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FARM NOTES.

The Dodder Pest.

Being a reader of your paper, I am sending you a sample of alfalfa and a vine which I would like to have identified. I fear a pest called dodder, and do not know whether this is it or not. Please ascertain and inform thru your paper. I have read a lot about alfalfa and decided to try to grow it on a piece containing 1½ acres. I prepared a good seed bed and sowed the 17th of June, and today, about 39 days after, have run the mower over it to check the growth of weeds. The alfalfa is now from 3 to 12 inches high, or was before cut. They tell me I cannot winter this plant here. Time will tell. I would like to know further from some one with more experience than I have why horses do not eat alfalfa stalks in pastures where a few grow with other grasses. I now have them in full blossom like soldiers about the field where horses pasture. I sowed this four years ago with other grasses, using a little sprinkling of alfalfa seed.

Osceola Co.

J. L. RAYFUSE.

The two stalks of alfalfa and the sample of the vine which was found in the field are reproduced (natural size) in the half tone at the bottom of the page. The vine is unmistakably dodder, and the cut is presented in order to enable the reader to recognize this pest the better if it should be found growing in his clover or alfalfa fields. Note the abundance of the tangled growth, and how the fine tendrils of the vine have wound around the alfalfa stems. While they are produced from seed and make their original growth from the ground, these fine vines wind around the alfalfa or clover, and their secondary, sucking rootlets penetrate the tissue of the growing legume, from which they derive their future nourishment, and after which all connection with the ground is severed by this parasitic plant. Its process of growth is continuous, new centers of growth being established every time it attaches to a plant, and as the alfalfa or clover is killed by the parasite at the point from which the colony started it spreads in a circle from that point. The plant has a disagreeable habit of maturing seed in its life cycle, and these are dropped to the ground as matured to make new centers of growth for the parasite whenever conditions are favorable in future years. The smaller cut was reproduced from a small sample sent in by

another inquirer, where this pest was found growing in a clover field. The small section cut from the growth shows the abundance of the vine and the manner in which it has entwined the clover stalks.

The serious nature of this pest, and its apparent presence in different sections of the state has led us to emphasize the necessity for its prompt eradication wherever it appears, notwithstanding the fact that it was commented on in the

is to completely destroy every colony discovered, by a thoro burning on the spot, with the aid of a suitable addition of straw or other inflammable material to insure the destruction of any seeds that may have formed, as well as the plants themselves. It is worse than useless to allow a stand of alfalfa or clover, however good, to remain on the ground unless the dodder is eradicated from the field, as the latter will spread until it

seed, or at least to send a sample to the state experiment station for examination. But where one finds that he has it in seed already purchased it can be removed from alfalfa seed by sifting it out with a screen containing twenty meshes to the inch. The seed of the dodder most commonly found in this country will pass thru a screen of that mesh, while the alfalfa seed will not.

There is no question with regard to alfalfa enduring our Michigan winters successfully. It has been growing for years in all portions of the state and, after the first winter, seems less liable to winter-killing than clover. So far as the reason for its being neglected by the horses in the instance cited by the inquirer is concerned, it is probably due to the fact that the alfalfa plants have become so far advanced in their growth as to be too woody or fibrous to be relished by the horses. Alfalfa is a rapid grower, and must be harvested at the right time to make choice hay. Likewise the growing plants must be eaten by the stock before they become too far advanced or they will not be palatable. There is plenty of evidence with regard to the palatability of well made alfalfa hay. The plant is better adapted to the making of hay than as a pasture plant, yet it is successfully pastured in some sections. However, the stock that is not accustomed to it will doubtless prefer the tender grasses to which they are accustomed in the pasture with the result that the alfalfa may be neglected as noted in this case.

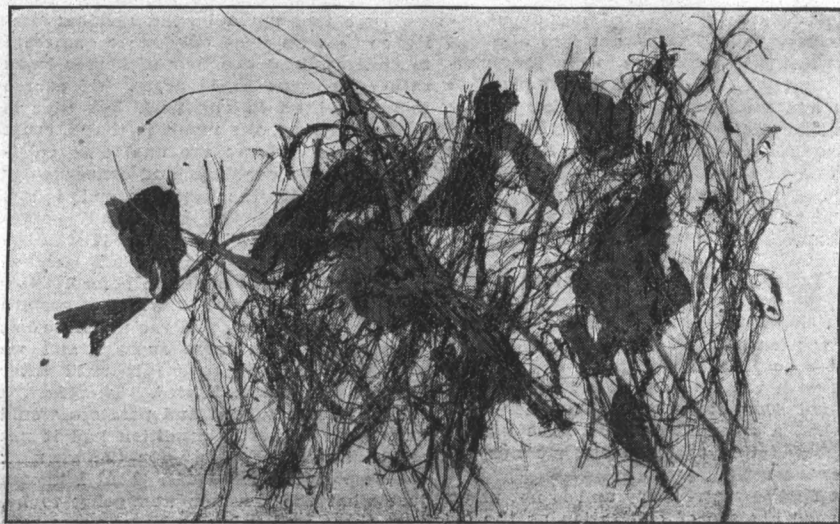
Inoculating Soil for Alfalfa.

If alfalfa thrives and seeds abundantly in a locality, is it proof positive that the soil is properly inoculated with the nitrogen producing bacteria peculiar to alfalfa? Would it be of any advantage to spread soil taken from around such plants over a field already sown to alfalfa, with the plants just nicely up? The plants mentioned are growing on a gravel bank, and as the field is to be plowed up on account of thin stand it would be possible to get soil.

Montcalm Co.

J. H. STEERE.

The fact that alfalfa plants are growing luxuriously in any place is sufficient proof that the bacteria peculiar to the plant is present in the soil. So far as the writer has been able to observe the

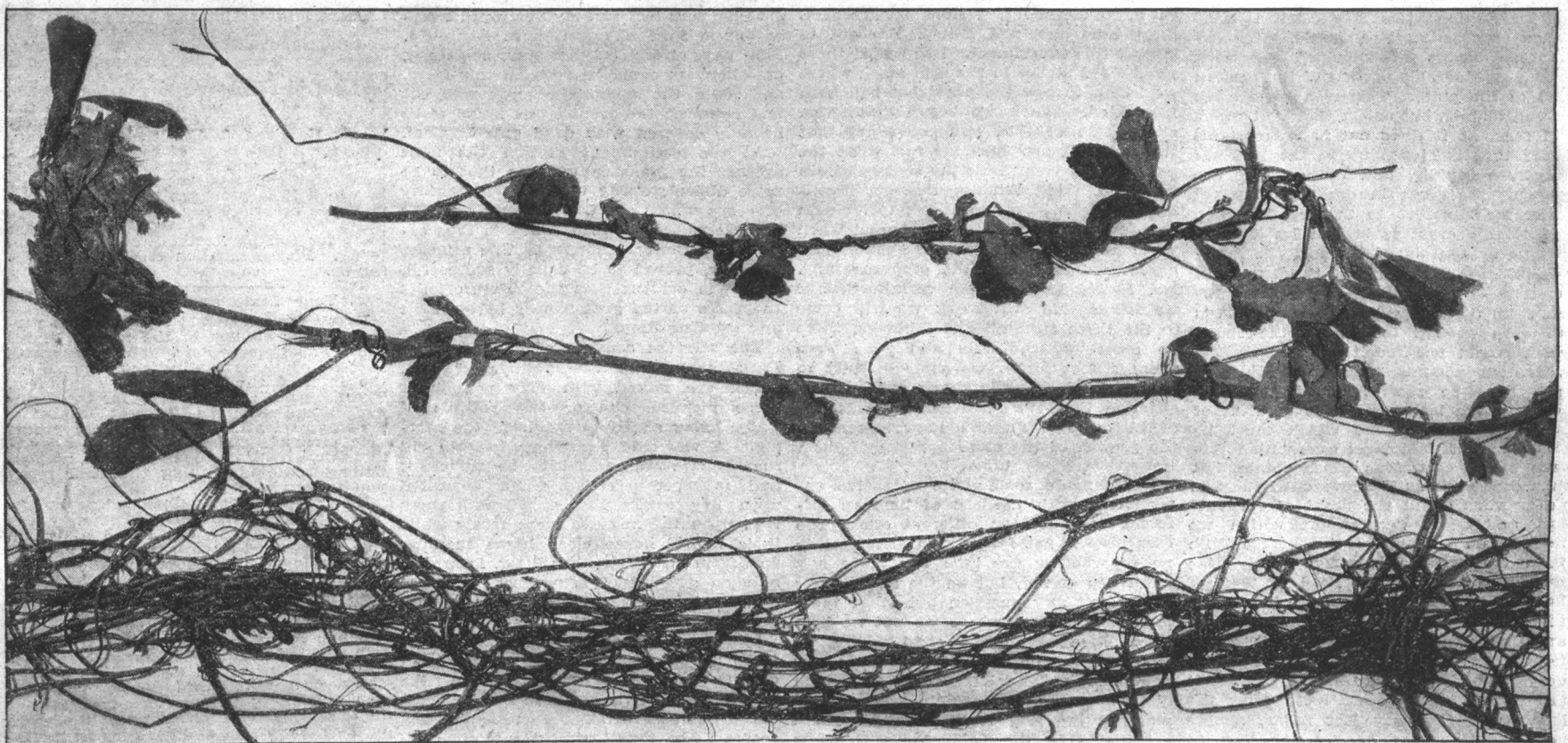


From a Sample of Red Clover, Showing the Mass of Dodder Surrounding It.

issue of July 24. It is easily recognized from its habits of growth, which are well illustrated in the accompanying cuts; its color, which is a rather bright yellow or orange, and is thus conspicuous, and its effect upon the legume which it attacks. The latter is the most conspicuous sign of its presence after the colonies are well developed, since it is likely to grow in the shade of the plant and not be conspicuous where there is a good stand of alfalfa or clover, until the colonies are well established. For this reason there is danger that it may have matured seeds to a point where they will germinate before it is discovered. For this reason, the best method of procedure

destroys the stand and the ground will become so thoroly seeded that it will be necessary to devote it to cultivated crops for two or three years in order to eradicate it. A word to the wise is sufficient. The sooner dodder is eradicated from the field after it is discovered, the cheaper can that very necessary work be done.

Too great care cannot be taken in looking out for the seeds of this pest when purchasing alfalfa or clover seed. It is more apt to be gotten in the former, but with its increasing prevalence the time may soon come when it will be altogether too common in clover seed. Where there is any suspicion that it may be present in either the best plan is not to buy the



Stalks of Alfalfa showing Dodder Vines Twined About Them and a Tangled Mass of the Vine Showing How Thriftily it Grows. (Natural size.)

plant very seldom makes a good growth on any soil where the bacteria is not present, altho on a soil abundantly supplied with nitrogen alfalfa would doubtless prove fairly successful for a limited time without their presence. Generally speaking inoculation by means of sowing soil taken from a field where the plants are growing successfully will prove successful, but this may not always be the case. From his experiments in this direction the writer is inclined to believe that the condition of the soil upon which the attempt is made has a good deal to do with its successful inoculation. If an acid condition prevails, inoculation will probably fail to give desirable results unless lime is applied to correct that condition. In one of his experiments with the crop, the writer failed to secure a perfect inoculation, altho the bacteria was present in spots. In a recent visit to the Upper Peninsula Experiment Station, we made an examination of plants sowed this spring on limed and unlimed plots, and while the bacteria was present in both, the root nodules were very much more plentiful on the plots where lime had been applied, notwithstanding the fact that the soil was of limestone formation, and alfalfa has been successfully grown on other land at the station for a number of years without liming. This seems to be additional proof that it is a good proposition to apply lime on any soil that is to be devoted to alfalfa, and we shall act on that principle with our next year's sowing. But whether lime is applied or not, where the soil for inoculation purposes can be obtained as easily as in this case it would be a profitable precaution to apply it in any case. It may not be needed. Experience shows that it is not needed in many localities, but it shows in an equally convincing manner that good stands cannot be secured in other localities without inoculation, hence the wisdom of taking this precaution where alfalfa is to be sown on untried ground.

For best results the soil used for inoculation should be harrowed into the soil as soon as applied, but we believe it would be worth a trial to apply it to this stand that is already up. Most kinds of bacteria are not destroyed by drying, and some of these little organisms would be likely to be washed into the soil by the rain. If the plants are large enough so they would not be injured by a harrow or weeder it would be a good plan to go over the field with one or the other of these implements after the inoculated soil is sown, but the experiment would be worth while in any event, and if tried a check plot should be left for comparison so the benefit derived can be more accurately determined.

Late Cultivation of Beans and Potatoes.

Will it hurt beans to cultivate them after they are in blossom or when they are wet? Will it hurt potatoes to work in them after they are in blossom? I have been told not to till them up or work in them at all after they are in blossom.

Gladwin Co. FLOYD EMERY.
Level, shallow cultivation of either beans or potatoes is not necessarily injurious to them, either during or after the blooming season, nor will the bean crop be materially injured by cultivating when the vines are wet with dew. Under some conditions this late cultivation of either crop is most desirable. For instance, a heavy rain occurred last week over a considerable portion of the eastern part of the state. This rain soaked the ground thoroughly, but unless the crust which will form as it dries out is broken, this water that is stored up in the soil will evaporate rapidly, and unless rains are frequent the crops in question may yet suffer for moisture to mature the crop. But if this crust is broken by a level, shallow cultivation of the soil, the moisture will be conserved for the benefit of the crop and no possible harm could result from the cultivation, so long as it is not deep enough to disturb the roots, which would not result from a shallow cultivation at this time in crops that have been so recently cultivated. As noted in the last issue, this problem of late cultivation is one which must be solved in each individual case with reference to the conditions which obtain, but in a case such as is above cited there is no question about the profit of cultivating, and as a general proposition we more often err on the side of too little than too much cultivation. Only this morning the writer noticed a field of beans that are commencing to bloom, altho not more than eight inches high, and that field has probably not been cultivated more than twice. This is now a very promising looking bean field, but if the owner failed to cultivate after the heavy rain that has just fallen, simply because the vines are commencing to

bloom, the prospects of a crop would be materially lessened. It is always safe to cultivate as late as seems for any reason desirable, provided the late cultivations are level and shallow and provided too long a time has not been allowed to lapse between cultivations.

ALFALFA FOR MICHIGAN.

I have at this writing just finished cutting and drawing ten acres of alfalfa, getting thirty loads of choice hay from this cutting.

The field was sowed five years ago, and has been growing better every year and not a forkful of manure has been put on the field in seven years.

Now, the question in my mind is, why do not the farmers of Michigan grow more of this crop. It will grow on almost any kind of soil that is dry, from light sand to clay hills, and it seems to be peculiarly adapted to hard clay soil even without inoculation. My theory of inoculation is this: Wherever sweet clover grows along the road sides the dust from the roads which extends several rods on either side is inoculation enough. On my farm I think every field is inoculated now from the application of manure from stock fed on alfalfa. It is the best feed I have on the farm for either cattle, sheep or horses, and even hogs do well on it. My horses will eat it while eating their grain, taking a mouthful of first one and then the other.

Most of the farmers of my acquaintance say, "Yes, I must get into alfalfa," but when the time comes to sow they neglect to try it. I have a small piece of oats and peas which I am going to sow this year after the crop is harvested, but one must do quick work and get it started in time to stand the winter. I hope that more of my brother farmers may be induced to sow this valuable forage crop.

Lenawee Co.

ABNER WILSON.

LILLIE FARMSTEAD NOTES.

Nitro-Culture for Field Peas.

For a number of years I have noticed that on certain fields, the peas which we mix with the oats to grow for cow feed, did not seem to do well. On other fields we had a splendid crop. I have usually attributed this to the fact that this occurred usually on poorer ground—ground that I have not recently and is not under as good a state of cultivation as the old farm. On the old farm, whenever it comes in the rotation to raise oats and peas, the peas usually do well, but it has occurred to me that perhaps this came more from the fact that this soil does not contain the bacteria, which thrive upon the roots of the plant and enable it to get nitrogen from the atmosphere, in order to make a more vigorous growth. So consequently, last spring, I sent to the agricultural college and got some nitro-culture for peas. I got enough to inoculate ten bushels of seed and put this inoculated seed on portions of two different fields. Now you can notice without very much difficulty just where we commenced to sow the peas that had been inoculated.

Mr. Helmer Rabild of the dairy division of the Department of Agriculture of the U. S. Government, visited my farm a short time ago, and I took him out to inspect this experiment. I had piled three small-sized stones in the drill mark where we began to sow the peas that had been inoculated. When we began looking on either side of this, you could see that there wasn't any question but what the peas were better where the seed had been inoculated. But, thinking that our imagination might have something to do with this, we walked thru the field, and when we came to where we thought the experiment began, we looked at the crop carefully. Mr. Rabild said: "I am certain that if we follow this drill mark we will come to the three stones," and following these up carefully (the oats and peas were about a foot high), we came directly to the mark. Now, this shows without any question that the nitro-culture had produced quite a marked improvement in the growth of the crop.

Lime.

I also made some quite extensive experiments with the use of lime on different fields and on different crops. The corn crop is not far enough along yet to notice whether the lime has made any difference or not, but on the sugar beets there isn't any question but what there is a better stand where we put on lime than there is on the strip where we left off the lime. Anybody can see this going along the road. There is enough difference so that a casual observer would make it the subject of remark. There are strips in the field where there is

not as good a stand of beets. Then again on this same pea and oat field, on one end of this we limed it at the rate of 1,500 pounds of lime per acre and certainly the lime did no harm. The oats are fully as good if not better there than any other place in the field, I am inclined to think that the lime had a beneficial effect upon the oats, and I am positive that it did upon the germination of the beets.

A Summer Shower.

On the morning of July 23 we had quite a smart little shower of rain. The ground was becoming quite dry, the pastures and the oat crop needed rain quite badly. Corn that had been well cultivated did not need it so much. We were in the midst of haying and harvesting for the entire day; but the next day it was dried off enough so that we could cultivate or you could cut wheat, or work in the hay field. Now I am inclined to believe that this shower of rain did me more harm than good, yet I did not have any hay that was injured, nor wheat that was injured. The idea is this: Our corn was well cultivated. We had a good earth mulch. If the day after the rain we could have gone over the entire area to be cultivated and stirred it up, made an earth mulch, broke up the crust, prevented the evaporation of the moisture and saved this moisture, it would have been a benefit; but we couldn't do it. We have this summer 65 acres of corn, potatoes and beets. Now, we were tied up in haying and harvesting so that we could only spare one team to cultivate and one pair of horses looks rather lonesome in 65 acres. Of course this is not all in one field, but that is the idea. Now, the result is that a crust has formed and we are unable to cultivate when we ought to, and consequently I believe that the corn ground today, and portions of the beet and potato ground is drier probably than it was before this rain, because we had checked the evaporation of moisture before. Now the rain has packed down the surface and formed a crust, and the moisture has evaporated much more rapidly, and we are powerless to prevent it until after we get the wheat hauled. Therefore, I believe that my corn and potatoes would have been in better condition had it not rained at all. Possibly for the growing oat crop it was a benefit. Had I known just what the weather was going to be, that there was going to be no more rain for a certain number of days, so that I could have got in the hay and the wheat without getting wet, it certainly would have paid me to have stopped haying and harvesting and put all the teams to cultivating until the surface was stirred up. But I dare not do it.

COLON C. LILLIE.

A SIMPLE REMEDY FOR DESTROYING GRASSHOPPERS.

The Griddle mixture, so called, for the wholesale destruction of grasshoppers, has been tested at and near the Upper Peninsula Experiment Station at Chatham, and the results, according to Superintendent Geismar's statement, are extremely gratifying. The mixture was first tried on a 40-acre farm with sandy soil where grasshoppers had already destroyed nearly one-half of a twenty-acre hay field. Ten days later only a few scattering grasshoppers could be seen on this farm, and after the undamaged hay was cut and removed, the ground was found to be literally covered with dead grasshoppers.

At the experiment station the fight against the grasshoppers was that to be more difficult owing to the great variety of crops which are being tested and the greater variety of feed which is thus afforded to the grasshoppers. The remedy, however, proved to be equally successful, and it is evident that the mixture suits the taste of the grasshopper better than any growing crop.

The mixture consists of one pound of Paris green and two pounds of salt, which are mixed with fifty pounds of horse manure, one or two pailfuls of water being added to facilitate the mixing. A shovelful for every four to six rods square was found to be sufficient, and is most effective when deposited upon dry sandy knolls. Grasshoppers feed upon the mixture more freely while it is moist, hence clear horse manure, free from straw or other litter, is preferable on account of being more compact and for this reason better able to retain moisture.

Since the mixture has been applied there have been several heavy rains, but careful observations have shown that the effectiveness of the mixture has been reduced but very little. As one application seems to be sufficient, there is thus af-

forded a very effective and inexpensive remedy against an insect which is highly injurious during dry seasons, and which throughout the northern part of Michigan and Wisconsin has caused tens of thousands of dollars' worth of damage to hay and other crops during the past two seasons.

The Engine That Almost Runs the Farm.

A new era in farming, in which a larger percentage of the hardest work will be done by engine power, is foreshadowed by the new Fuller & Johnson Farm Pump Engine. This wonderful little engine is so easily moved about and so adaptable to different uses that it almost runs the farm. It is primarily a pump engine, which attaches to any standard force pump by means of four common nuts and gets down to business instantly, requiring no pump jack, no special platform or concrete foundation. It works on a "roving commission"—always ready for quick removal to any point on the farm where power is required. It is equally at home at the pump or in the barn, milk house, tool house, cellar, kitchen or out in the open field. It works in any well which a windmill will pump, and supplies such an abundance of water that it can even be used for irrigating small tracts. But its simplicity, lightness and adaptability to the operation of all kinds of light machinery give it tremendous additional value as a practical labor-saver. The Farm Pump Engine has a pulley which permits it to be used to run the various machines intended for hand-power operation. It runs the cream separator, turns the grindstone, operates the fanning mill, feed cutter, horse clipper, washing machine, wood saw, churn, spray pump, etc., etc. It can be fitted with a pipe for extra air chamber or "head" and will throw a stream of water as high as a house, giving fire protection worth hundreds or perhaps thousands of dollars. The same attachment brings it into use for washing buggies, cleaning windows, sprinkling the lawn or watering the garden. If the boys are of a mechanical turn of mind, the Farm Pump Engine will furnish power for running scroll saws, turning lathes and other light machinery which boys delight to run. The Fuller & Johnson Co., Madison, Wis., who originated this marvelous engine, have printed a book which gives all the facts. Copies of the book are free for the asking. Every progressive farmer will be deeply interested in the description of the engine and what it will actually do. We have only given a general idea of the subject. The book covers the ground completely. It is absorbingly interesting and we would be glad to have every reader of this paper write direct to the company for a copy.

An Improved Hay Press.

The Whitman Agricultural Company, St. Louis, Mo., have added a new and valuable feature to their already excellent line of hay presses. This is a self-feed, positive pull back without a spring, and serves to completely eliminate the old style spring process, so often the cause of delay and expense in loss of time, to say nothing of the annoyance and labor caused the operator. The new appliance is so constructed as to form a positive connection with the press mechanism so that the pull back is accomplished as smoothly and inevitably as the operation of the press, and there is no longer possibility of twisting or jamming, as in the operation of the spring. All those interested in hay presses will appreciate the value of this innovation, a detailed description of which is furnished by the manufacturer. The Whitman Company are the largest manufacturers of both horse and power hay presses in the world, and are issuing an attractive descriptive catalog setting forth the special features of this and their other lines of high-grade agricultural machinery.

Found! Half a Million Acres Fertile Farm Land.

There is great interest this year in the opening of three reservations in the west, and thousands are going out to file claims. These are among the last public lands remaining of the once almost limitless national possessions. Do you know what "reclaimed" land is? Write today to the Little River Valley Land Co., ... Himmelberger-Harrison Bldg., Cape Girardeau, Mo., for a free copy of their large illustrated book, which tells all about this wonderful soil and the interesting way in which it is prepared for yielding such immense crops. Their announcement appears on page . . . of this issue. Refer to it for full particulars and write them today. Please mention this paper in doing so.

Your State and County Fair.

Every farmer should recognize his personal responsibility in the matter of his State and County Fair. The measure of success of these institutions depends on the interest the farmers show in them. The fairs are run primarily for the farmers' benefit—in the interest of better farming, scientific farming, more profitable farming. You cannot spend a day at the fair, even if you do not exhibit, without finding some new thing that will repay you for going.

One of the most valuable departments of the fair is the farm machinery exhibit. Any farmer can spend a day in this section and learn more about improved machinery in an hour than he can by reading catalogs all winter long. For instance, an hour or two spent in looking over the Loudon Machinery Company's exhibit of modern barn equipment will put you in possession of information that will enable you to make your stables modern and sanitary at small expense, and show you how to lighten labor. The Loudon Machinery Company's advertisement in this issue tells something of the value of their equipment and contains an invitation to meet them at the fair.

LIVE STOCK

FEEDERS' PROBLEMS.

Summer Care of the Feeders.

The man who is planning on feeding any kind of stock for the market this year and is running some or all of his feeders over summer, should not forget that his chance of making a profit on the feeding operations may be lost by poor or improper care of the feeders during the late summer and early fall. With grain and forage at the prices which are sure to prevail during the coming feeding season, it will take good management to make a profit on feeding stock, over and above the market value of the feed which they eat. Under modern conditions it is the handy light weight cattle and the early matured lambs that are the favorites, and to produce these it is essential that the feeders be kept growing and developing constantly. While pastures have been fairly good during the early part of the season, the late dry weather has shortened them materially, and while the copious rains which have fallen this week over a considerable portion of the state will revive them considerably, yet the feeders will need some supplementary feed during the next few weeks if they are to be kept growing and developing in a desirable manner, and the lambs that are to be fattened will need extra feed and care at weaning time, which is the crucial point in their career. It will not pay to neglect either, for time lost now will increase the length of the feeding period required to secure a proper development and finish.

The farmer who has provided some supplementary forage for use at this season has solved this problem in the most satisfactory manner, but the farmer who has not done this will find that it pays to feed the young cattle some bright clover hay and a little grain, if the pastures are short, and that it will pay still better to supply the lambs with a liberal grain ration from weaning time on. The cost of making a pound of beef or mutton when the weather is warm and when a portion of the feed is gleaned from the fields is certainly less than the cost of making it in the barn upon all dry feed, and when the fact is considered that if the animal is allowed to stop growing and become stunted to any degree, that it takes additional feed and time to get him in proper thrift again before profitable gains are possible, there should not be a remaining doubt in the mind of the feeder that it will pay to give a supplementary ration in the pasture at all times when the feed available will not keep the young stock in a thrifty growing condition. So the farmer who is confronted with this proposition has but two possible courses open to him which promise a good chance for a profit in the production of these feeders, the one being supplementary feeding to keep them in a thrifty condition, and the other being to sell them to some one who is looking for feeders and who will pay more for them before they have become stunted in development from lack of proper feed than they will after that too frequent result is apparent. By all means keep the young animals growing to the limit of their capacity or dispose of them at once. There is no middle course which will make their production a source of profit to the owner.

IMPROVING THE FLOCK.

In improving a flock of sheep the average flock owner places too much stress upon the importance of the breeding rams in the improvement of the flock. My experience in handling and breeding sheep has convinced me that the only permanent improvement of the flock must be brought about through the direct co-operation of the influence of both the ewe and the ram. The man who has a flock of inferior ewes of mixed breeding may bring about great improvement by the continued use of improved breeding rams, but if this improvement is made permanent he must keep up a systematic selection of the ewes that are to be kept for breeding purposes. As the flock more nearly reaches perfection the necessity of selecting the breeding ewes with equal consideration becomes more apparent.

Every experienced flockmaster knows that among his breeding ewes that throw individuality in their progeny, there are two distinct classes, the positive and the passive. The positive possess an individuality by the right of inheritance, and they are capable of enriching the

blood line in volume and momentum. The passive are perhaps lacking in both quality and breeding and simply serve as a channel through which the ram throws his type, and are unreliable as a breeding on or perpetuating force.

This point is very forcibly illustrated by noting the excellent results often obtained by mating a pure bred ram with a flock of very inferior ewes. The progeny will many times closely resemble the ram, and for all we can see they are fully his equal in every respect, but if these cross-bred individuals are kept for breeding purposes, they cannot be relied upon to reproduce themselves in type or quality. Their dams of inferior breeding simply acted as channels through which the pure bred sire threw his type, and they have added nothing to the volume or momentum of the blood line. In the prospective breeding ewes we must have individuality and breeding if we secure the best results, and these must come from the two currents that compose their blood lines—great sires and great dams.

In selecting breeding ewes there are a number of things that should be kept constantly in mind, and no flockmaster can afford to go about the work ignoring their relative importance. The first point to look for in selecting breeding ewes is constitutional vigor. An animal that shows indications of constitutional weakness and a lack of physical force and energy should be discarded at once, for these qualities are very essential in the early development of a profitable lamb. A ewe that is constitutionally weak can generally be detected by the appearance of her fleece, a narrow chest and dull, sluggish movements. If the appearance of the ewe does not satisfy you, catch her and examine her carefully, note the quality of her progeny, and if she does not measure up to the set standard of quality that you desire to maintain in the flock, put her in the fattening pen. There are many things to be considered in determining which ewes to keep over for breeding purposes, and it is an excellent plan to keep a record of the performance of each individual in the flock so that it may be referred to at the time the selections are being made for the next year's breeding flock. On this record of performance should be noted the conditions, for oftentimes ewes lose their lambs for no other cause than mismanagement on the part of the flock owner, and it is folly to discard a good individual unless she is a failure under favorable environment and conditions, as they are well worth another trial. The ability of a ewe to properly nourish her lambs is of great importance for ewes that do not afford their lambs plenty of nourishment are poor property. Of course the kind and quality of food given the ewes during pregnancy frequently affects their milking qualities during the entire season, but in the majority of cases we are compelled to rely upon the quality of the lamb in determining the future value of the ewe in the flock.

Breeding ewes that are in any way diseased should not be retained for breeding stock, for their progeny are apt to inherit such diseases and transmit them to their progeny. There is plenty of difficulty with disease in a flock of sheep without inviting and fostering the very elements that will destroy the results of systematic and careful selection. None but the best and most vigorous individuals that are free from all hereditary diseases should be selected for breeding purposes if we aim to build up a good uniform and profitable flock. Great regard should be paid to the size and general contour of the ram that is selected to head the flock. His structure should be firm and massive, with a broad and capacious breast, without a disproportionate length of legs, well formed and fully developed quarters, especially the hind quarters. His loin should be stout and well knit; his features bold and masculine. A firm, muscular neck with a bold, courageous eye are indicative of spirit and vigor. The head should be long, but rather small and finely moulded. These appearances denote excellence in rams of every breed. I do not believe in selecting extremely large rams nor those that are weak in one point and strong in another. Study the breeding ewes and select a ram that will have a tendency to correct any weaknesses or deficiencies that they may possess. In the purchase or selection of a ram great care should be exercised as to what his appearance would be when in his normal condition, for it is unsafe to rely upon the form or appearance of sheep, when these have been created either by external applications or by high and unnatural forcing. It is more than likely

that their progeny will be injured rather than improved by such methods. While the selection of the ram is of great importance, yet I do not believe that he represents as large a factor in the improvement of a flock of sheep as many writers would lead us to believe, especially when the flock is well bred and the ewes nearly as good in quality as the pure bred rams that are used in the work of improvement.

New York.

W. MILTON KELLY.

GETTING THE MOST FROM FARM STOCK.

There seems to be a desire within us, which has either come from habit, or from an inherent love for gain, to get all we can from the stock we raise on the farm. It seems, sometimes, that we demand more for what we have to sell than the intrinsic value within it will warrant. There is a sort of prevailing price, and we all want about the same; the man who has the stock of good quality does not always get what it is really worth, and the man who has the stock of medium of quality gets more than his is worth, in one sense, as the dealers seem to aim to pay a uniform price in order to retain the patronage of as large a number as possible.

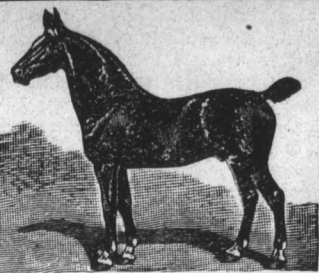
At the present time I wish to call attention to some practices wherein we cheat ourselves. One thing I wish to mention is the lack of interest sufficient to get the most from the young stock we raise on the farm. In the first place we are too often short-sighted when we raise colts on the farm. We breed to the stallion that is most convenient, and the services of which can be had for a small figure, and the result is, we raise colts that are too slow in maturing, and are of too little value to leave a good margin of profit. We are contented if the colt at three years of age brings, or is worth to keep, from a hundred to a hundred and fifty dollars. It is a well-known fact that grade draft colts, sired by pure bred draft stallions, weighing from 1,200 lbs. up, are selling around \$200 each, at three years of age. A little pains taken to use a pure bred draft stallion makes a difference of from \$50 to \$100 per colt. The cost of raising one is about the same as the other. The grade drafter is more often sought for, at the price he will bring, than the mongrel. It is worth the while to consider which pays best.

If we are raising calves on the farm to sell in the market for beef, we can see that there is a considerable difference in the weight of the animals that can be raised. If we use a mongrel sire we will have calves that are unthrifty, slow maturing and unprofitable. If we use a pure-bred sire of some one of the beef breeds, we have calves that have within them an inherent desire for food and will make much from what they consume, and when they have reached that market age, say two years old, there is a demand for them, and the ultimate price they can be sold for is fully \$20 each more than can be realized on the mongrel bred animal. The grade animals are more comely to look upon, and are a stimulus to encouragement to make something of them, while the mongrels are a source of discouragement, and on account of a lack of interest in them, we fall into the habit of neglecting them, and lose money by it.

The same rule holds true with the sheep and hogs. The lambs from a pure bred sire of some one of the mutton breeds can be fed along to market weights much younger than the indifferently bred ones, and can be sold for at least one-third more, because they are of better quality and in better demand.

The old long-legged, long-nosed slouch-eared, slab-sided, narrow-backed, crook-shanked, light-hammed hog should have been relegated to oblivion before this, but he has not been, and to the discredit of men who ought to have better judgment. He is still hanging on, taking a year and a half to reach market weights, and when he is sold, the inferior parts of the carcass represent too large a percentage of the whole weight to make him profitable. If a pure bred sire of some of the improved breeds is used, the pigs will be compact, will feed readily and reach market weights at from eight to ten months of age; make their gains cheaper and yield a good percentage of profit when sold. At the moderate price for which pure bred sires of the improved breeds can be got, no community can afford to use a mongrel, or a haphazard bred board. It is a losing game every time it is played.

The dairy business is spreading to nearly all parts of the country. Very many of the cows do not pay their keeping.



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HORSES and CATTLE

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Kills every fly it strikes! ½¢. worth saves 3 qts. milk. 1 gal. protects 3 animals a season. Cures all sores, and prevents infection. Heals from bottom without scab. Prevents itching. Nothing better for galls. Used by leading veterinarians and dairymen since 1885. Write for testimonials. Kills lice and mites wherever sprayed. Accept no substitute. If your dealer hasn't it send his name and \$1, and we'll send enough Shoo-Fly to protect 3 animals 30 days and improved 8-tube gravity sprayer. Name Exp. office. \$1 refunded if animals not protected. Shoo-Fly Mfg. Co., 1332 N. 10th St., Phila., Pa. Agents wanted everywhere. Special terms. Write today.

Editor knows from experience Shoo-Fly is O. K.

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Effective in the highest degree. Are highly concentrated. Absolutely uniform in strength. Mix instantly with water. One part to 100 parts of water. No sediment to clog nozzles. Harmless to the trees and user. Non-poisonous to animals grazing under trees. Invigorates and cleanses the tree. Write for pamphlet of convincing testimony. Wm. Cooper & Nephews, 177 Illinois St., Chicago

If every community where dairying prevails would secure a good dairy sire, of the breed that is most popular there, the heifers that could be raised from him would be much more profitable than the cows from which they came; be more uniform, and represent a value each of from \$10 to \$25 above the value of their dams.

By co-operating by communities, and using good, pure bred sires, the general character of the live stock could be so improved that it would be uniformly better than it now is, and sell for better prices in the market, thus bringing better returns, and give more universal satisfaction to all that are interested. Surely a little figuring and careful consideration ought to be sufficient to convince the most incredulous.

Wayne Co.

D. JOHNSON.

VETERINARY

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

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to some one else.

Partial Paralysis.—I have a pig four months old that has partially lost the use of its hind quarters. Part of the time he has poor use of his hind quarters and is hardly able to walk. F. T., Beal City, Mich.—Pigs that lose use of their hind quarters during the summer months have generally been fed an unbalanced ration or given too much food and had too little exercise, or kept in a damp, shaded, ill-ventilated place. Perhaps your pig has rickets. Feed more oats and oil meal, also plenty of green food, also feed some air slacked lime and apply equal parts turpentine, tincture nux vomica, spirits camphor and alcohol to back once a day. The bowels should be kept open by feeding laxative food, and your pigs had better be exercised more.

Sprained Fetlock Joint.—Fine large cow went lame in one hind leg. Have examined the foot very closely and find no wound or sore part. The ankle joint is badly swollen and there is also some swelling about foot. This lameness came on three days ago. In the morning she went to pasture traveling sound, when she returned in the evening she was quite lame. I thought she had perhaps snagged herself or sprained ankle, but I have heard since that some of my neighbors have had similar cases where the foot broke open, therefore it must be a sort of foot disease. The swelling does not extend much above the fetlock joint. F. L., Twining, Mich.—I do not believe that your cow suffers from foot disease, but her trouble is the result of an accident caused by either a sprain or bruise. Apply equal parts tr. arnica, spirits camphor, extract witch hazel and alcohol to sore parts twice a day.

Horse Has Sore Neck.—I have a horse that has a sore on top of neck caused by collar. The neck is considerably inflamed, the hair is sloughing out, but the sore has a hard center. I have washed it with salt and soda water and applied an ointment. None of these applications appear to have done it any good. A. P. L., Burt Mich.—The small core in sore on top of neck should be cut out with a sharp knife. A hard bunch of this kind under collar acts as an irritant, making it impossible to heal the sore until it is removed. Apply peroxide-hydrogen three times a day, a few minutes after these applications apply equal parts iodoform, powdered alum and borac acid. Ointments applied during the hot weather have never given me satisfactory results until the wound was healed.

Pigs Cough.—I wish you would tell me what to do for my pigs. They appear to be growing fairly well, but are troubled with a cough. Am feeding corn, wheat screenings and oats. R. B. S., Albion, Mich.—Your pigs are perhaps coughing the result of stomach worms. Give them some of the following compound powder in their feed night and morning. Ground gentian, ground ginger, ground quassia, a tablespoonful to each full grown hog at a dose twice a day for a week then let up a week and repeat. If any of them are very bad give 2 oz. of a one percent. solution of coal tar creosote, or give 20 or 30 drops turpentine in 2 oz. of sweet oil occasionally when their stomach is empty. Cooking their feed for a week will also benefit them; besides scalding their feed trough. If their bowels are constive, give them a dose of castor oil.

Fractured Hip.—My thirteen year old horse ran against a tree injuring the point of the hip. This accident occurred July 10th. He did not appear to be hurt much, consequently we put him to work mowing the following day. He soon got real lame and we quit working him and he has been idle ever since. The soreness now does not appear to be on point of hip, but about two inches above it. He does not swing or drag his leg while walking, but merely steps short—we have been using a wash to reduce the soreness, but that is all we have done for him. R. W. L., Dearborn, Mich.—It is possible that a simple fracture of the point of the hip has occurred at the time of accident and working your horse may have dis-

placed the piece of broken bone—or it is possible that the parts are badly bruised. In either case the horse should be given absolute rest, kept in one position, feed cooling laxative diet, also apply the following lotion: dissolve 1/4 lb. sugar of lead, add 1/2 pt. tincture opium, also 1 pt. tincture arnica to a gallon of water and apply to bruised or fractured part two or three times a day.

Ophthalmia in Cattle.—My cattle are having eye trouble; first symptoms are a watery discharge from one or both eyes which continues for two or three days, then a scum appears to cover the eye ball. Some of them are affected in one eye only, but others in both. They are running in brush land, have plenty of feed and pure well water to drink. R. M., Williamston, Mich.—Apply a saturated solution of borac acid to eyes once a day, also dissolve 2 grains sulphate zinc, 1 grain sulphate atropia in an ounce of water, and apply this to eye once a day. Blowing a little calomel into the eyes once a day, a few days after they have been sore will help. Give each of the cattle that have sore eyes a pound of epsom salts if their bowels are not loose.

Curb.—Horse sprained his leg 15 months ago bringing on a curb. I have blistered it frequently with different preparations, but the horse shows lameness when trotting. What treatment do you recommend? G. S., Mendon, Mich.—Blistering having failed, you had better have your local veterinary fire him lightly and I fully believe it will prove successful. In my practice and at my hospital I very often have to resort to this heroic means of treatment before the horse will go sound. Of course this line of treatment is a little ancient and a little old fashioned, however, results justify it being done when other milder remedies have failed.

Unintentional Cruelty by Misfit Collars.

Now, why does this happen? The answer is easy. All the English hame collars are made in practically four patterns, and they don't fit and can't be made to bring the pressure where it ought to be—on a horse's shoulder, and when the horse is made to work at labor where constant pressure is brot to bear on the shoulder, and the collar so presses on the neck as to hurt the horse, he swings his body out to get relief and to change the bearing on his neck. This causes the swellings and galls, or if it doesn't, after a few days' work the horse becomes sweened or gets stiff and sore in the shoulders and sometimes actually becomes chronically lame—by old-time horsemen called chest founder sometimes.

To be brief about it, horses' shoulders and necks are as different in their conformation as are men's feet. In order for persons to walk easily their shoes must fit the feet; so a horse, in order to pull loads, plow or do other farm work must have a collar that will fit the shoulder so as to bring the draft where it should be, or trouble will follow. All along the years man has been using horses in collars that were inflicting pain and injury to many a noble beast simply because it has been a custom to so get power from a horse. What I am saying regarding this collar I am saying not for the benefit of the manufacturers. I don't know them. I am saying what I do for the benefit of the horses of America. This collar is in use on my own farm team and I will not use any other except for light driving. Try them, if you wish to save your young horses in the future. If you wish to learn more about them send to the Humane Collar Company, No. 1609 Lowe St., Chicago Heights, Ill., or No. 1964 South 13th St., Omaha.—C. D. Smead, V. S.

Steel Roofs Guaranteed Against Lightning.

A foolish prejudice against supposed damage from lightning has kept some farmers from having one of the safest and most economical roofs known on their buildings.

To reassure such people that Edwards "Reo" Steel Shingles are lightning-proof, The Edwards Manufacturing Company have issued a \$10,000 guaranty bond against lightning, and are ready to pay for any of their roofs so damaged. They also state that these steel shingle roofs are the best protection against fire, and anyone who knows the ease with which wood shingle or prepared roofings burn will agree with them. This is a very important thing to consider on the farm where buildings are usually in groups, and it is hard to prevent flames spreading from one to the other.

The Edwards "Reo" Steel Shingles are also very attractive to the farmer for the reason that he can lay them himself with hammer and nails in about one-fifth the time it takes to lay wood shingles. They will outlast four wood roofs and six composition roofs, and thus are the cheapest in the long run to use for almost any purpose.

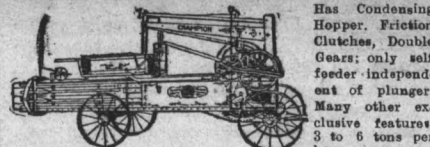
The Edwards Manufacturing Company are the largest makers of iron and steel roofing in the country, and for this reason can quote the very lowest prices on Steel Shingles, Corrugated, Plain or Crimp Roofing, Imitation Brick Siding, etc. They pay the freight on orders of 5 squares and over.

They have informed us that their latest big catalog is just off the press, and say they will be glad to send it to anyone who desires to know about roofs which last a lifetime without repairs.

We suggest our readers write to them addressing The Edwards Manufacturing Co., 903-923 Lock St., Cincinnati, Ohio.

The Ohio Tractor Mfg. Co., makers of the "Square Deal" Hay Presses announce that in order to keep up with their rapidly increasing business, they have moved their entire establishment from Delaware, Ohio, to Marion, Ohio. In their new plant their capacity will be increased several fold, and all orders will have prompt attention. Their advertisement appears in this issue.

CHAMPION OF HAY BALERS



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Stop Buying Sweat Pads!

Use Hameless Adjustable Collars, and keep your horses in working condition 365 days in the year. No Hames to buy or Pads to bother with. Fits any horse, indestructible, cheapest and best. Ask your dealer—take no other; if he does not keep them, send for our catalog and introductory price. Agents Wanted. Write today. Johnston-Slocum Co., 202 State St., Caro, Mich.

Death to Heaves Guaranteed



Or Money Refunded. NEWTON'S Heave, Cough and Distemper Cure. \$1.00 per can at dealers, or express paid. 15 years' sale. Send for booklet, Horse Troubles. THE NEWTON REMEDY CO., Toledo, Ohio.

Buckeye Concrete Mixer

Just the Machine for Farmers' Use
HORSE POWER BATCH MIXER

Write for catalog and prices.

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FOR SALE—REBUILT MACHINERY—22 h. Buffalo Pitts Traction engine; 22 h. Pt. Huron; 20 h. Frick; 18 h. Advance; 18 h. Baker; 16 h. Huber; 16 h. Gaar-Scott; 15 h. J. I. Case; 14 h. Buffalo Pitts; 12 h. Advance; 12 h. Huber; 12 ton road roller; 10 ton road roller; 50 h. Fire box boiler; 40 h. Tubular boiler. Write us for prices and terms. THE BANTING MACHINE CO., 114-118 Superior St., TOLEDO, OHIO.

2 STALLIONS CHEAP—Registered Black Percheron Black Belgian 6 years old, weight 1,800 lbs. Can show lots of colts. J. C. BUTLER, Portland, Mich.

FOR SALE—Three good cows, one new milch with calf. Fine for either family or dairy purposes. 795 Van Dyke Ave., Detroit, Mich.

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Herd headed by **UNDULATA BLACKBIRD** ITO 83836, one of the best sons of **PRINCE ITO 50006**, and Grand Champion Bull at the Detroit and Grand Rapids Fairs of 1907 and 1908. Herd consists of **Ericas**, **Blackbirds**, **Prides**, etc.

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\$50 buys registered Aberdeen Angus bull calves \$100 buys heifers and cows to start herds. Choice Polled Durhams and Hampshire sheep for sale. CLOVER B. FARM, Ft. Austin, Mich.

Holstein-Friesians. **HICKORY GROVE STOCK FARM**, Owen Taft, Proprietor, R. 1, Oak Grove, Leiv. Co., Michigan. Bell phone

HOLSTEIN FRIESIAN BULLS ALL SOLD. Oak Grove Mich. Home Phone: Cohotah Exchange.

GUERNSEY BULL CALF FOR SALE—An excellent individual of unsurpassed breeding. **W. W. BURDICK, Alba, Michigan.**

HOLSTEINS—A few fine bull calves (registered) from 4 to 7 months old at \$50 each. **I. M. SHORMAN, Fowlerville, Mich.**

75 REGISTERED HOLSTEINS,

from which I want to sell at once 25 cows and heifers 2 1/2-year old Bulls and 3 Bull Calves. Special inducements to quick buyers. L. E. CONNELL, Fayette, Ohio.

TOP NOTCH HOLSTEINS.

Top Notch registered young Holstein Bulls combining in themselves the blood of cows which now hold and have in the past held World's Records for milk and butter-fat at fair prices.

MCPHERSON FARMS CO., Howell, Mich.

BOARDMAN STOCK FARM, Holstein Cattle.

JACKSON, MICH. Has more imported Holstein-Friesian Cows than any farm in the Middle West. Registered BULL CALVES of the most fashionable breeding. 30 fine, registered, Duroc Jersey sows due to farrow soon.

GUERNSEYS. Bull Calf with many A. R. ancestors \$50. Also cow soon to freshen. G. A. Wigent, Watervliet, Mich.

HEREFORDS:—Both sexes and all ages for sale. Also Poland-China hogs. **R. E. ALLEN, Paw Paw, Mich.**

REGISTERED JERSEY BULL—Dropped Dec. 10, '08. Solid color, black tongue and switch. A fine individual. **MUNN & SON, Salem, Mich.**

JERSEY Bull Calf born Feb. 9, '09, first calf of a heifer whose dam gave 7344 lbs. of milk in '08. Sire's Dam's record 10,060 lbs. in 10 1/2 months. **THE MURRAY-WATERMAN CO., Ann Arbor, Mich.**



The Potato Digger Dowden

For Fast, Clean Work is the

Simple, strong, always in order. Works in all soils, all depths, hillside and level. No cutting and none missed. Potatoes always clean, lying on top of ground. Works well in heavy tops.

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Northern Grown Jerseys.

ROYCROFT FARM, Sidaaw, Mich.

Lillie Farmstead Jerseys.

We have some splendid bull calves for sale from one to six months old. They are from cows with records of 300 to 425 pounds of butter last year. Write for description and prices. **COLON C. LILLIE, Coopersville, Mich.**

SHROPSHIRE, all ages, both sexes, extra quality and breeding in lots to suit. Also a few large, robust Rambouillet and Franco rams. Will be priced so as to move them quickly. Correspondence and inspection invited. **C. LEMEN, Hamburg, Mich.**

RED POLLED BULLS, from 6 to 15 months old, bred from good milking sows. **John Berner & Son, Grand Ledge, Michigan.**

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T. F. MARSTON, Bay City, Michigan.

CHOICE JERSEYS. Large St. Lamberts. Young stock of either sex for sale. **CLARENCE BRISTOL, R. No. 2, Fenton, Mich.**

HEAVY MILKING SHORTHORNS—Can spare a few females. Good notes good as cash. **J. B. HUMMEL, Mason, Mich. (Citizens Phone.)**

J. B. CROUSE STOCK FARM, HARTLAND, MICH. No bulls for sale. Have some choice cows and heifers at right prices.

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DELAINE RAMS—Large, heavy fleeced Delaine and American Merino Rams. Also 20 good ewes. **S. J. COWAN, Rockford, Mich.**

REGISTERED Delaine Merino Rams—Descended from Standard Model and A. T. Gamber's Ring-leader. **C. M. MANN, Rockford, Michigan.**

SHROPSHIRE HALL STOCK FARM.

Will make special prices for thirty days, on ewes from 1 to 3 years old, all bred to Imported Cooper, and Mansell rams to lamb in March and April, also on very choice ewelams, this is to make room for an importation that is going to arrive this spring. **L. S. DUNHAM & SONS, Concord, Michigan.**

GO INTO SHEEP RAISING

Buy of Michigan's Largest Breeder of good sheep. **Romeyn C. Parsons, Grand Ledge, Mich.**

HAMPSHIRE RAM LAMBS and several extra good yearlings. All registered. **C. D. WOODBURY, Lansing, Michigan.**

HOGS.

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A few bred sows left yet, but no boars. Spring pigs of best families. **Guernsey Cattle, Plymouth Rocks, Pekin Ducks and M. B. Turkeys.** **HUPP FARM, Birmingham, Mich., G. C. HUPP, Mgr.**

NORTHERN GROWN BERKSHIRES. **ROYCROFT FARM, Sidaaw, Mich.**

A FEW FALL GLITS bred for fall farrowing. Also choice lot of spring pigs bred by King Premier. **A. A. PATTULLO, Deckerville, Mich.**

DAMS BROS. IMPROVED CHESTER WHITES, Litchfield, Mich. won more premiums in '08 than any other herd in Michigan. Stock all ages for sale. Prize winning W. Orpington, W. Leghorn and Buff Rock eggs, \$1 per lb. **Shorthorn bulls & heifers**

IMPROVED CHESTER WHITES—Young Sows bred for early fall farrow, one fall boar, also March Apr. farrow ready to ship. **W. O. WILSON, Okemos, Mich. (Both Phones)**

IMPROVED CHESTER WHITES. A fine lot of spring pigs, either sex, farrowed in March and April. Price \$10. Satisfaction guaranteed. **Colon C. Lillie, Coopersville, Mich.**

DUROC JERSEY SWINE. Shepherd Dogs. B. P. Rock eggs, \$1 for 15. **J. H. BANGHART, Lansing, Mich.**

DUROC JERSEYS **CAREY U. EDMONDS, Hastings, Mich.**

DUROC Jersey of size and quality. 40 Boars ready for service. 50 sows at Farmers Prices. Satisfaction Guaranteed. **J. C. Barney, Coldwater, Mich.**

O. I. C's Boars & sows all sold. I have a fine lot of young pigs that will soon be ready to ship. **A. NEWMAN, Route No. 1, Mariette, Mich.**

O. I. C. SWINE. My herd is headed by Jackson Chief, the world's Champion and Grand Champion, the greatest O. I. C. boar in the world. He is also grandson of Tutesy, the world's Champion sow. Pigs by him at live let live price. **A. J. GORDEN, R. No. 2, Dorr, Mich.**

O. I. C's—ALL AGES. Thirty sows bred for spring farrow. Shipped on approval. **H. H. JUMP, Munith, Mich.**

O. I. C. Boars ready for service. Spring pigs by grandson of World's Grand Champion. **Glenwood Stock Farm, Zeeland, Michigan, R. 6. Phone 94.**

WEANLING Pigs and bred Sows at bargains to quick buyers, from large-styled, prolific Poland-China sows. **ROBERT NEVE, Pierson, Mich.**

POLAND-CHINA BREEDERS

are invited to inspect my great herd at Michigan State Fair will be there strong with a car load, from the best herd in Michigan. **Wm. Waffle, Coldwater, Mich.**

POLAND-CHINAS—Choice young boars ready for use; bred right. Also young Sows bred. Right prices. Write today. **L. W. Barnes & Son, Byron, (Shiawassee Co.) Mich.**

Poland-Chinas. Nothing but spring pigs. Let us have your order now. **WOOD & SONS, Saline, Mich.**

LARGE ENGLISH YORKSHIRES. Boars ready for service \$15.00; Glits bred for fall farrow \$20.00; spring pigs either sex. Satisfaction guaranteed. **COLON C. LILLIE, Coopersville, Mich.**

POULTRY AND BEES

BACTERIAL INFECTION OF EGGS.

In these days of advanced scientific research it is not especially surprising to learn that even the contents of an egg-shell are subject to bacterial infection. At first that it would seem that the shell should afford ample protection, and yet we recognize the need of adopting some means of preserving eggs if we would keep them fresh for more than a very short period. Keeping them fresh means delaying the process of decomposition, and the fact that under natural conditions decomposition begins in a comparatively short time may be regarded as evidence that bacteria, in some of their multitudinous forms, have gained access to the egg contents. Were this not true we might reasonably expect an infertile egg from a perfectly healthy fowl to remain fresh almost indefinitely. Then, too, were eggshells germ-proof there would apparently be no good reason why eggs produced in hot weather should not be as easily kept fresh as those produced during the cooler months. As a matter of fact, however, we know that egg men regard it very poor business to attempt to preserve midsummer eggs.

A careful study of egg infection and preservation, supplemented by laboratory tests and observations, was made during the early months of this year by an able bacteriologist at one of the eastern experiment stations. His work led him to the conclusion that most eggs contain some form of bacteria at time of production or very soon thereafter, and that the development of these organisms, and the consequent decomposition of the egg, is influenced largely by the conditions under which the egg is placed. In other words, that the infection is naturally present to an extent sufficient to quickly cause decomposition under conditions favorable to the rapid multiplication of the bacteria. Prompt and proper handling of the egg would therefore appear to be the only means of retarding decomposition.

While this investigator found a number of different kinds of bacteria in the numerous eggs examined, he reports finding none of a disease-causing nature, altho he admits a rather remote possibility of such germs finding their way into eggs. Concerning the sources of egg infection, he says, in a bulletin issued by the Storrs (Connecticut) station:

"The bacteria that cause decomposition in eggs have been found in the oviduct of the hen, even in the upper portion, so that an egg may be infected in the earlier stage of its formation, particularly at the time when the white or albumen is secreted.

"A diseased condition of the ovary of the hen may cause the infection of eggs. Poultrymen, especially those who dress large numbers of fowls, frequently find hens that are so diseased. It seems impossible, however, to diagnose a diseased condition of this sort before dissection, hence it would be difficult to guard against such infection.

"Eggs may be infected after they have been laid, as it is possible for the bacteria to pass thru the pores of the shell. Moisture plays a part in such infections, for while the egg is covered with its normal mucilaginous coating and kept in a dry place it is difficult to infect. Infection is not a difficult matter, however, when the egg is moist. Many egg shells are defective, the defects sometimes glaringly apparent but oftentimes entirely unobservable. These defects may be caused by not feeding hens a sufficient amount of shell-forming food.

"Eggs are liable to be infected soon after they are laid. Nesting material is a great source of infection, for if this has been allowed to remain unchanged for a long time it becomes foul and teems with bacteria. Nine different kinds of bacteria were taken from one nest and each kind was cultivated separately. Egg media was prepared, consisting of the whites and yolks of fresh eggs mixed, poured into test tubes and kept at a high temperature for ten minutes to kill all bacteria in the media and on the test tube, also to harden it properly. Each kind of bacteria found in the nest was placed in a separate test tube, which was then covered and put into a bacteriological incubator, running at a temperature of 98.6° F. for three days. At the end of this time the egg media in each test tube showed that changes had taken place there, and these changes were accompanied by the disagreeable odor of

decomposition. The results of these experiments lead us to believe that the large numbers of bacteria in foul nests are a menace to fresh eggs, as they infect and decompose them.

"Whatever the means of infection, it has been found that a larger percentage of the July, August and early September eggs are infected or contain a greater number of bacteria, (at a time they may be called "fresh"), than the eggs of the other months of the year, particularly, when compared with the eggs laid during the months of April, May and June. This corroborates the opinion of egg packers who invariably prefer April, May, and June eggs to those produced during the other months of the year.

"It is considered, then, that the April eggs have the best keeping quality, the May eggs and the eggs of early June coming in the order named. Eggs were tested during each month of the year to see if they contained bacteria. One method was to take a freshly laid egg and shake it to break the yolk (vitelline) membrane, so that the yolk and white of the egg would be mixed, then treat a portion of the shell with carbolic acid to destroy the bacteria there, and with sterile forceps make a small hole in the shell thru which was passed a sterile platinum loop. A quantity of the contents of the egg was then drawn out quickly and put into a tube of liquid agar and the whole quickly poured into plates, where the agar hardened, and the plates, covered and labelled, were placed in an incubator (bacteriological) having a temperature of 98.6° F., and left for forty-eight hours. At the end of that time, colonies of bacteria would appear if they were present in the egg."

No one can read the above extract without drawing two important conclusions touching the production of strictly fresh eggs: First, that to produce a good egg it is necessary to have a healthy, vigorous fowl, and, second, that to keep such an egg fresh and appetizing for even a comparatively short period it must be given protection from bacterial contamination, and from weather conditions which may make it susceptible to infection, at the earliest possible moment. In other words, no matter how clean the nest, eggs should be gathered frequently and stored in the coolest place available, this advice being especially applicable to this season of the year when germs of all kinds are rampant.

WHY NOT FOLLOW NATURE'S LAWS.

Nature intended that all fowls should be reared, live and roost in the open air. The partridge is an example of a fowl following nature's laws. It is observed that chickens and hens prefer to roost in trees rather than in hot stuffy coops or pens. Hens prefer open-front scratching sheds to closed buildings and, where these are provided, will occupy them during most of the day. A hen that steals her nest lays her eggs upon the ground and Mother Nature assists her in hatching a good strong brood of chickens. Then why not, in rearing chickens, as well as in keeping fowls thruout the year, follow the laws laid down by nature?

In making nests hollow out the ground in the poultry house to conform to the shape of the hen, and put in a layer of hay, chaff one or two inches in thickness upon which the eggs may be placed. If the floor of the house is other than dirt, boxes may be used for nests by filling them nearly full of earth, then adding the chaff. Thus the natural way is closely imitated.

Coops for the hen and chickens should be made with at least half of the front open. This may be covered with wire screen or slatted so as to prevent the hen from getting out before the heavy dew is off in the morning and during rainy days. The coop should never be closed up tight at night, but left as open as possible to admit fresh air.

Colony houses, to which the chicks should be removed as soon as six to eight weeks old in lots of not more than twenty-five, should be built with open fronts which may be covered with half-inch-mesh wire netting. A door covered with the same material may be used to cover half the front end. Houses 4 to 5 feet in width, 5 to 6 feet in depth, with shed roof 4 to 5 feet high in front and 3 feet in rear, answer the purpose. When the chickens are large enough to roost, cleats may be nailed to the sides of the building two feet from the floor and upon these the perches may rest. Boards 4 inches wide serve the purpose. Such houses approach the open air perches in trees but keep off rain and cold winds.

Some of the best chickens the writer ever saw were some that roosted in low pines until late in October. The pines shed water much better than other kinds of trees and also protect chickens from the wind.

The winter houses should be supplied with commodious scratching sheds or should have open front, with roosting apartments in the rear protected by a curtain. Closed houses should have the windows removed or door or doors opened during the sunny part of the day. No house should ever be closed tight during the night. Colds, roup, and other diseases are practically unknown in open-front houses or houses that admit the largest amount of fresh air, without subjecting the fowls to drafts. This is nature's way.

In the matter of foods, why not do away with all mashes entirely and feed the hens whole grain. This is the natural food of birds. Make them hunt and scratch for every kernel of grain they get. Exercise is the secret of health and, with plenty of food, will produce eggs during the months when eggs command the highest price.

Eggs from stock raised by open-air methods hatch well and produce strong and hardy chicks. Why try all the artificial ways and methods, "new fads and fancies"? Why not study nature's laws and strive to follow her precepts? Her teachings mean hardiness, vigorous constitutions, and great productiveness.

New Hampshire. A. G. SYMONDS.

THE INSTINCT OF BEES.

Bees revisit their old haunts, the trees and the flowers where they have been used to find honey. They recognize their own hive among many others, returning to it in their homeward flight in a direct line, and never hesitating between it and the surrounding ones. It is highly remarkable that they know their own hive more from its locality than from its appearance, for if it be removed during their absence, and a similar one substituted, they enter the strange one. If the position of the hive be changed, the bees for the first day take no distant flight until they have thoroly scrutinized every object in the neighborhood; and it is asserted by Kirby and Spence that the queen bee does the same thing, making several probationary flights before the swarming of the hive, as if to select the proper spot. They also mention the circumstance of a number of bees having been attracted in the autumn to some honey which had been placed in a window, and of their visiting the same spot the ensuing spring in search of it again.

The mason-bee contrives holes as receptacles for its young, in which it lays up their food; and if a hole closes up during its absence it searches for some time along the wall, after its return, without noticing other holes, and, having found it, it removes the obstruction and continues its work—a clear proof that these bees distinguish between their own holes and those of others.

Bees are remarkable for the cleanliness of their dwellings. They are extremely solicitous to remove such insects or foreign bodies as happen to get admission into their hives. When so light as not to exceed their powers they first kill the insect with their stings and then drag it out with their jaws. But it sometimes happens that an ill-fated snail creeps into the hive; this is no sooner perceived than it is attacked on all sides and stung to death. But to attempt to carry out so heavy a burden would be labor in vain, and, therefore, to prevent the noxious smell which would arise from its putrefaction, they immediately embalm it by covering every particle of its body with propolis, thru which no effluvia escape. When a snail with a shell gets entrance, the disposal of it gives much less trouble and expense to the bees. As soon as it receives the first wound from a sting it naturally retires into its shell. In this case, the bees, instead of pasting it all over with propolis, content themselves with gluing all round the margin of the shell, which is sufficient to render the animal forever immovably fixed.

Indiana.

A. L.

New Jersey bee-keepers made an effort last spring to get an appropriation from the state for the purpose of fighting foul brood. The amount asked for was \$500, but owing to a threatened deficit in the state's treasury, the bill met the fate of practically all other new legislation carrying appropriations which came before the legislature.

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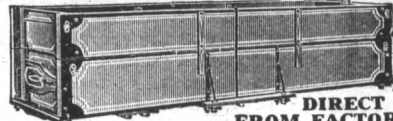
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DETROIT, AUGUST 7, 1909.

CURRENT COMMENT.

There is every prospect that before this issue reaches the reader the differences now existing with regard to certain provisions of the conference report, as signed by the committee and adopted by the House, will be adjusted, and that the bill will be finally acted upon. As previously noted in these columns, this bill followed the course of most important legislation in going to a conference committee composed of members of both houses of congress for an adjustment of the differences between the two houses by necessary compromises. The conferees agreed to an adjustment of these differences comparatively early in their deliberations, but that adjustment was not satisfactory to President Taft as fulfilling to the letter the campaign pledge for a downward revision of the tariff, and he insisted on a material reduction of the duties on some of the leading articles of import, such as lumber, hides, iron ore, etc. His ultimatum in this regard made it certain that the bill would not receive his approval unless further concessions were made and, after repeated conferences, an agreement was reached which included the reductions upon which he insisted. These three schedules mentioned above were finally fixed as follows: Rough sawed lumber was made dutiable at \$1.25 per M., decreased from \$2 per M. under the present law, which was the point of issue between the President and the conferees. Corresponding reductions were also made on manufactured lumber amounting to about one-third of the present rates and fence posts were placed on the free list. Shingles were increased from 30 cents to 50 cents per M. and some slight increases were made on special woods used in manufacturing pipes. Iron ore was reduced from 40 cents per ton, the present duty, to 15 cents per ton, and pig iron was reduced from \$4 to \$2.50 per ton, while heavy reductions were made in manufactured iron all along the line. Hides were placed on the free list in the compromise brought about by the President, and to satisfy the senators who represented the states of heavy production in this line an agreement was made whereby leather and its products manufactured from hides heretofore dutiable were also materially reduced. It was about this provision that trouble arose in the senate over the adoption of the conference report, several senators insisting that the

wording of the bill was such as to constitute a "joker," and that they could not support the report unless the duty on all boots and shoes and harness were reduced, in accordance with their understanding of the terms of the agreement under which they consented to the removal of the duty on hides. This apparent misunderstanding between the conferees, the western senators and the President was of such a serious nature as to make it apparent that the conference report could not be adopted in the senate without further concessions to them, notwithstanding it was urged by the conferees that no change could be made in schedules not involved in the hide controversy without resubmitting the proposition to the house, for which reason the wording of the conference committee report was a parliamentary necessity. Just what the solution of this misunderstanding will be cannot be predicted at this writing, but the most probable solution is said to be the adoption of a concurrent resolution by both houses of Congress, instructing the enrolling clerks of the two houses to make alterations in the schedules relating to hides and their products which will satisfy the demands of the western senators, the report of the conferees being adopted as it stands.

Whatever the outcome of this misunderstanding, it is safe to assume that it will not be permitted to block the tariff bill now so near to adoption and which is the outcome of months of work by Congress. That being assumed the general trend of the bill as it now stands will be of interest to the reader. Space will not permit comment on the different schedules and their several reductions in this issue, but the figures prepared by chairman Payne of the House Committee will serve to give a general idea of its trend. In an analysis of the bill showing the value of dutiable articles on which increases and decreases have been placed Mr. Payne presented the following tabulated summary. The figures given are based on the consumption value of the articles enumerated in all cases where the amount of production could be ascertained:

	Increase.	Decrease.
	Duty	Duty
Chemicals	\$ 433,099,846	\$ 11,105,820
Earthenware	128,423,732
Metals	1,248,200,169	31,280,372
Lumber	566,870,950	31,280,372
Sugar	300,965,953
Tobacco	No change
Agricultural products	483,430,637	4,380,043
Wines and liquors	462,001,856
Cotton	41,622,024
Flax, hemp, jute	22,127,145	804,445
Wool	No change
Silk	7,947,566	106,742,646
Paper and pulp	67,628,055	81,486,466
Sundries	1,719,428,069	101,656,598
Totals	\$4,978,122,124	\$852,512,525

In this analysis of the bill Mr. Payne further notes that of the above mentioned increases, the following are on luxuries or articles of strictly voluntary use:

Chemicals, including perfumeries, etc.	\$ 11,105,820
Wines and liquors	462,001,856
Silks	106,742,646

Totals

This would leave a balance of increases not on articles of luxury of \$272,662,203, against a consumption value of articles on which decreases have been made of \$4,978,122,124.

Of course these figures are only relative, and the claim is made by some members who are not friendly to the bill that a small reduction which places many of these dutiable articles in the decrease column more than offset by large increases in other schedules. But it must be taken into consideration that the framing of a tariff bill that would be satisfactory to all elements would be an impossibility, and that the result of the special session of Congress is a bill upon which a majority of the members of both houses are willing to stake their political future as indicated by their votes, and which has the approval of the President as complying with his pledge for a downward revision of the tariff. It received the support of the entire Michigan delegation on this ground, and certainly the farmers of the state and country have not suffered materially in the cuts which have been made in raw materials. Time alone will tell how satisfactorily the bill may prove in practical operation, but the country is to be congratulated that it has been formulated with so little disturbance to business as has been the case. Even those who are not satisfied with its provisions seem willing to concede that it is a step in the right direction, and former experiences would seem to indicate that this is a problem in the solution of which it is better to "make haste slowly" rather than to risk the effect of radical changes upon our generally prosperous business conditions.

The Farmer's Vacation.

With the passing of the harvest season and its strenuous work, the question of a vacation for the farmer and his wife, or at least a diversion which will relieve the strain under which they have been laboring, is a proper subject for careful consideration in every farm home. Just what that diversion shall be or how much time shall be devoted to it is, of course, a matter for individual determination in every case. There is, however, no question that a little time spent in some pleasant diversion from the daily grind, which becomes monotonous on the farm as elsewhere, will prove a profitable investment in every case. Also there is no doubt that to prove most beneficial such diversion should provide an entire change of scene and environments. Such a change need not be expensive and unless desired need not involve a great degree of travel, but a brief change of surroundings such as would be secured by a short trip or a visit to some other section of the state or country will prove beneficial to the entire family in more ways than one. First it will provide that change, which is in itself a rest, and second it will broaden those who participate in it to a very appreciable degree. Our lives are but narrow at the best, and they become more so thru the long continued and uninterrupted monotony of our daily tasks, whatever those tasks may be. But even a brief change of environment quickens our sense of perception and gives us a broader view of life, and in a majority of cases after coming into contact with people whom we have previously been inclined to envy, and noting the difficulties which surround other lines of business and the disadvantages of other locations than ours, we will return home in a better frame of mind as well as of body, and again take up our business burden with greater energy and determination, as well as greater satisfaction. Business men have not been slow to note this fact, and it is the common custom in large business houses to give the employees who occupy responsible positions a vacation each year, upon the theory that their services will be the more valuable to their employers because of the rest and recreation. Surely the home-owning farmer owes as much to himself and his family, and while he may reason that the winter season is the more suitable one for diversion and recreation, a little of both will surely be beneficial at this season of the year during the lull between the early and the later harvests.

HAPPENINGS OF THE WEEK.

Foreign.

A plan to celebrate the 100 years of peace between Canada and United States following the war of 1812 has been received with approval by authorities in Canada. It has been decided to hold the event at Ottawa and the United States, and the colonies will be asked to help finance the exposition which will be international in character. It is asserted that the preliminary plans promise a celebration that will exceed the ceremonies and pomp exhibited at the centenary at Quebec last summer.

Rev. Harris Lloyd, who has done much for the poor of the British metropolis, is now making a tour of western Canada for the purpose of locating lands that he might recommend to the unemployed of London for farming purposes. He believes that the men would be much better off on farms and is of the opinion that they would make desirable citizens of Canada.

Work on the Windsor side of the tunnel under the Detroit river is being carried on with difficulty since the recent heavy rains about the vicinity of Detroit, as floods have filled the tubes with fully eleven feet of water.

The university of Leipsic, which is celebrating the fifth centenary of its foundation, conferred the degree of doctor of laws upon Theodore Roosevelt. He was the only foreigner to be thus honored. He will also receive a similar degree from the University of Berlin when he lectures there in the spring.

Panama officials have informed the government here that redress will be made the persons injured by the local police and will pay indemnity to the family of one killed. This is the result of demands made by Washington officials.

Early in the morning of July 30 a district fully 1,000 square miles in extent, stretching from the Atlantic to the Pacific coasts of Mexico, was shaken by several earthquake shocks. Chilpancingo is reported destroyed and Acapulco is half in ruins from the shocks. The City of Mexico was severely shaken. Communication is so badly interrupted that the extent of the damage is unknown.

The recent outbreak in Morocco when Spanish troops suddenly found themselves outnumbered by the natives and that they were unable to hold out against the persistent attacks of the tribesmen, are each day proving but a morsel of the trouble before the administration at Madrid. In the attempt to raise troops for the defense of Spanish rights across the Mediterranean, the inhabitants of Barcelona rebelled, and the revolutionary spirit which has been smoldering thruout the nation for decades back became evident. The opposition of the Barcelonians be-

came so strong that a riot resulted and fully 400 persons are said to have been killed. A strict censorship is being enforced and it is difficult to secure reliable news, but what information comes pictures a serious situation. The Carlists are expected to take advantage of conditions and fight to enthrone the pretender, Don Jaime.

Despite the fact that Gen. Reyes announced his support to the Diaz-Carroll ticket in Mexico, a campaign that is fast gaining strength is being conducted to place him in the vice-president's chair.

Crete declared for union with Greece as soon as the announcement was made that the powers who have protected the island since 1898 would withdraw their troops. The Grecian flag was hoisted over the posts and government places on July 26.

It has been planned to run thru freight cars from Chicago direct to Havana. The cars will be ferried from Knight's Key, Florida.

Bubonic plague and cholera is raging in Amoy, China, where it is reported that 135 deaths from the former and 35 from cholera occurred in two weeks.

France will call an international conference to discuss the subject of air navigation during the week of aviation arranged for at Rheims, France, where all the men who have taken an active part in the demonstration of aeroplanes will be present to give public exhibitions with machines.

The government is investigating what purports to be a big opium smuggling scheme at Manila. A large quantity of opium was found in a recent shipment of machinery from Hong Kong.

A conflagration which raged at Osaka, Japan, for 25 hours destroyed 20,000 buildings, including a large number of business places of the town, whose estimated worth is around \$43,000,000. Thousands of people were rendered homeless. It is feared much suffering will result since a drought has damaged crops. The great buddist temple at that place was among the buildings destroyed, and the people are much grieved over this fate to their house of worship.

An agreement has been reached between Germany and the United States providing for the protection of patents in both countries without the duplication of manufacturing plants. Heretofore, it has been necessary for a concern to build plants in both countries in order to take advantage of the patent protection.

The inhabitants about Acapulco, Mexico, where 73 earthquake shocks have been felt since last Friday, are homeless and without food. At many other places there is much suffering.

The action of Lock Wing, the Chinese vice-consul at New York in rescuing Chinese girls from slavery in that city brot against him vengeance from the hands of a Chinese secret society, who finally took his life for interfering.

National.

The Wright brothers will begin teaching aviation to the army officers at College Park, Md.

The aerodrome, with which tests were made at Ottawa, Canada, last week proved a partial success. The inventors believe that the principle of the flying machine will work when given proper conditions.

The station is located about seven miles passed the bill agreeing to the amendment to the national constitution providing for an income tax.

Every liquor dispensary in South Carolina closed its doors last Monday.

A preliminary poll of the legislature of Alabama indicates that the prohibition bill, now being considered, will pass and, as the governor stands favorable, will probably become law.

Iron plate has advanced three dollars per ton in the past three weeks in the south. The manufacturers made the raise in three installments. The United States Steel corporation has also advanced the price for steel bars, angles, plates and beams, one dollar a ton.

The continued drought that has prevailed in the New England states promises to cause a milk famine in Boston.

The navy department is favorable to the development of California City as a coal-point for ships on the Pacific coast. The station is located about seven miles from San Francisco.

A relief boat will leave St. Johns, Newfoundland, in a few days for Greenland to ferry supplies to the Perry Expedition.

Last week Detroit witnessed one of the severest rain storms since the introduction of the weather bureau. Over four and one-half inches of water fell in the course of eight hours.

Harry K. Thaw is on trial before the New York asylum authorities who will determine whether he is a safe person to leave the asylum where he has been detained since the trial for killing Stanford White.

With the higher prices and the increased acreage the farmers of the northwest will realize more for their wheat crop than for any previous year.

Several deaths resulted in Chicago from the torrid wave which passed over that city last week.

The threat of Governor Marshall, of Indiana, to send troops to Gary, the home of the large steel plant, to prevent the running of dives and blind tigers has been effective in bringing the breakers of the law to time.

The new Lincoln pennies are now being shipped to banks for circulation. In Wall Street Monday, the new coins were selling for 25 cents to souvenir collectors.

State.

One man was killed and three others injured in a head-on collision at Kalamazoo, Monday.

Joseph A. Whittier, a pioneer lumberman of the Saginaw Valley, died at his home in Saginaw, Sunday. It is estimated that his firm did one of the largest business of any lumber firm in the northwest, handling as high as \$90,000,000 feet.

Men living in the state who have served in the German army are in convention at Ann Arbor this week.

Magazine Section

LITERATURE
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MICHIGAN FARMER
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IN THE LAND OF EARTHQUAKES—Calabria.

BY RAFFAELE SIMBOLI.

Calabria is one of the most unfortunate regions of Italy. It seems as if an evil genius were making game of an entire population which is laborious, honest and patient. Each year there is a new scourge to register, following a long series of misfortunes which run back for centuries. For instance, in 1669 the silk industry flourished there; at Catanzaro there were over a thousand looms; then came the earthquakes, and the invention of Jacquard looms, so that in a short time the industry declined. In 1743 a terrible pestilence raged. The earthquakes which in 1456 and 1638 had reaped many victims, returned to mow down others in 1854, 1857 and 1870. In 1873 there was a real cataclysm, and in 1894 the damages caused by terrible shocks were immense. To the earthquakes was added brigandage, which between 1862 and 1872 destroyed the industry of pasturage. Then came the oil fly and the phyloxera to injure agriculture.

Emigration, while on the one hand affording a safety valve for the too numerous population, on the other hand carried off the best laborers. Finally the administration did the rest—increasing the taxes which should have been lightened. All this befalls a region where the sun shines brightly and the earth lends itself to the most varied cultivation to such a degree that it is possible to cultivate lemons as well as cotton, and sugar cane as easily as the most delicate flower.

The inhabitants are most sincere; they do not forget injuries, but they cherish grateful memories of favors done them; they fight with ardor, but fly from treachery. They were among the most valiant soldiers of Italian independence. They have a fervid genius, speak with uncommon facility of language, and are physically handsome and strong. The misfortunes of their idolized native land often make them morose, suspicious and menacing. They suspect everything and everybody; their exasperation grows with the anticipation of new disappointments. In times of great disaster—to which none become accustomed—few curse, but the face grows sullen, the intellect darkened, and many go mad from grief. What keeps the peasant calm and patient is his love for his home, however miserable and unhealthy it may be, but when earthquakes lay his house low he becomes like an angry lion, and hates whoever has

a roof to shelter him and bread to eat. He ranges the fields in search of fruit; no one dares assert rights of proprietorship—his life would thereby be endangered. As an irony of fate, the Calabrian landscape is one of the most picturesque. The Sila plateau, rising two thousand

the west. Unfortunately it was not long able to maintain itself on the road of progress. The small proprietors were tormented with taxes; carriage roads, schools and churches were scarce. In 1901 Calabria was inhabited by 1,370,000 persons, scattered in villages and hamlets; 250



Calabrian Women in Festal Dress.

metres above the sea level, covered with gigantic firs and pines, whose fellows were used by the Greeks and Romans to construct their vessels, has a mysterious fascination for the beholder. Calabria was the highroad by which Greek and Asiatic civilization were diffused in

communes, already small in themselves, are divided into four fractional parts, distant from the main center. Of these localities it is difficult to obtain information because it is difficult to reach them. The Calabrian writer, Mandalari, thus describes them:

"They are groups of conical straw huts, erected without mortar, with a kind of black cement, a mixture of earth and sand. In all these dwellings bread is lacking; potatoes and fruit form the chief articles of food. The people lead a pastoral life, following their sheep, pigs and cows. In winter stuff for clothing is lacking, so they resort to the skins of animals. The peasants lack dwellings; it is not easy for them to build the most modest hut, since anything, however mean, that shelters the poorest bed is subject to taxes. There is no money to pay these, and there follows a fresh emigration of peasants to the centers of civilization, persecution by the tax gatherers, and the sale of the hovel to the first bidder."

The Calabrian writer speaks truly. It is sad to note, but alas, this poor region has been sufficiently neglected by the government. The hour has indeed come to think seriously of a proud yet gentle people, who cherish a true cult for family, liberty and country.

Whoever has not seen the Calabrians at close range can not understand all the troubles which for years have tormented them. Earthquakes are the principal enemy; experiences of the past make the inhabitants afraid. At the first shock, however slight, they flee panic-stricken. It seems as if even the animals were conscious of the ruin about to occur. It has been noted that almost all the cats and hens felt the earthquake in advance. Only a few dogs were found dead. After the scourge the few survivors wander famished among the ruins. The Calabrian, accustomed to do for himself, begins the work of rescue, his fingers bleed, his garment falls in tatters, his stomach is empty, his throat parched, but it matters not. Love of family is strong in him. At Fittimi, the peasant, Diego Mazzitelli, drew his son out from a heap of ruins, then seeing that he was dying, left him, saying: "Now we must think of the living." And this valiant fellow alone saved ten persons, one after another, risking his life at every step. Not content with this, he led the work of demolishing the most dangerous ruins. At Parghella a mother mourned her all, whom she believed dead, and searched the ruins for the corpse of her daughter. She wished to keep her earrings as a cherished remembrance. After four days of effort she heard a plaint and fancied it might be the faithful cat. The soldiers



Reggio, Italy, near the southern extremity of the Peninsula of Calabria and almost directly across the Strait from the ill-fated City of Messina, Sicily.

excavated with zeal, but instead of the cat they found the child, still alive, but in a most pitiable state. The child's life was saved, but the mother went mad. Such anecdotes are legion. The disaster of Sept. 8, 1907, was tremendous. Of the 413 communities of which Calabria consists, 212 were injured; Pizzo and Monteleone were destroyed. The province of Catanzaro which was most stricken had 20 communes destroyed, Cosenza 10, and Reggio Calabria three. The buried dead amount to 789, the wounded, over three thousand. The survivors, bereft of everything, can not be numbered. In Calabria riches are rare. There is a uniform level; misery may be said to be confounded with prosperity, prosperity with poverty. To be a proprietor means to have a little house, a small field, and stock of provisions. The house falls, and buries everything. The menace of a severe winter under such desperate conditions, is ever present to the minds of all. No one can say what passes in the mind of one of these proprietors, wandering desolate among the ruins of his home. It is a spectacle to stir every heart. From desolate, ever gentle Calabria, this time, has gone forth a cry which has found an echo in every generous heart. Science in the meantime seeks to explain the phenomenon, and the polemics in the newspapers only serve to extend their circulation among the terrorized people. From the time of Aristotle's book on earthquakes, much has been done to solve the mystery, which, however, remains almost impenetrable. Seneca wrote on the subject in a manner differing but slightly from what might be written in our time. Still a clear, persuasive theory obtains, namely that volcanoes are great chimneys rising from the center of the earth, where incandescent matter collects and cools off, forming quarries and mountains. Are volcanoes in communication with the

center of the earth? If it were so, would not the earth burst, like a huge shell? It is therefore believed that they average 10,000 meters in depth, a small figure in comparison with the earth's diameter. During the formation of mountains there are terrible upheavals such as earthquakes. On earth the shocks are insignificant from a geological standpoint, but from the human point of view disastrous and terrible. Japan has more than 200 volcanoes, of which 50 are active, and every year it suffers about 500 earthquakes. Italy has not such a number, but says science: "How many earthquakes will yet be needed for the future modeling of the earth? Were not probably thousands needed for the formation of the Apennines?" The latest serious earthquake in the province of Reggio di Calabria occurred near the close of last year, and in all civilized lands the people instantly turned their attention from holiday festivities to the task of sending aid to the inhabitants of stricken Sicily and Calabria. Previous to this were the quakes of Oct. 27, and Nov. 18, 1907, when the people all fled from their homes. One violent shock succeeded another in each of these cataclysms. The people of the towns and villages fled to the open air, camping outdoors or taking refuge from accompanying storms in subterranean grottos. The report of the last catastrophe says:

"Men and women, rich and poor, priests and soldiers are thrown together, and the devout are raising prayers to the madonna and the saints to succor them in their misery. The gravity of the situation is increased by the inclemency of the weather."

All this is scarcely consoling to a region tormented by earth and heaven, for to earthquakes are added downfalls of rain from which the peasants must seek shelter in the tottering houses from which they have fled, or in natural coverts.

A BRUTE OF A HUSBAND

BY EDGAR WHITE.

In those splendid early days of Missouri the man who stole corn from his neighbor or licked his wife didn't get off with a reprimand from the judge. He was made to understand that he had committed a crime. Nowadays he would be sent to jail possibly for 15 days for stealing the corn, and the case against him for licking his wife would be nolle prossed on his promise to do better. No wonder the country is going to the dogs.

The story of the erection of a whipping post in Easley township for the punishment of a wife-beater is yet fresh in the minds of the older inhabitants. Those stalwart sons had no patience with the law's red tape, or with the tommyrot that now impregnates what we are pleased to denominate as the course of justice.

Squire William Easley, for whom the township was named, was a flint-lock musketeer under General Price in the Mexican war. He had seen his brave commander string up Greasers for various deviltries, and his good old conscience approved the method. When he came to Missouri he was made justice of the peace and dealt out more real justice than has ever been vouchsafed the citizens of the county since. If the law books were against his convictions of right, he would toss 'em out the window and render a decision according to facts. He would on no account let the books interfere with justice. There were no appeals from his decision. He would have licked the man who had suggested such a thing.

When the people along the Chariton river bottoms were enjoying their annual visitation of the chills, Squire Easley, knowing their lack of clocks and watches, issued an edict that the sawmill engines should toot their whistles on the proper occasions for the administration of quinine. If any resident of the township could bring evidence that the engineer had failed to obey this law of Easley township, the defendant was fined a month's wages.

The whipping post, as remarked, was established under the benign reign of Squire Easley. Miss Caroline Wentworth, a lady of uncertain years, but positive convictions, reported to his honor that Pierre LeCompt, a frog-eater living down the stream away, had laid hostile hands upon his bright-eyed little wife, Joan. Pierre lived on Miss Caroline's road to town, and as she pursued her orderly way to the village to swap a basket of eggs for a few yards of calico, she heard, she said, screams issuing from the cot-

tage of the Frenchman, by which token she knew that the brute was castigating the little woman whom he had sworn to cherish and to protect.

Even before she had made her barter with the village merchant, the excited Miss Caroline called upon the law's representative and laid the terrible case at his feet.

Such an accusation in the land of Easley was worse than walking on the banner of the nation. That LeCompt was a foreigner was almost as bad as saying that he was an anarchist, but being a foreigner and striking a woman were two offenses that placed him beyond the pale of mercy. So grave was the news brot in by Miss Caroline that the Squire detained her in town until he could meet in consultation with several Solomons of the bailiwick. Before the inquisitorial board Miss Caroline repeated her information, with added detail and flashing eyes.

She declared that she knew the poor woman, meaning the Frenchman's wife, had been sick for some time; that she had on two or three occasions observed her standing around the yard with a vindictive scowl upon his face; on the morning in question as she came by she distinctly heard screams emanating from the cottage. Being solitary and alone, and only a poor woman, and knowing that a man who would strike his wife would not hesitate to do the same with a stranger who might interfere, she did not think it wise to interrupt the proceedings, but hastened to town in order that the wheels of justice might be started grinding on this important mission at the earliest possible moment.

The assembled wisdom bowed approvingly at Miss Caroline's lucid statement, and commended her upon her promptness in coming direct to the shop where justice was handed out.

Pierre and his wife lived in a little clearing down the river. He chopped wood and trapped mink, coon and possum, in season. Now and then he would bring a sled load to town, make explosive signs and utterance to effect the trade, and return home with the proceeds. Nobody knew much about him, and as communication was difficult he was left alone with the pretty little woman who had journeyed with him from the empire of Napoleon. To the few people who had met the little French girl she had always appeared bright and happy, but you can't tell about these foreigners; they are so dissimulating. Pierre wore a fierce black

mustache, an imperial that looked for all the world like the one affected by Captain Kidd, the pirate, and the grim tribunal before which his case was being considered was thoroly satisfied that every word Miss Caroline had averred to was exactly so, she being a good old-time Baptist, and a regular attendant at church.

The only question was the extent of the punishment. The guilt of the culprit was assured. Some that the Frenchman ought to be expedited to the happy land, arguing with fair logic that his crime was quite as great as that of a horse thief, for whom the code of the pioneers prescribed hanging, without benefit of clergy.

As a concession to the mercy side, Squire Easley advocated the use of the whipping post. He said it had been up for some time, and that the people were anxious to see how it was used. He had lots of friends back in the country, and he knew they would enjoy the spectacle. There weren't many diversions in the back woods in those days, and the great men were often hard put to it to study up something to keep the community interested. It wouldn't do to let a chance like this slip by. So the whipping post idea carried, and a constable was set to work making all things ready. It had occurred to one of the associate judges that it might have been well to have called the defendant in to attend trial, but Squire Easley showed the foolishness of this proposition when he remarked that the Frenchman could talk no English.

Everything was in perfect readiness before they sent for Pierre. There was no need of telephone or telegraph to stir up a crowd. Every outriding traveler stopped at all the cabins along the way and told the citizens what was up. Inside of 12 hours the news had thoroly percolated thruout the valley, and on the day of the ceremony there was a crowd on hand to do honor to the Frenchman. In fact, the crowd was there before sun-up. There was only the trifling matter of the victim's presence to attend to. Squire Easley told the crowd to be patient for a little while until he returned with the Frenchman. He set out on horseback with a constable, both riders carrying guns and ropes. In two hours they were back at the village—empty-handed.

"No, he didn't get away," explained Squire Easley, moving his feet about a little, and coughing some to clear his throat. "He was there all right, and so was she—the little wife. Miss Caroline—that austere lady was in the crowd regarding the court severely—"told the truth—the little French lady was sick, but she is better now—much better. There were screams that day. Miss Caroline was right again—perfectly right. But it was—er—a—new baby they got that done the screaming, and as it does its howling in French, it was most natural that Miss Caroline should be mistaken as to which one was making the noise. I always thot French was a fool language myself, and I don't blame Miss Caroline a bit for getting all tangled up about it. Pierre—the fool Frenchman—is acting like a wild man—he is that tickled. He wanted us to kiss the pumpkin-faced thing, and, by George! We done it! And—that's all, fellow citizens; you can go home now. Miss Caroline, the country is under obligations to you."

When the people of Easley township became prosperous enough to make business for a public barber, one of that craft came to town and put up a shack in front of the whipping post, which he illuminated in the colors of his profession. So the old torture tool worked out its destiny, after all, for the back woods' tonsorial artist of that epoch wasn't a spring zephyr when he moistened his hands and started to carve the bristles from the pioneer's face.

A WORD ABOUT AUGUST.

BY IDA BENSON.

The month of August, which is our eighth month, was called "Sextilis," or the sixth month, in the Roman calendar. It consisted of but twenty-nine days until Julius Caesar, in reforming the calendar, added one day to it.

His nephew, Octavius, who was the inheritor of his name and fortune, became the first emperor of Rome and was called by the title of "Augustus," meaning "the revered."

As the month of July was named for Julius Caesar, the Roman senate thot they would do his successor, Augustus, a like honor by naming the succeeding month for him.

But Sextilis had only thirty days, and July had thirty-one. So the senate,

wishing that the month of Augustus should have equal honor with the month of Julius, robbed February of a day and gave it to Sextilis, and called the month "August."

They played high-handed tricks with the calendar, those old Romans, when they had an emperor or great man to honor. September was the month of Augustus' birth, but many fortunate occurrences had happened to him in August, and he regarded it as his lucky month. And, strange to say, it was the month in which he ended his long and glorious reign. For the reign of Augustus Caesar is regarded as the most brilliant and prosperous time in the history of ancient Rome.

Ages have passed since the splendor of the Roman empire died away, yet each year the month of August brings to mind the man in whose honor it was named, and the time when Rome

"Sat on her seven hills,

And, from her throne of beauty, ruled the world."

LITTLE FARM FABLES.

BY AUNT QUILLIA.

Witch Hazel's Journey.

Once on a time when men believed in the divining rod Witch Hazel went on a journey.

This, to her, was a great event for she had always lived in the woods until, one day a year or two before, a countryman, noting her supple beauty had severed her from the parent shrub and carried her home.

This man was a well-digger, who, according to the faith of his times, believed she would be of great help to him in locating underground streams. Hence he made her his constant companion. Wherever he went there, also, went Witch Hazel directing him, as he supposed, to hidden fountains under the earth.

Tiring, at last, of what seemed to him a poor, plain life, he determined to seek his fortune in a distant part of the land. Having heard of the scarcity of water on the burning deserts he was about to cross, he packed Witch Hazel, with a few other treasures, into a bulging old carpet-bag and set out for the sun-lands of the southwest.

And now over the plains they went, the canvas of their "prairie schooner" gleaming like white sails on a trackless sea, or, if one's imagination were more tame, shining like a stiffly starched old-fashioned sun-bonnet as they lumbered along their lonely way.

On and on they went, past the great buffalo wallows, the queer villages of the prairie dogs and the bleaching bones of travelers that grinned at them in the cool moonlight or high, hot, midday sun.

At last they came to a line of hills from which a little river ran. Here, Witch Hazel's master staked his claim and sat down with his pan on his knee to wash out the fortune, that he was sure awaited him in the shining sands of the stream.

But alas! Gold does not flow much more readily into the hands of adventurers than into those of plainer men, and so, after a few months of fruitless washing and waiting, they set out for their former home.

For some reason Witch Hazel seemed to have lost her magic power—if ever she had any—and neither going nor returning was she of the least benefit to her master, who sometimes nearly perished with thirst.

Still, for old times' sake, he kept her among his treasures until he came in sight of the woodland where he found her when he gave her a careless toss that landed her on the very spot where she had first seen the blue sky.

Before her journey Hazel had been noted for her modest and retiring manners. Now, however, the airs she assumed were both amazing and ridiculous. For one thing, she flouted her old name and insisted on being called Miss Hammells. At times she would quite ignore her old neighbors, then again would assume a patronizing and commiserating manner almost too exasperating to be borne.

Never did she tire of rehearsing her own exploits, telling how she had charmed the waters to the surface of the parched deserts, and intimating that she had even located many a secret vien of gold.

Neither did she cease expatiating on the wonders of the scenes thru which she had passed, dilating at great length on what she termed the graceful forms of the ungainly cacti, the ample shade

of some squat mesquite, and the glorious stretches of dismal sage.

"Ah!" she would exclaim, "what a pity that you backwoods' people should be so ignorant of the great outside world. Poor galoots, you are rooted to the spot where you were born and can never know life nor nature as I have seen it."

This state of things continued until, one day in autumn, the poplar, being more nervous and sensitive than usual, began to tremble violently at her insulting remarks. The maples blushed scarlet

and even the dignified oak took on a dull flush of shame. The pine alone remained calm, and went on with an old lullaby she was humming. Finally she ceased and, frowning a little, darkly said, "Hazel's talk reminds me of a day when a couple of shop hands took their noon-ing in my shade. They had been discussing various features of the arts and crafts when one of them, rising, brushed the crumbs from his jumper and remarked, 'You are right. Fresh polish always spreads itself.'"

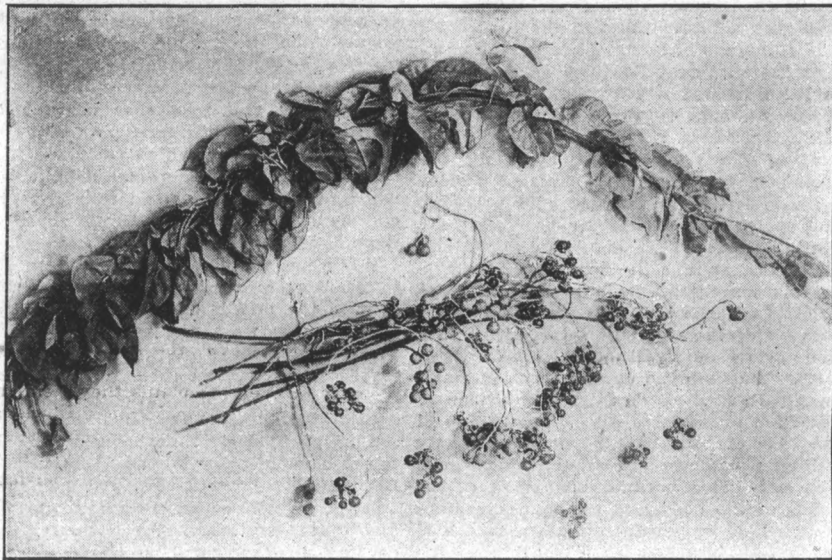
SOME OF OUR WILD FLOWERS—5

BY EVA RYMAN-GAILLARD.

Goldenrod—Dyer's Weed.—(Solidago.)

With more than eighty species of this plant in the United States and fully fifty of them in the territory over which we are hunting flowers, it would be hard to select one particular variety for consideration. Probably the variety best known as the *S. juncea*, whose great panicles (branching and re-branching) and made up of innumerable tiny flowers) of golden bloom sets the waste places aglow.

While there is a great difference in the size of both plants and flowers there is a general similarity that would prevent any mistake as to their identity. Some of the species begin blooming in July, and from that time until October one species or another will be brightening fence-rows and waste places generally.



Bitter-Sweet garland of foliage arranged by nature, and a handful of berries.

Very few species are known outside the United States, tho the generic name, *solidago*, comes from two Greek words that mean "to make whole," in reference to the medicinal powers of the entire genus.

Weed tho it is, its beauty has been recognized to the extent that Alabama, Missouri, Nebraska and South Dakota have adopted it as their state flower, while in Tennessee and Illinois it stood near the head of the list when the adoption of a flower was under consideration—in fact, it has ranked high when a national selection was being advocated.

Sunflower.—(Helianthus.)

By mid-summer the sunflowers are making a gorgeous showing, but, like the goldenrod, they are too numerous to classify. One fact, however, is worth remembering, and that is that a truly wild sunflower is always a single one, the double ones being the result of cultivation.

Wherever seen, a sunflower reminds us that it is sacred to all sun-worshipping people and, also, brings to mind the legend that the water-nymph, Clytie, loved the sun-god, Apollo, so madly that when she found her love was not returned she sat for nine days on the ground, without eating or drinking, but constantly turning her head to watch the sun until (so runs the legend) her limbs became rooted to the ground and her face changed to a flower.

This story accounts for the idea that the sunflower always faces the sun. In very wet times the plant takes up an immense amount of water, and if it gets more than can be thrown off by the coarse leaves the flower-head takes it and, becoming heavy, bends over, naturally turning to the strongest light. In very dry times even this sort of "turning to the sun" is not noticed.

Because of the great number of sunflowers growing wild in Kansas it was selected as her state flower, but "just any sunflower" would not serve as her emblem, and the *Helianthus Orgyalis*,

which grows from six to ten feet tall and bears so many flowers that it has been called "a veritable fountain of gold," was selected. But to most people a sunflower of any sort is suggestive of Kansas.

In other lands the sunflower is cultivated for many purposes, and takes a leading place in their industries (including agriculture)—a fact which the United States might do well to investigate with a view to following a good example.

Mullein—Velvet Dock.—(Verbascum Thapsos.)

The time of bloom for this plant is with the flowers of late summer and fall, but the tall spike formed of small flowers is not the part of the plant we admire.

Hundreds pass the rosettes of light,

the club-like form of the blossom-spike.

The Greeks used the leaves for lamp-wicks and the Romans dried the tall flower-stalks, dipped them in suet and burned them as funeral torches—a custom that accounts for the common name, *candelaria*—while we, more prosaic, make mullein tea for lung troubles and smoke the leaves for catarrh.

Milk-Weed—Silk Weed.—(Asclepias Syriaca.)

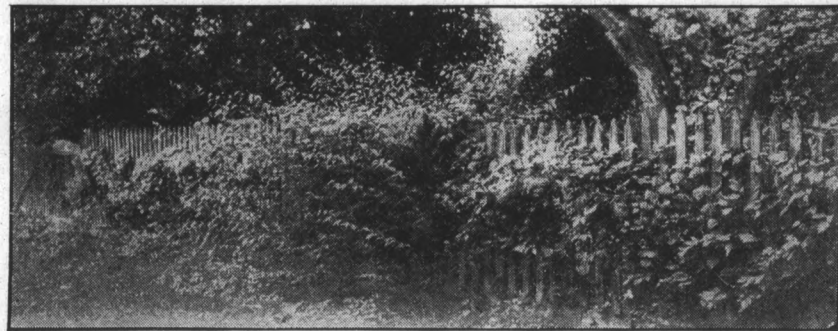
Those who break the stems of this tall, coarse-growing plant and get the sticky, milky juice on their hands need no explanation as to why it is called milk-weed or, sometimes, rubber-tree.

The two pods, filled with the silkiest down in the world, that follow the clus-

winter and mature their seeds during the following summer. The generic name comes from hama, together with, and mela, fruit, in reference to this unusual order of growth—the seeds of one year's flowers developing on the bush with the leaves of the following year.

When the seed-pods are fully ripe they burst and throw the seeds many feet away, and if picked before ripe and brot into the house they will amaze those unacquainted with their "artillery" practice, and amuse those who are.

The plant that creeps over the ground, the herbs, shrubs, and towering trees have, each, their place, but it needs the clambering vine to add the last touch of grace to the world of growing things,



Wild vines getting a nice start over the chicken-yard fence.

ters of purplish-pink flowers show, equally well, the origin of the name silk weed.

The milk-weed family includes more than two hundred genera and nearly two thousand species but, among them all, there is none more beautiful than the tuberous-rooted variety, *A. tuberosa*, which, tho lacking the milky sap of other species, is a true milk-weed. Its flat-topped clusters of bright, orange-red flowers are brilliantly beautiful, and are followed by the silk-filled pods that mark the entire family.

The gorgeous coloring of this variety is, probably, the cause of its being called "butterfly-weed," but another of its common names was given it by the Indians, who called it "pleurisy-root," because its long tuberous root was their remedy for that disease.

In New England this flower grows in masses along some of the railways, and is even more common in other localities, yet plants were brot from Holland to fill exhibition beds at the Centennial Exposition. Evidently, some people were ignorant of the flowers of their own locality.

Where one flower has been mentioned a hundred have come to mind, each worth study—the yellow-flowered tansy so closely associated with early Easter customs, and many others, but before we take a glance at a very few of our flowering vines we must remind flower-lovers to watch for that freak of all freaks in the floral world, the

Witch Hazel.—(Hamamelis Virginiana.)

The appearance of this shrub, with its several crooked, branching trunks, as large as a man's arm, springing from one root, and growing ten feet or more in height, is unlike other shrubs in form, but its odd habit of flowering is absolutely freakish.

The plant simply turns the seasons around by producing its small, yellow flowers in the fall—when the leaves are falling or altogether gone. The flowers hang to the leafless branches during the

and among them all it would be hard to find a more beautiful sort than the *Traveler's Joy*—*Virgin's Bower*.—(Clematis Virginiana.)

This is a particularly delightful vine to find because its beauty takes so many forms. First, we find the luxuriant vine clambering over everything in sight by wrapping its long leaf-stalk around every object it can reach; then, in July and August, we find it loaded with white flowers borne in loose panicles. A little later we find as many fluffy, silvery-green pompons (seed-pods), while, still later, we find these transformed into white, cottony fluffs, the hoary appearance of which cause the vine to be



The ever popular Goldenrod.

known, in some localities, as Old Man's Beard.

The leaf-stalk follows the sun, when coiling, and will make a complete circle in about six hours. If the reader chances to hear small boys talking about "Tom-bacca" or the "smoking tree," it is safe to believe they are talking of this vine.

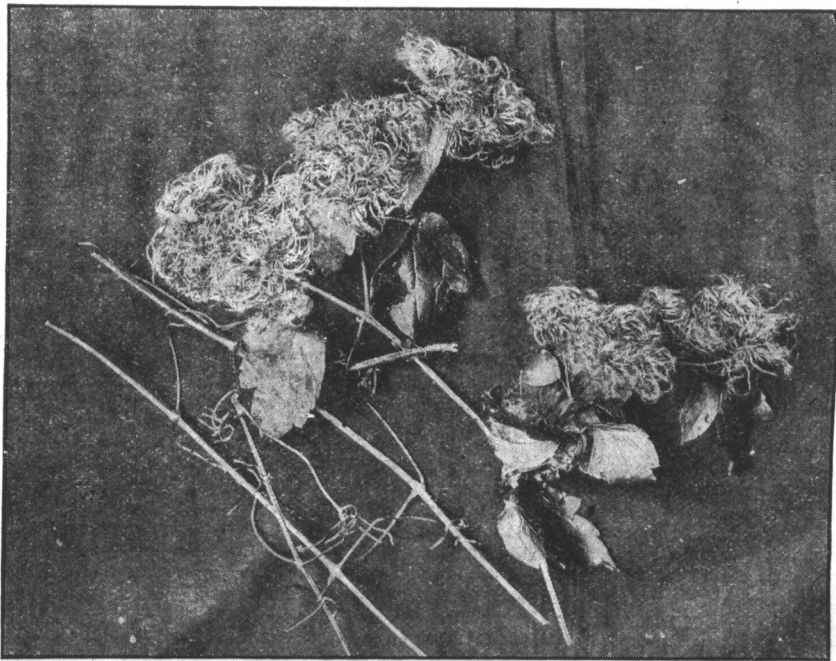
Bitter-Sweet—Wax-Work.—(Celastrus Scandens.)

This woody vine has small, scentless, greenish-white flowers that come in June but are too small to attract attention. Full compensation is made, however, by the beautiful orange-red berry-like capsules hanging in clusters during the fall months and attracting attention from a great distance. Then, when these capsules burst and turn backward around the stem, leaving the brilliant red berries exposed to view, they add a charming touch of color that remains thruout the winter.

This vine is a "twiner" and, if it finds nothing else to twine around, each new shoot twines around the older ones, forming the most perfect natural garlands of shining green foliage—as shown in illustration. (This vine must not be confounded with the nightshade, which is called bitter-sweet in some places, as the latter contains poison in the form of dulcamarin.)

If space permitted we would tell of the barberries, the black alder and other plants that hold their bright berries until after mid-winter, furnishing beauty to the eye, as well as food for the birds, and making a winter ramble thru the fields and woods as well worth while as a summer one.

Do not think that a plant seen once is



Traveler's Joy, with leaves cut away to show how leaf-stalks tangle themselves.

a plant known—even tho you may have examined it root, branch and flower—for under changed conditions it may surprise you. For instance, any of the clovers have a wonderfully different appearance when the young blossoms hide their heads in an overlapping pair of leaves and the lower leaves fold closely for the night. Different varieties fold their leaves in different ways, but each is an interesting study. Not the clovers alone, but many of our wild flowers and common plants furnish a field of interesting study in their changing positions, as night comes on, while some are so sensitive that a cloudy day affects them.

If flowers brot from fields or woods seem hopelessly wilted, do not throw them away, for often they have closed because shut from the light, and will freshen up as soon as put in the sunlight—the stems being in water, of course.

Some vines twine; others grasp an object by leaf-stem or tendril, and others attach themselves by aerial rootlets. Some plants have hollow stems and others solid ones. The method of leaf-spacing and arrangement differs widely, and in many ways the plants themselves are as interesting as the flowers they bear.

Concluding Suggestions.

When bringing plants home, for domestication, bring plenty of soil with them—not merely what can be made to stick to the roots, but free soil that can be mixed (thoroly) thru that in which the roots will be planted. Give every transplanted plant soil, and other conditions, as nearly as possible like those from which it was taken.

Vines are easily handled, as are the smaller plants growing from bulbs, corms, or heavy root-stocks, but those having fine, fibrous roots require vastly greater care in the work of transplanting and after care.

For the novice to attempt to transplant full-grown shrubs is simply a waste of time and labor, but, often, young specimens may be found growing near them that may be moved successfully.

Many plants seed freely, and so furnish an easy way of securing a supply, if the seeds are given conditions similar to those Mother Nature would provide for them.

Our wildings will thrive indoors, too, under the right cultural conditions, and a bit of personal experience may serve as an illustration, more helpful than mere directions.

During one summer the writer visited several places where wild flowers grew and each time brot home such plants as were found and, with them, soil—always soil.

Rather shallow boxes were filled two-thirds full of the soil (with some other soil mixed thru it); the roots were planted and watered, and then set in a shady place until cold weather, when they were taken to the cellar.

Late in January the boxes were brot to the light and put on low stools to keep them down where the temperature of the room was coolest. In an incredibly short time the blue and yellow violets, the pert Jack-in-the-Pulpit, stately trilliums, blood-root and many others, were coming up thru the moss and partridge-berry vine with which I had covered the soil.

By the last of February a "really and truly" bit of the wildwood was blooming inside the window, while just outside the snows were drifting high.

Each spring, after blooming, the soil was given some liquid fertilizer and the box placed outside until the next winter. After a few years the boxes rotted away and the roots were placed in the open ground, where they are thriving and giving me early wild flowers each spring.

THE RECOMPENSE.

BY DORA H. STOCKMAN.

Where is the babe, that but the other day

I clasped within my arms in fond embrace,

Kissing the soft, pink cheeks and wondering eyes,

The dimples lurking in the smiling face?

Silent the rooms which from the morn till night

Echoed with the swift patter of tiny feet.

I miss the finger marks upon the pane, The shouts of laughter my coming used to greet.

No frightened cry disturbs a dreamless sleep,

I lie awake all night and listen now—Longing for the unconscious touch of baby hands

Around my neck and on my fevered brow.

Cheer up, lone heart. Tomorrow he shall come,

The long, lost babe; yet in a stranger guise,

With a strong hand-clasp and stately tread,

And a glad greeting in his manly eyes.

THE CHEMISTRY OF COMMON THINGS.

BY FRANCIS E. WEST, M. S.

Cooking Soda and Baking Powders.

Some years ago, while working as chemist for a certain sugar company, I overheard the following remark by the superintendent, who is a German: "I don't like American workmen, for they won't do anything without asking why! My own countrymen go right along and do what they are told without asking any questions."

The American people are inquiring into the "why" of things more today than they have at any time in the past. The American is ever on the alert for new knowledge and he wants to know the "why" of things for the same reason that the little child asks so many times each day, "Mamma, why do you do that? Papa, what is this?"

One of the most encouraging things about work in agriculture at the present time is the fact that the farmer and the housewife are beginning to ask about the why of the work in which they are engaged. The work in Domestic Science in our colleges, high schools and county normals, together with the work of the farmers' institutes, have brot to the attention of the housekeeper the fact that there are many things with which she works and with which she is surrounded that she may know much more about. It is not necessary to say, "I do not know" to every question that the children ask. They expect you to know.

I heard a person say not very long ago that glucose was made from glue, but it is not. Some people may think that German silver contains some silver, but it doesn't. Neither does a lead pencil contain any lead, nor sugar of lead any sugar.

Cooking soda and baking powder are used by the housewife nearly every day in the year, but the average woman knows very little about their composition or the principles involved in their use. Cooking soda, or saleratus, consists of sodium (Na), a metal resembling lead but much lighter and softer and very much less stable, hydrogen (H), which is a very light invisible gas; and a part of a very weak acid (H₂CO₃) which is known as carbonic acid. One of the hydrogen atoms in this acid is displaced by the sodium so that the formula for cooking soda becomes NaHCO₃. If two atoms of sodium take the place of the two hydrogen atoms in the acid, washing soda, Na₂CO₃ is produced, so that the only difference between washing soda and cooking soda is that one contains twice as much sodium as the other.

Saleratus, another word for cooking soda, is made up of two Latin words, sal, meaning salt, and aeratus, from the Latin word for air, so that the word saleratus really means a salt that liberates air or a gas, which passes up thru the dough and makes the dough light and porous.

It is interesting to note that some other common words have their origin in this word sal, meaning salt. For example, the word salad for a preparation of vegetables dressed with salt and some other things; the word sauce for a composition of condiments; the word sausage for a preparation of meat that is seasoned with salt and spices; and even the word salary. We often hear the expression, "He don't earn his salt," meaning, of course, that he does not earn his salary. The use of this word came about in this way; the Roman soldiers were given a certain amount of money for salt, which was a part of their pay, hence the word salary.

Every housewife knows that in using cooking soda it is necessary to use sour milk, but with baking powder, sweet milk or water can be used. The reason sour milk has to be used with cooking soda is this: In order to liberate the gas (CO₂), an acid is required and sour milk contains an acid known as lactic acid, which has the following formula, HC₃H₅O₃. This acid reacts with the soda, causing a sizzling noise and liberating a gas, CO₂, which passes up thru the dough, making it porous. The reaction may be shown thus: NaHCO₃ + HC₃H₅O₃ = NaC₃H₅O₃ + H₂O (water) + CO₂.

Baking powders differ from cooking soda in having the acid already mixed with the soda, which will not react as long as the baking powder is kept dry, but when it is moistened, as with water or milk, a chemical action begins and the gas, CO₂, is liberated as in the case of the soda.

All baking powders are alike in that they contain cooking soda or the bicarbonate of soda, as it is called by chemists.

The soda is the gas-furnishing material, and there is added to this corn starch which is known as a filler and is used to prevent the reaction between the soda and the acid taking place in the can by the absorption of moisture from the air. The greatest difference between baking powders is in the nature of the acid used.

There are only four substances which experience has shown to be at all suitable for the purpose of liberating the gas from the soda, namely, tartaric acid (H₂C₄H₄O₆), cream of tartar, KHC₄H₄O₆, acid phosphate of calcium, CaH₄(PO₄)₂, and alum, Na₂Al₂(SO₄)₄. Tartaric acid is seldom used alone, as it does not keep well in the can, but it is often used to the extent of about 5 per cent with cream of tartar because it is stronger in acid properties than the cream of tartar and it thus makes it cheaper for the manufacturer.

The best powder is the one that will liberate the most gas and leave the least amount of solid residue in the food, but there is another thing that has to be taken into consideration and that is the keeping qualities of the powder and the imparting of taste to the food. Straight phosphate and straight tartaric acid powders do not keep well in the can, while the alum powders have excellent keeping qualities, but leave the food slightly bitter. Baking powder biscuits often have a slightly bitter taste and the housewife is often at a loss to know the cause, but in most cases it can be traced to baking powders that contain more or less alum.

The straight tartaric acid powders, the phosphate powders, and the alum powders evolve the most gas, but the first two do not keep well and the alum powders give a bitter taste to the food.

The amount of residue left by the powders is of interest because we want just as little residue left in the food as possible. An expert in the manufacture of baking powders gives the following regarding the residues left by using the various powders. In 100 parts of powder there is left from tartaric acid powders, 32.3 parts; cream of tartar powders, 70.0; straight phosphate, 18.2; straight alum, 31.5. The residue in the case of tartaric acid is largely Rochelle salts, and some object to the use of this kind of powder because of the constant introduction into the system of small quantities of these salts. Whether the constant use of small quantities of Rochelle salts is injurious or not I am not able to say. The residue in the case of phosphate powders is largely sodium phosphate and calcium phosphate. The latter is a normal constituent of the bones of the body and the manufacturers of this kind of powder maintain that it is much less injurious to have this residue left in the body than to have Rochelle salts left.

The use of too much baking powder should be avoided, for an excess of gas, CO₂, will not make the dough any more porous than just enough, and the excess simply passes off into the air so that it means a useless waste of the powder. Besides it leaves an excess of residue which is objectionable. With a high-grade baking powder, one heaping teaspoonful will be sufficient for one quart of flour.

AN AERIAL GUARDIAN.

BY BESSIE L. PUTNAM.

A sparrow hawk was recently found at the upper window of a large barn, where it was probably in quest of mice, and it fluttered hard in the vain struggle to escape. The owner, mistaking it for a dove, climbed one of the bents of the plank frame and rescued it. Luckily it was too much exhausted to make any defense, else the descent, dangerous at best with only one hand to sustain, might have been rendered eventful. Almost breathless thru fright and fluttering, it remained motionless in his hand, and not until safe on terra firma did its captor take a mental inventory of the hooked beak and strong talons which gave a clue to its identity.

The head closely resembles that of a dove in color, the large eyes, gentle, save in anger, aiding in the disguise. The curvature of the beak is rendered less noticeable by the upper mandible, which is shaped like a stub pen, fitting into the lower with mechanical exactness. Seven perpendicular bars of black mark the neck in a beautiful manner; and the breast, which shades to rufous, is blended with white and distinctly marked with polka dots of black—an attire worn exclusively by the male. The rest of the plumage shows a harmonious blending of slate, white, black and reddish not uncommon in bird plumage. The claws are long, and cushions on the inner side

of the foot enhance its ability to grasp and hold. A bit of bright yellow, margined with scarlet, at the base of the bill and around the eye are suggestive of its sanguinary nature.

This bird was placed in a cage for the night and, when it regained breath, pugnacity as well as extreme fright marked any attempt at familiarity on our part. It absolutely refused food, making fierce thrusts with beak or foot at the over-inquisitive. A characteristic attitude was to lie on one side, striking with the other foot with an agility and adroitness quite astonishing. "Do you see that fist?" was the title quite appropriately suggested by a small boy for this view of the bird.

Finally, as tho disgusted with fruitless attempts to frighten its audience, it seldom gave a protruding finger more than a look of stoic indifference. The beak thrusts were not prolonged as at first, but an occasional one rendered a sharp eye upon it constantly necessary.

The smallest, most beautiful, and most widely disseminated among our diurnal birds of prey, the sparrow hawk adds to its list of superlatives that of being one of the very best destroyers of insects and rodents. Spiders, crickets, beetles, and other insects are eaten with great avidity; and tho a relentless enemy to the English sparrow, rarely, except when brood-rearing or an unusual scarcity of insect life prevails, does this diminutive member of a maligned family deserve the charge of preying upon young chicks.

It may often be seen circling about a meadow, flying swiftly or hovering in mid-air, locating an ill-fated mouse or grasshopper which it seizes with its talons, from the ground or while on the wing, and quickly dispatches. Florence Merriam has aptly remarked that while the swallow and flycatcher use mid-air for a diningtable, the sparrow hawk uses it as a perch from which to locate food. Grasshoppers are its special delight, and when farmers are enabled to realize the enormous number annually destroyed by them their protection will be assured.

While not uncommon from Hudson Bay to Florida, remaining as a winter resident in the middle states, it is most frequent in the west, the wide stretches of prairie or grain offering a bounteous feast. Constancy in affection is denoted by the fact that it mates for life, yet domestic interests are not sufficiently strong to induce to nest building, after the manner of other hawks. The sparrow hawk is quite content with a hole in a tree, perhaps abandoned by a woodpecker and quite too cramped for comfort according to the usual standard of bird architecture; or it may resort to a sandstone cliff, a clay bank, or a dove cote.

Tho fierce by nature, it is said to be readily tamed to respond to the call; our own brief experience points toward a corroboration of this statement. After a time it was returned to the yard of the barn from which it was captured, that it might have no difficulty in returning to its companion. For some minutes it seemed not to realize that it was free; then, after making a few circles, it flew to a neighboring woods and alighted on a tall stub, apparently rejoicing to be there once more in freedom. And with this tho we, too, rejoice, trusting that it may long exercise its aerial guardianship over us against the numerous insect and rodent pests.

I received the sewing machine, and have tried it in every way, and find it a fine machine. It arrived all right and in good condition. Mrs. H. C. Tanner, Munith, Mich.

Red-Blooded Exercise.

America is becoming too prone to sit back in contented admiration and watch the trained few engage in games of strength and skill. Exercise should be by the people and not for the people. As a means of exercise nothing embraces so much of pleasure and exhilaration as cycling. Every muscle, every nerve, every faculty is spurred to healthful activity. And best of all, this exercise is in the open, where each deep breath of air fills the lungs with the sweetest and purest of all health tonics—oxygen. Bicycles have been wonderfully improved even within the past five years. It is surprising what a fine wheel a few dollars will now buy. We never realized this so fully as we do after looking thru the latest catalog of the Mead Cycle Company of Chicago. If you are interested in bicycles or if you feel the need of this sort of red-blooded exercise, write this company for a copy of their catalog. They will gladly send it and a wheel too for ten days' free trial of you wish.

A Good Razor.

The razor you sent me is the best I ever owned. Have used it for six weeks without touching it to the strap. Accept thanks for same.—E. J. Haskins, Pittsford, Mich.

SCHOOL TIME.

BY RAY E. WHITE.

On a morning bright and fair
In the spring,
When the fresh and balmy air
Seems to bring
Time a-flying faster—more
Than it ever did before—
Then you're bound to hear the horrid
School-bell ring.

Hurry up! Hurry up!
Still it seems to say;
Everything a-calling you
To stop while on the way.

In the meadow by the brook,
In the fall,
In a cool and shady nook,
Best of all,
When the fish are biting fast,
And you've landed one at last,
Then you're bound to hear the horrid
School-bell call.

Hurry up! Hurry up!
Still it seems to say;
Everything a-calling you
To stop while on the way.

In the winter on the lake,
Frosty day,
Just a dandy time to skate
All the way,
Turning here and swiftly glide
With your sweetheart by your side—
Then you're bound to hear the horrid
School-bell say:

Hurry up! Hurry up!
Still it seems to say;
Everything a-calling you
To stop while on the way.

In the summer's sand and heat
On the farm,
When the stubble prick your feet,
And your arm
Gets so tired of constant hoeing
Where the garden truck is growing,
Don't you wish you'd hear the sweet old
School-bell ring.

Hurry up! Hurry up!
Don't you wish 'twould say,
Everything a-calling you
To stop while on the way.

THE EARLY AMERICAN AUTHORS.

BY CARL S. LOWDEN.

Henry Wadsworth Longfellow.

"I will be eminent in something," declared the young poet one day; and his ambition was realized, for the name of Longfellow designates the man who became "America's best" among poets. At eighteen he graduated from Bowdoin, delivering his oration, "American Literature." This attracted unusual notice, and in 1826, the next year after the event, he was sent to Europe to prepare for a professorship in his own college. Returning after three years, he allied himself with Bowdoin; later he became a professor in Harvard. He went abroad a second and a third time; was married more than once; in 1854 he resigned his position; saw the East again; and died in 1882 at Cambridge, Mass.

From 1834-1880 he wrote extensively. During that time he published these books: "Evangeline," "Hiawatha," "The Courtship of Miles Standish," and others. Volumes of poems which appeared at that time contained: "Excelsior," "Psalm of Life," "Rainy Day," "The Building of the Ship," "The Skeleton in Armor," "Resignation," etc. Longfellow translated Dante's "Divine Comedy," and numerous poems from the German; but all of this work lacks spirit, sustaining power, and the untrammeled essential quality of his other writings. His prose was very feeble; but his poetry, which seems to have been the special medium to which he was adapted, is seldom seriously defective.

Longfellow was optimistic, frank, lovable, easily impressed, and buoyant. He had a broad sympathy, was sincere, never offensive, and always entertaining. These qualities of his temperament are manifest in his verses. "Hiawatha" is perhaps his most notable production; it is haunting, musical, fantastic, grim, original, impressive—it is almost impossible to enumerate its special merits, for they are blended so harmoniously that the one word to describe the legend is "charming," and that term is inefficient. His "Evangeline" is very similar; and "Excelsior" with its lofty ideals clings to the memory of the reader. Judged by all and each part of his work, Longfellow surpasses all other American poets.

One of this poet's most delicate bits of sentiment and truth is the short composition, entitled, "It is Not Always May." "The sun is bright—the air is clear; The darting swallows soar and sing, And from the stately elms I hear The blue-bird prophesying Spring.

"So blue yon winding river flows, It seems an outlet from the sky, Where waiting till the west wind blows, The freighted clouds at anchor lie.

"All things are new;—the buds, the leaves,

That gild the elm-tree's nodding crest,
And even the nest beneath the eaves;—
There are no birds in last year's nest!

"All things rejoice in youth and love,
The fullness of their first delight!
And learn from the soft heavens above
The melting tenderness of night.

"Maiden, that readst this simple rhyme,
Enjoy thy youth, it will not stay;
Enjoy the fragrance of thy prime,
For O! it is not always May!"

"Enjoy the Spring of Love and Youth,
To some good angel leave the rest;
For time will teach thee soon the truth,
There are no birds in last year's nest!"

This simple little rhyme, "The Rainy Day," is optimistic, cheering and comforting. We all have moments of depression.

"The day is cold, and dark, and dreary,
It rains, and the wind is never weary;
The vine still clings to the mouldering wall,
But at every gust the dead leaves fall,
And the day is dark and dreary.

"My life is cold, and dark, and dreary;
It rains, and the wind is never weary;
My thoughts still cling to the mouldering Past,
But the hopes of youth fall thick in the blast,
And the days are dark and dreary.

"Be still, sad heart! and cease repining;
Behind the clouds is the sun still shining;
Thy fate is the common fate of all,
Into each life some rain must fall,
Some days must be dark and dreary."

Below, I quote three verses from "The Day is Done."

"Read from some humbler poet,
Whose songs gushed from his heart,
As showers from the clouds of summer,
Or tears from the eye-lids start;

"Then read from the treasured volume
The poem of thy choice,
And lend to the rhyme of the poet
The beauty of thy voice.

"And the night shall be filled with music,
And the cares that infest the day,
Shall fold their tents, like the Arabs,
And as silently steal away."

KINKS.

Kink I—Hidden Insects.

The common names of insects are mentioned 20 times in the following narrative. Get out your insect books and hunt them out, the most of them are such familiar names that you will not need your books. To indicate your findings write out the narrative neatly, and place parentheses around the letters which stand for the insect names. In some cases the pronunciation will indicate the insects, the spelling not being exactly the same as in the insect name, but in nine cases the exact letters of the insect names are found contiguously in the text of the narrative.

The Narrative.

Said Orville Wright to Wilbur Wright as they set out to make a flight the other day: "What'll you bet we don't take a tumble?" "E'gone with your fears!" answered Wilbur. "We may fly all right today. Anyway we'll have to try else folks will be calling our machine a hum-bug." So they cranked up and she sailed off like a mighty bird, and skated edifyingly up and down and around in the sky. Said General Miles to General Miller: "What do you suppose the other birds think of the aeroplane's warble?" Said General Miller to General Miles: "I'm more inquisitive about what they think of that stink bugger's pollutin' atmosphere up there." Just then the aeroplane began to jigger and dip. A Dutchman, when he spied her doing that, remarked: "I pet Orville, he now say to Wilbur, 'It moost pe ve vill pooty soon quik shdrike bottom areddy yet.'" And they did. They dove right down into a little creek. Its bed bog was soft, so they didn't get hurt, except when General Miles exclaimed: "That was a damn sell fly!" They reproached him for his impoliteness.

Prizes for Straightening Kinks.

To the sender of each of the ten nearest correct answers to the above Kink, we will give choice of a package of 50 post-cards representing a trip around the world, a copy of "Concrete Construction on the Farm," or a fountain pen. Where contestant or some member of his family is not a regular subscriber a year's subscription (75c) must accompany answers. Answers must not reach us later than Aug. 27, as correct solutions will be published in issue of Sept. 4. Address answers to Puzzle Dept., Michigan Farmer.

Answers to July 3 Kinks.

Kink I. Four States.—Missouri, Connecticut, Colorado and Ohio.

Kink II.—Word Squares.

No. 1.	No. 2.
H E A R T	H A T E R
E R R O R	A D O R E
A R I S E	T O G A S
R O S I N	E R A S E
T R E N D	R E S E T

Kink III. Fourth of July Charade.—Declaration of Independence.

July 3 Prize Winners.

Solvers of Kinks of July 3 to whom prizes are awarded are the following: Miss Nina Hubbard, Mrs. Jas. W. Burt, J. W. Houghton, H. C. Olsen, Andrew Hale, Wm. Leatham, Miss Lucile Remsen, Mildred Vovillia, Mrs. W. R. Randall, Muriel Fuller, J. A. Newman, Miss Lulu Rentschler, Mrs. Burton T. Bates, Miss Susan McPherson, Mrs. Clarence Grahe, Marion Nisbet, Lottie McInnis, S. G. Buston, Mrs. V. G. Wilbur, Rae Greek, J. M. Whitacre and Sara A. Smith.

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The idea that just anything will do so it is called a Lightning Rod is **wrong**. The best is none too good, and when you trust your life to a Lightning Rod when a storm is raging, you will be safer and feel better if you know the rods you have are admitted by all good authorities to be the standard. Dodd & Struthers' rods were the ones to receive the highest award at the World's Fair at St. Louis, and also Jamestown, N. J.

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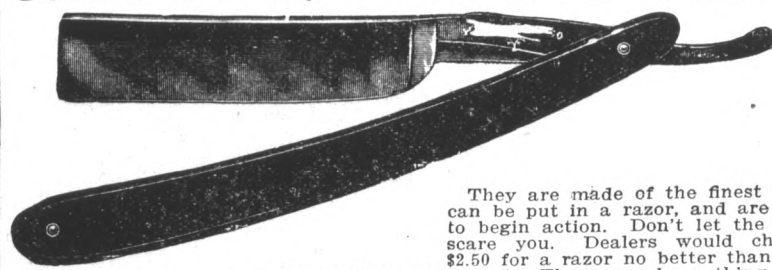
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They are made of the finest steel that can be put in a razor, and are all ready to begin action. Don't let the low price scare you. Dealers would charge you \$2.50 for a razor no better than what we ask 75 cents for. Each razor fully guaranteed. There can be nothing better in a razor, regardless of price. Order at once, 75 cents, postage paid. 8 cents extra if registered. You will not have to saw your beard off. Once over will make your face smooth as a baby's. We use one and know whereof we speak. With The Farmer a year \$1.25; 2 years. \$1.65; 3 years. \$2.00.

Shaved With It Three Years.

Three years ago when I first signed for the Michigan Farmer, I also ordered one of your German razors. I have shaved with it ever since, and I find that it is the best razor I have ever used, and anyone needing a good razor will make no mistake in trying one of your razors.—H. D. Inglis.

THE MICHIGAN FARMER, Detroit, Mich.

OF INTEREST TO WOMEN

HOME CHATS WITH FARMERS' WIVES.

BY ELLA E. ROCKWOOD.

Improving Our District School.

In spite of the well-deserved eulogies repeatedly declared at results effected by our country schools in the past the fact remains that they might be improved.

We point with pride to the numbers of pupils who have gone out from the little red schoolhouses and attained distinction in the world. Men whom the nation has delighted to honor have sat on the rough benches and there gained the rudiments of an education, all that they ever had of intellectual training before starting out to battle against odds and succeeding in the face of discouragement by the very force of character fostered by their early environment.

We call to mind that a very large proportion of our greatest statesmen, presidents, governors, senators, have begun life on the farm and in a district school applied themselves to their studies. Many of these men enjoyed further scholastic advantages while a few never went beyond these primitive sources of learning.

But we must acknowledge that while the educational facilities afforded by those schools were the best that could be afforded at that time, they would not fill the demands of today. Changes meet us on every hand, and nowhere are these more decided than along educational lines. From the day of the three R's to the twentieth century many new ideas have been evolved as to education and what the word means. Our best instructors are now unanimous in demanding training for the hand as well as the brain, and we have entered upon a period wherein that principle is being given prominence.

That this is a far more rational method than the old, few in this day and age will attempt to deny. If education is a "preparation for contact," as one has defined it, then truly the eye and the hand should be trained as well as the mind, for many more gain a livelihood by the hand than the brain.

We are just beginning to realize that the training afforded by our country schools has been illy-intended toward developing a love of the farm in the farmer's children. It is easy now to see that this charge is not without some foundation. East, west, north and south a great hue and cry has gone up over the fact that boys and girls are not content to settle down upon the soil which their fathers had tilled, and where they themselves have been reared, but are leaving for the city at the earliest opportunity. Lighter work, shorter hours, better pay, have all come in for their share of the blame in ascribing a reason for this. Fathers and mothers have been censured for not making home more attractive, for not providing less of work and more of recreation and for deriding their own avocation and discouraging their boys and girls against following it. All to no purpose! The exodus from the farm continues in spite of the wise ones pointing out the mistakes of parents and the best efforts of the latter to overcome the evil.

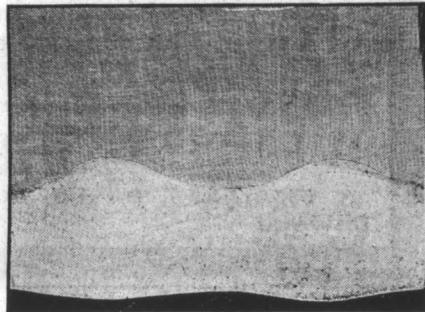
Now we are beginning to see that at the bottom of it all lies a defective system of education. The child has been educated away from the farm from his earliest recollection. Instead of the school teaching him something about the things he comes in contact with every day, the things with which he is familiar and about which he ought to know if ever he is going to be interested in crop-raising and stock-growing, he has been left entirely in the dark concerning them and led along lines entirely foreign to such a life. In short his education tends to push him cityward.

What can be done to make the farmer's vocation a more attractive one to the young? One answer to this is, begin to interest them in it from their earliest years. Who ever saw a child who could not be interested in demonstration work? The kindergarten, domestic science and manual training departments, where introduced, are more readily accepted than those departments where purely mental development is looked after. In our cities where shop work has been introduced we are told by the instructors that many times all that holds a boy to his studies is the bench and tools which he is permitted to use, pro-

vided he keeps up with his other classes.

Why may we not expect more love of the farm with its varied lines of operations if proper attention is devoted toward interesting the child in the wonderful things of nature which to so many remain a closed book throughout life?

Women are upon school boards in occasional instances already. But whether this is true in any case or not matters little if they will become active in creating public sentiment in favor of the new idea. Let the right persons be put upon the board at the coming school



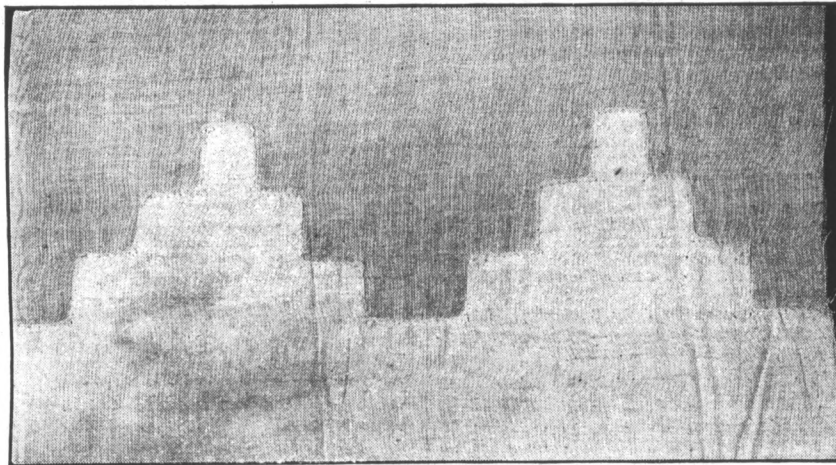
Serpentine design is often used.

meeting. Let this subject of teaching agriculture be brot before the people and freely discussed. Talk the matter over with the county commissioner. Send to the Agricultural College at Lansing for information, and if possible secure a personal address from Professor French of the college faculty. Secure a teacher who is more than passably competent; one specially trained for teaching rural schools, then let the patrons unite to give her hearty support and co-operate in every way for the best interests of the pupils.

Granges and farmers' clubs would be doing a good thing to bring this subject before their meetings more than they do. It is true it has been agitated considerably already, but not yet has the movement gained sufficient support. There is no question about the final outcome, but so far it lacks the undivided interest of all the people. Agriculture in the public schools has made good wherever it has been given a trial. What on earth should be the logical study of a farmer if not agriculture? His boys and girls are farmers in embryo and their instruction should early be begun.

If the agricultural interests of the country are to be maintained there must be more interest developed and more intelligence displayed on the part of the rural population generally. I fully believe that could we educate one generation of our young people along agricultural lines, giving them the advantages now afforded for scientific insight into what has in the past been more or less of a mystery, this trouble of leaving the farm to seek other avocations would largely be done away with.

It will be useless to expect any young man to remain upon the farm unless it pays. By means of advanced knowledge



Battlement style is suitable for wide hems.

he would be able to make it pay as well as any other legitimate business. The skillful horticulturist makes it pay. The dairy is paying big dividends right along to those who devote their attention to it in a scientific and practical manner. In every department those who apply thoro methods find no fault with financial returns. Those who do this are working intelligently.

For the wives and mothers there is much that can be done by way of pro-

moting this question. Talk farming up and not down. Never bemoan the fate of farm women. Their lot is better than the average of womankind even at the worst, and there is no place short of heaven where there is nothing which might not be improved upon. Even there I imagine some will not be satisfied.

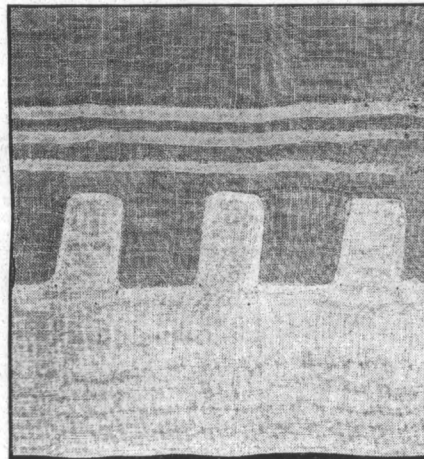
Farming and country life in general has many points to recommend it. One of the greatest drawbacks in the past has been, as I have said, that farmers themselves did not enjoy it and took no pains to hide the fact. They gave their children to understand that anything else was preferable. Is it strange that the lesson has been learned and that boys and girls have come to believe this to be true.

The time for the annual school meeting is approaching. Women are usually not largely in evidence at these gatherings, but no one should be more interested than they. Let them turn out in force this year and see that the right officers are elected. Turn out the old fogies, if such are now in power, and substitute some one with up-to-date ideas, some one who is alive to rural interests and who will work to forward the advance movement for more effective training and a better agriculture for the coming generation.

NOVEL HEMS.

BY MAE Y. MAHAFFY.

Of late there has been a decided reaction from the plain, evenly turned hems so long in vogue in favor of those of more fanciful shape, especially for garments made from sheer fabrics. The heavier materials are not tabooed altogether in this work, but they are by no means so attractive in it as those of thinner weave, like swiss, lawn, organdy, etc. Novel hems on this order furnish quite sufficient



Tucks and fancy hem combined are attractive.

embellishment for many garments, and thus save the usual expense of laces or embroideries. They are suitable on any garment where hems may be turned neatly, or on washable fancy work, such as curtains, pillow tops, bedspreads, shams, table covers, and the like.

In the illustrations three samples of these hems are shown, and a majority of workers will very quickly plan out

THE NEW WOMAN

Made Over by Quitting Coffee

Coffee probably wrecks a greater percentage of Southerners than of Northern people for Southerners use it more freely. The work it does is distressing enough in some instances; as an illustration, a woman of Richmond, Va., writes:

"I was a coffee drinker for years and for about six years my health was completely shattered. I suffered fearfully with headaches and nervousness, also palpitation of the heart and loss of appetite.

"My sight gradually began to fail and finally I lost the sight of one eye altogether. The eye was operated upon and the sight partially restored, then I became totally blind in the other eye.

"My doctor used to urge me to give up coffee but I was wilful and continued to drink it until finally in a case of severe illness the doctor insisted that I must give up the coffee, so I began using Postum and in a month I felt like a new creature.

"I steadily gained in health and strength. About a month ago I began using Grape-Nuts food and the effect has been wonderful. I really feel like a new woman and have gained about 25 pounds.

"I am quite an elderly lady and before using Postum and Grape-Nuts I could not walk a square without exceeding fatigue, now I walk ten or twelve without feeling it. Formerly in reading I could remember but little but now my memory holds fast what I read.

"Several friends who have seen the remarkable effects of Postum and Grape-Nuts on me have urged that I give the facts to the public for the sake of suffering humanity, so, altho I dislike publicity, you can publish this letter if you like."

Read "The Road to Wellville," in pkgs. "There's a Reason."

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

Rider Agents Wanted

In each town to ride and exhibit sample 1910 model. Write for Special Offer. **1910 Models \$10 to \$27** with Coaster-Brakes and Puncture-Proof tires. **1908 & 1909 Models \$7 to \$12** all of best makes. **500 Second Hand Wheels** All makes and models. **\$3 to \$8** good as new. Great Factory Clearing Sale. We Ship On Approval without a cent deposit, pay the freight and allow **TEN DAYS' FREE TRIAL.** Tires, coaster-brakes, parts, repairs and sundries, half usual prices. Do not buy till you get our catalogs and offer. Write now. **MEAD CYCLE CO., Dept. H 77 Chicago**

ATLAS

E-Z Seal Jar

(Lightning Trimmings) Most convenient jar made. Easiest to fill, empty and clean. No tin or zinc in contact with contents—all glass. Extra thick at top and smooth finish on lip. Don't stick to old-style jars which hold only cut or crushed fruit and break easily. Ask for **ATLAS JARS** and have the best.

HAZEL-ATLAS GLASS CO., Wheeling, W. Va.

HARTSHORN SHADE ROLLERS

Bear the script name of Stewart Hartshorn on label. Get "Improved," no tacks required. **Wood Rollers Tin Rollers**

FOR SALE—New Buick 1909 Model 5, 40 H. P., fully equipped with top, automatic wind shield, 5 lamps and generator, new set of quick detachable tires, not run over 100 miles, also two extra tires with cover for same, Jones speedometer, clock, magneto, in fact a most complete car. If sold quick \$1,250. Seats 5 people. **R. D. MAHER, 139 Beaubien St., Detroit, Mich.**

THE AFTER HARVEST TERM OF Jones Nat'l School of Auctioneering

The oldest, largest and most successful School of Auctioneering in the world. **OPENS AUGUST 30, 1909.** For free catalog and other information address **CAREY M. JONES, Pres., 1215 Washington Blvd. Chicago, Ill.**

WANTED—Census Office Clerks, Railway Mail Clerks, City Carriers, Postoffice Clerks, October and Nov. examinations everywhere. \$600 to \$1600 yearly. Common education sufficient. Political influence unnecessary. Candidates coached free. Write immediately for schedule. **Franklin Institute, Dept. J 52, Rochester, N.Y.**

EARN \$50 to \$500 spare time this summer gathering ferns, evergreens, flowers, roots, herbs. **Barton, 110-F Portsea St., New Haven, Ct.**

AGENTS **NINE IN ONE** \$75 monthly. Combination Rolling Pin. Nine articles combined. Lightning Seller Sample free. **FORSHEE MFG. CO., Box 287 Dayton, O**

SEVERAL Second Hand WELL DRILLING MACHINES for sale cheap. Suitable for drilling Artesian Wells. Write Michigan Prospecting Co., Eddy Building, Saginaw, Mich.

each portion of any pattern, so that all may be made of equal size. Instead of, or in conjunction with the machine stitching the worker may use any fancy embroidery stitch, such as feather stitching, French knots in rows, or some simple vine-like design in outline stitch. For aprons and children's dresses such work is particularly fitted, giving ornamentation, and at the same time eliminating the lavish or over-trimmed effect so often seen.

USING THE VERANDAH.

BY E. J. LYNCH.

I wonder if all the farm folk who have beautiful, attractive verandahs really get all the comfort out of them in the summer that they might. Just a little planning and a little work can make the home verandah the most beautiful, comfortable spot on the farm. A few hanging baskets filled with flowers in sufficient variety that there will always be something in bloom during the three hottest months, or some boxes for the edge with some overhanging vines, and some of the old, easily-cared-for favorite flowers, will do much to lend a charm to this part of the family domain.

Instead of dragging chairs to and from the inside of the house every day or oftener, have a few durable, easy porch rockers that can remain on the porch through the season.

Plenty of porch cushions for the steps can be made from straw and canvass, with a washable cover of some kind. Corn husks and clover, or new-mown grass, can all be used for filling such cushions.

However beautiful vine-covered porches and cottages may be there are some disadvantages. Vines attract worms and slugs, and some of the hardier vines have proven such delightful places for sparrows to congregate that their desirability was decidedly to be questioned. Then, too, a vine, while at times it may shield from the sun, also decidedly obstructs the current of air and the view, and prevents the occupants of the verandah from getting the breezes from all quarters. A porch curtain can be made from canvass, or striped denim, or even unbleached muslin, and this can be gotten out of the way when it is not desired, which is impossible with a vine. This curtain can be on rings through which a stout wire or rod is passed, or it can be tacked to a roller at the top and easily adjusted by a cord and pulley.

There is no reason why many of the meals in summer should not be eaten on the verandah, if the kitchen or dining room is stuffy and hot. A friend of mine had one corner of her verandah fitted up for a dining room, and from May till September all meals were taken there, except in rainy or unpleasant weather. She had an extra fall-leaf table which was easily moved there and accommodated her small family as well as a couple of visitors, as occasion required. A small table in the corner was used to hold the dessert or the soiled plates. By using a large tray to carry things to and from the kitchen, time and steps were saved, and the change was certainly greatly enjoyed by all concerned. A curtain made of ordinary unbleached muslin was used when, because of rain or for any other reason, a curtain was needed.

One of the gifts most appreciated by a lady friend was a swinging porch couch made by her son. It was plainly made in mission style and suspended by chains from the roof. It took up much less room than a hammock and was a much more comfortable thing to lie in. If she wished to stretch out for a half hour, a thick, bright-colored blanket made a pad, and with plenty of cushions she enjoyed many delightfully comfortable hours there during the summer.

HOT WEATHER HEALTH HINTS.

BY CHARLOTTE A. AIKENS.

In warmer weather better ventilation of living and sleeping rooms by means of open doors and windows assures cleaner air to breathe, and the chief cause of colds and affections of the air passages—bad air—is removed.

Summer colds are not uncommon, but the chief ailments to be feared during the hot weather are disorders of the digestive tract. With the coming of the hot weather the fly awakes to activity, and adds not only to the discomforts of the heat but contributes materially to the list of summer ailments both in children and adults.

Every one knows that flies fairly revel in filth of every kind. The fly that has been disporting itself around the swill pail or barrel and regaling itself on the various forms of filth and disease

germs found therein, may be found a few minutes later crawling over the food on the table. And flies never take the pains to wipe their feet before entering the house. A worker in a bacteriological laboratory—a place where they examine germs of all kinds under the microscope and study their habits and how they grow and do their work—caught a fly once that had been playing around a dirty scrap pail and proceeded to count the germs on his feet and legs. He found that on that one single fly there were more than 300,000 tiny germs. These germs have remarkable powers of multiplication. Some of them double their numbers every twenty minutes. When one sees the carelessness about flies in some farm homes, it is not hard to understand why we hear so much about digestive troubles of various kinds in summer. The fly which has gained admission to the milk pail has probably carried with it hundreds of thousands of germs, which if that milk be drank, will be carried into somebody's body. Nature has provided us with a chain of defense which we call our resistive force, which enables us to withstand the invasion of these germs unless they are present in unusually large numbers, but it should require no argument to convince the intelligent housewife that one of her chief summer duties is to guard her food supplies from flies and floating dust, and as far as possible to destroy the breeding places of flies and to keep them out of the house by all means in her power. Common decency demands at least our best efforts in that direction. The instinct of self-preservation should be quickened by intelligence that leads to action. The farmer who refuses to spend money for screen doors and windows for his home may spend in one doctor's bill for his family from summer disorders due to flies and germs, more than the screens would cost. It is hard to understand the attitude of mind of the man who has money to invest in new machinery and labor-saving appliances of all kinds and yet refuses to spend the modest sum which screens would cost to promote the health and comfort of himself and his family.

Recent reports tend to show that while typhoid fever is decreasing in cities, it is increasing in country districts. In many cases it can be traced to a polluted well which perhaps had never been suspected till the outbreak of the fever. It is somewhat unfortunate that there are large numbers of parents who feel a normal degree of parental responsibility for the housing, clothing and feeding of their families, but who are willing to shift over on "Providence" the protection of the family's health. When a purely preventable disease occurs from neglect of ordinary rules of sanitation and cleanliness, they rarely ever think of blaming themselves.

The purest water supply may become polluted by allowing barnyard fowls to congregate around it to defile it with their droppings. It is not a pleasant thing to contemplate, that the glass of drinking water we are about to raise to our lips, may have been defiled by the rain washing the waste of fowls into the well, but whether we think about it or not, it happens all too frequently.

A common mistake made by housewives is to take every stove in the house down in the spring except the cooking stove in the summer kitchen, and leave the family without any means of combating dampness thruout the summer. Dampness predisposes to a list of ailments, notably to rheumatism and lung troubles, and this tendency is increased by frequent rains. A small wood stove in the living room that can be started on chilly, damp days, adds not only to comfort but helps to keep the home sanitary. Germs of all kinds multiply more rapidly when dampness is present, as witness the germs which cause molds. Other germs are quite as active as these in damp places.

The dangers from unripe fruits and vegetables, such as green apples, cucumbers, etc., are pretty generally understood. Other common causes of cholera morbus are over-eating—or the use of undigestible foods, polluted water or cold water or beer taken in large quantities when very thirsty; or chilling after vigorous exercise or perspiration. It is not unfrequently induced by eating partially decomposed meat, which was unaltered either in taste or odor. Chicken pie was a favorite Sunday dish of a farm family in summer. The usual method of preparing it was to kill the chicken on Saturday morning, partially cook it by boiling, then put it into the pie, which was baked and reheated just enough to have it warm enough to eat on Sunday. Re-

peated attacks of diarrhoea and vomiting after this kind of Sunday dinner led the housewife to consult a doctor as to the reason. The meat formed a splendid soil for the development of poisonous germs. The partial heating of the pie on Sunday was not sufficient to destroy them. Instead, it helped them to multiply, and these carried into the system, set up the trouble. In summer one needs to be especially careful about this point. The chicken pie will probably prove a wholesome meal if eaten as soon as it is cooked. If eaten a day or two later in hot weather, it may prove exactly the opposite.

A very hearty meal when one is overtired by vigorous exercise in the hot sun is certain to be slow in digesting. Food which remains too long in the stomach undergoes chemical changes which frequently result in diarrhoeal trouble.

In any case in which diarrhoea is a prominent symptom, rest in bed will hasten recovery. The next step is to get the irritating matter that is causing the trouble out of the system as quickly as possible. This can be done by a quick purge with Epsom salts or castor oil—two time-honored remedies which should be in every home. The tendency to drink water constantly should be restrained. Weak cold tea without sugar, just a very little at a time, is better than plain water for the thirst, but the less fluid taken the better. Let the stomach rest. When vomiting and diarrhoea have ceased and the appetite begins to return, milk or broths with toast or crackers or a little plain, well-cooked boiled rice are good things to begin on.

Indulging too freely in any green vegetable should be guarded against. A little bit of cucumber may help to whet the appetite for substantial food. Too much has sent many an individual to an untimely grave. The same is true of green corn. A little is a good thing. It is the indulging to excess and the neglect to chew it properly that causes it to become a source of illness.

Eating too much meat in hot weather predisposes to sickness. Once a day in summer for meat is a good rule to go by from the standpoint of health. The appetite for meat is largely a matter of habit. Peas, beans, cheese, peanuts, and macaroni are rich in nutriment. It is hard to get out of old ruts, but the intelligent housewife who values the health of her family enough to bestir herself to make a change, will find plenty of substitutes for meat in hot weather.

What we need to safeguard our homes from disease and make them safe places for children to grow up in all the year thru, is a quickening of the sanitary consciences of our homekeepers—a feeling that they themselves are responsible for the family's health; that the prevention of preventable diseases rests largely in their hands. Once they realize this they will study the causes and take measures to guard against them.

WAGE WAR AGAINST FLIES.

House flies are the filthiest of all insect pests, and are carriers of disease germs. They pollute the food man eats, and many infect him with the germs of tuberculosis, diphtheria, typhoid fever, and other communicable diseases. Prof. H. A. Surface, Pennsylvania Department of Agriculture, recommends the immediate screening of windows and doors; the keeping of food screened, especially milk; the keeping of flies away from sick persons, especially those suffering with contagious diseases; and the catching and destroying of flies as they appear.

Sticky fly paper, traps and liquid poisons are among the things to use in killing the flies, but the latest, cheapest and best is a solution of formalin or formaldehyde in water. A spoonful of this liquid put into a quarter of a pint of water and set where they can find it and drink it will be enough to kill all the flies in the room. A cheap and perfectly reliable fly poison, one which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram of the drug, which can be obtained at any pharmacy, in two ounces of water, and add a little sugar as sweetening. Put some of this solution in shallow dishes, and distribute them thruout the house.

To quickly clear apartments where there are many flies, burn pyrethrum in the room. Keep the fly nuisance at a minimum by the use of disinfectants in garbage boxes and cans, on manure piles and among all refuse. This can be done by freely springing with chloride of lime or with kerosene. Keep house sewers and drains in good order, and covered, and repair all leaks at once. It is of the utmost importance to clean all sta-

bles, pig pens and other breeding places of "The Filthy Fly" at least once a week.

Pour kerosene into the drains. Cuspidors should be cleaned frequently, certainly once a day. Keep a 5 per cent solution of carbolic acid in them constantly. Do not allow decaying organic material of any kind on or near your premises, nor allow dirt to accumulate in corner, or behind doors. If extra care in observing cleanliness is used, and the directions above given are faithfully carried out, the fly nuisance can be greatly mitigated.

OUR PATTERNS.

Price, 10 cents each. Waist and skirt patterns are usually separate, therefore be sure to send 20 cents for a two-piece suit pattern which has two numbers, e. g., a waist number and a skirt number; if such a pattern has but one number, send only 10 cents. Order by number and title of pattern. If for children, give age; for adults, give bust measure for waists, and waist measure for skirts. Be sure to give size when you order. Address orders to Pattern Department, The Michigan Farmer, Detroit, Mich.



No. 8374. Skirt with Plaited Front. Made in 5 sizes: 22, 24, 26, 28 and 30 inches waist measure.

No. 8267. Misses' Waist. Cut in sizes for 15, 16 and 17 years.

No. 6004. Pretty House Jacket. Sizes for 32, 34, 36, 38, 40 and 42 inches bust measure.

No. 5667. Stylish Girl's Dress. Sizes for 3, 5, 7 and 9 years.

No. 8367. Child's Set of Short Clothes. Made in three sizes for 6 months, 1 and 2 years.

No. 6104. Dress in Over Blouse Style. Sizes for 10, 12 and 14 years.

No. 6117-6122. Boy's Outing Suit. Sizes for 8, 10, 12, 14 and 16 years.

No. 6114. Lady's Work Apron. Sizes for 34, 38 and 42 inches bust measure.

MARKETS

DETROIT WHOLESALE MARKETS.

Grain and Seeds.

Aug. 4, 1909.

Wheat.—Further decline in prices has marked the trade this last week. Altho the bears are having their way in the making of values, there is a firm tone all along the line, due largely to the eagerness with which millers are taking grain that is fit to be made into flour, to the demand from abroad and to the falling off in the deliveries to primary markets in the southwest. The visible supply is small, also. The other side of the market points to the splendid way in which the spring wheat crop is coming to the rescue of the trade by giving one of the largest harvests in the history of the country. The development of the crop has been almost perfect and a few more days will see it well harvested. The only hope of the bulls getting help from that section of the country is in a wet threshing season. Liverpool is firm. One year ago at this date No. 2 red wheat was selling at 94c. Quotations for the week are:

	No. 2	No. 1	No. 3	Red.	White.	Red.	Sept.	Dec.
Thurs.	1.10	1.10	1.07	1.07½	1.07½	1.07½	1.06½	1.06½
Fri.	1.09	1.09	1.06	1.06½	1.06½	1.06½	1.06½	1.06½
Sat.	1.09	1.08	1.05	1.07	1.07	1.07	1.06½	1.06½
Mon.	1.07	1.07	1.04	1.06½	1.06½	1.06½	1.06½	1.06½
Tues.	1.06½	1.06½	1.03½	1.05½	1.05½	1.05½	1.06	1.06
Wed.	1.06	1.06	1.03	1.06½	1.06½	1.06½	1.06½	1.06½

Corn.—Values are almost a duplicate of those for the previous week. The conditions of the new corn crop are most favorable. Rains have come to the rescue in some sections needing more moisture, and all over the chief corn producing states the warm days and nights have pushed the crop forward fast, making up much of the delay in growth caused by the heavy rains in the spring. In fact, many of the fields seem nearly as far along as in a normal year. Visible supply is low and the demand continues steady. One year ago the price for No. 2 corn was 60c. Quotations for the week are:

	No. 3	Yellow.
Thursday	74	75½
Friday	74	75½
Saturday	74	75½
Monday	74	75½
Tuesday	74	75½
Wednesday	73½	75

Oats.—Both cash and September oats are lower. Harvest is well along in this section and to the south threshing is in progress, and the market is being aided by early receipts of new grain. The returns are fulfilling promises and in many places the yield is superior to the estimated reports. Local demand is good and trade easy. At this date in 1908 No. 2 oats were selling at 60c. Quotations are as follows:

	No. 3	White.	Sept.
Thursday	50½	40½	39½
Friday	50	39½	39½
Saturday	50	39½	39½
Monday	49	38½	38½
Tuesday	50	38	38
Wednesday	50	37½	37½

Beans.—Cash beans are a little weak with nothing doing in the trading line. October continues at the quotation given a week ago. The new crop is developing nicely. Quotations for the past week are:

	Cash.	Oct.
Thursday	\$2.20	\$2.00
Friday	2.20	2.00
Saturday	2.20	2.00
Monday	2.20	2.00
Tuesday	2.15	2.00
Wednesday	2.15	2.00

Clover Seed.—The influence of the crop conditions has aided in advancing prices the past few sessions of the board. The late haying has eliminated a large number of fields of June clover that would, under normal conditions, produce at least a small crop of seed. The condition of other seed is fair. Demand is ordinary and confined to the future deals. Best alsike is selling at \$8.00 per bushel. Quotations are:

	Oct.	March.
Thursday	\$7.10	\$7.20
Friday	7.10	7.20
Saturday	7.10	7.20
Monday	7.25	7.35
Tuesday	7.30	7.40
Wednesday	7.30	7.40

Rye.—There is some buying of rye, but the market is far from active. The new crop is coming and quotations are given on the basis of 1909 grain. Cash No. 1 is selling at 73½c per bu.

Visible Supply of Grain.

	This week.	Last week.
Wheat	7,609,000	6,036,000
Corn	2,706,000	2,464,000
Oats	3,800,000	4,407,000
Rye	93,000	136,000
Barley	273,000	272,000

Flour, Feed, Provisions, Etc.

Flour.—Market active, with quotations from 85c to \$1 lower. Quotations are as follows:

Clear	\$5.75
Straight	5.90
Patent Michigan	6.25
Ordinary Patent	6.00

Hay and Straw.—Timothy is 50c lower and clover steady. Straw unchanged. Carlot prices on track are: No. 1 timothy, new, \$13@13.50; No. 2 timothy, \$12@12.50; clover mixed, \$11.50; rye straw, \$8; wheat and oat straw, \$7 per ton.

Feed.—Prices are off \$1 on all grades. Bran, \$27 per ton; coarse middlings, \$28; fine middlings, \$30; cracked corn and oat chop, \$28.

Potatoes.—Last week's price prevails. Supply and demand are well adjusted to

maintain a good market. New potatoes are quoted at \$2.50@2.75 per bbl.

Provisions.—Family pork, \$21.50@22.50; mess pork, \$21; light short clear, \$21; heavy short clear, \$22; pure lard, 12½c; bacon, 15@16c; shoulders, 10½c; smoked hams, 13c; picnic hams, 10½c.

Dairy and Poultry Products.

Butter.—The market here is weaker with the trade elsewhere. A decline of half a cent resulted from the easier feeling due to a new adjustment of supply and demand. Quotations are: Extra creamery, 26c; firsts, 25c; dairy, 20c; packing stock, 19c per lb.

Eggs.—There continues to be an active demand for eggs. The supply aided in bringing the price down a half cent on Tuesday. Fresh firsts, case count, cases included, are quoted at 22c per doz.

Poultry.—Both the demand and the supply of poultry are easy and the market has a free tone. The chief demand is from summer resorts. Hens, 13@13½c; roosters, 9@10c; ducks, 10@15c; geese, 8@9c; turkeys, 16@17c; broilers, 18c.

Cheese.—Michigan full cream, 14@15c; York state, 15½@16c; limburger, 16c; schweitzer, 20c; brick cream, 16c per lb.

Fruits and Vegetables.

Onions.—Domestic offerings, \$2.25 per bbl; Spanish, \$1.50 per crate.

Currents.—Higher, red, \$3@3.50 per bu.

Cherries.—Good demand and higher. Sour now quoted at \$2.75@3 per bu; sweet, \$4@4.50 per bu.

Raspberries.—Reds, steady and blacks are advanced. Red, \$4 per bu; black, \$3.25@3.50 per bu.

Peaches.—Lower at \$2@2.25 per bu.

Blackberries.—Firm at \$3.50 per bu.

Huckleberries.—Oversupplied at \$2@2.50 per bu.

Vegetables.—Beets, new, 20@25c per doz; carrots, new, 20c per doz; cauliflower, \$1.25 per doz; garlic, 10c per lb; green beans, 75c per bu; green onions, 10c per doz; green peas, \$1.50 per bu; green peppers, 45c per basket; leaf lettuce, home-grown, 30c per bu; head lettuce, 50c per bu; mint, 25c per doz; mushrooms, 50@60c per lb; plantain, 15c per doz; radishes, long, 8@10c per doz; radishes, round, hothouse, 8@10c per doz; spinach, 60c per hamper; summer squash, 50c per box; turnips, new, 35c per doz; vegetable oyster, 40c per doz; watercress, 25@30c per doz; wax beans, \$1 per bu box.

OTHER MARKETS.

Grand Rapids.

Not much change is noted in grain or produce quotations this week. Wheat is steady at \$1.02, with liberal offerings by farmers. At Ionia during the past 10 days, the mills report taking in 10,000 bu, the prevailing price being \$1.04. The yield averages 25 bu. per acre. There will be a large acreage of wheat sown in Michigan this fall. The egg market has advanced one cent. Butter is unchanged. In the fruit line huckleberries are a little easier, tho the demand continues brisk. Potatoes are holding steady at 80 to 90 cents.

Quotations follow:

Grains.—Wheat, \$1.02; oats, 45c; corn, 75c; buckwheat, 60c per bu; rye, 65c.

Beans.—Machine screened, \$2.

Butter.—Buying prices, Dairy, No. 1, 20@22c; creamery in tubs, 26c; prints, 26½c per lb.

Potatoes.—\$0@90c per bu.

Eggs.—Case count, 21@22c.

Cherries.—Sour, \$2.50 per bu.

Raspberries.—Reds, \$1.65 per 16-qt. case; blacks, \$1.25; huckleberries, \$1.40@1.60.

Cattle.—Cows, \$2.50@4 per cwt; steers and heifers, best quality, 3@5½c; dressed mutton, 9@10c; dressed veal, 6@9c; dressed beef, cows, 5@6½c; steers and heifers, 7½@9½c.

Hogs.—Dressed, 10@10½c.

Live Poultry.—Fowls, 10@12c; roosters, 7@8c; turkeys, 14@15c; broilers, 1½ to 2 lbs., 17@19c; spring ducks, 14@15c.

New York.

Butter.—Western factory firsts, 19@21½c; creamery specials, 27c.

Eggs.—Firm. Western first to extras, 22@25c; seconds, 20@21c.

Poultry.—Dressed, firm. Western broilers, 15@21c; fowls, 15@16½c per lb.

Grain.—Wheat, No. 2 red, \$1.15 per bu; corn, No. 2, 80c for old; oats, mixed, 53c.

Chicago.

Wheat.—No. 2 red \$1.05½@1.07; Sept., \$1.02½; December, \$1.00½; May, \$1.03½.

Corn.—No. 2, 68@68½c; Sept., 64½c; December, 53½c.

Oats.—No. 3 white, 39@46c; Sept., 37c; December, 37c.

Butter.—Steady at last week's prices. Creameries, 22½@26c; dairies, 20@23½c.

Eggs.—Firm. Firsts, 22c; prime firsts, 23c per doz.

Elgin.

Butter.—Market firm at 26½c per lb., which is a decline of ¼c from last week's price. Sales for last week amounted to 968,400 lbs.

Boston.

Wool.—The dullness which shadowed the market for a few weeks following the unusual activity of late spring and early summer, is now disappearing, and the buyers are again after wool, engaging large quantities of the raw material for manufacturers. The brokers are, also, gathering in holdings from the west. Prices are being well maintained, and in nearly all the grades there is a firmness that urges those who need them to buy whenever opportunity offers. The following are the leading domestic quotations: Domestic wools—Ohio and Pennsylvania fleeces, XX, 35@36c; X, 33@34c; No. 1 washed, 40@41c; No. 2 washed, 40@41c; fine unwashed, 27@28c; fine unmerchantable, 30@31c; ½-blood combing, 36c; ¾-blood combing, 36c; ¾-blood combing, 34@35c; delaine washed, 39@40c; delaine unwashed, 33@34c. Michigan, Wisconsin and New York fleeces, fine unwashed, 25@26c; delaine unwashed, 31@

THE LIVE STOCK MARKETS.

Buffalo.

Aug. 2, 1909.

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

Receipts of sale stock here today as follows: Cattle, 165 loads; hogs, 6,400 head; sheep and lambs, 3,200; calves, 1,400.

The cattle market today was strong at last week's prices. The demand today was a little better for stockers and they sold about 15c per hundred higher. Fresh cows and springers sold about the same as last week. We quote:

Best export steers, \$6.25@6.50; best 1,200 to 1,300-lb shipping steers, \$5.75@6; best 1,000 to 1,100-lb do, \$5.50@5.75; light butcher steers, \$4.25@4.75; best fat cows, \$4.50@4.75; fair to good, \$3.50@4; trimmers, \$2.25@2.50; best fat heifers, \$4.75@5.25; fair to good, \$4@4.50; common heifers, \$3.75@4; best feeding steers, 800 to 900-lb dehorned, \$4@4.25; 700 to 750-lb dehorned stockers, \$3.40@3.60; light stockers, \$3.25@3.50; best bulls, \$4.25@4.50; bologna bulls, \$3.50@3.75; best fresh cows and springers, \$4.50@5; fair to good do, \$2.50@3.5; common, \$2@2.25.

The hog market today was fairly active and the supply is well cleaned up, and we think the prospects fair for the balance of the week. We quote:

Medium and heavy, \$8.35@8.40; mixed and best yorkers, \$8.30@8.35; light yorkers, \$8.25@8.30; pigs, \$8.15@8.25; roughs, \$7.10@7.25; stags, \$5.25@6.25.

The sheep and lamb market today was active and everything is well cleaned up. We quote:

Best lambs, \$7@7.25; fair to good, \$6@6.75; culls, \$4.50@5.50; skin culls, \$4@4.50; yearlings, \$5.25@5.75; wethers, \$5@5.10; ewes, \$4.40@4.65; cull sheep, \$2@3.

Best calves, \$7.75@8; fair to good, \$6@7.50; heavy, \$4@5.

Chicago.

Aug. 2, 1909.

Cattle. Hogs. Sheep. Received today 20,000 21,000 16,000

Same day last year 24,454 40,475 27,824

Received last week 40,098 115,271 81,166

Same week last year 51,080 94,304 76,984

Prices had such a big tumble during the preceding week that far less were shipped in last week, and this was a distinct benefit to the market, since the general weakness was checked and fat cattle sold to better advantage. Plain grassers were slow, but corn-fed cattle were on the up-grade, with choice fancy lots of heavy steers bringing \$7@7.45, the top figure being 20c above tops in recent weeks. Fat little yearlings were much scarcer and went readily at \$6.50@7.50, the greater part of this class having been marketed. The greater part of the steers sold at \$5.80@7.10, with a limited call for good export cattle around \$6.25@6.60. Texas grass cattle continued to form a good percentage of the receipts, and prices were largely 25@35c higher than the low point of the previous week, with sales of Oklahoma-Texas steers averaging 1,050@1,100 lbs. at \$4.80. Good dairy-fattening steers averaging 1,310@1,515 lbs. brot \$6.75@7.05. Cows and heifers were in good demand at \$3.40@6.25, fat lots ruling higher, while canners and cutters had a fair outlet at \$2@3.25. Bulls were dull and lower at \$2.60@4.85, and stags sold at \$4.75@6, while calves were much lower, going at \$3@7.85 per 100 lbs. The stocker and feeder trade was again on a very moderate scale at about former prices, with a scarcity of good heavy feeders and a predominance of grassy offerings. Stockers went at \$2.70@4.40 and feeders at \$3.90@5.10. Milkens and springers met with a better eastern shipping demand, and sales were made at \$25@55 per head, backward springers selling the most readily, as usual.

At the close of the week good beef steers were 10@20c higher than a week earlier, while fat butcher stock showed advances of 25@40c, but calves declined 25@50c. The Monday run today shows half as many cattle as came in all of last week, including 2,000 range cattle, but prices are maintained under a good demand, with the best lots a little higher.

Hogs caused universal surprise last week by reaching Chicago and other western markets in unusually large volume, causing a rapid downward movement in prices. Eastern shippers did not increase their operations to any great extent, and Chicago packers acted as a unit in holding back and filling really important orders late in the day. Hogs accumulated in the pens in remarkably large numbers, and over 18,000 were carried over one night unsold, thereby swelling the supply the following day to uncomfortable proportions and adding to the depression. The average weight of the hogs received has increased recently to 239 pounds, compared with 221 pounds a year ago and 244 pounds two years ago. Provisions have sold off sharply in sympathy with the raw material, and grass-fed hogs and thin, old brood sows were hard to sell on almost any terms. The high point of prime hogs this year was \$8.45. The top early last week was \$8.30, and after falling to \$7.80 Thursday, it advanced Saturday to \$8.05, but at the close 9,349 hogs were left unsold. Today receipts were unusually small for Monday, and prices averaged 5c higher, hogs going at \$7.35@8.15.

Sheep and lambs were marketed last week very freely, especially from the Idaho, South Dakota, Montana and Wyoming ranges, and lambs sold off largely 25c more, these forming a liberal share of the offerings, while the eastern markets received their supplies largely from Virginia. The markets east were demoralized and much lower, and Chicago sellers were forced to depend to a great extent on the local demand. Feeders and breeders were in the usual limited supply and

in excellent demand at strong prices. Southern lambs have been largely marketed, but the time has arrived for abundant supplies of range sheep and lambs and a lower scale of values. At the week's end sheep, yearlings and lambs averaged 50c lower than a week earlier. Today's market is steady, with a moderate supply. Lambs are going at \$3@7.65 for culls to fancy, wethers at \$4@5.25, ewes at \$2@5, rams at \$2@4 and yearlings at \$5@5.50. Breeding ewes sold at \$4.25@6.25, and feeders paid \$6.25@6.75 for lambs, \$4@4.50 for wethers and \$4.75@5.25 for yearlings.

Horses sell all right, or the better class, there being a fair summer trade, but too many thin farm horses are being shipped in, and within a week many of these have sold from \$5 to \$10 per head lower, there being a poor outlet. Heavy drafters are the most active of any horses with sales at \$170@225 per head as a rule, altho a limited number go at \$250@300. Light drivers are fairly active at \$150@300, going largely at \$175@225. Feeders have a good inquiry at \$180@225, going chiefly to farmers of Ohio and Pennsylvania, who prepare them for the fall market.

LIVE STOCK NOTES.

Last week's declines in Chicago market prices for hogs were sensational after the long period of advancing markets, and prime hogs well below \$8 per 100 lbs. caused general surprise, for the great declines were altogether unexpected by everyone. However, there were much larger receipts at Chicago and other western markets, and buyers naturally stood ready to derive every advantage possible from the liberal supplies. All along it has been understood that hogs were very scarce thruout the country, and this made the larger receipts all the more surprising. It is hardly probable that these gains in supplies will be kept up, and for a long period it has been the practice of stockmen everywhere to let up in marketing hogs after a bad break in prices. The situation at the present time is rarely exceptional, for with scarcely any doubt there is a great shortage of hogs, while the great boom in prices that has taken place in provisions, in sympathy with hogs, is checking their consumption. Fresh pork in Chicago retail markets is up to 22 cents a pound, while hams and bacon sell as high as beef and mutton. There must be some limit to prices at which buyers will purchase in usual amounts, and perhaps that point has been reached. It is reported that all of the ham distributing points are liberally stocked, and that owners are making strong attempts to increase sales. Prices are varying 1½ cents a pound, with the old hams affecting the values of the sale of new ones. Published reports give 95,000,000 pounds of hams held at five leading western markets, and large stocks are held elsewhere. As was expected, the break in hog prices has checked shipments to market, and prices have gone up again, despite protests of packers.

Western range sheepmen are adopting the course of making their sheep, yearlings and lambs fat before marketing, the result being that there is a great scarcity of feeding flocks. These are in active demand for shipment to Ohio, Michigan and other feeding regions, but thus far this season very few orders have been filled, as live stock commission firms have been unable to secure any considerable supplies. Such sales of feeders as have been made from time to time have been at extremely high prices, and breeding ewes are also much sought after and are selling high, especially prime yearling range breeders. Owners of flocks find the wool end a highly important source of revenue at the present time, as wool is selling about 40 per cent higher on an average than a year ago. Now that most of the southern spring lambs bred in Tennessee and Kentucky have been marketed, there is a much better showing for lambs of superior quality from other parts of the country. For several weeks Chicago packers have depended mainly on these lambs, big supplies being consigned to them daily from Louisville.

In the region around Belle Fourche, S. Dak., the banks are loaning the principal portion of their deposits on large holdings of cattle and sheep that are pastured on the ranges, rates of interest being from 8 to 10 per cent. Good accounts are given by range stockmen of live stock interests, grass being plentiful and stock is taking on fat rapidly, but cattle shipments will be made later than usual, as herds came thru the winter in thin flesh. Loans on farms in the Dakotas, Wyoming and Montana are made at 10 to 12 per cent, one-third of the actual farm values being taken in making loans. Range cattle are being shipped to Chicago in moderate numbers, and by the latter part of August good supplies are looked for.

F. F. Ire, of Illinois, who fed 52 head of 777-pound Angus heifers that brot \$7.50 per 100 lbs. recently in the Chicago market, believes that where cattle are doing well on a certain feed they should not be changed, but where they get restless and do not do so well the feed should be changed. He also believes that where cattle have been on full feed over six months they should be put on pasture thirty days, where convenient, as they will assimilate their food better. Mr. Ire has the best sanitary conditions possible in feed yards and stables and keeps cattle nicely bedded. The cattle were on feed eight months and made an average gain of 437 lbs. and sold \$3.50 per 100 lbs. above first cost in Kansas City early last November. He had 36 hogs following the cattle, which sold at \$7.32½, averaging 260 lbs., and he figured that the hogs netted around \$600, or within \$200 of the first cost of the cattle. The grain fed was grown on his farm. Alfalfa pasture, shelled corn, ground corn and cob meal, oats, alfalfa hay, chopped corn, oil meal and pastures of blue grass, timothy and clover figured in the fattening process.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
Aug. 5, 1909.

Receipts, 1,104. Market strong at last week's prices. Stockers and feeders in good demand.

We quote: Dry-fed steers, \$5.50; steers and heifers, 1,000 to 1,200, \$4.75@5.25; steers and heifers, 800 to 1,000, \$3.75@4.50; grass steers and heifers that are fat, 800 to 1,000, \$3.75@4.50; grass steers and heifers that are fat, 500 to 700, \$3.50@3.75; choice fat cows, \$3.75@4; good fat cows, \$3.25@3.50; common cows, \$2.50@3; canners, \$1.75@2; choice heavy bulls, \$4; fair to good bolognas, bulls, \$3.50@3.75; stock bulls, \$3@3.25; choice feeding steers, 800 to 1,000, \$4@4.35; fair feeding steers, 800 to 1,000, \$3.50@3.75; choice stockers, 500 to 700, \$3.50@3.75; fair stockers, 500 to 700, \$3.50; stock heifers, \$2.75@3; milkers, large, young, medium age, \$4@5; common milkers, \$2@3.50.

Roe Com. Co. sold Brown 4 stockers av 420 at \$3.20, 6 do av 445 at \$3.20; to Sullivan P. Co. 3 bulls av 916 at \$3.75, 1 do weighing 660 at \$3, 3 stockers av 517 at \$3, 2 canners av 570 at \$2, 1 bull weighing 490 at \$3; to Newton B. Co. 3 butchers av 700 at \$3.50; to Hammond, S. & Co. 2 steers av 1,000 at \$4.50, 5 cows av 930 at \$3.30, 1 cow weighing 1,110 at \$4; to Mich. B. Co. 23 butchers av 800 at \$4, 3 do av 653 at \$3.25, 16 do av 756 at \$4; to Bresnahan, 1 canner weighing 860 at \$1.50; to Hammond, S. & Co. 4 bulls av 1,142 at \$3.75, 2 do av 1,375 at \$4, 1 heifer weighing 500 at \$3.15, 1 do weighing 600 at \$3, 1 do weighing 530 at \$3; to Rattkowsky 3 butchers av 386 at \$3, 2 do av 855 at \$3.50, 2 do av 700 at \$3.75, 4 do av 650 at \$3.75; to Ahmire 3 stockers av 716 at \$4.10, 4 feeders av \$30 at \$4.10.

Bishop, B. & H. sold Bresnahan 5 heifers av 510 at \$3.25; to Sullivan P. Co. 1 cow weighing 1,040 at \$3.50, 1 do weighing 600 at \$2.50, 1 bull weighing 470 at \$3, 6 mixed av 756 at \$2.75, 14 heifers av 701 at \$3.50, 1 bull weighing 1,230 at \$3.35; to Sullivan P. Co. 2 bulls av weighing 1,080 at \$3.75, 1 do weighing 860 at \$3.50, 2 cows av 810 at \$3.25, 1 steer weighing 940 at \$4.75; to Mich. B. Co. 3 steers av 806 at \$4.25; to Wilson 9 stockers av 585 at \$3.50, 20 do av 517 at \$3.35; to Sullivan P. Co. 2 bulls av 1,000 at \$3.65, 2 steers av 1,035 at \$4.75, 2 bulls av 975 at \$3.75, 2 do av 810 at \$3.25, 2 stockers av 600 at \$3, 5 do av 574 at \$3, 1 bull weighing 1,150 at \$3.75; to Regan 8 butchers av 700 at \$3.50; to Goose, 2 cows av 880 at \$3.25; to Bresnahan 1 do weighing 760 at \$1.75, 3 cows av 1,040 at \$3.50, 3 do av 800 at \$2.60; to Hammond, S. & Co. 1 bull weighing 1,430 at \$3.75, 2 cows av 1,055 at \$3.50, 1 heifer weighing 710 at \$3.75.

Spicer, M. & R. sold Regan 8 heifers av 531 at \$3.35, 2 do av 530 at \$3.25; to Mich. B. Co. 2 cows av 1,105 at \$3.75, 1 bull weighing 1,070 at \$3.75, 15 butchers av 735 at \$3.50, 1 bull weighing 1,100 at \$3.75, 2 do av 450 at \$3, 6 butchers av 783 at \$3.50, 3 do av 700 at \$3.25, 3 bulls av 1,053 at \$3.75, 11 steers and heifers av 836 at \$4.50, 1 cow weighing 870 at \$2.50, 1 cow weighing 900 at \$3, 4 do av 907 at \$3.50; to Bresnahan, Jr., 9 heifers av 462 at \$3.10; to Brown 2 stockers av 665 at \$3.60, 2 feeders av 900 at \$4; to Ahmire 4 feeders av 900 at \$4.25, 1 do weighing 700 at \$4, 3 do av 850 at \$4.10; to Schlischer 9 butchers av 716 at \$3.10, 2 steers av 700 at \$3.80, 5 do av 460 at \$3; to Mich. Beef Co. 19 butchers av 850 at \$4.10; to Sullivan P. Co. 4 butchers av 1,070 at \$3.75, 1 bull weighing 710 at \$3.75; to W. B. Thompson 1 bull weighing 1,060 at \$3.75, 1 bull weighing 1,150 at \$4, 1 do weighing 1,170 at \$3.70, 2 cows av 1,035 at \$3.50, 1 do weighing 1,300 at \$3.75; to Sullivan P. Co. 3 steers av 1,173 at \$5. Haley sold Spicer 8 stockers av 480 at \$3.25, 2 do av 440 at \$3. Johnson sold Schlischer 4 butchers av 600 at \$3.25.

Glenn sold Fitzpatrick Bros. 4 cows av 767 at \$3.25, 5 butchers av 733 at \$4. Haley sold Marx 4 steers av 762 at \$4.20.

McLachlin sold Hartung 4 stockers av 662 at \$3.40.

Robb sold Bresnahan 10 heifers av 485 at \$3.

Robb sold Sullivan P. Co. 3 cows av 976 at \$3.50, 4 bulls av 580 at \$3.

Haley sold same 14 stockers av 457 at \$3.05, 5 cows av 900 at \$3.45.

Glenn sold same 2 bulls av 1,040 at \$3.75.

Veal Calves.

Receipts, 784. Market steady, last Thursday's prices.

Best, \$7.50@8; others, \$4@7; milch cows and springers, steady.

Roe Com. Co. sold Hammond, S. & Co. 1 weighing 180 at \$8, 8 av 180 at \$5, 21 av 150 at \$8, 5 av 125 at \$8, 6 av 225 at \$4.50, 2 av 200 at \$6, 9 av 175 at \$8.

Groff sold Thompson 13 av 140 at \$8.

Johnson sold Sullivan P. Co. 7 av 150 at \$7.50.

Adams sold same 1 weighing 170 at \$6, 12 av 180 at \$8.

Dwelle sold same 2 av 95 at \$5, 12 av 150 at \$8.

Bishop, B. & H. sold Parker, W. & Co. 10 av 171 at \$7.65, 25 av 155 at \$7, 16 av 170 at \$8; to Newton B. Co. 10 av 162 at \$7.50; to Fitzpatrick Bros. 13 av 150 at \$7.50, 1 weighing 170 at \$6, 13 av 165 at \$8; to Sullivan P. Co. 8 av 150 at \$8; to Mich. B. Co. 11 av 150 at \$7.25, 6 av 155 at \$7.90.

Spicer, M. & R. sold Sullivan P. Co. 25 av 160 at \$7.75; to Burnstine 2 av 215 at \$7.50.

McLachlin sold Hammond, S. & Co. 5 av 165 at \$7.75; to Snyder 1 weighing 250 at \$7, 10 av 175 at \$8.

Robb sold Mich. B. Co. 2 av 310 at \$5.50, 4 av 150 at \$7; to Haley 7 av 160 at \$7.25, 1 weighing 170 at \$7.50, 1 weighing 360 at \$3, 2 av 215 at \$4.25, 8 av 150 at \$7.75.

Cheney & H. sold Newton B. Co. 2 av 160 at \$5, 21 av 155 at \$8.

Glenn sold Burnstine 4 av 155 at \$8.

Youngs sold same 6 av 150 at \$8.

Sheep and Lambs.

Receipts, 1,859. Market steady, last week's prices.

Best lambs, \$6.50@7; fair to good lambs, \$5.75@6.25; light to common lambs, \$4.50@5.25; yearlings, \$4.50@5; fair to good sheep, \$3.50@4.25; culls and common, \$2.25@2.75.

Bishop, B. & H. sold Mich. B. Co. 12 sheep av 90 at \$3.75, 3 do av 95 at \$3.50, 2 lambs av 60 at \$7, 22 sheep av 80 at \$4; to Parker, W. & Co. 67 lambs av 70 at \$6.50, 18 do av 68 at \$6.25; to Thorburn 304 lambs av 65 at \$6.50; to Fitzpatrick Bros. 40 sheep av 80 at \$4, 3 do av 115 at \$3.75, 22 lambs av 60 at \$6.50, 32 do av 60 at \$6.25, 3 sheep av 130 at \$2.75, 15 do av 75 at \$3.75, 23 do av 72 at \$4.25, 15 lambs av 75 at \$7, 1 sheep weighing 80 at \$4, 18 lambs av 60 at \$6.50, 22 sheep av 100 at \$3.60; to Thorburn 43 sheep av 90 at \$4.75, 112 lambs av 65 at \$6.25; to Fitzpatrick Bros. 51 lambs av 65 at \$6.75.

Spicer, M. & R. sold Thorburn 145 lambs av 65 at \$6.50, 12 sheep av 110 at \$4.25, 10 lambs av 50 at \$5.50, 5 sheep av 60 at \$4.50; to Sullivan P. Co. 32 lambs av 63 at \$6.50; to Thompson 27 sheep av 90 at \$4; to Sullivan P. Co. 20 lambs av 60 at \$6; to Mich. B. Co. 17 sheep av 90 at \$3.75; to Sullivan P. Co. 42 lambs av 67 at \$6.50; to Kamman 17 sheep av 50 at \$4, 3 sheep av 100 at \$3.75, 20 lambs av 60 at \$5.75; to Young 11 sheep av 100 at \$4.50; to Eschrich 26 lambs av 50 at \$4.25; to Thompson 24 sheep av 90 at \$4.75.

Roe Com. Co. sold Youngs 1 sheep av 90 at \$5, 6 do av 120 at \$3.50, 32 lambs av 75 at \$6.75; to Haise 6 sheep av 67 at \$4, 54 lambs av 65 at \$6.25; to Kamman 22 sheep av 75 at \$4.50; to Sullivan P. Co. 22 lambs av 70 at \$7, 3 do av 68 at \$7, 2 sheep av 120 at \$4.

Glenn sold Fitzpatrick Bros. 1 buck weighing 160 at \$3, 42 sheep av 85 at \$4.

Johnson sold Sullivan P. Co. 16 lambs av 75 at \$6.60.

McLachlin sold same 23 lambs av 70 at \$5.75, 7 sheep av \$8 at \$3.50.

Haley sold Mich. B. Co. 42 lambs av 65 at \$6.50, 56 sheep av 90 at \$4, 8 sheep av 105 at \$3.50.

Robb sold same 46 sheep av 110 at \$3.75, 83 lambs av 65 at \$6.

Haley sold Newton B. Co. 38 lambs av 70 at \$5, 50 do av 65 at \$6.50.

Cheney sold same 15 sheep av 80 at \$4.25.

Hogs.

Receipts, 1,441. Market 30@50c higher than last week.

Range of prices: Light to good butchers, \$7.90@8.30; pigs, \$7@7.75; light yorkers, \$7.50@8; stags, one-third off.

Kalaher sold Sullivan P. Co. 72 av 211 at \$8.30.

Sundry shippers sold same 39 av 223 at \$8, 18 av 200 at \$7.80, 15 av 154 at \$7.50.

Roe Com. Co. sold same 95 av 180 at \$8, 12 av 150 at \$7.60, 19 av 183 at \$7.75, 15 av 201 at \$7.90.

Sundry shippers sold Parker, W. & Co. 66 av 193 at \$7.90, 31 av 218 at \$7.80.

Spicer, M. & B. sold same 177 av 183 at \$7.95, 47 av 185 at \$7.90, 34 av 186 at \$7.80, 89 av 190 at \$8.

Bishop, B. & H. sold Hammond, S. & Co. 280 av 170 at \$8, 36 av 160 at \$7.85, 40 av 150 at \$7.75, 37 av 180 at \$8, 38 av 125 at \$7.50, 17 av 190 at \$8.20, 71 av 170 at \$7.65, 47 av 170 at \$7.70.

Friday's Market.

July 30, 1909.

Cattle.

The market opened at the Michigan Central Stock Yards Friday morning with a very light run in all departments.

The few cattle offering sold quickly at strong Thursday's prices for all grades.

Milch cows and springers were also full steady.

Dry-fed steers, \$5.50@6; steers and heifers, 1,000 to 1,200, \$4.75@5.25; steers and heifers, 800 to 1,000, \$3.75@4.50; grass steers and heifers that are fat, 800 to 1,000, \$3.75@4.50; grass steers and heifers that are fat, 500 to 700, \$3.50@3.75; choice fat cows, \$3.75@4; good fat cows, \$3.25@3.50; common cows, \$2.50@3; canners, \$1.75@2; choice heavy bulls, \$4; fair to good bolognas, bulls, \$3.50@3.75; stock bulls, \$3@3.25; choice feeding steers, 800 to 1,000, \$4@4.35; fair feeding steers, 800 to 1,000, \$3.50@3.75; choice stockers, 500 to 700, \$3.50@3.75; fair stockers, 500 to 700, \$3.50; stock heifers, \$2.75@3; milkers, large, young, medium age, \$4@5; common milkers, \$2@3.50.

The sheep and lamb trade was very dull at the close and several bunches were held over. Little light bucky lambs are almost unsalable.

Range of prices: Best lambs, \$6.50; fair to good lambs, \$5.50@6; light to common lambs, \$4.50@5; yearlings, \$4.50@5.50; fair to good sheep, \$3.50@4; culls and common, \$2.50@3.

Bishop, B. & H. sold Sullivan P. Co. 10 lambs av 52 at \$4.50, 41 do av 63 at \$6.50, 15 do av 65 at \$6.25.

Hogs.

The run of hogs was light and the market was 10 cents higher than on Thursday.

Quotations: Light to good butchers, \$7.60@7.75; pigs, \$6.75@7.10; light yorkers, \$7@7.60; stags, one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 50 hogs av 165 at \$7.50, 67 do av 185 at \$7.75.

CROP AND MARKET NOTES.

Calhoun Co., July 29.—A good shower has settled the dust, flattened out the corn leaves, greened up the potato vines, and both the crops and ourselves feel better. A heavy crop of wheat has been harvested and many are threshing from the field and selling at once. Market has been lowering gradually, the present quotation being \$1. Oats are variable, but rather light as a whole. No settled demand, as none are being marketed. Corn is very uneven and late. Some on light land has been injured by the dry weather. That on low land was injured by the water in May and June. Potatoes are looking well, only a small local demand for new ones. Little stock being sold. Hogs bring the best price in years, 7½c.

Saginaw Co.—Perfect haying weather saw the big hay crop safely under shelter. Wheat harvest is about over, but not a large acreage to gather. Oats are ripening early and a few have started to cut. Corn making wonderful progress, and other late-sown crops rapidly making up for lost time. Rain is badly needed; the few showers of the month making small impression. Sugar beets doing well and large acreage in.

Emmett Co., July 28.—Except for a few light showers, dry weather has prevailed during the month. The hay crop was as light as that of last season and that is saying a good deal. The dry season of a year ago, together with the absence of snow, contributed largely to the short crop. Pea and oat straw will also be short. The corn crop appears to be holding its own, where properly tilled, otherwise it is rolling badly. The crop of early potatoes will be light, as will also the late crop, unless copious showers come soon. On the lighter, sandy soils conditions are far worse than in this locality, and there are a few circumscribed areas favored with one or more copious showers, where ideal moisture conditions during the past three weeks have promoted vegetation of every kind, and within two miles of such a locality as this one, corn leaves are rolling and all crops at a standstill or comparatively so. There is but little winter wheat grown in the county. We have seen but one field this summer, and this on a farm joining ours. The grain is just being cradled. The straw has attained a good growth and the heads are large and well filled with a plump berry. The soil of this field has been cropped but twice before, which no doubt has much to do with the size of the heads and plumpness of the berry. The cherry crop is good, and there will be a good apple crop if the fruit is properly developed. Poultry is in good demand, fowls, dressed, 16c; chickens, 20c, alive; eggs, 22c; butter, 25c per lb.

Ottawa County, July 30.—The weather during haying and wheat harvesting, has been almost ideal with little or no rain. A good hay crop was secured in first class condition. Wheat is better than the average and the quality is No. 1. Threshing has commenced, and the yield is from 15 to 25 bushels per acre. A few oats have been cut and owing to unfavorable weather conditions they will be a light crop. Corn does not look very promising, much of it is very small and, owing to dry weather the growth is very slow. Pastures are becoming dried up so that stock is not doing very well. Pork is scarce and is selling for 7 cents alive and from 9 to 9½ cents dressed. Lambs sell for \$3.50 to \$4.00 per head.

Osceola Co., July 31. Ideal haying weather has prevailed nearly all the month, but too dry for growing crops. Haying about finished; hay a large crop and secured in fine shape with hardly a drop of rain on any of it. The drought hurt the oats and new seeding and pastures considerably, but a couple of good showers July 28 and 29 relieved it. Pastures are nearly dried up. July is a busy month; haying, harvest cultivating and taking care of the potato bugs all at the same time makes the farmer "go some." Potatoes are looking good but the bugs are pretty bad. With favorable weather from now on there is promise of a good crop. Corn is doing fine, altho considerably later than a year ago.

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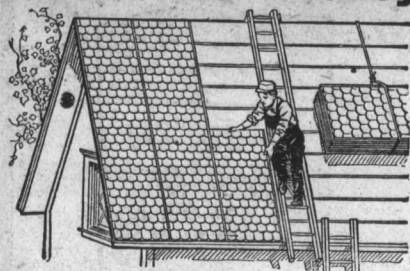
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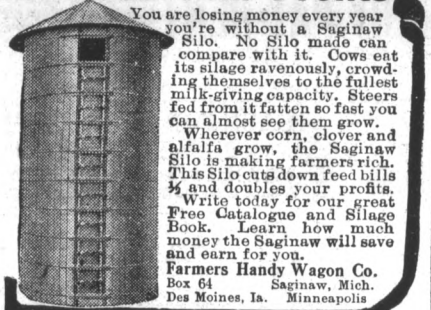
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THE DAIRY

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COW-TESTING QUESTIONS.

Will you kindly give us some information concerning the work of cow-testing associations? How do you figure out the cost of keeping the cows? How much do you figure the pasture worth, and what value do you place on skim-milk and manure? There are so many values placed on skim-milk that it is hard to decide which is the correct one. Has the association increased the annual income of the farmers in your locality, or otherwise? Do you consider it worth the trouble to do the extra work required? What, in your estimation, is the minimum amount of butter-fat a cow should give and yet pay a fair interest on the investment? What breed of cows do you consider the best for butter production? We are weighing the milk twice a day here and testing once a month, figuring the butter-fat at 28 cents per lb. the year around.

Minnesota. W. L. A.
The above letter from Minnesota was referred to me for answer. The cost of keeping cows is arrived at by actually weighing the feed of each cow for one day and estimating from that for every day the cow is kept on this ration. When the ration of the cow is changed in any particular, either increased or diminished, or other foodstuffs are introduced to make a different ration, the ration is again weighed, and it is weighed anyway once each month. Then the cost of the ration is computed by figuring the different foodstuffs in the ration at the actual market price of those foodstuffs. This, I say, is done once each month, and then the cost of the ration for the whole month is computed from this weighing.

The value of the skim-milk and manure is not taken into consideration by the cow-testing associations. It is simply economical production that we want to get at. Neither do we charge the cows with the cost of doing the work. The farmers of a neighborhood hire a man to go from farm to farm to do the testing and to estimate the cost of keep. This is not charged up to the cows, neither do they allow the cow anything for the skim-milk, the manure or the calf, allowing these three by-products to offset the labor of testing. Now, whether this is too much or too little is a question that can be argued pro and con. Personally, I believe that the calf, the skim-milk and the manure from a cow are worth more than the cost of doing the testing, so that we are absolutely safe in saying that it is worth as much. I might say, in passing, that skim-milk is usually figured at from 20c to 25c per cwt., and at the present price of corn and other grains it is well worth that when fed in proper combination with other foods.

Testing Associations are Bringing Results.
The testing association, speaking generally, has done more to increase the actual annual profit than it has to increase the annual production. By the cow-testing associations farmers are taught to feed economically—not to feed in such a manner as to produce enormous yields at an excessive price, but to feed in such a manner that they will get the largest profit from the feed invested. And I know of numerous instances where the cost of producing a pound of butter-fat in a herd has been reduced several cents thru the knowledge gained by testing the cows. I think it well worth the trouble and expense. The cow-testing association is the very foundation of the greatest success in dairying. It puts dairying on a business basis, keeping a farmer informed as to just exactly what his herd is producing, and the cost of production.

It is a difficult matter to answer the question as to how much, or what the minimum production should be, and still leave a profit from the cow. This would depend upon the cost. It would be possible for a man to make as large a profit from a cow that produced 250 lbs. of butter-fat as it would from another cow that produced 350 lbs. of butter-fat. The extra cost of feed might be enough more so that the cow which produced 250 lbs. of butter-fat in a year would actually produce it cheaper than the cow that produced 350 lbs., tho this is not usually the case. The large producers usually produce butter-fat the most economically.

Testing by Individual Farmer Apt to be Irregular and Inaccurate.

Any ardent advocate of the co-operative cow-testing association must admit that it is entirely practical for the individual farmer to test his cows. He can do it just as well if he will. The only question is, will he do it and do it

as carefully and systematically as a man employed for that purpose. Weighing the milk both night and morning and testing for butter-fat once a month would be accurate enough for all practical purposes. But this is only one phase of the question. We not only want to know how much butter-fat a cow produces in a year, but we must know how much it costs to produce that butter-fat, else we have not gained very much. It matters not how much business a man does in any line if he doesn't make a profit out of it. There is no fun in going thru with all of the work if there isn't an actual profit, and so there is no particular fun in keeping a cow the year around if you don't get a profit out of her, even if she produces 500 lbs. of butter-fat in that time, hence it is not only necessary to weigh the milk of the cow and to test for butter-fat, so that you can get the actual production, but it is just as necessary to estimate the cost of feed so that you know how much it costs to produce this. Then you can determine the value of a dairy cow as a business investment. The butter-fat should be figured at the market price, whether that is 25, 28 or 30 cents, and of course it varies. If a farmer has a contract to supply butter at 28c per lb., it is perfectly proper to figure the butter-fat the year around at 28c. If part of the time he sells butter-fat at 20c and part of the time at 30c, then it should be figured at just exactly what he receives for it, or else he knows very little about the economical production of the individuals of his herd.

In Michigan, the cow tester estimates the value of pasture when it is flush at 50c per week, or \$2 per month, but as soon as the pasture has passed its best, and some grain or other food has to be fed as a supplement, then the value of the pasture is reduced, and the cow is charged accordingly a reduced price for it. Usually during May and June, and perhaps the first half of July, she is charged at the rate of \$2 per month. After that it depends upon the pasture, varying from \$1.50 a month down to \$1, and perhaps to 50c per month.

WILL IT PAY TO HAVE A SILO FOR BEET TOPS?

We have 25 acres of sugar beets. Will it pay to buy a silo to put the beet tops in, either alone or with corn or straw?
Genesee Co. J. E. O.

I am of the opinion that it will not pay to build a silo just on purpose for beet tops. I would have a silo, but I would fill it with good corn, and would preserve the beet tops in another way. I consider the tops from an acre of good beets worth \$10 to feed to good dairy cows. I do not know so much about their value for feeding other stock, but I have no doubt they are equally valuable, especially where you have no other kind of succulent food. Hence they are worth saving, and if you couldn't save them in any other way it would pay to have a silo, but you can save them with less expense than by building a silo on purpose for them. At Lillie Farmstead one year we put the tops into the silo. It works all right, but it costs considerable to elevate them into the silo.

We use the tops to cover the piles of beets before they are hauled. After the beets are hauled, or rather when we are hauling the beets, we carefully remove the tops from the pile and put them in small piles about the size of a bushel basket. If you have them in too large piles they will rot. If you have them in too small piles they will freeze if it comes cold weather, but in piles of the size mentioned they will not heat, they will remain fresh, and it will take severe weather to freeze them. Now, after piling them thus we draw them in as needed and feed to the cows direct from the wagon, hauling in every day.

This can be done for any kind of stock, and I am inclined to think that this is about as practical a way to handle beet tops as any you can devise. Another way which would be cheaper than to build a silo on purpose, would be to pit them. Select a sandy place where there will be no standing water and excavate two or three feet. Draw the beet tops and fill into this place, tramping them in well, and cover it over with earth. They will be preserved almost perfectly.

I know a Menominee Co. man who stacks his beet tops, just as you would stack hay. They decay around the outside to the depth of several inches, but the center of the stack is preserved almost perfectly; in fact they are almost as good as if they had been in a silo. The tops pack together so closely that they exclude the air, and this is the reason you can preserve them in a much

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Don't be one. A leading farm paper says: "The modern separator no longer contains a bushel basket of 'innards' that require washing. And they skim cleaner than the old contraptions, besides." All unprejudiced folks say the same about the light, simple, sanitary, easy to clean, wear a life time Sharples Dairy Tubular Cream Separator—the only modern cream separator made.

The illustration shows the actual difference between simple Dairy Tubular bowls and complicated common or "bucket bowls." Tubulars are made in the world's biggest separator factory. Branch factories in Canada and Germany. Sales exceed most, if not all, others combined. Write for catalog 152

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This self-adjusting wrench grips any shape of nut without adjusting. The harder you pull, the tighter it holds. For every kind of farm machinery; far the best tool for quick sure work. Twelve inch size, takes any kind of pipe or nut up to 1 1/2 inch. \$1.00 prepaid. Send today for one. **AGENTS:** This is a big money maker—just out. Write for new proposition. Dealers wanted. Lake Superior Wrench Co., 123 Maple St., Sault Ste. Marie, Mich.

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less expensive way than you can corn. You don't have to have a first-class silo in order to keep beet tops.

Of course, when I speak of beet tops as a food for live stock, and estimate their value at \$10 per acre for a good crop of beets, or when I compare them with corn silage and say that a ton of beet tops is as valuable as a ton of corn silage, I mean when they are fed in connection with other foods. I do not mean that the animal should have an entire ration of beet tops. This would not only be extravagant feed, but it would be extremely poor feed. It would be a very unbalanced ration and the animal would not do well. They should be fed in connection with dry feed—hay, cornstalks, etc., and also a ration of grain. They should be regarded as merely the succulent food in the ration.

COST OF EQUIPPING A CREAMERY.

What would it cost to equip a creamery to handle the cream from 300 to 500 cows after the building is up, well put down and tank built?

Muskegon Co. SUBSCRIBER.

Only an estimate can be made of the cost of equipping a creamery of the character described by this subscriber. There are certain necessary things that must be had, but there are a great many things that a creamery ought to have that could be gotten along without. For instance, you must have a churn; you have to have weigh scales; you have to have a Babcock tester and an outfit for testing cream. You ought to have a test for moisture and all that sort of thing. Then to produce the very best results you ought to have a pasteurizer, but you could get along without this. Then there should be a good cream ripener and a starter can, and a great many other things too numerous to mention that finally come in as part of the equipment of a creamery. In fact, no up-to-date creamery is fully equipped without these things.

The churn will cost you \$300 to \$400, depending upon the size. Your engine and boiler will cost you probably \$500. You can buy a smaller one, of course, but when you are buying it is not best to buy of the capacity just adequate for your present needs. As a matter of fact, you ought to buy everything of sufficient capacity so that it need not be run to its full capacity, because when run at its full rated capacity it is straining it all the while and the machinery wears out. Then you have to have a cream ripener, which will cost \$200 to \$300 more. Besides that there ought to be a receiving vat. This, of course, is not very expensive, but the absolutely necessary things for equipping a creamery of the size you indicate will run close to \$1,000 and if you get everything you ought to have for the very best results, you will have to put in a pasteurizer and numerous other things, and it will cost you from \$1,500 to \$2,000 before you get everything needed.

Then there is another item. You must have ice, or artificial cold storage. If you put in an artificial ice plant, it will cost you something like \$1,500, but that is not necessary if you put up an ice house and fill it with ice. Now an ice house is a necessary part of the equipment of the creamery and that ought to be figured in. For a general estimate I would say that it will cost you in the neighborhood of \$1,000 for the necessary things, and if you fully equip it, it will cost you \$1,800, possibly a little less, possibly a little more.

FILLING THE SILO.

Mr. J. P. Fletcher discusses this question quite freely in The Farmer of July 24. Now, I do not wish to quarrel with him and my motive for entering upon this discussion is in part to stimulate popular interest in a question which as he says has not received the attention in the past that its importance warrants.

It would be hard to estimate the good done by the Michigan Farmer thru the medium of these discussions. Many cheap agricultural papers abound in glowing descriptions of immense farms, managed by men of large capital, principally for display. And while these articles are very readable, they are of little practical worth beyond the recreation they afford the reader.

But I started to write of the silo, and here I am comparing farm papers instead. Let me tell you how we fill our silos. The first one built in this section was filled for two years in an unusual manner. The owner elevated the corn to the top with hayslings and dropped it in without cutting. When two more silos

were built, the three men bot an ensilage cutter and hired a threshing machine engine to furnish power. But as the number increased, it was found that one machine could not do all the work in the required time. Five of us, therefore, purchased the machine of the original owners, and they, with others of their neighbors, bot a new one. Our machine was not mounted and we found it quite inconvenient to load and unload it. Fortunately we have in our company some very good workmen with considerable of ingenuity. We procured two mower-wheels from a dealer, got the blacksmith to adjust an axle, so that the wheels would conform to the highway, made a frame and mounted the machine, so that its weight rests over the wheels. The frame extends forward from the wheels about six feet and runners are placed under the front end. A hitch is made like that in an ordinary stone-boat. When we set the machine, two trenches are dug close to the silo to receive the wheels; the frame is staked down and we are ready to put up the blower pipe. Two men will move our machine easily on level ground. When we are ready to move, we hitch the machine behind the traction engine, a team takes the tank-wagon, blower-pipe, etc., and we are on the way almost as quickly as I can tell the story.

When our work is finished for the season, our machine is run into one corner of a tool-shed, where it is safe and dry and occupies but little room. We pay five dollars per day for a threshing engine and a man to run it. There are now seven of us in the company, our machine is in perfect order, we have about twenty dollars in our repair fund and the cost of the machine to each individual has not exceeded that amount.

Advantages of Co-operative Ownership of Ensilage Cutter.

It is simply out of the question for the man who keeps from seven to ten cows to own an ensilage cutter alone. If there are too many machines in the neighborhood, we shall lack engines to run them, unless they are purchased new for this purpose. A man must own a large dairy, if he can afford to own a complete outfit. I think it would be safe to say that nine-tenths of the silos in Michigan are owned by men who milk less than twenty cows, and it would not be practical for these men to purchase outfits individually; nor would it greatly lessen the time required to fill the silos if they should do so.

When the corn is ready to cut, we begin at the most convenient point and progress from place to place until the work is finished. Exchanging work settles the labor question. True, we are obliged to hire some help outside of our company, but only a little, and that can be secured quite easily. I do not think our farm work is neglected by this practice. Surely the corn is taken care of as quickly as it could be in any other way, and while it does take one away from home and the work is quite strenuous while it lasts, there are advantages that make this plan decidedly best for us. I should like to see every man who keeps cows have a silo and I am interested in discovering the plan which is best for the small dairyman.

If we can only co-operate with each other in this matter, it will be quite easy for us to build and fill our silos. The practice of changing work while filling, affords opportunity to gain a lot of useful information.

Every silo in our section is a success. No bad ensilage results in our experience. We have counseled together, we have compared our silos and our ensilage, and have succeeded always because every man's practice has been equal to the best known among us. It should be our ambition to promote the welfare of the small dairyman and farmer. An ideal rural community is one in which all own their homes and co-operate not only to their material advancement but in the maintaining of those social, educational and moral forces that tend to make the individual happy, the community prosperous and the nation secure.

Oceana Co. W. F. TAYLOR.

Summer Stock Water Problem.

Especially in the interior states, where springs are not over-abundant, the watering of stock in the summer is not only a problem but a task. The Gedge Bros. Iron Roofing Co., 102 Lee street, Anderson, Ind., recently have devised a portable and automatic watering tank for stock. This tank is easily movable from place to place, or from pasture to pasture, and when desirable, tanks may be located in different parts of the same large field. Once filled, the water remains fresh and clear—it feeds out only as it is taken by the stock. Of course it is on the principle of the vacuum fountain, and works automatically.

DO YOUR OWN HAY BALING

THE hay press of real value to the farmer is the press that enables him to do his own hay baling. There is unquestionably a great advantage in owning your own hay press.

You have ample time to bale your hay during the late fall and early winter months, and

The money you will save by doing your own baling rather than having it done by the contract baler will pay better wages for you and your horses than you can make any other way.

I. H. C. PRESSES FOR INDIVIDUAL FARMERS

I. H. C. hay presses are well adapted to the use of individual farmers. They are run by horse power, the kind of power you always have on the farm.

They do not require a large force to operate them. Usually there are men enough on the farm without hiring extra help.

They are not such expensive machines but that each farmer can afford to have a press of his own so he may bale his hay or straw when ever he is ready.

I. H. C. presses are made almost entirely of steel and iron, very strong and durable. They have the great advantage over many other presses in being made on the pull-power principle, by which the plunger is pulled, not pushed.

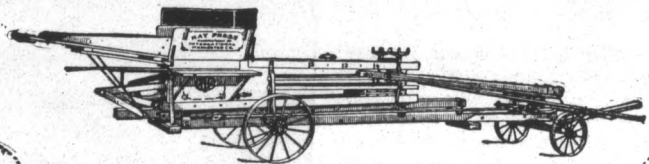
The presses are made in two sizes. The one-horse, made with a 14 by 18-inch bale chamber can be operated by two men and a boy. It will bale 6 to 8 tons a day.

The two-horse press bales 8 to 15 tons a day. It has bale chambers 14 by 18, 16 by 18 and 17 by 22 inches. This press is well adapted to doing not only your own work, but also neighborhood and contract baling, if you have the time.

Both presses are convenient to operate, easy on the horses (no extra pull when pressure is greatest), and are full circle type, avoiding unnecessary stopping, starting and turning of other presses. The stepover is only 4 inches high.

Call on the International local agent for catalogue and information, or write direct to the home office.

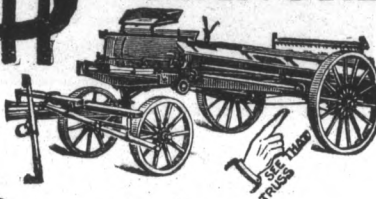
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(Incorporated)



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More Grain Profits

Pay me on time, or cash, my factory price, but be sure to try a Chatham, anyhow. Clean your grain—before you sell it—or before you sow it. \$1,000,000 lost by Farmers in every state each season by selling dirty grain is a low estimate. You are "docked" on the price because of dirt in every bushel. Cleans wheat for market. Takes oats, cockle, garlic, mustard and chaff out of wheat. Cleans red clover—takes out buckhorn plantain. Cleans alsike clover and alfalfa. Cleans beans, oats, barley. Grades corn. Cleans timothy seed.

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250,000 sold already in U. S. and Canada. Experiment Stations endorse them, and Agricultural Papers recommend them to subscribers. Write for full particulars—Prices and New Catalog Free—Address me at nearest city to you—MANSON CAMPBELL, President THE MANSON CAMPBELL COMPANY, Detroit, Mich. Kansas City, Mo. St. Paul, Minn. Portland, Ore. 24 Branch Warehouses for prompt shipments.



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SILO FILLING MACHINERY

Made in sizes to suit all wants. SOLD ON THEIR OWN MERITS. Buy them, try them, and only then do we expect settlement.

59 YEARS

EXPERIENCE

Largest manufacturers of Ensilage Machinery in the world.

ROSS CUTTERS ARE GUARANTEED.

Write to-day for FREE Catalog.

The E. W. ROSS CO., Box 14, Springfield, Ohio.



We do not ask for cash with order, because Ross Machines for the past 59 years have proved beyond the expectation of every purchaser.

EXPERIENCE MAKES PERFECT.

Every buyer of a Ross outfit is a satisfied customer.

Our catalogue shows the most complete line of Silo Filling Machinery on the market. Don't forget the

ROSS SILO.

HOW TO FEED COWS AND INCREASE THEIR MILK OUTPUT.

Also how to save from 10% to 20% of feeding cost. This information is valuable to every farmer or stock raiser, and will be sent free for the asking. Write and send us a copy of the ration you are now feeding.

CHAPIN & COMPANY, Inc., Milwaukee, Wis.

HORTICULTURE

AUGUST SPRAYING OF APPLES.

The apple crop of Michigan this year will doubtless be very small and may not exceed last year's crop. This means that sound apples are going to sell at fancy prices this fall and winter. Never before have so many apple orchards been sprayed during the early part of the season, and in most cases the crop is in very good condition.

In traveling about the state, visiting, advising and instructing fruit growers, as the writer does, he is exceedingly encouraged over the increased interest and thoroughness fruit growers have taken in spraying this year, and this opportunity is taken to urge all apple growers to spray in early August for the codling moth and scab. When the prospects are so flattering for good prices, growers cannot afford to run the risk of losing the benefit of all their work so far and of having their crop ruined by those two most destructive pests. One good, thorough application of Bordeaux mixture containing arsenate of lead or Paris green—arsenate of lead being much more preferable because of its adhesive qualities and no danger of its burning the fruit—will assist greatly in controlling them and securing a clean crop.

Several growers expect to make two sprayings in August, thinking it will be greatly to their advantage.

Several enthusiastic apple growers have announced to the writer that they are determined to prove that Michigan can produce apples that will compete in any market with apples from any state. Several instances are known where Michigan growers received from \$5 to \$9 per barrel for apples last winter. Naturally such prices stimulate these growers to pursue the most thorough and up-to-date methods.

The college is endeavoring this year to encourage and to demonstrate in different parts of the state horticultural operations for the benefit of those who apply for help.

Agri'l College, Mich. O. K. WHITE.

THINNING SEASON DELAYED.

July 24 is rather late to thin peaches; too late by about a month, in fact, but it was on this date that we finished the work this year. The crop is the most abundant we have had in several years and the peaches simply hung in clusters, and it was a larger job than it appeared at first, and it is sometimes a little difficult to judge just how much time such an undertaking will require. Singularly enough there are still some who question the profitability of such work. But with us it has long since ceased to be an experiment. Judicious thinning does not reduce the number of packages, and by experience in a packing house a few years ago it was found that an increase of a quarter of an inch in the diameter of a peach added 25 to 30 per cent to its selling value. And practically no time is lost in the work of thinning, as the fruit must be picked any way, and less time is consumed in dropping them on the ground than in putting them in a basket.

Some have practiced knocking the green fruits off, taking a stick two to three feet long and of a convenient size and striking the limbs where the peaches hung too thickly, but we have never found such a practice quite satisfactory. The fruits are not left evenly distributed and the limbs are more or less bruised. A grower of considerable experience said to me the other day that he had followed this method for some time and could see no difference in the quantity of fruit harvested over the practice of hand thinning, but I am satisfied that if the peaches were run over a grader before being packed that a material difference would be discovered. The peaches would be less even in size and enough would go into the smaller grades to cover the difference in cost between hand and stick thinning.

The men are at this writing thinning the early apples. The fruit on the Transparents, Duchesses and Wealthys are altogether too abundant to permit of any reaching marketable size unless thoroughly thinned. A few years ago a Transparent tree was loaded about as they are now, and was left without thinning, and at harvest time only about a barrel and a half of very small apples were picked, and these were barely large enough to be marketed. All of the rest were abso-

lutely too small to be offered for sale. The tree was large enough to have yielded five barrels of good, merchantable apples, and the fruit brot about \$1.50 per barrel on the trees that year. The apples sold from that tree brot \$2.25, while if it had been properly thinned the product would have sold for as much as \$7.50, and a man could have done the work in less than a half day at an expense of less than 75 cents; 75 cents would have brot \$5, and with less exhaustion to the tree.

While earlier thinning of apples is desirable, yet if done shortly before ripening the results are very marked. It is quite surprising how much the later and smaller ones will grow after the riper ones are harvested and a smaller number is left to take the substance from the trees. But even then there is a decided advantage in Michigan in having only a proper number on the trees at ripening time. The earlier apples always bring the highest price, and as the season advances the quantity increases and prices decline. So if a person has only what the tree can bring to full maturity, the maximum yield will be secured of the finest specimens and at the earliest possible date, hence the most money is obtained by this method.

This year we propose trying for a little profit out of the job of apple thinning. Green Duchesses apples at this time of year make excellent sauce and pies, and as apples are quite scarce there is a demand for them. Last week in order to test the market we shipped two baskets of these apples, and they sold at a price

farmers, get the "short end of the bargain," when they sell their orchards in this manner, and the reason is that they are ignorant of the value of their fruit. The men who buy know this, and impose upon the innocence of the grower. Many growers would be money ahead if they went to some disadvantage to gather their crops themselves a few seasons and put it on the market as carefully as possible, for the sole purpose of gathering information about the worth of the crop. In after years this would be helpful knowledge and experience, and would, if the amount of fruit is much, return many times the extra trouble made in gathering the crop for the one or two seasons.

Storage house keepers, horticultural students and fruit growers who have made a study of the problem, are convinced that a large part of the waste coming from fruit failing to stand up under shipment, while in cold storage, is due to damage done the specimens in picking, grading and packing, and to the cooling after harvest. Perhaps no other fruit section in the country has given the study to this problem that the citrus section of southern California has. There by exhaustive experiments they have learned that the decaying of fruits is almost invariably traced to some abrasion or injury to the skin of the fruit. And further that cars of fruit shipped to eastern points would get to market in a condition depending upon the quickness with which the car was cooled after the fruit was taken from the trees. Upon these findings, improvements were at once made in the manner of handling the crop so as to



Twelve acres of Lettuce, with both an early and late crop growing. Kitchen garden will lend itself to the practice of double cropping.

that would net \$1.50 per barrel on the trees. So, in thinning these apples we purpose picking off the larger ones instead of the smaller specimens and shipping them. Doubtless the smaller ones will be a little later in maturing than would the larger ones, but enough will be realized from these first shipments to much more than repay any shrinkage in the price of the later ones.

Allegan Co. EDWARD HUTCHINS.

HANDLING FRUIT.

Whether an acquired characteristic or not, the tendency of the consumer to avoid fruit that shows marks of handling in favor of that free from bruises is quite universal. Cherries without stems, apples with dark spots, peaches roughly handled, are up against it in a market with good fruit. The retailer demands carefully handled fruit of his wholesaler, for that is what his customers want. The wholesaler demands, in turn, from his buying agents fruit that will meet the wants of the retailer. These agents naturally hope to get hold of fruit that will meet these requirements and consequently are willing to pay more for such a product. But in making a distinction between good and poor fruit in a community, there is often trouble over the fact that in many places, where fruit growing is not a business, "apples are apples," and should a buyer pay more to one man than to another he must ever after fight shy of that community. To overcome this danger, many buyers have their own picking crews and pay a "lump sum" for the fruit of an orchard or so much per barrel for the different varieties and grades after harvested. This usually gets better results from the trees, for experienced pickers and packers will always get the fruit together in better shape than amateurs.

But often fruit growers, and generally

eliminate every possible injury and to shorten the time from the taking of the fruit from the tree till it was placed in a cool temperature where the action of destructive bacteria would be slow. The findings have led to a wonderful widening of the market for the crop from that section, and has made the returns to the growers correspondingly greater.

These results should help the ordinary grower. He cannot go to the expense that the organization referred to did, but he can eliminate much of the damage that now comes from improperly handling so valuable a crop as apples, peaches, grapes and other fruits. He can provide baskets adapted to the work, tables for sorting and grading, means of carting the fruit to cellars, or the coolest place available as quickly as possible after it is taken from the trees. He can instruct his pickers and packers how to handle the specimens and be on hand to see that they follow the instructions laid down. And the best of it is that he can do these things and take other precautions feeling that he will be well paid for the pains.

SAVING SEED, AND ITS CARE.

Now that seeding time is practically over, the garden work lies chiefly in properly caring for what has been grown, and preparation for next season's work. We have often emphasized the importance of judicious seed selection and its proper care right at home and upon our own grounds.

In spite of evolution theories, the bald facts remain that it is the fight of our lives in animal and plant breeding to hold our own, to say nothing of advancing or attaining greater heights of perfection in our standards, as the invariable tendency is backward toward the original type. So now that the harvest time is here we believe that some suggestions along these lines, the oft-repeated, may

A Clean Man

Outside cleanliness is less than half the battle. A man can scrub himself a dozen times a day, and still be unclean. Good health means cleanliness not only outside, but inside. It means a clean stomach, clean bowels, clean blood, a clean liver, and new, clean, healthy tissues. The man who is clean in this way will look it and act it. He will work with energy and think, clean, clear, healthy thoughts.



He will never be troubled with liver, lung, stomach or blood disorders. Dyspepsia and indigestion originate in unclean stomachs. Blood diseases are found where there is unclean blood. Consumption and bronchitis mean unclean lungs.

Dr. Pierce's Golden Medical Discovery prevents these diseases. It makes a man's insides clean and healthy. It cleans the digestive organs, makes pure, clean blood, and clean, healthy flesh.

Constipation is the most unclean uncleanliness. Dr. Pierce's Pleasant Pellets cure it. They never gripe. Easy to take as candy.

It restores tone to the nervous system, and cures nervous exhaustion and prostration. It contains no alcohol or habit-forming drugs.

GET THIS HARROWING ATTACHMENT FREE

We are going to give one of these Harrowing Attachments absolutely free to one farmer in each neighborhood. Write us AT ONCE for the particulars. This is a straight business proposition. We sell all our implements direct to the farmers. We depend on them making more sales on their merits. Just now we are making a specialty of these Harrowing Attachments, and we want to sell thousands of them this fall. One in use will sell many others; so we want one in each neighborhood to show farmers what it will do.

Do you want one now without a cent of cost to you? If so, write us to-day. Just a postal card request for particulars.

American Plow Co.
2344 Fair Oaks Ave.
Madison, Wis.



FREIGHT PREPAID

FULTZ WHEAT

Best Milling Variety, Good Yields, Sure Cropper.

Our crop pure and carefully prepared for sowing. Also Poole, Mammoth White Rye, New Crop Timothy. Write for samples, circulars, prices. The O. C. Shepard Co., 20 B St., Medina, O.

WINTER SEED WHEAT
62 Bushels Per Acre—The New Malakoff and Turkish Red—two hardest varieties, surest croppers and biggest yields; made world's record. Samples, prices and descriptive circulars FREE. Mention this paper. Address RATEKIN'S SEED HOUSE, Shenandoah, Iowa.

SEED WHEAT!

400 acres. Grown especially for seed purposes in the wheat belt of Lancaster Co., Pa. Return of seed allowed and money refunded if not satisfactory. The best varieties smooth and bearded. Issue a neat circular. It is free but you must ask for it. A. H. HOFFMAN, Bamford, Pennsylvania.

ROYAL

Hydrated or Crushed

AGRICULTURAL LIME

is the strongest Lime in Ohio, and greatly benefits the soil. Same is put up in packages easy to handle. It is ready for the drill. Experimental Stations advocate its use. Write or wire us for prices for fall seeding. Made only by

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AGRICULTURAL LIME

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Always mention the Michigan Farmer when writing to advertisers.

prove useful. In passing to and fro thru our growing crops, it requires only the casual observer to notice that here and there will be plants standing head and shoulders above their neighbors. Apparently all are growing under the same general conditions; yet, Saul-like, some are towering above the rest in vigor, size and season of maturity. Of whatever kind or variety the plants may be, they are the ones from which to select our seed for future use; the ones to perpetuate and build up. If it be potatoes, carefully mark the hills, and when digging be sure to save those most closely adhering to the ideal type in form, size and general appearance. If it be corn, in some way mark the hills so that they may be easily found at any time, then note from time to time the conditions of growth as to height of stalk, foliage, size and form of ear, maturity, etc. here are many points of importance of which to take note; but experience will help us out. The same general principles hold true with many other vegetables, as peas, beans, tomatoes, etc. With the latter, earliness is a vital point, and this may be encouraged and developed by picking the fruits before fully matured. Just when they are beginning to tinge with pink is the right time to pick them, then keep them carefully until fully ripe before taking out the seeds.

The After Care.

All vegetables from which we intend to reproduce or propagate should be carefully stored. Potatoes and roots are best held at just as low a temperature as we can give them. Seeds, for best results, require thoro drying, and after this should be kept in paper sacks where dampness will not reach them. Beans, peas, etc., that are liable to insect attack may be kept entirely free from their ravages by fumigation, which, of course, should be done before storing, and the safe time to do it is just as soon as they are dry.

Take a box any convenient size and fit a close cover, paper inside and out, if need be, to make it perfectly air tight. It is convenient to fit adjustable shelves so that several kinds may be treated at the same time, or the box may be filled nearly full in bulk. Procure of any drug-gist a one-pound can of carbon bisulphide, which should cost not to exceed 25 cents. Place the seeds in the box and pour a tablespoonful or more of the liquid into a saucer or other earthen vessel and place it in the box, closing the lid tightly. Twelve hours will be sufficient to "quiet the title" of every living insect, tho more time will not injure the seed. Do not inhale the fumes, as too much will put the operator as well as the bugs out of commission; also keep it carefully away from fire, as it is very inflammable. After thoro fumigation, air out and place the seeds in sacks. If thoro aired for a time the process will not injure the seeds for cooking or eating purposes.

The above has doubtless been threshed out a good many times; but nevertheless much wheat still remains in the straw; and the foregoing suggestions if intelligently carried out, will surely place our feet squarely on the main highway to success.

Cabbage Worms.

The following is said to be an entirely effective remedy for the green cabbage worm, and if as represented will prove a boon to cabbage growers: Thoro dissolve a large tablespoonful of salt in a gallon of water and spray the plants. This, it is said, will effectually rid them of the pest; and if so it will be very convenient for cauliflower, as the arsenites are entirely unsafe when once they begin to head. I would be glad to hear what success others may have with it.

Wayne Co.

J. E. MORSE.

Onion Maggots.—An inquirer has an onion bed that is troubled with onion maggots. Injections of carbon bisulphide in the soil along the rows of plants will destroy them. Or, dissolve 1 lb. of soap in a gallon of water and add a pint of crude carbolic acid. This is then diluted with 30 parts of water and applied to the soil close to the rows of plants. Still another method of combatting the pest is to place tarred paper near the base of the plants. This acts to keep away the flies that lay the eggs from which the maggots hatch. Cheesecloth is often spread over a small patch. This also prevents the flies from laying their eggs. Cabbage root maggots are combatted in the same manner. It is a practice among many large growers of cabbage to cut pieces of tarred paper so that they can be placed around the stem of the cabbage plants. This is accomplished by making a hole at the center of the piece, which is usually cut hexagonal, and a slit from this hole to one side. The piece is readily spread at the slit and slipped past the stem to the hole at the center.

GRANGE

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

THE AUGUST PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Which is the most profitable investment, seventy-five dollars in cows, in hens or in swine?

(Vary the sub-topics to fit the industries of your community and ask for figures to prove the arguments.)

Review of a book or magazine read recently.

Industrial Alcohol, its sources, uses and manufacture.

Sports and Games in the Country.—Why do we need more? How shall they be encouraged?

Some practical home-made refreshments—by a "Surprise Committee" consisting of young people who give instructions for making and serve samples of the refreshments.

WHY FARMERS SHOULD BE PATRONS OF HUSBANDRY.

This is an age of organization and farmers fully appreciate the truth of this oft-repeated statement every time an effort is made to have their influence felt in any direction. Let the farmer attempt to right any wrong arising from the lack of legislation or thru the operation of unjust laws and he immediately finds himself face to face with an organized force. He must battle, single handed, with a body of individuals thoroly organized. The result, disastrous as it is to the farmer, is only what might reasonably be expected under the circumstances, and the outcome is much the same where a weak organization meets a stronger.

Can a more potent argument for a strong farmers' organization be advanced than that contained in the above facts? And, granting that there is general agreement as to the need of organization, where is there an organization built upon a more permanent, enduring basis, or that has been more thoroly tried out, than the Grange? It has become a lasting social and educational force in every progressive farm community which it has entered. Its plan, that of having an organization in township, county, state and nation, makes possible its reaching and helping the farmer in every sphere, and anything short of this would not make for a strong, influential body.

Another point in favor of the Grange is that it was the first organization that gave to woman the same privileges and rights as are enjoyed by man. In doing this it has not only turned on the radiant light of hope for her, but it has strengthened the union of both, has created deeper love for home, and given inspiration for better thoughts, nobler deeds, and higher aims for the future.

There is nothing equal to the Grange in giving opportunity to the boys and girls of the farm. Here their latent ability is awakened and hope engendered until we see them developed into fuller and more complete men and women. In so doing they take greater pride in their work, more interest in the farm and the home and their attachments for it are increased many times.

OUR NEW GRANGES.

V.—The New Secretary's Part.

The secretary—the "Quiet Officer." Much of his work is in silence and none of it is showy; yet upon the painstaking performance of it depends much of the power of any grange. The secretary may, as it were, lubricate the whole machinery so it will run ordinarily without friction. does this:

1. By being promptly and always in his place. Members often wish to pay dues before the meeting calls to order, seek information concerning trade contracts or ask other questions.

2. By jotting down the minutes accurately at the time business is transacted, and later copying them carefully into a record book.

3. By taking particular care never to accept money for any grange purpose whatsoever without giving a receipt for it which is recorded on the corresponding stub of the receipt book; and by taking equal care to secure and preserve receipts for all monies paid out. These vouchers for monies passing through the secretary's hands are his chief passports to fitness for his office. He should guard them carefully, keep them in order and present them, at the end of the year, to the finance committee as evidence of honest and efficient discharge of duty. To have the grange records of membership, receipts and expenses check up accu-

rately and completely should be at once the ambition and satisfaction of every secretary. This furnishes good business training if the membership is large, and is an accomplishment worthy of pride.

4. By having the items and papers, needful to come before the Grange at hand, ready instantly upon call of the master for "applications," "bills," "reports," "new business," etc. Here is where a capable secretary supplements the master in dispatching routine work with alacrity.

5. By accepting no more duties than one person can well perform. I recall the plaintive letter of one faithful secretary, written me years ago. She had all the secretary's detail work of a large Grange, and in addition, acted as purchasing agent for supplies, subscription agent for farm and Grange papers and conducted all the correspondence of the organization. It was obviously not a fair division of labor. Such a grange as hers was must have within its membership more than one person who would be benefitted by sharing these duties.

JENNIE BUELL.

TWO MORE U. P. GRANGES.

State Deputy John Wilde is still working among the farmers of the Upper Peninsula. He organized Metropolitan Grange at Metropolitan, in Felch Township, Dickinson Co., Saturday evening, July 24, with the following officers: Master, Andrew Rian; overseer, John Blomquist; lecturer, Jonas Blomquist; steward, John M. Wickman; assistant steward, Herman Gustafson; lady assistant steward, Anna Rian; chaplain, Leander Nyland; treasurer, Matt. Willman; secretary, Alfred Anderson; gate keeper, Jacob Blomquist; Ceres, Anna Nyland; Pomona, Mary Blomquist; Flora, Gustafson Anderson.

On Monday evening, July 26, he organized a Grange in the Misery Bay settlement, Ford River Township, Delta Co., with the following officers: Master, Geo. Jensen; overseer, Swan Lafgen; lecturer, Bertha Peterson; steward, Neil Jensen; assistant steward, Viggo Johnson; lady assistant steward, Anna Jensen; chaplain, Julia Eddy; treasurer, Wm. Williams; secretary, Hiram Wellman; gate keeper, Bertram Hansen; Ceres, Cornelia Jensen; Pomona, Mary Dickson; Flora, Ulerike Lafgen.

AMONG THE LIVE GRANGES.

Another Grange "At Home."—Union Grange, in Isabella county, now owns a home. The blinds to the hall were donated by a rural mail carrier who took this way of expressing his appreciation of the work of the Grange in securing the rural mail system.

Maple Grove Patrons, of Charlevoix Co., are repairing their hall and fixing up the surrounding grounds preparatory to holding a Grange picnic on Aug. 28. Bro. J. C. Ketcham, of Barry Co., has been secured to deliver the principal address.

Grand Traverse Grange reports that the "Emergency" program, mentioned last week, proved a profitable and enjoyable one. Nearly every member present offered good suggestions regarding one or more of the critical situations considered. In nearly every case the importance of preventive measures was strongly emphasized. Some of the suggestions offered were highly humorous. It was also discovered during the carrying out of the program that there were several real heroes present. One speaker related how "in the hour of shipwreck," by keeping his head he had been of material assistance to the other members of the party. Nearly all of the speakers agreed that the correct procedure "when burglars are discovered in the house" is to go to sleep and let them burgle. However, it was advised not to keep anything in the house that would be a temptation to a burglar. The next meeting of this Grange will be held Saturday afternoon, Aug. 7.

COMING EVENTS.

Pomona Meetings.

Gratiot Co., with Elm Hall Grange, Saturday, Aug. 7. Bro. J. C. Ketcham, state speaker.

Charlevoix Co., with Maple Grove Grange, Thursday, August 12. Hon. D. E. McClure, state speaker.

Emmet Co., with Pickerel Lake Grange, Friday, Sept. 24.

Western Pomona (Ottawa Co.) with Tallmadge Grange, Friday, Aug. 27.

Picnics and Rallies.

Granges of southwestern Lenawee Co. will hold their second annual rally and picnic in Bishop's grove, three miles northwest of Morenci, Saturday, Aug. 7. Granges affiliating are Morenci, Medina, Lime Creek, South Dover, Sugartown and Chesterfield.

Ionia Co. Pomona will hold annual picnic in Bosworth's Grove near Lake Odessa, Tuesday, Aug. 10. State Master Hull heads the list of speakers.

Granges and farmers' clubs of Northern Lenawee Co. will hold picnic at Sand Lake, Friday, Aug. 12. State Master Hull heads list of speakers.

Haring and Selma Granges, of Wexford Co., will hold a rally on Saturday, Aug. 14. State Master Hull, state speaker.

Bronson Grange, Branch Co., will hold annual picnic at Matterson, Lake, Wednesday, Aug. 18.

Kent Co. Pomona Grange will hold a farmers' picnic in Byron township, Kent Co., Wednesday, August 25. Fourth and fifth degree session with Carlisle Grange in the evening. Master N. P. Hull, state speaker.

Lapeer Co. Pomona will hold Grange rally and basket picnic at Lake Pleasant, Cedar Landing, Thursday, Aug. 26.

FARMERS' CLUBS

Address all correspondence relative to the organization of new Clubs to Mrs. W. L. Cheney, Mason, Mich.

Associational Motto.—

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

Associational Sentiment.—

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

A STROLL IN THE GARDEN.

(Paper read at the June meeting of the Indianfields Club, by Mrs. Clara Miller.)

"I would like to see your garden before I go home," said Mary, toward the close of one beautiful summer's day. And as John and I are always ready to show our garden to our friends, of course, we started for there.

"Your garden is not very far from the house," said Mary, "and you have it fenced with chicken wire so nothing can get in to destroy it."

"Oh, yes," said John, "we thot it paid for itself the first year. But I see it needs repairing. It has been up now eleven years and it has saved a great deal of running to chase chickens and also to keep the cattle out. You see, Clara and I always try to attend the Indianfields Farmers' Club every month, and we would not like to come home and find our garden destroyed." Here Mary interrupted in her lively way.

"Oh, I see now where you have your watermelons; right here behind that big tall sweet corn, and it has different heights; but I want to know more about the watermelons. First, why do you plant them on the outside?"

"John, you can tell Mary all about the vegetables, but I want to tell her about the flowers."

"Yes," said Mary, "I see you have a lot of them over there."

"Well, Mary, you just wait until we get over there and I believe you will think they are pretty. Now, John, you can tell Mary why we put the watermelons and other vines along the side of the garden."

"Well, Mary," answered John, "it takes up less room in having the vines at the side; they can be planted near the edge and you can see they vine on the sod and up against the fence. We planted two rows side by side because then the vines hold the moisture so much better. You see our garden is thirteen rods long by six rods wide, and it slopes to the south, so we plant watermelons, then cucumbers, because they do not mix very badly; then the summer squashes (tho we do not eat them ourselves, we always raise them for our club collections at the fair). You see those kinds of squashes do not vine, but stool quite large, so they do not bother the other vines. Now comes the other kinds of squash."

"Well, how many kinds have you?"

We plant only three kinds," said Mary.

"Well, Mary, you will be surprised when I tell you we have eleven different kinds. A lady sent us some seed from Vassar; they were the Banana squash; I am anxious to see how they will be. But, as I said before, we plant a great many different kinds of vegetables that we do not care for ourselves. You see there is only one hill of each kind of all the summer varieties."

"Are these watermelons, too?" said Mary, her mind still on the watermelons.

"Oh, no; they are citrons," laughed John; "just two hills are all there are of them."

"Look at those pretty white blossoms; they look like white lilies, what are they?" asked Mary, who began to gather a handful of blossoms.

John told her laughingly that they were gourds. I made her a nosegay of one of the leaves. They are only about a foot across; they look so much like water lilies; I put a bunch of the white flowers in the center. Mary thot the flowers had such a pretty ruffled edge. "Now, John, tell her about the sweet corn and other growing sorts, and why you put them here."

"Well, Mary," said John, "you see our garden is close to the road; so we plant sweet corn, sugar cane, broom corn, sunflowers, popcorn, tobacco, in fact all the tall growing sorts at this side of the garden for a background. When I am riding along the road I admire nice gardens, and I think others like to see them also. We think we have some fine kinds of sweet corn: Stowell's Evergreen, Country Gentleman, Howling Mob, and the best of all, the little Yellow Bantam; you see

it is the smallest and earliest, when you are eating that you will want to do like the little boy did; send the cob back by the waiter to have it filled again. We do not pay any attention to the different kinds mixing, for we buy new seed every year, as a rule."

"I see you have woven wire for your peas to vine on, and see what big pods!" interrupted Mary.

"Yes," said John, "they take less room on the wire and bear so much longer and are so much easier to gather. The vines are not torn to pieces, and besides they are not so apt to mildew."

"Oh, what are these pretty things on this end of the wire?" cried Mary. John told her they were ornamental gourds.

"I thot they would do better to grow on the wire, too, as there was plenty of room. Now, Mary, you will see the low-growing sorts, such as tomatoes. Look at those little red and yellow tomatoes."

"How many kinds have you?" said Mary.

John thot for a moment, then said, "You won't hardly believe me when I tell you there are twelve different kinds. Those little ones are the Yellow and Red Cherry; those others are the Yellow and Red Pear; those little yellow ones with the husk on are called Strawberry or Husk Tomato. Those pink fuzzy tomatoes are the Peach, and they are simply fine for preserves; those large yellow ones you see are the Golden Queen; they are not so sour as the red. These large oblong tomatoes are the Ponderosa; those large purple potato leaf sort are the Mikado; they are very nice, but a little late. These are Tucker's Favorite; they are nice and bear well. These last two kinds are the earliest. Spark's Earliana is a little earlier than Burpee's Pink Beauty, but are not so large and do not bear so well. We had ripe tomatoes the 13th of July, and hope to have again this year."

"Well, you surely have a nice variety," said Mary.

"We have our beets along by the tomatoes and such other varieties as do not spread over the ground much," continued John. "Here are the parsnips, salsifi or vegetable oyster, string beans, Lima beans." Here I just had to interrupt John and speak a few words in favor of the Limas.

"Mary, if you have never planted any of the bush Lima beans, be sure and do so next year; of course it is too late now. If you cook them like you do sweet corn, when cut from the cob, you will want to do like the little boy and the sweet corn John told about; you will want to send your dish back to have it filled again."

"This is Swiss-chard," continued John. "It is very nice cooked like asparagus. You see, we have several different kinds of cabbage, but we like the Early Winningstead best, the worms do not bother it so bad."

"What do you do to keep the worms off?" asked Mary.

"Well," answered John, "we use Paris green with water; some object, but I cannot see the harm. Cabbage grows from the center of the head and so we do not put it on if it is heading much. Here are Brussels sprouts. We never have very good luck with them, but we do have nice cauliflower; we raise two kinds, Burpee's Best Early and the Dry Weather, one or the other, if not both, will be good."

"Oh, I see where your muskmelon patch is," laughed Mary. "I have been wondering if you did not raise them as well as watermelons."

"You see," said John, "muskmelons will mix with cucumbers so much easier than watermelons, and they do not spread as bad as other vines, so we plant a row thru the garden."

"But where is your peanuts?" asked Mary, who had been eating some in the house and wanted to see how they grew. John told her they were over farther and we would soon be around there.

"Here are the peppers; aren't they pretty? There are five kinds, the Chinese Giant, New Celestial, Red Chili, Long Red Cayenne and Fancy Wrinkled. We only put out a few of each. These are the egg plants; last year they did not set fruit until so late they did not do us any good."

"Now, what is that?" cried Mary, pointing to a vine that was new to her.

"It is called the Wonder Berry," said John. "It is one of Luther Burbank's greatest creations; at least so the catalogs say. We are anxious to see what it will be. It was advertised so highly it looks a little like the garden huckleberry. I hope it isn't, for we didn't care for that much. You know we like to try the new novelties, for sometimes we get some kinds we like very much."

(Continued Next Week.)

THE MICHIGAN FARMER.

AUGUST 7, 1909.

POTASH

The Lesson of the 1909 Wheat Crop

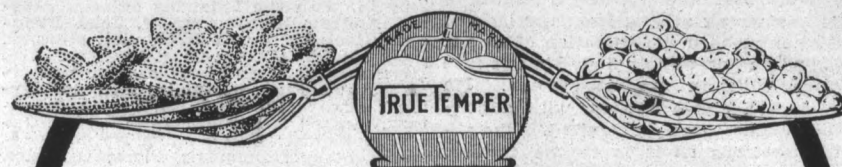
in this country is: Not enough of the right kind of wheat at the right time to get the right price. The trouble is: wheat-sick lands, lands worn out by continued cropping without fertilizing. The remedy is: the right amount of the right kind of fertilizer at the right time. The right time is this fall: the right amount is 200 to 400 lbs. to the acre; the right kind is 2-3-6. If your commercial fertilizer contains less than 6 per cent. of Potash, make it right by adding Muriate of Potash until it contains 6 per cent. and you'll find that

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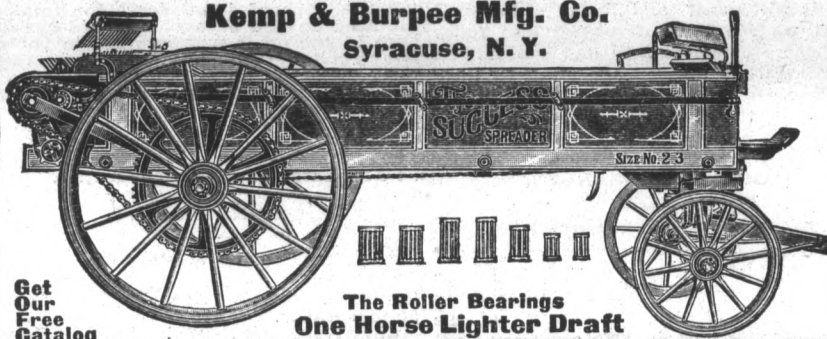
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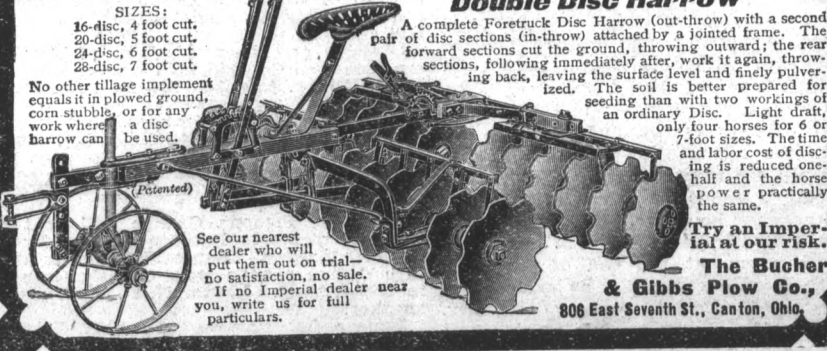


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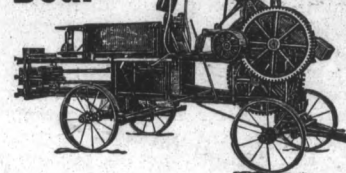
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