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MORE ALFALFA NEEDED ON MICHIGAN FARMS.

NOTWITHSTANDING the fact that volumes have been written and published on the subject of alfalfa culture, while institute lecturers have advocated it for Michigan and its value has been demonstrated in a practical manner by the progressive farmers of hundreds of communities in the state, the great mass of our farmers have failed to become interested enough to try it out, even on a small scale, on their own farms or, trying it in a haphazard way, have failed and abandoned further attempts to grow it. Owing to the percentage of failures with alfalfa in Michigan, too many farmers have jumped at the conclusion that it is not adapted to our conditions of soil or climate, leaving it to their more progressive contemporaries to solve the problem of its successful culture, and incidentally to first reap the reward which surely awaits the farmer who gets this greatest combination of forage producer and soil improver established on his farm. Quite generally, too, it will be found that the farmer who has failed with alfalfa very often fails to get a seeding of clover on his land from similar causes. Indeed, it is doubtful if the percentage of failures with alfalfa have been measurably greater, where intelligent and painstaking efforts have been made to get it established, than the percentage of clover failures on the same farms in the same seasons. But clover has been the standby as a forage producing and soil improving legume used in the regular crop rotation for many years; its value, and even its necessity in maintaining a profitable agriculture has become universally recognized, and even the farmers who have most often failed in getting stands of clover on their farms have persevered year after year in sowing it, too often, it is true, without making an intelligent effort to remedy the conditions which have contributed to the frequent failures, yet with a commendable tenacity which, if applied to the problem of alfalfa culture, would certainly bring about its early and successful solution. Indeed, the problems surrounding the successful culture of alfalfa are almost identical with the problem of eliminating the uncertainty of clover seedings, and practical study of and experimentation with alfalfa will help to solve the clover problem for many a farmer to whom its early solution is a matter of vital importance.

Then there is another large class of farmers, whose soil is in a condition to succeed with alfalfa easily and who have not found the problem of clover seedings a serious one, who have not tried alfalfa because they have not realized that they needed it, or that it would add to the profit from their farms. They have

grown clover in the regular crop rotation to good purpose, and in combination with other grasses it has provided them with a liberal amount of roughage, so why, they have reasoned, should they bother with an uncertain crop like alfalfa. Just a little figuring should convince every Michigan Farmer reader that there is a profitable place for the alfalfa crop upon his farm. First, it will, on an average, produce fully twice as much forage per acre as will clover. Many instances have been cited in which from four to as high as seven tons of hay per acre have been produced from a good

nutritive ratio of 1:5.9. This closely approximates the nutritive ratio required by the dairy cow and young, growing animals, but it is such a bulky feed that these animals cannot consume enough of it to satisfy their requirements, and when fed in connection with the other home-grown feeds the nutritive ratio becomes too wide for best results without the addition of supplementary feeds to balance the ration. The same tables show that alfalfa hay contains 11 per cent of digestible protein and has a nutritive ratio of approximately 1:3.86, a ratio so narrow that it aids materially in balancing up

up in the clover roots by the nodule-forming bacteria. But with alfalfa this process of appropriating nitrogen from the air in the soil and storing it up in the root nodules in an available form for the plants goes on indefinitely, while the roots of the plants penetrate the soil to a much greater depth than do the roots of clover, bringing up the mineral elements of fertility, and making the plant practically independent of moisture conditions after the first season of its growth. When this soil is again broken up for a crop it will produce as good or better crops as when in its state of virgin fertility. The seeding of the crop need be little if any more expensive than the seeding of clover, and when once established it may be left indefinitely or used in a regular rotation of crops as best suits the needs of the grower.

But it is not only as a hay crop that alfalfa is valuable. As a green forage for hogs it has no equal. Last year, after three cuttings of hay had been removed from seven acres of alfalfa on the farm of F. Wermuth, Gratiot county, 27 shots that were estimated to weigh about 125 lbs. were pastured for about five weeks in the field. Ordinarily these pigs would consume about eight bushels of ear corn per day. While grazing on the alfalfa if more than a bushel were thrown before them night and morning they would leave it. Thus the alfalfa pasture saved six bushels of corn per day on this lot of hogs. The hogs were sold direct from the pasture and averaged over 200 lbs. in weight. This same field cut 14 large loads of hay at the first cutting this season and has made a splendid start toward the second crop. But while the value of alfalfa as a pasture crop for hogs is well known and generally appreciated, there is a more or less popular impression that it is not a suitable pasture for other stock. From the standpoint of the future value of the stand, it is true that alfalfa should not be pastured, but when it is to be broken up the following season it may be very profitably used as pasture. Mr. L. Townsend, of Gratiot county, had a successful stand of alfalfa on eight acres which he mowed for three seasons. The next season the first crop was again cut for hay, and the field was then utilized as a pasture for 144 lambs the balance of the season. The lambs were fed to a finish in the winter, the hay cut from the field in the early summer being used as roughage, with some left for feeding other stock after the lambs were finished.

So much for the "why" of alfalfa culture. The "how" is somewhat of an individual problem for each locality in the state. The two pieces above mentioned were seeded in barley at the time of



Cutting Two Tons of Alfalfa per Acre on June 10, J. S. Bartlett, Kalamazoo Co.

stand of alfalfa in a single season right here in Michigan. Not only will it produce more hay than will clover under similar conditions, but it will produce hay of very much superior feeding value in combination with other home-grown feeds. With the advent of the balanced ration, our dairy farmers, particularly, have appreciated the economy in feeding a ration containing sufficient protein to satisfy the requirements of their animals in this direction and thus prevent a waste of the other elements of nutrition in the ration and at the same time promote a maximum production. In order to accomplish this it has been necessary to buy nitrogenous concentrates in considerable quantities to feed with the home-grown feeds. This is an expenditure which could be largely, if not entirely, avoided by growing alfalfa hay upon the farm. According to Henry's feeding tables, clover hay contains 6.8 per cent of digestible protein and has a

the other home-grown feeds. If fed with corn silage in the proportion of 20 lbs. of alfalfa hay to 40 lbs. of corn silage, which would provide the necessary amount of dry matter and nutrients for a dairy cow of average production, the nutritive ratio of the ration would be 1:5.7, which would exactly conform to the Wolff standard. This would still be a bulky ration, a defect which could be remedied, however, by the substitution of home-grown grains, with a minimum amount of nitrogenous concentrates, for a portion of the roughage in the ration, thus giving a maximum of results at a minimum of cost.

Again in the matter of soil improvement alfalfa is superior to clover as it is used in the crop rotation on the average farm. When clover is seeded with timothy, as is the usual practice, and the seeding is mown for two or more years, the timothy will appropriate to its use a large proportion of the nitrogen stored



Scenes Like this would be Common Throughout the Season on Michigan Farms if their Owners would Get Interested in the Possibilities of Alfalfa.

sowing that grain in the spring. Many other successful stands of alfalfa on the better agricultural lands of central Michigan have been secured by the same method. In fact, in the community where the two above mentioned fields are located there has not been a single failure with this method of seeding alfalfa since it was first grown there several years ago, which is more than can be said of clover. In many sections of the state conditions are similarly favorable, and neither an application of lime nor inoculation of the soil are essential to success with the crop. In other sections lime is needed, as is the case on the writer's farm, while in very many localities inoculation is necessary for early success with the crop. But with a liberal application of ground limestone and inoculation where needed, together with a suitable preparation of the soil for the crop, it has been pretty clearly demonstrated that alfalfa will succeed anywhere in Michigan, and the Michigan farmer who does not get busy and grow it is not living up to his business opportunities. It is well worth while to find out what, if anything, is lacking in the way of conditions which are favorable to its growth, and supply the deficiency.

As above noted, lime is needed as a soil corrective in many cases. The writer recently saw a striking example of the effect and lasting benefit of lime so far as alfalfa is concerned, on the farm of H. J. DeGarmo, of Oakland county. Mr. DeGarmo has a field of alfalfa, part of which was sown last year and part two years ago. Lime was applied to the portion of the field sown last year, but neither the soil or the seed was inoculated. The portion sown two years ago was neither limed nor inoculated. On that sown last year there is a good stand, but only scattering inoculation, as denoted by the color of the plants. That sown the previous year is mostly a poor stand, with the exception of a strip lengthwise of the field of perhaps an acre. Here Mr. DeGarmo recalled that he had applied two or three loads of ashes more than 20 years ago. On this irregular strip where the ashes had been applied there was a very heavy growth of alfalfa, with apparently perfect inoculation and all about this patch almost none at all. Undoubtedly it was the lime content of the ashes applied years ago which made the difference. Apparently this soil had been a suitable home for the bacteria peculiar to the alfalfa plant, which was apparently present in the soil where it had been waiting for its host for years. This would seem to indicate that the effect of lime is more lasting than has been generally supposed and should be an added encouragement for its use in preparing the soil for alfalfa where it is needed for this purpose. It is also a hint to apply the lime to the land which will be sown to alfalfa at some future date as soon as practicable, instead of waiting until the seeding is done.

As to when to sow and whether to use a nurse crop or sow alone there are many and conflicting opinions. It is the writer's opinion that the seeding can be done as successfully in a spring crop of barley or a thin seeding of oats as without a nurse crop. But, given favorable conditions, it is a hardy plant, and will live and thrive no matter when seeded. The thing most needed at this time is home-grown seed, both because it is more hardy and better adapted to our conditions and because it would lessen the danger of introducing new weed pests. But this is another reason why we should grow alfalfa, since it has been demonstrated that it will seed liberally in Michigan and will yield sufficiently well to make the seed a profitable crop.

ERADICATING QUACK GRASS.

Being a subscriber of your valuable paper I naturally read a great deal about weed pests, and the methods of destroying them. I have read a great deal about quack grass, and the different ways of killing it. It is rarely that two men agree on the way to do it. Some say it is the worst pest on the farm, but it has some redeeming features after all. It makes good pasture, and fairly good hay, if cut before it gets too near maturity, and it never pricks you when you get into a nest of it. I have got it on my premises, and nearly everyone, if he looks closely, will find Mr. Quack. Until this spring I always thought it was the worst pest to get rid of that a farmer could possibly have on his land, but I will say now that I have changed my mind somewhat in regard to it.

Last May I plowed a field of six acres

which was completely sodded over with it, and I made up my mind I would summer fallow it and see if I could get rid of it, so when I got the piece plowed I let it lay until it began to look green again, and then I took a disk harrow and went over it, setting the disks at full angle, and lapping half, giving it practically a double disking. I consider the disk the best tool to break the furrows with, because it cuts the roots all up. After I had got it worked over once this way I let it lay about a week and then I took the lever drag and dragged it every few days all summer. I sowed the piece of ground to wheat on September 19, but the weather was so warm that the Hessian fly totally ruined it, so I let it go till this spring and sowed it to oats. The oats are looking fine with practically no quack grass in sight. I believe that it can be gotten rid of easier than milkweed or Canada thistles. There is nothing but what can be killed if it is kept from breathing long enough.

Eaton Co.

W. P. ROGERS.

STACKING GRAIN.

I always liked to stack the grain before threshing unless there was enough to force us to commence threshing first. A wet stack with its sprouted grain is something to be avoided, even if one has to thresh from the shock and let the grain sweat in the bin.

I have always insisted on round stacks at the barn and round or ricks in the field, as seemed best. The years when the straw was long caused a different arrangement than when the straw was short. This year, 1912, the straw is short, more round stacks will be built than common as they not only keep better but many will stack that have often threshed from the shock. The fall of 1911 was a lesson they remember. Much threshing was done this spring because of last fall's rains and all the round stacks as far as I can learn, built as I am about to suggest, opened up in perfect condition except for the butts on the north side—a place where there are but few heads.

The whole secret in making stacks so they will not wet and grow inside is:

1. Make a solid foundation as small as the perfect stability of the stack will allow.
2. Keep the middle full and well tramped.
3. Leave a loose edge of straight straw, untramped, that will settle so much more than the center as to cause all straw to be in an inclined position.

The object should be to build a perfectly shaped stack as well as safe one. I know long and lodged grain will, unless extra care is taken, produce long, ill-shaped bundles that are hard to stack if one wishes a perfect shaped stack, yet patience and slower work will overcome the difficulty.

If the ground is not level where you wish the stack to stand take time to make it level, and uniformly solid. On this space lay a foundation of something that will let air in and keep moisture away from the straw. Straw when packed will provide an avenue for capillary attraction, so, if in contact with the damp ground, the straw will be wet near the bottom.

In starting the stack make a closely packed shock; as built in the field, this is to be circled by other bundles, each circle laid more horizontally, each butt of each circle an exact distance from the center, until the desired diameter of the foundation is reached, when the last circle of bundles should be nearly level, its head resting on the band of the inner bundle and its butt resting on the foundation, providing a slant that will easily shed water and a tie that will not slip out of place. In commencing to shingle a roof one puts on a double course at the eaves so we often double our outer tier of bundles before laying any inner tiers or courses. This outer circle has been laid with the long straw of the butt of the bundle on top, that is so the top of the bundle would project beyond the bottom straw of the same bundle. (This shape of the butt is caused by the bundles standing in shocks in the field and when the bundles have not been shocked I caused it by jarring the bundle if necessary). The second or inner tier should be commenced with the butts of each bundle laid well over the band of the outer bundles. The length of the straw and the condition of the grain when cut will govern this placing of the first inner tier. The object is to give an even surface to the outside of the stack and to firmly tie each bundle in place. The butt slant of this second tier should be op-

posite to that of the outer bundles, that is, the longest straw at the bottom; this makes a slant on which to lay bundles later.

So far no weight of any kind has been allowed to rest on these two outer tiers, and I always lay them very carefully with a fork. The man throwing from the load should always pitch the bundle so it lands on the center of the stack with the butt, if possible, pointing to the outside of the stack where stacker is at work. As each row is completed begin another with its bundles laid so the butt will pass the band and extend to or beyond the middle of the distance between the band and the edge of the butt. Your object now is to bind and fill up. Lay with the butt slant running back. Pack the bundles more tightly than you have the two outer courses and tread each bundle firmly between the band and head. Have every other load, if possible, driven up on the other side of the stack. Much depends on the carefulness of the man who unloads the wagon. Be sure to tread in extra bundles when the center is reached.

Be careful not to draw in too fast, a good steep roof is desirable. Select special bundles and take unusual pains in breaking them for the top. A stake sharpened at both ends and five or six feet long should be used to pin the top sheaves. Finish by carefully raking the outside to straighten the water channels.

Wisconsin.

OLD AGRICULTURIST.

THE WATER SUPPLY ON THE FARM.

Forty years ago the most of the wells in this section were from 10 to 30 feet deep. A few were walled with brick, but the most of them with stone from the fields. These were all open at the top, and as the stone was laid without mortar there were plenty of holes at the sides for the entrance of angleworms and other things still less pleasant to contemplate. The almost universal means of securing the water was by means of the old oaken bucket, with a "sweep" for the shallow, and a rope and windlass for the deeper wells. Sometimes a prowling cat went to the bottom of the well along with the overturned bucket at night, and necessitated drawing of all the water in the well, no easy job with the means employed. The most of the cattle drank from ponds, none too clean at some seasons, and from creeks, as was most convenient. In the early days the wells gave an abundance of water, but later they would give trouble during dry seasons, and then the bored wells, cased with wood or tile, 40 to 50 feet deep, came into use, but as the wind-mills came to be used for pumping, both for the house and stock, these were also lacking in a dry season, and then came the tubular wells cased with a three and a half-inch iron pipe. These go to various depths, the one on the farm here is 125 feet deep, with about 90 feet of water. It was put down 19 years ago, the pumping is done by a 10 foot wheel, on a 40 foot tower, and both the house and all stock is supplied from it. It has never given the least trouble, always supplying an abundance of water. As the water all passes through the house tank, holding about a barrel, it is always fresh.

I recently visited a neighbor who last fall put in a water system in his farm home, which he took pride in showing me, and a justifiable pride, too, I think, for it is the best I ever saw in a country home. The water supply is from a deep tubular well, and is pumped by wind-mill into a nine-barrel tank in a closet on the second floor. When the tank is full it overflows to the stock tank at the barn. Standing by the kitchen range, and connected with it, is a 40-gallon galvanized tank, which is connected with the large tank upstairs. This gives an abundant supply of hot water at all times when the range is in use. A room adjoining the kitchen has been fitted up as a bath room, with a fine, roll rim, white enameled tub, with hot and cold water connections, a seat of the latest improved type, and porcelain lined sink with hot and cold water connections, also a pump with pipe to cistern to supply soft water as needed. All waste is piped to a cess-pool eight or ten rods from the house, the pool is covered with brick arch. This system, all complete, not including the wind-mill, and not counting his own labor, cost \$105. It has certainly had a severe test, with the temperature down to 32 below zero, but no pipe has frozen, and it is giving perfect satisfaction. In these days a farmer can have conveniences as well as his city brothers, and at moderate cost.

Eaton Co.

APOLLOS LONG.

RYE AND SAND VETCH FOR COVER CROP AND GREEN MANURE.—LIMING WHEAT GROUND.

My farm being a gravel burr oak soil, I am thinking of putting 12 acres to rye and try some sand vetch. I want to sow it by Aug. 1, and then pasture some. Then in the spring I will put this ground to ensilage corn. Is rye good to plow under in the spring as green manure, for the purpose I wish? As to winter vetch, is it a good investment for plowing under for a manure, at the present cost, \$7.50 per bu.? Which is the best investment for my purpose? Also, is it advisable to lime wheat ground this fall, for the purpose of getting a clover stand next summer? I intend to top-dress one-half of field, the other half I intend to put commercial fertilizer on after I have my soil analyzed.

D. D.

Rye and sand vetch make an excellent cover crop and an excellent crop for green manure, especially upon sandy land as both of these plants do well upon sandy land. If your land needs vegetable matter, and I presume it does, as a great deal of land needs this quite as much as it needs anything to build up its crop producing power, I don't know of any more helpful way to get this than to seed this 12-acre field to rye and sand vetch the first of August. I would give this field a good dressing of commercial fertilizer at the time of sowing to give the rye a good start, get all the growth you can this fall, then it will start up early in the spring and by the time you want to plow for ensilage corn you will have a heavy growth of rye and sand vetch, which will add an immense amount of vegetable matter to the soil, and the sand vetch will undoubtedly have accumulated some nitrogen from the atmosphere which will furnish plant food also to this field. But you are making a mistake if you are going to sow this for the benefit of the land and then pasture it. The prime object in sowing this cover crop, as I understand you, is to build up the land, but if you go to work and sow rye and pay \$7.50 for sand vetch seed and then pasture it off, what good are you going to get towards building up the soil? You ought to grow just as big a crop as you can and plow it down for your ensilage corn next year instead of pasturing it off. Of course, if what you need most of all is pasture then your plan will work all right, but it won't tend to build up the soil. There is where a great many people make a mistake. For instance, they mow a clover meadow that was none too heavy and then as soon as they get it mowed they turn the cattle in, and every green spear of clover that comes up the balance of the year is nipped off as soon as it gets up, literally grubbed into the ground. Now this way of treating land never will build it up.

Whether it is advisable to lime land or not all depends upon the condition of the land, and no one can tell without an experiment. If the land is acid it certainly needs sweetening, and it will pay to get lime for this purpose. Whether the land is acid or not can be determined by the litmus paper test. However, if the land is deficient in lime as a plant food this can be determined only by experimenting. That is the safest way anyway. If one does not have good success in growing clover it is suspicious that the soil may need lime, it either needs lime or plant food, and it is well to try a portion of the field with lime. If you use ground limestone use at the rate of two tons per acre. If you use crushed burned lime one ton per acre will be sufficient.

Some people seem to think when they use lime they do not have to use manure or commercial fertilizer, but lime does not take the place of manure or commercial fertilizer. You need the fertilizer just as bad when you use lime because lime is rarely a plant food in our Michigan soils. Usually when it is needed it is for the purpose of correcting the acidity of the soil.

ARRANGING A FILTER FOR THE CISTERN.

Will you please tell me what material is used and how a filter can be arranged in a cistern?

Lapeer Co.

E. H. H.

The most common method of installing a filter in a cistern is making a division in the cistern by means of a brick wall, or construct a square "well" inside the cistern of brick and mortar. The brick being porous the water will soak through them and be fairly well filtered in the process. This kind of arrangement will be satisfactory for filtering cistern water for domestic purposes other than for drinking water, in which case a more elaborate arrangement will be required for best results.

LIVE STOCK

TENDENCY OF LIKE TO BEGET LIKE.

Great as is the scope for skill in the management of soil and crops, there is still greater scope in the management of live stock. When a farmer buys the seed for a crop, no skill in tillage will make any variation in the kind of crop. When the stock breeder goes to work, it lies largely with his own judgment and skill whether or not he produces an improved animal. Continued selection and hybridization have made farm crops what they are, and with ordinary cultivation there is little tendency to deteriorate. In the case of live stock, a single generation may make the greatest difference either for better or for worse.

It cannot fail to strike the observer how wonderfully uniform in appearance wild animals are. Rabbits, squirrels, foxes, etc., are each an exact reproduction of the type. This is not the case with the domesticated animal. The more the breeding of the stock has been kept under control, the more variable the stock may be if that control is injudicious. A short examination of the general principles of breeding will throw a good deal of light on these variations. The original principle is that "like begets like."

The wild rabbits of a certain district will be found all alike in color, size and general appearance. In different districts we find rabbits of different type, although they may be descended from the same original stock. This brings us to a further principle that "the circumstances of life modify type." Where circumstances are favorable we have the large, well-developed type; where unfavorable, the type is pinched and dwarfed. Now, in our farm live stock we see how this second principle works in the large breeds of cattle, horses and sheep that are found on the good land, and the small breeds that occur in the mountainous districts. Contrast the Shorthorn cow with the Kerry, the Shire horse with the Connemara pony, the Roscommon sheep with any of the mountain breeds of sheep. So strong are the circumstances of life that the true type of the mountain breed cannot be reared on the good, low-lying land. The first generation of calves from Kerry cows on the rich lowlands will be larger and coarser when full grown than the original Kerry. The first principle of breeding, "like begets like," establishes the importance of pedigree or "blood."

Where animals are all of one strain of blood from time immemorial, they all settle down to one type. There is no reason why they should vary. The male element and the female element work together to fix the type. When a cross takes place between animals of two different types, whether different strains of the same breed or different breeds, there is a struggle for influence between the different types. As a result, the progeny may show some of the points of each of the parents, or sometimes may resemble one parent very closely and show little resemblance to the other. These variations are not arbitrary. Where the male and female elements are both equally pure-bred, the progeny usually shows a mixture of characteristics. Where one element is pure-bred and the other is cross-bred, the pure-bred type will always predominate in the young. The blood of the pure-bred parent is prepotent over the other parent, because it has a fixed type, whereas the other is a mixture of types without any fixity.

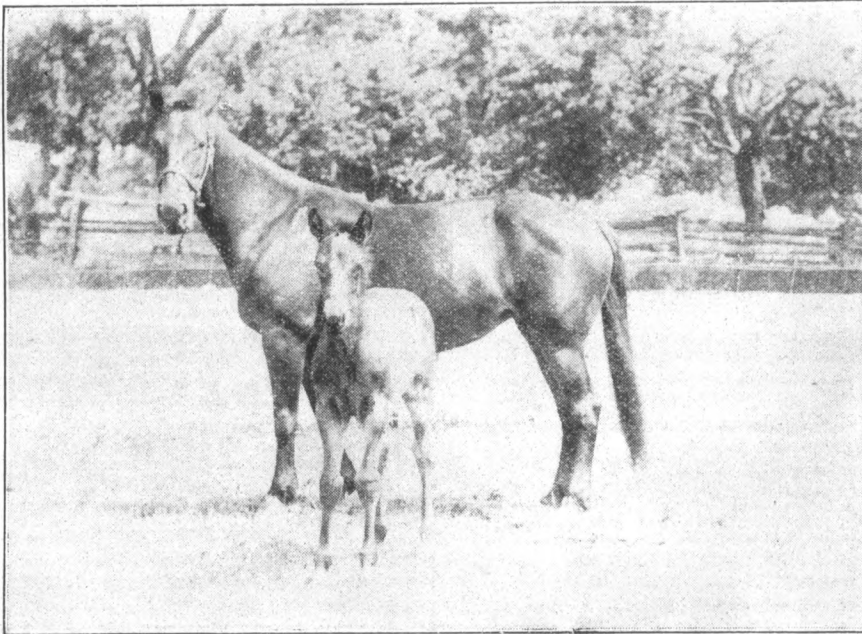
This explains the prejudice of experienced breeders against mongrel sires. They may be fine-looking animals, perfect in every external point, but they have little, if any, prepotency. They may produce strong, healthy stock, but there is no certainty that this produce will not cast back to the inferior strain of the blood. The average run of female live stock throughout the country is of indefinite breeding, so that there can be no certainty what the produce will be like if they are mated with badly-bred sires. With the same class of stock the pure-bred sire will impress his own good qualities on the offspring.

Among dairy cattle the influence of the pure-bred sire will tell not only in the shape and constitution of the calves, but also in the milking capacity of the heifers. This influence will be for good if the sire comes from a line of milking cattle; it will be for bad if he comes from a non-dairy family. A pure-bred bull of beef-producing type will spoil a

dairy herd just because of the prepotency which his pure-bred breeding gives him. This is no argument against the use of pure-bred sires in such cases. It only shows the necessity of understanding every aspect of the principle "like begets like."

The same principle holds in the selection of parents of good constitution. Delicate or unsound parents, poor feeders, poor milkers, or vicious, bad-tempered animals are apt to produce these qualities in their progeny.

The farmer who keeps before his mind the principle "like begets like," and who remembers that it is applicable in a full sense only to animals of pure blood, has made one step in the direction of making his stock more profitable. If he breeds for milk he will find out the best of his cows by keeping a record of their produce, and will mate them with a pure-bred bull of a good dairy strain. This is important, for in the same breed of cattle there is much variation in dairy capacity. If he breeds for beef he will



Brood Mare and Colt on Farm of Chas. Gibbs, of Ottawa County, a Useful Type which is Becoming Uncommon on Michigan Farms.

take those heifers which show the earliest maturity and quickest fattening qualities and will mate them with a bull of an early maturing beef type. It is all a matter of selection. No farmer need have unprofitable live stock if he will make a point of selling the bad ones and breeding only from the good.

Illinois.

W. H. UNDERWOOD.

BLIND STAGGERS IN HORSES.

The Department of Agriculture a short time ago received a report from the Kansas Experiment Station of some investigations of the disease of horses variously known as staggers, blind staggers, sleepy stagger and mad stagger. This disease has occurred in outbreaks of greater or less severity in many sections of the United States.

The first symptoms of the disease are usually a refusal of food and a desire for water, often accompanied by some difficulty in swallowing. Animals suffering from the disease generally go in a circle, either to the right or left, depending on which side of the brain is most seriously diseased.

Away back as far as 1891 the Kansas Station had reached the conclusion that the disease was due to mold which had badly damaged the small corn crop grown that year because of dry weather. In 1902 and 1906 there were severe outbreaks in various parts of Kansas, while there has also seemed to be a continued loss of horses from staggers in any locality in which much corn of an inferior grade is fed. There are a few authentic records of cases where the horses had not been fed corn, although in other states severe losses have occurred when the grass in the pastures became moldy.

While it is possible to cure a few cases, it is the opinion of the station officials that the best means of combating the disorder consists in prevention. No unsound corn should be fed horses. If it is necessary to feed a poor grade of corn it should be shelled and thoroughly cleaned with a fanning mill. Very good results have been obtained by the so-called floating of corn before feeding, which consists in pouring it into water. The moldy grains, being lighter, rise to the surface and may be skimmed off.

Washington, D. C.

G. E. M.

EXPERIMENTS WITH WINTER-FED LAMBS.

Dr. A. C. True, of the Office of Experiment Stations, has received a report from the New York Cornell Station of some tests made there to determine the relative cost of gain in weight with wide and narrow rations and to study the effect of overfeeding lambs. The animals were fed in addition to wheat salvage and corn, alfalfa hay, bean fodder and oil meal for one lot; alfalfa and ajax flakes (distillers' dried grains) for another and timothy hay as a supplementary feed for the third. At the end of 60 days the lambs in the first lot made an average gain of 16.3 lbs., at a cost of 8.27 cents per pound of gain. The corresponding figures for the second lot were 20 lbs. of gain, at a cost of 7.48 cents per pound and for the third lot 15.3 lbs. of gain at a cost of 7.87 cents per pound.

The experience with the third pen showed that these sheep lacked protein in their ration because they were very

eager to eat up all the bean forage and by coming up to full feed after their ration had been changed toward the end of the experiment when many lambs were eating daintily or were off feed entirely. These lambs not only made poorer gains but it was hard to get them to eat as much grain by weight as did the lambs in the other pens, until a change was made in the ration which narrowed the nutritive ratio.

LIVE STOCK NOTES.

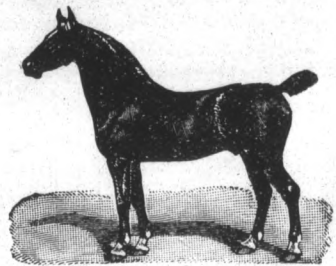
The Live Stock Report of Chicago, says: "A factor in the situation right now developing bearishness on the part of buyers is the severity of government inspection that is cutting down many beef bullocks of high-class some as tuberculosis, and others as afflicted with measles, tape worm and one thing and another that were unheard of a few years ago as cause for condemnation. Buyers say that with this rigidity of inspection now in operation, it is hard to get off at as to beef cost with a load of steers bought at current high prices."

Now that the season of the year for marketing the crop of range lambs has fairly opened, low prices for lambs may be expected. The first Idaho and Washington range lambs showed up in the Chicago stock yards recently and brought about a sudden break in prices for lambs of all descriptions, the best included. Compared with a few weeks ago, all kinds of sheep and lambs are much lower, and there is the poorest kind of an outlet for thin little lambs, which are not wanted, even on liberal concessions in prices. Live stock commission houses at Chicago have been cautioning their country shippers to exercise the greatest care in marketing lambs and to avoid sending in light native lambs weighing around 30 to 50 lbs. These little lambs should be kept at home, provided their owners are provided with sufficient feed, and allowed to mature and acquire proper weight before being sent to market. It is the good native lambs that will be wanted by slaughterers, and only these should be shipped to market. It should be remembered that in addition to range lambs and native western lambs, the Tennessee and Kentucky spring lambs are being marketed freely at Louisville and other markets, and that Chicago is receiving liberal supplies of these, consigned to the packers. The southern lambs are likely to be marketed all through this month freely.

The new freight rates on wool from western states ordered by the interstate commerce commission now in force are expected to result in a saving of approximately \$400,000 to sheepmen of Colorado, Wyoming, New Mexico, Arizona and Utah.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hook, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

KENDALL'S SPAVIN CURE

—has saved thousands of dollars and thousands of horses. The old reliable cure for Spavin, Ringbone, Splint or lameness. For sale at all druggists. Price \$1 per bottle, 6 for \$5. "Treatise on the Horse" free at druggists or write to Dr. B. J. KENDALL, COMPANY, Keosauqua Falls, Vt., U. S. A.



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GUARANTEED CURE FOR HEAVES, COUGH, DISTEMPERS AND INDIGESTION. Cures Heaves by correcting Indigestion. Book explains, sent free. Cures Coughs, Cold, Distempers, Prevents Colic, Staggers, etc. Blood Purifier. Expels Worms. A Grand Conditioner. A Veterinary remedy, 20 years' sale. 50c and \$1.00 per can. Use large size for Heaves. At dealers or direct prepaid. THE NEWTON REMEDY COMPANY, Toledo, Ohio.

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Illustrating the most important line of farm machines made. Tells when, where and how to use them. It answers every question you might ask about farming implements. Send postal today for package No. X15 John Deere Plow Co. Moline, Illinois

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Grinds your plow shares, cultivator points, axes, sickles, knives and all tools. Edge or side of wheel can be used. No Engine too small for it. Will last a lifetime. Special attachment for grinding discs furnished free. Write for circular. Pays for itself in one season. Duplex Mill & Mfg. Co., Box 408, Springfield, O.

The Magic in Deep-Tilled Farms!

Here are some facts about deep tilling and the money-profit to farmers who do it. Also the facts about the *Spalding Deep-Tilling Machine* which tills, pulverizes and mixes the soil, all in one operation, leaving a perfect, deep, garden-like seedbed over the entire farm. Every farm that produces its maximum profits must, finally, come to this careful, easy way of deep tilling.



Ordinary Seedbed



Spalding Machine at Work



Spalding Seedbed

Note the illustration above. It shows the rear view of the Spalding Deep-Tilling Machine. The seedbed to its right, with the high stand of corn, is the seedbed the Spalding makes. The one to the left is the kind of seedbed that most farmers are apt to make now. Note the difference in crops. We have hundreds of letters from Spalding users giving actual figures to bear out what this picture tells—not only corn figures—all kinds of crops. These farmers have plowed one field the old way and another, alongside, with the Spalding Machine, just to make an actual comparison. The results they obtained are surprising. Every up-to-date farmer should know what they are. The Spalding Machine on a thousand farms is causing some almost miraculous increases. Learn what it can do for you. Among the thousands of Spalding owners there are farmers who own just such farms as yours. Their experiences with the Spalding are exactly the same as yours will be. Write for the name of an owner near you who will show you his Spalding in operation. Get his experiences first hand.

Why Users Laugh at Drought

Hundreds of users in drought sections say, "If we'd had that machine last year we'd have had a crop now." That's because the deep seedbed stores the winter rains, like a sponge, while the rains on the shallow-plowed land run off. It's because this pulverized, well-mixed soil liberates the utmost of the needed plant food for the long, healthy roots which can grow to their full in deep seedbeds.

Using a Spalding is like spading the whole farm, just as you spade your garden, taking even less time to do it than plowing and harrowing takes now.

The machine's operation is simple. But the results in the yields are like magic. One disk cuts a furrow four inches deep. Another disk follows, cutting the same furrow from eight to twelve inches deeper, the soil being mixed and pulverized all in the one operation. No other machine or plow does anything like it. You ought to know all about it and about the profits to farmers who deep-till every year with the Spalding.

Read over the letters from users. Then write for our book on deep tilling called "The Bulletin"—also the Spalding Catalog. Cut out this ad as a memo to send for them.

Spalding Dept. R-7 Gale Manufacturing Co., Albion, Michigan

Cleveland, O., February 9, 1911.

Gentlemen: About three years ago I bought for Good Hold Farm, in Mentor, two of these plows. Last fall I bought the third. That is perhaps the best opinion that I could give in regard to this plow. If it had not been satisfactory, of course I would not have bought the third plow. As a cultivator it is correct in principle. It will cut up the hardest kind of soil. It lifts the soil up in the same manner that it is lifted up by a spade—lets the air come through it and drops it back again in a loose condition. It does not create soil, but it will cultivate it as deep as it is ever practicable.

My experience is that by under-draining and the use of the Spalding plow and disks, which work on the same principle as the plow, and by proper selection of seeds and fertilization of the soil, we have increased the products of the land on Good Hold Farm threefold. Yours truly,

L. E. HOLDEN.

Live Oak, Fla., August 18, 1911.

Gentlemen: I am in receipt of yours of the 14th, and replying thereto will say I would like to have the machine shipped as early as you can do so. In my opinion your double disk plow is the finest instrument for breaking land and turning under heavy vegetation that has yet been made. I note a wonderful difference in corn grown on land this year, broken with your tilling machine, as compared to land broken with the ordinary two-horse plow. I believe it will make at least ten bushels of corn per acre more. Please let the shipment come forward at once. Yours truly,

W. J. HILLMAN.

Monmouth, Ill., April 27, 1912.

Gale Manufacturing Company, Albion, Mich.

Dear Sirs: In reference to your inquiry as to my experience with the Spalding Deep Tilling Machine, I wish to say that we bought the machine in 1910. In the fall of that year I plowed a field of about seventy acres, forty acres with a gang plow to the ordinary depth and thirty acres with the Spalding Deep Tilling Machine to an average depth of fifteen inches, cutting a furrow of about twelve inches in width. At this width and depth I considered it of very light draft, considering the amount of ground we were turning and the fact that we were only using four ordinary-sized horses.

In the spring of 1911 this field was put in corn, all was tilled the same, cultivated the same number of times, and no difference made as regards cultivation, except that the ground plowed with the Tiller was much easier to get into condition for seeding, due to the manner in which the machine pulverizes the soil.

The yield of corn per acre was as follows:
Ground plowed with Gang Plow, ordinary depth, 24 bushels.
Ground plowed with Spalding Machine, 15 inches, 61 bushels.

I will admit that the above results sound unreasonable, and have had a hard time realizing that it was so, but wish to say that the above results were not gained through guesswork, but by actual weight.

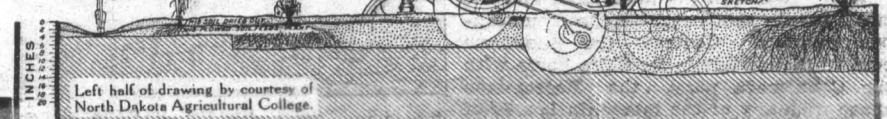
When the machine was first brought to my attention I hesitated about buying on account of the price, thinking it too high, but the above experience proves to me that it is without doubt the cheapest implement on the farm, and especially so, because the first cost is the only cost, as there have been no repairs.

With the experience, together with the results I have obtained, it is impossible for me to understand how any farmer can be without a SPALDING DEEP-TILLING MACHINE.

I will be glad to have you refer anyone interested in this machine to me, and want you to consider yourself at liberty to do so.

Yours very truly,
F. I. BROWNELL.

Spalding Deep Tilling Machine



Left half of drawing by courtesy of North Dakota Agricultural College.

(33)

PERCHERONS

Bred for utility as well as show quality. Stable includes several international winners. Three 2-year-old stallions of quality for sale. Come or write B. E. ANDERSON, R. No. 3, Adrian, Mich.

For Sale—Horses, cattle, sheep, swine, poultry and dogs, nearly all breeds. Sires exchanged. South West Michigan Pedigreed Stock Ass'n., David Woodman, Sec'y., Treas., Paw Paw, Mich.

Write W. A. EWALT, Mt. Clemens, Mich., for white and collie puppies, natural stock workers.

THOROUGH BRED COLLIE PUPS.
Fine. C. A. HAYS, Milford, Michigan.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS.
Herd, consisting of Trojan Erica, Blackbirds and Prides, only, is headed by Egeon W. a Trojan Erica, by Black Woodlawn, sire of the Grand Champion stock and bull at the International in Chicago, Dec. 1910. A few choice bred young bulls for sale.
WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of foremost dairy breeds; young bulls and bull calves for sale. Berkshire swine. All pure bred.
Michigan School for Deaf, Flint, Mich.

Am offering a yearling May Rose Guernsey bull for sale. ALLAN KELSEY, Lakeview Michigan.

GUERNSEY BULL CALVES for sale, at prices you can afford to pay. (Reg.) W. W. BURDICK, Wayland, Mich.

7 Months old Holstein Bull Calf
very large for age, nearly white, his dam a daughter of Lillie Pauline De Kol Count, his sire a son of the King of the Pontiacs from one of Hengerveld De Kols good daughters. Have others.
ED. S. LEWIS, Marshall, Michigan.

A 24-lb. Bull

Have Bull Calves out of—
13, 20, 23, 24-lb. Cows A. R. O.
By a 24-lb. Bull.
My herd averages 19 lbs.
If you want this kind write

BIGELOW'S HOLSTEIN FARMS,
Breedsville, Michigan.

HOLSTEINS

I can please any body with a service bull, bulls from one to ten months old, sired by Johanna Concordia Champion. Also cows and heifers bred to him. Write me for anything you want in Holsteins.

L. E. CONNELL, - Fayette, Ohio.

HOLSTEIN BULL calf sired by best son of Pontiac Butter Boy, 58 daughters in advanced Registry, out of a grand daughter of De Kol 2nd Butter Boy 3rd, over 100 daughters in advanced Registry. A beautiful calf of choicest breeding. Price only \$50.
C. D. WOODBURY, Lansing, Michigan.

"Top-Notch" Holsteins.

Choice bull calves from 6 to 10 mos. old, of fashionable breeding and from dams with A. R. O. records, at reasonable prices. Also one 2-year-old bull, fit to head a good herd.

McPHERSON FARMS CO., Howell, Michigan.

6 HOLSTEIN BULL CALVES
From \$50 to \$80. Send for pedigrees.
LONG BEACH FARM, Augusta, Michigan.

FOR SALE—4-yearling Holstein Friesian Bulls, 2 A. R. O. bred. Some cows. Also bull calves. 34 years a breeder. Photos and pedigrees on application.
C. Jackson, South Bend, Ind., 719 Rex St.

Holstein Bull Calf—dropped Feb. 17, 1912, nearly white, 37% blood Hengerveld De Kol dams; record Senior 2-year-old, 1837 lbs. butter.
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Purebred Registered HOLSTEIN CATTLE
The Greatest Dairy Breed.
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REGISTERED HOLSTEIN CATTLE—Bulls all sold. Head headed by Hengerveld Colin Pieterse LOYD F. JONES, R. F. D. 3, Oak Grove, Mich.

Big Bull Bargain—Choice registered HOLSTEIN ready for service. Hatch Herd, Ypsilanti, Mich.

YPSILANT FARMS BULL CALVES.
Choicest Konradyke, Dekol and Hengerveld breeding. \$50.00 to \$100.00 Official Pedigrees on request. COLE BROTHERS, Ypsilanti, Michigan.

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A few high class boars from such champion boars as Orion Chief, Instructor, and King of Illinois. Also a few bred sows, Jersey bulls, cows and heifers.
BROOKWATER FARM, ANN ARBOR, MICH., R. F. D. 7.

Lillie Farmstead JERSEYS

Bulls ready for service, also bull calves and heifer calves. Cows all in yearly test. Satisfaction guaranteed.
COLON C. LILLIE, Coopersville, Mich.

MARSTON FARM—JERSEY CATTLE.
T. F. MARSTON, Bay City, Michigan.

NOTICE—I offer for sale a fine three-year-old Jersey cow. Also two young bull calves at bargain prices. C. A. TAGGETT, R. No. 1, Caro, Mich.

Jersey Cattle For Sale.
C. A. BRISTOL Fenton, Michigan.

BUTTER BRED JERSEY BULLS
CRYSTAL SPRING STOCK FARM.
Silver Creek, Allegan County, Michigan.

RED POLLED—Choice lot of females any age, also some bull calves.
J. M. CHASE & SONS, Ionia, Michigan.

RED POLLED BULLS FOR SALE—from good strains. JOHN BERNER & SON, Grand Ledge, Mich.

DAIRY BRED SHORTHORNS—Milk strain, beef type, or good note. J. B. HUMMEL, Mason, Mich.

SHEEP.

Leicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Albion, Mich.

Hampshires—Who wants 18 good ewes and ewe lambs, and a good 300 lb. imported ram for \$225. Also have 7 good ram lambs for sale. All registered. E. A. Hardy, Rochester, Mich.

Oxford Down Sheep—Good Yearling F. field Rams and ewes of all ages for sale. I. R. WATERBURY, Highland, Michigan.

Reg. Rambouillets—Wish to close out both sexes. All ages, low price. Farm—2½ miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

HOGS.

Durocs and Victorias—Young sows due Mar. & April. Bred to 1st prize and champion boar. Priced to move them. M. T. Story, Lowell, Mich.

BERKSHIRES—2 fancy gilts, bred, at \$35. Boars serviceable age, \$25 and up. Am booking orders for spring pigs. Elmhurst Stock Farm, Albion, Mich.

Quick Maturing Derskshires—Best breeding; best type. Satisfaction guaranteed or money refunded. C. S. BARTLETT, Pontiac, Mich.

BERKSHIRES—Weaned pigs either sex \$15 two for \$25; bred gilts \$35; bred sows \$50, registered and transferred. Excellent breeding. Choice individuals.
C. C. COREY, New Haven, Michigan.

Improved Chesters—Spring pigs, either choice young boar and a few sows bred for early fall farrow. W. O. WILSON, Okemos, Mich. Both phones.

O. I. C's Special Prices on spring pigs and service male's. Also fall pigs 200 to pick from. Shipped on approval. ROLLING VIEW STOCK FARM, Cass City, Michigan.

O. I. C. SWINE—Males weighing 200 lbs. each. Also a few very choice gilts, bred for June farrow. Geo. P. Andrews, Danville, Ingham Co., Mich.

O. I. C. Extra choice bred gilts, service boars and spring pigs, not akin from State Fair winners. Avondale Stock Farm, Wayne, Mich.

O. I. C's—All ages, growthy and large, sows bred. Males ready, 100 to select from. Attractive prices on young stock. E. H. Jump, Munith, Mich.

O. I. C's—I have some very fine and growthy last fall pigs, either sex, males ready for service now, pairs not akin. OTTO B. SCHULZE, Nashville, Mich., half mile west of depot.

OUR Imp. Chester Whites and Tamworth swine won 245 1st at Fairs in 1911. Service boars, also sows bred for spring farrow of either breed that will please you in quality and price. Adams Bros., Litchfield, Mich.

O. I. C. swine and Buff Rock cockerels of right type, best of breeding, price way down for quick sale. G. D. SCOTT, Quimby, Mich.

O. I. C. Challenge (2311.) Write for prices. GLENWOOD STOCK FARM, Zeeland, Mich.

O. I. C's of superior quality. Service boars, gilts, spring pigs. No akin pairs. Also Buff Rock eggs \$1.50 per 15. Fred Nickel, R. 1, Monroe, Mich.

O. I. C's with size & quality, the kind I can positively guarantee to give satisfaction or will refund money. Newman's Stock Farm, R. No. 1, Marlette, Mich.

O. I. C. SWINE—Write me for Pigs, pairs and trios, not akin. Have a number of service males of good type. Write me describing of your wants. A. J. GORDEN, R. No. 2, Dor, Mich.

O. I. C.—Orders Booked For Spring Pigs. C. J. THOMPSON, Rockford, Michigan.

DUROC JERSEYS—One service boar, two bred gilts, spring pigs, either sex. Choice breeding. Prices reasonable. Write or come and see. R. G. VIVIAN, R. No. 4, Monroe, Mich.

Duroc Jerseys—Sows bred for May and June. Spring pigs. I pay the express. J. H. BANGHART, Lansing, Mich.

DUROC JERSEY SWINE—THE BIG KIND. Write your wants. F. A. LAMB & SON, Cassopolis, Mich.

DUROC-JERSEY SOWS bred for July and August farrow. Choice bred spring pigs. Prices reasonable. JOHN McNICOLL, North Star, Mich.

DUROC JERSEYS—10 Fall and Winter Boars, ready for service. Prices right for 10 days. Write or come and see J. C. BARNEY, Coldwater, Mich.

Duroc Jerseys For Sale—Service Boars, bred sows and Spring Pigs either sex. Pairs not akin. M. A. BRAY, Okemos, Mich.

CLOSING OUT—Butler's Big Type POLAND-CHINA.
A bigger, better and more prolific type, 10 nice, big sows, bred for June, July, August, September at \$25 each, f.o.b. You had better order one at once.
J. C. BUTLER, Portland, Michigan.

POLAND-CHINA SWINE
Bred for September. R. W. MILLS, Saline, Mich.

Big Smooth Poland China Hogs from large sires, either sexes, at reasonable prices. ALLEN BROS. Paw Paw, Mich.

Poland Chinas—Bred from large type. Stock all ages, both sexes, at Farmers prices. W. J. HAGELSHAW, Augusta, Michigan.

POLAND CHINAS—Gilts and yearling sows bred for first of Sept. farrow, a few big types.
E. D. BISHOP, Route 38, Lake Odessa, Mich.

POLAND CHINAS—Either sex, all ages. Something good at a low price.
P. D. LONG, R. No. 8, Grand Rapids, Mich.

LARGE TYPE P. C.—Largest in Mich. Come and see greatest herd of big, prolific P. C. in state. Sows avg. 10 pigs to litter. Free live, expenses paid if not satisfied, order early and get choice. Prices reasonable, quality considered. W. E. LIVINGSTON, Parma, Mich.

BIG TYPE Poland China fall and Spring pigs, sows bred. Dairy bred Shorthorn bulls and calves. Prices low. ROBERT NEVE, Pierson, Mich.

15 Poland China Sows bred for spring litter, priced to sell. WM. WAFFLE, Coldwater, Mich.

POLAND CHINAS—Young sows bred for April farrow. Extra good fall pigs, either sex. L. W. BARNES & SON, Byron, Shiawassee Co., Mich.

Big Type P. C. Sows bred to Big Bone Junior.
A. A. WOOD & SON, Saline, Michigan.

Mulefoot Hogs—30 SOWS and GILTS bred. Also pigs not akin. G. C. KREGLOW, Ada, Ohio.

For Sale, Yorkshire Gilts—Bred to farrow the latter part of August. Also pigs, both sexes. WATERMAN & WATERMAN, Meadow Land Farm, Ann Arbor, Mich.

Lillie Farmstead YORKSHIRES.
A few choice Gilts bred for September farrow, good ones. Spring pigs, either sex, pairs and trios not akin. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Mich.

Please mention the Michigan Farmer when writing to advertisers.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

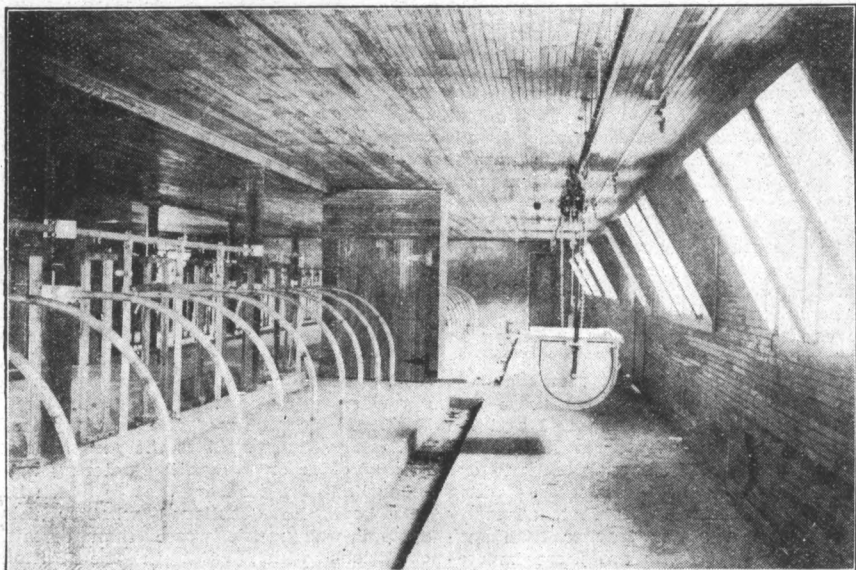
A MUDDY BARNYARD—SOWING ALFALFA IN AUGUST.

Will you kindly answer the following questions: First, what can I do to secure a dry barnyard? My yard is in a rather level place and in time of the wet seasons mud gets deep. What is the best and least expensive way of remedying this? Second, I desire to sow a piece of alfalfa on clay ground. I have thought of plowing the ground in about ten days from now and then allowing it to stand late in July and then sow it without a nurse crop. Would you recommend this course?

Lenawee Co.

B. W. A.

If your barnyard is situated on land that mudds up when it gets wet it is impossible to have a decent barnyard during the wet portion of the year. If you have much stock and use it, it is the use of the barnyard, when the land is wet, just as it is the use of our common dirt roads when they are wet and soft, that



An Abundance of Light, Ample Ventilation and General Regard for Cleanliness re-Sought in the Construction of this Dairy Stable.

makes them bad. If we could only keep off from the clay roads when the land is wet, wait until they are dry, the problem of good road making would be solved, and so it is with the barnyard. If you could keep your cows up when the land is wet, wait until the barnyard dries off then there would be no trouble, but if you can't do this, the only way is to pave it and in the long run I am positive that the cheapest and most satisfactory way is to make a concrete barnyard. Mr. Gurler, of DeKalb Co., Ill., told me the history of his barnyard. He was bothered in just the same way.

During the spring or a rainy season in the summer, the land would poach up until it was knee deep to the cattle, and as he was trying to produce certified milk it made it almost impossible. The cows had to be all washed after they were put back into the barn. He tried to remedy this by using gravel but the gravel would punch down into the black prairie soil of Illinois and would not last but a short time, then he tried cinders and he got carload after carload of cinders and hauled them from the station and put them into the barnyard, with practically the same results. It is just like trying to build a permanent road on soft ground. You have got to get down below the soft part of the ground or else when you come to use the road the top-dressing which you give will punch down into the soft ground and be of little avail. After going to the great expense of heavily graveling and heavily cinderizing the barnyard Mr. Gurler went to work and made a cement covering or a grout covering just as you would a stable floor. He made the surface of his yard about four inches deep and had it gently slope to one side. Since then there has been no mud in the barnyard. He says it is quite satisfactory.

I used to be bothered in the same way but I adopted a little different plan, and now in the spring and in the fall when the ground is soft we keep the cows in the barn and don't use the barnyard until it and the lane get dry enough so that the cows won't punch them up in going down to the exercise lot. This is an effective remedy. It is cheaper than paving the whole barnyard with cement. I couldn't do this very well with my hog yards so I cemented those, but it costs money. There is little injury done to

keeping the cattle in during excessive wet weather or early in the spring and in the fall, and if you do that you protect your barnyard. My soil, however, was not as bad as that of Mr. Gurler, being of a firmer character, not all clay, but clay and sand mixed.

Sowing Alfalfa in August.

Many of the farmers who have experimented with alfalfa are beginning to recommend August seeding. Some of the most practical men recommend that you raise a crop in the spring of peas and oats, or oats, or early potatoes, harvest these crops and then fit the land and sow it to alfalfa. Undoubtedly, the surest way to get a stand is to plow the land early, as you suggest, and work it thoroughly from time to time during the summer and then when the rains bring enough moisture so that the seed will germinate, sow the alfalfa. The prime object in this is to do away with the problem of weeds choking out the alfalfa. Weeds don't grow very luxuriantly late in the season. They grow early in the spring. When you sow alfalfa early on weedy land the weeds being more vigorous choke out the alfalfa. But if the

seeding is deferred until late in the season after the season for weeds, then the alfalfa has the field to itself. When you come to think of it, fall is the natural time of the year for the seeding of grass. If you allow the grass to mature and ripen its seed the land is seeded by the plants themselves at that time of the year, not early in the spring. I am going to put in a field to alfalfa this year that is now in peas and oats. My intention is just as soon as the peas and oats are harvested to prepare this land, probably by plowing it and then rolling it and packing it well and making a good seed bed by applying lime and some inoculated soil from another alfalfa field and then just as soon as the moisture problem will warrant the alfalfa seed will be sown.

IS IT PROFITABLE TO PEDDLE MILK AT SEVEN CENTS PER QUART?

Will you please tell me whether or not I could make a fair profit peddling milk, a distance of five miles, over good roads at seven cents a quart? I have to buy all the feed.

Calhoun Co.

B. M.

A great many dairymen have peddled milk for five cents a quart and made money. I know of several who have done well, laid by money for a rainy day in peddling their milk at five cents a quart. This, of course, was at a time when feed was not as high as it now is neither was labor as high, nor any of the other things which enter into the problem of manufacturing good marketable milk. However, I think it safe to say to B. M. that if he has a good milk route at seven cents per quart and is a good dairyman, knows how to produce the milk, there is a fair chance for him to make a decent thing out of the proposition. I don't like the idea that he has to buy all the feed because I always couple a dairyman with a dairy farmer. Growing feed should be a part of the business of dairying. That is the best way to get an economical ration. However, I am aware that some people can buy the food for the dairy cow as cheap or cheaper even than they can raise it themselves, and if this is the case it is only a business proposition to purchase it.

I want B. M. to think, however, that if he makes any money out of the milk route that he has got to work for it. He

(Continued on page 56).

DE LAVAL CREAM SEPARATORS

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DETROIT, JULY 20, 1912.

CURRENT COMMENT.

In a report made public by the Interstate Commerce Commission this week sweeping reductions in express rates, averaging approximately 15 per cent are ordered, subject to later judicial hearings, and comprehensive changes in the methods of conducting the express business are prescribed. This report is an exhaustive one containing over 600 printed pages. The investigations leading up to this report have covered a period of about three years and its preparation involved the comparison of hundreds of millions of express rates in this country, as well as investigation of financial operations and business methods of express companies through an examination of their books. Under this proposed reduction in express rates the greatest reduction will occur on small packages below 50 pounds in weight, reductions being in many cases approximately 50 per cent.

By the terms of the commission's order the change in the business methods and practices of express companies and other administrative reforms are given immediate effect and it is stated that the express companies have agreed to this part of the order. These reforms, among other things, contemplate the through billing of express packages at one rate where two companies operate between points of origin and destination. The reduction in rates will, however, not become effective for some time, the commission having fixed October 9 for the beginning of the hearing of the representatives of the express companies and shippers as to why the rates prescribed by the commission should not go into effect.

It is stated that the companies will claim that the new rates will not produce an income of six per cent on the total amount of business done. This, however, is not an effective argument unless it can be shown that under the proposed rates the companies cannot make a reasonable profit on the capital invested. At least the net profit of the express companies would be approximately 15 per cent less on the volume of business done under the proposed rates than under existing rates at the same operating expense.

It is, however, quite probable that a less strenuous fight against the enforcement of proposed rates will be waged by the express companies than would be the case had it not been for the agitation of parcels post legislation, and the propositions now before congress to that end, including two postal express bills which contemplate the taking over of the entire express business by the government, as well as several bills providing for a liberal parcels post under different plans. Some of the latter, however, are not acceptable to the business interests of the country, inasmuch as they contemplate increasing the cost of transporting printed matter through the mails, such as advertising literature, catalogs, etc., published by business houses, which could be more cheaply sent from a foreign country under the provisions of the Bourne parcels post bill now under consideration by congress.

It is probable, as forecasted in a previous comment, that the matter of parcels post legislation will be postponed until congress convenes again in December, the subject to be investigated in the meantime by a special committee appointed for the purpose. During this time the matter of the enforcement of the proposed express rates will be finally

threshed out by the Interstate Commerce Commission and passed on to the Commerce Court in case an appeal is made by the express companies from the judicial findings of the commission.

This proposed lowering of the express rates, however, should not effect the parcels post propaganda, inasmuch as the latter would give to the whole people of the country immeasurably better service in the transportation of small parcels than would the express companies even at the same rate. Under an adequate parcels post law the small packages would be delivered at the door of the person to whom they were addressed, while even under the best of regulations the express companies would take them no further than their nearest local office, except in restricted districts in the large centers of population.

This proposed regulation of the express companies is, however, a victory for the American people in that it further demonstrates the practicability of the regulation of public utilities by governmental authority, but it is only a beginning toward giving the people of the country an adequate service in the transportation of small parcels at a minimum cost.

Over in North Dakota the railway institute train idea has been worked out this year along lines similar to those used in Michigan and other states, but a new feature has been introduced in the work which it would appear might promise good results. This new feature is the holding of a series of follow-up meetings after the meetings scheduled for the Institute train.

By organizing interested people of each locality for the purpose it would be easy to promote sufficient interest to make these follow-up meetings a success. The trend of the topics discussed could be easily varied to suit the greatest need in the locality and more beneficial results would undoubtedly follow than from the holding of a single institute meeting in the locality as is the common method. At least in the ten localities selected for a test of this plan in North Dakota the interest seemed to be as great in the later meetings as in the earlier ones.

This is a suggestion for the progressive farmers of many localities to follow up the work of the state institute by later meetings held under the auspices of their local organization to aid in the solution of the more purely local problems which cannot be properly elucidated at the general institute meeting.

The figures presented in the general review of crop conditions and prices on July 1, appearing in another column in this issue, are a matter for congratulation to the farmers of the country. These figures show that as a whole, crop prospects throughout the country are generally better than at the same date for the average of recent years. While prices paid the producers are considerably higher than the high record of one year ago on most products.

Notwithstanding the fact that the general condition of the crops throughout the country is fairly satisfactory, as shown by these figures, the acreage of important crops is somewhat less than that of last year although greater by a small percentage than that of other recent years. In the matter of conditions of all crops Michigan does not stand very high in the list of states, due, no doubt, to unfavorable weather conditions which have prevailed during the early part of the summer, and to some degree to the exceedingly dry season of last year, followed by the exceptionally severe winter. But the prospects for remunerative prices for farm produce, based on comparisons of the price on July 1 of the previous year promise to make up any deficiency in production so that the present year should average up with recent years, so that the income from the farm devoted to a diversified agriculture will be little, if any, reduced. There are, however, certain lessons to be gleaned from the present conditions of agriculture in Michigan which no farmer should neglect to consider. The dry season of last year followed by the hard winter and late spring resulted in a scarcity of forage upon the average farm which is perhaps unprecedented in the history of Michigan agriculture. The dry June resulted in short pastures in many sections of the state and also shortened the hay crop to a degree, while the late spring and poor seed contributed to an unusually poor prospect for corn, the season of the year considered.

These conditions have resulted in further reducing the already depleted supply of live stock in our state and many farmers will be poorly equipped for taking advantage of the high price for live stock and live stock products during the coming year. The remedy for this condition of affairs has been repeatedly pointed out in these columns by showing that ensilage has been proven to be the most economic feed for the bulk of the roughage ration for all live stock, except horses and hogs, maintained upon our farms. More silos are needed upon Michigan farms, not only to supply storage for an abundance of cheap winter feed, but as well to supplement short pasture which is likely to occur under unfavorable weather conditions, such as have prevailed in our state during the past year.

The production and maintenance of live stock is essential to the prosperity of our agriculture as at present conducted and it is reasonably certain that prices for live stock products will remain permanently at a higher figure than has prevailed in past years, offering a more profitable source of income to our farmers than ever before. But where live stock farming is not followed in order to maintain the fertility of the soil the system of our agriculture must be so changed as to provide for the plowing down of more vegetable matter to replenish the supply of humus in the soil to the end that a few weeks' mid-summer drouth which may be expected in the normal season, may not prove an insurmountable handicap to the production of profitable crops, or what is more important, to the securing of good clover seedings which are regularly needed in our crop rotations.

The season holds an individual lesson for each and every farmer, differing in essential points with the different conditions found upon different farms and in different communities. But these lessons should be closely studied and the failures which may have resulted should be made to contribute as greatly to our future prosperity as the successes which have been attained. In fact, adversity is generally a better teacher than success, since its lessons are more impressive, and while the general prospects for the season may be considered as quite satisfactory, future prospects will be materially bettered by a consideration of the lessons which may be drawn from the past year's experience.

In another column of this issue will be found a list of Michigan fairs, with dates and places at which they are held. The average busy man gives the subject of agricultural fairs but little thought or attention until the season to hold them arrives, when he either attends or not, as convenience may dictate.

There is so much of benefit to be derived, however, from the making of an exhibit at either the local or general fairs that every Michigan Farmer reader would do well to give a little thought and attention to the proposition. The man who simply attends a fair fails to take the interest in exhibits along any particular line which he would if he had some of the products of his own farm entered at the fair as exhibits. Very often we go on producing the same crop or the same kind and quality of live stock year after year with complacent satisfaction without paying much attention to ideals in the matter or comparing our own products with those of other farmers about us. If some farm product or some kind of live stock is exhibited at the local or general fairs comparisons will be forced upon the exhibitor and in case his own product fails to compare favorably with others, in the eyes of the judges, he is aroused to the improving of that product to a point where it will be equal to or better than that which is produced about him.

The local fair is a good place to begin this kind of patronage, and the exhibitors at the state and general fairs will mostly be found to have developed their products as a result of experience gained in exhibiting at the smaller fairs. While from the standpoint of exhibitors there is afforded the greatest educational advantage either in the local, state or district fairs, yet the man who attends a fair with the idea of gaining all the knowledge possible from a close study and comparison of exhibits made will unconsciously raise his own ideals to a point above what they have been heretofore or would have been without such a careful study.

Then again, there is no better place than the agricultural fair, particularly

the state and district fairs, to study the improvements in agricultural machinery, since here the different products along this line can be studied side by side and comparisons made which would otherwise be impossible. Then the introduction of other educational features such as will be presented at the State Fair, at Detroit, this year in the Boys' Model Farms and, as has been noted in previous years at the West Michigan fair, at Grand Rapids where a portion of the area inside the mile track has been seeded to alfalfa, thus affording an object lesson as to the value of this great forage crop and its adaptability to Michigan conditions.

There are other educational features too numerous to enumerate here, such as the good roads exhibit, which will be shown at the state fair, etc., which are worthy of every farmer's most careful study and attention, for which reason every Michigan Farmer reader should plan in advance on making some exhibit at the local or general fairs if possible, or in any event, attending them, to the end that he may derive the benefit from these agricultural shows which will certainly accrue to the studious exhibitor or visitor.

While we are wont to feel a just satisfaction and pride in our American institutions and ideals it is well to take cognizance of the opinions which are held by the students of other lands with regard to those same institutions and ideals, particularly the latter. As an example our attention has been directed to an address given by an East Indian student of an American University, in which he gave expression to a disinterested viewpoint of America.

In his address the speaker declared that the United States has as distinct a caste system as India, only that the Americans are unable to see it, and said that it takes a foreigner, unused to our ways, to judge our manners and customs in an unbiased light. In speaking of the caste system of India, which prohibits the person born to any class or occupation entering any other line of work from that to which he was born, he questioned whether this system was much worse than certain conditions which exist in the United States, where he declares we have a money caste and a color caste. He described the idea of the general brotherhood of man as a beautiful ideal which can never become a reality until all good men can mingle together without considering each others' aristocracy of birth, wealth or race.

It is probable that this student's view of conditions in America was somewhat warped, yet there is enough of fact in the ideas expressed to give rise to similar opinions from intelligent and disinterested foreign students. It is true that this superficial viewpoint is largely confined to our most populous centers, and yet everywhere there is open to the ambitious young man the widest opportunity for success along any line of endeavor, notwithstanding the seeming handicap of prejudice which is perhaps too prevalent in America as elsewhere.

But may we not hope that the prejudices are fast disappearing? But a few years ago the farmer was made the general butt of ridicule because of his calling by many of his city contemporaries, but this fact was due to the ignorance of his city contemporaries more than to any one cause, an ignorance which has been rapidly dispelled in recent years, until now agriculture is generally looked upon as a most desirable occupation. May we not believe that other American idiosyncrasies will meet with a similar fate, that prejudices will be banished and that the beautiful ideal of universal brotherhood, as described by the student above mentioned, will be even more fully realized? But if there are those among us who feel that we are made the subject of unjust discrimination it might be well for us to reflect that the fault lies with us, in part, at least. Merit and ability certainly receive universal recognition in American business and industrial lines. In other respects the law of averages must apply in the forming or existence of ideals, and each one of us should strive to make the average high, in so far as our relations and influence with our fellowmen may make that possible.

HAPPENINGS OF THE WEEK.

National.

After a very sweeping investigation requiring nearly three years of work by federal employees connected with the interstate commerce commission, that commission is about to order a big cut in express rates. For small packages the reduction will amount to nearly one-half (Continued on page 49).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION



The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

LOW silence falls on nature, as if she,
Worn out with caring for her numerous brood,
Slept sweetly. Even the low and busy hum
Of insect life is hushed; and all the birds
That lately poured from swelling throats
a flood
Of silvery music to salute the morn
Are mute. Unstirred, the grass
Leans softly to the earth—moves not a leaf;
As carved from pearl the languid lilies float
Upon the glossy bosom of the lake,
As if tired Nature, in her hour of rest,
Breathed not, but lay inert, as in a trance.
The sun pours down his enervating rays
Upon the stifled earth. One filmy cloud
Broods like a nestling dove above the scene,
Faint tinged with pink, against an azure sky.

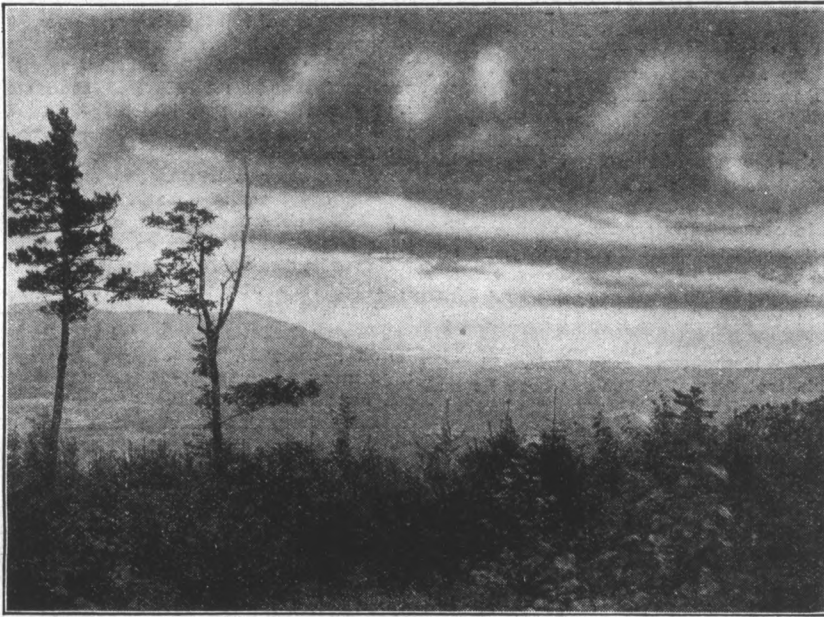
But lo, a transformation! Cloud on cloud
Marshal their forces from an unseen source,
And rank themselves athwart the startled sky.
With swift increase, their wild battalions form
On the fair battleground—as soldiers, who
The soft grass trample, and the tender flowers,
In their mad thirst for blood.

Hush! What was that? The muffled roll
Of drums
Calls the wild hosts to battle. Nature now
Springs up, affrighted, from her daisied couch,
And trembling, shrinks before the Unknown Power
That, with dark menace, contemplates her doom!
Long since, the god of day, in wild dismay,
His cheerful, round face has hid; no friend
Seems near at hand to rescue or protect!
Once more, across the intervening space,
Comes the wild roll of drums. Then suddenly
A vivid flame illumines the battle front,
Close followed by a crash that rends the air
As when a cannon bellows forth their doom
To trembling wretches on a battle-field.
A sudden gust of wind sweeps low the trees,
Their chirping inmates fluttering with affright,

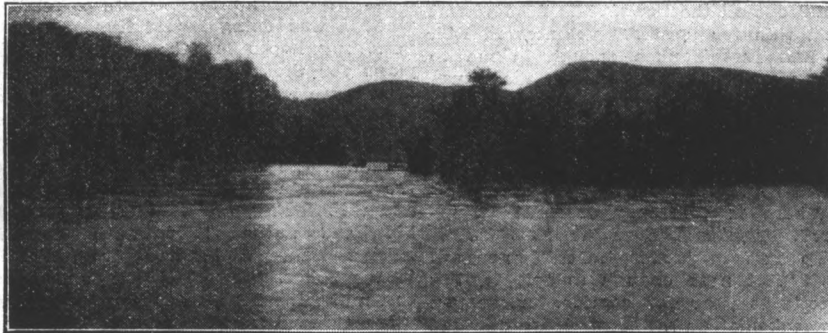
THE STORM

BY DAISY WRIGHT FIELD.

*And the last fragments of the storm,
Like shattered rigging from a fight at sea,
Silent and few, are drifting over me.—LOWELL.*



"Cloud on cloud marshal their forces."



"The lake lies limpid."

And beats the tangled grasses to the earth,
Wherein the startled insects seek repose;
Churning the calm-faced lake to foamy spray,
It thunders on, to distant heights, and leaves
Behind, an ominous calm.
But now, behold, the seething hordes advance,
Yet with an inward turmoil, as if they
A common cause for fierce dissension found.
Now faster roll the drums—the cannon fire
Volley on volley, vivid flash on flash
Reverberating from the eternal hills.
The elements of wind and rain assault
The hapless earth. The musketry of hail
Rattles against her foliage; while the lake
Sends up a million fountains, as if she
Bled from the opalescent balls that sink
Deep in her bosom. 'Tis an hour of fear
When Nature cowers before a mighty God!

A sudden lull. The scarlet lightnings sheathe
Their forked tongues within the murky clouds;
The cannonading ceases, and the hail
Gives place to gentle drops that soothing fall
Upon the lacerated breast of earth.
The god of wind reins in his furious steeds
To a mild pace. No other sound is heard
Save the soft dropping of the silvery rain
That tinkles pleasantly upon the leaves.
And so for hours
The earth slakes her long thirst. Then one by one
The clouds as spirits silently depart
To that mysterious source from whence they came.

The sun leaps forth, and the last sprays of rain
Are changed to sparkling diamonds on the grass,
To coronets of pearl on every fern,
And wreath the trees with many a silvery chain.
The lake lies limpid 'twixt her velvet banks,
Reflecting on her placid breast the bow
That spans, with mellow tints, the evening sky;
While from the new-washed grass upsoars a song,
The clear note of the lark;
And yonder oak
By lightning riven, alone is left to tell
The tragic story of the recent storm.

The Aviators of the Vegetable Kingdom.

By Chas. H. Chesley.

Many and curious are the devices by which the seeds of our common trees and plants are scattered to the four winds. Some are equipped for aeroplaning, and some take advantage of outside agencies, such as birds and animals, to assist them to their final resting places. The superficial observer might think that the maple had small opportunity of sowing its seed, and at best the planting must be under cover of its own shade; but look at the winged seeds, and then go out some summer morning and note how prodigally the west wind scatters them. Should every seed find fertile lodgment, we might expect a thrifty crop of young trees within a full quarter-mile of each silver maple.

It is the wind that scatters the winged seeds. These are the aviators of the vegetable kingdom. If the winds are strong when the seeds fall, then will the planting be farther afield. The silver maple sows in late May, the red or white maple in June and the sugar maple sends out its winged messengers with the painted leaves of autumn. The ash seed is not so airy, and falls nearer the parent, but it is winged or, rather, equipped like an arrow or dart. In a gale it may

fare some distance, but usually settles near home. We might compare the maples to certain peoples who have planted colonies in the far places of the earth, while the ashes are less adventurous.

Another class of trees includes the willows, poplars and cottonwoods. The seeds of these are very light and each is inclosed in a dainty fluff of cotton, which may often carry the seed for miles on the summer wind. Few of these light seeds find lodgment in fertile soil. So airy are they that the slightest breath of wind drives them away, and unless one blows under a leaf or finds anchorage beside a stick or grass blade, its vitality is soon spent in useless flittings.

All are familiar with the cotton bolls of the common milkweed. The tightly packed cotton is attached to the seeds, and as the pods open when ripe and the seeds launch on the wind, they may travel for miles. Plants of the thistle and daisy families also provide their seeds with fluffy cotton or feather-like attachments. The fireweed, which so quickly springs up on burned lands, is a prodigal seeder of this class. In the northern forests the

winds seem always laden with these seeds ready to re-clothe any denuded area.

Nature built the first monoplane to disseminate the seed of the basswood or linden tree. Slender threads attach the seeds to the center of a sort of leaf, which, when detached from the parent tree, enables them to sail majestically away to find a congenial soil far from home.

The seeds of pine and other cone bearers have wing attachments which make them so buoyant that they may be carried for miles. They are very small and, as the cones open slowly, the distributing season is much prolonged. Often in walking through a pine forest one will notice myriads of tiny scales making their way slowly to earth and shimmering with beauty as they cross the patches of sunlight.

There is a pine on the west coast of America that is very jealous of its seed. It is called the lodgepole pine from the tall straight growth and freedom from limbs of the tree trunk. It is a great producer, but, like a miser who hoards

his gold, it holds its seed for years. The cones are hard and flinty and sealed with a substance that only a fire can melt. Thus it happens that when a fire sweeps the mountain slopes, as it often does in that section, thousands of seeds are liberated to re-cover the burned districts with a fine growth of young lodgepoles in a few years. Possibly nature had this end in view when she sealed the cones so tightly. Thus she always has a supply of seed at hand.

The witch-hazel blossoms and bears its seed in late autumn, a belated bearer, and then scatters them by a method of its own. When ripe the burs burst with small explosions and scatter the round seeds for ten feet or more in every direction. The familiar jewel weed, or touch-me-not, has seed pods set with springs, which, when fully ripe, burst with considerable force.

Many seeds employ outside agencies for their journeys. Cherry pits are scattered everywhere by robins and cedar birds; nuts are hidden away by squirrels and forgotten; acorns are dropped long distances from the parent tree; burs and sticky pods become entangled in the fur of fox and bear and are shaken out to

sprout and grow many miles from the place of their birth. In proof of this carrying by animals, I have in mind a row of chestnut trees planted many years ago in a locality where none grew before. Now the countryside for several miles is interspersed with thrifty young chestnut trees, the seed of which must have been planted by bird and squirrel. All kinds of berries, which are but seeds covered with a pulpy protection, depend largely upon birds and animals for distribution. If left to themselves they would fall at the foot of the parent bush, where they would have no chance to grow, but the parent wisely provided a juicy food that the birds might be in-

duced to carry the seed to some more favored spot.

Nature as a rule is very lavish in her sowing. Any tree will produce thousands of seeds, some millions each year. Of course, all could not grow. Indeed, not more than one in a thousand falls in good ground; the others perish by the wayside, or spring up in a ledge crevice to make a sickly growth for a few weeks or months and then wither away. Note the crop of young maples that sprout every spring, but only a few find conditions favorable to continued development. Nature is a great planter but she usually forgets to nurse and cultivate the seedlings.

MY LAST TRIP—By Mary B. Topping.

It was before my wholesale days that I made it, and it wasn't any pleasure trip, either. It was either that or "Pht," up in smoke for mine. It is queer how a man can laugh at tragedies after he leaves them so far behind that they become comedies silhouetted upon the pantomime curtain of time.

I was a peddler then, up in the east end of Tennessee. At that time civilization quarrelled with border ruffianism in a rough-and-tumble fight. There had been a murder, and the murderer was still at large, roaming about in the wilds of the Cumberland mountains, enjoying the freedom of the wilderness, while sheriffs and constables with their deputies camped behind the rocks and in the jungles to starve him out. Not that there was anything uncommon about that. The strangeness of the affair came in when the climax of the thing assumed the objective to the personal pronoun, "My," and he was not a welcome possession, either.

I said I was a peddler, but dignity forces me to correct that statement. My cart was loaded with drygoods which I exchanged for wool among the farmers and delivered to legitimate merchants, for which I received a liberal commission.

One night, after a long hot dusty July day, darkness had overtaken me at the junction of two rough country roads where a country store winked at me invitingly with its smoky coal-oil lamps through its many-paned windows. I was a sociable fellow in those days, made more so by the lonely life I led, eating my lunches alongside some noisy stream or some gurgling spring, with only the birds for my companions. I couldn't talk back to them, though I used to lie in the shade, amused at their antics and soothed by their songs, so I didn't need any second invitation from those lamps; they were as welcome as the most brilliant electric shining through diamond windows. It didn't matter a bit to me that a big piece had fallen out of one of the chimneys and been replaced by a bit of wrapping paper pasted in, the paste brown and charred.

There were men there, rough, uncouth and tobacco spitting, yet they were men and could talk, with the homely vernacular of the mountains it is true, but this speech was music to my ears. Then, too, almost any man might be an angel in disguise.

Tennessee was on the prohibition list, and bootlegging joints were as common as springs in the sticks. I was not a prohibitionist but believed in the doctrine of temperance in all things and never missed a chance to prove it.

So I tied my team, left them chaunking the contents of their nose-bags, and sauntered into the store. It was half full of men who were discussing the recent murder as though the result of the trial depended upon their efforts.

A small weazened up man by the stove attracted me. He was huddled up, with his hands close behind him, almost against the stove as though to warm them. I could easily guess that he had stood there, off and on, most of his time winter and summer, but it looked queer with the stove door open, spilling out a collection of unlighted rubbish which had evidently been picked off the floor since the fire had gone out in the spring. The man's forehead was normal but the eyes beneath were set back under it, giving him the appearance of wearing two hats instead of one. His nose was only a section of knife blade covered with skin, and it had a slight twist sideways at the end, while his mouth was nothing but a slit in his face. His under lip receded, and his chin was a small knob so far back and so insignificant that with his hat off—he occasionally removed it to

scratch his head—he looked half man and half chimpanzee. With his hat on he resembled a superannuated scarecrow whose face had been picked off by the birds to line their nests.

"Ah don't guess that ar' fellow is goin' to git ketched up in them hills. He knows the land from A to Izzard." His voice was thin and it occasionally cracked as though his epiglottis was working overtime.

A long lank hill-billie lying on the counter with his bony hand in the cracker barrel threw his quid into the bucket of sawdust and remarked: "He could hold up the whole country. They say he took an army rifle along that shoots both ways."

"Is Halyards daid?" questioned the storekeeper from behind the counter.

"Daid as a door-nail," replied the little man.

"He must have croaked in the night then; he was swearin' at midnight," objected the lank man in the cracker barrel.

"He passed in his checks at half-past two."

A fat bleary-eyed man pulled himself to his feet from the bench where he had sat half asleep.

"How do you know so durn much about it, Monkey-face?" he bawled.

"Now quiet down, Bill," the storekeeper ordered.

"He makes me so durn tired," explained Bill. "He's allus got that nose o' his'n poked in sump'in that don't concern him."

The little man had quietly put the stove between himself and Bill, from which safe position he replied, "Ah was down there afore daylight."

"You can allus depend on Monkey-face findin' out all the news. His nose warn't made thin for nothin'," volunteered Bill.

I had just Yankee enough in me to draw my own conclusions on the situation, but I had no sympathy for the little man, for he shot an ugly sidelong glance from his eyes which I didn't like. Bill was evidently sore from some gossip dispensed by Monkey-face at his expense.

"Where is this man located?" I inquired.

"Up yan in 'Tater holler," answered Bill. "Not near enough to spit in, but a leetle to near for comfort unless you all's reckonin' on gittin' that five hundred dollars reward."

I pricked up my ears at this, for five hundred dollars was what I had been looking for.

"Governor'll pardon him out if they git him in the pen, but Ah reckon they sort o' want to keep the money in circulation," said Bill.

"Did he murder Halyards in cold blood?" I asked.

"Ah don't know whether it was cold blood or not. Halyards and Moore owned some land together and Moore wanted to sell, but Halyards wanted to work the land. Moore got full of Kentucky corn juice, took a gun and tried to persuade Halyards to his way o' thinkin', but he had to shoot him full o' holes to do it."

I inquired if there was an inn where I could put up for the night.

"Reckon they is," Bill replied, "but you'd better wait till daylight."

The lank man pulled himself out from the cracker barrel and, with his mouth full of crackers, invited me home with him for the night, but I declined.

"I got a deal over there to tend to early in the morning," I said and visions of 'Tater holler and five hundred plunks dangled before my eyes, "so I guess I'll go over tonight."

After demonstrating to their satisfaction my thorough belief in temperance behind the back partition, during which I ascertained that the tavern and 'Tater holler lay in the same direction, I bade

them goodnight and left the store. I threw the grain bags under the wagon seat, pumped the trough full of water with the groaning pump and was about to swing myself aboard the wagon when I felt a tap on my shoulder. I turned and faced Monkey-face.

"Reckon Ah could ride a piece?" he whispered.

I never had been so very particular as to my associates, but when that fellow jumped in and sat down beside me I felt just like you feel when you meet a snake in a road. He just made me shiver. We rode along in silence for a time; then habit asserted itself and I began to whistle. I had one tune which ran along just the right meter for the horses to get on a good comfortable trot and this was the one I struck into. It had never seemed to me amusing, but I had only gotten to the end of one bar when the man beside me made a noise which I interpreted as a laugh. It was between a choke and a sneeze. It wasn't to be supposed that a being like that could give vent to a real healthy laugh, but somehow the imitation made me mad and I stopped whistling. After a minute he said, "Keep your tune up. You needn't never be afraid of a man ut whistles."

"You afraid of me?" I asked in astonishment.

"Naw, but I cayn't tell what you all's a goin' to do next."

"Why should that interest you?" I snapped. I had a suspicion that the pump had applied its suction valve to me, and though my life had been clean and above board yet, like Bill, I hated a meddler.

"Thinkin' o' tryin' for that reward?" he asked after a while.

"Suppose I was. What then?"

"Thot mebbe I could make you change your mind." His voice contained a suspicion of a threat. I shut my mouth like a steel trap but Monkey-face kept on pumping.

"'Tater holler's a perty bad place to ketch a man in," he offered by way of a priming.

I kept my mouth shut.

"I'd never dast tackle the job," he went on. My silence didn't bother him in the least. "You're such a big man, reckon you don't ever feel afraid o' nothin'," he insinuated, and I had to sit on my hand to keep from slapping him. "That man Moore is a big critter, stan's six feet four in his socks."

"The biggest men are sometimes the biggest cowards," I retaliated, satisfied that civilization was so strong in me that I would allow myself to use no other weapon than my tongue.

He kept it up and before I realized what I was doing I told him my business, my hopes for the future and my plans for the night. Then I wanted to kick myself out of the wagon for it.

By and by, over to the right, there appeared a high peak which actually darkened the already dense darkness of the mountain night. It loomed up bleak and threatening, and Monkey-face waved his hand toward it with the remark, "Yan's Bald Knob, and down there's 'Tater holler. Try it if you reckon you can make it. I'll git out here."

He threw himself over the wheel and was lost in the thick bushes that skirted the road.

Two hours later I sat in my little hot stifling room in the tavern making out my report. From my window I could see the black outline of Bald Knob, and the sight of it made me cease to wonder why Moore had not been caught. Down at the store I had made a firm resolve to try for the reward and cut out this tedious driving across country for my daily bread, but the thought of doing so now made cold chills run down my back. I was quite content to discard all my get-rich-quick schemes, and I thanked my stars that I was within four walls if it was hot.

I could not keep my eyes off that knob that constantly intruded upon my privacy. The moon was nearly due and it was getting lighter outside so, after fancying that the knob shook its fist at me several times, I pulled down the shade, whereupon the mercury in my room bobbed up ten degrees. The heat from the lamp made the room almost insufferable, and the flies were the most persistent ones I had even seen.

All at once my lamp began to smoke and the already blackened chimney became so smutty that I could not see my own figures. I threw down my pencil and began digging about for something to wipe the chimney with but could find nothing but my handkerchief. This I had poked into the chimney while the

lamp blaze spit and sputtered in my ear, occasionally flashing up with a warning that the burner was getting too hot. In my haste to put the chimney back I had daubed my hands with lampblack, and a hasty swipe of the handkerchief across my face, to catch the drops of sweat which were rolling off my chin, completed my appearance.

I did not realize what I had done until I caught sight of myself in the glass, but I had no time to clean my face for the knob of the door turned; the door opened slightly and then an ugly face was thrust in. I threw the chimney at the intruder but it smashed helplessly against the door and a revolver was inserted beneath the ugly face. The shining ring of the barrel end was the most distinct thing in the room.

A man's form followed the face, and he was six feet four all right. I could have sworn that he was ten feet high. I began to think that I was in a nightmare with that giant creeping toward me; I tried to yell, but a grimy hand was slapped over my mouth. Just then Monkey-face squeezed through the door behind Moore and I understood it all: Monkey-face was Moore's spy. He stood there grinning at me and I confess that I was more frightened than I ever had been before.

"Git a move on ye, peddler," hissed the giant in my ear.

Monkey-face picked up the handkerchief that I had dropped and silently put it in his pocket. All was fish that came to his net. I put on my shoes as I was ordered. Then Moore said, "He'll go along. Mosey down yan in the hollow with the team. I'll be thar."

I was about to inform him that his company could, on a pinch, be dispensed with, but I was warned to keep my mouth shut. Moore passed the revolver to Monkey-face, who put it in his pocket, giving me to understand that it would stay there as long as I behaved. I drove to the "Holler," with that slimy monkey clinging to my arm like a loving brother. Moore was there per schedule, and climbed up behind, seating himself on the cover which was built out over the wagon to protect the goods. His knees just touched my shoulder. His hands carressed the barrel of a long-bore rifle while in his belt I knew there was an ugly knife, for I had caught the gleam when he had stood over me in the smoky lamplight. Prudence bade me drive on; I drove.

We heard wheels coming. Moore adjusted himself flat on the top of the cover with the end of the rifle close to my ear. "Open your clamshell and the top of your danged haid comes off," he cheerfully offered. I kept my clamshell shut. I just made out a doctor's rig which we met and passed in the narrow road.

"Drive like thunder; hit's gittin' lighter," commanded Moore. Monkey-face grabbed the whip and belabored my poor team. Surprised and shocked at this unaccustomed treatment they paused for just an instant, then, with a fierce jerk they started. The road at this point was just a descending tier of rocks running across the track, and we went down there on a jump. I expected to see my horses turn a double somersault, but they reached the bottom in safety. We drove as he said, and no mistake. I did not know that the team had it in them, but I made a mental note of the fact. Rip, slam, bang! Down we went and by the time we struck smooth road again I would not have given two cents for my load of drygoods. All the way down the hill lay rolls of cloth and bundles of wool. I could not resist a look of regret backwards, for instead of the five hundred reward for the capture of the murderer I could see myself working overtime for the next few years to get even.

"Mind your knittin'," said Moore, "and you kin git 'em all back agin' daylight. Turn that ar corner yon. You all kin drap me at the junction crossin'. My side-door Pullman's awaitin' for me. Babe'll stay by ye and see ut you all gits your proper rest afore returnin'. He's the most attentive cuss this side o' old Baldy." He chuckled hugely at his own joke.

Just then the whistle of a train was heard. Monkey-face gave the team another fierce welt with the whip and we turned the corner where the road descended another tier of rocks.

We made the corner on two wheels and the speed of the horses was so great that they could not pick their way. In the middle of the hill the high horse tripped and fell; the off horse, after wail-

(Continued on page 46).

IN HAYING.

BY FLOY SCHOONMAKER ARMSTRONG.

Long ago in days of boyhood,
In my old home on the farm,
Haying-time was fraught with pleasure,
Work could not dispel the charm.
Everyone was up and at it
From the early dawn of day,
And I felt the call to battle
When I heard my father say:

"Now then, Sonny, turn the grindstone,"
And the grindstone I would turn
Till my young arms called for mercy
And my eyes would smart and burn;
But at last the scythes were sharpened,
Every one hung right and true,
And, with rub stones in their boot-tops,
Men marched forth in morning dew.

Now then, Sonny, fill the old jug,"
And the old jug I would fill
Till the water gurgled over;
Then I'd lug it up the hill,
Hide it in the cool, damp bushes,
Within easy reach and call
Of the thirsty men whose broad swaths
Reached—the jug beside the wall.

"Now then, Sonny, you rake after,"
And after I would rake—rake
Till the hot sun burnt my shoulders,
And my arms and legs would ache;
But the pain and fret of battle
Ebbd away, at close of day,
When I rode t'ward home and supper
On a load of new-mown hay.

How I'd like to try it over!
Just to see how long I'd last;
But I know that Time has "bushed" me,
And my haying days are past.

WHEN GENE LOOKED THROUGH A SOLID BOARD.

BY S. VIRGINIA LEVIS.

He was known as Gene the newsboy.
He was known also as the smallest mite
of humanity that was in business on his
own account, in the entire neighborhood.

Tiny as was Eugene's body, it was big
enough to accommodate a vast amount
of respect and admiration for one cer-
tain individual; that certain individual
being no less a personage than Doctor
Branson, who was favored with the most
extensive practice of any physician
thereabouts. Besides his reputation for
unusual skill, Doctor Branson's peculiar-
ity of attire won him a reputation for
eccentricity as well. On this account he
was frequently referred to by the "news-
ies" as "that funny lookin' guy."

"I'm never goin' ter call him names
again, fellers—not after wot he done fer
me," announced Gene to a group of fel-
low merchants as they awaited the dis-
tribution of dailies from the newspaper
office. "Gee! I was sick—never knowed
I could get sick before," continued the
doctor's champion; "and the fust thing
I seen meself settin' in a velvet chair;
and that doctor feller says, 'I'll fix you
up, sonny,' jes' like he was me father."
"Gee!" exclaimed a newsy, "you been
in his house, then."

"'Course," answered Gene with a ring
of pride; "and Doc—Doctor Branson
ketched hold on me wrist and seen me
tongue, guv me some med'cine wot was
awful bitter, and here I am as well as
ever," finished he, straightening up in
an endeavor to appear as tall as the oth-
er boys.

After that, the newsy who dared refer
to Doctor Branson as a funny guy was
looked upon by the others as a moral
pervert, and was peremptorily silenced.
"Any man wot kin see right through
yer," as Gene said, "ain't goin' ter be
called names."

Late one evening when the busy doc-
tor found a few spare minutes, he in-
troduced Gene to the mysteries of a
queer looking machine that had so at-
tracted the lad's attention the day he
was "tuck sick." To use Gene's own
words, "Fellers, I never seen anything
like it. Talk about the doctor lookin'
through yer! Well, the doctor he jes'
touched sumpin in that there machine,
and up sputtered a light—kinder green-
like and scary. 'You can see right
through a solid board with this,' says he.

"A solid board—g'wan," sniffed a new-
sy, but his contemptuous allusion was
ignored and Gene proceeded to relate
how the doctor had held up an oaken
board—a slide from his dining-room ta-
ble. His dressing-gown was lying near
and, bundling it into many thicknesses,
he put that back of the board, and be-
hind all he placed a pair of shears.

"And I looked right through the board,
gown and all, and seen them shears as
plain as I see you now. Next, I held me
hand up to that light, and wot did I see
but the bones—I seen 'em right through
the flesh!"

That was almost too much for one
newsy's credulity, but when he began
to remonstrate Gene said, "Shucks!
didn't never read 'bout X-rays? Wot do
you carry papers fer—only to sell 'em?"

After that the boys listened eagerly as
Eugene explained how the X-rays could
penetrate certain substances which were
totally opaque to the unaided human eye.
For instance, those mysterious rays will
reveal coins, keys, etc., in a closed leath-
er purse; or suppose you held up your
arm and were wearing a bracelet; the
flesh would appear to have melted away,
while the bones, along with the bracelet,
would appear in shadowy outlines.

As all of our strictly up-to-date hospi-
tals are furnished with a Roentgen X-ray
apparatus, it is possible for any boy or
girl to witness its wonders the same as
did Gene the newsboy.

THE COMMON SENSE OF CANOEING.

BY FRANK H. SWEET.

To the uninitiated the canoe is a dan-
gerous craft, to be spoken of with bated
breath; and yet for ordinary water, but
little experience is needed, coupled, of
course, with care and an ordinary
amount of common sense. When rapids
are to be encountered it is a different
story, and only after considerable expe-
rience should a loaded canoe be taken
through heavy water.

Leaving aside the racing machines,
misnamed canoes, the three chief types
are the Rob Roy, the birch bark and the
canvas. Of these the Rob Roy is the
sturdy sea-going canoe for sail or dou-
ble-ended paddle, having a deck over all
but the opening in which one sits sur-
rounded by an apron if the sea is rough.
Such a boat will stand very heavy seas,
if properly handled, and is, in any case,
a wonderfully safe little craft, most suit-
able for salt water and for large lakes,
but not for running water. From the
original Rob Roy type innumerable var-
ieties have been developed, some with
keel, some with center-board, some large
enough to hold several people, others
carrying only one person. The cost of
cruising canoes of the Rob Roy type runs
from about \$75 to \$175, according to size
and to style of finish.

For inland waters, especially river
work, we have in the canvas canoe a to-
tally different class of boat—one that has
developed from the famous Indian birch-
bark. It embodies the good points of
the birch-bark model, and in addition it
is stronger and has a fine smooth surface
by which friction is so greatly reduced.
This so-called canvas canoe should more
properly be called canvas-covered, for it
is sheathed with light, thin wood over
wide but thin ribs and covered with can-
vas, which is painted, rubbed down and
varnished until it feels almost like glass.
The bottom is without keel in order to
allow of quick turning in a strong cur-
rent or rapid. Such a canoe has but
slight hold on the water, and consequent-
ly is difficult to control when there is a

beam wind. For special work a keel may
be fitted, as it renders the canoe more
steady. I have seen them used with a
one-inch keel on the large lakes of Flor-
ida, where the occupants were some-
times out of sight of the low shores, and
the boat's behavior, even in high winds,
was most satisfactory. The smooth-bot-
tom boat will, without doubt, stand pret-
ty stiff weather, but unless loaded heav-
ily must either head the sea or run with
a fair wind. A canvas-covered canoe 16
feet long will draw four inches with a
load of 500 pounds.

As a thing of beauty the well-made
Indian birch-bark canoe is unique, but
for practical use it is not equal to its
canvas-covered descendants. Birch-bark
canoes are neither so smooth nor so
strong as canvas, nor do they retain
their shape so well; and, from what I
have seen of them, I should say they
were not so thoroughly water-tight. The
idea that they can be more easily patched
is scarcely true. Either kind can be
readily mended, if the hole is small, by
dropping a little melted pitch (which
should be part of the canoeist's outfit)
over the break, the edges of which should
be well dried and warmed. If the hole
is large, a piece of canvas or similar ma-
terial may be put on by means of melt-
ed pitch. To further insure its being
water-proof, a coating of varnish or
paint may be applied.

In selecting a canoe, one must think
of many things. Lightness is essential
where portages are to be made. From
55 to 70 pounds is about the range of
weight for the canvas-covered boats. Re-
member that a new canoe in a store is
lighter than an old one in use. Even the
new one will rapidly gain in weight when
used if it is a cheap one in which the
wood is not thoroughly protected from
the water. The price of canvas canoes
ranges from about \$20 to \$100. For \$40
an extremely good one may be procured,
while the cheaper kinds will do for short
trips. If children or women (inexper-
ienced in canoeing) are to be carried, it
is best to get the extra-width canoe.
These, though slower and harder to han-
dle in quick water, are very much more
steady than those of less beam, and have
the advantage of greater carrying ca-
pacity. A 16-foot boat will carry three
persons and a fairly heavy outfit. When
I say fairly heavy, I mean according to
the ideas of one who has really camped
and realizes what weight means. Most
people carry so much unnecessary stuff
that their trip is ruined by the slowness
of their progress and the loads that must
be carried, to say nothing of the ever-
lasting packing and unpacking which,
unless properly managed, is, even with
light loads, the bugaboo of camping.

If you would save the canoe, avoid
wearing boots or anything with hard

heels. Good "beef" moccasins are the
ideal footwear for canoeing, and next to
these come the kind of rubber and leath-
er shoe that is so much worn by the
lumbermen.

In every canoe there should be an ex-
tra paddle, and if there is any chance of
shallow water or rapids a light but
strong pole with steel point will be found
necessary. If there is much poling to be
done an extra pole may be carried for, in
going through rapids, there is always the
chance that the pole may break or be-
come jammed between boulders.

GETTING THEM INTERESTED.



"Don't you wish you had some of my Ducks?"

The little girl pictured above, whose
name is Frieda Betts, and who lives in
Hillsdale Co., has "made friends" with
the ducklings and in consequence is de-
veloping a lively interest in this branch
of her mother's poultry operations.

LITTLE FARM FABLES.

BY AUNT QUILLIA.

Bunny's Benevolence.

Father Bunny was a most conspicuous
character, his chief traits being an all-
absorbing interest in the affairs of his
neighbors and an insatiable desire to
manage them.

These instincts being top-most in his
constitution, it goes without saying that
it was impossible for Bunny to hoard up
what he considered needed advice and,
feeling within himself that he could fur-
nish a superior brand of that commodity,
he went about distributing it with a
prodigality truly astonishing.

Relatives, friends, acquaintances alike
came under his benign guidance. Indeed,
not a resident of Hickory Heights could
claim having escaped his benevolent su-
pervision. For instance, when the Red-
tails, having secured what they consid-
ered the best fork of the finest tree in
the grove, were proceeding to settle
therein, Father Bunny's observant eye
took in the situation and he at once hur-
ried over to inform them that they were
making the mistake of their lives, intimat-
ing that it being the tallest tree on
the hills it was liable to fall in the next
high wind or become a mark for the
lightning's stroke. "If I were you," con-
cluded he, "and cared one straw about
the safety of these charming little Red-
tails I would abandon the place at once.
I can direct you to a site that is per-
fectly secure, and advise you to seek it
before disaster befalls you."

Again, when young Mr. Fleetfoot was
plumming himself on his good luck in find-
ing an immense hollow log which he
planned to use as his winter cache,
Father Bunny, hearing of it, immediat-
ely hunted him up and informed him that
he happened to know that that particu-
lar log was the worst den of snakes any-
where about, "and even if they have
left it," continued he, "the walls are so
old and rotten that they are liable to
cave in any moment and not only bury
your provisions but yourself with them.
My advice is to look a little farther. I
can assist you, as I knew every foot of
these woods before you were born."

Then there was old Widow Red-fur
who was reported as having come upon

Ready For Work, Though It's Vacation Time.

By Alice Annette Larkin.



Any books, any papers, any errands to-
day?

It is clearing-up time and we'll carry
away

All the things you don't want; bring
them out to the gate,
There is plenty of time; of course, we
can wait.

It's vacation, you know, and Rover and I
Have a chance for much fun as the days
quickly fly.

What a load? It's too heavy for one dog
to draw?

I guess you don't know us or you never
saw

Rover pull from the front end while I
push behind.

It's not me that rides, I guess you'll
soon find.

The picture-man came as we started
away.

So that's just the reason I'm riding to-
day.

Any books, any papers, any errands for
two?

We're ready and waiting; what next
shall we do?

We'll hoe in the garden or rake up the
yard;

We're willing to work and work pretty
hard.

It's vacation at last for Rover and me,
And the farm is the place where we're
thankful to be.

a veritable bonanza in the shape of a tree literally breaking down with the largest and finest nuts imaginable. But no sooner had her good fortune reached Father Bunny's ears than he betook himself to her quarters and, with a sad face and many sighs said: "It is my unpleasant duty, madam, to advise you to waste no time on that worthless tree. I have been acquainted with it for years and know it to be a poor, miserable, deceiving fraud, which I have long hoped would fall beneath the woodsman's ax. I can tell you of one, however, which will meet all of your expectations. To be sure, it is on the outskirts of the grove, but you had better go some distance for sound sweet nuts than to depend upon these poor, bitter, sodden things. If you are wise you will take my advice and make the change."

And so it went. Being wholly engrossed with the affairs of others, Father Bunny, of course, had no time to look after his own and, one bitter morning in January, his nearest neighbor, having thrust his head out of his cozy cabin, saw in the distance the form of the great benefactor stretched upon the frozen earth. Having neither food nor shelter, he had succumbed to the freezing blast. Lying prone on his back, with stiff little paws extended to the pitiless skies, the grinning, lifeless form of Father Bunny was a most pathetic sight.

Withdrawing his head from the nipping wind, Poucher said to his mate: "Reminds me of a conversation I heard on Thanksgiving day. Two lads, who were out hunting, were discussing the character of someone who had lately died in the man-world. 'Makes me think,' remarked one of them, 'of a newspaper quip I came across this morning: 'Many men are so liberal that they had rather give good advice than keep it for their own use.''"

SEEING BEAUTY IN UGLY THINGS.

BY ISAAC MOTES.

How common it is for people to find beauty only where it is easy to find it, and to overlook it in the lowly, commonplace things, in the homes and lives of poor people, amid the squalid poverty of cities, or in whatever other things they see which offend the eye or the taste. We walk along a beautiful avenue in the city and admire the fine stone mansions amid green trees and shrubbery on both sides of us, but we turn with a sort of scorn and rebellious protest from the long lines of forlorn tenement houses where poor people live, where palid faced, shabbily dressed women and children crowd the doorways and forlorn, tumble-down porches and stare at us with dull, heavy eyes.

Yet in the lives of some of these poor people there may be more of beauty, more to admire than in the lives of rich people who dwell in the mansions along the splendid boulevards. There may be in the lives of some of these poor tenement dwellers a beautiful spirit of self-sacrifice for the sake of loved ones which you would not find within the grand mansions. We are too apt to forget that ugly, commonplace surroundings may harbor beautiful things, as though God took pleasure in giving a redeeming touch to otherwise unlovely places and things.

I was once made to realize this in a peculiar way by a little occurrence while spending vacation with my mother at the old home in the country, back in one of the eastern states. I was sitting with my mother upon the kitchen porch, helping her prepare cabbage for dinner—cutting off the refuse outer leaves, and getting the hearts and inner portions ready for washing and cooking. It had been quite a dry summer in the old home state, and all garden vegetables were poor, especially these cabbage heads, which were small and withered, and some of them considerably worm eaten, the ugly green worms sometimes boring far into the heart of the cabbage heads, making it necessary to throw away the larger part of each head.

Mother and I were talking about the poor quality of the cabbage and the ugly green worms found in many of them, which we had to be so careful to cut out, when suddenly, as I cut away the outer leaves of one of the heads a beautiful butterfly fluttered from the inner part of the cabbage and alighted in the sunshine upon the green morning-glory vines which grew up the side of the porch. It was a medium-sized butterfly when it first flew out, but with beautiful wings dotted over with blue, yellow, green, purple and other variegated spots. As it

sat there upon the morning-glory vine it seemed to grow larger, and to become more beautiful, with a richer color as the sunshine filtered through the gently waving leaves and fell upon the exquisite creature in a golden shower.

The colors upon its wings became more brilliant, it seemed, with their gorgeous tints, and the butterfly waved these beautiful wings joyously, as though glad to get out of its dark, cavernous home into God's golden sunlight. It had grown from one of those ugly green worms within the cabbage and had developed into this beautiful, airy creature which looked as though it had fluttered down from heaven along with the sunlight, rather than out of an ugly, withered, blue head of cabbage. It had once been a worm, but was now one of the most beautiful creatures my eyes had ever rested upon.

After sitting upon this vine a minute or two, waving its starry wings as if in an ecstasy of joy, it flapped these wings a little more energetically and flew out across the yard, alighting upon a grapevine which grew over a trellis. While flying it seemed almost as large as a paradise bird, and even more beautiful, its shimmering wings reflecting the sunlight in many-hued colors, gold and purple, blue and white—in fact, so many that the eye could not distinguish one from the other—until you could hardly realize that the beautiful creature had ever been an ugly green worm boring into a cabbage. Had I not seen it fly out, almost into my face, I could hardly have believed it really came from there, and had I been looking for such a beautiful, fairy-like creature, a cabbage head would have been the last place in the world in which I would have expected to find it.

So let us not shut our eyes to beauty, from whatsoever source it comes, but train ourselves to find something lovely in all God's creatures, and we shall see the beautiful and the good in many places, people and things where we might naturally least expect it. It is one of the laws of the Almighty that some of the least attractive of his creatures can develop into things of surpassing loveliness.

THE DEADLY FLY.

BY DR. A. P. BONNEY.

It does not matter to the large majority of the readers of this article that the fly's name is *Musca domestica*, and that it has been known since time immemorial. Its remains are found in pieces of amber, which ages and ages ago was the gum of a tree; this, falling to the ground, became hardened and is now washed up on the shores of the Baltic. But this knowledge does not go far towards getting rid of the pest, and its destruction is the animus of this article. However, I shall stop to state that the fly gets the last half of its name on account of its habit of staying about inhabited places, or wherever human beings congregate. Why this is, I do not know, but the fact may be borne in mind as showing how it is that the fly is carried from place to place.

There are several ways of catching and killing flies; poison papers, sticky papers and traps are all efficacious if handled properly, but I wish to say that it will do but little good to have papers and traps in the parlor if there is an open, fermenting slop bucket standing close to the kitchen door, or if decaying material is allowed to accumulate about the yard, for a female fly lays millions of eggs in a season and there is never any question about their fertility. I wish to still more emphatically call attention to the fact that one female fly captured in the spring is worth the capture of hundreds of thousands in summer.

The sticky fly paper so popular is made of rosin softened in oil; about a pound of rosin to four ounces of cheap castor oil will make a good compound; however, there must be a little more oil in cold and a trifle less in hot weather. The oil is put into a can and heated, and the rosin added until it is dissolved, when it is ready to use. The usual plan, following that of manufacturers, is to put the compound on paper that has been sized with glue, but this is done only to allow the paper being shipped. A better way is to heat a common tin pie plate, pour some of the rosin into it, pour off, and it is ready to use, as enough will adhere to the pan to catch many flies. When the surface of the pan is covered with dead flies take it out of doors, pour boiling water over it and it is ready to use again.

Poison fly papers are made by dissolving arsenite of soda or arsenite of potas-

sum in water. Soak blotting paper in the solution, dry and put away for use. An ounce of the arsenite will make a gallon of solution. To use, put a small piece of the paper into a dish and pour on a little water; the flies drinking the water will die. It does not do much good to put out poisons if there are other wet things in the room, as the flies must be made to go to the poisoned water for drink. Another good compound is made from a handful of quassia chips boiled until you have a teacupful of fluid. Sweeten this and the flies will flock to it. It is not poisonous to humans. A teaspoonful of formaldehyde in a teacupful of water sweetened with honey will kill thousands of flies; it costs but a few cents and lasts a long time. If a room is infested with flies, heat a shovel red hot, pour a teaspoonful of carbolic acid upon it, and leave the room quickly. If the room is kept tightly closed for awhile every fly will be killed.

Put a cupful of formaldehyde into a bucket of water and pour into the vault, which will kill many flies, particularly as they hatch, and a similar compound sprinkled where flies congregate to feed and breed will end them.

There is a trap on the market, a cone inside a cylinder, both of wire, which is a good thing to have at the kitchen door, but the best way of all is to put out poisons and traps early in the season, thus delaying the fly harvest by catching the mother flies. In this, as in all other avoidable things, an ounce of prevention is worth a ton of cure and sorrow.

MY LAST TRIP.

(Continued from page 44).

lowing about uncertainly, caught himself and stood stock still.

I was used to these hills and had learned how to brace against them. I jumped on the brakes with one foot and jammed the other one on the brake board, grabbing the hand-rail hard. I got a terrible shaking up but stuck to the wagon. Monkey-face jumped over the wheel like a rabbit, rolled over a couple of times, then gained his feet and disappeared in the underbrush. Moore shot straight into the air and came down on the fallen horse, which broke his fall somewhat; then he rolled between the horses. The standing horse came down on his leg with one foot. I heard the bone crack; the man shrieked like a screech owl and lay groaning.

"Whoa, there, five hundred dollars," I chuckled and jumped to the ground, tying Moore's feet together with a piece of the rein which I slashed off with my knife. I hadn't figured out how he was going to run with a broken leg. Throwing him roughly to the side of the road I cut the fallen horse loose and tried to get him upon his feet but it was no go. I could find no broken bones so I took the standing horse from the wagon and passed one of the reins under the other's fore-legs and through the ends of the traces. "Pull," I yelled, and you bet he pulled. The fallen horse was on his feet. His shins were badly bruised and blood was running down his leg but that was all.

After I had my team straightened out I threw Moore over a horse face downward. He had fainted and I was glad, for there was a limit to my brutishness and I had reached it. I picked up my cloth and bundles of wool as fast as I came to them and bound them to the other horse.

He looked like a Christmas tree when I pulled into the tavern yard with my strange load, and the shout that went up from the landlord and the hostler, who had been laboring with a sick horse and were just returning to the house with a lantern, was full of enthusiasm.


I have told this story some seven hundred and fifty-nine times, but it has never been appreciated as it was that night after I had gotten the soot rubbed from my face, Moore locked in the closet and the sheriff sent for.

I had no trouble in getting the reward money and I stayed at the tavern for a month, getting my team back to normal and my own nerves restored.

While genius is often useful and sometimes leads to fortune, the men who make successes of their lives are those who work while others rest.—Lloyd.

"How did that story pan out about the man up in the Bronx who found the big hailstone on his back stoop this morning?" asked the city editor.

"Nothing in it," replied the reporter. "He discovered it wasn't a hailstone after all. The iceman left it there."



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Woman and Her Needs

At Home and Elsewhere



Need We Remain Poor?

Household Editor:—What is poverty? Is poverty accidental? What is the cure for poverty?—L. F.

Poverty defined: "Poverty is the state of being poor; want; penury."—Dictionary.

Cause: "Go to the ant though sluggard; consider her ways and be wise; which having no guide, overseer, or ruler, provideth her meat in the summer and gathereth her food in the harvest. How long wilt thou sleep, O sluggard, when wilt thou arise out of thy sleep? Yet a little sleep, a little slumber, a little folding of the hands to sleep: So shalt thy poverty come as one that travelleth, and thy want as an armed man."

"I went by the field of the slothful, and by the vineyard of the man void of understanding; and lo, it was all grown over with thorns, and nettles had covered the face thereof, and the stone wall thereof was broken down. Then I saw and considered it well: I looked upon it and received instruction. Yet a little sleep, a little slumber, a little folding of the hands to sleep: So shalt thy poverty come as one that travelleth; and thy want as an armed man."

"Poverty and shame shall come to him that refuseth instruction: But he that regardeth reproof shall be honored."

"Love not sleep, lest thou come to poverty; open thine eyes and thou shalt be satisfied with bread."

"For the drunkard and the glutton shall come to poverty."

Cure: "He that tilleth his land shall have plenty of bread; but he that followeth after vain persons shall have poverty enough."

The above sayings of the Wise Man show conclusively that continued poverty is not accidental, but the result of lack of wisdom and effort. And in the face of all the world's poverty and misery I venture to say that no man need continue poor unless he so chooses. Even the poor of the big cities could escape from their poverty if they would "open their eyes" to possibilities outside of their own surroundings.

The country is crying for laborers, farms are being only half worked for want of help, yet men will choose to starve half the year in the city rather than go into the fields to work. Girls will live on half a living wage so that they can work in a store or shop rather than do honest housework, where "they would be bossed around by a woman."

Poverty in those cases is not accidental; it is intentional and criminal. Its cure is understanding and the prophet's vision, a clear sight which looks beyond the irritations of the today to the future which will arise out of present efforts.

No one need continue poor, but millions will because they close their spiritual and mental eyes for "a little sleep, a little slumber," and "refuse the instruction" which would lead them out of their want.

DEBORAH.

FOR AN EVENING'S ENTERTAINMENT.

BY PEARLE WHITE M'COWAN.

Two little guessing contests that may be used successfully to add enjoyment to an evening's entertainment for the young folks, are "Advertisement Puzzles and Candy Guesses."

For the first, "Advertisement Puzzles," numerous pictured "ads," minus the printing, of course, are pinned upon a large sheet or blanket. These are all numbered, and the guests each provided with pencils and slips of paper. At the chosen time the blanket, pictures attached, is hung upon the wall, and the guests given ten minutes in which to supply, upon their paper, the name of each article advertised, or possibly in some instances the advertiser's firm name. Each answer, of course, being numbered ac-

cording to the number upon the picture. A ransacking of old magazines and papers will supply all the pictures needed. For instance, a smiling, happy baby face, cut from a magazine, is at once suggestive of talcum powder, while a little downy chicken immediately brings to mind a well known cleaner. Anyone who is at all familiar with insurance companies' "ads," knows what the Rock of Gibraltar stands for, while the old woman with a stick immediately is recognized. These and many others, familiar though they may be, will call for considerable brain racking after all, and bring forth much amusing comment from the participants. A little souvenir can be given to the one supplying the most correct names, if desired.

The second is "Candy Guesses," and an appropriate prize would be a box of bon bons.

Slips of paper are passed around to the contestants, as in the first game, only upon these are written, or typed, the first parts of the following lines. If this is thought to be too much trouble, the hostess may read them aloud, giving the guests a minute or two in which to supply the name of the candy which each line suggests.

An exclamation—Fudge.

A dairy product, and a people—Butter Scotch.

A season, and a color—Wintergreen.

A spice and an herb—Peppermint.

To chew, and to fall—Gum Drops.

What is done to postage stamps, a letter, and a food—Licorice.

To curry favor, or in slang, "to soft soap"—Taffy.

A large mass of stone—Rock Candy.

One of the luxuries of farm life—Cream Candy.

Contains a negro abbreviation for the word more, and a Scotch synonym for girls—Molasses Candy.

They are grown in old Virginia—Peanut Candy.

A term of affection and a bug—Fondant.

It reminds you of your sweetheart—Kisses.

A kind of nut and a toy—Cocoanut Balls.

A kind of fish—Suckers.

A low, wet piece of land, and a weed—Marshmallow.

Two other little ideas that are sure to bring forth hilarious bursts of amusement are as follows:

Each guest is given a card, men one color and ladies another, with corresponding numbers upon each kind. Then they are all given ten minutes in which to draw their partner's picture. No names need be signed, though the finished pictures, most of them highly amusing, are hung upon a curtain or large towel, and the men allowed to vote as to which of the ladies' drawings they consider best, and vice versa.

If desired the cards may then be turned over, and the guests provided with clay (in the form of huge sticks of white paraffine gum), and toothpicks, and told to mold articles therefrom. Each person is allowed to choose for himself what he shall make. Animals, fowls, persons, and buildings, usually being among the subjects chosen.

The cards, of course, are useful to do the molding upon, and the toothpicks help to supply legs, arms, etc.

Ideas especially suitable for showers for brides or newly married couples, are as follows:

Provide guests with pencil and paper, and request each to write an original poem on the life of one, or both, of the contracting parties. The poems, unsigned, are all shook up together, and passed out again to be read aloud. Judges should be appointed to vote upon which is best, and the writer then invited to own his contribution and come forward to receive his prize, usually some insignificant and amusing little article.

A trial of nerve that is very absorbing is arranged for by supplying small dishes

of rice and teaspoons, with which each guest tries to lift and count the greatest number of kernels in a given time. Three kernels, no more, no less, must be lifted and removed from the dish at once.

ANOTHER CHANCE TO HELP THE CITY'S POOR.

Once more the heated term is on in the cities, and the task of securing relief for the children of the poor is again before the few philanthropic people who make this their work. Hundreds of poor children are besieging the Fresh Air Society for a chance to get away from the heat and noise for a time, but the number of homes which are open is far less than the number of children to be sent.

Several kind-hearted country people have written in to the society offering to take children, but many of these are at points too far distant to make them practicable, some taking all day long to reach. Homes, 60, 75 or 80 miles from Detroit are greatly in demand, as to these the children could go in two or three hours and could travel alone in safety. Such homes are greatly in demand and the society would appreciate offers from farmers who can take one or two children for a week or longer.

One or two readers have written to The Farmer that their experiences in years past with Fresh Air children were unpleasant. That the children were dirty, untruthful, sometimes dishonest, and not at all pleasant to have around. Such cases, unfortunately, sometimes come up. The society agrees to send the children out clean and decently dressed, and they try to see that no child will be sent who might have a bad influence on other children in the home. But bad morals are sometimes so cleverly concealed that the wisest person is deceived. Is it not better, however, to do some good even at the expense of discomfort to ourselves than to shut our doors on a child for fear we may get one who will make us trouble? And even if we do get one who is vicious, who knows what the effect of a week or two in a clean, well regulated home may be on him? Our work may not show while he is with us, but the influence of that two weeks may in time mean the child's reformation.

Besides, the usual result is satisfactory. Mrs. Brosamle, of Chelsea, a Michigan Farmer reader, has already written to the society asking for the little brother and sister she had last summer, and they have gone to her for another outing.

The address is the same as last year, Michigan Fresh Air Society, 406 Washington Arcade, Detroit. The officers are George N. Brady, president; Dr. W. H. Browne, treasurer; Dr. Francis Duffield, secretary; Miss Alice M. Hewitt, assistant secretary; Miss Annie Carmichael, agent.

In writing be sure to give at least one reference, state the sex you prefer, how many children you can take, for how long and at about what age. If you have children of your own, tell the agent and she will be at extra pains to send you children with no known bad habits. The society pays the children's railroad fare and only asks the country friends to furnish board and lodgings.

HUMAN WELFARE QUERIES.

Buttermilk Pie and Words of Praise.

Household Editor:—I saw in a June issue of Michigan Farmer that Northern Star asked for a buttermilk pie recipe. I will send one: Two cups buttermilk; two eggs; one cup sugar; two and a half tablespoonsful of flour; one teaspoonful of butter; any flavoring desired. We are subscribers to the Michigan Farmer. Long may it do good; we like the paper and would not know how to keep house without it.—Mrs. J. H. P., Bangor.

Household Editor:—I am a reader of your paper and like it very much. I saw a request for buttermilk pie and send my recipe: One beaten egg, one cup of sugar, juice and rind of one lem-

on, one and a half cups of fresh buttermilk, two tablespoons flour, a little salt. Bake with one crust.—Mrs. F. H. C., Mt. Pleasant.

Pieplant Pie With One Crust.

Wash and peel the pieplant, cut into pieces half an inch long, put into a granite dish, turn on enough boiling water to cover in which half a teaspoonful of soda has been dissolved. Let scald for 15 minutes, drain, add half cup of granulated sugar, one tablespoonful of cornstarch or flour, a little salt or butter to one pint of pieplant. Fill the crust and bake until done. When it is cold whip three-fourths of a cup of thick sweet cream until it is very light and stiff, add a teaspoonful of sugar and a little lemon extract and cover the top of the pie with it. Keep in a cool place. The variation and uses of pieplant are legion.—Mrs. L. E. M.

Canning Pieplant.

Household Editor:—I enjoy your recipes very much. "Busy Mother" wishes to know how to put up pieplant for winter use. I do up a lot every year in this way and find it just as good as when taken off the root and used for pies. Take fresh pieplant just picked, cut up as you would for pie, wash it, pack in sealers, just as tight as you can. Pump some real cold water in your can of pieplant, let all bubbles out by standing about three seconds or a minute, seal tight and put in the cellar. It will keep till the next spring. I do mine up the last of June or in July. Here is another recipe for butter-scotch pie which is very nice. Three-fourths of a cup of brown sugar, one egg, separate white from the yolk, using white for frosting, butter, the size of a walnut, one tablespoon of flour, beat butter, yolk of egg, flour and sugar until creamy then take three-fourths cup of boiling water, be sure you stir it all the time. Let cook for three minutes or until thick, like lemon pie. Remove from range and put one teaspoonful of vanilla into it. You will have a pie liked by all of your family. Will you tell me how to can corn, peas and beans that has been tried? It is nearly berry time and I wish to let you know how delicious they are, done up in this way: I make a nice syrup of white sugar and boil well, have your fresh berries washed and in your cans. Pour your syrup on the berries boiling hot and seal tight. See how delicious they are next winter.—Happy Housewife.

Household Editor:—Having seen a request in The Farmer for information as to how to can pieplant, will send my recipe and two others which may be of help to someone.—Mrs. H. E., Elsie.

Wash and wipe the pieplant until dry, cut in inch pieces. Smash the pieces enough to draw the juice. A milk crock and potato masher I find are the best things to use for this. Pack as much as you can in a can and be sure there is juice enough to cover it well. When opened in winter it can not be told from fresh pieplant and it always keeps.

For Frozen Eggs.

If frozen eggs are put in a cup and boiling water put on them and let stand until cold the yolk will be soft.

To Clean Silverware.

Put silverware in a dish and cover with buttermilk. Let stand all night; in morning wash; dry and it looks like new.

SHORT CUTS TO HOUSEKEEPING.

If you have a granite or tin dish that has sprung a leak, take an old can rubber, break off a piece, lay it over the hole, set it where it will get hot, take a stick and rub the rubber thoroughly over the hole until it is all filled up. Your dish will hold hot water or anything.—S. E. H. S.

During the hot summer days, I make the beds early in the morning while it is cool, and immediately turn all the top clothes neatly down, over the footboard to air all day. This method is also used when much work has to be done in the winter.—Harriet.

MALTESE CROSS DRAWNWORK DESIGN.

One of the most prominent devices used for weaving in drawnwork patterns is that of the familiar Maltese Cross, seen frequently in other forms of needlework, as well. It is used for the weaving in the accompanying sampler of a pretty pattern, suitable alike for fine or coarse materials; for household linens, waists, aprons, and the numerous fancy articles for which drawn work is fitted.

In the illustration medium weight linen was used, and a slightly heavier working cotton than the threads of the linen's weave. One end of the sampler shows the manner of placing the filling threads, ready for the woven figures, while the other end shows the work completed.

In the first place threads are withdrawn for a space of an inch and a quarter, being clipped away neatly at the corners. This raw edge thus formed is then buttonholed closely, and the linen mounted in frames or basted on a piece of pasteboard, perfectly smooth and even. If the latter method is used do not be

to other devices besides the cross; such as, wheels, bows, clover leaves, and the like, and one of these figures might be used in alternation with the cross, if preferred.

KEEPING UNFERMENTED FRUIT JUICES SWEET.

BY G. A. RANDALL.

The following method for preserving fruit juices of all kinds and keeping them sweet and wholesome for indefinite periods is said to have been for centuries guarded jealously by the Italian in making their famous wines.

If sweet cider is desired kept either for a beverage or to be subsequently employed in making jelly or for apply-butter at any time, select two-thirds sweet apples and one-third sub-acid apples to be ground and pressed for the liquid. This is left to settle 48 hours in barrels or casks and is then carefully drawn off above the settlings. The sweet juice is then strained carefully through two or more thicknesses of muslin to further remove impurities and then placed im-



Anty Drudge saves John's shirts

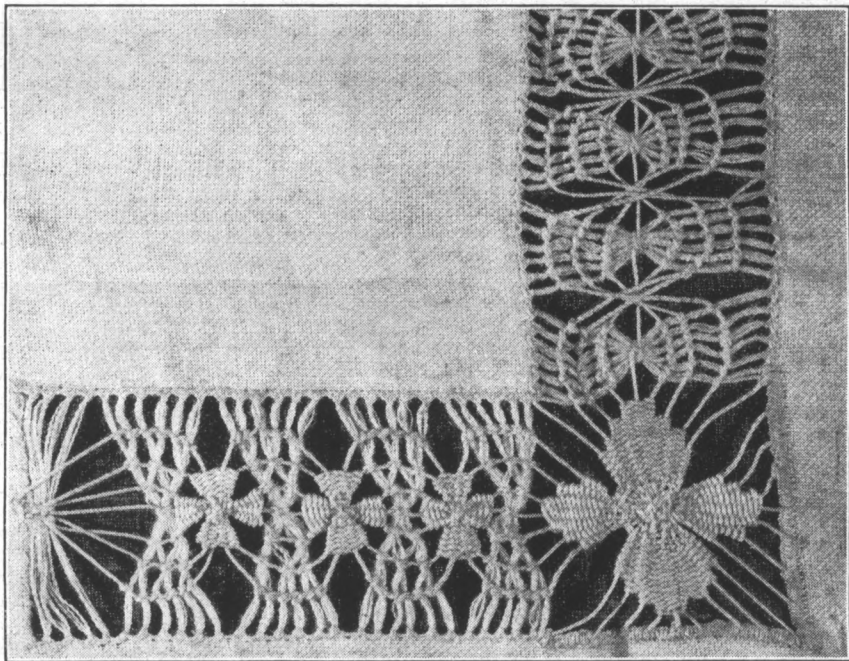
Mrs. Field—"My John has become so fussy since he started to take Mame Klauder out buggy riding, that I believe he has more shirts in the wash than all the other boys put together. Why, I sometimes have a whole boilerful of shirts on the stove at one time. And they don't seem to wear any time at all."

Anty Drudge—"It's not because John is hard on his shirts that they wear out. It's because you boil the life out of them. No shirt can stand that. Why don't you use Fels-Naptha Soap—you need use only cool or lukewarm water—then see how much longer the shirts will last."

There is no drudgery about spring cleaning done the Fels-Naptha way. Why don't you try it? Fels-Naptha Soap cleans everything—carpets, oil cloth, woodwork, windows, paint, pots and pans, dishes, just as it does clothes.

You don't have to use hot water; simply cool or lukewarm. It dissolves dirt as the sun melts snow, but does not eat it like a chemical compound. Will not harm the most delicate fabric or the tenderest hands. Try it for housework as well as for washing. Full directions on the red and green wrapper.

For full particulars, write Fels-Naptha, Philadelphia



A Sampler of Maltese Cross Drawn Work in Medium-weight Linen.

sparing of the bastings, but secure the linen to the pasteboard in a firm manner, so that it will not pull loose right in the midst of the work.

The outer edges of the work are now hemstitched in parallel clusters, 12 to the inch. As the corners are reached in this process carry the floss diagonally across the space, thus starting the filling spokes for these openings. When the hemstitching is done carry another thread straight across the corner space through the center and on through the clusters, knotting every six of these into a group at the center. A short distance from this central thread carry another slightly diagonal across the corner space, knotting it to the single clusters of the groups just outside of the central thread. Treat the other side in like manner, the two threads crossing each other between groups. Two more threads are then run just outside of these, one at either side, knotting as before, and crossing between groups in the same way. Still another pair of threads must now be carried outside of these, and in the same manner, thus making the three threads on each side of the central thread.

We are now ready for the weaving. Tie the end of a strand of the floss around the filling threads where they cross each other between groups, and with a blunt pointed needle begin the weaving, going under and over threads alternately, four for each of the lengthwise arms of the cross, and three for each of the side arms. One section must of course be woven at a time, 10 or 12 rows being made. When the arm is finished run the needle down through the weaving to center again, and proceed with another arm. Each cross is made in this fashion. The larger one at the corners differs only in the number of threads and manner of ending the work. Seven threads are used at either side and nine for the remaining arms of these devices, and when the weaving has been carried out for about a quarter of an inch the two outer threads are omitted, and the weaving continued for four rows on the remaining threads; then two more are omitted, and so on until only three remain.

Filling threads placed in the way described for this sampler are also adapted

mediately in a copper kettle and heated gradually to the boiling point, at once removed and again strained. Then into bottles, or casks, etc., it is put while hot. If bottles are used, they are filled until only about one-half inch of air space remains in the necks, tight corks are pressed firmly in place, crowding them downward until half way down the neck this leaves a space of say half an inch over the cork unoccupied, into this a wax made with equal parts of melted resin and tallow is poured while also quite hot, allowing it to fill and gradually run over the top where it readily hardens, thus making a hermetically sealed air and germ proof receptacle. The bottles or cans are then washed in warm water and placed necks down in a cool, dry and dark cellar where they should remain until desired for use, when even though years may have elapsed, except for a slight sediment, they will be found, when used, sweet and seemingly as fresh as the day they were first prepared. All such liquids should be used immediately as they soon get sour on exposure to the air.

(While copper was at one time much used in fruit preserving, the danger that the fruit acids may generate mineral poisons from the copper has brought into use other and better cooking utensils. —Ed.)



The Old Oaken Bucket

filled to the brim with cold, clear purity—no such water nowadays. Bring back the old days with a glass of

Coca-Cola

It makes one think of everything that's pure and wholesome and delightful. Bright, sparkling, teeming with palate joy—it's your soda fountain old oaken bucket.

Whenever you see an Arrow think of Coca-Cola.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

Demand the Genuine as made by THE COCA-COLA CO. ATLANTA, GA.

52-J



Hair Must be Fluffy—JAP ROSE Soap Makes It So

The first principle of sanitary cleansing is to soften. Yet ordinary soaps do not do that—especially if the water is hard. JAP ROSE softens the water, softens the hair, softens the scalp, and removes the dirt and excess oils. Oils that belong in the hair stay in it—not on it. JAP ROSE removes the waste matter and all dust, dirt and perspiration. It is remarkably beneficial to the entire hair and scalp tissue, and makes the hair extremely light, glossy, fluffy and attractive.

Simply wet the hair, rub JAP ROSE lightly on the hands and let the handfuls of bubbly lather do the rest. The appearance and feeling of your hair will be the best argument in the world for JAP ROSE. Try it today.

All Dealers Sell JAP ROSE

MADE BY KIRK CHICAGO, U.S.A.

A Large Transparent Cake 10c

Special Trial Offer: Send a 2c stamp and your dealer's name for a Free trial cake of JAP ROSE. JAMES S. KIRK & COMPANY, 213 Michigan St., Chicago



HAPPENINGS OF THE WEEK.

(Continued from page 42).

of the present rates. It is expected that the new rates will go into effect after the first of October. Commissioner Lane, who had general supervision of the investigation, and who collaborated the report is of opinion that the change in rates will encourage greatly the selling of farm products directly to consumers in the cities.

A wreck occurred Sunday on the Chicago, Burlington & Quincy railroad, just out of Chicago, and resulted in the death of 14 persons and the injury of 17 others. A fast mail train ran into the rear coaches of a passenger train, plowing through the first and far into the second before the engine was brought to a standstill. The victims consisted of passengers in the coaches and the engineer of the oncoming train. Torpedoes had been placed behind the standing train but they were declared by the fireman to have been too close to allow of stopping without colliding.

Last Saturday the United States Senate voted to unseat Senator Lorimer of Illinois. The charge against Mr. Lorimer was that he obtained his election to the national congress through bribery. This was the second vote taken upon the case, the first being favorable to the Illinois man.

Last Sunday the steamer Grammer was sunk just above Port Huron after colliding with the steamer Northern Queen.

Eight prostrations were reported in the city of Detroit last Sunday.

A wind storm accompanied by rain was the cause of four deaths, many persons being injured, and an estimated property loss of \$350,000 in and near Alton, Ill., Sunday.

Preparations are being completed for the celebration of Cadillac, July 22 to 26 inclusive. The magnitude of this carnival promises to make it an important event in the state's history. It is expected that Detroit will entertain a half million visitors during the week.

A storm which passed up the Detroit river Monday resulted in four deaths and the injury of several others.

The U. S. Senate has under consideration this week proposed regulations of the Panama canal. It is the opinion of many senators that under the treaty giving America authority to go ahead and construct the great waterway that discrimination against foreign ships and in favor of American ships cannot be allowed. England is protesting against such discrimination and it appears that her grounds for complaint are well founded.

The democratic state central committee of Michigan met in Detroit Monday. They decided to hold the state convention in Grand Rapids, Sept. 26, and authorized the holding of county conventions on Monday, Sept. 9.

Two dead, five injured and property damaged to the extent of about \$2,000,000 are the result of a flood caused by the overflow of Cherry Creek at Denver, Col., Monday morning. Practically the entire wholesale and factory districts of the city were flooded.

A board of arbitration is considering the claims for increased wages of locomotive engineers on 52 railways in the territory east of Chicago and north of the Norfolk & Western railroad. The increase demanded will aggregate about \$7,000,000.

In a dense fog on the morning of July 7, the steamer Commonwealth, proceeded to Fall River from New York, ram-

	State.	Southern counties.	Central counties.	Northern counties.	Upper peninsula.
Wheat	519,504	388,985	94,821	37,324	3,374
Rye	371,751	210,913	85,303	78,670	2,765
Corn	1,629,066	1,220,588	276,921	129,325	2,232
Oats	1,460,490	951,220	325,072	131,399	42,499
Barley	85,347	49,019	27,963	3,120	5,245
Buckwheat	64,598	41,588	10,288	12,093	629
Beans	408,007	201,907	183,355	22,213	632
Peas	68,662	1,879	18,266	35,638	12,879
Potatoes	360,434	173,794	78,723	90,354	17,563
Hay and forage	2,363,619	1,359,298	577,381	284,184	142,756

med the United States Battleship New Hampshire, tearing away the latter's stern and crushing her own bow. The collision resulted in a near panic on board the steamboat, but her water tight compartments saved her from sinking and she proceeded to Newport under her own steam.

A reduction of one cent in the rate of shipping grain from Buffalo to New York city has failed to bring grain to the former port as expected.

A freight train smashed into a passenger train near Latrobe, Pa., killing 21 persons and injuring many others.

The California railway commission has undertaken the control of the expenditure of moneys raised by the sale of bonds and stocks of public service corporations.

Foreign.

The Mexican rebels who have had their headquarters at Juarez are about to evacuate that place and join other rebels at Casas Grande, 141 miles to the southwest.

On Monday of this week the insurance law recently enacted by the British parliament went into effect. The law provides for the compulsory insuring of 13,000,000 persons between the ages of 16 and 70 years. The most important feature of the insurance is the sick benefit which provides that a man is to receive 10 shillings and a woman seven shillings and six pence each week while ill for 26 weeks and then five shillings each week thereafter until they are 70 years old, when they will be granted an old age strength lead in the athletic contests at pension.

The Americans continue to keep their Stockholm, Sweden, where the greatest athletes of all countries of the world are competing for honors. Up to Sunday evening the score stood: United States, 120; Sweden, 79; England, 58; German,

31; Finland, 28; France, 21; South Africa, 16; Denmark, 13; Italy, 13; Canada, 11; Norway, 10; Australia, 9; Hungary, 8; Belgium, 7; Greece, 4; Russia, 3; Austria, 3; Holland, 2.

MICHIGAN CROP REPORT.

Wheat.—At present indications are that the wheat crop will fall short of the 1904 returns, when the yield for the state was a trifle over 5,000,000 bushels. The average estimated yield in the state and central counties is 11, in the southern counties 9, in the northern counties 13 and in the upper peninsula 22 bushels per acre.

The total number of bushels of wheat marketed by farmers in June, at 74 mills is 83,304 and at 78 elevators and to grain dealers 67,116, or a total of 150,414 bu.

Of this amount 124,094 bushels were marketed in the southern four tiers of counties, 22,905 in the central counties and 3,415 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in 11 months, August-June, is 13,878,000.

Ninety-four mills, elevators and grain dealers report no wheat marketed in June.

Rye.—The average estimated yield of rye in the state, southern and central counties is 12, in the northern counties 13 and in the upper peninsula 20 bushels per acre.

Corn.—The condition of corn in the state and southern counties is 68, in the central counties 63, in the northern counties 69 and in the upper peninsula 90. One year ago the condition of corn in the state was 92.

Buckwheat.—The acreage of buckwheat sown or to be sown, as compared with last year is 87 in the state and central counties, 85 in the southern counties, 90 in the northern counties and 88 in the upper peninsula.

Beans.—The acreage of beans planted or to be planted as compared with last year is 102 in the state, 97 in the southern counties, 103 in the central counties, 109 in the northern counties and 105 in the upper peninsula. The condition of beans, compared with an average is 86 in the state, 85 in the southern and central counties, 89 in the northern counties and 93 in the upper peninsula.

Potatoes.—The condition of potatoes in the state and southern counties is 88, in the central counties 81, in the northern counties 89 and in the upper peninsula 104.

Sugar Beets.—The condition of sugar beets is 82 in the state, 83 in the southern counties, 79 in the central and northern counties and 109 in the upper peninsula.

Clover.—The condition of clover sown this year as compared with an average is 90 in the state and southern counties, 84 in the central counties, 87 in the northern counties and 95 in the upper peninsula.

Hay and Forage.—The acreage of hay and forage that will be harvested as compared with last year is 94 in the state and central counties, 93 in the southern counties, 92 in the northern counties and 98 in the upper peninsula.

Peas.—The acreage of peas sown or to be sown, as compared with last year is 82 in the state, 89 in the southern counties, 84 in the central counties, 71 in the northern counties and 83 in the upper peninsula.

The following table shows for the state and the different sections the estimated acreage of the principal farm products grown in Michigan for the year 1912:

	State.	Southern counties.	Central counties.	Northern counties.	Upper peninsula.
Wheat	519,504	388,985	94,821	37,324	3,374
Rye	371,751	210,913	85,303	78,670	2,765
Corn	1,629,066	1,220,588	276,921	129,325	2,232
Oats	1,460,490	951,220	325,072	131,399	42,499
Barley	85,347	49,019	27,963	3,120	5,245
Buckwheat	64,598	41,588	10,288	12,093	629
Beans	408,007	201,907	183,355	22,213	632
Peas	68,662	1,879	18,266	35,638	12,879
Potatoes	360,434	173,794	78,723	90,354	17,563
Hay and forage	2,363,619	1,359,298	577,381	284,184	142,756

Fruit.—The prospect for a crop of peaches in the counties included in the Michigan Fruit Belt is as follows:

Allegan	15
Berrien	26
Ionia	5
Kent	3
Ottawa	3
Van Buren	26
Muskegon	4
Newaygo	0
Oceana	18
Benzie	41
Leelanau	25
Manistee	47
Mason	17
Average for Michigan Fruit Belt	18
Average for Michigan Fruit Belt, 1911	34

GENERAL REVIEW OF CROP CONDITIONS AND PRICES JULY 1.

Crop conditions in general on July 1 average for the United States materially better (5.9 per cent) than on same date last year, but somewhat lower (1.2 per cent) than the average condition of recent years. The month of June was slightly less favorable for crops than the average June but much more favorable than June of last year.

The aggregate area of the important crops—corn, wheat, oats, barley, potatoes, tobacco, flax, rice, and cotton—in 1912 according to preliminary estimates is 241,155,000 acres, which is 1.8 per cent less than the estimated area of the same crops in 1911, but 1.9 per cent greater than in 1910 and 6.9 per cent greater than in 1909.

The condition of various crops on July 1 as compared with their average condition (not normal) on July 1 of recent years was as follows:

Peaches, 123.9; apples, 115.9; strawberries (production), 111.6; kafir corn, 108.0; alfalfa, 107.8; hops, 107.1; pears, 106.4;

millet, 105.3; oats, 105.2; grapes, 105.1; broom corn, 104.9; hay (all kinds), 104.7; spring wheat, 104.3; lima beans, 104.1; tomatoes, 103.9; tobacco, 103.7; barley, 102.7; sorghum, 102.3; cabbage, 102.3; flax, 102.2; cantaloupes, 102.0; hemp, 101.9; watermelons, 101.9; onions, 101.6; peanuts, 100.6; sugar beets, 100.5.

Cotton, 99.6; potatoes, 99.6; sweet potatoes, 99.4; rye, 98.1; timothy, 98.0; rice, 97.8; beans (dry), 97.8; clover hay, 97.1; oranges, 96.8; raspberries, 96.5; corn, 96.3; pasture, 94.8; winter wheat, 91.4; lemons, 91.1; blackberries, 90.4; sugar cane, 89.3.

The general or composite condition of all crops combined on July 1, duly weighed, in Michigan, on the basis of 100 representing average conditions (for most crops the ten-year average) is 89.8.

Prices paid to producers of the United States on July 1 of 1912 and 1911, respectively, averaged as follows: Corn, 81.1c, 60.0c per bu; wheat, 99.0c, 84.3c; oats, 52.5c, 37.5c; barley, 81.9c, 70.1c; rye, 83.6c, 76.9c; buckwheat, 86.2c, 72.4c; flaxseed, 198.4c, 205.6c; potatoes, 103.6c; 56.3c; hay, 15.57, 13.99 per ton; cotton, 11.2c, 14.4c per lb. (the average of prices of above crops, which represent about three-fourths of the value of all crops, declined 4.9 per cent during June, whereas in June, 1911, they advanced 6.7 per cent; they averaged on July 1 about 17.5 per cent higher than on July 1 last year); butter, 23.4c, 20.4c per lb; chickens, 11.0c, 11.2c; eggs, 16.7c, 14.2c per dozen.

Prices on June 15 of 1912 and 1911, respectively, averaged: Hogs, \$6.65, \$5.66 per 100 lbs; beef cattle, \$5.23, \$4.43; veal calves, \$6.33, \$5.72; sheep, \$4.52, \$4.24; lambs, \$6.02, \$5.51; milk cows, \$45.84, \$43.86 each; horses, \$145, \$145; milk, 22.1c, 20.6c per gal; apples, \$1.08, \$1.35 per bu; beans, \$2.62, \$2.19; sweet potatoes, \$1.11, \$0.94; onions, \$1.55, \$1.34; clover seed, \$11.69, \$8.80; timothy seed, \$6.68, \$5.25; honey, comb, 14.0c, 13.3c per lb; wool, unwashed, 13.7c, 15.5c; peanuts, 5.2c, 5.2c; cabbage, \$2.67, \$2.46 per 100 lbs; broom corn, \$79, 69 per ton; cotton seed, \$19.24, \$23.38; bran, \$29.35, \$25.87.

MICHIGAN FAIRS FOR 1912.

The following contains a list of fairs to be held in Michigan during 1912. Most of the dates have been received from official sources but should anyone have positive knowledge of incorrectness in the list we would appreciate greatly if they would advise us with correction. Also, if any fairs are omitted we would be pleased to receive information regarding them. The list is arranged as follows: First, the name of fair; second, where it is held; third, the date.

So, Michigan State Fair, Benton Harbor, Aug. 13-16.
Tuscola Co., Vassar, Aug. 21-24.
Cass City, Cass City, Aug. 20-23.
Caro, Caro, Aug. 24-30.
Flint, Flint, Aug. 26-30.
Gratiot Co., Ithaca, Aug. 27-Sept. 1.
N. E. Michigan, Bay City, Sept. 2-6.
Antrim Co., Bellaire, Sept. 3-6.
Barry Co., Hastings, Sept. 2-5.
Cass Co., Cassopolis, Sept. 3-6.
Howard City, Howard City, Sept. 3-5.
Marquette Co., Marquette, Sept. 3-5.
Sanilac Co., Sandusky, Sept. 3-6.
West Michigan State, Grand Rapids, Sept. 9-13.
Charlevoix Co., East Jordan, Sept. 10-13.
DeKerville, DeKerville, Sept. 10-13.
Menominee Co., Menominee, Sept. 10-13.
Thumb District, Port Huron, Sept. 10-13.

Michigan State, Detroit, Sept. 16-21.
Allegan Co., Allegan, Sept. 17-20.
Berlin, Berlin, Sept. 17-20.
Cadillac, Cadillac, Sept. 17-20.
Calhoun, Marshall, Sept. 16-20.
Delta Co., Escanaba, Sept. 17-20.
Emmett Co., Petoskey, Sept. 17-20.
Greenville, Greenville, Sept. 17-20.
Huron Co., Bad Axe, Sept. 17-20.
Otsego Co., Gaylord, Sept. 17-20.
Cheboygan Co., Wolverine, Sept. 25-27.
Chippewa Co., Sault Ste. Marie, Sept. 26-27.
Copper Co., Houghton, Sept. 24-28.
Ionia Co., Ionia, Sept. 25-27.
Inter-State, Kalamazoo, Sept. 23-28.
Lenawee Co., Adrian, Sept. 23-27.
Milford, Milford, Sept. 24-27.
North Branch, North Branch, Sept. 25-27.

Oceana Co., Hart, Sept. 24-27.
St. Joseph Co., Centerville, Sept. 24-27.
Armada, Armada, Oct. 2-4.
Eaton Co., Charlotte, Oct. 1-4.
Hillsdale Co., Hillsdale, Sept. 30-Oct. 4.
Inlay City, Inlay City, Oct. 1-3.
Oscoda Co., Ewart, Oct. 1-4.
Fowlerville, Fowlerville, Oct. 8-11.

State Fairs and Expositions.
North Dakota, Fargo, July 22-27.
Iowa, Des Moines, Aug. 22-30.
Ohio, Columbus, Aug. 26-31.
Canada, Toronto, Aug. 29-Sept. 9.
Indiana, Indianapolis, Sept. 2-6.
Minnesota, Hamline, Sept. 2-6.
Nebraska, Lincoln, Sept. 2-6.
West Virginia, Wheeling, Sept. 2-6.
Kentucky, Louisville, Sept. 9-14.
New York, Syracuse, Sept. 9-14.
South Dakota, Huron, Sept. 9-13.
West Michigan, Grand Rapids, Sept. 9-13.
Wisconsin, Milwaukee, Sept. 10-14.
Michigan, Detroit, Sept. 16-21.
Illinois, Springfield, Oct. 4-12.
International Dairy Show, Milwaukee, Oct. 22-31.
National Dairy Show, Chicago, Oct. 24-Nov. 2.
International Live Stock Exposition, Chicago, Nov. 30-Dec. 7.

ANNUAL FARMERS' PICNIC.

The annual Clay Banks Farmers' picnic will be held at Cedar Grove, on the shore of Lake Michigan on August 22. A good program will be provided for the 5,000 to 7,000 people who are expected to assemble for a day's outing as in former years.—D. J. Aderson, President.

Bean Growers Take Notice

Goodchild's Cultivator Guards was O.K'd by users last year and pronounced by farmers at State and County Fairs; also at the State Round Up Farmers Institute as Ideal Bean Growing equipment for late cultivating, are also for Beets, Potatoes, Garden Truck and all similar crops.

1 bushel of beans extra will almost pay for two pairs every day of labor saved by a pair. Booklet free at dealers. "Value of Cultivating" by Farmers Agri. Experts and U. S. Dept. of Agriculture. Phone him now or write for demonstration.

Geo. Goodchild, Lansing, Mich.



\$4 Puts a Set of STEEL Wheels on Your Wagon

Try wheels 30 days for heavy hauling on roughest roads. If found as represented, pay balance; if not, back comes your \$4.

Empire Steel Wheels. Made in one piece. All sizes, to fit any axle. Save 25 per cent of draft. 2,000,000 sold. Owners delighted. Life savers for men and horses. Book free.

EMPIRE MFG. CO., Box 435, Quincy, Ill.

CORN

HARVESTER with Binder Attachment cuts and throws in piles on harvester or windrow. Main and horse cuts and shocks equal with a corn binder. Sold in every state. Price \$20.00. W. H. BUXTON, of Johnstown, Ohio, writes: "The Harvester has proven all you claim for it; the Harvester saved me over \$300 in labor last year's corn cutting. I cut over 500 shocks; will make 4 bushels corn to a shock." Testimonials and catalog free, showing pictures of harvester. Address:

NEW PROCESS MFG. CO., SALINA, KANSAS.

CORN HARVESTER

That beats them all. One horse cuts two rows. Carries to the shock. Worked by 1.2 or 3 m-n. No danger. No twine. Free Trial. We also make Stump Pullers and The Ditchers. Catalog Free. Agents Wanted. C. G. BENNETT & CO., Westerville, Ohio.

AGRICULTURAL LIME

fresh Burned and Ground ready for use with the drill. For free Circular and full information address THE OHIO & WESTERN LIME COMPANY, Huntington, Indiana.

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The government and experiment stations advocate the use of LIME to increase the productivity of the soil. Most soils need LIME. We manufacture a LIME containing the proper analysis to be most beneficial to the soil. Prepared ready for use. QUALITY THE BEST. PRICES RIGHT. Send for booklet, sample and prices.

Agents Wanted. SCIO LIME & STONE COMPANY, Delaware, Ohio.

WODWAL BOARD SAVE ONE HALF BUILDING EXPENSE

WRITE US FOR SAMPLES. PRICES—NAME OF NEAREST DEALER. SOUTH BEND, INDIANA. BEST FARMERS USE PRINTED STATIONERY. Rise to the dignity of sound business. 100 Note-heads, 100 Envelopes, 100 Cards, \$1 postpaid. Neatly printed with name of farm and products. Be up-to-date; advertise your stock, poultry, dairy products, etc. NATIONAL PRINTING CO., Shelbyville, Ind.

PATENTS that PAY \$127,530 made by clients. 2 Books—"What & How to Invent—Proof of Fortune in Patents" & 12 p. Guide Free Send sketch or model for report. E. E. VROOMAN, Pat. Atty. 864 F St., Wash, D.C.

WANTED—Experienced Hog Man. Address, giving full experience, Box "B," Michigan Farmer, Detroit, Mich.

WANTED—Post Office Clerks, City and Rural Carriers. Thousands needed. Examinations soon. Trial Examination Free. Write today. Osmont, 11 R. St. Louis.

Government Farmers Wanted—\$50 monthly. Free living quarters. Write today. OZMENT, 17 F. St. Louis, Mo.

Wanted to Buy an Improved Farm of 80 to 120 acres, near town of six thousand or better in Southern Michigan. Must be a bargain. JOHN B. HUDDLE, Cedar Springs, Mich.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

For Sale, Farms of all sizes, at all prices and all kinds of soil. WISNER & GUTHRIE, Eaton Rapids, Mich.

We Sell Farms in Oceana, greatest fruit Co. in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. HANSON & SON, Hart, Mich.

Beautifully Illustrated Booklet about Delaware, the State of red apples, luscious peaches, strawberries and of ideal homes. Address State Board of Agriculture, Dover, Delaware.

WHY PAY RENT when you can buy the Best Land in Michigan at from \$7 to \$12 an acre near Saginaw and Bay City. Write for map and particulars. Clear title and easy terms. Stafford Bros. (owners) 15 Merrill Bldg., Saginaw, W. S. Michigan.

I Bring Buyers and Sellers Together. Farms, business places and all kinds of property. Bought, sold and exchanged. No matter where located if you want to buy, sell or trade, write me. Established 1881. Frank P. Cleveland, 948 Adams Express Building, Chicago, Illinois.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property FREE. American Investment Association, 3 Palace Bldg., Minneapolis, Minn.

300 Acre Lake Farm \$2300 Growing Crops and Tools Included.

Big, productive farm, bordering cool, pretty lake where there is good fishing and boating and only three miles to flourishing summer resort where farm produce sells at fancy prices; near neighbors, school and 2 1/2 miles to village; smooth fields, spring watered pasture; 100 cords wood and nearly 100,000 feet timber; 6-room cottage, shade, work shop, carriage house and barn; all machinery, tools and crops on farm at time of sale will be included; owner has business elsewhere; if taken now only \$2300, easy terms. See description of other lakeside farms, page 45, "Strout's Big Farm Catalogue '12", copy free. Station 101, E. A. STROUT FARM AGENCY, Union Bank Building, Pittsburg, Pa.

MENTION the Michigan Farmer when writing to our advertisers.

MARKETS

DETROIT WHOLESALE MARKETS.

July 17, 1912.
Grains and Seeds.

Wheat.—The downward trend of the prices noted a week ago has continued, the greatest margin of loss being with the futures. The decline is due chiefly to weather conditions which are pushing the spring wheat crop of the northwest and finishing the winter wheat. In the southwest threshing is showing good returns from fields that were despaired of earlier. The bears are taking advantage of the situation by heralding exaggerating statements of crop conditions, presumably to get hold of the bulk of the crop as early in the season as possible. They declare the present outlook promises more than enough wheat for home consumption, which will make it necessary to reduce values to an exporting basis to dispose of our surplus. Farmers seem reticent about accepting this interpretation of conditions and are not selling their wheat in the southwest where threshing is on as early as the traders anticipated. One year ago the price for No. 2 red wheat was 85¢ per bu. The visible supply shows a decline of about one and one-third million bushels. Quotations for the week are as follows:

	No. 2	No. 1	Red.	White.	Sept.	Dec.
Thursday	1.07½	1.06½	1.09½	1.12		
Friday	1.08½	1.07½	1.10½	1.13		
Saturday	1.08½	1.07½	1.10½	1.12½		
Monday	1.06½	1.05½	1.07½	1.09½		
Tuesday	1.05½	1.04½	1.06½	1.08½		
Wednesday	1.03½	1.02½	1.04½	1.06½		

Corn.—Up until Tuesday of this week the corn trade was sufficiently strong in itself to resist the influence of the downward trend of wheat. The outlook which has been improved by the recent warm weather, is not flattering. The amount of stock in dealers' hands is small and exchanges are few and of limited volume. One year ago the price for No. 3 corn was 67½¢ per bu. The visible supply shows a decrease of 983,000 bushels. Quotations are as follows:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	74	76½
Friday	74½	76½
Saturday	75	77½
Monday	75	77½
Tuesday	75	77½
Wednesday	74½	76½

Oats.—Oat quotations have advanced 1½¢ since a week ago. The cash trade is steady with exchanges limited by small holdings. Crop conditions have not changed materially from last week. One year ago standard oats were quoted at 47¢ per bu. Quotations are as follows:

	Standard.	No. 3
		White.
Thursday	53	52½
Friday	53	52½
Saturday	54½	54
Monday	54½	54
Tuesday	54½	54
Wednesday	54½	54

Beans.—No reports of sales have been made on the local market. October beans are nominally quoted the same as at the close of a week ago. The crop is promising in Michigan and the acreage is large. The nominal quotations are as follows:

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

Clover Seed.—No change is noted in the local quotations for October clover seed. Rains have improved the outlook for June seed. Nominal quotations are:

	Prime Oct.
Thursday	\$9.75
Friday	9.75
Saturday	9.75
Monday	9.75
Tuesday	9.75
Wednesday	9.75

Rye.—No. 2 rye is now quoted at 73¢ per bu. The quotation is nominal.

Flour, Feed, Potatoes, Etc.

Flour.—Prices are steady with the trade slow.

Straight	\$5.60
Patent Michigan	5.80
Clear	5.00
Rye	5.40

Feed.—Bran and coarse middlings rule higher while corn and oat mixtures are lower. Carlot prices on track are: Bran, \$26 per ton; coarse middlings, \$28; fine middlings, \$30; cracked corn and coarse corn meal, \$31; corn and oat chop, \$30 per ton.

Hay and Straw.—All grades steady. Quotations: No. 1 timothy, \$21.50@22; No. 2 timothy, \$19@20; clover, mixed, \$18@20.50; rye straw, \$11@11.50; wheat and oat straw, \$10@10.50 per ton.

Potatoes.—Still larger offerings of new potatoes than have yet arrived this year served to put the price of the new crop below the quotations of last week. The ruling price for southern offerings is \$2.75 @2.85 per bbl.

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

Dairy and Poultry Products.

Butter.—Offerings are moderate with prices ruling the same as a week ago. Quotations are: Extra creamery, 26½¢; first creamery, 25½¢; dairy, 21¢; packing stock, 19¢ per lb.

Eggs.—There is the usual supply of eggs coming into the market for this

season. Prices are the same as a week ago. Current receipts, candied, are quoted at 20¢ per dozen.

Poultry.—Trade is easy with few changes. Broilers are a little lower and chickens a little higher than last week. Other kinds rule about steady. Live—Broilers, 24@25¢; chickens, 14½@15¢; turkeys, 16@18¢; geese, 10@12¢; ducks, 14¢; young ducks, 15@16¢ per lb.

Veal.—Steady; fancy, 10@11¢ per lb; choice, 8@9¢ per lb.

Cheese.—Steady except that domestic Swiss rules lower. Michigan flats, 16@17¢; York state, flats, 17@18¢; limburg, 17@18¢; domestic Swiss, 22@23¢; brick cream, 17½@18¢.

Fruits and Vegetables.

Cherries.—Sour are quoted at \$1.50@1.75 per 16-qt. case; sweet, \$2.25 per 16-qt. case.

Raspberries.—Prices steady to higher. Supply is fair. Reds selling at \$4.50@5 per 24-qt. case.

Blackberries.—Not plentiful and higher. Ruling quotations are \$1.50@1.75 per 16-qt. case.

Huckleberries.—Selling at \$2@2.25 per 16-qt. case, which is an advance over last week.

Gooseberries.—Firm at \$2@2.25 per bu. **Honey.**—Choice to fancy comb, 15@16¢ per lb; amber, 12@13¢.

Apples.—New apples are quoted at \$4.50 @5 per bbl.

OTHER MARKETS.

Grand Rapids.

Fruit sold as follows on the city market Tuesday morning: Red raspberries, \$2; black caps, \$1.60@1.75; currants, \$1.25; cherries, sour and sweet, \$2. First home-grown huckleberries brought \$2.50 per crate. In vegetables, first summer squash sold at 8¢ per lb., first red cabbage at \$1 per bu. Spinach brought 60¢; carrots, 10¢; beets, 10¢; cabbage, 30@40¢; per doz; peas, \$1@1.25 per bu. Dressed hogs are worth 9@9½¢; live fowls, 10½¢; broilers, 18¢. New hay is in better demand, selling around \$15. Wheat is quoted at \$1.03; oats, 52¢; corn, 76¢; beans, \$2.20.

Chicago.

Wheat.—No. 2 red, \$1@1.03; Sept., 96½¢; Dec., 98½¢.

Corn.—No. 3, 72@72½¢; Sept., 67½¢; Dec., 57½¢.

Oats.—No. 2 white, 52@52½¢; Sept., 33½¢; Dec., 35¢.

Butter.—Volume of business fair at prices which have ruled for several weeks past. Quotations: Creameries, 23@25¢; dairies, 21@24¢ per lb.

Eggs.—No change in prices; market is steady. Quotations: Firsts, 17½¢; ordinary firsts, 16¢ per doz; at mark, cases included, 15@16¢.

Potatoes.—Prices in this market have registered a further decline of 10¢ since a week ago. Receipts about normal and the cooler weather is having a steady effect. Oklahoma stock is selling at 60 @65¢ per bu., while Early Ohio from Kansas and Missouri are quoted at 70¢.

Beans.—Market steady at last week's outside figures. Quotations: Pea beans, choice hand-picked, \$2.95 per bu; prime, \$2.85; red kidneys, \$3.25.

Hay and Straw.—All grades of timothy again higher, an advance of \$1 having been made during the week. Quotations: Timothy, choice, \$23@24; No. 1, \$21@22; No. 2 and No. 1 mixed, \$18@19.50; clover, \$9@12; No. 2 and no grade, \$5@9; alfalfa, choice, \$13.50@14; No. 1, \$11@13; No. 2, \$9@11. Straw—Rye, \$10@11; wheat, \$7.50@8.50; oat, \$7.50@8.50.

New York.

Butter.—There is little change in this trade. Quotations: Creamery, special extras, 27@27½¢; do. firsts, 26@26½¢; do. seconds, 25@25½¢; factory, current make, firsts, 23¢ per lb.

Eggs.—Market irregular. Fresh gathered extras, 23@24¢; extra firsts, 21@22¢; first, 19@20¢; western gathered whites, 19@23¢ per dozen.

Poultry.—Dressed, steady. Western broilers, fresh killed, 24@27¢; fowls, 15@17¢; turkeys, 16@17¢ per lb.

Boston.

Wool.—The advance in wool is not fictitious but seems to be based upon the law of supply and demand. Statistics indicate that domestic wool will be short by twenty to thirty million pounds. On the other hand, consumption is going on at a greater rate than for any season during the past five years. With this condition confronting them manufacturers are not hesitating about paying the higher values being asked by brokers. This gives a general air of satisfaction to the trade, especially from the standpoint of those producers who have held on to their fleeces. The price for both Ohio delaine and XX have advanced fully 2¢. Unwashed combings and ¼-bloods have advanced 1¢. There has been little activity in Michigan wools and it is difficult as yet to make comparisons. Michigan ¼-blood is quoted at 29@30¢ on the market here; ¾-blood combings, 29@30¢ and ½-blood combings, 28@29¢.

Elgin.

Butter.—Market is firm at 25¢ per lb., which is the quotations of one week ago.

THE LIVE STOCK MARKETS.

Buffalo.

July 15, 1912.

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

Receipts of stock here today as follows: Cattle, 115 cars; hogs, 80 double decks; sheep and lambs, 25 double decks; calves 1,250 head.

With 115 cars of cattle on our market here today, the handy weight butcher cattle of all classes sold 10@15¢ higher, while the best heavy weight cattle were dull and draggy, and 10@15¢ lower than last week. About everything was sold

by noon, except a few loads of prime cattle. Very light run of milkers and springers here today and prices on the best were from \$3@5 per head higher; others steady.

We quote: Best 1,250 to 1,500-lb. steers \$8.50@9.15; good prime 1,200 to 1,300-lb. do., \$8.50@8.75; do. 1,100 to 1,200-lb. do., \$8@8.50; medium butcher steers, 1,000 to 1,100, \$7.25@7.50; butcher steers, 950 to 1,000, \$6.25@6.50; light butcher steers, \$5.50@6; best fat cows, \$5.75@6.25; fair to good do., \$4@4.75; common to fair kind, \$3.25@3.50; trimmers, \$2.50@3; best fat heifers, \$7@7.50; fair to good do., \$5.50@6; light butcher heifers, \$4.50@5; stock heifers, \$3.50@4; best feeding steers, \$4.50@5; common feeding steers, \$3.50@4; stockers, inferior, \$3.50@4; prime export bulls, \$6@6.25; best butcher bulls, \$5@5.50; bo-springers, \$45@55; common kind do., \$25 @30.

The hog trade today was about steady with Saturday on all but pigs; this grade sold a little bit higher. Some very choice hogs were offered here today, but buyers discriminating against the heavy weights. We were unable to sell this class any higher than the good quality yorkers and mixed; the bulk of the sales were at \$8; pigs and lights, \$7.65@7.75; roughs, \$6.50 @6.75; thin roughs, \$3@4; stags, \$5@6. The market closed steady, and with a good clearance, we should have a fair trade for the next few days.

The lamb market was active today; most of the choice spring lambs selling at \$8@8.25, which was about steady with the close of last week, and the same with yearlings; most of the best selling from \$6@6.50. The sheep market was steady. Look for about steady prices on both sheep and lambs the balance of the week.

We quote: Choice spring lambs, \$8@8.25; cull to fair do., \$5@7; yearlings lambs, \$6@6.50; bucks, \$2.50@3; wethers, \$5@5.25; handy ewes, \$3.75@4; heavy ewes, \$3.50@3.75; cull sheep, \$2@3; veals, choice to extra, \$9.50@9.75; fair to good do., \$7.50@9.

Chicago.

July 15, 1912.

Cattle. Hogs. Sheep. Received today16,000 35,000 25,000 Same day last week.....26,431 35,973 23,526 Received last week.....40,981 118,217 100,584 Same week last year.....58,601 112,023 88,517

Everybody thought early this morning that the small Monday cattle receipts meant at least a moderate advance in prices, but buyers were unusually slow in taking hold, and while the better class of long-fed steers and fat butcher stock sold well enough, other kinds of steers moved surprisingly slow, going about 10 @15¢ lower on an average. Hogs were about a nickel higher early, but it was largely a speculators' market, and the later sales did not look much of any better than sales of last Saturday. Hogs went at \$7@7.75. Last week's hog receipts averaged in weight 238 lbs., compared with 230 lbs. a year ago and 245 lbs. two years ago. The sheep and lamb run is much larger than that of Monday a week ago, the lamb receipts embracing only about 2,000 from Louisville to packers direct and about 15,000 range lambs. The market is steady for the better class and weak for other kinds. A sale was made of some prime light-weight native ewes at \$4.50.

Cattle prices have continued to widen out between the best long-fed lots and the poorest little grass-fed yearlings, the best heavy beefs showing the regular weekly advances and bringing the predicted \$10 cattle nearer than ever. On Wednesday last beef steers sold chiefly at \$7.25@9.50, with a very good showing of \$9.55@9.75 cattle, while buyers secured the poorer steers of light weight at \$5.50 @7.25. There were sales of fair killers at \$7.50@8, while a medium class of steers sold around \$8.25@8.75, with a good class of steers of good weight bringing \$9@9.50, and choice heavy beefs going at \$9.60 and upward. Cattle that were good, but lacked in weight, sold at \$8.50 and over, while cows and heifers on the butcher order went at \$4.25@8.40, there being a lack of the fancy class of heifers that sold in recent weeks at \$8.50 @8.75. Cutters sold at \$3.40@4.20, canners at \$2.35@3.35 and bulls at \$3.50@7.10. Most of the choice cattle arrived on Monday and Wednesday, and cattle receipts on other days were extremely small in volume and not any too good in average quality. Extremely hot weather tended to curtail the consumption of beef materially throughout the country, and this brought about reductions in prices for the bulk of the cattle selling below \$9.25. The stocker and feeder trade was only moderate in volume, despite the fact that prices were largely 50¢@1 per 100 lbs. lower than a few weeks ago, stockers selling at \$4@6 and feeders at \$5.25@6.65. Feeding heifers averaging from 700 to 800 lbs. brought \$4.40@5. Calves were in moderate supply and sold freely at \$3.50@9.15 per 100 lbs., with an especially strong demand for choice light-weight vealers. Milkens and springers had a moderate demand at \$35@75 per head, demand centering in prime Holsteins. There is much comment on the great cattle shortage, receipts at the six leading western markets for the year to date being 550,000 head less than a year ago. During the latter part of last week good butcher and canner stock, as well as feeders and stockers, sold higher, but the common and medium grades of steers sold off sharply.

Hogs were marketed rather freely last week, with a fast growing percentage of rough lots, including many sows that had weaned their litters. The demand was fairly active usually, with a fair call for the better class of hogs to ship east, and prices developed a greater widening tendency between the best barrows and coarse, grassy hogs. Light butcher hogs were the best sellers, the hot weather having the usual result of developing a strong demand for young hog fresh pork, and extremely heavy offerings were

strongly discriminated against by buyers. Prices had some fair advances and also some breaks, with local packers taking a bearish stand and contesting upward movements. On Monday a consignment of 249 head of strictly choice 23-lb pigs, most of them roasters, brought \$7.25, all being healthy and shipped in from an Iowa point largely because of a scarcity of corn. At the close of the week hogs sold at \$6.95@7.65, or not much different from a week earlier. Pigs sold at \$5.80@7.35, stags at \$7.60@8.25, boars at \$3.25@4, government throw-outs at \$2@6 and throwout packing sows at \$6.25@6.85.

On Monday last week only 16,993 sheep and lambs were received, and prime Idaho range lambs brought \$8.15@8.25, advancing sharply on a good demand, while the best natives brought \$8. Later in the week there were severe declines in prices under liberal offerings of range lambs from Idaho, Washington and Oregon, as well as plenty of native lambs, with a less urgent general demand. There was a fair showing of native ewes and western range yearlings, with some range wethers, and the usual offerings of native bucks. The week's receipts show enormous gains, and while sheep did not go off so much as lambs, the general market closed in bad shape, the packers receiving extremely large supplies of lambs direct from Louisville. Native ewes closed at \$1.50@4.25, breeding ewes fetching \$3.75@5. Native yearling wethers brought \$3.50@5.60, and bucks sold at \$2.50@3, while Oregon feeding yearlings brought \$4.25. Lambs sold at \$4@7.25, feeders being wanted at \$5@5.65.

Horses were marketed last week in exceedingly moderate numbers, and more horses of the better class could have been sold advantageously at firm prices, but inferior animals were hard to get rid of and sold in some instances much lower. Farm horses were wanted to ship to Wisconsin and other states, and sales were on the basis of \$100@200 per head for animals weighing from 1,100 to 1,450 lbs., with the best demand for good horses that weighed 1,400 lbs. or over. Inferior horses were quoted around \$85@95, while the best heavy drafters were scarce and largely nominal at \$275@325. One attractive team of blacks that aggregated considerably under 3,000 lbs. in weight brought \$630, and buying orders for good pairs of drafters at \$500@525 had to go unfilled. Chunks that weighed from 1,250 to 1,450 lbs. were salable at \$150@200.

LIVE STOCK NOTES.

The steadily growing country shipments of aged and thrifty sows to western markets is a pretty good indication that many stockmen throughout the corn belt states are going to depend upon this year's gilts for future litters of pigs. Some observers have estimated that from 50 to 60 per cent of one day's heavy run at Chicago consisted of sows, with a big share of them of last year's crop. To a more or less degree similar reports have been received from other leading markets. Experienced stockmen believe that thrifty sows are now and will continue to be for some time to come an extremely valuable asset on the farms of the country, and it is believed that marketing them now will be followed by regrets later.

Thomas Foy, of Sycamore, one of the most extensive of Illinois silage feeders to cattle and sheep in the entire state, was on the Chicago market on a recent Monday with a car load of steers that averaged around 1,350 lbs. that sold at \$9.35 per 100 lbs. They were the last of a bunch of 268 head of cattle that Mr. Foy has fed this season. Some previous shipments sold up to \$9.40. Mr. Foy has made a study of the silage question, and is one of the strongest advocates of this feed for producing beef and mutton in an economical manner.

The great reductions that have taken place in prices for stocker and feeder cattle in recent weeks failed to bring about much of an improvement in the demand at Chicago and Missouri river markets, with the rank and file of such cattle offered at from 50¢ to \$1 per 100 lbs. under the best time of the present year. Pasturage is first-class in most parts of the country, but farmers are slow to take advantage of the market, and one reason advanced is that corn planting got an unusually late start, rendering the crop outlook uncertain.

A chronicler of events in the Chicago live stock market observed several days ago that live stock prices must look good to the country, otherwise less precipitancy to cash in would be noticeable. Thirty per cent of the receipts of cattle on a recent day, says this observer, were not fit for the butcher, while there was a mere handful of finished steers. Little cattle that weighed less than 1,000 lbs. were offered liberally, with the cause of their presence a mystery. Perhaps a good answer would be that prices are extremely high, and owners are fearful that present prices will not be permanent. Haste to get the ready cash has brought about a decline of fully \$1 per 100 lbs. in prices for light steers at a period when choice bullocks were commanding the highest prices on record.

D. M. Riggs, a successful farmer and stock feeder of Muscatine county, Iowa, was in the Chicago market recently with a consignment of 43 head of beef steers that averaged only 1,046 lbs., yet they brought the handsome price of \$8.25 per 100 lbs. He said that the cattle were yearlings and were far from finished, but with the packers hanging up good prize money, with corn selling at nearly the highest prices on record, and a good profit in sight, he was induced to market his young cattle in an unripe condition. Mr. Riggs said pastures were short in his section and that another light hay crop will be gathered. He added that there was a fairly good outlook for the corn crop.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
July 18, 1912.

Cattle.

Receipts, 841. Market active and 15¢ 25c higher than last week.

We quote: Extra dry steers, \$8@8.25; steers and heifers, 1,000 to 1,200, \$6.50@7; do. 800 to 1,000, \$5.50@6.25; grass steers and heifers that are fat, \$4.00 to 1,000, \$5.50@6; do. 500 to 700, \$4@4.50; choice fat cows, \$5; good fat cows, \$4@4.50; common cows, \$3@3.50; canners, \$2.50@3; choice heavy bulls, \$4@4.50; fair to good bolognas, bulls, \$3.50@4; stock bulls, \$3.25@3.50; choice feeding steers, 800 to 1,000, \$4.50@5.25; fair feeding steers, 800 to 1,000, \$4@4.25; choice stockers, 500 to 700, \$4@4.50; fair stockers, 500 to 700, \$3.25@3.50; stock heifers, \$3.25@3.50; milkers, large, young, medium age, \$4@5; common milkers, \$2@3.

Roe Com. Co. sold Mich. B. Co. 1 bull weighing 1,330 at \$4.50, 1 do weighing 670 at \$4, 2 do av 740 at \$4, 11 butchers av 770 at \$5, 19 do av 780 at \$5.15; to Goose 8 do av 395 at \$3.75; to Sullivan P. Co. 14 do av 775 at \$5, 2 do av 780 at \$4, 11 do av 802 at \$4.75; to Regan 6 heifers av 445 at \$3.75; to Newton B. Co. 3 canners av 800 at \$2.75; to Heinrich 10 butchers av 825 at \$5; to Regan 10 do av 538 at \$3.75; to Parker, W. & Co. 2 bulls av 915 at \$4.25, 23 steers av 940 at \$6.90.

Bishop, B. & H. sold Wyness 3 cows av 873 at \$3.15, 3 do av 1,023 at \$4, 2 do av 900 at \$3.65, 1 do weighing 1,030 at \$3.15; to Kamman 2 heifers av 750 at \$5.50, 14 butchers av 420 at \$3.60, 12 steers av 821 at \$5.75, 1 cow weighing 810 at \$3, 1 do weighing 850 at \$4; to Bresnahan, Jr., 15 stockers av 601 at \$4; to Newton B. Co. 3 cows av 916 at \$3, 1 do weighing 1,000 at \$4; to Fromm 7 bulls av 600 at \$3.65; to Sullivan P. Co. 9 steers av 810 at \$6; to Schlischer 4 bulls av 1,080 at \$4; to Parker, W. & Co. 2 steers av 875 at \$5.50; to Goose 2 cow and bull av 1,120 at \$4.50, 1 cow weighing 1,090 at \$3.50, 8 butchers av 570 at \$4; to Rattkowsky 2 cows av 950 at \$3.75; to Applebaum 7 butchers av 786 at \$4; to Mich. B. Co. 25 do av 670 at \$4.35; to Kamman 10 do av 458 at \$4; to Sullivan P. Co. 4 do av 925 at \$4, 1 bull weighing 1,040 at \$4; to Bresnahan 3 cows av 970 at \$4, 1 do weighing 1,060 at \$5.50, 1 steer weighing 800 at \$8; to Kamman 10 do av 870 at \$6.25; to Bresnahan 2 cows av 850 at \$3, 16 stockers av 570 at \$4.25; to Sullivan P. Co. 7 cows and bulls av 1,056 at \$4.80, 2 cows av 935 at \$4, 5 do av 916 at \$4.50; to Parker, W. & Co. 20 butchers av 800 at \$5.50, 25 steers av 1,033 at \$3; to Kamman B. Co. 18 do av 914 at \$6; to Schneider 4 do av 1,142 at \$7.60.

Spicer & R. sold Mich. B. Co. 2 cows av 1,120 at \$4.65, 27 steers and heifers av 804 at \$5, 1 steer weighing 920 at \$7, 4 do av 875 at \$7; to Regan 2 heifers av 530 at \$4.25; to Bresnahan 6 cows av 983 at \$4.35, 2 do av 920 at \$3.25, 2 do av 1,015 at \$4.50, 2 do av 960 at \$3, 6 do av 1,050 at \$3.75, 5 do av 948 at \$3.50, 1 do weighing 770 at \$3, 4 do av 1,032 at \$4.25, 8 do av 882 at \$3.20; to Schroeder 2 bulls av 905 at \$4.40.

Haley & M. sold Mich. B. Co. 1 cow weighing 930 at \$3.50, 1 do weighing 1,050 at \$4.50, 4 steers av 1,032 at \$7.25, 2 do av 880 at \$5.50; to Thompson Bros. 12 butchers av 700 at \$4.50, 3 cows av 850 at \$3.50; to Sullivan P. Co. 1 do weighing 1,110 at \$5, 2 do av 870 at \$4.75, 1 bull weighing 940 at \$3.75, 10 butchers av 792 at \$5, 2 do av 685 at \$4.50, 2 cows av 875 at \$4, 5 butchers av 516 at \$3.70; to Regan 6 do av 521 at \$3.75; to Newton B. Co. 4 cows av 922 at \$3.25, 4 do av 922 at \$3.25; to Mich. B. Co. 25 butchers av 824 at \$5.50, 16 do av 627 at \$4.60, 19 steers av 710 at \$5.35, 3 do av 610 at \$4.60, 1 cow weighing 1,280 at \$4.50; to Goose 4 butchers av 390 at \$3.60, 4 cows av 961 at \$3.60; to Bresnahan 4 heifers av 495 at \$3.75, 2 cows av 1,000 at \$3.50; to Wyness 2 canners av 865 at \$3.15.

Weeks sold Marx 18 butchers av 864 at \$5.50.

Gross & S. sold Heinrich 1 steer weighing 930 at \$6.

Veal Calves.

Receipts, 766. Market 25c to 50c higher. Best, \$8.50@9.50; others, \$4@7.

Bishop, B. & H. sold Hammond, S. & Co. 4 av 150 at \$8.50, 4 av 155 at \$7.50, 11 av 175 at \$9, 20 av 150 at \$9, 1 weighing 160 at \$7; to Sullivan P. Co. 3 av 120 at \$6.50, 11 av 165 at \$8.50, 8 av 155 at \$9, 3 av 135 at \$7.50, 15 av 155 at \$9; to Parker, W. & Co. 25 av 165 at \$7, 1 weighing 170 at \$7, 3 av 150 at \$9, 21 av 155 at \$9, 5 av 200 at \$7, 1 weighing 220 at \$7, 15 av 150 at \$8.75, 1 weighing 250 at \$7.8, 14 av 140 at \$8.50; to Hammond, S. & Co. 4 av 150 at \$6.50, 18 av 160 at \$9, 1 weighing 160 at \$9.50, 4 av 185 at \$9.50, 23 av 160 at \$9, 36 av 145 at \$8.25, 9 av 150 at \$9, 2 av 110 at \$7; to Sullivan P. Co. 19 av 155 at \$8.50, 3 av 110 at \$8, 24 av 160 at \$8.75, 7 av 165 at \$9; to Thompson Bros. 10 av 159 at \$9; to Mich. B. Co. 16 av 175 at \$7; to McGuire 17 av 160 at \$9.

Spicer & R. sold Sullivan P. Co. 8 av 160 at \$8.50; to Burnstone 6 av 155 at \$8.75, 6 av 160 at \$8.75.

Haley & M. sold Mich. B. Co. 19 av 155 at \$7.25, 9 av 165 at \$8.25, 11 av 150 at \$8.50; to Newton B. Co. 5 av 165 at \$9, 6 av 155 at \$9, 2 av 120 at \$8.50, 5 av 145 at \$9, 16 av 160 at \$8.85; to Rattkowsky 2 av 380 at \$4.50, 2 av 160 at \$8.50.

McQuillan sold McGuire 8 av 180 at \$9.

Roe Com. Co. sold Sullivan P. Co. 7 av 135 at \$8.50; to Mich. B. Co. 4 av 255 at \$5, 4 av 130 at \$8, 8 av 180 at \$7; to Goose 5 av 165 at \$7, 26 av 160 at \$9; to Hammond, S. & Co. 4 av 155 at \$7.50. Sharp sold Mich. B. Co. 26 av 155 at \$8.75.

Karcher sold Newton B. Co. 11 av 165 at \$9.

Sheep and Lambs.

Receipts, 2,600. Market steady at last week's and Wednesday prices. Best lambs, \$7.50@8; fair to good lambs, \$6@7; light to common lambs, \$4@5; yearlings, \$4@6; fair to good sheep, \$2.50@3.50; culs and common, \$1@2.25.

Haley & M. sold Mich. B. Co. 32 lambs av 55 at \$7.25, 89 do av 60 at \$7.25, 43 do av 60 at \$7, 36 do av 70 at \$7.50, 132 mixed av 75 at \$4.50, 14 sheep av 107 at \$3, 1 buck weighing 140 at \$2.50, 32 lambs av 70 at \$6, 12 sheep av 100 at \$3, 1 buck weighing 100 at \$2; to Newton B. Co. 13 sheep av 110 at \$3.25, 7 do av 120 at \$3.25, 33 lambs av 70 at \$5.50, 40 do av 70 at \$7.12, 12 do av 75 at \$8, 8 yearlings av 85 at \$5.50; to Parker, W. & Co. 11 lambs av 65 at \$6.75, 15 do av 65 at \$7, 3 sheep av 140 at \$3.

Spicer & R. sold Hayes 6 lambs av 50 at \$6.50, 3 sheep av 80 at \$3; to Parker, W. & Co. 10 lambs av 45 at \$5.50, 30 do av 60 at \$7.50; to Young 17 yearlings av 85 at \$4.60; to Barlage 50 lambs av 60 at \$4, 15 do av 55 at \$4, 2 to Fitzpatrick Bros. 26 do av 67 at \$7.65, 9 do av 70 at \$7.50.

Roe Com. Co. sold Newton B. Co. 57 lambs av 70 at \$7.25.

Bishop, B. & H. sold Mich. B. Co. 10 sheep av 89 at \$2.50, 57 do av 90 at \$3.25, 10 lambs av 51 at \$5.50, 22 do av 70 at \$7.50, 14 do av 68 at \$7.75, 32 do av 65 at \$6, 130 do av 63 at \$7.25, 30 sheep av 90 at \$3, 14 lambs av 68 at \$7.75, 20 yearlings av 90 at \$5.50; to Parker, W. & Co. 2 lambs av 70 at \$7.75, 15 do av 65 at \$7.50, 5 sheep av 120 at \$3.25, 22 lambs av 60 at \$7.50; to Sullivan P. Co. 32 sheep av 96 at \$2.25, 53 do av 65 at \$7.25, 25 do av 60 at \$3.50, 19 do av 65 at \$7.75, 19 do av 68 at \$7.75, 12 sheep av 115 at \$3.25; to Hammond, S. & Co. 23 do av 100 at \$3, 7 lambs av 77 at \$5, 7 do av 60 at \$7.50; to Young 66 do av 70 at \$7, 12 do av 48 at \$5.50; to Parker, W. & Co. 61 do av 63 at \$7.50; to Hayes 34 sheep av 55 at \$3.25; to Newton B. Co. 53 lambs av 64 at \$7.25; to Young 15 do av 75 at \$8; to Sullivan P. Co. 15 sheep av 110 at \$3.25, 10 lambs av 56 at \$6, 26 do av 75 at \$7.50, 10 do av 47 at \$5; to Fitzpatrick Bros. 81 sheep av 85 at \$4, 10 lambs av 64 at \$7.50, 22 do av 70 at \$7.50, 25 sheep av 110 at \$3.25, 15 do av 120 at \$3.25, 23 lambs av 65 at \$7.50, 10 do av 52 at \$5.50.

Hogs.

Receipts, 2,042. Market 5¢@10¢ higher than on Wednesday or steady with last week's close.

Range of prices: Light to good butchers, \$7.65@7.70; pigs, \$7@7.25; light yorkers, \$7.40@7.55; stags one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 350 av 150 at \$7.60, 300 av 200 at \$7.75, 800 av 170 at \$7.65, 210 av 150 at \$7.50.

Haley & M. sold Parker, W. & Co. 240 av 160 at \$7.65, 140 av 170 at \$7.60.

Spicer & R. sold same 28 av 170 at \$7.50, 59 av 180 at \$7.65, 42 av 170 at \$7.60, 47 av 150 at \$7.55.

Friday's Market.

July 12, 1912.

Cattle.

Receipts this week, 1,112; last week, 1,045. Market steady at Thursday's prices.

We quote: Best steers and heifers, \$8@8.25; steers and heifers, 1,000 to 1,200, \$6.50@7.50; grass steers and heifers that are fat, 800 to 1,000, \$5@6; do. 500 to 700, \$3.56@4.50; choice fat cows, \$5@5.25; good fat cows, \$4@4.50; common cows, \$3@3.50; canners, \$2@3; choice heavy bulls, \$4.50; fair to good bolognas, \$3.75@4; stock bulls, \$3.25@3.50; choice feeding steers, 800 to 1,000, \$4.50@5; fair feeding steers, 800 to 1,000, \$4@4.50; choice stockers, 500 to 700, \$4.25@4.75; fair stockers, 500 to 700, \$3.50@4; stock heifers, \$3.75@4.25; milkers, large, young, medium age, \$4.50@5; common milkers, no demand; mediums, \$3@3.50.

Veal Calves.

Receipts this week, 1,042; last week, 1,143. Market strong, 25c higher than on Thursday. Best, \$8.50@9; others, \$4@7.

Sheep and Lambs.

Receipts this week, 1,686; last week, 1,733. Market steady with Thursday; run very light. Best lambs, \$7.50@7.75; fair to good lambs, \$6@7; light to common lambs, \$4@5.50; yearlings, \$4@6; fair to good sheep, \$2.50@3.25; culs and common, \$1@2.

Hogs.

Receipts this week, 3,307; last week, 2,973. Market, quality considered, steady with Thursday's prices. Range of prices: Light to good butchers, \$7.60@7.70; pigs, \$7.25@7.40; light yorkers, \$7.40@7.55; stags one-third off.

LIVE STOCK NOTES.

Joseph Culbertson, of McCool Junction, Neb., one of the largest cattle feeders of that region, has fattened three car loads of steers recently and cleaned up close to \$1,000 profit without feeding any corn. The cattle were fed exclusively molasses feed and alfalfa hay.

A ranchman who for a quarter of a century was engaged in cattle ranching in Montana, says he was compelled to abandon the business a few years ago on account of the high price of labor and short hours of work. In Montana eight hours is a legal day's work, and \$3 is the standard day's pay.

R. I. Bilby, of Quitman, Mo., one of the big farmers of the northwestern part of that state, has 5,000 acres of land in corn, which is said to be one of the largest acreages in that grain belt of the country. Besides farming on an extensive scale, Mr. Bilby also feeds a large number of cattle. He says he never saw

better grass, and the only thing farmers every week for prime female cattle. It should be needless at such a period to state positively that all good breeders should be retained for breeding purposes, for there is going to be big money in that industry for years to come. It is obvious that there cannot be any considerable expansion of the cattle supply of the United States until more calves are retained and brought to beef maturity.

VETERINARY

CONDUCTED BY W. C. FAIR, V. S.

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to some one else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

Cow Holds up Milk—Blocked Teats.—Have a five-year-old cow that fails to let down all her milk. There seems to be some soreness in two of her teats. G. R. S., Tower, Mich.—Milk her while she is eating and do so quietly as possible. Apply glycerine to sore teats twice a day.

Sore Eye.—My chickens are troubled with little bunches on head and some of them have sore eyes. They do not appear to be sick and their appetite is all right. G. W. S., Holt, Mich.—Touch bunches with tincture iodine daily and apply boracic acid to sore eyes once or twice a day.

Coughs.—My sheep have seemingly developed a cough and some of them are not thriving as well as they should. W. W. E., East Lake, Mich.—Mix together equal parts powdered licorice and salt and let them have all they want of it.

Anemic.—I have watched the veterinary column of the Michigan Farmer for some time in order to know how to treat anemia in cattle. This cow has been sick for 12 weeks, chews cud normally, but has a good appetite. I have thought she might have some urinary trouble for she dislikes to pass water. H. J., Albion, Mich.—Give your cow 1 oz. ground gentian and 3 drs. powdered sulphate of iron at a dose in feed three times a day. Also give her a dessertspoonful powdered nitrate potash and 1 dr. ground nux vomica at a dose in feed once a day.

Barren Cows.—My cows do not seem to get with calf, but have never aborted, and my herd has been free from this trouble. Do you suppose keeping my bull stabled and not exercised should affect him? E. E. L., Freeland, Mich.—If your bull could be exercised daily, he would perhaps prove a sure calf getter, for I believe the cows are perhaps all right. Drugs do not give very good results in such cases.

Bone Spavin—Stifle Sprain.—I have a mare about five years old that I am sure is lame, caused by bone spavin; this same mare has also had stifle trouble. We have treated both stifle and hock and the blisters we put on acted well, but she is quite lame until she travels about a mile. F. R., Rushton, Mich.—I believe the stifle trouble has gotten well, but spavin is causing lameness. Give her a rest and apply one part red iodine mercury and six parts cerate of cantharides every week or ten days. Or you can safely use any of the spavin remedies that are regularly advertised in this paper.

Fibrous Tumor.—Two months ago I noticed a bunch between fore legs on my four-year-old mare and this enlargement has gradually grown ever since until it is now quite a size, but loose and flabby. A. N. D., Montague, Mich.—I am inclined to believe the swelling should be opened and perhaps some pus will be found in its center, then swelling will go down. Give him 2 drs. iodine potassium at a dose in feed twice a day.

Lump Jaw.—I would like to know how to treat lump jaw. I also wish you would prescribe a remedy that can be obtained of our druggist. K. S. McK., Hetherton, Mich.—You will obtain fairly good results by applying one part red iodine mercury and four parts lard to bunch once a week and by giving the animal 2 drs. of potassium iodide at a dose two or three times a day, keeping up this treatment for three or four weeks.

Septic Arthritis.—I have a colt four weeks old that is suffering from navel infection; his joints are all swollen, he is lame and stiff and unable to get up without assistance. Our local Vet. has treated him for the past three weeks and tells me that the colt will perhaps get well, but I doubt him. C. H., South Shaftsbury, Vt.—I believe your colt is suffering from joint ill, (pyemic arthritis), an ail-

ment due to an invasion of a streptococcus germ that makes its way into body through navel of colts, usually occurring from three to 15 days after the birth of the foal. The filthier the stable and the poorer it is ventilated, seems to aid in this infection of young colts. However, it does not always follow that the colt must be kept in a filthy place to become infected, for I have had cases to treat where the colt became infected out in a clean pasture field. The antistreptococcal serum combined with nuclein and normal salt solution gives fairly good results. The mixed bacterins are also used to good advantage. I advise your Vet. to use any one of the latest vaccines recommended for suppurative ailments of this kind.

Congestion of Spine.—I have a mare that worked on farm last spring and summer up to July 2, showing no sickness, but was rather dumpish on evening of July 2 and July 3, seemed to give out and has been in rather bad condition ever since. When down she has trouble getting up and when up her hind parts sway from side to side. She drinks lots of water, has perhaps some fever and does not eat well. We have kept cold water on head thinking perhaps she was affected by heat. C. W. M., Burt, Mich.—She is suffering from congestion of coverings of spinal cord and will be benefited by keeping her head cool, applying mustard and water to back every two or three days and giving her 2 drs. iodine potassium and 1½ drs. fluid extract nux vomica at a dose three or four times a day.

Liver and Stomach Trouble.—Have a mare about 11 years old that has been gradually growing worse for some time and she is now very thin and weak. I might add that she eats plenty of food, but gets little benefit from it. Our local Vet. is treating her for catarrh of the stomach, but she is not improving. This Vet. seems anxious to look at her after death; therefore, I believe he is in doubt as to what ails her. J. C., Sunfield, Mich.—Your mare suffers from chronic liver and stomach trouble and is perhaps in such a diseased condition that she will never get well. Give her 1 dr. ground nux vomica, ½ oz. ground gentian, and ½ oz. fluid extract cinchona at a dose in feed three times a day.

Indigestion.—The writer has a mare 14 years old that is not thriving. Had her teeth floated and have been feeding her ground corn and oats with timothy hay. Urine seems heavy and contains a large amount of sediment of a very light yellow color, sometimes the urine is about the consistency of thick paint. Bowels are always constipated. Coat looks bad and she has several spots that the hair is coming off. Also has white discharge from nostrils. J. J. H., Holly, Mich.—Give her a dessertspoonful of Fowler's solution, a tablespoonful fluid extract of gentian and a tablespoonful fluid extract cinchona at a dose in feed or as a drench three times a day. She should be fed on grain and grass.

Mange.—I have a grey mare that is not less than 20 years old that has had disease of skin for past ten years, but is worse this summer than ever before. I do not dare to leave her in pasture for fear of her rubbing down fences for she seems to be in misery. What can be done for her? R. W. G., Shiloh, Mich.—Give her a teaspoonful of powdered sulphur in feed night and morning, also give a dessertspoonful of Donovan's solution at a dose in feed twice a day.

Laminitis.—I would like to know what ails my horse and if so what is the remedy. He eats wheat and oats daily and is very stiff in fore feet. R. G., Bad Axe, Mich.—Stand him in wet clay several hours a day and give 2 drs. salicylate of soda, 2 drs. nitrate of potash and 2 or 3 drs. powdered licorice; also feed him grass two or three times a day.

Pin Worms.—We have a mare that will soon be six years old, that is troubled with pin worms. H. H. S., Sherman, Mich.—Mix one part coal tar disinfectant and 30 parts water together thoroughly and inject mare three times a week. She should be fed on laxative food.

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POULTRY AND BEES

TEACHING YOUNG CHICKS TO ROOST.

Chicks, whether reared with a brooder or with the mother hen, must be taught to roost and sometimes this becomes quite a task. If neglected they seek a neighboring out building, fence or tree, where they are exposed to the attacks of night marauders. When fall comes the survivors must be caught one by one and put in the poultry house until they forget their former bad habits.

The best way is to drive the mother with her brood in the direction of the desired roosting place as soon as the chicks are big enough to perch. She will lead the way if it is toward their bedtime and they will follow without any trouble. After a few nights all will go in and seek the perches without assistance. Brooder chicks can be carried to the desired place at any time after they require no further hovering.

Young turkeys early in life display the perching instinct which should be gratified as soon as possible. They should not be left to find a lodging in the trees or on the near-by fence. A stout pole suspended about four or five feet from the ground will prove just what they want. Underneath some trees night-flying flesh-eaters will not be so likely to spy them and the pole should be high enough to be out of the reach of prowling animals.

In some localities skunks make trouble by getting into the chicken coops during the night. To avoid loss of this kind close fronts of wire screen should be hinged to the coops and fastened down securely every night.

Genesee Co.

E. E. R.

USE OF MUSLIN IN POULTRY HOUSE CONSTRUCTION.

The accompanying illustration shows a type of muslin-front poultry house that has given me the best of satisfaction after four years of use. I have used several types of houses but like the muslin-front best of all. I have one open-front house, but somehow I can not recommend them. They are a bit too cold and, if there is snow on the ground, or if it is snowing and the wind is blowing, more or less snow gets into the house, which is objectionable.

I keep a breed of poultry having large combs and wattles and last winter was one of the coldest and most severe I

front houses, to place the muslin at the top of the building. I do not think much of that method for this reason: Heat rises, and if the muslin is at the top too much heat will be lost which might to advantage be used in the house. Carbon dioxide, a poisonous gas given off in the breath of the fowls, falls or settles downward. This is what we want to get rid of and I claim the muslin-front, with muslin at the bottom of the building, will let much of this gas escape.

I have always found the health of fowls housed in his type of house to be most excellent. In fact, I have had no cases of roup develop in these houses, but at different times have placed affected hens in these houses and they seemed able to overcome the trouble without further treatment. The experiment station of Massachusetts has shown that roup could be cured by fresh air. In summer the windows and muslin are removed and the doors left open, so that the fowls have an abundance of fresh air and are coolly housed.

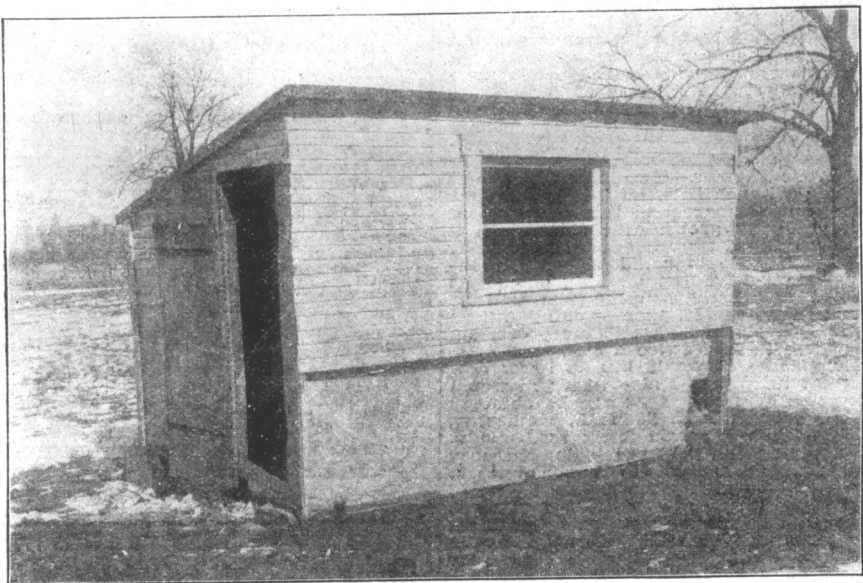
In conclusion: I believe the muslin-front house will be found satisfactory in the far north but as yet I am somewhat fearful of the open-front houses, I may use them later but certainly can not speak too strongly of poultry houses having a muslin front, with muslin at the bottom, and if anyone desires further information on this particular plan it will be cheerfully given through these columns.

Ohio.

I. G. SHELLABARGER.

SEASONABLE SUGGESTIONS.

Some poultrymen take up their surplus cockerels from the range and market them with no previous preparation. This is an unwise practice for, while a small profit will result from this method, a much greater profit will be realized if they are caponized and sold when full grown. When capons bring from 30 to 50c per lb., according to where they are sold, it will be apparent to anyone who looks into the matter that caponizing is profitable. Not only this, but when one disposes of his cull cockerels alive on market he runs the risk of having some of them used as breeders in the yards of the purchaser. This is often damaging to the breeder's reputation. For instance, if someone bought one of your cull cockerels on market—a cockerel that you considered fit for nothing but the table—and decided to use him in his breeding pen, what would be the result? This party would tell it around that this cockerel was of your strain, and was purchased from you. This would give a bad impression of the quality of your stock



A Satisfactory Small Poultry House with Muslin Front Beginning at the Floor.

have experienced, the mercury going as low as 20 degrees below zero and remaining at zero for several days. With all that I had no frozen combs.

The colony house shown is 9x12 feet and built of single walls, weather-boarded with tongued and grooved siding. My hens in this house, and another like it, last winter continued to lay eggs right along, as has been the case every year since I have used these houses. Little frost is ever seen on the walls and if any collects it soon disappears, as there is a good circulation of air and the sun can penetrate the walls.

Last fall I built a large poultry house on the plan of this one and can not, in fact, speak too highly of muslin-front houses. I have never used anything but muslin, although some prefer burlap, but either one is satisfactory for the curtain. It is common, in the building of muslin-

and your method of doing business. It would give the impression that this was a sample of the stock you sell to your customers. It is better to caponize all cockerels intended for market and you can then rest assured that they will not be used for breeding purposes.

In shading hives from the sun various methods have been advocated, such as the utilization of grape vines, sunflowers, trees, shade-boards, etc., each having its good points. Trees have one advantage over everything else in that they shade the apiarist as well as the hives. While this is so, yet trees, as a rule, are apt to give too dense a shade, and I am satisfied, from years of close observation, that, so far as the bees are concerned, they do much the best right out in the bright rays of the sun the whole year around, when it is a question of dense shade or no shade at all.

F. G. H.

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

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15 for \$1; 30 for \$1.50. O. M. YORK, Millington, Mich.

Crystal White Orping'ons—the great winter layers. Bargains in pens and tris if taken now. Young stock for sale. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.

Order Booked for Single comb Buff Orpington Cockerels of May hatch. Otis Greenman, R. 4, Bellevue, Mich.

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

Prize Winning Barred Rocks, R. I. Reds, Mammoth Pekin and I. Runner ducks. Stock for sale. Eggs \$1.25 per set. Utility \$5 per 100. EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

Barred Rock Eggs—Great Laying Strain and prize winners, 15 eggs, \$1.00; 30, \$1.75; 100, \$5. W. C. Coffman, R. 6, Benton Harbor, Mich.

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

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

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PRACTICAL SCIENCE.

NUTRITION STUDIES. (Continued).

BY FLOYD W. ROBISON.

In some of the previous discussions we have attempted to explain why it is that the tables showing the total digestible nutrients in feed stuffs do not give the real values of these different feeding stuffs to the animal. We apprehend there is perfect understanding on this point, that a considerable amount of energy is required to perform the functions of digesting and absorbing the various nutrients, that is the protein, carbohydrates and fats in roughages, and on this account the net energy available to the animal from the consumption of a given roughage is very materially less than the figures for digestible nutrients would indicate.

For the sake of clearness let us illustrate again. Oat straw, for example, contains four per cent of crude protein, 79.4 per cent carbohydrates and 2.3 per cent of fat. The digestible nutrients in oat straw are 1.3 per cent protein, 39.5 per cent carbohydrates and .8 per cent fat, the difference between the digestible nutrients and the total nutrients being the undigested portions which are rejected in the feces. One might assume at first instance therefore that the dairy cow were able to utilize the sum total of the digestible nutrients but while 1.3 per cent of the protein is digestible, the cost of the digestion of that 1.3 per cent in roughage of the nature of oat straw has been very material indeed, and we consequently figure that the actual amount of protein available for functional purposes in the animal body is much less than the 1.3 per cent. These results were shown very clearly when Armsby, Kellner and others began their experiments with the respiration calorimeter which we have previously discussed.

The Kellner Standards.

Indeed, to properly compare different feeding stuffs it therefore became desirable to make inquiry into the cost of digesting and absorbing the various feeding stuffs available to the feeder. This has been done to a limited degree and both Armsby and Kellner have published tables which were deduced from their experimental work. There is a slight difference in standard of comparison but the practical results are essentially the same in each instance. Kellner, of one of the German stations, published his standards which are based on what he calls the starch value of different feeds. Armsby in his tables considers them from a standpoint of what he calls energy values, or therms. Kellner found that one pound of digestible starch fed in excess of the maintenance requirements of the animal was capable of producing .248 lbs. of body fat. Taking this pound of digestible starch as the unit basis for his calculations he figured that one pound of digestible protein would have a starch value of 0.94 lbs.; one pound of digestible nitrogen-free-extract and fibre had a starch value of one pound; one pound of fat in roughages and roots had a starch value of 1.61 lbs.; one pound of fat in mill by-products such as gluten meal, etc., had a starch value of 2.12 lbs.; one pound of fat in oil meal, linseed meal, cottonseed meal and the like had a starch value of 2.41 lbs.

Grains and Concentrates Have Starch Values as High as Pure Nutrients.

In products containing practically no fibre such as the oil meals, the concentrates, and grains such as corn meal, Kellner found that the digestible nutrients estimated on the basis of the grain itself had practically as high a starch value as when those nutrients were fed in the pure state free from their connection with the grain. It seems evident from this observation that the concentrate, being practically free from cellulose, offered little or no resistance to the digestive mechanism and consequently little energy was expended in contributing it to the food economy of the animal. In the case of roughages, however, and all materials containing more than a mere nominal amount of fibre, the actual starch values as figured on the pure nutrients, have to be supplemented very materially because the work of masticating and digesting reduces very materially the net value of those nutrients. Kellner figured that this reducing factor of straw was from 60 to 70 per cent of the starch value, figured on the basis of the pure ingredients in the digestible

matter. In the case of hay, 30 to 50 per cent; in the case of ensilage, 20 to 40 per cent. The standards as promulgated by Kellner for a farm animal weighing 1,000 lbs. are given below.

Based on One Thousand Pounds Live Weight.

For the maintenance of a mature steer, neither gaining nor losing weight, there was required from 15 to 21 lbs. of dry matter and .6 lbs. of digestible protein, and a starch value of 6 lbs. For a fattening steer, from 24 to 32 lbs. of dry matter, 1½ to 1.7 lbs. digestible protein and a starch value of from 12.5 to 14.5 lbs.; a milk cow yielding 20 lbs. of milk daily, from 25 to 29 lbs. of dry matter, 1.6 to 1.9 lbs. digestible protein, with 9.8 to 11.2 lbs. starch value; with a cow yielding 30 lbs. of milk daily, dry matter from 27 to 33 lbs. digestible protein from 2.2 to 2.5 lbs. with starch value of 11.8 to 13.9 lbs.; a cow yielding 40 lbs. of milk daily, from 27 to 34 lbs. dry matter, from 2.8 to 3.2 lbs. of digestible protein with a starch value of from 13.9 to 16.6 lbs.

It will be seen by the above standard that a 1,000 lb. steer at rest, neither gaining nor losing in weight, should be provided with nutrients with a starch value of 6 lbs. In other words, the daily requirements of that animal require feed to the equivalent of 6 lbs. of digestible starch. With that steer under fattening conditions the feed must be increased practically double in quantity. In other words, the nutrients should be equivalent to from 12 to 14 lbs. of digestible starch.

We have given, along with this table, Kellner's figures regarding the amount of protein needed at the same time and we must emphasize again that if the reader plans to compute his ration on a starch basis, according to Kellner, he must not lose sight of the fact that they are figured in terms of starch merely for convenience and that the minimum amount of protein must be allowed in the feed as we have discussed heretofore.

LABORATORY REPORT.

What is the difference between ammonia and nitre? Which fertilizer is the best—that which has a lot of ammonia in or lots of nitre—to sow with wheat and get a catch of clover? Which fertilizer is the best, that which is ground fine or that which is ground coarse?

Huron Co. J. W.
The difference between ammonia and nitre is that ammonia is a combination of nitrogen and hydrogen, represented by the symbol NH₃, that is, one part nitrogen to three parts hydrogen. The usual form in which ammonia is sold as a fertilizer as is sulphate of ammonia, that is, a combination of ammonia with sulphuric acid, written (NH₄)₂SO₄. Nitre is either potassium nitrate or sodium nitrate. The usual fertilizing substance known as nitre is sodium nitrate, sometimes called Chili salt petre. Its formula is NaNO₃, that is, the neutralization of sodium with nitric acid.

Nitrogen in the form of ammonia or in the form of nitre is usually given about the same commercial valuation, depending entirely upon the amount of nitrogen of course, present in the particular fertilizer. Both forms are entirely soluble in water and consequently are considered immediately available for plant growth.

It is usually considered that for application to a growing crop, such as wheat, nitrogen in the form of the nitrates, that is, in nitre or saltpetre is preferable to the nitrogen in the form of ammonia.

Fertilizers that are finely ground are considered better than those which are coarse. The reason for this is that the fineness of division, that is, fineness of grinding, influences very favorably the solubility of the fertilizer. Consequently a fertilizer finely ground is more readily available than a fertilizer coarsely ground.

CATALOG NOTICES.

"How I Became 'Tire-ly Satisfied,'" is the title of an interesting booklet published by the United States Tire Co., Broadway and 58th street, New York. This booklet will be of interest to every user or prospective buyer of an automobile.

"Better Corn for Ottawa," is the motto on the cover page of the Year-book of the Ottawa County Corn Club and Western Pomona Grange, this being a catalog for next year's work and a report on the work of the past year.

Mr. John A. Thomas, of Penfield, Mich., in renewing his subscription for three years says: "The Farmer gets better every issue."



Stop this Loss

From one-quarter to one-half of the wheat acreage has been abandoned in five states that produced about one-third of our winter wheat.

This means a loss of about seven million dollars for seed alone and several times this for preparing the ground and sowing. A well-fed plant can better resist unfavorable surroundings.



Wheat correctly fertilized. Good crops.

Unfertilized Wheat abandoned, planted in corn.

POTASH

Good fertilization means enough fertilizer of the right kind. With a good rotation three hundred to four hundred pounds per acre is enough, provided a reasonably high-grade formula such as 2-8-6 or 0-10-6 is used. The low grade 1-7-1, 2-8-2 and 0-10-2 formulas are out of balance—cost too much per unit. Urge your dealer to carry high-grade formulas, or to buy some potash salts with which to bring up the potash content to a high grade. One bag of Muriate of Potash added to a ton of fertilizer will do it.

If you prefer real bone or Bone Meal in place of acid phosphate try a mixture of 1700 pounds of either with three hundred pounds of muriate of potash. You will find that Potash Pays.

These high potash mixtures produce better wheat and clover, heavy grain and stiff straw.

We sell Potash Salts in any quantity from two hundred pounds up. If your dealer will not get potash for you write us for prices and for our FREE booklet on Fall Fertilizers.

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HORTICULTURE

IS THE ILLINOIS, OR "BLISTER CAN-KER," IMPORTANT IN MICHIGAN.

ATENTION has been called in a recent number of the Michigan Farmer to a circular of the Ohio Experiment Station upon a serious limb disease, which is very prevalent in certain parts of Ohio.

Since many horticulturists in this state are interested in this item, it may be well to interpret this to fit Michigan conditions. It may be well also to describe again the symptoms of the disease and the method of attack, in order that there be no mistake about the disease in question.

The Illinois canker was first described from Illinois as a serious apple disease, whence the name Illinois canker. The author of the Ohio circular chose to refer to the canker under the name blister canker, because of the peculiar effect produced upon the apple limb. The disease manifests itself in the mature condition by a number of circular projections. These projections grow out from the wood and eventually break through the bark. The individual blisters are about as big as the head of a carpet tack, and a diseased limb after the bark is peeled, appears studded with these rough projections. The name blister canker, however, is apt to give the wrong impression, since one might expect that the projections were mound-like. Instead of this sort of growth, the projections are small warty ones, and if a descriptive name is desired, the term "nail-head canker" would fit better than the term blister canker—but a new name is not needed at all since the disease is well known under the name Illinois canker.

Many farmers do not understand the nature of these enemies of his orchard. The blister canker is the work of a parasitic fungus. A parasitic fungus is a plant without green coloring matter which makes no food for itself, but steals its food from another plant. The Illinois canker fungus depends upon the tissues of the apple limb for its food. Entering through a small injury in the bark, the fungus gradually grows, throwing out a thread here and there until it occupies a large area of the branch. Up to this time there will be no blisters, but the limb might show wilted leaves, if the fungus has girdled the branch.

The fruiting stage is then produced. This is the stage in which the fungus is carried from limb to limb. The fruiting stage consists of the warty growth mentioned above, and this warty growth is honey-combed with a great number of small and regular pits which are shaped like a long-necked bottle or flask. In each flask-shaped chamber great numbers of little sacks are formed, and each sack contains a number of spores. The spore is the part of this minute anatomy with which the fruit-grower is concerned for this is the little body which carries the disease from one limb to another, from one tree to another, and from one orchard to another. These spores are as light as motes in the air, and are blown by the wind from a diseased branch, and with many such branches in an orchard a chance for a severe attack is very great.

The only control for this disease, which can be readily practiced, is careful cutting out. Such a method of handling plant diseases has been known for ages. The Chinese gardeners, 2,000 years before the birth of Christ, practiced this sort of control for similar diseases. The horticulturist practices this same sort of control when he cuts out pear-blight cankers. This fungus grows and produces spores on limbs that are cut from the trees, and hence material that is cut from the orchard should be burned. The first requisite in the control of this disease is to recognize a diseased limb, and in pruning such limbs should be selected. Make these cuts flush with the larger branch so that healing will not be obstructed. The cut surface must be covered to prevent spores of this fungus and the general heart-rots from entering. Many substances have been suggested for this work, but the matter is in the experimental stage as yet, and it seems safest to advise the use of good white lead paint, applied thoroughly, and frequently renewed. If one is painting these stubs for beauty, he may use the fancy colored ready-mixed paints and paint but once; but if he wants protection against the fungous enemies, he must use paint of a good body, and renew it frequently.

Although this disease is common in Nebraska, Illinois, and Ohio, it has been found only once in Michigan. This instance was noted by the writer last spring, when some limbs were found in an old orchard near the college. These limbs were some that had been removed the fall previous, and a careful search failed to show any extensive working of the disease. Therefore, a word of explanation must be said in this connection. We have here a disease which is very common and destructive in states south of Michigan, yet it has been found only once in the state, and no fruit grower in Michigan has, to my knowledge, complained of its ravages. It would seem then, that although the fungus occurs in the state and may be widespread, so far the damage has been slight or has been overlooked.

It is my opinion that the more northern states are less affected by this fungus than are the southern states, and



Section of Apple Tree Limb Affected with Illinois, or "Blister Canker."

this opinion has some confirmation in the statement made to me by Professor Lewis, of the Maine Experiment Station, who says that the fungus occurs in Maine, but does no great amount of damage.

We must remember that a whole range of conditions is presented in Michigan. Many of the orchards in the southern parts are under climatic conditions, not essentially different from Ohio, and it may be that the fungus is doing damage in that section. It certainly would be well worth the horticulturist's time and trouble to inspect his orchard carefully, and if he finds suspicious cankers to send them to the Department of Botany at the college for examination. This examination will be made free of charge, and if the disease is found, a personal inspection will be arranged, if possible. A careful inspection of your trees and a verification of your suspicions will be well worth your time and trouble.

Mich. Ag. Col. G. H. COONS.

AMONG OUR STRAWBERRY PLANTS IN SUMMER TIME.

Frequent cultivation the remainder of the summer will fit the strawberry bed for its next year's work. The plants should now be thriving luxuriantly. The condition of the plants at this time is a pretty good indication of what the harvest will be next summer. To secure a strong healthy growth, frequent cultivation keeps the ground free of weeds and conserves soil moisture for the use of the plants. This insures a mellow, friable and well aerated condition of soil so conducive to both soil and plant life. To maintain the highest efficiency in this respect requires soil stirring as often as once a week, and in some instances as often as once every fourth or fifth day. There are times when a shower makes a stirring necessary only one or two days after the regular cultivation. One can not have any set rule for a guide. Not for one single day must the sun be allowed to pump water unhindered from the soil; if one desires and expects to obtain the best and most profitable results.

In strawberry culture I prefer the hedge row, over all others. First, this style of row permits the working of the maximum amount of the surface of the

field with horse tools. This makes a saving of both time and muscle. With any of the matter row plans, the weed nuisance is often serious. Second, the greatest crops of highest quality are to be secured by this plan of row, as each plant is allowed room for full development. Third, a field of plants in the double-hedge row makes a more beautiful picture than any of the other plans of culture.

We must keep the weeds out if we would have the plants do their best. Weeds draw largely on soil moisture and fertility. Weeds also rob the legitimate plants of sunshine, and sunshine is indispensable in bringing about the proper chemical changes in the plant food elements which take place in the leaves.

Shallow cultivation should be the rule from this time on. The strawberry plant is a surface feeder; hence, deep cultivation will prevent the natural growth and therefore the normal development of the plants. One or one and one-half inches of stirred soil is the depth we endeavor to maintain.

We take considerable pains to have the plants properly spaced in the row. It is our practice to place each plant where it is needed, pressing it lightly into the soil, so that it may root quickly. Sometimes it is advisable to place a lump or bit of earth on the runner just back of the plant to secure it in position while rooting. With our style of row this hand spacing is necessary to secure perfectly lined rows. With the matted row, it is not necessary to be so particular with this spacing. Many of the plants may be set with a hoe. Then, too, a proper manipulation of the cultivator may be made to simplify this work. The method is as follows: The cultivator is run the same direction in the row throughout the season. At first the soil is worked close to the original row of plants. Now the outside tooth leaves a shallow furrow and, as the runners push out they will grow out over this. Some of the plants will naturally find a congenial place in the trench where they quickly take root. At the next cultivation the cultivator should be narrowed so that the teeth will fill the first trench while leaving another a few inches farther out. The same operation pushes those runners which have grown out where they are not at present needed, back into line with those that have already rooted. A small-toothed cultivator should be used and shallow cultivation given.

After a sufficient number of plants have set to properly fill in the rows it is best to remove surplus runners as fast as they appear. By so doing the entire energy of the plants is centered in building a large and strong bud system. All extra plants are as so many weeds. They rob the soil of moisture and plant food and crowd plants that would do well if given more room.

A satisfactory method for clipping off surplus runners is to draw a rolling cutter along each side of the rows. This severs the runners that extend across its path. The cutter may be drawn or pushed by hand, or it may be attached to the cultivator.

Emmett Co. M. N. EDGERTON.

THE PRODUCTION OF PLUMS AND PRUNES IN THE UNITED STATES.

The last census shows that during the year of 1910 there were over 23,000,000 plum and prune trees of bearing age in the United States. These trees produced in the preceding year, that is 1909, over 15,000,000 bushels of these fruits having a valuation of over \$10,000,000. The three Pacific states, California, Washington and Oregon produced by far the greater amount of these fruits, due largely to the heavier acreage of prunes in that section of the country. Michigan is the eighth state in the Union in the amount of production, ninth state in the number of bearing trees and eighth state in the value of the crop for 1910.

It might be noted here that the number of bearing trees for 1910 is 7,000,000 short of the number reported on June 1, 1900, ten years earlier. On the other hand, the production of fruit for 1909 was nearly double the production for 1899. In the year of 1909 the number of bushels harvested amounted to 8,764,032.

CATALOG NOTICE.

Henderson's Midsummer Catalog for 1912, issued by Peter Henderson & Co., 35-37 Cortlandt street, New York, is a 40-page illustrated catalog of strawberry plants, vegetable seeds for summer growing, forage and grain seeds, perennial flower seeds, etc.

SALLOW FACES

Often Caused by Tea and Coffee Drinking

How many persons realize that tea and coffee so disturb digestion that they produce a muddy, yellow complexion?

A ten days' trial of Postum has proven a means, in thousands of cases, of clearing up a bad complexion.

A Washn. young lady tells her experience:

"All of us—father, mother, sister and brother—had used tea and coffee for many years until finally we all had stomach troubles more or less.

"We all were sallow and troubled with pimples, breath bad, disagreeable taste in the mouth, and all of us simply so many bundles of nerves.

"We didn't realize that tea and coffee caused the trouble until one day we ran out of coffee and went to borrow some from a neighbor. She gave us some Postum and told us to try that.

"Although we started to make it, we all felt sure we would be sick if we missed our strong coffee, but we tried Postum and were surprised to find it delicious.

"We read the statements on the pkg., got more and in a month and a half you wouldn't have known us. We all were able to digest our food without any trouble, each one's skin became clear, tongues cleaned off, and nerves in fine condition. We never use anything now but Postum. There is nothing like it." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

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

A Plowing Outfit That Backs Up and Turns Square Corners.

We guarantee to pull four plows under all conditions. Drawbar H. P. is what the farmer needs. We have it. Weight, 8,000 lbs. ALL STEEL.

Our printed matter will interest you. Write us.

BATES TRACTION COMPANY, Bates Street, Lansing, Mich.

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All northern grown, guaranteed to be 99 percent pure and free from dodder. Write for free sample on which we invite you to get Government tests. This seed should produce hay at \$80 per acre annually. Free instructions on growing.

Grain and Grass Seed

Northern grown and of strongest vitality. We handle export grade only and can furnish grass mixture suitable for any soils. Write for catalog.

WING SEED CO., Box 242, Mechanicsburg, O.

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15c PER ROD
buys this High Grade Hog Fencing; heavier than usual kinds offered. 26 inches high, 7 bars, weighs about 6 lbs. to a rod, all heights at proportionate prices. 48 inch Poultry Fencing, 27c strongest built, per rod.
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This price is for No. 6 gauge. Other sizes in proportion. This is our Galvanized Wire Shorter, put up 100 lbs. to a bundle, suitable for fencing and general purposes.
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Best and strongest; standard weight. Made of No. 12 gauge, galvanized, put up 100 lbs. to a reel, per 100 lbs. **\$1.95**
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We manufacture the very best quality of Steel Roofing, in V Crimp, Corrugated, Pressed Standing Seam or Roll and Gap Roofing.

We can save you money. Write us for prices. Agents Wanted.

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MENTION the Michigan Farmer when writing to our advertisers.

GRANGE

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

GRANGE TO PROMOTE AGRICULTURAL DEVELOPMENT.

A movement having as its object the advertisement of the agricultural resources of Kalkaska county had its beginning at a meeting of Kalkaska Pomona Grange held May 21 last. This meeting was held with Excelsior Grange in Excelsior's comfortable Grange home, the hall and the group of progressive patrons responsible for the movement being shown in the photograph reproduced upon this page. A committee was appointed to prepare plans for waging an effective campaign for the fuller development of the county in an agricultural way. The Master of this Pomona is D. P. Rosenberg and the secretary, Mrs. M. E. Beebe.

NEW GRANGES IN THE VARIOUS STATES.

In National Secretary Freeman's report of Granges organized and re-organized from April 1 to June 30, 1912, Pennsylvania, Ohio and Washington show up strongly, while the newer Grange states of Montana, South Dakota, Kansas and others are making encouraging growth. The report for the quarter named is as follows:

Organized.	
Colorado	5
Delaware	1
Idaho	3
Indiana	3
Iowa	2
Kansas	7
Kentucky	2
Massachusetts ..	2
Michigan	9
Minnesota	1
Montana	9
Nebraska	8
New York	1
Ohio	15
Oregon	7
Pennsylvania	23
South Dakota	7
Washington	15
Wisconsin	9
Wyoming	1
Total	130
Re-Organized.	
Michigan	2
Ohio	1
Pennsylvania	2
South Dakota	3
Washington	3
West Virginia ..	2
Wisconsin	1
Total	15

AMONG THE LIVE GRANGES.

A Volunteer Program, in the absence of the lecturer, was a feature of the last meeting of Harmony Grange, of Charlevoix county. Two candidates were given degrees and the finance committee's report showed more than \$30 in the treasury.

Harmony Grange, of Wayne county, initiated 16 new members at its last

meeting. Fourth of July orations, most of which, however, were along lines, similar to those followed by the sisters. The latter, acting as judges, gave first place to M. C. Oviatt by a narrow margin. A beautiful mounted United States flag was presented to Mrs. Evans and a handsome piece of statuary to Mr. Oviatt.

Morenci Grange held a Fourth of July picnic at the pleasant home of Bro. and Sister Ira Smith, with 130 present. A basket dinner on the lawn, music and athletic events, including a ball game, were features of the day's entertainment.

Charlevoix Pomona met June 27 with South Arm Grange. There was a good attendance from a comparatively small number of Granges, there being seven Granges represented out of a total of 17 in the county. Good roads was the principal topic discussed. After the present proposition had been fully explained by Commissioner H. L. Olney and others the sentiment seemed to favor the proposition but still opposed the original proposition. It was decided to go on with the building of the Grange rest room on the fair grounds and, on motion, the master of the several Granges were appointed a committee to collect funds for the purpose. The building is to be 24x40 ft. and the amount of money still needed is \$175. Contributions to the fund may be sent to Sec. L. D. Willson, of Boyne City, or to Peter Knudson, of East Jordan. The entertainment offered by the members of South Arm Grange was of the highest order, chicken pie and strawberries and cream being leading features. A musical program closed the exercises in the evening. The next meeting will be held with Bay Shore Grange, Aug. 22.—L. D. Willson, Sec.

Eaton Pomona was entertained by Oneida Grange in June, the attendance and program combining to make it one of the best meetings ever held by the county organization. A prominent program feature was an excellent address by T. A. Farrand, who is recognized as the apple king of Michigan. Mr. Farrand holds that if enough farmers in any given locality will produce enough good apples, buyers will come to that locality and insure a ready market for the product; that there are several good methods of marketing the crop and the farmer should adopt one of these and stick to it; that the farmer should familiarize himself with the written contracts before signing same; that the farmer should understand grading his apples; that selling on the tree offers the best method to the farmer of disposing of his stock and will give him the greatest amount of clear profit; that the farmer should be honest in his packing and not put the good ones at the top and the inferior stock at the bottom; that honesty is the best policy and applies to selling apples as much as it does to any other line of business, and that spraying is of vital importance to the profitable production of apples. "The Hub of the Wheel" was assigned to Mrs. Dora Stockman, of Capital Grange, and the many apt sayings of the speaker made a most favorable impression. Mrs. Stockman said she was not a suffragette and described a suffragette as a woman who could throw a stone and hit a window, but admitted that inasmuch as each saloonkeeper had agreed to furnish 25 votes against woman suffrage she was for it. She maintained

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

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Associational Motto.—

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

Associational Sentiment.—

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

SUMMER PICNICS.

The annual picnic of the Washington Center Farmers' Club will be held Aug. 8, in the grove on the farm of its president, Mr. F. L. Cook. Club members and the neighborhood are cordially invited to join the procession and go to the picnic.

THE AMERICAN GOVERNMENT.

(Continued from last week.)

Paper read by Valois B. Todd at the March meeting of the North Shade Farmers' Club, of Gratiot county. Published by request of Club.

Another thing which has been the cause of a great deal of graft and corruption in the government is the strong party affiliation and partisan feeling which has drifted down from the high strung passions of the Civil War, but which we believe is diminishing to a large extent. One of the most prominent men in our national life says, "Old party names have lost much of their persuasiveness; men must think for themselves, and in that fact lies the great hope for the future of the nation. The principles and character of no party can ever rise above the principles and character of those in control of its organization. Parties have come into power as the advocate of popular rights and the opponents of the privileged class, and their organizations have been seized by the political representatives of private financial and industrial powers and through their various public agencies have been used for private gains, rather than for the public welfare. Special interests secure control of a party organization and while its orators outwardly dwell upon the glories of the past and inspire the people with the fervor of patriotic loyalty the corruption interests are bribing, bossing and thieving within. This old party prejudice is many times so strong that it obscures the vision and warps the judgment. The voter has his eyes so firmly fixed on the party name that he tramples all righteous principle under his feet.

The progress which our nation has made in a material sense is far beyond anything the world has ever witnessed. It has swept from the Atlantic to the Pacific in one great homogeneous republic. When we consider the extent of its domains, its genial climate, its great natural resources, its industries and ambitious people, we realize it could not help but be the richest and most powerful nation on earth. Some few years ago when the question of imperialism was being discussed some of its advocates declared that this nation was in the hands of destiny. That is somewhat different than it was expressed by George Washington, when this government was starting on its career. He said: "The destiny of a republican form of government is in the hands of the American people."

We must not mistake mere bigness for greatness. We can look back and see Rome rise to be the only great world power; see her pass from a republic to an empire; see her wealth concentrated in the hands of the few; see her given over to ease, pleasure and luxury and the weakness and decay which rapidly followed. The methods of our government might be reversed and all the principles upon which it was founded be repudiated, all its sacred memories of the past ignored, and still the country would be here with its hundred millions of inhabitants, with all its vast structural work still standing. The sun would still be shining, the rain would fall and bring forth the abundant harvest of the earth. The character of a nation cannot be maintained simply by material prosperity. It is only as we adhere strictly to those fundamental principles of equitable and just government as laid down by the founders of our nation that we will make progress that is worth while.

As we look at the signs of the times we take an optimistic view of the situation. We see the people waking up to perils which threaten the government. That old partisan spirit which has been a stumbling block to good government so long is dying out, the people are becoming citizens, instead of partisans. We see great intellectual men, champions of popular government, taking the initiative in the affairs of the nation, throwing consternation into the ranks of special interests. There is great prosecution of graft in city, state and nation of those who take unlawful advantage of the public. One progress which we are making toward a more perfect government by the people is the substitution of the primary election for the old political convention which was one of the strongholds of the special privilege seeking, money power. The voter would not be willing to delegate his right to vote the ticket, then why should he delegate his right to make it, which is of equal importance. The initiative, the referendum and the recall, which have been adopted by several of the states and which we believe will soon be adopted by the entire nation, are measures which will a great deal more thoroughly restore the sovereignty of the government to the people. Whatever our prosperity and progress may be, we must ever keep in mind that saying of Samuel Adams, "Eternal vigilance is the price of liberty."

CLUB DISCUSSIONS.

Will Take Summer Vacation.—The Salem Farmers' Club held its July meeting at the pleasant home of Mr. and Mrs. Mortimer Osborn. About 40 guests assembled and enjoyed the social hour, the bountiful dinner and the program, which was excellent but short, consisting of music by the young ladies choir, which was much enjoyed, and a fine paper by Robt. Ross, on "Practical Patriotism," showing us how far we have fallen from the high standards of patriotism which inspired the founders of our great republic. It was voted that the entire paper be sent to the Michigan Farmer for publication. Club will take a vacation until Sept. 4.

Discuss Woman Suffrage.—The Salem Farmers' Club held its June meeting at the pleasant home of Mr. and Mrs. Webb Lane. Music by our old friends, Mr. and Mrs. Wm. Stanko, was much enjoyed. Also a solo by Mrs. H. Munn. The principal feature of the day was a question box, conducted by Chas. Ross. The speaker called upon the president of the W. C. T. U. for an answer to the question, "Shall we men vote to give the women of the country the ballot?" Mrs. Thompson answered decidedly in the affirmative. "The mothers of this nation have as good a right to say what laws shall govern them and their children as the ignorant foreigner—who knows nothing about our institutions or needs. Mrs. Alice Lane and Mrs. Maxwell also spoke on the affirmative of this question, the latter having resided formerly in the state of Kansas and enjoyed there the privileges of an American citizen. Mr. Chas. Ross added the thought that the present corruption in politics would, he believed, be largely remedied by the vote of the women.

Practical Topics.—Another question, "Which is more profitable, dairying, or raising and fattening cattle for the market?" was largely discussed. Mr. Chas. Ross, Mr. John Asplin and others spoke in favor of the fat cattle interest, while Mr. Gilbert Thompson and others spoke enthusiastically for the dairy business. "How to exterminate rats," was then discussed. Chas. Ross told of an experiment in digging a trench in their runway, covering it and in this way had killed 67 rats. This was the best record shown, though Erastus Perkins said the hired man had killed 60 with the dog. Also, Mr. Asplin knew of someone who had killed 14 at one shot. Gilbert Thompson said they had got a lot of cats which exterminated the rats, but now they don't know what to do with the cats.

Farm Comforts.—The Napoleon Farmers' Club met at Lake View, the pleasant home of Mr. and Mrs. Eugene Bromley, Saturday, June 15. The meeting was opened with the regular order of business. It was decided to go to Eagle Point, Clark's Lake, for the annual picnic, and have a pot luck dinner, the Club to furnish lemonade. Roy Hatt then read an excellent paper which we give in part: "Is money spent on farm comforts, not strictly necessities, a good investment?" I will answer the question, yes, because I think that money paid out for home comforts is money well spent. The farmer is, or should be, at home the greater portion of his time, therefore farmers without home comforts are in discomfort most of their time. There is no better way to keep the young folks on the farm than to keep the home well supplied with such things. If we want it and can afford it the proper thing to do is to get it. I do not think it a good policy to buy something just for a home comfort that we cannot afford, for in so doing you are running a chance of making yourself more uncomfortable than before." Following the discussion of this paper, Mr. Ellison, of the Summit Club, made a few remarks, after which the Club adjourned to partake of a most delicious supper consisting of strawberries and hosts of other good things.



Charlevoix Pomona Patrons at Excelsior Grange Hall, where the Movement for Greater Agricultural Development in the County was Started.

meeting in June. A good program, to be in charge of Flora, was arranged for the meeting of July 6, the married patrons to answer roll call by naming favorite flowers, and the unmarried by giving quotations about flowers.

An Oratorical Contest will be the feature of a joint meeting of Nunica Grange and Coopersville on July 27. Nunica patrons recently closed a successful membership contest and has a lot of initiatory work to perform at meetings of the near future.

Grand Traverse's Patriotic Program took the form of an oratorical contest, or, rather, a contest for the sisters and one for the brothers. The former were given the floor first and each had her say upon the topic, "Votes for Women," some presenting arguments in a forceful way while others contented themselves with a mere statement of their personal beliefs upon the subject. The brothers, as judges, passed upon the merits of the several efforts, awarding the honors to Mrs. E. A. Evans. The brothers had pre-

pared that farmers have become the hub of the wheel and that agriculture is the basis of every government; India has exhausted its soil, hence famines exist and we have to help; China is the only country that has conserved its soil and can feed its millions; rebellion and revolution follow the exhaustion of the soil.

COMING EVENTS.

Pomona Meetings.

Lenawee Co., with Fruit Ridge Grange, Thursday, Aug. 1. J. C. Ketchan, state speaker.
Allegan Co., with Gun Plains Grange, Thursday, July 28.
Kent Co., at John Ball park, Wednesday, Aug. 14. Picnic dinner, address by National Grange speaker, and athletic program.
Charlevoix Co., with Bay Shore Grange, Thursday, Aug. 22.
Ingham Co., with Leroy Grange, at farm home of Mr. and Mrs. Clyde Putnam, Friday, Aug. 23.

IS IT PROFITABLE TO PEDDLE MILK AT SEVEN CENTS PER QUART?

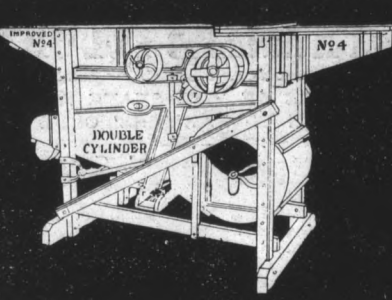
(Continued from page 41).

has got to be "Johnny on the spot," day in and day out, rain or shine, cold or hot. It is an everlasting job, a painstaking job, a job which you are never through with, your nose is on the grindstone every day of the year, year in and year out. The past year, if you have been producing five per cent milk you could realize on an average 30 cents a pound for the butter-fat or \$1.50 for the butter-fat from 100 lbs. of five per cent milk, and the skim-milk is certainly worth 20 cents per 100 lbs. or 25 cents per 100 lbs. for feed to pigs or to calves, so your milk would net you \$1.75 per 100 lbs. In this case the cost of production is materially less than is the cost of marketing the milk, and the expense of marketing is almost nothing compared to that of peddling milk. At seven cents per quart the gross returns will be something like \$3.50 per 100 lbs. if it is bottled and delivered. The money collected in ordinary dairying where the farmer skims his milk and sells the cream he gets something like \$1.75 per 100 lbs. for five per cent milk. You therefore would be going to the extra labor of producing extra clean milk, bottling it, and delivering it every day to your customers from house to house for \$1.75 per 100 lbs. That is the only way you can figure this. It is the labor problem extra.

The farmer who produces butter-fat can produce this butter-fat or the milk cheaper than you can if he is a good farmer, because he can get a cheaper ration. You are simply in the marketing business and you have got to take this milk after you produce it and deliver it to your customers in town for \$1.75 per 100 lbs. consequently you have got to figure on the cost of delivery. It costs money to deliver milk every day, rain or shine, over all kinds of roads and in all kinds of weather. You have got to figure on losing a portion of it because you will trust out some of it to patrons and lose it. You will start out upon the policy that you won't; but you will, everybody does. You will need a more expensive outfit. The milk ought to be bottled on the farm. I would not advise you to undertake to sell milk in the city without doing this, that's where it ought to be bottled. You can't hold your good trade unless it is bottled on the farm, because the city consumer now demands a good quality of milk, and you can't give them a good quality of milk unless you bottle it on the farm where it is produced and keep it away from the air and the dirt until it is delivered into your customers' hands. You ought not to go into the market milk business unless you are willing to do this.

Perhaps in a short time you could get eight or ten cents a quart for your milk. I believe you could if people were thoroughly satisfied that you gave them a superior article of milk, and the expense would not be very much more in delivering that kind of milk over and above what it is for delivering just ordinary milk. The delivering has to be done just the same. It doesn't cost any more for delivering certified milk or clean milk that is carefully produced and bottled on the farm than it does milk carelessly produced and delivered in bulk. The cost of production is a little bit more but you could charge more for this extra cost of production. However, this cost of production is liable to be more than you think if you have never been in the business. It costs money to go to town every morning in the year. Horses can't stand it, men can't stand it, or won't, wagons wear out, bottles are lost and your business at home gets away from you. Take it all in all, it is more expensive than you figure on, and yet if you are healthy and willing to do the work I believe that you can make some money in the production of milk and selling it for seven cents a quart. I would get eight, however, if I could, because a superior quality of milk will usually give you a wider margin of profit.

The good dairyman watches closely the condition of his pasture lots during the months of July and August. A few hot, dry days may reduce the available feed to a point where the animals cannot supply the bodily wants and keep up their flow of milk. With feeds so expensive all possible precautions against waste need to be taken, but at the same time profits are greater when the cows are fed liberally. To prevent the first and supply the second condition is the dairyman's aim.



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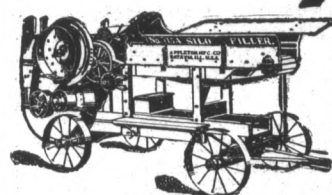
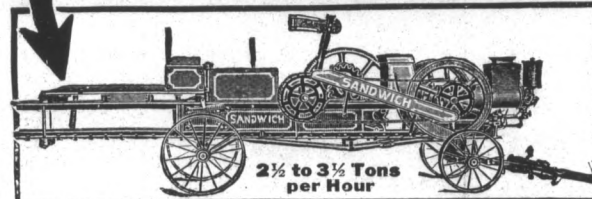
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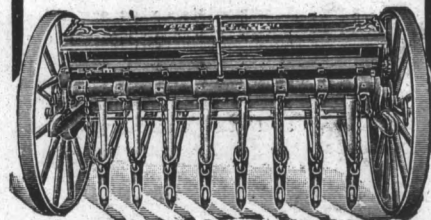
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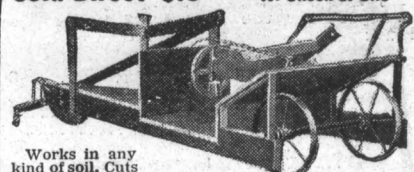
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