. In this section fruit promises to be light except small kinds, which look to be a fair crop.

Nebraska.

Hitchcock Co., May 28.—Thus far crops are just fine and wheat is beginning to head. Corn planting is done and forage feed is being sowed, cane and millet being the principal crops in this part of the country. The pig crop was not very large this spring so many had bad luck. The fruit prospects are good and conditions are fine, though it has been somewhat cool the past month. The market prices on farm produce are: Eggs 15c; butter 12@20c; butter-fat 20c; barley 40c; wheat 72c; corn 80c.

Antelope Co., May 27.—The weather has been fine; plenty of rain. Alfalfa is most ready to cut. Corn is all planted. Hogs are at top prices; eggs 15c; butter 25c; old hens 13c; potatoes 1.35 per bushel. We have good prospects for a good crop.

Colorado.

Western Kit Carson Co.—Weather still continues fine; ground is in excellent shape. A larger number of pigs than usual. A large acreage of spring grain and it is looking better than for a number of years. Rye is extra good; fall wheat not very good; pastures good and everything looks like a good crop for 1914. Eggs 16c; cream 21c; corn 85c; barley 85c; hogs \$7.75; stock all in good condition.

Idaho.

Cassia Co.—This being an undeveloped country, there is not much corn planted. Several of the ranchers are sowing spring wheat. Some of the wheat sown last fall did not come up until this spring. Most of the people are clearing sage bush and breaking ground. Nearly all the government land in this locality is filed upon. Flour \$2.20; eggs 14c; oats \$1.15 per cwt; wheat \$1.25 per cwt.

FARMERS SHOULD REPORT THE PRESENCE OF HESSIAN FLY.

It appears that an unusual infestation of Hessian fly is developing in southern Michigan and states adjacent. For this reason we have been asked by Professor Webster, of the National Bureau of Entomology, to co-operate in collecting data concerning the conditions that have combined to bring about such a state of affairs. We should therefore like to obtain samples of fly-infested wheat from all parts of the state in order that we may ascertain what, if any, parasites are present.

Further, it is essential that we be informed as to the presence of the fly and the extent of the infestation last spring, last fall, and this spring.

In order to facilitate gathering this information, a franked and addressed box, together with blank for filing information will be sent to anyone sending a postal to Prof. E. F. Webster, Bureau of Entomology, Washington, D. C.

It is hoped that there will be many responses to this request since it is through such efforts that we may hope to gain information of the underlying principles that control the outbreaks of this pest, perhaps enabling us some time to accurately forecast such outbreaks, and give warning in time to prevent loss.

Mich. Ag. Col. R. H. PETTIT.

CENTRAL MICHIGAN HOLSTEIN BREEDERS MEET.

The Central Michigan Holstein Breeders' Association will hold their annual basket picnic at Silver Creek Farm, Dimondale, Mich., on June 19. All interested in the black and white cattle are cordially invited to attend. Conveyances to and from Dimondale will be furnished. Hon. D. D. Aitken, of Flint, President of the National Holstein Breeders' Association, Congressman J. M. C. Smith, and others will give short talks.

THIS IS THE FIRST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
June 4, 1914.

Cattle.
Receipts 794. Market steady to 10c lower than last week.

We quote: Best heavy steers \$8.25 @ \$8.75; best handy weight butcher steers \$8 @ \$8.50; mixed steers and heifers \$7.75 @ \$8.25; handy light butchers \$7 @ \$7.50; light butchers \$6.75 @ \$7.25; best cows \$6.25 @ \$6.75; butcher cows \$5.50 @ \$6; common cows \$4.50 @ \$5; canners \$3 @ \$4.25; best heavy bulls \$7; bologna bulls \$6.25 @ \$6.75; stock bulls \$5 @ \$6.50; feeders \$7.25 @ \$7.75; stockers \$6.50 @ \$7.50; milkers and springers \$4 @ \$8.

Bishop, B. & H. sold Sullivan P. Co. 1 cow wgh 1140 at \$5.50, 2 steers av 820 at \$7.75, 1 bull wgh 870 at \$6.25, 10 cows av 997 at \$6, 1 steer wgh 970 at \$7.50, 4 butchers av 800 at \$7.25, 8 cows av 966 at \$6.25, 2 steers av 960 at \$7.50, 1 bull wgh 910 at \$6.25, 3 do av 1147 at \$6.50, 3 steers av 1007 at \$8.15, 3 cows av 1290 at \$6.50, 23 steers av 1215 at \$8.35, 1 bull wgh 500 at \$5.50; to Ratner 2 bulls av 1010 at \$6.25; to Horne 4 cows av 1022 at \$5.50; to Parker, W. & Co. 2 cows av 1020 at \$5.75; to Armstrong 2 do av 785 at \$4.25, 5 do av 966 at \$5.50, 2 do av 1000 at \$5.50, 7 do av 891 at \$5.35; to Rattkowsky 2 do av 1080 at \$6.15, 2 do av 1160 at \$6.15, 2 do av 960 at \$6, 2 do av 810 at \$6.25, 3 do av 857 at \$6; to Bresnahan 2 stockers av 715 at \$6.25; to Beach 7 do av 487 at \$6.50; to Hammond, S. & Co. 2 cows av 920 at \$6.50, 3 bulls av 1080 at \$6.60; to Heinrich 24 steers av 796 at \$7.90; to Thompson Bros. 2 bulls av 890 at \$6.25; to Newton B. Co. 11 steers av 780 at \$7.40; to Beach 1 feeder wgh 870 at \$6.75; to Converse 2 cows av 775 at \$5.65; to Mich. B. Co. 9 steers av 966 at \$8.25, 1 cow wgh 900 at \$4.25, 1 do wgh 1060 at \$6.25.

Roe Com. Co. sold Watts 3 steers av 957 at \$8.20; to Bresnahan 5 heifers av 734 at \$7.50; to Rattkowsky 2 bulls av 795 at \$6.25, 1 do wgh 1440 at \$7.25; to Hammond, S. & Co. 4 cows av 1017 at \$6; to Horne 3 do av 860 at \$5.35; to Grant 2 do av 910 at \$6.35, 8 do av 966 at \$6.15; to Goose 1 bull wgh 1460 at \$6.60; to Kamman B. Co. 3 cows av 1043 at \$6.50, 5 steers av 774 at \$7.75, 22 do av 835 at \$7.75; to Mason B. Co. 2 bulls av 1045 at \$6.50; to Bresnahan 5 steers av 774 at \$7.75.

Haley & M. sold Mason B. Co. 2 cows av 1260 at \$6.75, 1 bull wgh 1280 at \$6.70; to Converse 2 cows av 645 at \$5.85, 7 stockers av 500 at \$6.95; to Watts 1 cow wgh 1090 at \$7, 2 do av 910 at \$7.15; to Sullivan P. Co. 1 bull wgh 1020 at \$6.50; to Mich. B. Co. 20 steers av 914 at \$8.10; to Black 3 do av 823 at \$7.75; to Chamberlain 17 stockers av 480 at \$7.

Spicer & R. sold Sullivan P. Co. 1 steer wgh 1260 at \$8.25, 1 cow wgh 980 at \$6.60; to Strong 2 stockers av 675 at \$7.50, 11 do av 556 at \$7, 12 do av 433 at \$7.25; to Rattkowsky 1 cow wgh 850 at \$5.75, 1 bull wgh 1140 at \$7.25, 1 do wgh 1420 at \$6.75, 1 do wgh 1180 at \$6.75; to Kull 2 butchers av 805 at \$6, 1 heifer wgh 650 at \$7.25; to Mason B. Co. 20 steers av 1004 at \$8.20; to Hirschleman 4 do av 925 at \$6.50, 7 do av 863 at \$8; to Goose 1 bull wgh 1900 at \$7, 1 do wgh 1960 at \$6.50; to Rattkowsky 4 do av 1007 at \$6.60; to Mich. B. Co. 2 do av 675 at \$6, 2 heifers av 775 at \$7.75, 17 steers av 925 at \$8, 1 cow wgh 1150 at \$6.50.

Veal Calves.

Receipts 887. Market steady to 25c higher. Best \$10 @ \$10.50; others \$7 @ \$9.50.

Haley & M. sold Kull 2 av 155 at \$9.50, 9 av 165 at \$9.50; to Newton B. Co. 9 av 155 at \$10; to Shapiro 6 av 155 at \$10.50.

Spicer & R. sold Shapiro 4 av 155 at \$10, 2 av 145 at \$10; to Thompson Bros. 3 av 150 at \$10; to Parker, W. & Co. 10 av 122 at \$9, 1 wgh 220 at \$8, 6 av 135 at \$8, 55 av 160 at \$10.

Roe Com. Co. sold Mich. B. Co. 5 av 120 at \$8, 14 av 160 at \$10; to Rattkowsky 24 av 160 at \$10; to Ratner 9 av 150 at \$10.

Weeks sold Lowenstein 15 av 150 at \$9.75.

Sheep and Lambs.

Receipts 1189. Market 10 @ 15c higher. Best lambs \$7.85 @ \$8; fair do \$7 @ \$7.50; light to common lambs \$6.50 @ \$7; fair to good sheep \$4.50 @ \$5; culls and common \$3.50 @ \$4.50.

Bishop, B. & H. sold Mich. B. Co. 31 sheep av 115 at \$5; to Kull 16 lambs av 80 at \$7; to Sullivan P. Co. 8 spring lambs av 45 at \$9, 10 lambs av 59 at \$9, 6 sheep av 120 at \$5, 4 do av 95 at \$4, 90 lambs av 65 at \$7.75, 7 spring lambs av 65 at \$10; to Nagle P. Co. 50 sheep av 135 at \$4.50, 252 lambs av 78 at \$7.85; to Harland

7 spring lambs av 55 at \$9.50, 14 lambs av 56 at \$9; to Newton B. Co. 113 lambs av 75 at \$7.75, 11 do av 88 at \$4.50; to Hammond, S. & Co. 97 sheep av 125 at \$4.75; to Thompson Bros. 4 sheep av 125 at \$5; to Fitzpatrick Bros. 41 do av 78 at \$4.65, 27 do av 80 at \$4.50, 14 lambs av 75 at \$8, 36 do av 70 at \$7, 32 do av 73 at \$7.50; to Barlage 37 sheep av 80 at \$4.

Haley & M. sold Newton B. Co. 7 spring lambs av 65 at \$9, 4 sheep av 145 at \$4, 28 do av 115 at \$5.

Hogs.

Receipts 5136. Pigs \$8.15; others \$8.20 @ \$8.25.

Roe Com. Co. sold Sullivan P. Co. 460 av 195 at \$8.25.

Spicer & R. sold Parker, W. & Co. 815 av 190 at \$8.25.

Haley & M. sold same 227 av 200 at \$8.25.

Bishop, B. & H. sold Hammond, S. & Co. 2510 av 195 at \$8.25.

Friday's Market.

June 5, 1914.

Cattle.

Receipts this week 932; last week 992; market steady. Best heavy steers \$8.25 @ \$8.75; best handy weight butcher steers \$8 @ \$8.50; mixed steers and heifers \$7.75 @ \$8.25; handy light butchers \$7 @ \$7.50; light butchers \$6.75 @ \$7.25; best cows \$6.25 @ \$6.75; butcher cows \$5.50 @ \$6; common cows \$4.50 @ \$5; canners \$3 @ \$4.25; best heavy bulls \$7; bologna bulls \$6.25 @ \$6.75; stock bulls \$5 @ \$6.50; feeders \$7.25 @ \$7.75; stockers \$6.50 @ \$7.50; milkers and springers \$4 @ \$8.

Veal Calves.

Receipts this week 1094; last week 746; market steady. Best \$10 @ \$11; others \$7 @ \$9.50.

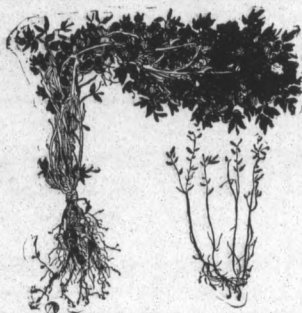
Sheep and Lambs.

Receipts this week 1232; last week 1561; market steady on good; grass grades dull; one load good dry-fed lambs sold at \$8.25; best lambs \$7.75 @ \$8.25; fair lambs \$7 @ \$7.50; light to common lambs \$6.50 @ \$7; spring lambs \$8.50 @ \$9.50; fair to good sheep \$4.50 @ \$5; culls and common \$3.50 @ \$4; heavy sheep \$4 @ \$4.25.

Hogs.

Receipts this week 7111; last week 7637; market 5c higher; all grades \$8.30.

Better Alfalfa



Ferguson's NITROGEN BACTERIA

has produced wonderful results in strengthening alfalfa crops. It is no experiment put a proved success, as we can show you by the testimony of thousands of users. Plants must have Nitrogen. There is lots of it in the air, but too little in most soils. Ferguson's Bacteria gather Nitrogen from the air and store it on the roots of the plants. They store up such a quantity that the plants need only a part of it for food, and the balance is left to the soil to enrich it.

Saves the cost of fertilizers; Does better work. Quarter-acre quantity, 50c; 1 acre, \$2; 5 acres, \$9. Let us explain why you need Nitrogen Bacteria and why Ferguson's is best. Write for Special booklet M-free. Homewood Nitrogen Co., 51 Liberty St., N. Y. City. We want agents—A very liberal offer.

THE BALL LIGHTNING CELERY BLEACHER



Most perfect method ever invented. No banking with soil. Cheaper than boards or strips of roofing paper. Bleaches quicker and makes a more beautiful product. Big money and labor saver for the market grower. Handy, neat and equally good for the private gardener.

Write for free sample of Bleacher and Circular describing a wonderful little device that enables a boy to put on 5000 of these bleaching tubes a day. It means dollars to every celery grower.

THE BALL MFG. CO.
Dept. R, Glenside, Pa.

FOR SALE We have left one power sprayer with 200 gallon tank, rotary agitator, double plunger pump; 3 1/2 hp air-cooled engine. Outfit carries from 200 to 225 pounds pressure nicely. Anyone really wishing to buy and unable to reach Lansing to examine the outfit, can have it for a week's free trial. HINES MFG. CO., Lansing, Michigan.

WANTED—Board for refined girl of 12 in the country until September 1. With family of adults. Location not over 60 miles from Detroit. Address Box G, care Michigan Farmer.



**Where full value
is demanded
for every
dollar spent**



THE modern farm—conducted in accordance with the best business methods—takes no risk when buying roofing. That is why so many of America's most up-to-date farms using "rubber" type roofings invariably select

J-M REGAL ROOFING

Of Its Type The Best By Test

This roofing is made of imperishable Trinidad Lake Asphalt and the very best long fibre wool felt, all made in our own factories. J-M Regal Roofing is backed by an organization that has been built up to nation wide proportions by a policy that does not permit a single customer to be dissatisfied. We also manufacture J-M Asbestos Roofing—the roofing of highest possible quality; and J-M Transite Asbestos Shingles, fireproof and everlasting. Write nearest branch for full information and booklet No. 4040

H. W. JOHNS-MANVILLE COMPANY

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Baltimore	Chicago	Dallas	Kansas City	Milwaukee	New Orleans	Pittsburgh	St. Louis
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LIVE POULTRY, BROILERS, FRUITS, POTATOES, ONIONS, ETC.

Let us handle your poultry, fruits, farm products. Our 25 years in the same store assures your satisfactory results. **CHAS. W. RUDD & SON, Detroit, Michigan.**

HAY

Ship your Hay to Pittsburgh and to Daniel McCaffrey Sons Company Pittsburgh, Pa. Ref.—any bank or Mercantile Agency.

FARMERS—We are paying good premium above the Official Detroit Market for new-laid eggs shipped direct to us by express. Write us for information. It will pay you. **American Butter & Cheese Co.** 31-33 Griswold St., Detroit, Mich.

Griggs, Fuller & Co., Wholesale Commission House, Detroit. Want your apples, potatoes, poultry and rabbits. Quick returns.

Farms and Farm Lands For Sale

FARMS, GOOD, CHEAP, PROFITABLE. UNUSUAL OPPORTUNITIES NOW. State Board of Agriculture, Dover, Delaware.

FOR SALE, whole or part, 320-acre Southern Mich. farm, 55 a. fine looking wheat. Immediate possession. Otto S. Schairer, 214 Dewey Ave., Swissvale, Pa.

FOR SALE FARM and Fruit Lands, also large ranch purposes. Clay loam soil, lime rock subsoil, near market and railroad. Address R. MITCHELL, Agent for Thad B. Preston, Onaway, Michigan.

IF YOU WANT to sell your farm write at once to, G. R. FREEMAN CO., 728 Ford Bldg., Detroit, Michigan. We have some very good income and residence property to exchange for farms.

SO. MICH. DAIRY FARM—180 acres best dairy and near milk condenser, good school, all tiled, woven wire fence, fine buildings, owner retiring, a bargain. address quick. F. A. KINNEY, Seneca, Lenawee Co., Mich.

MICHIGAN FARMING LANDS

Near Saginaw and Bay City, in Gladwin and Midland Counties. Low prices. Easy terms. Cheap. Write for maps and particulars. **STAFFELD BROTHERS, 15 Merrill Building, Saginaw, (W. S.), Michigan.**

Fine Place—300 acres; 12-room good house; barn, 60x100; horse barn 30x40; other fine buildings; 55 head Holstein cows and heifers; 4 horses; tools; hay, grain; on state road, an ideal home and money maker. \$20,000, part cash, balance 5% interest, long time. Catalogue No. 1002. **HALL'S FARM AGENCY, Owego, Tioga Co., New York.**

SUMMER ALL THE TIME!

THE FAMOUS CALIFORNIA LANDS. San Joaquin Valley grow alfalfa, walnuts, peaches, apricots, cherries, grapes, almost everything. Write for information. **J. D. TOWAR, East Lansing, Michigan.**

For Sale—260 a. clay loam soil, 100 a. cleared, mostly seeded, good buildings, 3/4 mile to school. 1/2 mile to railroad town, well settled farming community, good standing hardwood timber. Price \$5500, \$1000 down. Buy it now, get this year's crops and make good payment. Write W. F. UMPHREY, Ewart, Mich.

Disabled Owner Must Sell 284 Acres, Equipped, \$3500

Disabled owner wants to close out at once: remarkable opportunity for a hustler; broad fertile fields, immense crops; pasture for 30 to 45 head; valuable wood and timber, choice fruit; close to lake, on state road to market town; 7-room house, 3 big barns, other buildings; 5 cows, 2 pigs, hens, hay in barn, tools and furniture included if taken now and only \$1200 cash needed; full details and location, page 28, "Strout's Farm Catalogue 37", just out, copy free. E. A. STROUT FARM AGENCY, Station 101, Union Bank Bldg., Pittsburgh, Pa.

Breeders' Directory—Continued from page 613

DUROC JERSEYS—A few fall pigs of both sexes for sale, **CAREY U. EDMONDS, Hastings, Michigan.**

FOR SALE—Collie Pups—Sable and White, Pedigreed Heel drivers \$5 each. **RUSSEL MYERS, Hillsdale, Mich.**

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

POLAND CHINA

Registered Boar Pigs From Some of the Finest Stock in Michigan. **FOREST SIDE STOCK FARM, M. H. CHAMBERLAIN, Jr., Proprietor, R. F. D. No. 3, Romeo, Mich.**

LARGE TYPE P. C.—Largest in Mich. Fall pigs all sold, order a spring pig sired by the largest boar in the U. S., weight 900 lbs., 24 months old. Come and see. Expenses paid if not as represented. **W. E. LIVINGSTON, Parma, Mich.**

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

Poland China Boar; Sows Bred, All of the Big Type. **A. A. WOOD & SON, Saline, Michigan.**

MY OH MY! What an Opportunity.

Starting May 1st, we are going to give to the farmers and breeders an opportunity to get started right in the breeding industry. We are going to give you a chance to get hold of foundation stock that will give you a nucleus for one of the finest and best herds in your community. We are going to show you as we have others, that you will have greater success with our big type.

POLAND CHINAS

than with any other breed. We want to place at least one pig, or a pair in every community, to advertise our herd. We will give agency, if not already taken. If interested, write for our plan and prices. **HILLCREST FARM, KALAMAZOO, MICH.**

POLAND CHINA PIGS—From large Prolific stock. Shorthorn Bull Calves. Eggs \$1 per 15 from choice Barred Rocks. **ROBERT NEVE, Pierson, Michigan.**

FOR SALE—A choice bunch of March and April boar pigs, a few herd headers. Prices reasonable. Satisfaction guaranteed. **R. W. MILLS, Saline, Mich.**

P. C. GILTS—Bred for July farrow, boar ready for service, all the big type. **JOHN GOKKE, Owosso, Michigan.**

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. We have 25 big boned sows for fall farrow. Buy one and make more money on your hogs. You can't get any better at any price. **P. C. History Free, J. C. BUTLER, Portland, Mich.**

30 Poland China Fall Pigs—Good ones from immune sows \$10 and \$15 each, while they last. Bred sow sale Feb. 27th, send your name for catalog if you want to buy Big Types with Quality. **Wm. Waffle, Coldwater, Mich.**

350 BIG TYPE MULE FOOT HOGS—America's Champion Herd. Prolific, hardy, Best for Mich. Also Ponies. **J. DUNLAP, Box M, Williamsport, Ohio.**

Mule Foot Bred sows, bred gilts and boar pigs, not related, for sale. Satisfaction guaranteed. **G. C. KREGLOW, Ada, Ohio.**

Yorkshires—Spring Pigs Of Excellent Quality. **GUY J. DOTY, R. 2, Monroe, Michigan.**

FOR SALE—Yorkshire boars ready for service. Sows bred for Sept. farrow. Prices reasonable. **C. H. JOHSE, Mt. Clemens, Mich.**

YORKSHIRE Swine—March & Apr. pigs ready to ship. Pairs not akin. College Princess and Cooks Bacon foundation stock. **Geo. S. McMullen, Grand Ledge, Mich.**

Yorkshires Guaranteed to not die of Cholera. Prolific, long deep and well fleshed. Pigs ready for delivery. Not akin. **Cribbs Bros., Watervliet, Mich.**

YORKSHIRES

The large, long-bodied, prolific kind. Gilts bred for July, August and September farrow. A choice lot of spring pigs, pairs and trios, not akin. Prices reasonable. **W. C. COOK, R. 42, Ada, Michigan.**

Lillie Farmstead Yorkshires

Open gilts and gilts bred for September farrow. Spring pigs either sex, pairs and trios not akin. Satisfaction guaranteed. **COLON C. LILLIE, Coopersville, Michigan.**

THE VARIATION IN TEST IN MILK AND CREAM.

(Continued from page 602).

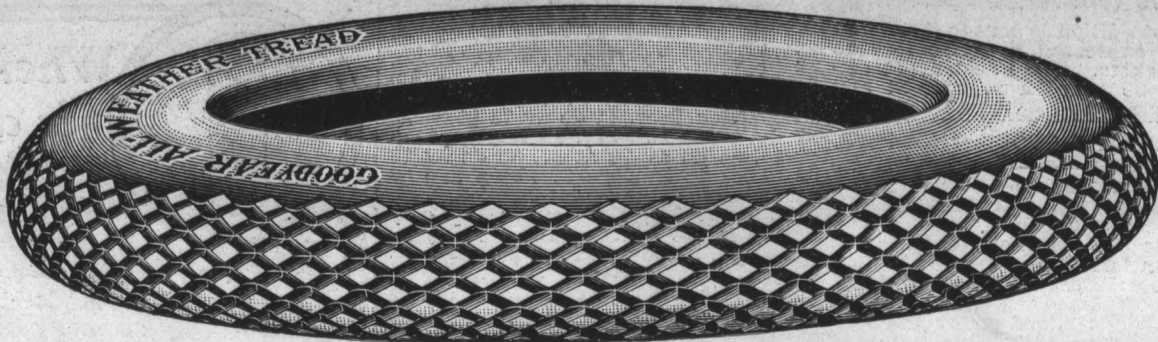
for instance, that if a man has 100 pounds of cream testing 40 per cent, he should receive credit for 40 pounds of fat. Suppose now the next day he has 200 pounds of cream testing 20 per cent. He still has 40 pounds of fat but his test is 20 per cent instead of 40 per cent. Now an average test of a composite sample made from these two creams would be 30 per cent and the total weight of the cream received was 300 pounds. If the composite test is 30 per cent, as it manifestly would be, being 40 per cent one day and 20 per cent the next, and the total weight of cream received were 300 pounds, then he would receive credit for 90 pounds of fat, whereas he actually delivered but 80 pounds. **Composite Sample Should be Taken According to Volume of Milk Brought.**

Of course, if one is to take a composite sample, in order to have the sampling correct he should in every instance take a certain volume of sample for the volume of milk brought in, but this we believe is practically never done and consequently there is a constant gain or loss to either the dairyman or the creameryman due to variation in test, which is natural, or due to variation in volume, which is likewise natural.

These points have not been given very much attention, but from our experience and study of dairy problems we are convinced that therein is the source of much of the dissatisfaction which exists from time to time between the creamery and the dairyman.

THE TRUTH ABOUT SOIL ANALYSIS.

No one part of the farm concerns the man on it more than the soil. It is the storehouse from which all things must come. The farmer is naturally anxious to know the truth about the matter of available plant food. In the effort to find out what elements of plant food exist in their soils, a mistaken notion has arisen among many men as to the value of soil analysis. "The fact is," says Professor Alfred Vivian, soil fertility expert of the College of Agriculture, Ohio State University, "soil analysis gives practically no hint as to the immediate needs of the soil. It gives the total plant food in the soil but does not give any clue to its availability. The most important thing that the chemist can do is to determine whether the soil is properly supplied with lime by testing for acidity." Rather than make a chemical analysis of a soil, Professor Vivian has another method of determining its needs in the way of fertilizers. He tests for acidity, notes the physical properties of the soil and then asks the owner a number of questions, including such as, the location of the farm, kind of crops grown, whether clover can be grown successfully or not, and the character of the underlying stone. From the answers to these questions he can tell what kind of fertilizer is needed with more intelligence than when simply making a chemical analysis. In a general way," says Professor Vivian, "there are three things concerning soil fertility, of which every Ohio farmer can be sure. These are: (1) There is no soil in the state that does not need phosphorous. No experiment has ever been conducted in the state that did not show a benefit from phosphorous. (2) Soils cultivated for any length of time are low in organic matter. Data on virgin and cultivated soils side by side, show that from 35 to 50 per cent of the organic matter has been destroyed in the cultivated soils. (3) Every man can determine absolutely by test whether or not his soil needs lime.



Tire Prices That We Call Unjust

Let men, if they will, claim a tire as good as the Goodyear No-Rim-Cut tire. But don't let men claim a better tire to charge you a higher price.

Bear in mind that Goodyear tires hold top place in Tiredom. They outsell any other. After millions of tests, men are adopting them faster than ever. Our this year's sales break every record, by 55 per cent.

And these tires offer four great features found in no other tire. Compel the men who ask higher prices to show some reason for them.

From \$5 to \$15 More

Sixteen makes of tires now sell above the Goodyear prices. The price per tire will often run from \$5 to \$15 more.

The reason lies in our mammoth output, our factory efficiency, our modest profit. It results from Goodyear popularity. Those extra prices, we can prove to you, are utterly unjust.

GOOD YEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO
Toronto, Canada London, England Mexico City, Mexico

Branches and Agencies in 103 Principal Cities Dealers Everywhere
Write Us on Anything You Want in Rubber

(1562)

Bale Hay! Big Pay!

Can start or stop instantly. Coupled up short. Easy to turn. Great on windrows. 2 1/2 to 3 1/2 tons per hour.

Tons Tell The Story of Profit. This **Free Book** tells of profits baling hay. Sandwich owners lead all others: Make \$200 to \$300 clear profit every month baling hay for growers in their district. "32 tons in 8 hours with a 3-man crew" writes C. W. Brown, Merrill, Michigan. Plenty more bale 20 to 30 tons daily, rain or shine. **Big Tonnage.**

SANDWICH Hay Presses

This mighty, solid steel **MOTOR BALER** supplies its own power from high grade, hopper cooled, Gas Engine, 4, 6, 8 or 10 H. P., mounted on same truck. Geared Magneto. No break downs. Another exclusive feature—full power delivered to Press by heavy steel roller chain. Turns out solid, salable bales. No dangerous belts to slip or stretch in wet weather. No other baler has this friction clutch on press, can start or stop instantly. Simple self-feeder that stands hard crowding. We make Horse and Belt power presses too.

Grasp This Golden Moment! and mail a postal for our famous "Tons Tell" catalog that shows you in actual figures the money made with the Sandwich Press and how you can pay for your press from your first year's earnings. Sent free postpaid. Address today. Sandwich Mfg. Co., 109 Oak St., Sandwich, Ill. Box 109, Council Bluffs, Ia. Box 109 Kansas City, Mo.

Don't Take Chances on a Poor Grindstone



Don't spoil your knives, axes, hoes or cutter-bar blades on some soft-spotted, lopsided, cheap stone. That's not economy!

Here's a good stone—the **CLEVELAND "STERLING"**. Guaranteed to wear evenly, grind quickly and put a keen edge on. Made of the only Berea rock, exactly the right grit for farm use. Ball-bearing, well-made steel frame. Works like a bicycle—and just as easy. Every stone personally selected by our expert judges.

CLEVELAND Grindstones

We are the biggest producers of grindstones in the world. We own and operate the only Berea quarry, the standard by which all grindstones are compared. We have 17 other quarries. We've made grindstones for 60 years. 9 out of every 10 agricultural implement makers use our stones in their own shops. They know what's best. We treat our customers fairly. Money back if anything goes wrong. Write for booklet, "The Grit that Grinds," and name of dealer who will supply you. Insist on this trademark.

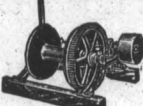
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