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The Army Worm and its Natural Enemy.

THE appearance of the army worm in a number of widely scattered localities in the best agricultural sections of Michigan has caused widespread apprehension on the part of very many farmers, and rather serious loss to a few whose oat crop has been attacked by this worm during recent weeks.

The first reports of serious damage from this pest came to hand just as the forms for the last issue of The Farmer were being closed. Among these reports was one from a Huron county farmer, who states that several fields of grain in his vicinity had been badly injured by the ravages of the army worm. In looking for the worm in his own fields, he made a discovery which will be most reassuring to others who have had serious apprehensions with regard to the damage which might result to other crops through the outbreak of this insect. He found thousands of small, light, silky cocoons in his fields, some attached to grain stalks, but mostly lying secluded under lumps of earth and pieces of old sod. He collected a number of these specimens and sent them to The Farmer for identification. When they arrived, small winged insects were emerging from them, and in order to make certain of their identity, the specimens were at once forwarded to Prof. Pettit, Entomologist of the State Experiment Station, requesting him to prepare a statement regarding their identity, their connection, if any, with the outbreak of the army worm, together with a brief history of the life of this insect and the causes which contributed to its present outbreak.

His response to this request is not only interesting, but most reassuring to the farmers of Michigan who have had grave apprehensions with regard to the prospect of general serious consequences from the unusual prevalence of the army worm in many localities of the state at this time. Prof. Pettit's statement follows:

A Parasite Which is the Natural Enemy of the Army Worm.

The little box of cocoons is the most reassuring thing that I have seen since the army worm came this time. These little light-colored objects, which look like kernels of grain, only smaller, are the cocoons of a parasite which develops in the body of the army worm. At the time when they arrived, the adults were coming out. A close examination of the little cocoons that you send shows them to be made of silk and, in fact, to be miniature cocoons. Each of these cocoons will produce, or rather is producing a tiny wasp-like insect, belonging to the family of Braconidae, and known as Microgaster. The females of this numerous family will lay their eggs in the skins of the army worms, searching out those not already attended to, and these eggs in hatching will produce grubs in the bodies of the pests that will literally eat them alive, only eating them from the inside, out of sight. Each one of

these grubs eventually eats its way out of the "worm" and spins another little cocoon like the ones sent, and this goes on until the army worms are so hard to find that the parasites themselves find it hard to make a living.

Story of the Army Worm.

The reason for the present epidemic of army worms is merely that these and other species of parasites (notably tachina-flies) failed to make good in the business of killing off the "worms" and the worms managed to get the start of them. It came about in this way:

The parasites are all of them very

calamity when this balance is upset from any cause.

Briefly, the army worm develops as follows: There are three generations each year, one in April and May, one in July and one in September. The one in July usually does all the damage. The eggs are laid in low places by preference and the winter is passed in all stages, though mostly in the larval and pupal stages. The larvae or "worms" have the habit of cutting worms, and cut off leaves from grasses and grains, at night, wilting them and eating them on the following night. They work so secretly that one

is apt to overlook their presence in

is, if it is only green. In a few days, they get their full size and then each one burrows into the soil and changes to the resting stage (corresponding to the cocoon stage of many insects) and then after a short time more each one of these pupae in the soil gives up a moth, of a general clay color and measuring about an inch and a half across the extended wings. The moths mate and lay their eggs for the next generation.

The Control.

When an army of these worms gets possession of an oat field it is usually impossible to do more than to keep them from spreading or marching to new ground. They are discovered so late in the day that quick work is imperative, and the method is to place a barrier around the army. Sometimes tarred boards are set on edge around the place, but the quickest, and when practicable, the cheapest way is to plow a furrow around the place, turning the furrow toward the worms, so that when they fall in in trying to march, they find the smooth side of the furrow like a wall before them. They do not climb well on soil, but if the army is large, they will quickly fill the furrow with their bodies and crawl across on each other. To prevent this a second furrow is put in parallel to the first and about six or more feet away, to catch the ones that get by the first, and sometimes a third furrow is necessary. When any of the furrows get half full it is well to turn them under, leaving a fresh furrow to be filled. As the creatures work at night, this makes the work more difficult.

Sometimes they get past the furrows and then it is necessary to poison them. The poison used is made of one pound of Paris green, 20 lbs. of bran, half a gallon of molasses and enough water to moisten the mass somewhat. To this is added three oranges ground fine, skins and all, in a food chopper, and the whole is broadcast over several acres. This was first tried out on grasshoppers in Kansas by Prof. Deane, of the Kansas Experiment Station, and succeeded perfectly last year against the hoppers. It seems to be doing well against the army worm as well.

Sometimes the soil is so loose, mucky or sandy, that one can not plow a smooth deep furrow, then it is well to get in a deep furrow or ditch and to drag a short log back and forth along it to crush the "worms" as they accumulate.

Finally, the writer has never seen army worms appear twice in succession in any one place, because the parasites have always been able to deal with them. It is, of course, possible, but so improbable, as to amount almost to certainty. If they do appear in small numbers in September, it is more likely to be in places at a distance from the present epidemics. The trouble seems widespread, not only in lower Michigan but in some of the other states. R. H. PETTIT, Entomologist of Experiment Station.



A Welcome Call Summoning the Hungry Harvest Hands to Dinner.

sensitive to temperature, and the cold wet weather during early spring, prevented them from keeping up with the "worms" of the first generation. The army worm has three generations each year. This failure of the parasites to appear in time allowed the pests to get a start, which produced an enormous crop in the second generation, the one now at work. The presence of the parasites which you have sent in, and which have also been received from other parts of the state, shows, however, that the parasites are about to resume control. It is all a matter of the maintenance of a balance between a pest and its natural enemies, and the danger of a not very particular as to what the find

COST FINDING AGAIN.

Mr. Peck's informing article on "Cost Finding," in the Michigan Farmer of July 25, has a logical conclusion. The gentleman is on the "honor roll" of the internal revenue office. His article brings convincing evidence of the student, and yet I am surprised that he should say: "I refuse to recognize any such thing as productive hours," and yet he confesses elsewhere that "I realize my labor costs for 1911 are low," and explains why. In other words, "productive hours" and "unproductive hours" cannot be left out of the equation—in fact, there is no adequate cost finding without them. Mr. Peck's own explanations prove this.

Cost finding is more than bookkeeping—it is in a different realm—that of higher accountancy. As yet it is not an exact science. We are all groping our way. Each line of business has its own line of special problems, but gradually there is working out basic principles which must and do govern all cost finding.

One great difficulty with Mr. Peck is, he seemingly does not differentiate between his own profit and loss account and cost finding on his farm. Strictly speaking, the farm must be treated as a separate entity. It should be charged with all items of expense and service rendered and credited with all earnings whether crops grown or appreciation in values.

One of the rarest qualities of mind is that of efficient executive ability. Mr. Peck has surely this quality, and the farm gets full advantage of his superior ability and studious experience—for nothing, so he says. This is not real cost finding. True, it makes no real difference in Mr. Peck's annual report to the collector of his income tax, but we are discussing cost finding on his farm and not the net "washout" of Mr. Peck's personal investments.

Again, I wish to take issue with his statement, "it is no longer customary in the best practice to charge interest on the investment." If real costs are desired it must be taken into consideration. He does not neglect to take interest on borrowed money into consideration. Neither should the basic investment be left out. Cost finding and profit finding are two different things, although closely related. In the yearly balance sheet interest on investment "washes out" on the profit side of the ledger, but it is a legitimate charge against overhead in finding costs. The money invested might be earning six per cent elsewhere if it were not employed as the basic investment. So, too, might Mr. Peck be drawing a handsome salary elsewhere if his farm did not demand his personal time and attention. In both cases he would be compelled to add these earnings in his income tax statement.

As I stated in my previous article, hour costs vary widely at times, depending largely upon the ability of the management to keep constructively employed the man, beast and machinery elements of the farm organization. Weather and seasons have their influence, as do many other things, so that costs are generally estimated on averages for months or years. Such a thing as a positive pre-knowledge of costs cannot be, unless a person is willing to deceive himself and then he does not know—he only thinks he knows, which is always dangerous and generally expensive.

Here is the difficulty with human-kind. We are always tender with our own delinquencies. We estimate on the basis of overly favorable conditions and imagine the year will wash out on the same basis—but it seldom does.

It requires a man of courage to handle cost finding. Even so fair a man as Mr. Peck frankly acknowledges that he arbitrarily arrives at certain hour basis and refuses to entertain

other vital requirements in arriving at cold facts.

Understand me, I do not wish to be too severe with Mr. Peck because I have a very high opinion of the man and his method. He is the most advanced along this new road of any farmer I have yet come to know of. He certainly has been a student, and I sincerely hope he will keep an open mind, as there is much for us all yet to learn. Theory and experience must go hand in hand. Comparisons should be had with other lines of industry as the whole business fabric is at school just now along these same lines. Cost finding is absolutely essential to successful business. When we learn our cots there will be many readjustments in farming as there has been in every other business where it has cold-bloodedly pointed out unknown washes and leaks that kept the business on the "ragged edge of despair."

When there are more men like Mr. Peck a sort of standard hour cost can be established, but no one can afford to do business on any basis save his own known hour costs. The standard hour cost will simply be a standard to work to or work by. The great problem is to make your own hour costs as low as they should be and herein Mr. Peck can be of great service to the great American farm constituency if he will be honest with himself—will charge his own farm with all legitimate items of expense—which includes a reasonable salary for himself and interest on the investment—and will take up the matter of "productive hours" and "unproductive hours," for here is the crux of the whole matter. Most farmers win or lost right here. Efficient management is the secret of loss or gain.

I am sure Mr. Peck will get great profit in the study of the law of average. Big business has come to respect it, and even reverence it. Government statistics are being built on it more and more. It is about the only safe guide we have but we must have accurate figures on which to formulate that law. Otherwise it will be a case of "the blind leading the blind," and we have had too much of that already. What you want, and I want, is the truth, and to use a scriptural phrase, "the truth will make you free"—which is true in the material world as well as the spiritual.

My only thought in this matter is to help others arrive at the basis of fact. I hope some day I may have the privilege of discussing these matters with Mr. Peck face to face.

Wayne Co.

A. H. FINN.

FARM NOTES.

Eradicating Bindweed.

Under a separate cover I send you a sample of a weed I found on my place. Would you tell me the name of the plant and something of its nature and the best way to exterminate it? I have only a small patch. It seems harder to keep subdued than quack grass.

Clinton Co.

W. B.

The specimen enclosed was *Convolvulus Arvensis*, (L) commonly known as field bindweed. This is a very troublesome perennial weed with extensive creeping roots which penetrate far into the soil, and any piece which contains a bud is capable of starting new plants, hence this weed is very rapidly spread by ordinary implements used in working a field where it is present. Where the weed is present in small patches only, it is best to eradicate it by frequent hoeing of the plants as soon as they make their appearance above ground. Where it becomes well distributed over a field, the best way to keep it in check is by the frequent use of late planted hoed crops in a short rotation. The use of late planted crops enables the cultivation of the field earlier in the season with thistle sweeps, while hand hoeing of the crop will aid in destroying the plants which survive this early cultivation. In extreme cases it is sometimes necessary

to summer fallow the land, in which case the weed may be subdued by sowing buckwheat in the fallow and plowing under when coming into bloom, after which surface cultivation of the summer fallow will generally completely eradicate the plants. If necessary, the field may be devoted to a hoed crop after this treatment.

Applying Lime to Alfalfa.

I have a five-acre field of alfalfa which I seeded last June 13. The heavy soil is doing fine but the light part is yellow and does not grow. Have cut it once and heavy soil stands six inches high now, but the light soil seems to have still a yellow cast and does not grow. Do you think caustic lime applied to yellow would help it any. If so, advise how much and how. Would hardwood ashes be of any account? If so, how much? Am satisfied the soil is sour, as I have tried the litmus paper test.

Clare Co.

D. U. W.

There is little doubt that the poor condition of this alfalfa on the light soil is due to an acid condition of the soil which is unfavorable to growth of the bacteria necessary for the best development of the plants. Whether an application of lime to this seeding will obviate this trouble or not can only be told by experiment. The writer has tried it in one instance with apparent success, applying about 500 pounds per acre of caustic lime broadcast upon the surface. This application should, of course, be made when the plants are not wet, so as to prevent possible injury to them. The application of ashes at the rate of a ton or more per acre should prove even more beneficial, as it would supply some plant food as well as lime, although the lime might not give as good results as when applied in a more caustic form. Unquestionably, however, better results in the treatment of an acid soil are secured where the lime is mixed with the soil when it is being fitted for the alfalfa or, better yet, for some previous crop. Carbonate of lime in the form of ground limestone will not give quick results on acid soil unless applied in liberal quantities. The writer has found a light application of say 500 pounds of caustic lime to give more satisfactory results when applied in the spring before seeding, than has an application of two tons per acre of ground limestone.

Sowing Clover on Oat Stubble.

Would it be advisable to sow our oat ground to clover in August without a nurse crop? If so, about what time?

Kalamazoo Co.

B. R. F.

Clover can sometimes be successfully seeded on stubble ground after harvest, depending largely upon moisture conditions which prevail at the time. Unless conditions are favorable so that the seed will germinate quickly and make a good growth before winter, the success of the plant is doubtful. Under favorable conditions, however, many good seedings are secured by this method. One cannot answer the question satisfactorily without a knowledge of soil and climatic conditions at the time the oats are harvested.

LILLIE FARMSTEAD NOTES.

We have had no rain to speak of here since the flood of late June, and today is the 27th of July. One very light shower last Thursday, but not enough to thoroughly lay the dust is, in fact, the only particle of rain we have had the entire month. It has been so dry that my second crop of buckwheat is spotted; so also, is the second crop of corn, both planted after the early peas were harvested. But the major portion of the corn field is doing fine. Some predict it will make as good a growth yet, as any corn. We have it cultivated out once, and you can almost see it grow. Had there been one shower, or had it got onto the buckwheat field a few days earlier, there would have been a promising crop, because there is time for the crop to mature. I am not sure, but buckwheat is the crop to tie

to if one wishes to grow a crop after early peas.

Some people make a business of growing buckwheat every year and think it pays, but I never had much to do with it, never, in fact, only as a catch crop. But why not figure on sowing one field at least every year after the early peas are harvested. One could figure on getting it in by July 1 practically every year. Of course, one could plant late potatoes and be practically sure of a crop, but with potatoes the ground must be plowed, or loosened up so deeply that there is great danger of its drying out too much at this season of the year.

Alfalfa.

The old field of alfalfa is making a surprising growth for the second crop. Even on portions of the field where the June grass has worked in to a considerable extent, the alfalfa is in so vigorous that in many places it is nearly a solid mass of foliage, though the plants are somewhat scattering. It has made a much better growth where I top-dressed it last year with commercial fertilizer. It will take care of about all the manure and fertilizer one cares to give it. My observation so far is that it will pay wonderfully well to feed it, too. We must not expect to take off two to three crops of hay every year and not put some manure back. This is against the natural order of things, and my opinion is that alfalfa will prove to be no exception. I believe the reason why there has been so many failures in the past with this plant is because we have tried to grow it on the poorest fields and without manuring.

The Army Worm.

So far we have not noticed this insect in our neighborhood. But it is within four or five miles of us quite plentifully. Many fields of oats have been injured and one field, I understand, has been entirely destroyed. It has commenced to work on the corn to a slight extent. I am in hopes that it will have run its race before much damage is done.

Late or Sweet Peas.

One variety of late, or sweet peas, has been harvested, and they were almost a total failure. The green aphids seemed to eat the blossoms and some vines had no pods on at all. The field of ten acres only produced 5,000 lbs. of shelled peas. Barely enough to pay for the seed and fertilizer. We have the vines for silage, which will help out some. The other variety is ready to harvest but they are no better, if as good. So striking an average of my entire acreage and the pea crop has not been a very good success. It is certainly disappointing. I have some faith in the crop yet, however, and will try on a more limited scale again. Excessive rains at the wrong time, I am sure, was the principal cause of failure. I don't believe we would have been bothered much with the aphids if it had not been for the rains.

Seed Potatoes.

We have another illustration of the value of whole potatoes for seed. Where those were planted we have a perfect stand, scarcely a hill missing, be it on clay or sand. But the cut seed is quite an imperfect stand. The seed potatoes were taken from the cellar and spread on the barn floor and left there till planting. Every one of the small ones planted whole grew. Many of the pieces of cut seed did not germinate.

Sweet Corn.

Some of my sweet corn is thick enough for ensilage corn. In fact, it is thicker than most people plant their silage corn. The question is, will it ear properly? I want to get a crop of ears from sweet corn and also a crop of stalks for silage. How thick should it be planted to make me the most money? That is what I am trying to find out. We simply must have some silage anyway, but would like to get both.

COLON C. LILLIE.

NORTHERN INDIANA FARM NOTE

Crop Conditions Promising.

In this section, the season thus far has been very favorable to the farmer. While the latter part of June was somewhat droughty, July brought an abundance of rain, although not so much as to seriously interfere with the gathering of the hay crop, or the harvesting of the wheat. The thermal conditions are well up in the nineties, and all crops are making fast headway.

The corn is coming on with wonderful rapidity, and is forming ears under very favorable circumstances. Nearly all the corn was delayed in planting until after the twentieth of May, and this, after four cultivations, was all too large for further working after the first of July. As far as clean culture and uniform and large growth of stalk go to make a good corn crop, the present crop is the evenest and best grown in this section.

Much of the oats were caught at the stage of their most rapid growth by the drought prevailing the latter part of June, and were checked, making a light crop compared with their very promising growth the first half of June. But little more than half a crop is expected, harvesting the early sown fields having already begun, while later sowings may stand a few days longer. It may be said that owing to the very unfavorable conditions at seeding time last spring, the oats acreage this year is much below normal.

Wheat Yield Not up to Expectations.

Here and there a threshing machine has started on its rounds and as the work of threshing wheat progresses, the yield continues to disappoint expectations. This is not so great a surprise when the preparation for the crop is considered, almost the entire acreage of wheat having been put out in a reckless and careless manner. The fact is, the Hessian fly has of late years been so damaging that farmers are becoming averse to wheat growing, and do not take the time and trouble to prepare their ground as they ought, the result naturally being that many farms have become depleted. Because of this depletion, many farmers are turning their attention to dairying, in the hope that in this form of agriculture may be found a remedy to restore the fertility of the partly wornout soil.

Experiments with Alfalfa.

As alfalfa is one of the essentials of successful dairying, it may properly be asked what success our farmers have had in growing this crop, especially on the more exhausted farms. It may be said that very few have as yet gone into alfalfa growing very extensively, and it is therefore only in an experimental stage. We have on our farm one acre sown last August. The ground, a sandy loam, was well fertilized with the best rotten stable manure and was plowed in May. We harrowed the patch at least six times in the interval between the plowing of the ground and the sowing of the seed. The "catch" was a good one, and in spite of the somewhat dry September the alfalfa made quite a growth until winter. Our first cutting about a ton and a half, was made on June 15, this year, and the second is about ready at this date, July 20. We doubt whether more than two cuttings can be made this year. The most of our experimenters are working without inoculation, their success being just as good as that of those who give attention to this matter.

New Crops Are Being Substituted for Old.

Another change worthy of mention that may be said to be taking place in this section, is the change of onion growing to mint raising. While in sections of southern Michigan mint has been grown quite extensively for some time, it is only within the past five years or so that the industry has

been carried on in the northern counties of Indiana. Practically three-fourths of the world's mint supply is now grown within a radius of 90 miles of Kalamazoo, the territory extending south and west into Indiana as far as Plymouth and Warsaw. The acreage this year in the counties of St. Joseph, Kosciusko, Marshall, Elkhart and La Grange, is greater than ever before. The marshes in these counties were reclaimed for onion growing, having produced large crops, but the very great uncertainty of the onion crop in recent years has caused a gradual change to mint growing. In the Prough marsh alone, located in La Grange county, there are approximately one thousand acres of mint this season. The crop is excellent this year, and harvesting that part of the crop which was set last year or before, will begin in about a week, while the plantations set last spring will not be ready for about three weeks. It is hardly expected that the heavy crop will not materially affect the price of oil, yet growers are hopeful that prices will not fall so low as to make the work of raising the mint unprofitable.

Indiana.

D. L.

WHEAT SEEDING AND THE HESSIAN FLY.

I note the interesting article in the last issue of the Michigan Farmer on the subject of "Early Preparations for Wheat Seeding." The advice is good, but lest it may tend to promote early seeding as well as early preparations for seeding, I am constrained to call attention to a factor which should this year be carefully considered in its relation to the date of wheat seeding.

While early preparation is essential for best results with the wheat crop, it now seems probable that this season will be one in which extremely early sowing will be undesirable. While reports of serious damage by the Hessian fly have not been particularly numerous this year, reports of the presence of the insect in considerable quantities are very general. This insect is one which periodically becomes troublesome, due to the fact that under normal conditions it is kept in check by parasites which almost subdue it. With the decrease of the flies' prevalence, however, these parasites become of necessity greatly reduced in number, thus permitting the insect to again get a vigorous start. This year the prevalence of the insect in many wheat fields would seem to indicate that unless weather conditions are such as to check its operations this fall, wheat seeding should be delayed if possible until after a good hard frost. This prospect, however, makes it even more important that early preparation for the crop should be such as to insure the quick germination of the seed and the rapid development of the crop after it is gotten into the ground. This result will also be made more certain, provided suitable supplementary fertilization is given at the time the wheat is sown. There is perhaps no crop which pays better for a moderate application of chemical plant food than does the wheat crop, and such fertilization also insures greater certainty in securing a good seeding of clover in the wheat the following spring.

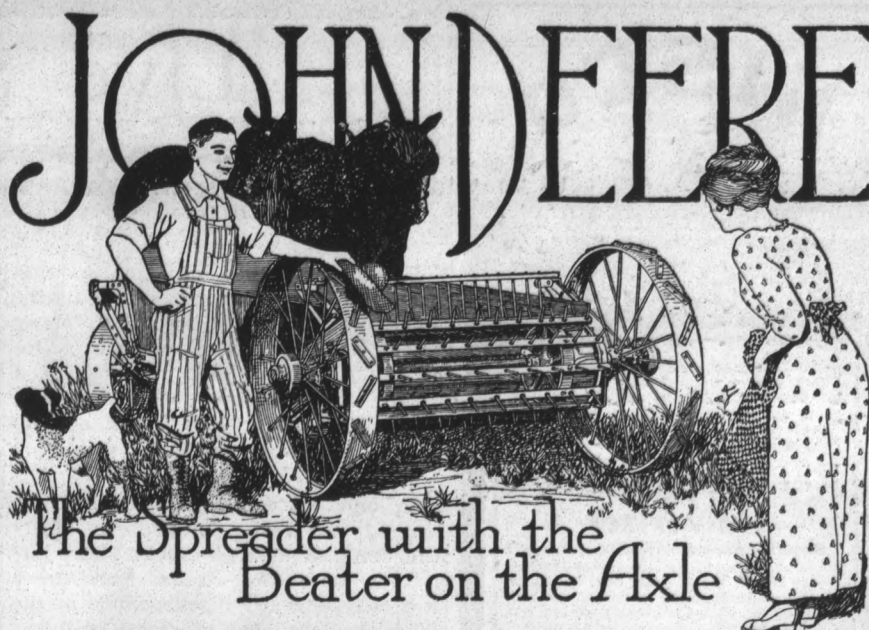
Oakland Co. A. R. FARMER.

A BIG GROWTH OF CORN.

Clifford Pierce, of Van Buren county, claims he has raised the biggest corn in this section of the state. He has exhibited a stalk in South Haven which measures a trifle over 12 feet long. Pierce declares it was grown from seed planted just two months ago. He believes that if he had let the stalk grow the rest of the season, it would have been a foot longer.

Kent Co.

A. D. S.



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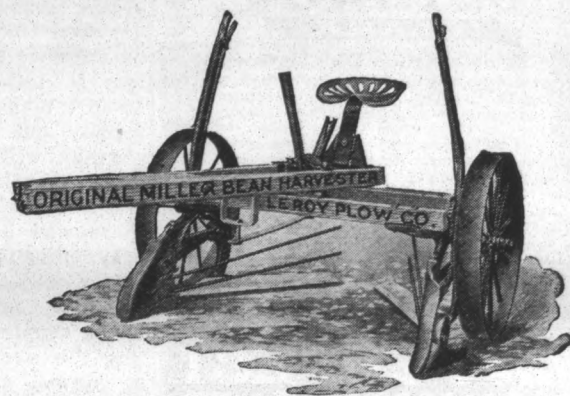
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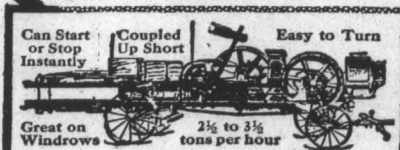
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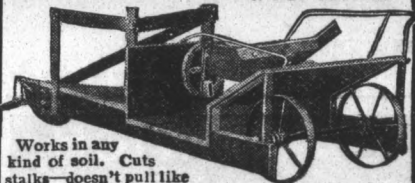
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Live Stock.

SWEET CLOVER FOR WEEDY PASTURES.

Last week I had occasion to ride about 40 miles through the country and I was surprised to see so many weedy pastures. Some of them seemed to me to be of little value for feed at all, as there were weeds of several kinds so thick that I could see no grass. I cannot understand why such a condition is permitted to exist.

In one pasture I noticed that the ground was very rolling, being really the bluffs of a large creek. There was timber along the stream back for a few rods in many places. Some of the land was level, but the most of it was one ridge after another, and many of them high, while the general trend of the land was rapidly upward as it extended back from the creek. Now, this whole pasture seemed to be composed of bushes and a white flowered weed about a foot high. Here and there were little patches of bluegrass, but it would keep a cow busy hunting them up.

This pasture was especially adapted to seeding to sweet clover. The rough clayey nature of the soil would give it a good hold, and it is the only crop that would take hold quickly and pave the way for any other grass desired if it was not the pasture wanted finally. If it proves to be all it is claimed to be, and those who make the claims are men of experience and reliability, no better pasture plant could be desired.

In sowing this pasture to sweet clover it would be well to begin as soon as possible, and if a fall growth can be obtained so much the better, but if not sow it early in the spring, and follow by another sowing in the following summer just after sweet clover seed ripens, as this is the season nature does the sowing. Sow again if this is not enough to get an even stand. When once started it spreads rapidly, but a little help by repeated sowings will make the weed killing more certainly and quickly done. When the whole field is fully seeded there will be no chance for weeds. When this is accomplished the sweet clover may be easily superseded by any other grass by carefully mowing for a couple of seasons, not permitting the weeds to grow. They could be plowed and sown to alfalfa, timothy, clover, or any tame grass. Surely they were worth the effort, for they lay in a country where land values ran from \$100 to \$200 per acre. Some of these men take great pains with their orchards and fields, and yet they lose the value of their pastures. It is true they use them, but one man I talked with acknowledged his pasture would support double the number of cattle and keep them in better condition if he had good grass instead of the weeds. He was always planning to make the change but did not do so.

It is not the lack of profit in farming that causes the dissatisfaction with the results that are so general in many communities, but it is the losses caused by these leaks. Poor marketing, overlooking the little things that make up the real profits, and not utilizing to the full extent the resources of their farms is what causes the trouble. Look around you and see if that is not the case. It is true in every state in which I have observed conditions.

Kansas.

L. H. COBB.

SOUR SKIM-MILK FOR CALVES.

Calves do as well on sour skim-milk as on sweet skim-milk in summer, states a late press bulletin from the

U. S. Department of Agriculture. This should prove welcome news to those who have been deterred from raising calves in summer because of the expense of keeping the milk sweet.

This expense, experiments carried out by the Department, indicate to be quite unnecessary. The calves will make as rapid gains on sour skim-milk. In winter, it is true, this is not quite so satisfactory. It chills the calves and some of them drink it with great reluctance. Very young calves have even been known to refuse it altogether. On the other hand, of course, it is much easier to keep the milk sweet in winter.

In calling the attention of farmers to these facts, however, the Department at the same time emphasizes an important precaution. Unless the milk is produced and kept under cleanly conditions, it may become contaminated with disease-producing bacteria. Farmers should therefore allow the milk to sour quickly and then feed it without delay.

In the course of these experiments, sour skim-milk was fed to 22 calves, Holsteins, Jerseys and Guernseys, at different seasons of the year. In no case did it cause digestive disturbances even when the change from sweet to sour milk was made abruptly when the calves were only a few days old. Moreover, no evil results followed the alternate use of sweet and sour. It seems, therefore, that the common idea that sour milk leads to scours is quite unfounded.

The calves, it was found, did not like the sour milk as well as the sweet but in the majority of cases soon became accustomed to it. The aversion, however, increased when the milk was fed them at a low temperature.

EARLY FATTENED HOGS.

No doubt many farmers will as usual, make the mistake this year of failing to begin hog feeding until late. Quite often some do not begin until the beginning of October. This is a great mistake, especially if the hogs are to be fattened for the market, as the earlier the hogs are marketed, the better prices will be obtained. As a rule, the well fattened hog brings more per pound than the medium fattened one. Evidence of this is especially noticeable in the large markets. There the thoroughly fattened hogs sell at top prices, and are the first to leave the pens. Those that go at low prices, or are held over, are those not well filled in and rounded out, and should have stayed in the fattening pen from two to four weeks longer.

In our experience we have found that the most profitable hog is of a March litter, grown for the most part on clover pasture, and fattened on corn, the fattening being early, and the hog being marketed at the age of about nine or ten months.

In growing corn for hogs it is our practice to make two plantings. One is of an early or ninety-day variety, which is usually from the first to the tenth of May. The other is of a longer season sort and is planted at about the same time as the early planting. The early variety matures about the middle of September, the late not much before the first of October.

In order to fatten the hogs early, we do not wait until the corn is mature, but begin feeding it while it is yet soft, feeding stalk and all. We put the hay-rack on the wagon and drive along the side of the corn field, cutting the corn and loading it on the wagon, which is hauled into the hog lot, the green corn being fed from the

wagon as needed. When the bunch of hogs is not large, enough can be hauled on a load to last some time. We feed only a moderate quantity at the start, increasing the amount gradually until a full ration is fed.

Putting the early corn in the shock is begun about the middle or last of September and after it has stood a few weeks we begin to husk of this to feed to the hogs. Of course, it is usually not dry enough to crib at this stage but it will do very well to feed to the hogs. As the season advances the corn becomes more solid and dry, and the hogs are finished on this and are fat enough for market about the middle of November.

It is universally conceded that corn is the best feed for fattening hogs but it should not be imagined that the hogs should be fed on corn alone. A monotonous diet is not good, and the health requires a variety. Corn may well constitute four-fifths of the diet of fattening hogs, but the remaining fifth should be of something else. We have fed pumpkins with corn and have had good results. We have also fed boiled potatoes, steamed clover hay, and apples. Salt and charcoal are also necessary. When hogs have salt constantly, and all the water they want to drink they will not use too much salt. The best drink for fattening hogs is pure water.

Indiana.

D. L.

FEEDERS' PROBLEMS.

Tankage for Pigs on Grass.

Would like some information in regard to feeding tankage to hogs. The tankage is guaranteed 22½ per cent protein, five per cent crude fat, and not exceeding 12 per cent fiber. Will feed in connection, ground oats, middlings and corn. Hogs have run of rape patch and clover field. Please give me a balanced ration from this assortment of feeds.

Indiana.

R. A. I.

The amount of tankage which should be fed to hogs when on clover pasture should depend somewhat upon the age of the hogs. For growing pigs this ration with the addition of ten per cent of tankage, would make an ideal combination. For older hogs it will not pay to feed quite as much protein when running on this kind of pasture, and either the middlings or oats—whichever are more expensive—could then be eliminated with economy. It has been clearly demonstrated at several experiment station trials however, that it pays to feed some protein feeds with corn when hogs are running on clover pastures, but the amount of protein required can be furnished by the addition of the ten per cent of tankage above mentioned. Both these additional feeds may be eliminated from the ration of fattening hogs, but for growing hogs, a mixture of grains is more palatable and will produce more profitable gains than a ration which does not afford such variety.

Rape for Hog Pasture.

What is your opinion in regard to rape for hog pasture? I sowed a patch this spring and turned the pigs in when it was quite wet; they got sore; people told me that the rape poisoned them. It is my first experience. The pigs seem to like it, and are doing quite well on it, but are some sore.

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Rape is an excellent hog pasture, but where young pigs are turned into same when the rape is wet with rain or dew, it sometimes has an irritating effect on their skin, particularly white pigs. Generally this is not serious, however, and with normally dry summer weather, there should be little further difficulty of this kind. If the trouble becomes aggravating, it would be best to keep the pigs off the rape in wet weather until the effect of the irritation is no longer evident. Rape pasture produces very economical gains when used as hog forage in combination with a suitable grain ration.

Dairy.

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CLEAN MILK IN DEMAND.

That more sanitary and better methods for producing and caring for the milk supply of this country should be adopted no one will deny, although many refuse to do it. There are comparatively few who care for their cows in a way that would tend to keep their bodies and udders clean; but rely wholly upon the strainer to take from the milk the dirt and filth that they so carelessly let get into it.

Many good farmers are slovenly, filthy men, when it comes to the care of their cow stables. I sometimes am inclined to attribute this, in part, to the fact that they never have, nor have they ever tried to realize any profit from their cows. Any old thing from which they could get a little milk has answered their purpose. They have had no particular type or breed in mind—they have not fed with any particular object in view. They have not gotten returns from the little feed and care they have given their cows that would excite energy and enthusiasm sufficient to carry on this very important branch of farming as it should be.

Milk an Economical Food.

It has been but a comparatively short time since any particular stress has been put on the food value of milk. The high cost of living, of which we have heard and read so much the past few years, has brought us face to face with some very important facts. Among which we have learned that milk is one of the most economical, healthful and nutritious foods—that one quart of milk is nearly the equivalent in food value of one pound of beefsteak; or, in other words five to eight cents worth of milk has about the same food value that 16 to 25 cents worth of steak has. This knowledge has, and is, creating a great demand for pure wholesome milk. The cities are wanting to know the source of their milk supply, and are sending out inspectors who, where it is necessary, are requesting and if needs be demanding, a general clean-up—clean cows, clean barns, well lighted and ventilated, a wholesome supply of feed and pure water for the cows, a clean place to keep and cool the milk, that the animal heat may be gotten out of it as soon as possible after it is milked. This will insure the keeping qualities and flavor of the milk.

Farmer Must Supply Cleaner Milk.

While this means extra work, time and expense, it certainly is a move in the right direction. True, we have lived, for these many years, under present and possibly worse conditions, but we must bear in mind that conditions are constantly changing, that the demands of the rapidly increasing population of this great country must be met, that agriculture is the foundation of all other business, that from the farms must come the entire food supply of the present and future generations. There is no use trying to dodge the issue, for it is up to the dairy farmer to supply this demand for better milk.

There has never been a more opportune time for the dairyman to show to the consumer that he can not furnish it at present prices, and that it will be necessary for him to have more money if he meets their demands. It has been but a few years since very little milking was done in the winter time. But high priced land and the low price paid for summer milk has brought about a change on many farms and much more milking is being done in winter than formerly. Supply and demand usually make the price of any commodity as it has

in the past for milk and its products. A big supply in summer meant low prices. A shortage in winter meant higher prices. The custom thus formed, regardless of quantity or cost of production, yet prevails, and you can rest assured that the consumer will not be the first to change it. This "rut," like hundreds of others that the farmers and dairymen are in, should be gotten out of, and it will be by their own effort if they ever get out.

That we should receive 25 cents to one dollar less per 100 pounds in summer than in winter, is as absurd as it needs be. Any dairyman can prove the above assertion. During the time we get least for our milk our time is the most valuable. We have our crops to care for, we have flies, hot and dry weather to combat; help is scarce and hard to get at any price. The dairyman who keeps his herd in good condition, keeps up the flow of milk, knows he has done something, and that has cost something, but the one who has failed to do this has made a mistake that will cost him much more. In the winter we have our silos full, a good supply of alfalfa, clover and other roughage and grain, with nothing to do but our chores. Thus it is not hard to figure that it costs more to produce milk in summer.

Get Out of the Rut.

The average cow gives less than 5,000 pounds of milk per year, but allowing her that average at \$2.00 per 100 pounds, her product would bring \$100. She can be starved but not properly kept for less than \$80 a year, which would leave \$20 for investment and risk. The loss of one would mean the profits from four or five that were better than the average cow. What other class of men would do business on so small and uncertain a margin. Yet the dairymen of this country are doing it, as a whole, for fully several cents per 100 pounds less than \$2.00.

Brother Dairymen, what are you going to do about it, stay in the same old "rut," go out of business, or adopt different methods and meet the demands? Let's hear from the brethren. Ohio. L. E. CONNELL.

RATION FOR COWS ON PASTURE.

Will you compound me a ration from the following feeds: Corn meal, ground rye, oil meal, old process, bran. Cows are running on marsh pasture during the day, and on timothy pasture at night. This is for Jersey cows giving from 20 to 40 lbs. of milk per day, testing from five to seven per cent. Is ground rye a good cow feed? Some people say it is as good as corn meal and others that it will dry a cow off. F. E. H.

Rye is not considered a good grain for dairy cows. They don't like it very well and the don't do as well upon rye as they do upon almost any other grain. Even ground wheat is a better food for dairy cows than rye. Therefore, I would not purchase it as a dairy food if I had to buy grain. On good succulent pasture I don't think it is necessary to feed oil meal, because the growing grass has a large per cent of protein in it. I would prefer to feed corn meal and bran on pasture to any of the foods mentioned. My judgment would be to mix corn meal and wheat bran equal parts by weight. Then feed the cows one-half pound of this mixture a day for every pound of butter-fat they produce in a week. This will be a very good ration on good pasture. As the pasture becomes shorter and is affected by the dry weather then the grain ration can be increased up to a winter ration with profitable results. This would be a pound of grain per day for every pound of butter-fat produced in a week. Good dairy cows, as are indicated by F. E. H.'s letter, will pay for a good liberal grain ration on pasture. The grain ration will not only make them hold up on their flow of milk but it has accumulative effect and the cows will do better next winter from having had the grain ration in the summer.



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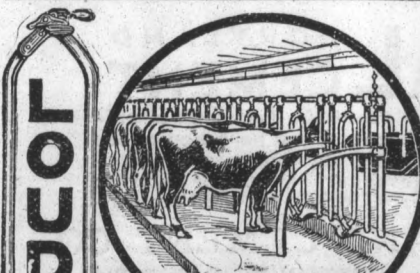
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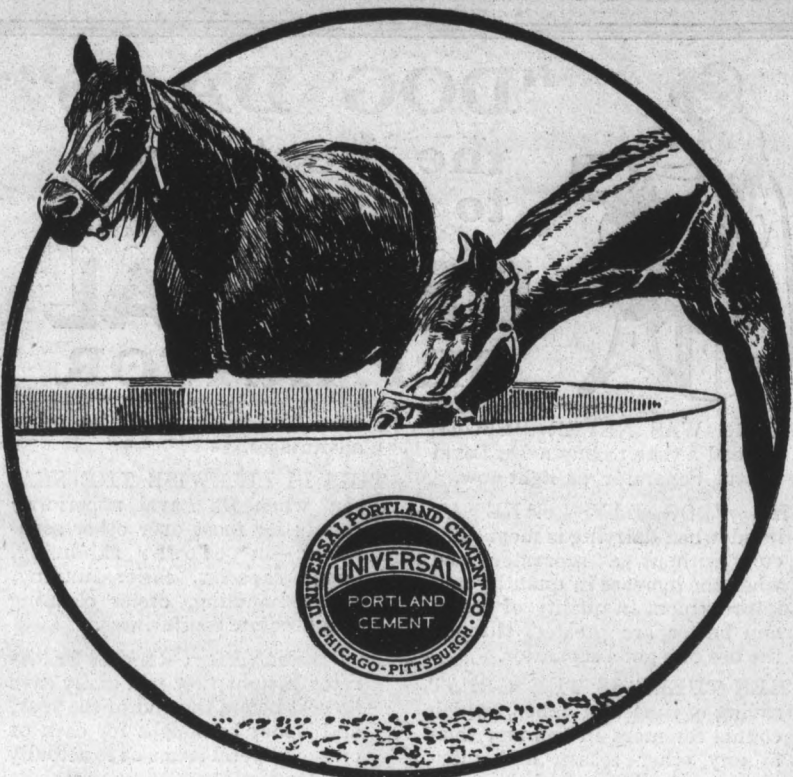
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Practical Science.

SOME ABUSES A RESULT OF MODERN TEACHING.

BY FLOYD W. ROBISON.

The tendency of advanced agricultural education has rightly been toward making farming pay. It has been very difficult indeed to get farmers to consider profit and loss in their farming accounts. To encourage thoughtfulness on the part of farmers along these lines, agricultural experimenters and writers have dwelt continually upon the proposition of keeping rigid accounts of the activities in the various lines on the farm. Some have insisted that each field by itself should have a debit and credit entry and that each productive animal on the farm should likewise have a debit and credit account on the farmer's books. With the majority of farmers we think it essential that some system of this kind be developed. Admirable as this idea has been, like all progressive ideas, accompanying it have been certain very set abuses. These abuses must necessarily develop for they are the result of the adoption of the working plans of the ultra-enthusiastic among agricultural workers and writers.

Economical considerations have been placed way in the foreground and in order that the farmer shall give the proper amount of consideration to the problem of economy it has been necessary that the farmer's mind should be set almost solely on this one item.

The Importance of Conservation of Manures.

The conservation of farm manures is an illustration of the point we are trying to bring out. So clearly and so vividly has the question of conservation of manures been presented by different individuals to the farmer that some have considered the loss of manurial constituents to be little short of a crime. We think there is no surer way of getting the farmer to properly consider the importance of conservation of manures than to get him enthusiastic even to this extent with the subject.

In plain language, it has taken the sensational man on the subject of farm manures to acquaint the farmer with the subject. If experimenters and writers had been content with portraying simply the exact truth, and truth alone, regarding commercial fertilizers, it is doubtful if farmers would have become thoroughly appreciative of the great value of manurial conservation. But the over-enthusiastic, the sensational, if you will, have developed the theme to such an extent that the rank and file have generally become awakened to the real value of conservation of farm manures.

Farm Sanitation Takes Precedence Over Conservation.

There are certain sanitary considerations which are antagonistic to the proper conservation of farm manures in certain instances, and it has always been our position that the economic conservation of farm manures occupies a position second to sanitary considerations. In fact, the most important consideration of any of these topics is the sanitary consideration. Therefore, when the conservation of farm manures runs counter to the question of farm sanitation, farm sanitation must take precedence. In most instances, however, a proper conservation of farm manures likewise expedites question of sanitation and health.

The Exercising of Cows.

The dairyman has been taught, and rightly so, that to secure the best results from his herd of cows, considerable care must be thrown around them, not only in the stable but in

the yard and farm lot. Economic consideration as shown by milk pail production seems to be, on the whole, rather in favor of keeping the cows pretty much in the barn. We think where short period tests have been made in nearly every instance a greater profit from milk production has been shown where the stock were not allowed to run at large, and agricultural institute workers and writers have spread this doctrine pretty thoroughly. Certain abuses have, in this way, crept into the dairy management which, it is thought at this time, dairymen should consider. We feel certain that for purposes of health as well as for general humanitarian principles the custom in many places of keeping the stock entirely in the barn should be very materially modified. A proper system followed out in the matter of exercising dairy cows and turning them into the open at regular intervals two or three times a day will in the end develop a stock with just as great milk-giving qualities and which are less susceptible to slight changes in management.

Modern Dairy Cow Has a Very Delicate Mechanism.

The greatest fault with the modern dairy cow is her exceeding delicacy and for this, dairymen themselves are to blame, for they have reared the animal and kept her under such conditions that delicacy of fibre and constitution has been the one result to be expected.

It is time the dairyman began to think of these things; to think not only of the immediate economic point in view, but to think as well of the health and general welfare of the animal and the possibility of getting her into such a condition that slight changes in management will not cause gross differences in her performance.

Calves Should be Raised.

Another consideration which the economic production of milk has brought about is the effect upon the dairy and beef stock production of the country. Farmers have thought, and there has been considerable basis for this opinion, that a calf, particularly a dairy calf, could not be raised economically. This prevailing opinion has caused farmers generally to sell the calves for veal at a very early age and build up their herds by the buying of grown stock. By so doing it has not been necessary to divert the milk from the new milch cow from its usual channels to what has been considered an uneconomic source, that is, the feeding of the young calf. In fact, we are familiar with instances in which calves one day old have been destroyed without consideration of returns whatsoever, for the mere purpose of conserving for economic use the milk of the cow. This custom, and it is more of a custom than many imagine, is repulsive and we believe, as well, an economic mistake. We think that farmers and dairymen may well afford to feed their calves milk even at the expense of diverting it from the regular economic channels until such a time as the calves are prepared to be put upon a less expensive ration. We think the time will come when it will be unlawful to kill healthy calves for any purpose whatsoever short of a certain definite age.

Missed His Trade Paper.

The Michigan Farmer.
Gentlemen:—I am enclosing \$2 for five years' subscription to The Farmer. Have been a month without it and never missed anything so much in years.

Yours truly,

W. H. WADE,
Grand Junction, Mich.

Horticulture.

Ward Orchard Notes.

The weather the last few weeks has been ideal for fruit. The cool spell we had during the latter part of July seemed to stop the work of the blight and also checked to a great extent the spread of the scab. The rains have furnished moisture to make up what there might be lacking due to the fact that we did not keep the orchard well cultivated this year.

The fruit is developing nicely and with few exceptions is quite clean. Due to the fact that we were delayed in our spraying just after the blossoms, the scab started to develop in the Wealthy and a few other varieties on the hill. As soon as we noticed it we got the spray rigs busy and have succeeded in checking its spread. After the thinning these trees require, during which the imperfect apples will be picked off, is done, the fruit which will remain will develop into a nice clean crop.

A Codling Moth Infestation.

Around the large packing shed we noticed a rather bad attack of the codling moth about July 15. They were all side worms and were apparently fresh infestations. It was most noticeable on the five or six rows surrounding the shed and the worst on the east side. We were at a loss to know the cause of this, as these rows had been sprayed at the same time as the others, but we found what we believe was the cause of the trouble. Inside the shed and along the east wall there were several thousand old crates and picking baskets in which the moth passed the winter in the cocoon stage. When the moths emerged they laid most of their eggs on the trees near the shed. We immediately sprayed the rows surrounding the shed and have succeeded in checking the work of the moth.

The Effect of Location on Scab.

The block of trees around the buildings is quite scabby, and in as much as most of these trees got an extra application of spray at the time of the second spraying after the blossoms the only way we can account for it is that the location is one very favorable for the development of the scab. This orchard is in a hollow and is hedged and sheltered by the buildings and a hedge fence, besides the trees are quite close together. This allows for very little circulation of air and therefore prevents the quick drying of the trees after rains and heavy dews. While we may have prevented the scab by more frequent and more timely sprays, we believe that the comparative results between this and the other parts of the orchard show the importance of having a location which has good air drainage and circulation for fruit growing. There is no doubt that a favorable location aids greatly in the control of fruit pests.

Thinning the Duchess and Other Varieties.

During the latter part of July we were busy with the thinning of the Duchess. These thinnings were of good size and were barreled and shipped to Detroit where they brought on the average of \$3.45 per barrel net. Being well packed and of good quality and size, and getting them to the market early, were the causes of these apples bringing the good prices. We do not expect to get as high prices for the main crop, as the market will be more plentifully supplied then. The thinned trees showed a great increase in the size of the fruit remaining, even a few days after thinning.

We shall undoubtedly be kept busy thinning for some time, as both the Wealthy and Wagener trees are in need of it. The Wealthy trees will be

thinned first as they are the most in need of it. We have over 5,000 trees which need thinning.

The Next Spraying.

The August spraying we shall start shortly after the first of August as the first of the codling moths which we got from the trees we banded emerged from the cocoons about July 21. As we are to have the State Horticultural Society meet with us August 6, we may not start the spraying until immediately after that meeting, as we have so many other things to attend to.

We are not especially proud of the present appearance of the orchard. It is in need of a general slicking up. We have the mowing machines busy now cutting weeds, and have several men cutting out dead and broken limbs. We have been so busy with essentials, but the little trimming up it is getting now will greatly improve its appearance. The tramp may have an entirely healthy body, but he presents a bad appearance because his hair is long and unkempt, and his clothes ragged. Our orchard is somewhat like the tramp, but we have taken care to not neglect anything which would affect the general well-being of the trees and the crop. The barbering process we are getting at as quickly as we can, but we do not hope to get all done this year that we would like to.

TROUBLE DEPARTMENT.

Clay Ground for Apple Trees.

I intend to set out a few apple trees next spring on the brow of a heavy clay bank and would like you to advise me how to prepare the soil so as to get the best results; also, how to care for the trees. C. N. W.

Fruit trees of most all kinds do well on soils of a clayey nature. It seems that on such soils they are more regular in bearing and more resistant to diseases. The chief objection to clayey orchard soils is the hard work in keeping them in cultivation, therefore, before setting out an orchard, it would be advisable to turn under a heavy crop of green manure so as to make the soil more porous and more workable. There are various crops one can use for this purpose, probably at this time of the year a combination of winter vetch and rye would be most preferable. This should be turned down in spring and the ground well worked before the trees are set. It is quite important to give the orchard good cultivation during the first year, so as to make available to the trees all the plant food and moisture possible during the time they are getting established in the soil.

Attention should also be given to insect pests which might work on the trees, the most troublesome being the climbing cutworm. This often causes serious injury to newly set trees by eating at the newly opened buds. These can be controlled by putting bands of cotton around the trunk of the tree; sticky fly paper is also used with success for this purpose.

Sacking Grapes.

What do you know about sacking grapes on the vines? Is it a success or not, and if so, to what effect? Indiana. A. H.

Sacking grapes is not practical in a commercial way on account of the time and expense involved. If grapes are desired for extra fancy and exhibiting purposes, sacking has some value. It protects the grapes from insect and fungus injuries, punctures by birds, and injuries from rubbing against wires, etc. The fruit may increase slightly in size but the main advantage is the protection given in keeping the bunches perfect.



Tom Profit's Wisdom

Jim Kerr bought an axe in town—just a common lookin' sort of an axe with some gilt smeared on the head of it that made it shine—powerful. The first day he put in with it in the woodlot took all the gumption out of it,—an' the edge offen it, too. He took it back to the store an' sez he "What's that axe made of?" "Steel," sez Bert Staley. "S-t-e-a-l," sez Jim, an' they laughed together for an hour over it like two bulldogs in a mix-up. Then Jim bought a



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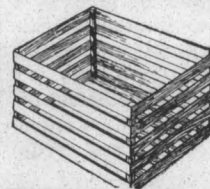
KEEN KUTTER

across the street and he got the reg'lar Keen Kutter quality an' a guarantee fer it. He told me all about the dickerin' an' I guess he'll stick pretty close to Keen Kutter tools for a bit. I told him my experience with Keen Kutter axes an' hatchets an' he bought a Keen Kutter tool grinder, too, for grindin' generally. We can depend on that guarantee the Simmons people give, with lief to the dealer to hand back the money we've shed for any Keen Kutter tool, any kind, that doesn't pan out right. That's square business. You'll allow I'm right.

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DETROIT, AUG. 8, 1914.

A FEW LEADING ARTICLES OF THE WEEK.

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CURRENT COMMENT.

The European War. The marvelous alacrity with which serious international complications may arise is startlingly well illustrated in European developments of the past week. Suddenly there has been precipitated a situation which to one not a close student of European politics is almost inexplicable, and today a general war is on among the powers of continental Europe which promises to be the greatest and most deadly conflict in the world's history. The immediate cause of the present situation was the recent murder of the crown prince of Austria and his wife, following an unsuccessful attempt upon the lives of the royal couple by fanatical citizens of Serbia. This little country refused to comply with the demands of the Austrian government relating to an international investigation of the crime, which the Servians contend was a personal act for which the government is not responsible, while the Austrians as firmly assert that it was the result of a plot in which one of the powerful political societies which

abound in Serbia was concerned. Upon the virtual declaration of war by Austria, Russia at once commenced to mobilize her great army at the border and failed to heed Germany's ultimatum that she cease mobilization within 24 hours, whereupon Germany became an active factor in the quarrel, and France, due to the rankling of a well-earned hatred for Germany, at once arrayed herself on the other side of the controversy. At the present writing England has not officially announced her attitude, while Italy has signified her intention of maintaining a strict neutrality. But the spirit of war pervades all Europe and these countries will be fortunate indeed, if they are able to keep out of the conflict.

As above noted, the real underlying causes of the war which has so suddenly involved all Europe, go far back and beyond the misguided criminals who now lie in Servian prisons, all but forgotten in the mighty storm which their acts caused to break over Europe. Space will not permit a full discussion of those causes at this time. It is enough that the world is actually confronted with a condition of war between several of its greatest powers, a condition which would be in nowise alleviated by an elaboration of any number of theories regarding the underlying causes. The fact itself is most regrettable, and one for which those who have precipitated it will doubtless repent when the consequences of the conflict are weighed. And to the world at large, speculation regarding those consequences is of greater present interest than a study of the underlying causes of the conflict.

The consequences to Europe are bound to be most disastrous. The cost in the lives of men and in money is sure to be enormous. Immense armies will operate in a thickly populated and well developed country with good roads and excellent transportation facilities and with modern equipment for the destruction of life and property which makes the seemingly inevitable result disturbing to contemplate. The cost of such a war in human life, in money and in the devastation of the country is almost incomprehensible. In fact, the very cost in money is held by some authorities to insure that the conflict will be brief.

That a great war, such as the present European struggle promises to be, will have a world-wide effect is certain. Many able financiers are already prophesying disastrous results to business in the United States as a result of the European disturbance, while others predict just the opposite result. An analysis of the situation from the standpoint of our agricultural industry alone would seem to support the latter opinion. Undoubtedly the foreign demand for gold will be so great as to draw heavily upon our reserves of this metal, but with the steps which will be taken for the issuing of emergency currency under existing laws this should not impair the volume of our circulating medium to any extent. There will also doubtless be a large emigration of foreigners who will return to their native countries to participate in the fight, which fact may be felt in the future labor market. But there will also be needed large quantities of foodstuffs for the support of the troops in the field, if not for that of the non-combatants in the European countries involved, due to the heavy draft which will be made on the agricultural population to recruit the armies, to say nothing of the devastating effect upon the agriculture of large sections of the country as a result of actual military operations. On the other hand, the vicissitudes of a general European war will make the carrying on of foreign trade, even in foodstuffs, an uncertain proposition, while other departments of foreign trade are almost certain to be demoralized for an indefinite period. But

this, in turn, will stimulate a greater demand for domestic goods of many kinds. In fact, any attempt to analyze the situation is largely futile on account of the uncertain and indeterminate factors encountered, for the correct weighing of which there is no precedent. It is at least a matter for sincere congratulation that the geographical situation of our country insures against any but the indirect consequences of this deplorable struggle, during which we can do no better than to pursue the even tenor of our way in the production of foodstuffs, using our best judgment in the matter of marketing same, regardless of the feverish excitement of the speculative market.

Federal Aid in Road Building.

There are at present pending in the two houses of Congress, two bills which embody a plan for federal aid in road building which has been previously mentioned in these columns. This is the plan recommended by Senator Bourne who was chairman of a joint committee having under consideration this proposition of federal aid in road building, which is embodied in the Shackleford bill before the House, as well as the Senate bill. Briefly reiterated, this plan provides for the issuing of 50-year three per cent bonds by the federal government to the amount of \$500,000,000 to provide a fund which would be advanced to the several states to be used in road building under certain prescribed conditions. These conditions would require the states to issue four per cent bonds in the amount of their allotment, which bonds would be deposited with the federal government as security. The difference in the rate of interest would be used to create a sinking fund for the purpose of retiring the state bonds at maturity. In reality, the federal government would not be expending anything in this plan of aiding in road building, and the states would only have to pay the interest on the amount advanced by the government for a period of 50 years, when the accumulated sinking fund would retire the bonds.

This is a lesson in high finance on which the average man could reflect with profit, since it is a large example of the cumulative result of savings. While it is not probable that these bills will receive serious consideration at the hands of the present Congress, their presence before that body shows the trend of congressional thought on this important subject. Some statistics recently collected by the United States Department of Agriculture show equally well that it is in harmony with public thought on the same subject in the several states. According to the statistics above mentioned approximately \$206,000,000 was spent in permanent road improvement last year, as compared with \$79,000,000 in 1904, which is an increase of over 250 per cent in ten years. Also, these figures show that the percentage of the total road mileage of the country which has been permanently improved is greater than is appreciated by the average well informed person. According to the Department's estimate there are a total of 2,226,842 miles of roads in the United States, of which 223,774 miles, or approximately 10 per cent, are classed as improved roads.

In the event of the passage of a bill embodying this plan for federal aid in the financing of road improvement by the several states, some 27 states, of which Michigan is one, would find themselves unable to meet the requirements of the plan without amending their fundamental law, being prohibited by their constitutions from borrowing money for the making of internal improvements.

The biennial convention of the Anti-Saloon League of America, will be held at Atlantic City, N. J., in July of next year. It is expected that 30,000 delegates will attend.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Four great European powers are now at war and other countries are likely to become involved at any moment. Austria-Hungary declared war upon Serbia following the assassination of the crown prince of the former country, and his wife, while they were traveling through the streets of Belgrade. By the terms of an alliance Russia was honor bound to assist Serbia in trouble of this kind, and she promptly began mobilizing her troops to move against Austria. At this Germany, through a similar alliance with Austria, takes up the cause of the latter country and declares war against Russia. It further appears that Germany is taking advantage of the situation by moving troops across the French border to attack Paris, while France is mobilizing her forces in self-defense. In spite of the movement of troops across the French border no war has been declared by either country and as a consequence England is undecided as to what her position will be. She will likely oppose the aggressive party, and it would seem from this that her fortunes will be joined with France and against Germany. Japan is ready to co-operate with England should the interests of the latter country in the Far East require the protection of the Nippon government. Italy is endeavoring to remain neutral and so are Belgium and Switzerland, although the latest report is that German forces have invaded the two last named countries which will require at least a defensive action on their part. German warships defeated the Russian fleet in the North Sea on Monday and the boats are now bombarding Libau.

The latest reports from Mexico indicate that the Constitutionalists are closing in on Mexico City from three points. There appears to be a great deal of scepticism as to the ability of the leaders of the different factions in Mexico to get together on terms of peace, although many believe peace will be brought about in a short time.

National.

Property damage to the extent of \$100,000, and one life, were the toll of a cloudburst near Colorado Springs, Colo., Sunday night.

The Interstate Commerce Commission has rendered its railroad rate decision after considerable delay. The decision allows the advances asked by the railroads for traffic west of Buffalo, Pittsburg and Charleston, W. Va., while for traffic east of these points the requests were denied absolutely. It is now expected that the railroads will begin a campaign for advances in passenger fares, this having been suggested by the commission.

The United States government is taking precautions to assist and protect American tourists and business men who are in Europe and become marooned by the declaration of war. The State Department will accept deposits of cash to be placed to the credit of such Americans who are in need.

Railroad engineers on lines in Illinois and to the west are considering the proposition of going out on strike, with the probability that such a move will materialize this week. The order would affect 55,000 men.

Congress is considering legislation to prevent the suspension of trans-Atlantic shipping and an embargo on the movement of American crops during hostilities in Europe. An effort will also be made in Congress to amend the Panama Canal Act to permit foreign ships to take American registry.

This week the Navy Department will submit plans and seek bids for the construction of three United States dreadnaughts. One of the ships will be built at the New York navy yard.

With the fall election in Maine scarcely six weeks away, leaders of all political parties now have their eyes on that state.

Mr. Clyde A. Waugh, assistant editor of the Ohio Farmer, has accepted a position with the Middle West Soil Improvement Committee, with headquarters at Chicago, as manager of its editorial and publicity department. Mr. Waugh is well known to many Michigan Farmer readers through his contributions to this paper previous to his official connection with the Ohio Farmer.

The Board of Experts, appointed by the National Rifle Association to decide upon the ammunition to be used by the American rifle team in the contest for the historic Palma trophy, which is to be shot at Ottawa, Canada, next September, has selected the cartridges made by the Winchester Repeating Arms Company. The board recently held a competitive test of various makes of cartridges at Sea Girt, N. J., and in the test Winchester cartridges outshot all others.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

Among the Temples and Mosques of Egypt.

By PROF. ALFRED VIVIAN.

SCIENTIFIC investigations of the innumerable monuments of Egypt during the last century indicate with ever growing certainty, that the valley of the Nile was the cradle of history and of human culture. Nowhere else can be found temples and monuments which were built more than five thousand years ago, and no other country has a well preserved historical record reaching back for so many centuries. The visitor to Egypt is bewildered by the number and magnificence of the ruins of these ancient architectural wonders, for nothing he has seen heretofore has prepared his mind for the comprehension of the immense scale on which these monuments were constructed.

Every school boy is more or less familiar with the appearance of the Sphinx and Pyramids from the illustrations found in the geographies, and naturally the first desire upon reaching Cairo is to go immediately to visit the Pyramids of Gizeh—the group most frequently pictured, and at the same time the most easily reached and most interesting of all the pyramids. The Great Pyramid of Cheops belongs to this group and is the largest one of all.

Shall it be confessed that the first view of the pyramids is disappointing? They stand out on a large open plateau on the edge of a desert, many miles in extent, which furnishes no object that the eye can use for comparison. The consequence is that on approaching them it is impossible to realize their size, and as the tremendous proportions of the great pyramid are emphasized in all the descriptions the feeling of disappointment is quite pronounced. When the base of the pyramid is actually reached, however, and especially after a walk around it, the disappointed feeling suddenly disappears and the longer the visitor remains the more he becomes impressed with the gigantic dimensions of this pile of stone which was erected to be the final resting place of one frail man.

The pyramids are the oldest monuments of human industry. The Great Pyramid was built nearly 3,000 years before Christ. The base is 768 feet square. The original height was 482 feet, and the base covers an area of 13 acres. It is practically a solid mass of limestone for the chambers occupy but a small space. Herodotus says that it required thirty years to build it, and that 100,000 men were required for three months of each year to move the stone from the quarries on the east side of the Nile River to the site of the pyramid, which is on the west side. It has been calculated that it contains 2,300,000 separate blocks of stone each containing forty cubic feet. There is nothing especially beautiful about the pyra-

mids, but the technical knowledge displayed in their construction and the might of the kings who could command such thousands of workmen compel the admiration.

The view from the pyramids is remarkably interesting and striking—"There is perhaps no other prospect in the world in which life and wealth, fertility and desolation, are seen in so close juxtaposition and in such marked contrast. To the west and south

lages, palm groves and fields of the valley of the Nile. Towards the east glitters the river, on each bank of which stretches a tract of rich arable land, luxuriantly clothed with blue-green vegetation, the fields intersected in every direction by canals, on the banks of which rise stately palms, waving their flexible fan-like leaves, and interlacing their shadows over the fellah villages perched like ant-

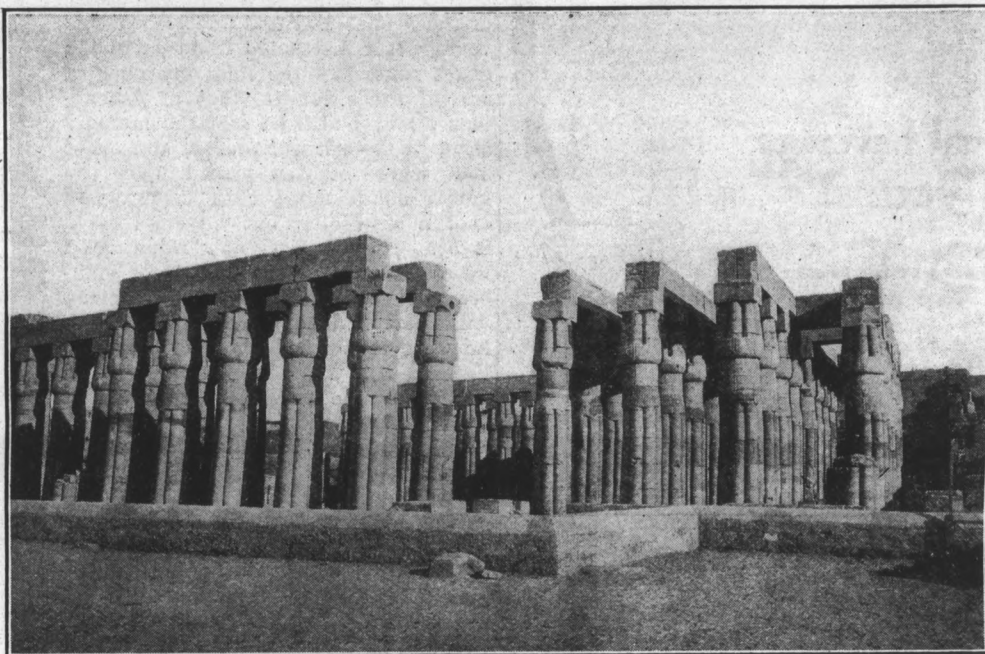
the natural rock, with added blocks of stone. It is supposed that the natural rock had somewhat of this form and that an ancient king improved the resemblance to the lion and had the face carved in his own likeness. The body is 187 feet long and the height to the top of the head is 66 feet. Between the paws is an altar, and a granite temple has been unearthed about 50 yards to the southeast of it. The Sphinx has been more than once covered by the drifting sands of the desert and even now constant labor is required to prevent its being again hidden from view.

Not far from here was located Memphis, the ancient capital of Egypt, and the oldest city of which there is any historical record. The wonderful monuments and temples of this city have been almost entirely destroyed, and the materials of which they were composed used in the construction of the Mohammedan mosques, castles and palaces of Cairo. At a later date Thebes, 450 miles farther up the Nile became the center of Egyptian life. Thebes was located at or near what is now the city of Luxor on the east bank of the Nile.

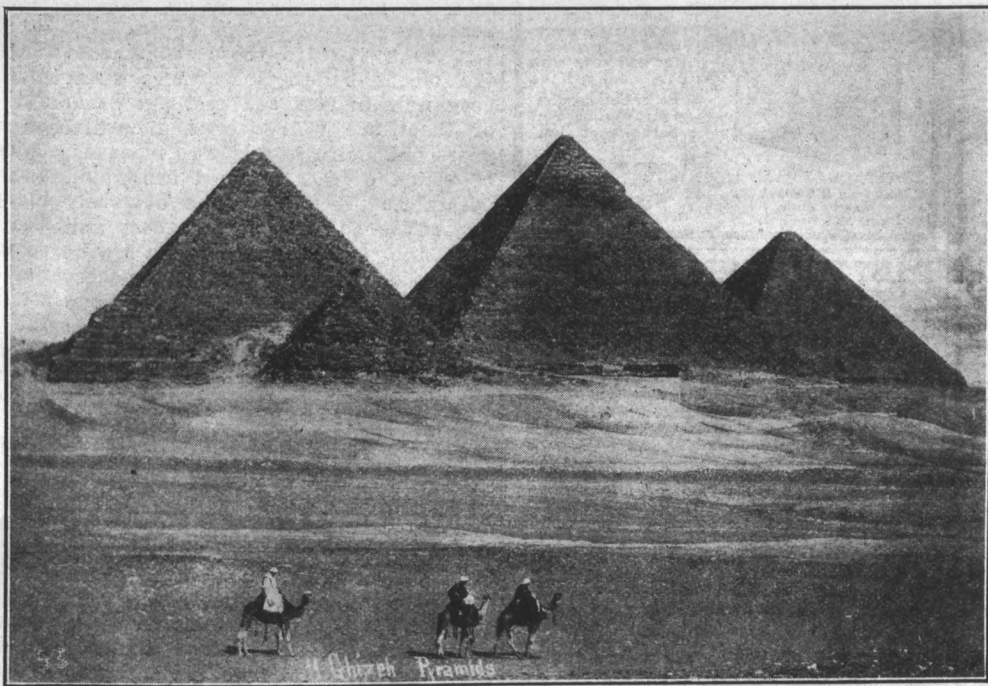
Some of the greatest monument builders among the Egyptian kings lived at Thebes and the temple ruins to be found here are probably the most wonderful in the world. The worship of Ammon reached its height here and most of the temples are dedicated to this god. The Temple of Ammon at Karnak was considered the most striking creation of an age famous for its architectural achievements and it is said that to this day no other building in the world can match its dimensions. The wonderful lotus and papyrus columns, carved out of solid granite, which are still standing command the admiration of the beholder. Fortunately, these ruins are in a better state of preservation than are those farther down the Nile.

Old Rameses II who lived about 1300 B. C., was the great master builder of them all. He built new temples right and left, as well as trying his hand at repairing and adding to the older ones. It is said that he did not hesitate to occasionally scratch out a predecessor's name from a temple and to put his own in its place. He was not especially handicapped by modesty either, for all of his temples represent him upon intimate terms with the gods.

According to his own story, he was what the American street urchin would call "some fighter," for he represents himself as, single handed and alone, destroying a choice collection of several hundred of his enemies. In one of the temples he placed some 30 or 40 colossal statues of himself varying from 24 to 45 feet in height, and others without number are found in



Portion of the Ruins of the Temple of Luxor.



The Pyramids at Gizeh.

extend yellowish brown and glaring the direction of Cairo runs the long straight carriage road, while immediately before rises the Citadel with its striking minarets, and the Kokattam hills, which form the chief mass of color in the landscape. The Sphinx is, next to the pyramids, the most famous monument of Egypt. It is a recumbent lion with the head of a man and is hewn out of

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different temples in this district. He also represents himself—sublimest egotism of all—as a farmer holding a plow and preparing the soil for the grain. After all, he did things and much in the way of egotism can be forgiven a man who really accomplishes something. Ramses II is supposed by many to be the Pharaoh of the Oppression mentioned in Exodus I-ii. His mummy may be seen in the museum at Cairo. He certainly accomplished his purpose of perpetuating his own memory.

On the west side of the river at Luxor are the Tombs of the Kings and Queens. These are the burial places of the rulers reigning about 1500-1000 B. C. and are in marked contrast to the pyramids which were the tombs of earlier dynasties. The "Tombs of the Kings" are located in a valley in the limestone hills and are carved out of the solid rock.

They each consist of a series of rooms and corridors hewn into the rock and are very elaborate in design, representing an enormous amount of labor. The walls from the entrance to the final chamber are covered with sacred pictures and text, a knowledge of which was considered essential for the deceased in the future life. The deceased had to sail through the underworld at night in a boat and many of the scenes and texts described this voyage and instructed them as to the exact route. In the final chamber of one of these tombs (that of Amenophis II) may still be seen the mummy lying in the sarcophagus in the exact spot where it was placed upon the king's death more than 3,000 years ago, a gruesome but an impressive sight. The tomb is now illuminated by electricity for the benefit of visitors and we could not resist wondering what Mr. Amenophis would think if he were to awaken and find his tomb lighted by "hairpins burning in a bottle" as the Irishman expressed it.

One of the most striking sights in this locality is the Colossi of Memnon. These two immense figures are 52 feet in height and stand by themselves in the midst of cultivated ground. At one time they stood in front of a temple which has now entirely disappeared. These two tremendous statues are visible for miles in every direction and as they stand there surrounded by green fields, with the fellahin, tiny in contrast, driving their equally tiny oxen round and round them, they make a picture long to be remembered.

After a visit to these monuments the oldest buildings in Cairo seem very new in contrast, and yet some of them are well over a thousand years old. Cairo is a city of mosques, of which over a hundred are found within its precincts. It is obviously impossible to visit all of them and the visitor is forced to select a few of the most important. One of the most interesting of them all is the Mosque of el-Azher which since 988 A. D. has served as a University. Here about 10,000 students gather to be taught the Koran. Like all the mosques this one is built around a rectangular court, the sides consisting of many columned arcades. In the spaces between these columns are held the classes. The professor sits cross-legged on a straw mat and reads from a book placed on a desk before him. The principal instruction consists in making the student commit to memory the Koran—the sacred book of the Mohammedan. The students who are not attending classes sit around in groups studying aloud, and swaying their bodies to and fro all the time as they think the movement of the body assists the memory. As there are always several thousand people in the mosque and as most of them study aloud or are reciting, it may be imagined that the place is not much short of bedlam. The students spend most of their time while in the building, eating their meals and many even sleeping on the floor. Little ex-

ercise is taken for the Egyptian cannot understand why one should exercise who is not compelled to work. Four, six and sometimes even twelve years are spent by students in this place. There is nothing in this method of education that encourages independent thought, and the students are the mere recipients of the knowledge of the past or, in other words, their minds are occupied with the lowest grade of intellectual work, their chief task being the compilation of knowledge handed down to them.

The Citadel, which is located on a high hill commanding the city is worthy of a visit if only to see Cairo as it is bathed in the golden light of sunset. We used to think that the painter of the Egyptian sunset allowed his paint brush to run riot the way he put on the unimaginable yellows and reds, but it would be practically impossible to overcolor a painting of these sunsets. The dust-laden air combines with the sands of the desert to produce sunset tints that are seen nowhere else in the world. It is worth a trip to Egypt to see the sunsets alone. The Citadel contains an alabaster mosque built by Mohammed Ali, whose graceful minarets are conspicuous for long distances, and a good view is here obtained of the Mosque of Sultan Hasan which lies below and which is supposed to be the finest example of its style of architecture.

One of the most interesting mosques is that of Amr although it is in a very poor state of preservation. This mosque had originally 366 large marble columns some of which have been destroyed. In front of the pulpit is one column surrounded by an iron railing. The guide says that the Caliph Omar who built the mosque, being a descendant of the prophet Mohammed, ordered all the columns to fly through the air from the quarry to their places in the mosque. All the columns obeyed but this one which refused, whereupon Omar whipped it until it also flew to its place. In memory of its disobedience all the faithful who came to the mosque took a turn at whipping the column until it was beginning to wear away, so a few years ago the Khedive took pity upon the naughty column, placed the railing around it, and issued an order that no one should again chastise it. Perhaps we smiled slightly for the guide said very solemnly: "That is not for fun. That is a true story for I have read it in my book."

Cairo is full of architectural surprises. Wandering down a dirty, dilapidated street you suddenly come upon a bit of exquisite old carving or a balcony of rare beauty, a part of what was sometime no doubt a palatial residence. Many times the balconies nearly meet overhead, the streets are so narrow. The bazars are located in narrow alleys, generally covered over with an awning to shade them from the sun, and flanked with shops six or eight feet wide. Each locality is given over to one kind of ware—all the brass for instance, being found in one bazar.

The everyday life of the street is full of interest and amusement to the westerner. The throngs of men and women and children, with their peculiar clothing; the donkeys and camels jostling each other; the water carriers with their goat skin vessels; the women with jars of water on their heads; the jingling of the money on the tables of the money changers; the venders of fruit and food materials, and the hundred other sights keep the visitor's head turning from side to side and, incidentally, keep him dodging from right to left if he is on foot.

It will be an unusual day if a wedding procession is not seen with the camels and drums going on before and the happy bridegroom riding behind, the cynosure of all eyes. The bride, by the way, has no part in this procession, Almost any time of the day a fu-

neral procession passes by. The corpse is borne on a bier carried upon the shoulders of four men. The corpse is preceded by professional mourners who walk in twos and threes at a slow pace chanting to a weird tune these words, "There is no God but God. Mohammed is the ambassador of God; God be gracious to him and preserve him." After the bier come professional mourning women chanting and shrieking and weeping. As the weepers often forget their duty and carry on a laughing conversation the whole performance seems decidedly lacking in reverence and solemnity.

This procession coming down the street with the band playing in front and the gentlemen with the decorated carriage and self-satisfied air is to celebrate the return of that worthy from his pilgrimage to Mecca. Henceforth he will be a man greatly to be respected as well as having his soul forever saved through his pilgrimage. If he is

a merchant he will have the front of his shop decorated with pictures describing the terrors of the excursion (most of which was probably performed on railroad and steamboat).

That cry is the muezzin announcing from the minarets of the mosque that this is the time for prayer, and the good Mohammedan spreads his rug and says his prayers wherever he may be. Incidentally, the more public the place the better, for he does not believe in the closet method of praying.

Your attention need not be called to the beggars for they are present everywhere. The first word the child learns is "backsheesh" (a gift) and he repeats it to every white face he sees until the end of his life. These miserable, insistent, filthy beggars do their best to rob a visit to Egypt of much of its pleasure. At the same time the tourist is doing much to pauperize a people who are already too willing to forego the joys of manual labor.

A Friend Indeed BY MARY SHERBURNE WARREN

IN a very large chair sat a very small boy. The June sun smiled at him straight down through the branches of the old apple tree but received no answering smile. Perhaps a boy who has sprained his ankle on his third day in the country can be forgiven if he does not feel like smiling—even at the warm, friendly sun.

Uncle John was working in the garden just beyond the fence. "To be the only boy on a big farm like this and a sick one at that, is what I call hard luck," he confided to a thrifty tomato plant. "A lonesome child just makes my heart ache. Now, this morning, when I turned those big calves out to pasture the look little Brown Beauty gave me was enough to—the idea of a great man like me talking in this way!" And Uncle John attacked a stubborn weed savagely.

Suddenly the "great man" stopped short. He looked again at the little boy with the sober face; then he threw down his hoe, walked rapidly to the barnyard, and opened wide the gate.

"Two lonesome children on Happy Hill Farm!" he exclaimed to the small calf standing in a shady corner. "Whoever heard such nonsense in this wide world! You just come with me, you forsaken pet."

When the calf found itself in the fairyland of green things it kicked up its heels and ran for joy over the soft grass. Several times it looked sharply at the figure in the big chair.

"What is that?" it seemed to say. "It looks like something alive but I never saw a live object that could keep still like that. I can't." And up the tiny heels would fly again.

"Two is company, three is a crowd," said Uncle John, smiling at Robert's eager face. "I must go to work."

Little Brown Beauty was a real question mark. It nosed all about the fence and examined every tree, that is, every tree but the one under which sat the still little boy. But whenever the boy called it would look up as much as to say, "I should like to know what that is but I guess I'd better be on the safe side."

At last Robert gave it up; he could not go to the calf and the calf would not come to him. His head drooped, he was fast asleep; but fifteen minutes later when he awoke he looked straight into a pair of big round eyes.

The boy hardly dared to move but he reached two fingers toward the nose that was thrust out so expectantly. He could not touch it and could reach no farther. But the calf timidly took a step forward. Yes, the still little boy was all right, after all. It seemed so good to be petted again. How soft the little boy's hand felt as it stroked the upturned face and the fat little neck!

Until the troublesome ankle was

well Little Brown Beauty did its best to entertain the boy. It chased out every chicken that ventured inside the fence; it stood very still while the boy decorated it with chains made from the daisies and buttercups Aunt Molly gathered for him; it lapped the little boy's hands—and face, too—there was nothing better to do; and, when it lay down, it always chose its green bed close to the big chair. Indeed, it was a very comforting little calf!

When Robert was able to run about once more he whispered something in Uncle John's ear. The man shook his head at first, then remembered that he once was a boy.

"That's a pretty fine calf," he said. "I should hate to have it run away and get lost but if you are perfectly sure—"

Run away! Robert flew to the orchard gate and opened it just wide enough for a small body to squeeze through. Run away! What calf would care to run away with Happy Hill Farm to explore by the side of a very inquisitive small boy? Such days in the hayfield, such berry-picking days, such days by the brook! The two could hardly be separated for the short summer nights.

The first day of September when Robert left the farm for his home in the city he hugged Little Brown Beauty close and whispered, "I'm so glad I sprained my ankle because it made us acquainted. You've been 'xactly as good as a boy."

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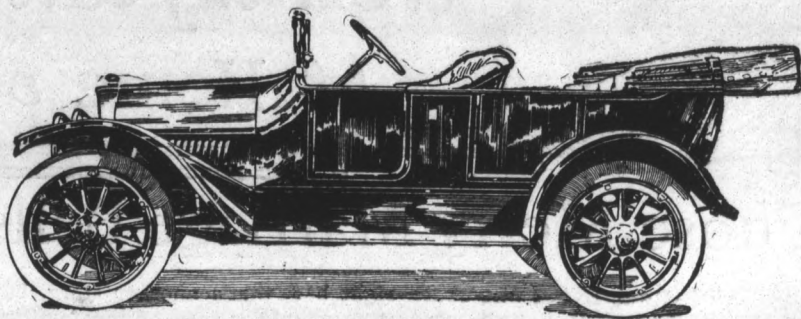
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Woman and Her Needs

At Home and Elsewhere



Those Merry Marriage Bells.

I BELIEVE it was Byron who wrote that well known line, "All went merry as a marriage bell." Whoever the poet, he had the right idea, the marriage bell should be exceedingly merry, but the facts do not bear out the poetizing. All too often the bell sounds more like a funeral knell.

Now please do not think this is to be a solemn warning against matrimony. Far from it. It is simply an expose of the fond (?) relatives who mourn when it is to laugh.

There was a wedding in our block last week which for funereal aspect exceeded the best managed funeral I ever saw. The bride was the sweetest, prettiest girl on the street. The groom a clean, decent young chap, not the cleverest fellow in the world nor the richest, but a good enough man for anyone's son-in-law. But the bride's parents didn't like him. Not that they could find any fault with him except he wasn't good enough for their daughter. She, being their daughter, should have as a husband a man of wealth and position. This upstart only draws a modest salary and besides he hasn't a dress suit and there are two or three of the latest dance steps he doesn't know, and he doesn't always remember to take off his hat at the right time, and is a little bit lame on which fork to use, and a few other points like that. These were really the only faults the old folks could find with him, they couldn't say a word about his morals or habits.

These faults not being sufficiently large to turn the daughter's heart against him, she insisted on marrying him anyway, because he was the man she loved. She said that she was the one who would have to live with him and if she didn't mind his social deficiencies why should her parents? The father and mother, finding sneers, entreaties, threats and wild ravings couldn't change her, would not even then yield gracefully. The evening before the marriage they packed their grips and left town on an excursion, leaving the girl alone on the last night before her marriage day. A neighbor's daughter volunteered to stay with her over night, and another neighbor on hearing of the circumstances, insisted on giving the bride a wedding breakfast after the ceremony, which, of course, had to take place in the minister's home. The whole block turned out to try to cheer the teary little bride, but even then the wedding could not be robbed of all its funereal air.

Casting over in my mind the many weddings I have witnessed, I seem to find about as many which were unhappy affairs because someone didn't like the combination, as there were where everyone was perfectly satisfied. I venture to say that out of 100 weddings which take place in this old world, at least 80 per cent are made unhappy for the participants by someone's criticisms. It seems a shame, doesn't it, that the one time in a young girl's life which should be blissfully happy, should be marred by the unkindness of her family or friends?

Why should such a condition arise, except because there are chronic grumblers in the world? If a girl is in love, and there is no real good reason why she shouldn't marry the man, why not let her alone? If he is down-

right bad, that's another story, but if it is simply a case of the family not being in love, too, for goodness sake keep still about it. In this glorious age of freedom no amount of objections from the family will make a bit of difference. On the other hand, it will simply hurry matters along. Many a girl has rushed into a marriage she would never have made if she had not been nagged constantly by her family until, out of sheer obstinacy, she married the man just to show she would.

And after the wedding all the unkind things which have been said come back to stand around between the young couple and the parents. The daughter can never forget that you made fun of John's nose, or objected to his big feet, or criticised his manners at the table. And now John means more to her than do mother or father, so it isn't hard to see the beginning of a breach. Just remember that your daughter can not be expected to see things through your eyes, and if she is satisfied, try to pretend you are.

DEBORAH.

PLANT THESE BULBS EARLY.

BY L. H. COBB.

It is a hard matter for those not perfectly familiar with the various bulbs to know when to purchase and plant them. I have had parties come to me for tulips and hyacinths in the spring, and be surprised that they could not get them, when I had explained to them the season before when the bulbs were in bloom that they must be planted in the fall. They had paid but little attention to the time of planting, giving their whole mind to the flowers themselves, and when the proper season arrived to plant they thought nothing of it. When the spring arrived they began to think of the tulip beds they were going to have, and made inquiries for the bulbs, only to find that they would have to wait another year.

All fall bulbs are not to be planted at the same time for best results, either. Some should be planted as early as they can be obtained and some not until it is late enough so they will not grow too much before winter. If the order for the bulbs is made out now and sent to the seed house with a request that such varieties as arrive early be forwarded at once by parcel post, you will get all your order as soon as they arrive.

Callas, freesias, and Easter lilies are the first of the house blooming bulbs to be ready, and they can usually be had in July or early in August. Candidum lilies for the garden can be had at the same time, and they should be planted at once, for all lilies lose vitality rapidly when exposed to the air. Freesias may be planted early or kept until late, for the bulbs will stand it all right, but the early plants will be the strongest and will bloom sooner than the later plantings. Freesias are much better if potted up and grown a few weeks in the open air before being taken into the house. They are more sturdy and the stems will be strong, and the flowers of better substance. These bulbs can be used over and over, as they will not deteriorate, but will increase in size if allowed to grow on until they die

down. Callas should be planted early whether one uses their old bulbs or buys new ones. The dry bulbs one buys are certain to bloom, and are much superior to the usual potted plants offered by florists. Too many times these are but small bulblets started and will not bloom for two or three years. A strong dormant bulb, an inch or over in diameter at the crown, will bloom soon after planting and will keep it up all winter. Callas like a wet soil and plenty of hot water at the roots. I generally have the pot in a common milk crock and every morning I fill the crock with water as hot as I can bear my hand in.

The true Easter lily, *Lilium harisii*, can be obtained early and should be planted at once if one wants to have them in bloom by Easter, but it is subject to a disease that ruins many of the bulbs. Many florists have quit using it at all and use the *Longiflorum* lily instead. The flowers are similar, but they are not so early as the *Harrisii*. Get the *Lilium longiflorum giganteum*, for it is the hardiest of the longiflorums and easier to grow. You cannot get these until in September.

For garden culture there is hardly any bulb or flower that can excel the *Candidum* lily. This lily is known by many pet names, such as the *Madonna Lily*, *Ascension Lily*, and *Old Fashioned Easter Lily*. It has strong bulbs, and is very hardy and thrifty, and will soon make a good clump. It is especially fine for the cemetery, as it blooms in May.

None of these early planted bulbs except the lilies need be set away in a dark place to root when put in pots. The freesias and callas are to be placed in the window at once, or, if planted early, in a sheltered place in the open air where they get good light and the sun, at least in the morning. The lilies, either *Easter* or *longiflorum*, should be potted in rather small pots at first and put in a dark place for a few weeks, and then brought to the light. As soon as the roots have filled the small pots transplant to larger ones until they are in seven-inch pots, which are about right for the best results, though I have had fine flowers in six-inch pots. The bulbs can be placed in the pots they are to bloom in if it is desired, but care must be taken not to overwater at first, for the larger amount of soil is apt to sour before the roots have had a chance to penetrate it. When in the pots they are to bloom in the bulbs should be at least four inches below the surface, for the annual roots that support the flower stalk must have room to come out above the bulb.

CANNING CORN ON THE COB.

The following recipes for the canning of corn have been worked out in the Department of Agriculture's canning kitchen and the products tested for nearly two years.

These recipes have been used in connection with the five different types of canning devices and the corn has been put up in all types of containers, such as glass top, screw top, suction top, and tin cans. The method employed is the cold-pack method, the same as is now being used in the best commercial factories.

Blanch in boiling water for five to ten minutes, according to ripeness,

size, and freshness; plunge quickly in cold water. Pack, alternating butts and tips; add just a little boiling water and one level teaspoonful of salt to each quart. Place rubber and top and partially tighten. (Cap and tip tins). Process 180 to 240 minutes in hot water bath; one and a half hours water-seal outfit; 60 minutes under five or more pounds of steam; 40 minutes in aluminum pressure cooker. Remove jars, tighten covers, invert, and cool. Heat up for table use in steamer, not in water. If corn seems flat or water-logged, it has been overcooked or allowed to stand in too much water.

Use one or two-quart glass jars if not needed for other products. Quart jars will hold two ears, two-quart jars will hold from three to five ears, according to size of ear. Do not can large ears. Half-gallon or gallon tin cans with large openings should be used in the canning of ear corn when idle glass jars are not available. Gallon tin cans will hold from six to 12 ears. They should be graded to uniform size.

In high altitudes, 4,000 feet and over, it will be necessary to increase the time requirements in the canning of sweet corn about 25 per cent, if water boils at about 202 degrees F., and even less.

The gallon tin cans, including soldered-hemmed caps, will cost about six cents apiece, but they will hold six to 12 ears of corn, which is enough for a good-sized family. If the corn is removed from can and steamed for a few minutes, it cannot be distinguished from the sweet-corn removed from the husk in midsummer. The corn can be heated in the container before opening to serve.

An ear of sweet corn on the average dining-car and hotel a la carte service costs 25 cents. Considering this, canning corn on the cob for the market might prove a very desirable investment for a thrifty housekeeper and bring to her considerable pin money.

One advantage of sweet corn canned on the cob over other canned corn, is that all the best food values are kept with the cob. In cutting corn off, the germ quality of the kernel, which keeps up its standard, is usually lost. This germ quality is the part of the corn that is sought by rats and mice when they look for food in the corn bin, and is the most vital part. Much of the corn is also rendered mushy when it is cut from the cob.

In regard to the container for corn on the cob, it might be mentioned that for advertising and exhibition purposes, glass is much more satisfactory than the tin can, but if corn on the cob were to be put up in large quantities as a business venture, the glass would not be practical, being too expensive, but the tin cans would prove quite satisfactory.

SHORT CUTS TO HOUSEKEEPING.

When cutting dry bread for toast, if very hard, placing the loaf for a very short time over the top of a steaming tea kettle will make the cutting easier.—E. L. C.

A tasty way to utilize dry bread is to dip the slices into hot water to soften them, then into beaten eggs and milk, after which fry on both sides.—E. L. C.

Poultry and Bees.

Don't Kill the Setting Hen.

CHICKENS get tiresome at this time of the year, don't they? When the lice begin to flourish, and feathers begin to fall, when the egg basket begins to get empty and you have to scurry around to the neighbors to get up enough eggs for the cake, then the work among the flock of biddies drags, and the money for the feed comes hard.

Don't it make you mad to go down some morning and find a thick-feathered hen all fluffed up in the hot nest, where you have had to drive out the lice so often to keep them from eating the biddies bodily? Isn't it the greatest temptation to throw a bucket of water over her, or wring her neck. Then you say:

"That hen isn't any good, anyhow. If she's got to setting I just can't break her up, and she won't lay again this year. She'll just sit around and break what few eggs the hens do lay, and breed lice to kill the rest, though she seems to fatten on them. I think we had better chop her head off and put her in the kettle."

A Sitting Hen is a Laying Hen.

Don't do it. Why? Because you know she is a laying hen. If she hadn't tried her level best to fill up the egg basket she wouldn't sit. You know that. Did you ever see a hen go to sitting who was not acquainted with the nest? No, you didn't, nor anyone else. It is a hen's nature to sit after she has laid out her clutch.

If you have a hen who wants to sit in July, you know reasonably well that she has laid eggs in July. And a hen that lays in July is little short of being a gold mine. Then why should she go to fill the stomachs of the family, while the hen can't get up enough ambition to lay, to say nothing of sitting, strays around and picks the choice bug, and the choicer wheat and corn, and digs in the beans to her heart's content while you are away from home? That isn't a very good way to reward the faithful, to my way of thinking.

Break the Sitting Hen Up.

Just try breaking her up by shutting her up in a shady coop by herself, give her plenty of water and feed, and 10 or 15 times a day throw her a choice bit from the table. Then see if she don't go to laying again. If she doesn't, she will be the first one to cackle the goods news in November. She will lay a long time ahead of that paled combed one that roams about your place, turns her head over sidewise and runs for the bushes when you approach with the feed bucket, then comes back and gobbles as though she was afraid some other hen would get a bite.

If you do not study your hens you have no idea how many star boarders you have among your flock. You know half of human-kind make of themselves problems for the other half to solve, and it is the same way with the hens. Some biddy may be a beauty. Her color perhaps is full clear to the skin. Her eyes may be bright as a bead. She may have the shape of a thoroughbred, and the air of a conqueror, but if she can't perpetuate her own kind, what good is she but to eat? If you are in the business for what you can get out of it, you might get her price back in the shows, but the chance is not worth her feed, to my way of reckoning, and besides, wouldn't you be advertising a gold brick?

Fancy Feathers do Not Indicate Utility.

When I go through a show I look for eggs. I'd be suspicious of any pen of prize hens who couldn't show the

goods, but many a starter in the business is deceived with flaunting colors, and high stepping proclivities. It is these trusting tenderfoots who watch us. Then how can we deceive them and expect success?

Look for the contented, bustling biddies who are always singing and going after the festive bug, and the one who, once in awhile is found in

Introducing New Blood in the Flock.

EVERY farmer in this section appreciates the value of introducing new blood or different individuals into his herds of cattle and swine that he may increase the value of these animals, but he thinks little and does less in too many instances about introducing new breeding stock in the poultry yard. It is the common practice on many farms to save over a few males birds each year from the general flock to sire all the chicks to be hatched next year. This inbreeding if continued for too long a period, the flock will deteriorate and become quite profitless.

Inbreeding Not Advisable.

There are exceptions, however, when inbreeding must be resorted to to bring about certain points. The fancy poultry breeder must indulge in some inbreeding when breeding for certain fancy points but the farmer, the source from which comes the bulk of eggs and poultry, it is not wise for him to inbreed his poultry to any great extent.

Many farm flocks are spoken of as mongrels and dunghills and no surprise is caused at that when it is noticed that all kinds, colors, sizes and ages of fowls are left to breed indiscriminately and no culling or improvement is practiced.

The average farm flock could be wonderfully improved if a new male was introduced in the flock. When introducing a new male the mistake of crossing an egg breed onto a meat breed should not be made, but if an egg breed is on the premises then by all means introduce a new male of the same breed and the same variety ought to be used also. If the White Leghorn is the breed now bred, then buy a new male of that variety.

Do Not Mix Types.

Some persons get the faulty idea that if a meat breed is introduced into an egg flock the progeny from this mating will be sort of a dual or general purpose fowl, but this is quite absurd. By any such crossing the usefulness of both is interfered with and greatly lessened.

After a new male has been introduced his progeny should be rigidly culled and only the best females retained and another new male of the same blood lines introduced the next season. The male exerts more than one-half of the influence on the progeny, hence the importance of good male birds is apparent.

It is also important to have healthy and vigorous females, but the male is possibly the more important for reasons mentioned. The male must be healthy, vigorous, and fully matured, and should be without any serious defects that will interfere with his breeding, such as wry tail, crooked breast bone, badly frozen comb and wattles or web feet. An indication of the bird's healthfulness can be ascertained by the appearance of the comb, eyes and wattles. If these organs are pale and badly deformed it is a sure sign the bird is not healthy or vigorous. A male bird with a small head entirely out of proportion to the size

the nest when she ought to be under the trees, and who gives you a sharp peck when you would reprimand her, just to remind you that she has done her share and needs a rest. And it is up to you to do your share and feed her for her good looks.

Trap Nest Indicates Productive Birds.

If you can't tell which are the laying hens, just use the trap nest and find out who's paying for her board. You can generally pick her out, and if you want to raise chickens for the eggs, save her. But if you are raising them for their good looks and to fool your neighbor, go to it. There is one comfort, your time is short, for a hen that can't lay is as good as dead to the world anyhow.

Tennessee. MARIA C. TOPPING.

of the rest of the body is not good as a breeder and should be discarded.

If more attention was given to the breeding of the farm poultry the good brought about in better fowls and the large amount of eggs produced would be hard to estimate. There is no better time to introduce new blood than in the spring of the year just before breeding time. For a few dollars a few fine specimens can be secured that will make a wonderful difference in the appearance and value of the flock the first year. There is also no better time to cull and sell the surplus fowls than right now, as the market is probably as high as it will get this season for adult stock. The market price from now on will undoubtedly decrease.

Ohio.

I. G. SHELLABARGER.

SCALY LEG.

Scaly leg seems to be most prevalent in the warm weather, as, at that time the buildings and yards are rather more liable to develop filthy conditions than at other seasons. Dirt and uncleanness are the factors that produce scaly leg. The trouble is readily recognized in its advanced stages, the legs of the fowls becoming rough and unsightly. It seems to attract the older birds rather than the chickens, although the young birds are not immune, by any means.

The cause of scaly leg is a tiny mite, smaller than the common "red mites," which attacks the bodies of the fowls. Unlike its cousin, which lives in cracks and crevices about the buildings and only visits its victims to feed, this mite lives under the scales of the legs. It burrows beneath the skin and there breeds and thrives, making a crusty deposit which raises the scales and gives the legs an unsightly appearance. As a usual thing, the general health of the birds is not affected, although they may become lame if the mite is allowed to breed and multiply for a long time unchecked. The legs may also become considerably enlarged.

Keep Things Sanitary.

The first thing to be done is to give the house and yards a careful cleaning. The washing and disinfecting recommended for other poultry parasites should prove effective for scaly leg as well. When this has been done, remedies may be applied locally. One of the best of them is made by mixing one part kerosene and two parts raw linseed oil. Dip the legs of the birds in this liquid, allowing them to remain in it but a moment. Allow the oil to drip off before placing the birds back on roost, as the kerosene must not come in contact with the feathers or flesh of the birds. This work may best be done at night, just after the birds have gone to roost. There are other remedies but this seems to be an easy one which has proved effective. One application will usually suffice, but in advanced cases it may be necessary to repeat the dose in a few days.

N. H.

CHAS. H. CHESLEY.

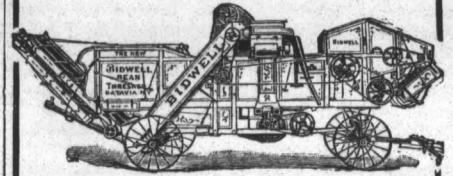
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POULTRY.

NOTICE—Limited Number Fawn and White Runner ducks. My breeding pens drakes, \$1.50 ducks \$1.00, young drakes \$1.00 ducks 75c. RIVERVIEW FARM, R. No. 8, Vassar, Mich.

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

S. L. WYANDOTTE EGGS—From great laying strain of Blue Ribbon Birds. Satisfaction guaranteed. F. E. Cowdrey, Ithaca, Mich.

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

SILVER, White and Golden Wyandottes. Eggs from Whites \$1.50 per 15, \$2.50 per 30. Silvers & Golden at catalog prices. Browning's Wyandotte Farm, Portland, Michigan.

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Hounds for hunting Fox, Coon, Skunk and Rabbits. Send 2c stamp. W. E. LECKY, Holmesville, Ohio.

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of the best English strain in America 40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog.

T. B. HUDSPETH, Sibley, Jackson County, Mo.

When writing to advertisers please mention The Michigan Farmer.

Markets.

GRAINS AND SEEDS.

August 4, 1914.

Wheat.—The war situation in Europe has been the big factor in the changing of wheat values this past week. The fact that hostilities have made it impossible to export wheat from any of the large producing countries of the continent, like Hungary and Russia, dealers here felt that an unusual call would be made upon our supply and prices jumped 10c and more; but the situation abroad temporarily checked the shipment of wheat from our shore and allowed wheat to accumulate at sea port elevators. This caused a bearish feeling to develop and reduced prices from the high point reached during the week, although the advance has been only partly lost. Crop conditions are favorable in the spring wheat section and the winter crop is practically secured. Dealers hardly know what the future of the trade will be, but they seem to be unanimous that there will be strength later, which feeling was substantiated by an advance in prices Tuesday. The action of Congress in allowing foreign ships to registry here will probably aid the exportation of the grain to the advantage of the local markets and the producers. Flour is much higher. One year ago the price of No. 2 red wheat was 89c per bushel. Quotations for the past week are:

	No. 2	No. 1	Sept.
Wednesday	92	92	92½
Thursday	96½	96½	97½
Friday	91	91	92
Saturday	91	91	92
Monday	88	88	89
Tuesday	89½	88½	91

Chicago.—No. 2 red wheat, 88c; Sept., 89c; Dec., 94c per bushel.

Corn.—This cereal advanced with wheat but its position is stronger because of crop conditions, dry weather in the corn belt jeopardizing the crop in some sections. There is also a scarcity of cash grain, which is aiding the bulls. One year ago the price paid for No. 3 corn on the local market was 71½c per bushel. Quotations for the past week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	76½	78½
Thursday	79	81
Friday	79	81
Saturday	79	81
Monday	79	81
Tuesday	79	81

Chicago.—September corn 69½c; December 64½c; May 68c per bushel.

Oats.—The influence of the two major grains was not strongly reflected in the oat deal, although a narrow advance is noted over last week's prices. New oats are now being delivered in considerable quantities and the demand is only moderate, resulting in an easy feeling in the trade. The threshing returns are fair to good in the central states. One year ago the local price for standard oats was 44½c per bushel. Quotations for the past week are:

	Standard.	No. 3
		White.
Wednesday	40	39
Thursday	41	40
Friday	40½	9½
Saturday	41	40
Monday	41	40
Tuesday	41	40

Chicago.—New standard oats 33½c; Sept., 35½c; Dec., 38½c per bushel.

Rye.—An advance of 5c was made last week. The grain is in demand and farmers are holding for better prices. No. 2 is quoted at 70c per bu.

Beans.—Demand is fair and market firm. Quotations: Immediate and prompt shipments \$2.05 per bu; Oct. \$2.02. Chicago reports quiet trade. Pea beans, hand-picked, choice, are quoted at \$2.10@2.15; common \$1.95@2; red kidneys, choice \$3.20@3.25.

Cloverseed.—Cloverseed is firm at another advance; alsike is easier. Prime spot \$9.50; October and December \$9.90; alsike sales were made at \$9.10.

Timothy Seed.—Prime spot \$3 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent \$5.95; second \$5.45; straight \$4.95; spring patent \$5.95; rye flour \$4.55 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$24.50; standard middlings \$28; fine middlings \$30; coarse cornmeal \$32; cracked corn \$33; corn and oat chop \$28.50 per ton.

Hay.—Prices steady. Carlots on track at Detroit are: No. 1 timothy \$16.50@17; standard \$15.50@16; No. 2, \$13@14; light mixed \$15.50@16; No. 1 mixed, \$13@13.50; No. 1 clover \$12.50@13 per ton.

New York.—Market firm. No. 1 timothy \$22@22.50; No. 3 to No. 2 \$18@21.

Chicago.—Best grades firm, with prices higher. Choice timothy quoted at \$19@20 per ton; No. 1, \$17@18; No. 2, \$14@15; new timothy \$10@14.

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

DAIRY AND POULTRY PRODUCTS.

Butter.—Market steady, with prices slightly higher. Extra creamery 28c per lb; firsts 26c; dairy 18c; packing stock 17c.

Chicago.—Market firm and prices higher; extras in light supply. Extra creamery 27½@28½c; extra firsts 26@27c per lb; firsts 24@25½c; seconds 21½@23c; packing stock 18½@19c.

Elgin.—Market is firm at 28c per pound.

New York.—The market is steady, with prices higher. Creamery extras 29½@30c; firsts 26@29c; seconds 23@25½c; packing stock 18½@19c.

Eggs.—Market is active, with fresh stock selling at 21½c per dozen.

Chicago.—The feeling is firm, especially for fresh stock. Prices are higher. Fresh stock, free from heated conditions is quickly sold. Miscellaneous lots, cases included, 16@20c per dozen; ordinary firsts 18@19c; firsts 19½@20c.

New York.—Market steady. Prices on fresh stock are higher. Fresh gathered extras 26@28c; firsts 22½@24c; extra firsts 24½@25c per dozen.

Poultry.—Market quiet and steady. Prices slightly higher. Broilers are slightly lower. Live—Broilers 19@20c per lb; hens 15@16c.

Chicago.—Market steady but prices on springs and ducks are slightly lower. Quotations on live are: Fowls 15c; spring chickens, according to quality, 16@17c; ducks, good stock 12@14c; guinea hens per dozen \$3.50; spring geese 12@13c.

FRUITS AND VEGETABLES.

Fruits.—Gooseberries \$1@1.25 per case; cherries sour \$1.25@1.50 a case; sweet \$1@1.25 per case; blackberries \$1.75 per case; raspberries, black \$1.75 per case; red \$4.50@4.75 per bushel.

Chicago.—Cherries, sour \$1.25@1.50 per case; sweet \$1.25@1.50 per case; currants \$1.40@1.50 per case; raspberries, red \$1.50@1.75 per 24-pt. case; black 1.50 per 16-qt. case; blackberries \$1.25@1.50; Michigan peaches, Clingstones, 40@50c per bu; Michigan Burbank plums \$1@1.25; Sugar pears Michigan, 1-5 per bushel basket 20c.

Vegetables.—Home-grown cabbage, \$1.25@1.50 per bbl; new beets 20c per dozen; radishes 10c per dozen; home-grown green corn \$1@1.10 per sack; lettuce 40c per lb; green beans 75c per bu; wax beans 75c per bu.

Apples.—New apples in good demand. Transparent 75c@81; Duchess \$1@1.10 per crate, and \$3@4 per bbl.

Chicago.—New apples in good supply. Choice stock sells well. Transparent \$1 per bushel basket; Duchess 75c@81; Transparent \$3@3.50 per bbl. Duchess \$2.75@3.25.

WOOL.

This market remains firm. A very satisfactory volume of business is being done, and the inquiry is broadening. Demand is strongest for territory offerings; however, the call for fleece wools is increasing, although manufacturers feel that quotations for the latter kind are comparatively too high. The quotations appear, however, to be on a parity with foreign prices and fleeces are certain to move more freely. Dealers at Boston are holding XX fleeces at 30@32c; fine delaines at 31@32c; Michigan unwashed combing ranges from 23@29c, while unwashed clothing rules from 23@26c.

GRAND RAPIDS.

Potatoes are coming in freely now and are selling around 70c. Early harvest apples have a wide range, selling from 35c up to \$1.25. Huckleberries are quoted at \$1.75@2.25, and blackberries at \$1.65@2. Hay brings \$10@13 on the city market. Grain prices paid at the mills follow: Wheat 81c; oats 50c; corn 75c; white beans \$1.75; red kidneys \$2.75 per bushel.

DETROIT EASTERN MARKET.

Tuesday morning's trading was active and prices held to nearly the same basis as a week earlier. Cabbage was offered freely at 40@55c per bushel; apples are coming forward more freely, prices ranging from 60c @1.25 per bu; lettuce 30@60c; mulberries \$2.50 per 16-qt. crate; onions

\$2.25 per bu; bunch onions 10 bunches 25c; cucumbers 75c@1.25; corn 75c per bag; eggs 28c per dozen; celery three bunches 25c; loose hay \$16@18 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

August 3, 1914.

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

Receipts of stock here today as follows: Cattle 172 cars; hogs 80 d. d.; sheep and lambs 17 d. d.; calves 1000 head.

With 172 cars of cattle on our market here today, all good cattle of good weight sold from 10@20c per cwt. higher than last week. The medium and common cattle sold only about steady, and the grassy fat cows from barely steady to 10c lower. At the close of the market about everything was sold and the feeling closed steady on all fat stuff. The grassy and clippery stuff that are not fat have to be sold at feeder prices.

Receipts of hogs today were about 75 double decks, including five loads held over from Saturday. Opening trade was very slow, especially on anything carrying weight. All light grades sold at \$9.30@9.40, and a few choice heavy at \$9@9.10, but extreme heavy weights almost impossible to dispose of. Some choice hogs, weighing about 300 lbs., offered on the late market at 9c per lb., and were still unsold at this writing. Rough hogs sold at \$8@8.25, as to quality. Stags \$6@7.25. Late trade on all grades was very dull in sympathy with all other points and as conditions stand at the present time it would be wise to use caution in buying in the country.

The market was active today on lambs and sheep. Prices quarter higher than close of last week. Choice handy lambs selling mostly at \$8.75@9. We look for steady prices balance of week.

We quote: Spring lambs \$8.75@9; cull to fair \$6.50@8.50; yearlings \$6@7.50; bucks \$2.75@3.25; handy ewes \$5.50@5.75; heavy ewes \$4.25@4.50; wethers \$6@6.50; cull sheep \$2@3.25; veals, choice to extra \$11.25@11.50; fair to good \$8.50@11; heavy calves \$5.50@7.50.

Chicago.

August 3, 1914.

Receipts today..13,000 31,000 10,000
Same day 1913..16,478 48,124 31,078
Last week32,792 96,809 72,578
Same wk 1913..47,857 124,153 111,292

Cattle market today felt the first direct effect of the war in Europe—tight money influence on this side of the Atlantic, and light supply sold unevenly lower. Packers refrained from buying until late in the session, rumor crediting inability to make normal financial arrangements, due to the banks tightening up on loans. The market for prime good goods held steady to 10c lower and all other steers as well as she stock finally sold 15@25c lower, many fat steers at the full decline. Tops went at \$9.90 and bulk of medium to good steers at \$8.50@9.25. Hogs opened 5 @10c lower but packers held off the market and later pounded prices terrifically, buying their droves at 40@50c decline from last week's closing, even prime heavy and butcher grades showing this break. The price cut carried a lot of hogs to a \$7.65@8 basis and on the close \$8.35@8.60 bought choice lights, such as sold a few days previous at \$9.15@9.30. Sheep and lambs went 10@25c higher on strength of small supplies.

Supply of cattle at Chicago fell to light volume again last week, but still proved high enough for trade needs, hot weather, imported beef in the east and high price of the product at retail being demand repressive influences. A mean call from shippers and packers alike prevailed for steers below choice grade and net declines of 10@15c were shown at the week end compared with the week before on kinds grading in value below \$9.25. The plain and medium to good steers showed 40@65c cut from high point in mid-July, most decline falling on kinds selling down to \$8@8.65. Prime heavy and yearling steers held steady, a \$10 top being registered again for heavies, and yearlings sold up to \$9.80. Only a small quota of heavy steers of choice to prime grade was included in supplies, and scarcity of that kind is due to be a market feature for months ahead. Still there is a determined effort on part of packers to hold costs below \$10. In the past week not a packer would pay \$10, even though they bought cattle 10@15c under that figure, which compared with the \$10 drove an outside killer took, were intrinsically 25@35c cheaper. Bulk of steers sold at \$8.50 @9.50 and a lot of grassers went at \$7.75@8.25 with a tailing kind down to \$7.25. First range steers of the season, Washington and Dakotas, sold

at \$7.25@8.40, the latter being from first named state. Butcher cows held at last the previous week's low spot, selling mainly at \$5@6.25 for grassers and good to choice corn-feds made \$6.75@7.50 and higher. Heifers of prime yearling grade went up to \$9.50 but there were few above \$8.50, and \$7@8 bought fair to good fat kinds, with common grassers down to \$6.25 and lower. Canners cows sold at \$3 @4 and cutters up to \$4.75. Bull trade scored a 10@15c advance, canner and bologna grades making \$4.75@6.25 and fair to good butchers \$6.50@7.50. Calves held steady at \$10.50@11.25. Milkers and springers still had narrow country demand at \$60@90 for plain to prime. Country call continued to favor well-bred fresh cows and backward springers.

Hogs, starting higher early in the week on brisk shipper demand scored at \$9.10@9.30 for good to choice butcher and light grades, but big local packers have continued a bearish attitude toward the market, refusing to buy many of the offerings. Provision trade had a higher turn in sympathy with the great advance in grains due to the European war situation, but pork prices broke terrifically later, on a packer bear raid and influenced by a similar situation in the hog market. Prices for hogs in late days of the week declined 30@40c from high point and packers bought common to good heavy and mixed packing grades down to \$8.25@8.65, while the smooth butchers and heavies sold at \$8.75@8.90, with a fancy light bacon type making \$8.95@9.05 at the close. Most pigs sold at \$8@8.75.

Range sheep and lambs are forming a considerable quota of the marketings now, but a small supply last week gave the trade stronger tone. Sheep closed at 15@25c advance while lambs showed only a shade higher basis than noted at the finish of the previous week. Feeding stock from the range comprises a short crop of the general receipts, but as yet demand from Michigan, Indiana and Ohio buyers is small. Washington and Oregon contributed bulk of the range stock. On the close a prime grade of range and native lambs sold at \$8@8.10 and medium to good natives at \$7.25@7.75, while the culls went down to \$6. Feeding lambs made \$6.50@7.25. Range wethers made \$5.15 @5.75 and fed wethers sold up to \$6, with a cull class at \$4@4.50. Poor to prime yearlings brought \$5@6.50 and range yearlings topped at \$6.15. Native and range ewes went at \$4@5.10 for common to choice and culls at \$2.75@3.

Horse market is showing stronger general tone in spite of increasing supplies, a little higher scale of values being forced for good business classes last week. Eastern demand is expected to improve shortly and the prices should then be established on a level considerably better than have prevailed for weeks past. Good 1400 to 1500-lb. chunks have sold at \$235@250 per head. Plain to fair light chunks went at \$125@165 and the medium work horses mainly at \$140@175. Good mares sold at \$180@200 and the common little nags down to \$65@85. A high class draft animal has been worth \$240@260 and up, but there are few of these being marketed at this time.

ADDITIONAL VETERINARY.

Foot-rot—Inflammation of Food.—I have a flock of about 80 sheep, a portion of them are going lame. They run on high, gravelly land and none of these sheep seem to be lame in more than one foot. Close examination shows that the heels are swollen, bottom of hoof seems chalky and the tissues between toes seem dry. Those that showed lameness a week ago seem to be getting better and others are showing more lameness. F. H. B., Mecosta, Mich.—I am inclined to believe that your sheep suffer from a simple contagious affection of the foot which should be called foot-scald and not foot-rot, and this ailment may perhaps be contagious, or it may be due to exciting causes. It is important to prevent the spread of this disease; therefore, I advise you to construct a trough, walking your sheep through a solution composed of one part coal tar disinfectant, ten parts water; or one part carbolic acid and 20 parts water every four or five days. It is needless for me to say that the hoofs of worst cases should be trimmed with a knife and if there are any angry sores, apply powdered sulphate of copper lightly every few days. I suggest that you treat the whole flock as it is easily done and not very expensive.

NEXT WEEK.

D. W. Francisco, who has made a careful study of Michigan's methods of selling fruit, will tell the readers of the Farm Commerce Department what should be done to improve fruit marketing in this state.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

August 6, 1914.

Cattle.

Receipts 1495. Bulls, cows and canners steady; all others 15¢-25¢ lower than last week.

We quote: Best heavy steers \$8.25 @ 8.50; best handy weight butcher steers \$7.25 @ 7.75; mixed steers and heifers \$7 @ 7.25; light butchers \$6.75 @ 7; best cows \$6 @ 6.50; butcher cows \$5.50 @ 6; common cows \$4.50 @ 5; canners \$3 @ 4.25; best heavy bulls \$6.50 @ 6.75; bologna bulls \$6 @ 6.25; stock bulls \$5.25 @ 5.75; feeders \$6.75 @ 7.25; stockers \$6 @ 7; milkers and springers \$4 @ 7.00.

Haley & M. sold Bowersox 3 stockers av 550 at \$6.60, 1 do wgh 450 at \$6, 1 cow wgh 930 at \$4.75, 1 do wgh 1020 at \$6, 1 stocker wgh 680 at \$5.75, 1 do wgh 590 at \$6.50, 1 do wgh 500 at \$6.25; to Goose 2 cows av 1015 at \$4.85; to Mich. B. Co. 2 do av 1055 at \$6, 3 stockers av 760 at \$7, 1 do wgh 1020 at \$8, 2 cows av 950 at \$6.50, 2 steers av 1110 at \$7.40; to Parker, W. & Co. 4 canners av 855 at \$3.85, 1 do wgh 820 at \$4; to Sullivan P. Co. 8 cows av 951 at \$6, 2 do av 990 at \$6, 1 bull wgh 1050 at \$6.25; to Rattkowsky 1 cow wgh 720 at \$4, 1 do wgh 890 at \$5.75; to Graves 8 stockers av 554 at \$6, 5 do av 680 at \$6.40; to Cooke 6 steers av 888 at \$7.75, 2 do av 1055 at \$7.75, 1 bull wgh 810 at \$6; to Goose 1 cow wgh 1070 at \$5.25; to Gleason 1 steer wgh 750 at \$7; to Lachalt 5 butchers av 862 at \$6.80; to Hammond, S. & Co. 1 cow wgh 1060 at \$4.75, 2 bulls av 990 at \$6.25, 2 do av 990 at \$6.

Bishop, B. & H. sold Sullivan P. Co. 1 cow wgh 1080 at \$4, 1 do wgh 1200 at \$6.50, 1 do wgh 1200 at \$5.50, 1 do wgh 1220 at \$6.25, 18 steers av 1046 at \$8.25, 1 do wgh 1200 at \$7; to Brown 20 steers av 1085 at \$7.45, 30 do av 1106 at \$7.45; to Thompson Bros. 7 do av 976 at \$7.50, 1 bull wgh 1020 at \$6.25; to Parker, W. & Co. 5 do av 1188 at \$6.25, 2 cows av 900 at \$4; to Breitenbeck 6 cows av 905 at \$5.15; to Heinrich 16 butchers av 900 at \$7; to Rattkowsky 4 bulls av 400 at \$5.50; to Findlay 3 stockers av 493 at \$6; to Kull 14 steers av 1102 at \$8.15, 5 do av 952 at \$7.50, 2 bulls av 1240 at \$6.25; to Heinrich 16 butchers av 845 at \$7; to Thompson Bros. 1 cow wgh 1100 at \$6.25, 3 steers av 870 at \$7.25, 3 cows av 917 at \$5.80; to Rattkowsky 10 cows av 1060 at \$6, 1 do wgh 1130 at \$5.50; to Parker, W. & Co. 3 do av 833 at \$5.50; to Lentz 9 stockers av 610 at \$6.10, 25 do av 567 at \$6.10; to Parker, W. & Co. 28 butchers av 767 at \$7, 3 bulls av 1063 at \$6, 3 canners av 900 at \$3.75, 5 do av 740 at \$4, 28 steers av 1010 at \$7.90; to Hirschleman 2 steers av 850 at \$7; to Mason B. Co. 5 do av 876 at \$7; to Herrick 11 cows av 990 at \$5.65, 16 stockers av 669 at \$6.15; to Parker, W. & Co. 3 cows av 753 at \$3.85, 6 do av 900 at \$4, 4 steers av 992 at \$7.75, 2 do av 1075 at \$8.50.

Veal Calves.

Receipts 509. Market 50¢ higher than on Wednesday; steady with last week's opening. Best \$11 @ 12; others \$8 @ 10.

Bishop, B. & H. sold Hammond, S. & Co. 9 av 160 at \$11.50, 5 av 165 at \$11.25, 5 av 165 at \$11.50; to Parker, W. & Co. 6 av 145 at \$11.50, 3 av 145 at \$10.75, 1 wgh 170 at \$11.50; to Rattkowsky 7 av 210 at \$10.50; to Shaparo 9 av 160 at \$11.50; to Ratner 13 av 160 at \$10, 8 av 135 at \$10, 3 av 170 at \$6; to Parker, W. & Co. 3 av 155 at \$11.25, 5 av 165 at \$10; to Sullivan P. Co. 26 av 160 at \$11.50, 6 av 200 at \$11.25, 4 av 250 at \$8, 1 wgh 200 at \$10.50; to Kull 2 av 165 at \$11.50; to Parker, W. & Co. 1 wgh 170 at \$12; to Nagle P. Co. 11 av 155 at \$11.50, 4 av 180 at \$12, 2 av 105 at \$9, 3 av 120 at \$8.50, 5 av 155 at \$11.50, 9 av 170 at \$11.50; to Sullivan P. Co. 4 av 155 at \$12, 4 av 150 at \$12, 2 av 150 at \$10, 7 av 180 at \$12, 7 av 155 at \$12; to McGuire 9 av 175 at \$12, 11 av 165 at \$11.50.

Sheep and Lambs.

Receipts 2611. Good lambs 25¢-50¢ higher than last week; common and light lambs very dull; should be kept in country until fit for market. Best lambs \$8.50; fair do \$7 @ 8; light to common lambs \$5 @ 6.50; fair to good sheep \$4 @ 5; culls and common \$2.50 @ 3.50.

Haley & M. sold Sullivan P. Co. 7 sheep av 107 at \$5.50, 6 do av 95 at \$5.50, 23 lambs av 65 at \$7.50, 121 do av 75 at \$8.50; to Harger 29 sheep av 120 at \$4; to Thompson Bros. 3 do av 105 at \$4.50, 47 lambs av 72 at \$8.50, 10 do av 66 at \$7.50, 12 sheep av 95 at \$4.25, 9 lambs av 55 at \$8.50; to Mich. B. Co. 47 do av 60 at \$8.25, 20 do av 55 at \$8.25, 8 sheep av 125 at \$4.50, 64 lambs av 70 at \$8.50; to

Hammond, S. & Co. 81 lambs av 75 at \$8.35; to Thompson Bros 53 sheep av 85 at \$4.50; to Hammond, S. & Co. 10 sheep av 93 at \$3.75, 10 lambs av 75 at \$8.50.

Roe Com. Co. sold Barlage 23 lambs av 70 at \$8.25, 32 sheep av 110 at \$4.50, 14 do av 85 at \$4.50, 34 lambs av 65 at \$8.25, 11 do av 65 at \$7, 48 do av 75 at \$8.25, 4 sheep av 140 at \$4.50; to Newton B. Co. 10 lambs av 68 at \$7, 74 do av 80 at \$8.25; to Young 17 lambs av 75 at \$8.50; to Burnstine 2 sheep av 155 at \$4, 5 lambs av 73 at \$7.25.

Hogs.

Receipts 2133. None sold up to noon; prospects higher. Heavy \$8.75; others \$9.

Roe Com. Co. sold Sullivan P. Co. 125 av 190 at \$8.90.

Haley & M. sold Hammond, S. & Co. 170 av 190 at \$9, 89 av 225 at \$8.90.

Spicer & R. sold same 125 av 200 at \$9, 70 av 250 at \$8.90.

Bishop, B. & H. sold Parker, W. & Co. 800 av 190 at \$9, 275 av 250 at \$8.90.

Friday's Market.

July 31, 1914.

Cattle.

Receipts this week 1259; last week 2216; market steady. Best heavy steers \$8.50; best handy weight butcher steers \$7.25 @ 7.75; mixed steers and heifers \$7 @ 7.25; light butchers \$6.75 @ 7; best cows \$6 @ 6.50; butcher cows \$5.50 @ 6; common cows \$4.50 @ 5; canners \$3 @ 4.25; best heavy bulls \$6.50 @ 6.75; bologna bulls \$6 @ 6.25; stock bulls \$5.25 @ 5.75; feeders \$6.75 @ 7.25; stockers \$6.25 @ 7; milkers and springers \$4 @ 8.00.

Veal Calves.

Receipts this week 746; last week 1016; market steady. Best \$11 @ 11.50; others \$8 @ 10.

Sheep and Lambs.

Receipts this week 2026; last week 1859; market strong. Best lambs \$8.25; fair lambs \$7 @ 7.75; light to common lambs \$6 @ 6.75; fair to good sheep \$4.50 @ 5; culls and common \$2.50 @ 3.50.

Hogs.

Receipts this week 2517; last week 4489; market 5¢ lower. All grades \$9.15.

LIVE STOCK NEWS.

Advices from Montana are that shipments of range wethers from that state this season will not exceed 25 per cent of shipments of last year. There is a serious lack of aged wethers, old ewes and yearlings, many rangemen having been forced to go out of the sheep business because of encroachment of settlers. Range conditions are singularly good this season, and flocks are expected to be marketed in unusually fat condition. Based on the number of ewes bred, there was a good spring lamb crop, but breeding operations are small when compared with former years before the country thereabouts was taken up by settlers. From present indications, it is not probable that there will be a large marketing of lambs from Montana before the middle of September.

Everything manufactured from hogs sells with great liberality with the single exception of lard. With an eye to this fact, packers have been throwing the minimum quantity of fats into the lard kettle, but considerable of that commodity must necessarily be made, and reducing the lard stocks is slow work.

"Iowa never had a better feed prospect," said D. D. Cutler, general live stock agent of the Northwestern Railroad, recently, "and where the thin cattle and sheep are coming from to convert into beef and mutton is a puzzle calculated to confound a Philadelphia lawyer. Cattle are abnormally scarce, but the country is full of pigs, and as far as I could ascertain, they were as healthy as hoboos."

It is becoming an interesting question with intending buyers of feeder lambs and breeding ewes where they are going to secure supplies, as sheepmen are everywhere awake to the importance of retaining their good breeders, while on the range the lambs will be finished good and fat as a general rule. In fact, well-bred ewes adapted for breeding purposes have been selling at higher prices than in the Chicago market recently, and ewe lambs are reserved for the same purpose. The season for marketing range and native lambs is on, and whenever the market develops any strength receipts are sure to be liberal, but after bad breaks in prices flocks are held back.

The average quality of the cattle marketed in Chicago last week was the poorest of the season, with a much increased proportion of grassers and the smallest percentage of high-dressing fat steers seen since 1912. Still, the demand for fat beefs was very contracted, even on Monday last week, when only 11,813 cattle arrived

on the market. It is evident that the dearthness of beef everywhere is resulting in materially lessening its consumption.

E. H. Farrington, head of the dairy school of the University of Wisconsin, says that with extra large quantities of good domestic butter going into storage at high prices and the market remaining steady, the influence of foreign dairy competition due to the lowered tariff apparently has not been so far-reaching as was expected.

The recent war news exerted a marked influence on the Chicago provision market, prices advancing sharply all along the line on the Board of Trade. In the event of war between big European powers, an enormous amount of meats, bread and other food would be required for feeding the armies in the field and the navy forces. Meanwhile the home demand for cured hog meats, such as bacon and hams, is very large, while the domestic consumption of fresh pork products is on a much heavier scale than in former years.

Never has the hog market been in a stronger position than it is now, and owners are fully justified in making them good and fat. The season for marketing grassy sows and other inferior swine is here, and this tends to widen out prices, prime shipping hogs of the lighter weights selling at the highest of all. The average weight of the hogs reaching the Chicago market has increased to 245 lbs., and there is a marked scarcity of pigs, with prime lots averaging under 140 lbs. selling nearly as high as the best matured hogs of strong weights.

CROP AND MARKET NOTES.

(Continued from page 113).

light ones are also in evidence. Threshing help is scarce and wages high.

Ohio.

Madison Co., July 24.—Threshing is well along. Wheat is good, but not equal to reports, and the price is advancing. Oats are very poor, and will not make half a crop. Pastures are burning up from continued drouth, in fact, everything is suffering for rain. Wheat 77c; oats 32c; corn 68c; rye 60c; potatoes \$2; butter-fat 30c; eggs 20c. Fat stock of all kinds is scarce and high.

Hancock Co., July 25.—Threshing of wheat going on, with a good yield. Oats nearly all cut, with a shorter crop than usual; corn looks good; also potatoes, but rain would help to improve it. Hay crop was light and more acreage was cut, leaving less for seed. Apples are making a fair crop; Peaches are not so plentiful. Eggs 18c; wheat 76c; some hogs are being marketed at \$8.75. Pasture is short. Not much rain lately.

Holmes Co., July 27.—The weather is hot and dry. Hay is all made, but is a light crop. The wheat yield is above the average. Oats are ready to cut, and the yield is promising. Potatoes are looking good. Pastures are getting short, and cows are falling off in their milk. Apples will be a good crop in the valleys, but scarce on the hills. Peaches will be plentiful and pears promise well. Wheat 75c; oats 40c; corn 90c; hay \$10; cream 28c; country butter 18c; eggs 19c. Chickens, ducks and geese are plentiful, but turkeys are scarce.

Harrison Co., July 27.—It is very dry, and corn is suffering for want of rain. Wheat is all harvested in fine shape. Oats are ready to cut and are a poor crop. Potatoes will be a poor crop on account of dry weather. Hay was not a full crop, but of excellent quality. Early apples are plentiful, and late apples promise a fine crop. Plums and pears will be a good crop, but peaches will be light. Eggs 20c; butter 23c; fat cattle 8c; hogs 7½c; sheep are very high.

Missouri.

Vernon Co.—Threshing is in full blast, and wheat is yielding from 25 to 40 bushels per acre; oat yields 25 to 50 bushels. Corn looking fine. The potato crop is very light, having heavy vines but few potatoes. We will have a fair crop of peaches and apples. The pig crop will be very light. Corn is selling at 85c; wheat 65c; oats 28c; hogs \$8.25; cattle \$5 @ 7; spring chickens 17c; eggs 14c; butter 20c.

Indiana.

Noble Co., July 27.—At present we are very much in need of rain; the dry weather is damaging what would otherwise have been an exceedingly good corn crop. A great deal of wheat has been threshed and runs about 15 bushels to the acre, the fly having done considerable damage. Oats have all been cut and is a large crop. Early potatoes are about the average and late crop looks fine. Plum and peach crops will be short; apples now promise well. Onion crop will be large and of good quality. Considerable number of grass cattle are being shipped at \$6.50 @ 7.50 per cwt;

hogs \$8 @ 8.25; chickens, old 12c; young 18c; wheat 78c; oats 40c; corn 95c per cwt; butter 25c; eggs 18c.

Dickinson Co., July 26.—Harvest was long and tedious owing to the heavy grain and frequent showers. The yield of wheat is 15 @ 40 bushels per acre. Corn is looking fair. Alfalfa is being cut. Plowing has commenced. Potatoes are scarce. Fruit is of good quality but not very plentiful.

Kansas.

Finney Co., July 20.—Wheat harvest is over, and it is estimated that the average yield will be 20 to 25 bushels per acre, which is good for this country. Farmers here engage principally in stock raising with great success. In the irrigated districts crops of all kinds are fine, and there are plenty of plums, apples and cherries. Prairie hay is good. Butter 25c; eggs 15c; spring chickens 16c; wheat 60c; potatoes \$1.80 per bushel.

Waukhara Co., July 27.—Drouth has been broken by copious rains, but pastures had suffered considerably, and the milk flow is going down. Rye is a fair crop, and oats are good except where drowned out in the spring. Corn looks good, but much of it was planted late and needs a late season in which to mature. Potatoes look fine. A big hay crop was harvested. There are few summer or fall apples, but winter apples are a little better. Eggs 17c; butter 23c; oats 40c; rye 56c; wheat 90c; beef 4 @ 6c live.

Idaho.

Power Co., July 19.—Wheat is almost ready to head. There will be a good crop of wheat except where killed by the June frost. The spring wheat will be good unless too dry weather prevails before harvest. The potato crop will be light. The first crop of hay is rather light. Wheat sells at \$1.25 per cwt; butter 17½c.

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To You, Mr. Farmer.

Did you ever stop to consider that the population of the world is increasing every year, with practically no increase in land area since the world began. In a few years to own a farm will be the hall mark of wealth and distinction. The wise man will take the first opportunity to get one. You can get one in this new country which is just opening up for settlement in Central British Columbia. The North Coast Land Co., has some fine farming land for sale in the Prince George district, the valleys of the Fraser, the Nechaco, the Bulkley and Skeena Rivers. The land is productive; the climate fine; first class country for stock; home market. The chance for the farmer to become independent. For information write.

WHITNEY LAND COMPANY, 420 Germania, St. Paul, Minn.

Farm Commerce.

New York's Rigid Apple Market Law.

IT may at first seem out of place for this publication to give the wording of the New York state apple packing law, but there are good reasons for doing so. First, many Michigan apples find their way to New York in spite of the fact that the sister state is the largest producing state in the union, and growers who wish to make it easy for their agents in the metropolis to sell, want to know the law that they may conform to its requirements.

Second, we are anxious to improve the apple pack in Michigan, and if the attention of the growers is called to the provisions of the advanced law of New York state, they can watch its influence on the business and by so doing be better prepared to improve our own laws.

Again, a similar law in Canada is working out admirably and is putting the fruit shipped from the provinces on an entirely higher selling basis. If the New York law does the same and helps the producers of that state to develop a better market, gain a better reputation in the nation's and world's markets, and consequently secure to the growers greatly improved prices Michigan farmers generally wish to be fully apprised of the means whereby the advantage is gained, and on the other hand, if it fails to do any or all of these things they wish to know that, too.

Following is the text of the law:

An act to regulate the grading, packing, marking, shipping and sale of apples. The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. That the standard grades or classes for apples grown in this state when packed in closed packages shall be as follows:

The Fancy Grade Brand.

First. New York standard fancy grade shall consist of apples of one variety, which are well-grown specimens, hand-picked, properly packed, of good color for the variety, normal shape, free from dirt, diseases, insect and fungus injury, bruises and other defects except such as are necessarily caused in the operation of packing.

Other Grades.

Second. New York standard "A" grade shall consist of apples of one variety which are well-grown specimens, hand-picked, properly packed, of good color for the variety, normal shape, practically free from dirt, diseases, insect and fungus injury, bruises and other defects except such as are necessarily caused in the operation of packing; or apples of one variety which are not more than ten per centum below the foregoing specifications on a combination of all defects or five per centum on any single defect.

Third. New York standard "B" grade shall consist of apples of one variety which are well-matured, hand-picked, properly packed, practically normal shape, practically free from dirt, diseases, insect, and fungus injury, and which may be of medium or less than medium color for the variety; or apples of one variety which are not more than ten per centum below the foregoing specifications on a combination of all defects or five per centum on any single defect.

Unclassified Apples.

Fourth. Unclassified. Apples not conforming to the foregoing specifications of grade, or, if conforming, are not branded in accordance therewith, shall be classed as unclassified and so branded. The minimum size of the fruit in the package shall also be

and in addition to the other marks hereinafter required.

The marks indicating grade as above prescribed may be accompanied by any other designation of grade or brand if that designation or brand is not inconsistent with or marked more conspicuously than the one of the said four marks which is used on the said package. Apples packed and branded in accordance with the United States law approved August third, nineteen hundred and twelve, shall be exempt from the provisions of this act.

The minimum size of the fruit in all classes or grades, including the unclassified, shall be determined by tak-



A Turk Displaying Truck Crops for Sale.

ing the transverse diameter of the smallest fruit in the package at right angles to the stem and blossom end. Minimum sizes shall be stated in variations of one-quarter of an inch, like two inches, two and one-quarter inches, two and one-half inches, two and three-quarter inches, three inches three and one-quarter inches, and so on, in accordance with the facts.

Minimum sizes may be designated by figures instead of words. The word "minimum" may be designated by using the abbreviation "min."

A tolerance or variation of five per centum on size shall be allowed in all classes, but such five per centum shall not be in addition to the variations or tolerances for defects provided in grades "A" and "B."

Name and Address of Packer is Required.

Section 2. Every closed package containing apples grown in the state of New York which is packed, sold, distributed, transported or offered or exposed for sale, distribution or transportation in the state by any person shall bear upon the outside of one end in plain letters and figures the name and address of the packer or person by whose authority the apples were packed and the package marked, the true name of the variety, the grade or class of the apples therein contained and the minimum size of the fruit in the package, as provided by section one. If the true name of the variety shall not be known to the packer or the person by whose authority the package is packed or branded, then such variety shall be designated as "unknown." Every package of apples which is repacked shall bear the name and address of the repacker or the name of the person by whose authority it is repacked in place of that of the original packer.

Section 3. It shall be unlawful for any person within this state, except under the percentages of tolerance

and variation as allowed by paragraphs second and third of section one relating to New York standard "A" and "B" grades, to pack, sell, distribute, transport, offer or expose for sale in closed packages apples which are not hand-picked or which are wormy or diseased, or which show fungus or scab injury, unless such fact or facts shall be plainly stated by the use of the words "not hand-picked," "wormy," "diseased," "fungused," or "scabby," as the case may be, said words to be branded upon the outside of the same end of the package on which the marks prescribed by section two shall appear.

Section 4. The marks or brands prescribed by sections one, two and three, shall be in block letters and figures of size not less than 36 point gothic.

Misbranding Not Tolerated.

Section 5. It shall be unlawful for any person within the state to pack, sell, distribute, transport, offer or expose for sale, distribution or transportation, apples which are adulterated or misbranded within the meaning of this act.

Section 6. For the purposes of this act apples packed in a closed package shall be deemed to be misbranded:

First. If the package shall fail to bear all statements required by sections one, two and three.

Second. If the package shall be falsely branded or shall bear any statement design or device regarding such apples which is false or misleading, or if the package bears any statement, design or device indicating that the apples contained therein are New York "standard grade" and said apples when packed or repacked do not conform to the requirements prescribed by section one of this act.

Section 7. For the purposes of this act apples packed in closed packages shall be deemed to be adulterated if their quality or grade when packed or repacked does not conform to the marks upon the package.

A Fine Provided.

Section 8. Any person who knowingly misbrands or adulterates apples within the meaning of this act, or who knowingly violates any of the provisions of this act, shall be deemed guilty of a misdemeanor and, upon conviction, shall be punished for the first offense by a fine not exceeding \$25 and not less than \$10; for the second offense by a fine not exceeding \$50 and not less than \$25, and for the third and each subsequent offense by

a fine not exceeding \$200 dollars and not less than \$50, together in all cases with the costs of prosecution.

Whenever any such violation is with respect to a lot or shipment consisting of fifty or more closed packages, there may be imposed in addition to the above penalties 25 cents for the first offense, 50 cents for the second offense and \$1.00 for each subsequent offense for each package in excess of 50 with respect to which sum violation is committed.

How Enforced.

Section 9. The enforcement of this act shall be vested in the commissioner of agriculture under rules and regulations to be adopted by him.

Section 10. No person shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the person from whom he received such articles to the effect that the same is not adulterated or misbranded within the meaning of this act. Said guaranty to be valid shall contain the true name and address of the person or persons making the sale, and in such case the guarantor shall be liable to the penalties of this act.

Definitions.

Section 11. Definitions. The word "person" as used herein shall be construed to include both the singular and plural, individuals, corporations, copartnerships, companies, societies and associations. The act, omission or failure of any officer, agent, servant or employee acting within the scope of his employment or office shall be deemed the act, omission or failure of the principal. The words "closed package" shall mean a box, barrel or other package, the contents of which cannot be seen or inspected when such package is closed. The words "not hand-picked" shall include windfalls, drops and apples shaken or knocked from the tree by any agency.

Section 12. No person shall on behalf of any other person pack any fruit for sale, transportation, or distribution contrary to the provisions of this act.

Section 13. This act shall not apply to unpacked apples actually transported in barrels to storage within this state until the same are removed from storage for the purpose of marketing, sale, transportation or distribution.

Section 14. This act shall take effect July 1, 1914.

Section 15. All acts or parts of acts inconsistent herewith are hereby repealed.

Faulty Eggs and How they are Classified.

A LARGE per cent of the eggs sent from the farm never reaches the consumer. A number of things may happen to cause them to be thrown out or used for entirely different purposes than were intended, and the terms employed by the trade to describe these damaged eggs are not always understood by the producer. However, he should know what the commission man means when certain terms are used, and how to avoid or minimize the injury described.

Eggs that are completely wrecked, (and termed "mashed," in commerce), are not only worthless themselves but they soil a number of eggs, otherwise good. When the shell is so broken that the contents are escaping the egg is termed a "leaker."

Another class of eggs which have a technical term applied to them because of mechanical injury are the "checks." "Checks" are eggs the membranes of which are intact but with cracked shells. The egg industry has to contend with an enormous number of these. If the crack or defect is visible only when the egg is held before a candle or when it is gently tapped against another sound egg it is called a "blind check." This tapping of one egg against another is called "clicking" by the egg men.

"Leakers" are thrown out at every stage of handling. The country merchant usually throws them away when he discovers them, as do the egg peddler and the city retailer. They therefore constitute a total loss. "Checks" are sure to rot quickly when on the market for they are ready prey for any mold or germs that may chance to fall into the crack. They are usually disposed of as soon as possible and are likely to be found in greater numbers in markets near a section producing eggs. If found at a distance from a producing section a cracked egg is more than likely to be of a very low quality. However, there are plenty of "checks" which are fresh and above reproach except for the damaged shell, but they must be handled carefully and rushed to the consumer as quickly as possible.

Dirt Outside no Indication of Bad Interior.

The egg with a dirty shell is one of the most objectionable factors of the egg industry. However, it must be remembered that outer filth is not conclusive evidence that the contents of the eggs are infected. Of course, if eggs have shells that are cracked as well as dirty, they may well be regarded with suspicion.

The great drawback in the case of

dirty-shell eggs is that they bring a lower price in the market, although the egg may be large and its contents fresh. Eggs with dirty shells do not store well. They are, therefore, not available for holding when the surplus production is great and when the market can secure more "clean" eggs than it needs. Often they scarcely pay the expense of marketing.

When shells are stained, as well as dirty, there is an indication that water as well as filth has come in contact with the egg shell, and such eggs when stale are often infested with bacteria that have gone through the pores of the shell. Stains can not usually be washed off. Eggs that are to be kept should never be washed, as water will remove the natural coating that protects the contents of the eggs.

The highest percentage of dirty-shell eggs occurs during wet spring weather. Since they do not keep well a large number find their way to egg-breaking establishments, as do the cracked eggs termed "checks."

Warm Weather and Stale Eggs.

The egg dealer encounters enough unfavorable conditions resulting from bad weather without those that result from rough handling and mechanical injury. When warm weather prevails eggs go stale and many of them show what is termed "heat." This means that the yolk rises in the shell and is flattened, and the white becomes thinner than normal, while the air space in the egg increases in size. In the fertile egg the change goes further, for the egg begins to hatch.

What the commercial trade terms a "weak" egg or a "watery egg" is merely a stale one which has usually suffered rough handling. The result is that the white is frequently thin and the membrane lining of the egg proper has become so loosened that the latter rattles around loosely when the egg is turned. In the late summer and autumn when the hens are not laying, and country merchants are withholding stocks for high prices in the future, such eggs form a very large proportion of the current receipts of the city market.

EFFICIENT MANAGERS AND GOOD ACCOUNTING SYSTEM NEEDED.

When the farmers determined to enter the field of co-operative grain marketing they were beset by many obstacles. In the first place it was difficult for them to procure trackage sites from the railroads for their elevators. When they did procure sites and build their elevators, every possible device of destructive competition was brought into play by the line elevator companies to kill them before they could get fairly stated. Add to these difficulties the inexperience of the farmers in business affairs, and the resulting poor management of their elevators, and it is only natural that a great many failed. In spite of early discouragements, the farmers persevered, and today we have a goodly number of successful farmers' elevators in many of the states of the grain belt—notably Illinois, Iowa, Wisconsin, Minnesota, North Dakota, South Dakota, Nebraska and Kansas.

Frequent failures among farmers' elevator companies, however, have not been confined to the early days of the movement. They are still occurring with deplorable frequency. Competition of line elevator companies at local points still persists. Poor management, in the form of inefficient managers and cumbersome and faulty accounting systems, is still common. Every year, scores of farmers' elevators are closed in the northwest, but the aggregate number in operation is steadily increasing, owing to the entrance of new companies every year. These facts suggest the principal problem connected with the farmers' elevator movement today, viz., what means shall be adopted to place existing companies on a

sound basis, and to insure to new companies a reasonable chance of permanent success?—L. D. H. Weld.

MARKET FRUIT CAREFULLY.

Only a little extra time and skill are required to market plums and apples properly. If they reach the market poorly graded, and bruised, or in dirty, broken packages, they cannot command good prices. Every farm paper advertises the clean, neat packages necessary to show fruits advantageously.

Pick with care. Don't wait for plums to soften or apples to become mealy. They should be well colored and large, but still firm. A soft plum will not stay up in the market and neither will the price. Fall apples may be picked when full size is reached without regard to color, or the color may be allowed to develop if desired, but the fruit must not be allowed to soften or drop if it is to be handled profitably.

Discard all bruised, stung, or misshapen plums and grade as No. 1 those of good color, and as No. 2 those inferior in coloring. Sort according to size so that every package is uniform throughout in size of plums which it contains. The same suggestions apply to apples, especial care being taken to discard those that are wormy, scabby, bruised, or stung. Uniformity in color and size of fruit and size of package, combined with neatness and cleanliness of package, will add greatly to the market price of the fruit.—W. G. Briery.

Crop and Market Notes.

Michigan.

Hillsdale Co., July 24.—Crops of all kinds are good. Yield of wheat is from 22 to 41 bushels per acre, and half the crop is threshed. Oats are good; corn is very fine; potatoes are better than usual; hay is a good crop. There has been a fair amount of rainfall. There are no apples, plums or peaches. Timothy is selling at \$10; oats 33c; wheat 76c; eggs 18@20c.

Northern Isabella and Southern Clare Co.'s, July 29.—Haying is nearly done, with barely an average crop, but secured in good shape. Potato bugs are plentiful; all crops looking well; oats are nearly ready to cut; wheat all cut and of good quality. Huckleberry pickers rushing north for berries and they are a short crop. The following is the Clare market: Cream 24c; butter 17c; eggs 17c; red wheat 74c; white wheat 74c; rye 50c; oats 34c; beans 1.65.

Saginaw Co., July 27.—Wheat harvested in good condition, yielding about 35 bushels per acre. Oats are ripening fast, and promises to be a very heavy crop. A few are already cutting oats; corn is looking fine. The county has a heavy hay crop, nearly all harvested. Heavy rains have somewhat injured beans, though the county has large acreage. Butter-fat 27½c; eggs 18c.

New York.

Niagara Co., July 28.—At last we are having a little rain; wheat is medium, not filled in heads on account of prolonged dry weather. Oats are heading up short; corn and potatoes very good; hay two-thirds of a crop; beans are looking fine. An abundance of early apples, but not so many late apples as was expected in the spring. Some apples, pears and quinces were struck with blight. Pears are medium crop but aphids is thick. Peaches so scarce that \$3 a basket is rumored. Plums half a crop. Pork is 7½c per pound, or \$7.50 per cwt; eggs and butter 21c. Cherries have been an abundant crop and only 2@3c per lb; baskets of 6 lbs. scarcely selling now at 11c.

Lapeer Co., Aug. 1.—Threshing is on and grain is not yielding up to expectations. Onions look fine, and the beans, with the exception of those fields damaged by the frost of June 19, look good. Hay is very light. Potatoes in many instances are developing very large vines and some farmers fear that there will be few potatoes; however, the acreage is large. Both early and late apples are plentiful here; pears are fairly good; plums scarce and peaches are a complete failure. Eggs are 18c; butter 20c. Calves sell slowly, while chickens bring good prices. Army worm has nearly run its course. Many good fields of corn are to be found, but

(Continued on page 111).

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CLEAN LITERATURE IN THE HOME.

Paper read before the North Shade Farmers' Club by Mrs. Geo. Emrick and published at the request of the Club.

(Continued from last week).

President Eliot said: "There are bits of poetry learned in infancy that have influenced my life more than all the sermons I have ever heard. A child will remember what it reads, much longer than a message from the pulpit. Let us give our children books containing noble characters, such as Gene Stratton Porter has portrayed in 'Freckles,' and 'The Girl from the Limberlost.' Harold Bell Wright's works are all true to nature, having noble character and a good moral.

"I shall not try to enumerate the many good works, which are being written by men and women who are trying by their pens to make the world better. Reading is like traveling, it broadens our vision. Few of us can afford the expense of a trip to the remote parts of our own country, but we can all afford the price of a good book.

In writing a story, the author goes to the place where he expects to lay its plot and studies local conditions. After reading the story, we have quite a good idea of that locality, naturally, historically and geographically. "The trail of the Lonesome Pine," by John Fox, Jr., gives us a fine picture of life in West Virginia and Kentucky. Also the awful workings of a mountain feud. "The Sky Pilot," by Ralph Connors, takes us up to northwestern Canada, so if we can not travel ourselves, let us do so by reading.

Boys and girls should be supplied with books, suitable to their age. Mothers, read the books your boys and girls read; you may have to cook less and dress plainer, but it is worth a great sacrifice, it will guard the children and will keep you young in mind.

In teaching we always emphasize the "do's," and minimize the "don'ts." This I have been trying to do, but there are four don'ts I wish to emphasize.

First, don't allow in your home the unclean daily paper, that advertises liquors and tobacco, that brings out all the nasty points in a divorce case, and all the horrible ones in a murder trial. That paper is poison to your child's morals.

Second, don't allow in your homes the cheap magazine that advertises all sorts of get-rich-quick schemes, and medicines which will not cure, and also medicines for purposes that, if your family physician would do the same thing, he would be put behind the bars, and yet these things are thrown in the way of our young men and women.

Third, don't allow the detective or the wild western story in your homes. Those stories give the boys the wrong impression of life. Detective work is a business, not a romance. In the story, the detective always comes out all right, but in real life, sometimes he does not come back at all. The firm of Pinkertons could testify to this. Wild western stories cause our boys to become thugs, highwaymen and bank robbers.

Fourth, all stories have a vein of love running through them. A story, to be interesting, must have a woman in it, and where a woman is there will be love, but bar from your homes the

silly story that is nothing but love. It gives your daughter a mistaken view of life. She will expect a young man to fall upon his knees to offer his hand in marriage, a thing no self-respecting young man would do, but that is the attitude they strike in her favorite story, and she will not accept a proposal made in a straight-forward way, such as men use in real life.

But worse than that, is the story that pictures the girl running away from her parents and going to the city, and becoming a great lady or actress, or marrying a rich man.

That is not true to nature. A girl that runs away and goes to the city, without friends, will be far more likely to become a great nothing, and is taking great chances of getting in a white slave den. As we love our daughters, let us keep these things far from them.

Let us be more careful of the books we read, than of the food we eat. Unclean food might kill the body, but unclean literature will kill the soul. Let us fill our homes with good, clean literature that will train the minds and educate the heart, as well as amuse.

CLUB DISCUSSIONS.

A Home-Coming.—The East Nankin Farmers' Club held a Fourth of July celebration and home-coming at the home of Mr. and Mrs. W. S. Lathers. The day was opened with a ball game between the East Nankin ball club and the Elm ball club, in which the East Nankin club won. A picnic dinner was the next thing on the program, which was followed by a patriotic address by the Rev. Wm. S. Buck, of Detroit. Mr. R. J. Lather gave a short historical sketch of the settlement and development of the neighborhood. Mrs. Martin Stringer, of Wayne, gave a temperance reading, followed by two vocal selections by Mr. Chas. Smith, of Detroit. A very strenuous tug-of-war was then held between the married men and the single men, in which the married men won. This was followed by games and races of all sorts, and a ball game between the married men and the single men, in which the single men were victorious. After the ball game the company dispersed. Between 250 and 300 people were present.—Cyrus Lathers, Sec.

Will Take Month's Vacation.—The July meeting of the Somerset Farmers' Club was entertained at the home of Mr. and Mrs. M. R. Morton, Saturday, July 25. Meeting was called to order by the president, Mr. Harry Lombard. Opened by singing, "Michigan, My Michigan." Followed by prayer by Mr. L. T. Smith, reading of minutes, reports of committees, etc. Resolutions were adopted on the death of a member and former secretary, Mrs. Mary Carney. A paper, "Am I my brother's keeper?" read by Mrs. Mary Lane, was discussed by Rev. Bellewe. Roll call was answered by temperance notes, a talk on England and Scotland, and who visited those countries last year, was given by Rev. Pellewe. He began with a graphic description of his trip across the ocean and of the gigantic icebergs the ship encountered, but unlike the ill-fated Titanic was piloted safely through the dangerous bergs and safely into port. He said the first two noticeable features were the beautiful green grass, an emerald green, so different from our American grass, and the rosy complexions of the English ladies, who surpass the American ladies and their white faces. But, he added, the English lords are attracted more by the green backs of our American daughters than by rosy faces. He told us of the grand old castles, the gorgeous scenery, notable structures, and so many things for which England is famous. Altogether it was very enjoyable. After the rendering of several excellent literary numbers a very able address on the subject of "Temperance," was given by Rev. G. M. Vanbuskirk. It was a plain, forceful, and I may say, powerful, setting forth of the evils of intemperance. He was listened to with rapt attention. Some of the many things we would remember was, "That 90 per cent of the criminals in our penal institutions are there through the curse of alcoholic drinks." "China is leading the world in getting rid of the opium curse." The meeting then adjourned to meet, after one month's vacation, with Mr. and Mrs. A. Houghtaling, on September 26. Tables were then spread at which 50 sat down to a sumptuous repast, which concluded a very enjoyable afternoon.—Mrs. Z. E. White, Cor. Sec.

Grange.

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

STATE GRANGE TO ASK NEEDED LAWS.

At a recent meeting at Lansing of the executive committee of the State Grange, resolutions were passed endorsing, among other things, a law guaranteeing bank deposits in Michigan and the complete tonnage tax law.

With the elimination of salt and the fixing of graduated rates for iron the committee completed the Grange's tonnage tax measure, which is now ready for circulation of petitions required by the initiative. The rate on refined copper is one-fourth cent, as previously fixed; while coal is listed at two cents the ton.

Iron received the biggest share of attention, great effort and much time being devoted by members of the committee to distributing the imposition upon an equitable rate. The rate will average about seven and one-half cents the ton. The ores are divided according to the technical designation of Besemer and non-Besemer ores. Of the former there are two classes: All ores of 48 to 53 per cent "metallic iron content natural," are class A and given a rate of 12 cents the ton; all Besemer ore above 53 per cent as above, are B class and have a rate of 15 cents the ton.

The non-Besemer ores have three classifications, as follows: All ores of less than 48 per cent "metallic iron content natural" are rated at two cents the ton; all between 48 and 53 per cent inclusive at seven and one-half cents; and all over 53 per cent at 10 cents a ton.

Provision is also made in the tonnage tax measure, whereby 80 per cent of the specific tax is to go to the general fund of the state, and the remaining 20 per cent to be returned to the counties, "for purposes hereafter to be determined." The only phase of the whole matter, untouched by the proposed tonnage tax bill is what disposition shall be made of the money that is returned to the counties.

The Grange declaration for guarantee of bank deposits does not go into detail, but broadly places the Michigan State Grange on record as favoring such legislation. Discussions in the committee touched upon this guarantee for state bank only, but it was shown that this would exclude the private bank in the small rural community and eventually drive them out of business, since few of the smaller institutions could capitalize at the \$20,000 minimum now required of state banks. The formal attitude of the Grange, however, leaves it up to the Legislature to make a law reaching these smaller banks. If necessary, several of the executive committee would favor admitting the small banks under some sort of provision whereby they would be automatically compelled to increase their capital stock as the deposits increase.

The resolutions also declared the attitude of the Grange toward M. A. C. as follows:

"The Michigan Agricultural College ranks ahead of such institutions in this country and is generously accorded that position," says the Grange resolution, which then declares that the college's "leadership should be confined to agriculture and its related arts. In that field its prestige must never suffer through any niggardly financial policy or petty personal and political considerations."

Besides the above the committee also took action favoring the Smith-Lever bill, by which the federal government makes a liberal appropriation

available for agricultural extension work, and equal in amount to that raised by the state.

In line with its policy of bringing the nomination of political candidates as near to the individual citizen as possible, the Grange favors the election of delegates to the national political conventions by district and delegates at large at primaries to be held on the same day with annual township meetings.

Their fifth recommendation to the Legislature is for the creation of a state trade commission, which would do for the market products of the state, what the proposed federal trade commission is to do for interstate commerce. Problems related to the "high cost of living," caused by the present long route from producer to consumer, would be within the power of the trade commission to study and solve.

The Grange also asks for the repeal of the hucksters' license law so far as it relates to country store keepers' wagons making deliveries through the country.

The committee took action in support of the Woodruff good roads bill, in preference to other road bills which are pending before Congress. The committee favors the Woodruff bill because it is modeled upon the state highway plan whereas the other bills pending are federal post road systems.

At the coming meeting of the Legislature the Grange will also ask for a law regulating the galvanizing of wire fence. They state that fencing is one of the most important problems confronting the farmers and they want to see that he is not sold fence that will be useless in a few years. The Grange will also likely recommend a law providing for the testing of fence. They say that wire fencing is a necessity as board and hedge fences are impractical.

The mortgage tax law will also be amended if the Grange has its way. The law now provides for the payment of taxes on mortgages by the payment of a recording fee. The Grange leaders do not think this is enough. They think the holder of a mortgage should pay an annual tax.

The Grange's service to the state in the field of legislation has been most valuable, and all Grangers can be proud of the influence the Grange has had for good along this line of work.

A WORD FROM BRANCH COUNTY.

Branch County Pomona Grange, No. 22, met with Unity Grange at the pleasant home of Matt H. Garrett on Thursday, July 16, with a record-breaking attendance, to be entertained by a single Grange, 430 by actual count being served at dinner, Unity Grange doing the honors. The meeting was held in the orchard and on the spacious lawn of Bro. Garrett, one of our most enterprising and hustling patrons who, by the way, is a very successful breeder of Polled Durham cattle, and will make a large exhibit of his stock at Cleveland, Columbus and Detroit fairs the coming fall. The attendance was around the 600 mark during the rendering of a splendid program of music, recitations, readings and papers, by some of our leading patrons of Branch county.

To specialize would make too long a paper for publication. Suffice to say that all did fine, and nearly everyone was obliged to respond to an encore. The children did remarkably well, showing in a marked degree what the Grange is accomplishing in an educational way. Branch county Pomona Grange has over 300 active members and many more in sight. We aim to meet once each year with every Grange in the county, and help, not hinder, progress. We have 13 Granges in the county, all but one being very strong, and have a marked influence for good.—Wallace E. Wright, Deputy.

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 someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany letter.

Sore Ears and Skin.—I have 17 pigs in orchard; part of it is growing June grass and the other rape, and several of my pigs have sore ears and sores on body. A. M., Springport, Mich.—I am inclined to believe that eating rape is causing this skin eruption, or it may be caused from the moisture getting on body from running in rape and high grass. Apply one part oxide zinc and seven parts vaseline to sore parts of body every day or two.

Cow Gives Bloody Milk.—My seven-year-old cow came fresh a week ago and must give bloody milk for we find streaks of blood on inside of separator bowl; this cow appears to be in perfect health and we have never had any trouble with her before. Mrs. W. O'M., Melven, Mich.—If you keep her in a stable, bed her well and where she is inclined to lie nights, be sure it is free from pebbles and blocks of wood, for she may injure her udder when down; besides, if she is inclined to step over fences or out of ditch, she may injure her bag in this way. Apply the following lotion to udder three times a day: Dissolve ¼ lb. of acetate of lead in a quart of water.

Rheumatism.—I have a sow that either has rheumatism or a sort of paralysis affecting nearly the whole body, but more so in hind quarters. E. C., Elwell, Mich.—If the basement barn you keep her in is damp and not well ventilated, remove her to a dry, airy place, or perhaps outdoors under a shade tree. Give her 15 grs. of sodium salicylate and 20 grs. of powdered nitrate of potash in a dose in feed three times a day. Feed her oats and grass and it will do no harm to give her some skim or buttermilk.

Stunted Calves—Indigestion.—For the past 30 days my calves have not gained a pound, but do not show any particular symptoms of sickness and I am sure they are not lousy. N. G., Cedar, Mich.—Mix together equal parts of ground gentian, ginger, bicarbonate soda and give each calf a teaspoonful at a dose in milk or feed three times a day. Are you sure they are having plenty of good feed and should they not be sprayed with a fly repellent?

Mare Pants in Hot Weather.—I have a black Percheron mare 10 years old that eats well, keeps fat, works all right in cold weather, but as soon as the sun shines hot she pants badly and seldom perspires. She has a thick coat of hair and resting her does not give much relief. G. M. P., Jonesville, Mich.—Your mare should be clipped and when the sun shines bright cover her with a white sheet. Give her 4 drs. tincture of arnica and 6 drs. sweet spirits of nitre in a pint of water as a drench three times a day. The skin should be washed with warm water twice a day. Black colored horses seldom stand the heat as well as lighter colored animals.

Surfeit.—I have a mare five years old that just foaled, but lost her colt; since then she has not done well nor fleshed up, and this morning she is covered with pimples on neck and side. J. N., Martin, Mich.—Give your mare 1 oz. bicarbonate soda and a teaspoonful of powdered nitrate of potash at a dose in feed three times a day, and wash her with tepid water twice a day.

Garget.—Have a cow that came fresh one month ago which has garget affecting one teat. G. H., Metamora, Mich.—Apply one part iodine and 20 parts fresh lard to gargety portion of udder every day or two.

Suppurating Foot.—I have two cows that are troubled with sore feet, both affected in a similar way, and I would like to know if it is dangerous to use their milk. C. A. R., Big Rock, Mich.—I do not believe it unsafe to use their milk. Saturate foot in one part carbolic acid and ten parts water, or apply equal parts of powdered alum and oxide of zinc, or apply air-slaked lime once or twice a day.

Infected Colt.—I have a colt two weeks old that has bunch on stiffler joint causing lameness, and I am unable to say what caused it. F. S. W., Fenton, Mich.—Apply one part tincture iodine and nine parts spirits of



\$3 Package CURE any case or money refunded
\$1 Package CURE ordinary cases. Mineral Heave
Remedy Co., 463 N. Fourth Ave., Pittsburgh, Pa.

FOR SALE—Gray 2-year-old Percheron Stallion, weighing 1700 pounds, 24 months old. Price, \$500. M. A. BRAY, Okemos, Ingham Co., Mich.

Registered Percherons, BROOD MARES, FILLIES AND YOUNG STALLIONS at prices that will surprise you. L. C. HUNT & CO., Eaton Rapids, Michigan.

FOR SALE—Registered weanling Stallion Colts from our best Percheron Mares. Write, R. S. HUDSON, Michigan Agricultural College, E. Lansing, Michigan.

BREEDERS' DIRECTORY.

CATTLE.

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Bull calves and yearlings ready for service. Sired by Louis of Viewpoint II. Closely related to five Grand Champions—Brother, Sister, Sire, Sire's Brother and Grand sire. (International Grand Champion for three years in succession. Prices \$75 up. Will meet prospective purchasers either at Somerset, Addison or Addison Junction. You are bound to get good calves from these bulls even with strongly dairy type grade cows.

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HERD FOUNDED IN 1900. Strains represented consist of Trojan Ericas, Blackbirds and Prides, only. Black Quality Itos, a bull of rare individuality and merit, heads the herd. WOODCOTE STOCK FARM, Ionia, Mich.

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We have for sale imported and home bred Bull Calves, ranging from 10 months down. They are fine and have had the best of care. Send for sale list, or what is better for both parties, come and see them.

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Guernseys—Famous May Rose Strain. A select herd. Tub. Tested. Several A. R. O. Cows. J. K. Blatchford, Windermere Farm, Watervliet, Mich.

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

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

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His dam a 21.27 lb. 3-year-old. His three nearest dams average 25.64 lbs. butter in 7 days.

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Holstein Cows I have on hand 100 high grade Holsteins, age 6 mos. to 24 yrs., lots of quality and in good condition. Also a fine selection of full Matured cows. Arthur Birkholz, New Buffalo, Mich.

Very Choice Holstein Bulls At Farmers Prices. Long Beach Farms, Augusta, Kalamazoo Co., Mich.

HOLSTEIN Bull 6 months old, large, straight, heavy boned, handsome fellow, with A. R. O. dam. His sire has 24 A. R. O. sisters, including Pontiac De Nijlander 35 lbs. butter in 7 days (champion cow of Michigan). \$85 delivered. HOBART W. FAY, Mason, Mich.

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JERSEYS—Bull calves nearly ready for service. Sired by Jacob's Fair, Emanon 10711. SMITH & PARKER, Howell, Michigan.

For Sale—Jerseys, two-year-old heifers bred, yearling heifers, bulls ready for service, bull and heifer spring calves. All can be registered. Write what you want. J. W. HELME, Adrian, Mich.

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

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HILL CREST JERSEYS. I would sell two or three young cows. Come and see them. A herd of 20 to choose from. S. B. WATTLES, Troy, Michigan.

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

JERSEYS—YEARLING BULL READY FOR SERVICE. Also bull calves. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

JERSEYS—For list of stock for sale and Jersey facts write A. P. EDISON, Sec. M. J. C. O. 326 W. Bridge, Grand Rapids, Mich. If a breeder and a member of M. J. C. O. send list of stock for sale to the above.

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

DAIRY BRED SHORTHORNS—2 young bulls 7 mos. old for sale. Price \$100 and \$125 each. J. B. HUMMEL, Mason, Michigan.

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

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

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

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

CHESTER WHITES—The long type, prolific kind. A nice lot of spring pigs. MEADOW VIEW STOCK FARM, Holland, Michigan.

O. I. C. March, April and May pigs; the big, growthy kind that always makes good. LEMUEL NICHOLS, R. F. D. No. 2, Lawrence, Mich.

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

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

O. I. C. Choice pigs, two to four mos., the long bodied kind. One choice gilt bred for August. ALVIN V. HATT, Grass Lake, Michigan.

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

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

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

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

Choicely Bred Chester Whites. Spring pigs either sex pedigree furnished. Sent C. O. D. subject to examination for prices and breeding. Address: John Gintling, Bronson, Mich.

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

O. I. C's—Growthy spring boars. Satisfaction Guaranteed. A. R. GRAHAM, FLINT, MICHIGAN.

O. I. C. SPRING PIGS—Have some extra good March and April boar pigs. H. W. MANN, Dansville, Michigan.

O. I. C. Swine—Also Holstein Bull calf sired by a 26-lb. son of Ypsiland-Sir Kordyke DeKol. Clover Leaf Stock Farm, R. No. 1, Monroe, Mich.

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

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

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

BIG TYPE POLAND CHINAS—Boar pigs ready for new homes. They are corks and immuned. WM. WAFFLE, Coldwater, Michigan.

Poland Chinas of the big type. March and April farrow. The kind that please our customers. A. A. WOOD & SON, Saline, Mich.

LARGE styled Poland China Spring Pigs, older sows bred for fall farrow. Also Shorthorn Bull calves. ROBERT NEVE, Pierson, Michigan.

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

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

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

Yorkshire Swine We have a nice bunch of May pigs now ready to wean. Write us for description and prices. Ostrander Bros., Morley, Mich.

For Sale, Yorkshires—Gilts bred for early Sept. farrow, growing, also boars for fall service. WATERMAN & WATERMAN, Ann Arbor, Mich.

YORKSHIRES

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

Lillie Farmstead Yorkshires

Open gilts and gilts bred for September farrow. Spring pigs either sex, pairs and trios not akin. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Michigan.

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camphor to stifle joint twice a day for a few days, then once a day. If the navel is not healed apply one part iodoform and nine parts boracic acid daily.

Navel Infection.—I have a colt four weeks old whose joints swell and open, causing considerable lameness in one leg; this colt does not seem to be sick, but I am told he never will get well and will always be a cripple. J. G., Vermontville, Mich.—Had you taken proper care of colt's navel at birth and for a few days after, you would have avoided this joint trouble. Apply one part iodoform and 19 parts boracic acid to sore part of joint twice a day. Cover joint with iodoform gauze.

Short-winded.—I have a mare that has been troubled all spring with her wind, but she is free from the heaves. T. A. W., Hart, Mich.—Give her a teaspoonful of tincture lobelia and a dessertspoonful of Fowler's solution at a dose in feed three times a day. She should not be fed too much bulky food when worked. If the glands of throat are swollen, apply one part iodine and nine parts lard two or three times a week.

Ringbone.—Some 15 months ago you prescribed a remedy for ringbone and I saved clipping but appear to have mislaid it; therefore, I would like to have you tell me what to apply. This salve is almost red when prepared. E. L. M., Lake George, Mich.—Apply one part red iodide of mercury and four parts lard every ten days.

D. M., Frankfort, Mich.—Your mare died of dropsy, not of inflammation of bowels, and it is possible that her kidneys and liver were torpid.

Wounded Teat.—I have a young cow that came fresh three weeks ago; she got mired in a swamp and tore one of her teats, close to bag, over half way across. The stitches are now pulling out and milk leaks from side of teat, but only leaks when milking. A. B., Prescott, Mich.—When you milk her, use a milking tube and apply equal parts powdered alum, oxide of zinc and boracic acid to wound twice a day. The teat should be bandaged with surgeon's plaster to hold edges of wound together.

Blood Mixed with Urine.—I have a bull calf two months old that was in splendid condition up to a short time ago, but lately is not thriving and I have thought his urine was tinged with blood. N. P. W., Allegan, Mich.—Your calf may have met with an injury. Give him 30 drops of fluid extract buchu and 10 grs. urotropin at a dose two or three times a day.

Skin Blisters.—I have several young pigs that appeared to do well until they were four days old, when scabs formed over body and the older sows were also covered with scabs. This sickness seems to have caused the death of a few. I would also like to know if a person handling these pigs is likely to become infected. J. H., Allegan, Mich.—Your hogs show some of the symptoms of measles, but it may only be a skin disease. Apply one part oxide of zinc and seven parts vaseline to sore parts twice a day. Give each full-grown pig three drops of Fowler's solution at a dose three times a day. It is needless for me to say that you should whitewash and thoroughly disinfect your place. No danger of man becoming infected.

Surfeit—Eczema.—I have a three-year-old unbroken colt that has several bunches on shoulder and back. Whatever this trouble is, it causes itchiness. C. B., Clio, Mich.—Give your horse a dessertspoonful of hypsulphite of soda at a dose in feed three times a day and dissolve 4 ozs. of soda in a gallon of water and wet sores with it twice a day. Grass is the best food you can feed him.

Weakness of Heart.—I have three horses, two four years old and one nine years old, that do not appear to be sick, but all three pant and blow a great deal when working. I have fed them molasses with their grain until a month ago, and I have been giving them salt peter, but it fails to help them. F. M., Dansville, Mich.—Wash them two or three times a day with warm water and give each of them a tablespoonful of tincture arnica at a dose three times a day. If they are heavy coated and have not shed off properly, clip them.

Shoulder Sweeney.—I have a ten-year-old mare which is sweeneyed in right shoulder; caused by slipping when running in pasture. A. C. B., Kent City, Mich.—Clip off hair and apply one part powdered cantharides and six parts lard three times month.

Pig Has Piles.—I wish you would give me treatment for a bad case of piles in sow eight weeks old, weight about 30 lbs. W. P. M., Lawrence, Mich.—Piles usually results from constipation; keep bowels open by feed or giving castor oil or epsom salts occasionally. Dissolve 1 oz. acetate of lead, 2 drs. tannic acid in a quart of water, and apply to protruding bowel four times a day. A little surgical work might affect a cure.

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Goodyear tires now undersell 16 other makes. That is due to mammoth output—the largest in the world.

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