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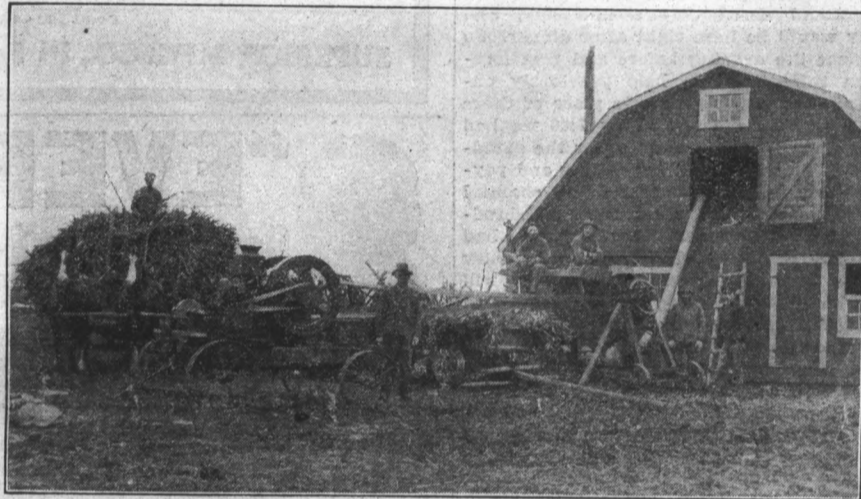
Preparing for Winter.

IN a large way in this climate all the work of the year is a preparation for winter. With the farmer who practices live stock husbandry nearly all of the work on the farm centers on the proposition of preparing to take care of this live stock during the winter. The live stock farmer's income, of course, comes from animal products or the animals themselves and to keep these animals properly during the winter time food must be grown upon the farm specially for this purpose, and this takes up the larger part of the farmer's time. And, hence, the work of the whole year is largely a preparation for the winter. Man makes special preparations on his own individual account for winter in this climate. Of course, in tropical climates the case is different but tropical climates have their drawbacks and there are periods of the year when some preparation must be made to carry it through as well as in this climate. In our climate, with our soil, and under our conditions, if we did not have to make preparation for winter life would be one long sweet dream. But, life isn't a dream. "Life is real, life is earnest," and the farmer must make preparations every summer for the coming winter in order that he may exist and be comfortable and prosper, this is his duty as a man and a farmer. And it is the duty of every citizen to make preparation during youth and manhood for old age. Many of us would not be willing to work as we do during the growing season if we did not realize that it was necessary to do so in order to be comfortable in the winter time. Again, many of us would not be willing to work as hard and as continuously as we do during youth and manhood if we did not realize that it was necessary to do so in order to make proper provisions for old age. Nothing is more pitiful in this world than to see a man or a woman in the decline of life without sufficient of worldly goods to make their declining years comfortable and independent. Some people during their youth and manhood do not seem to realize the necessity of preparing for old age, consequently they make little or no preparation for this period and thus become objects of charity. So, too, many farmers do not seem to realize the importance of making preparations for win-

ter, and the winter comes every year with its merciless and exacting weather and he who does not prepare for it must pay a heavy toll for neglect. And so the old man, who has, by carelessness and neglect and want of purpose squandered his youth and manhood, pays the penalty in his old age.

But I presume the editor of The Farmer, when he selected his topic for late

If one has a large amount of work to be done in the spring a certain area should be plowed in the fall because it is almost impossible to do all of the work in the spring and do it on time and this certain amount of fall plowing is a necessary preparation for winter, not only this, but sometimes on land with heavy clay subsoil if this land is plowed in the fall it is benefited by the freezing and thawing of



Corn Husking on the Farm of Wm. J. Nielsen, of Montcalm County.

autumn discussion, had more in mind the minor things about a farm, which necessarily must be attended to in making preparations for winter, than he did for this broader question, and certainly there are a great many of the minor things on the farm that must be adapted for winter conditions in order to make the farmer and his stock comfortable and in order to reap the greatest reward for the labor during the summer time. Of course, the first thing that the farmer should think about in the fall is doing up the fall work and getting it done before severe winter weather comes. The corn should all be husked and in the crib, the stalks drawn and properly taken care of, potatoes should be dug before frost comes.

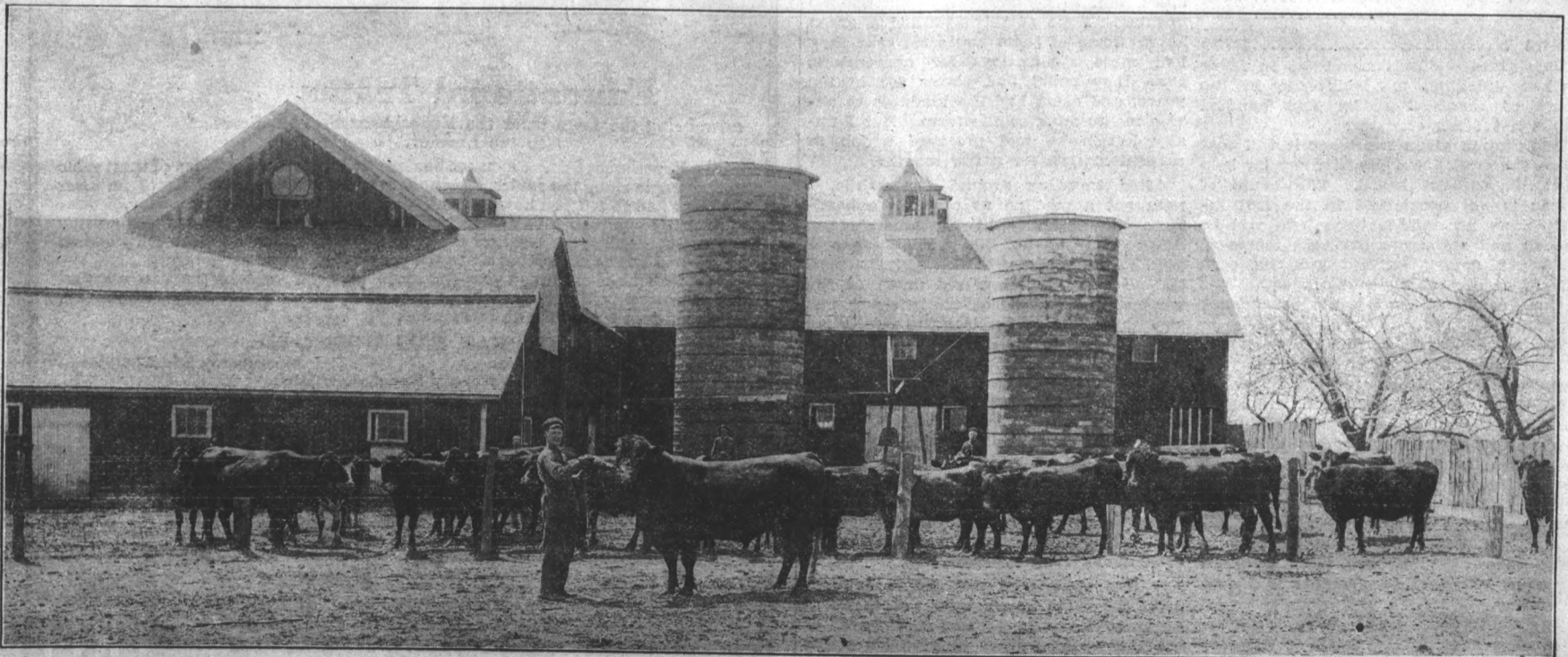
It becomes pulverized in a way that cannot be done by any kind of tilling and this makes a certain amount of this work necessary and a proper preparation for winter. Then again, on every farm there are stables and buildings to be repaired. There is rarely a farmer but who has broken some glass in the stables and out buildings during the summer time and these should be replaced before the rigorous weather of winter comes. Most always there is some repairing to be done in the stables or the buildings in general to get them into the best possible condition for winter. If possible, preparations should be made for the extra winter's feed and the purchased feed drawn home before bad roads come just

before winter, and a good supply of coal or other fuel should be provided.

The poultry should be properly sorted. The hens that are not needed for winter layers should be separated and fattened and gotten rid of. The pigs should also be sorted and gotten into their winter quarters before winter comes if possible, likewise the cattle. In fact, it goes without saying that all of the stock on the farm should be snugly quartered in their winter quarters before the rigorous weather of winter comes. And yet there are very few farmers that do all this before winter comes. I venture to say that a great many farmers were caught this fall with the unexpected blizzard before they were ready for it. In fact, many of us didn't have our fall work done, let alone having all of the window lights replaced, stables fixed, and everything in readiness for winter.

But there is another phase to this question. Which pays the best, to stick to the fall plowing when it is good weather and leave some of the tinkering that is necessary for winter to be done after the weather is so severe that you can't plow, or let the plowing go? Which pays the best, to stick to husking the corn and get it all in before cold weather, or to stop before that work is all done and fix the stables? Now, as a matter of fact, the stables can be fixed after cold weather comes, the window glass can be put in, the poultry can be sorted, and while, theoretically, it is not perhaps the proper thing to do yet practically it is the way most of the farmers do do, and we do it because it is more profitable to do it that way than the other. A man can fix his stable when the weather is so severe that it is very uncomfortable to work out of doors and in the meantime he can quarter the stock intended for this stable temporarily so that they will be fairly comfortable. The question really resolves itself into a question of management and everyone must be left to decide his own individual case himself.

With all the other things to be prepared for winter the farmer should not forget to subscribe for his farm papers and magazines for, by reading the experiences of others and comparing with his own he not only finds much enjoyment but much profit. COLON C. LILLIE.



Winter Quarters of the Herd on the Farm of Wells Parish & Sons, of Ottawa County. One of the Concrete Block Silos Has Been in Use Seven Years.

HUSKING CORN WITH A POWER HUSKER.

In your paper of November 18, I note an article from E. S. C., of Oakland county, which is of great interest to me as we are using the method of husking our corn which you recommend. I am, therefore, sending you an illustration of our little husking outfit which can be operated nicely by five men. This picture shows six men, but as I had the misfortune to break my collar bone earlier in the fall, I had to get a neighbor to do the sorting which I ordinarily do myself. With this outfit, five men and one team can husk and crib from 200 to 300 bushels of corn per day, depending, of course, a great deal upon the per acre yield of corn. (See cut on first page).

Montcalm Co. WM. J. NIELSEN.

SHREDDING VS. HAND HUSKING.

Possibly there is but one side to this question for some farmers, for instance, the large dairyman who has plenty of teams, or can get them by exchanging help with his neighbor, and who perhaps can not get sufficient help to husk his corn. Such farmers may really have no other alternative but to shred if the entire neighborhood does likewise and day help is scarce.

Again, there may be but one side for the small farmer who is in a community where shredding is not the rule, and where it would be difficult to pick up enough help and teams to do the work, but who could husk his corn out by hand alone, or with a little help that could be picked up.

But most of us are in a position to get the work done either way, if we are willing to bide our time and wait for the shredders, and are not too particular about the condition of the fodder when the work is done. The question is, which will pay the best? The first factor to be considered is, which is the cheapest?

I have figured this out several times, taking our own expense of husking by hand and hauling the corn and stalks, and the cost of some neighbor in harvesting an equal amount of corn with a shredder. As shredding is done in this locality the figures will run something like this, allowing 15 acres as a day's work, which is probably more than will be husked on an average.

Husking 1,500 baskets corn at 3c.	\$45.00
Five teams, and teamsters for hauling fodder corn and one for ears, at \$3.50	21.00
Three men to handle fodder, two for corn, one for shelled corn and shredded fodder, at \$1.75	10.50
Board for men and teams, 2 meals	6.00
Total	\$82.50

These figures will, of course, vary with the crop, distance of hauling, weather, whether the work is done in one day or parts of two, and other factors. The price of help may also be more in some localities, possibly less in others.

The cost of hand-husking and hauling corn and fodder, an equal amount, in our locality, is about as follows:

Husking 1,500 bushels of corn at 3c per bushel	\$45.00
Team and two men to haul corn and fodder, four days at \$5.75	21.00
Twine for tying fodder	1.50
Total	\$67.50

This gives a difference of \$15 in favor of hand-husking, the difference in the value of shredded fodder and bundled stalks not being considered.

The figures given are what it will cost to do the work here, figuring regular help at \$1.75, without board. The board of teams is not considered in the last instance, as no outside team help will be needed and we figure our own teams at \$1.75 per day. We can get the corn husked at six cents per shock eight hills square, or about three cents per bushel, without board.

The next thing to consider is the value of shredded fodder as compared with bundled fodder. Upon this point there is much disagreement. Nearly all will agree that the shredded fodder is more convenient to feed in mangers and furnishes bedding and allows of hauling out the manure more conveniently. Many will consider these points alone sufficient to compensate for any added expense of securing the crop in this way. Then, in some cases, the lessened room required for storing the shredded fodder is a consideration.

The point upon which there is difference of opinion is the value of the fodders for feeding purposes. Some claim that the stock will gain considerable added nutriment from the pith and inner parts of the stalks when they are shredded

over what would be obtained when the fodder is fed in the bundle. In the absence of any data on the subject that I can recall I do not believe this amount would be large and might be compensated by the loss in tearing the leaves and tassels into fine bits when the fodder is rather dry, or the loss from moulding when the fodder is too damp. A neighbor of ours who has shredded for several years past, and who owns part interest in a shredder did not shred this year, stating that he had always had more or less trouble with the keeping of the shredded fodder and that he did not care to chance it this year. This is also the experience of several others, and seems to be the worst feature of this method of harvesting the corn crop. This season the condition of the fodder has been damp most of the time, and it is probable that much of it will not keep well.

We have simply given the arguments and figures on both sides and leave the reader to form his own conclusions. We might add to this our own experience this year. We husked eight acres by hand and concluded to have the balance, about the same amount, shredded, and made arrangements for the shredders to be here about ten days ago. Rains delayed them, and like most threshers, they would take jobs ahead to save moving, and after putting off the job several times we thought we were sure of getting it done Saturday afternoon. They started shredding in the morning for a neighbor who promised the shredders and myself that he would shred only a half day, and they would be here right after dinner. So I spent the evening before and that forenoon informing the help previously engaged, and getting more in place of those that couldn't come, and by 1:30 we had four wagons loaded waiting for the shredders. We might still be waiting and paying the help, for the other fellow changed his mind and had them keep on shredding that afternoon. That night we had a heavy rain and wind followed by snow and a blizzard for two days and we will not be likely to shred for a week, if at all. Had we kept on husking by hand instead of doing other work while waiting for the shredders we might have had the crop in shelter. This is another factor to be considered. There is good argument on both sides, just as in the case of cutting the corn by hand or with a binder.

Calhoun Co. S. B. HARTMAN.

LEAVING THE FARM.

The writer was brought up on a farm and, owing to the poor health of his father, did not have much chance to attend school. As my father did not pay me any wages, as soon as I reached my majority, like many other young men, I became discontented with farm life and, being of a mechanical turn of mind, decided to get into a shop and learn the machinist's trade. I thought there would be no trouble to get into such a shop, but soon found out my mistake. After making application to all the shops in a near-by city, and meeting with no encouragement, I then commenced writing to the different machine shops in several cities and, to my surprise, could find no opening. None of them wanted a green hand. Some of them wrote me that they had more applications for apprentices, than they could find places for in ten years, and some had the kindness to advise me to stick to the farm. But I finally left home and procured a job at carpenter work for a few months.

After traveling around for awhile, I next got a position as clerk in a hardware and agricultural implement store. After working at this business for a year I became heartily sick of it, because it was very confining and much of the work very disagreeable, and the pay was so small I had to practice the most rigid economy to pay for my board and necessary clothing. And when I found there were scores of other clerks in the city who were getting no better pay, it convinced me that clerking was a rather poor business to follow. So, when my father made me an offer to come back and run the farm, I gladly accepted, and have been contented on the farm ever since, which perhaps would not have been the case without having had the experience above related.

If this experience will be an inducement for some young man not to be in haste to leave home and the farm, or influence some farmer to give his son a chance so he will not wish to leave home, then the writing of this little sketch may do some good.

Ottawa Co. JOHN JACKSON.

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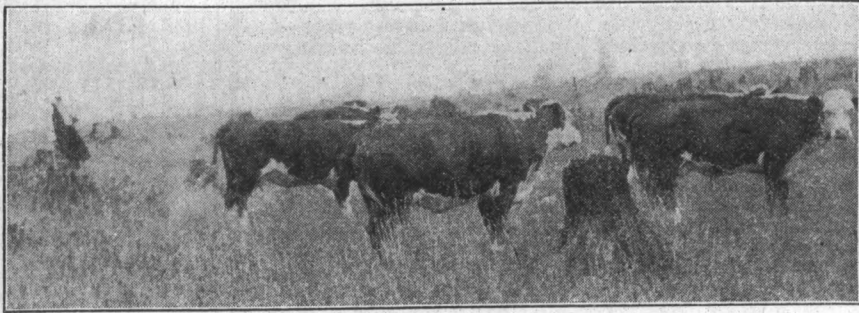
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LIVE STOCK

BEEF CATTLE IN MICHIGAN.

The subject of raising beef cattle in Michigan has not been mentioned in print very often during the last decade. There have been other matters that have been talked of more, for the reason that there has been more profit in other kinds of live stock. For several years sheep were selling at high prices, which attracted a good deal of attention, while interest in the dairy business has been increasing steadily, and seems to rest on a firm foundation. Only two years ago hogs were selling at abnormally high prices, and good corn crops made it possible to



"Beef Makers" in Stump Land Pasture on the Chandler Farm, Presque Isle Co.

make large profits on raising and selling pork hogs. Now sheep are selling extremely low, hogs at moderate prices, while first-class beef cattle bring high prices. So the prices for different kinds of stock go up and down, in a see-saw manner, while one is up, another is down—one making the farmers money, another is produced and sold at a loss. It is not always fair sailing for the cattle, sheep or hog raisers.

But the outlook for good profits on raising good beef cattle seems to be far better than at any time since the years of the War of the Rebellion. There have been conditions which caused periods of depression in the beef cattle business, that have been very pronounced, especially in the old settled portions of the country. It does not now look as though conditions would again arise that will make beef cattle raising unprofitable.

Back in the sixties and seventies, the demand for good beef cattle was steady at paying prices. The lordly Shorthorn was the ideal of a good animal, and with their grades constituted the farmers' cows, and were the animals from which the butter was made to sell in the market, and from which the calves were raised that made up the beef cattle supply of the country. The quality of the beef cattle depended largely on the amount of Shorthorn blood that coursed in their veins, ranging from the half-blood to the several crosses that were occasionally met with, while the pure-bred animals in the form of choice steers and barren heifers, represented the highest class of carcasses that graced the butcher's stalls during the holiday season.

Many of the older men remember the parades of highly fattened animals that were driven through the streets of Detroit, led by a brass band that made up a part of the display at the Marine Market, at the foot of First street, owned and run by the late William Smith. Those Christmas shows seemed to be the pride of Mr. Smith's life, and at the same time they served as an example of what could be produced by skillful selections and persistent feeding. The bullocks that exceeded three thousand pounds in weight, and produced a high percentage of dressed meat to the live weight, were among the many specimens that hung up to meet the astonished as well as the admiring gaze of large crowds of people who were onlookers and purchasers of some of the extra fine cuts of meat that were handed out during those annual dispersion sales of the best the country afforded. The prices paid for Christmas stock were always liberal, and it was considered an honor to produce something good enough for the Smith Christmas show.

The golden era came during the seventies while the western ranches were being stocked with cattle. Prices reached such heights that they were bewildering to the average onlooker. The climax was reached when at the New York Mills sale, near Utica, N. Y., in September, 1873, the eighth Duchess of Geneva sold for \$40,600. All Shorthorns in the country carrying a good percentage of the "blue blood" of the Bates, Dukes and Duchesses appreciated in value, Michigan breeders secured a portion of the glory and some of

the money, for the firm of Avery & Murphy, of Port Huron, sold a large consignment of highly bred cattle at Dexter Park, Chicago, on May 21, 1874. Seventy-five head sold for an average of \$670 per head. The 23rd Duke of Airdrie sold for \$9,600. It was at this period that the Bates, Dukes and Duchesses were quoted in Bailey's Shorthorn Reporter, nominally at \$10,000 each.

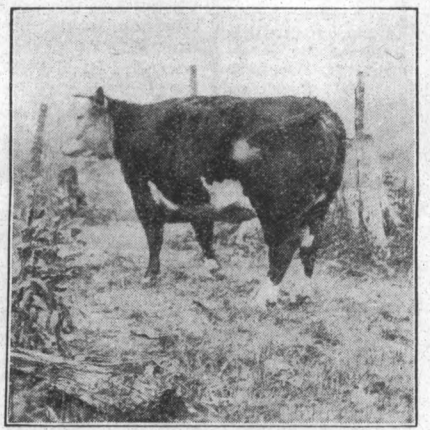
The western ranches secured all they needed of the Shorthorns, and prices began to decline in the early eighties. The farmers and breeders in Michigan had caught the fever and a large number of pure-bred herds were established. In one county, (Oakland), there were over 20 good herds of pure-bred Shorthorns, and other counties followed along with large numbers.

When the stock from the western



Stump Land Pasture is no Bar to Flesh.

ranches began to come east in large numbers, prices for beef cattle declined and the demand for pure-bred Shorthorns ceased almost altogether. Other beef breeds have come in and demanded a share of attention. Herefords, Galloways and Polled Angus, though not kept in large numbers, have been highly appreciated on account of their rapid growth and ripening into acceptable marketable



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animals at an early age. The dual purpose Red Polls have also won a high place in the estimation of farmers.

The dark clouds of depression that have hung over the beef raisers of the state for a quarter of a century have lifted, and the light of new hopes and bright prospects has dawned upon us. Prices for good beef cattle have again reached a high plane, with no visible signs of a decline in the near future.



A String of Hereford Heifers (1910 Calves) on the Chandler Farm, Presque Isle Co.

The supply of cattle in the country, besides the dairy cattle, is fully ten million below the normal requirements of the markets for ordinary consumption. This fact, in view of a rapidly increasing population, makes one wonder how the great demands of the people are to be met.

The great ranches of the west have been cut up into farms, and the farmers' competitors in the markets in the future will not be the men who raise their cattle on public lands, but will be found on farms and in stock raised under similar conditions. The increase in numbers will not be as rapid as in the past, and if the supply catches up with the demand the decline will not be as marked or sudden

as has been the case in former years.

On a great number of farms in Michigan, where dairying is not made a specialty, beef cattle can be raised to advantage. Beef raising works in well with mixed husbandry. There is generally an abundance of grass in the outlying fields to be used as pasture feed in summer, and liberal quantities of roughage for winter which can be consumed and converted into a choice quality of beef that will suit the taste of the exacting epicure, and the needs of those who perform the most vigorous muscular labor. Beef meats give strength, courage and endurance to the industrious sons of toil. Let us appreciate it at its full value.

It has been my privilege to traverse much of the country known as the new, stumpy, burnt over, and so-called waste lands in several of the northern counties of our state. It is interesting to see how quickly the grasses and clovers of different kinds spring up as soon as the surface of the earth, by any process, has been made bare. It seems as though nature, sensitive about her nude spots, hastens to cover them with her emerald robes of grasses until she can be again mantled with forest trees. There are great opportunities for the introduction of the quick growing and early maturing beef breeds, and to reap rich profits from the venture. Some have already mastered the problem and are ready to show what they have accomplished as an example to prove what others may do.

Wayne Co. N. A. CLAPP.

A GOOD TIME TO FEED CATTLE.

Farmers who have plenty of corn, hay and roughness cannot do better than feed live stock this winter. With hogs following cattle these times, and the bright prospects for sheep and lambs properly fattened, to say nothing of the fertilizer for the farm to be derived from manure, there was never a time when feeding prospects on the whole were any better. It is an everywhere admitted fact that there is a great shortage of beef cattle in all parts of the United States, east and west, especially throughout the east, where reliable accounts say that barely half the usual number will be fattened. The western range season is closing, and in a short time stock feeders will have the field entirely to themselves, when good advances in prices will be in order. Hence, owners of thrifty young cattle that are doing well should hang on to them until they are good and fat, instead of sacrificing them at the present time merely to save feed. Farmers have argued that corn was too dear to feed to stock, but this is a mistaken view, and furthermore, prices for corn are weakening as the weather gets colder and more favorable for drying the new crop of corn, sample lots having dropped from four to five cents a bushel in the Chicago market in several days. But even at the highest prices for corn that have been paid this fall, it would still pay well to produce prime beef for the market. Choice beefs are extraordinarily high and bid fair to reach record figures the coming winter and spring months. Farmers who can feed cattle from two to three months will find steers that are well-bred



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WINTER CARE OF THE FLOCK.

The autumn and winter months, or immediately after the usual lamb weaning time for the average farm flock in this latitude, may be considered a period of rest and recuperation.

In spring and summer when the ewes are giving birth to, and suckling their lambs, they are necessarily subjected to a considerable physical strain. Heavy demands have been made upon their strength and vitality, and they reach late summer in a somewhat weak and exhausted physical condition. This is true, however, to a greater or less degree, according to the condition in which the sheep reached lambing time, and the care and feed given them during this period. The better they were prepared for it, the better they were able to discharge the function of maternity and the better and stronger the offspring will be.

The success of the flock owner depends to a very considerable extent upon the skill he may possess in feeding his flock, and his thoughtfulness in caring for them through the late autumn and winter months.

By the time winter sets in the flock should have gained much in flesh and appearance and be greatly invigorated and strengthened. Thin fleeces should have made a good growth and be in a condition to provide ample protection from the winter's cold, provided they have sufficient shelter to keep them dry. Contrary to the belief of some, sheep do not require expensive and warm quarters for protection from winter weather. It is, however, very important that they have a clean and dry place. Too much care can hardly be exercised in this regard.

Few flock owners perhaps, realize the loss entailed from allowing their flocks to go unprotected from the cold rains and wet snows of late autumn and early winter. It seems to be the aim of some flock owners to keep their flocks at pasture as long as possible, till they are actually driven to the barns by severe winter storms. The wisdom of such practice is doubtful. If feed is saved thereby it is likely done at the expense of the health and strength of the sheep. A fleece once wet is not easily or quickly dried out and it must be dried very largely from the animal heat of the body which it covers. Colds and distemper are often contracted and must draw more or less heavily upon the animals' vitality, to say nothing of the more serious complications that may result.

Sheep do not seem to mind the severest cold if they have shelter from the winds and rain, in fact, a steady cold temperature seems to promote their taking on flesh and also the growing of a good fleece of wool.

Regularity in feeding and watering, and a clean and wholesome ration are two prominent factors in the economical wintering of the flock. If the feeding be done at the same time each day, the sheep quickly accustom themselves to almost any sort of a time schedule, and will not expect or worry for feed at any other times. Cleanliness and wholesomeness are absolutely essential for the best results. Sheep are not delicate feeders when these two points are carefully observed in preparing their feed. Roughage of almost any kind, if it is bright and well cured, will be used to good advantage by them. They delight in a variety of feeds and if they may be given a little of several kinds of roughage it will go far toward keeping their appetites keen and satisfied.

Some form of succulence in the ration is very desirable. For this purpose roots are unexcelled. Corn silage is good and somewhat cheaper from the cost of production standpoint. A succulent feed aids greatly in the matter of digestion at all times, and at suckling time it insures an abundant flow of milk for the young lambs.

But little grain should be needed, and corn should form no considerable part of it. Oats with a little bran added are much more satisfactory, and if neither roots or silage are fed a little of linseed oil meal will be found very beneficial. Just before lambing time the grain may be fed a little more liberally.

The supply of fresh water needs careful attention at all times. It is most conveniently furnished, perhaps, in tubs or small tanks which are easy to keep clean. Sheep naturally drink but a little at a time, but drink often and they are very discriminating in the matter of clean, odorless water.

Of course, fresh air, and a reasonable amount of exercise are necessary to the strength and vigor that should character-

ize well-fed and well-cared-for bodies. Gratifying results are sure to reward thoughtful and painstaking effort in properly caring for the farm flock through the winter months.

Ingham Co. H. M. YOUNG.

A RATION FOR FATTENING LAMBS.

Have just read Mr. Lillie's article on "Feeds and Feeding" in the Michigan Farmer, which was of much interest to me, being a young farmer in the third year for myself, although I was a "hired man" for 14 years. I have worked by the day, month and year in five different states, from the Empire state to the Evergreen state (Washington), and realize that "knowledge is power, on the farm as elsewhere. I make live stock a specialty, growing and feeding hogs, raising and fattening lambs. I have 66 head of lambs on dry feed now. They cost me four cents per pound at my local yard. My method is to clip in October. Then I get rid of the ticks and the lambs will feed much better. As a grain ration I am feeding equal parts of corn, cull beans and oats, with timothy hay, bright oat straw and corn fodder as roughage. Will have bean pods to add to roughage ration soon. Is this a good ration and could I better it? If so, how? I have a feeder's chart which I cut from the Michigan Farmer several years ago, but have no data regarding the three important nutrients in beans, bean fodder, barley or barley straw.

Gratiot Co. F. H. B.

While this ration for fattening lambs is a fairly good one I think it can be beaten. If the roughage part of the ration only contained clover hay I would say then that it would be hard to beat. The roughage part of the ration is deficient in protein. Of course, in the grain ration we have cull beans, which are quite rich in protein, but it would cheapen the ration very materially so far as the protein content is concerned to have it in clover hay and raise it on our own farms rather than to purchase it in grain, and my advice would be to stop growing timothy and grow clover or alfalfa for fattening lambs. Anybody in Michigan can make a success of growing clover and they should plan on growing it instead of timothy. Of course, it is perfectly proper to feed the oat straw and corn stover to fattening lambs or any other kind of live stock which you have because these are by-products of the farm and should be utilized, because we want to get all out of them that we can. We can get more out of them if we have clover hay to feed in connection with them than we can if we do not. If it is impossible to get clover hay in the ration then I would say add oil meal to the grain ration. It may make the grain ration a little more expensive but I believe that F. H. B. would get enough better results so that he would be justified in giving a small allowance of oil meal.

The analysis of beans will vary but a trifle from that of field peas which contain 19.7 per cent of protein, 49.3 per cent of carbohydrates, and .4 per cent of fat. Bean straw contains 3.6 per cent of protein, 39.7 per cent of carbohydrates. Barley contains 8.4 per cent of protein, 65.3 per cent of carbohydrates and 1.6 per cent of fat. Now, barley straw contains .9 per cent of protein, 40.1 per cent of carbohydrates, and .6 per cent of fat. The percentages given here are for the digestible ingredients and not for the total per cent. Bean pods or bean straw would be a good addition to the roughage for these fattening lambs and would in a large measure, fill the place of clover hay, and it would also give more variety to the roughage.

COLON C. LILLIE.

HORSES IMPORTED FOR BREEDING PURPOSES.

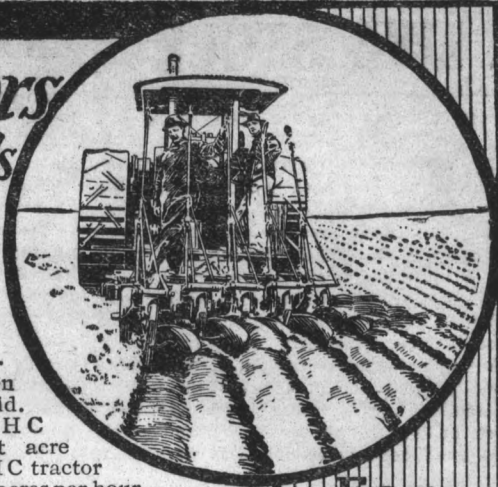
It is the intention of the Department of Agriculture to publish every quarter a list of horses imported for breeding purposes for which certificates of pure breeding have been issued under the provisions of orders of the Bureau of Animal Industry. Such a list for the quarter ending June 30, shows that during the period 461 horses were imported for breeding purposes and certificates issued. Of this number, 108 were Belgian Draft; 26 Clydesdale; seven Hackney; 230 Percheron; 12 Shetland Pony; 61 Shires; nine Suffolk and eight Welsh Pony. The circular gives the name of the animal, registry number, name of importer, port of entry, date of arrival and number of horse issued by the Department.

Washington, D. C. G. E. M.

Reports from Montana are that rains have made feed prospects much better, and thousands of young sheep will be carried through the winter that would have been marketed this fall under ordinary conditions.

IHC Tractors Gain New Laurels at Winnipeg

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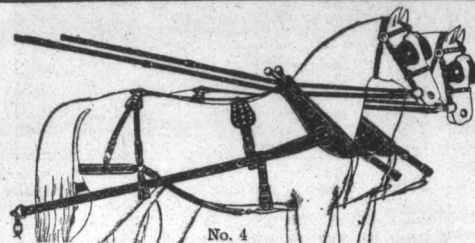
These victories, backed by those of years gone by, at Winnipeg and in Europe, stamp IHC tractors as the world's best. For plowing, disking, seeding, harvesting, for heavy hauling of all kinds; for running the thresher, saw, silage cutter and filler—in fact, for all drawbar and belt power work, IHC tractors have proved their many advantages in economy, strength, simplicity, and durability. Measure the cost of a tractor by length of service and kind of service and you will select an IHC. Look into the efficiency and superiority of the complete IHC line, which includes Tractors in 12, 15, 20, 25, and 45-H.P., operated by gasoline or kerosene; and horizontal and vertical engines, stationary or mounted on skids or trucks, air or water cooled, 1 to 50-H.P. See the IHC local dealer, or, write direct for catalogues and full information.

IHC Service Bureau

The Bureau is a clearing house for agricultural data. It aims to learn the best ways of doing things on the farm, and then distribute the information. Your individual experience may help others. Send your problems to the IHC Service Bureau.

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LIVE STOCK NOTES.

Again reports are received regarding the poisoning of cattle on sorghum. It is the yearly story of a bunch of cattle turned into a field of second-growth sorghum.

Receipts of western range cattle at Chicago for the season so far amount to 171,000 head, compared with 251,000 for the same period last year.

The marketing of pigs in recent weeks has drawn heavily on the future, and fewer hogs will be available for marketing next March, April and May. It is now hoped that cold weather will check the enormous marketing of the pigs.

Country shippers have overstocked the Chicago market with cattle of late on the slightest encouragement afforded by advances in prices, hundreds of stockmen throughout feeding districts being anxious to avoid winter feeding.

Reports are reaching Chicago from various parts of Illinois, as well as from several other western states, that hogs have been mostly marketed. Large numbers of hogs, mostly pigs, have been shipped to market on account of hog cholera.

The published figures showing the great increase in the receipts of hogs at western markets this year convey a wrong impression to those who forget that the receipts last year were abnormally small in numbers. If comparison is made with a normal year, 1909 for instance, it is seen that the increased receipts are quite trifling in numbers.

J. M. Thompson, of Illinois, says Illinois farmers never before met with such heavy losses of hogs and pigs from sickness as this year. He lost 67 fine brood sows and as many shoats. This epidemic resulted in heavy shipments of hogs to market, a panic prevailing, and although farmers have good crops of corn, the loss of their hogs will cause large marketing of corn and much reduced cattle feeding through the winter.

Eastern sections of the country have put comparatively few cattle on feed, and that region may be expected to continue a good customer in the Chicago cattle market this winter. A good many cattle have gone to feeding districts in Illinois, Iowa and Missouri, according to late accounts, and it is safe to say they will all be needed to supply the requirements of the beef trade.

More farmers are going into dairying, attracted by the advancing prices for milk, cream, butter and cheese. Butter and eggs are going to sell extremely high this winter without much doubt. When November opened Chicago cold storage warehouses held only 40,238,000 pounds of butter, comparing with holdings of a year ago of 60,820,000 pounds, stocks having decreased during October 7,789,000 pounds in place of the usual large increase. The cold storage warehouses of Chicago on November 1 held 1,940,000 cases of eggs, or 580,000 cases less than a month earlier. High-grade dairy cows are the ones chiefly in demand, and nowhere near enough are offered to go around.

Prominent Montana sheepmen say they got notice from bankers of that state early in the season that loans would be cut down or renewal refused, which rendered shipments to market imperative, but nearly everybody held on as long as possible. This policy explains the heavy shipments late in the season, bringing about the slump in prices. It is estimated that 75 per cent of the sheep shipped from Montana this season represented forced marketing, and the same liquidating process has taken place very largely throughout the entire sheep growing regions of the northwest. Recently some of the best fixed sheepmen have begun to change this policy to a considerable extent, especially those who are well supplied with hay. It is said, however, that in the entire length of the Yellowstone Valley, with facilities and feed for handling half a million head, not more than 50,000 will be carried over the winter.

Some good 132-lb. fed western wethers were sold at the Chicago stock yards not long since at \$3.55 per 100 lbs., the same price per 100 lbs. as they cost the Illinois man who bought them on the Chicago market two months earlier. Their heavy weight was an objection to buyers and the price paid not one calculated to induce the owner to ship in others of his feeding at the same time, although he declared that he could resell the stock there even at its costing price per 100 lbs. and still be ahead in the deal. Being carried in a corn field for a period of two months and gaining an average of 20 lbs. per head in weight, the good gains made were put on with little cost, and the sheep left valuable fertilizer on the farm.

The Chicago Butter and Egg Board, which is under investigation by the federal government department of justice, after announcing an advance of a cent a pound in prime creamery butter on a recent day, retracted on a later day in the week, following a lively row at the meeting. The older commission merchants expressed the belief that the committee had forced the wholesale price up beyond the proper maximum profit, and it was thought that the high priced butter had gone to already was likely to cause many families to substitute butterine. Similar action was taken regarding eggs, and the board lowered the price after raising it to 26 and 28 cents a dozen, down to 25 and 27 cents. United District Attorney James H. Wilkerson said that the price committee of the board would be given an opportunity to explain its action in advancing prices for butter and eggs, and this probably explains its subsequent reductions in values. Retail prices have climbed in Chicago as high as 42c a dozen for eggs recently, and prime butter has retailed as high as 40c. The storage stocks of both articles are materially reduced, and it is evident that very high prices are going to rule this winter, less butter having been produced during the fall than usual.

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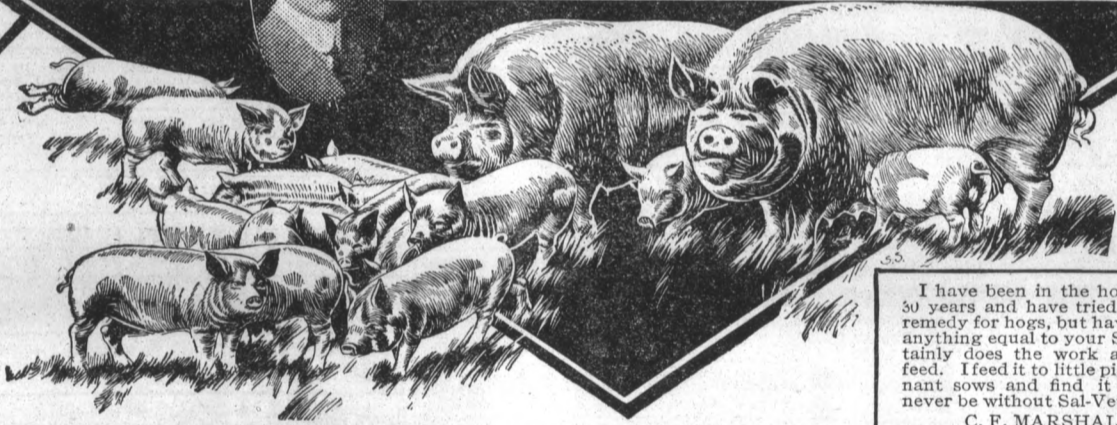
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VETERINARY

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Weak Heart.—I have a mare that raised a colt last summer; when worked she perspires freely...

Mange.—Warts on Teat.—I have a 3-year-old colt that is troubled with some sort of a skin disease.

Melanotic Tumors.—Is there any cure for the "grey horse" tumors? This animal is well along in years...

Bleeding Wart—Sore Heel.—I have a colt 12 months old that has a bunch on shin that bleeds freely...

Diabetic—Tuberculosis.—I have a mare 16 years old that raised a nice colt last summer...

Stifle Lameness.—I have a mare that has been lame for some time; she hurt her stifle some time ago...

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Jersey Bull Calf Dropped Dec. 5, 1910. Sire, Marston's Interested Prince Has three daughters in Register of Merit with yearly records.

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LILLIE FARMSTEAD JERSEYS. Cows all in yearly test. Four Bulls old enough for service.

Holstein Bulls from 2 to 12 months, grand sons of Hengerveld De Kol, King Segia, King Veeman De Kol, and King of the Hengervelds.

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DUROC JERSEYS—Nothing for sale at present. CAREY U. EDMONDS, Hastings, Mich.

DUROC-JERSEY BOARS of the large, heavy boned type and good in quality, also gilts and fall pigs for sale.

30 High Class Boars ready for service. Special prices for 30 days.

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Three Extra Good Fall P. C. Boars By Next In Line. 32 spring male pigs ready to ship.

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PURE BRED YORKSHIRES, all ages, both sexes. Cut prices for 30 days on boars old enough for service.

Lillie Farmstead Yorkshires. Boars old enough for service. A few bred Sows, Fall Pigs, pairs and trios not akin.

Large Improved Yorkshires—5 boars for sale. Farrowed July 11. Price reasonable.

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.

POULTRY

INFERTILE EGGS KEEP BEST.

A large part of the heavy loss from bad eggs can be obviated by the production of infertile eggs. This has been demonstrated beyond a doubt by the investigations concerning the improvement of the farm egg which, during the past two years, have been conducted in the middle west by the Bureau of Animal Industry of the Department of Agriculture. Secretary Wilson estimates that, between the producer and the consumer, there is an annual loss of \$45,000,000 in the egg crop of the United States, the greater portion of which falls on the farmer, who is by far the largest producer. Of this enormous loss, about one-third, or \$15,000,000, is caused by heat which develops the embryo of the fertile egg, causing what is known to the trade as a "blood ring." As it is impossible to produce a "blood ring" in an infertile egg, such an egg will stand a higher degree of temperature without serious deterioration than will a fertile egg.

The natural conclusion is that if farmers and others engaged in the production of eggs would market their males, or take them away from the layers, as soon as the breeding season is over, a large saving would be made, as practically every infertile egg would grade a first or second if clean and promptly marketed. No more simple or efficient method for the improvement of the egg supply of the country could be adopted than that of reducing the proportion of fertile eggs placed upon the market.

WHITE CHINA GEESE.

Classed among the smaller breeds of geese, the White China averages from 5 to 7 lbs. lighter than the Toulouse, Embden and African which are more commonly found upon the farms of this country. The standard weights for the China breed are 14 lbs. for the fully developed gander and 12 lbs. for the goose.

Following the general law which seems to hold good among all kinds of poultry, however, they possess other qualities which offset this deficiency, if such it may be termed. They are credited with being the most prolific breed of the entire goose family, averaging 50 to 60 or more eggs per year. In quality of flesh they are by no means inferior to any other breed, while they are just as easily managed and fatten just as readily.

As will be noted from the accompanying illustration, these geese make a very good appearance, being exceedingly graceful fowls. The head is large, with a large knob at the base of a medium-length bill. The neck is very long and gracefully arched. The back is medium in length and the breast round and full. The round, plump body is supported by short, stout thighs and shanks of medium length. The wings are large and strong. The breed is reputed to be quite hardy and above the average in its tendency to mature early. Two distinct varieties are recognized—the brown and the white. The fine appearance of the latter, whose plumage is pure white throughout, has made it the greater favorite among producers of these fowls.

PLANNING FOR A MORE PROFITABLE FLOCK.

A farm with chickens is a common sight in winter; a farm with plenty of eggs in winter is not very common. Why? Farmers want eggs the year round and when the price begins to soar they worry and complain that their hens do not furnish the eggs.

The trouble is that too many forget to plan in advance. Now is the time to plan for the winter of 1912-13, and this winter is the time to commence working according to that plan.

What is to be done? First take an inventory—mentally at least—of the present condition of the flock. Upon a great

many farms it may be stated something like this:

1. A mixed lot of pure bloods and hybrids.
2. Most of the pullets hatched between June 15 and August 15, while the older hens moulted very late. Males always run with flock.
3. A roost room beside the barn on the west. A half window for light and all made as warm and tight as boards and paper can make it.
4. Flock has the run of the barns, stock yard, sheds and the surrounding grounds.
5. A liberal feed of corn with plenty of "pickins," added to constant "stealings" from the hogs and other stock.
6. Hens constantly being frightened in one way or another and roughly handled when caught. They get plenty of water at the stock trough.

Now to the formulation of plans for the improvement of these conditions. For No. 1, select a good breed and stick to it. Your conditions must govern that selection. Leghorns are good farm fowls if eggs are wanted and if they can be kept warm and comfortable. They are not a very cold weather fowl. Color is not of much note, as the difference lies in the breeding. "Any fowl is what you make it," says a good authority. If your thermometer shows that you are in a cold section, choose one of the American breeds. Don't forget that you want a breed that matures early, as the first six months of the fowl's life must be measured in dollars and cents. Winter eggs from any American breed will cost you more money than those from the Leghorn; but the American more than makes it up when the surplus fowls are sent to market.

For No. 2 in the invoice, cut out the males until toward spring, and cut them out again about August 1. Many good poultrymen cut them out July 1. Never inbreed. Select your winter pullet stock from a late April or early May hatch and aid the older stock at moulting time by giving proper care, food and drink.

No. 3 is no small factor in producing the winter egg with its high price. Warm roosting places, with conveniences for



Trio of White China Geese upon a Gratiot Co. Farm.

cleaning, giving ventilation without draft, and light. A scratching room of good size, well lighted, ventilated and floored is needed. Supply grit and ash boxes.

No. 4 is a common dirty practice resulting in much uncleanness of stock and machinery, and of but little if any benefit to the hens. Hens can "mope" just as well that way as another. Fair weather might help if the hens could cover the yards and manure pile, but I would keep mine up. The object should be to comfortably shelter the hens night and day.

No. 5 is where most feeders fail. We are liberal but not scientific. After studying the farm press, bulletins and poultry journals we feed a good balanced ration but forget to force the hen to take exercise.

A good breed, warm quarters night and day, plenty of air and light, a balanced ration, feeding at regular intervals, with plenty of exercise, will force hens to lay provided they are not disturbed or frightened as noticed in No. 6. Kindness, sympathy and slow movements with the hands not only pay with hens but with other stock. The voice is a great factor in the care of any stock. Never forget it. A laying hen when frightened will generally lay the next egg and then stop, sometimes never commencing again until warm weather comes. AGRICULTURIST.

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BUFF & White Orpingtons, Buff & White Leghorns Barred & White Rocks, & R. C. Rhode Island Reds (Chicks, Selects \$3, Mediums \$2, Utility \$1.50 each Satisfaction guaranteed. **H. H. KING, Willis Mich.**

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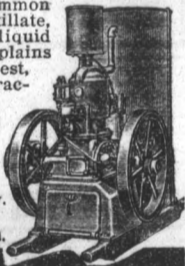
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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

WHAT IS THE MATTER WITH THE COWS?

What is the trouble with my cows? I have been feeding them ensilage or alfalfa all the year round for the last ten years, together with hay or straw at noon during the winter. As a grain ration, I have fed corn, ground cob and all, cottonseed meal, linseed meal, bran and about every kind of grain on the market. In other words, I have pushed these cows to the utmost. I have but few of my original herd left. We have made good money in the past but are not making any now and did not make any last summer and little during the past winter. The cows have been in winter quarters about two weeks and we are getting about every kind of grain on the market. It has been suggested that possibly the ensilage is working this trouble. What is the matter with these cows?

Monroe Co. J. W. K.
No matter who it is nor what kind of cows one starts with, in ten years' time there will be but few of the original herd of cows left; this is everybody's experience. Select the best herd of cows that you can find anywhere, start in with them all perfect and in splendid condition and doing splendid business and one by one they drop out of the game and new ones are selected to take their place, so it is not to be wondered at that in ten years' time after pushing cows to the limit, as J. W. K. says he has done, that he has but few of the original herd of cows left.

I do not know what is troubling J. W. K.'s cows. The information he gives is too brief to form an intelligent idea of what is the matter, if anything really is the matter. Are they nearly all fresh or are they nearly all strippers? If they have been giving milk all summer long it would be expecting too much to think that they would keep up their milk flow when put into winter quarters and fed winter rations. If the cows came fresh this fall and did not respond to feed, that is another question, and it may be caused by one of several conditions. I am sure that one reason why cows do not do so well this fall in this section is on account of the extremely wet and cloudy weather. We lack sunshine. It is dark and gloomy and neither animals, men, nor plants can prosper as they should. Cows didn't do first-rate last summer because it was extremely hot. In one of those severe hot spells during the summer our cows shrunk wonderfully on their milk and we couldn't get them back. They suffered from the heat and while they were fed liberally, at that time having a very good pasture and were fed grain and corn silage in the barn, yet we could not keep them up on their milk and it was almost entirely due, in my opinion, to the extremely hot weather.

It is not true that ensilage will eventually ruin a cow. It seems strange that one would have to answer this question in this day and age of the world. How J. W. K. could ever ask that question after he has fed cows for ten years on corn silage, is more than I can understand. He knows himself that ensilage will not injure cows permanently. It is a splendid food. It's the corn plant. There is no better plant on earth for cows or any other kind of stock and putting it into the silo after it becomes mature, an air-tight receptacle where but slight fermentation takes place, does not injure it as food. If anything it is made better and we have at Lillie Farmstead animals that have eaten corn silage all their lifetime and the generation before them, and the generation before that also had corn silage. As a matter of fact, for the last 19 years we have fed corn silage to our cattle with no injurious effects. On the other hand, it has been a benefit to them. They have always done better and it is the cheapest ration that we can possibly get.

I am aware that a man can feed such a heavy grain ration that cows will not endure as long as they would if fed a less liberal grain ration. There ought to be a certain proportion existing between the bulky part of the food and the concentrated part, and if you give cows an abnormally large grain ration they can't stand this feed as long and be as healthy as they could if it was properly proportioned with the roughage. Now, with good roughage like corn silage and clover hay and good corn stover, we feed what the cattle will eat up clean and then feed enough grain to balance up the roughage part of the ration and give the cow about 2 1/4 to 2 1/2 lbs. of protein a day when she is giving a good flow of milk.

If a cow is fed a balanced ration there is little danger of overfeeding but if we feed an unbalanced ration there is danger. If we feed a cow too much protein for any considerable length of time she may be injured thereby. If she does not get a feed properly proportioned between the concentrates and the roughage she may be injured. I think the best rule is to feed what roughage they will eat up clean and then give each cow as many pounds of grain per day as she produces pounds of butter-fat in a week.

BUILDING UP A PURE-BRED HERD.

It would be a great step in dairying if every owner whose herd is composed of a nameless riff-raff of mongrel blooded animals would set aside a bunch of his choicest appearing heifers as a basis for building up a herd of real value. The uniformity of the cow stock in the herd may be taken as a criterion of just what that owner is doing toward increasing his profits and bettering the stock of the country.

In selecting a start for a herd it is important that animals of the same age be taken and that they be of the same breed and type as nearly as possible. A close resemblance in the individual characteristics and similarity are of importance for with these we have a good basis for building a herd that will be recognized as of breeding merit. The greatest drawback to the cattle breeding interests of this country is found on the farms of the rich agricultural districts where the herds show little or no similarity or purpose of breeding. They are of all colors and all types plainly indicating that there is no attention paid to breeding. Evidently the owner is giving some attention to dairying, but has no fixed ideas about the business and is breeding a beef-dairy animal that is of no great value for either purpose. No dairyman can make a success by following such a plan.

There is but one successful course open to the breeder who desires a good herd and that is to take up the work of breed distinction as carried on by the successful breeders. Select a breed possessing the qualities and properties you most fancy or desire and aim to keep the breed pure and growing better. The selection of a good bunch of heifers is an investment that cannot fail to be a money-making venture even though the investor be inexperienced. It is not always possible to secure full blooded animals for the sum set aside for investment, but the highest grade possible should always be secured. Nowadays high-grade heifers can usually be secured at a price but little above that of beef cattle. There is really no excuse for any dairyman keeping low-grade animals when the country has so many breeders of blooded stock offering their surplus at moderate prices.

It is but necessary for the cattle raisers to observe the distinction now made in the markets between the high-grade feeding steers and those of low grade, to see where the advantage is and how to improve by this knowledge. It is the best high-grade or pure-bred animals that are bringing the paying prices. Good cattle are always in demand and the way to produce this class is by getting a bunch of nice evenly graded heifers and growing them into cows of size and quality. The selection of the proper sire will then give you the advantage desired. Can any dairyman, cattle raiser or farmer afford to keep the old scrub cow of nameless breed and perpetuate her kind by breeding from her heifer calves, when the high grade may be so easily had?

Ohio. SUBSCRIBER.

AMERICAN DAIRY INDUSTRY.

Our last census shows the total number of dairy cattle in the country to be 20,580,845. Of this number, 4,825,912 are reported in the eastern north central division of states, which includes Ohio, Indiana, Illinois, Michigan and Wisconsin, and 5,324,374 in the western north central division, which includes Minnesota, Iowa, Missouri, North and South Dakotas, Nebraska and Kansas. These two divisions support nearly one-half of the dairy cows of the United States. Four states of the two divisions own over a million cows each, they being Illinois, Wisconsin, Minnesota and Iowa. Ohio has over 900,000, Missouri over 800,000 and Michigan 767,088. Two other states outside of these two divisions have over a million cattle; they are New York state with 1,508,672 and Texas with 1,011,204. It is seen, therefore, that the dairy industry is best developed in the northern states, including those immediately west of the Mississippi river.

Fairbanks-Morse Eclipse Pumper

This shows the Eclipse Pumper attached to ordinary windmill pump. (The pump is not included with the engine.)



A high grade Pumping Engine at the **\$50.00** Low Price of **Plus the freight from factory, Beloit, Wis. Buy One Now**

It is a Four Cycle Water Cooled Gasoline Engine and Pump Jack ready to attach to any pump. A reliable engine, so simple a child can start it. Will pump 200 to 2000 gallons per hour depending on size and type of pump and lift. Engine has two belt pulleys at different speeds for driving cream separator, churn, grind stone, etc.

Catalog shows how to attach to other pumps and farm machines.

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Hay \$24 per ton. Dried Beet Pulp \$24 per ton or less

Feed one pound Beet Pulp in place of two pounds of hay. That is cut down the hay two pounds and increase the pulp one pound.

Save over one cent per day on each animal.

How do I know? Because I tried it one winter when short of hay. It works all right. If anything the cows did better. Don't stay in a rut. Thousands of live dairymen and feeders are using Dried Beet Pulp to their advantage.

Try it. You can't lose but you will undoubtedly profit thereby.

Ask your dealer. If he does not keep it write to **T. F. MARSTON, Sales Agent for the Sugar Co.** Box D. Bay City, Mich.

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PATENTS How to GET Every Dollar Your Invention is Worth. Send 8 cents stamps for new 128 page book of Vital Interest to Inventors. **R. S. & A. B. LACEY, Dept. 89, WASHINGTON, D. C.**

HARD COAL ASHES AND GYPSUM AS STABLE ABSORBENTS.

Please answer in The Farmer whether it is proper to put hard coal ashes into the gutter in the cow stable as an absorbent. Is the gypsum that cement companies use to mix with the cement, good for the same purpose and what could anyone afford to pay for it for use as an absorbent?

Washtenaw Co. SUBSCRIBER.
Hard coal ashes will do some good as an absorbent in the stable. They will do no harm. They are very dry and will absorb some of the liquid manure and will help dry up and keep the stable clean. Gypsum will undoubtedly be better because I think it will absorb more moisture than coal ashes. Gypsum is a sulphate of calcium or lime and you will be adding lime to the soil besides saving some of the liquid manure. It used to be taught that gypsum or land plaster would act as a trap for ammonia in the stable; that is, when soluble nitrate of ammonia came in contact with the sulphate of calcium or the sulphate of lime, or gypsum, there would be a chemical reaction take place and the nitrate of ammonia would become sulphate of ammonia, which is soluble but not volatile. Modern chemists, however, have figured out that the chemical action will not take place when phosphate of calcium is so close that this land plaster is brought in contact with the soluble salt of ammonia.

I used to send my teams to Grand Rapids thirteen miles to the plaster quarry and get gypsum or land plaster for \$4.00 per ton and I furnish the bags. We used it quite liberally in the cow stable. It is a good absorbent, it sweetens up the stables and keeps them clean and it is worth that price I am sure, but after I found out that gypsum didn't act as a trap for ammonia I didn't think so much of it. Now I am paying about \$15 per ton for acid phosphate, super phosphate, to be used in the gutters of the cow stable. When mineral phosphate rock is treated with sulphuric acid to make the phosphoric acid water-soluble, the chemist tells us that there is enough sulphuric acid left so that when this is sprinkled in the gutters of the cow stable that a chemical reaction takes place between the soluble ammonia and the free sulphuric acid of the super phosphate and makes a real trap for the ammonia. I have been using this now for about a year and I am satisfied that this chemical action does take place, because there is no smell of ammonia where this is used. You take it in the horse stables and usually there is a strong smell of ammonia but where a handful or two of super phosphate is sprinkled in the stable under the horses you smell no ammonia. I have been in the horse stables when the smell of ammonia was strong, the man had neglected to sprinkle the super phosphate, and by taking a pail of super phosphate and scattering it all over the stable the smell of ammonia would entirely go away, which proves that it is a trap for ammonia. Now some people would argue that they could not afford to pay \$15 a ton for acid phosphate or super phosphate to put into the stables. I have figured it over and I believe I can afford to do so. I have figured that my land needs phosphoric acid more than it needs any other plant food and when I buy acid phosphate I buy 14 per cent of soluble phosphoric acid. The price of the super phosphate is based on the phosphoric acid; that is, I pay about \$15 for 280 lbs. of phosphoric acid delivered at my station. I get 1,720 lbs. of something else free for the freight. Now this something else is land plaster, sulphate of calcium. When we treat mineral phosphate rock which is phosphate of calcium, with sulphuric acid a chemical change takes place, the lime and the phosphate rock unites with the sulphuric acid, making the sulphate of lime and the phosphoric acid of the rock is set free or made water-soluble. Now if the 280 lbs. of available phosphoric acid is worth the money, and I believe it is, then I am getting 1,720 lbs. of the sulphate of calcium, land plaster, or gypsum, for the freight on it, which is cheaper than it is to send my teams to Grand Rapids and pay \$4 a ton for this land plaster in its original state. Therefore, I am of the opinion that I can better afford to pay \$15 per ton for 14 per cent super phosphate to put into the cow stable than I can afford to pay \$4 or \$5 a ton for the sulphate of calcium or gypsum that is mined from the quarry or plaster beds. There is another idea that is becoming prevalent. Agricultural chemists are trying to figure out why it is that it does so much good when it is applied to land, for growing crops. They can't quite figure out that the phosphoric acid as plant food does all the good that

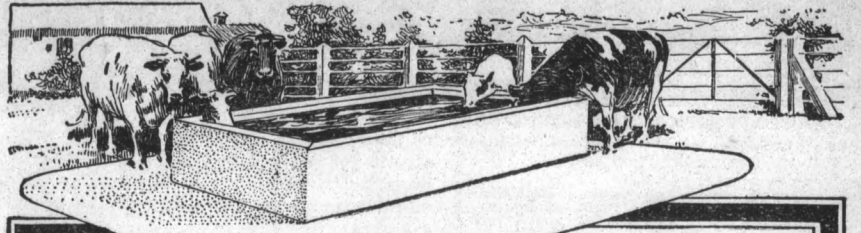
is received. They are coming to the conclusion that the land plaster which is formed when they treat phosphate rock is not tied up so close as the natural rock that is taken from the plaster quarries or beds, and therefore the sulphate of lime from the phosphate rock does more good in the soil and perhaps it can form a different combination with the soluble salt of ammonia and perhaps a part of the sulphate of the sulphuric acid can be utilized by growing crops, at any rate, this is the only reason that can be given why people get such beneficial results when they use acid phosphate alone.

A GRAIN RATION WITH THRESHED CORN FODDER.

What grains do you think best to feed in connection with threshed corn fodder? I am at present feeding bran, cottonseed meal and corn, ground cob and all. How much of each should I feed? What feeding value has pumpkins for milch cows?
Berrien Co. W. C. R.
Corn fodder alone for the roughage part of the ration is insufficient to give best results. Cattle require a greater variety. Cornstalks are all right to feed as a part of the ration but where cattle have to depend upon cornstalks alone for the roughage part of the ration they don't like them after a time. Of course, they have to eat them because there is nothing else and if we have nothing else they can get along with them but it takes a more expensive grain ration to get results, but with the grain ration which W. C. R. is feeding you can get fairly good returns with nothing but cornstalks for roughage. I would suggest that he mix 200 lbs. of corn-and-cob meal, 200 lbs. of wheat bran and 100 lbs. of cottonseed meal together, or mix it in that proportion and then feed a pound of this grain a day for every pound of butter-fat that the cow produces in a week. For instance, if a cow produces 12 lbs. of butter-fat in a week give her 12 lbs. of this grain, six pounds at night and six pounds in the morning. If she produces only six pounds of butter-fat in a week give her six pounds of grain, three at night and three in the morning, and I believe it would pay where you only have these threshed cornstalks for roughage to moisten them before they are fed. Throw down enough on the stable floor at night for the morning feed and then thoroughly sprinkle them with water and in the morning throw down enough to feed during the day and turn the hose on and wet it quite thoroughly. It wouldn't do any harm to throw down enough to last two or three days and wet them. It would begin to heat and warm up and the cattle would eat more of the cornstalks than where they are dry. If care is taken in feeding them they can be fed the same as you would ensilage. Feed the grain at the same time by placing it on the moistened corn fodder. I think that you would get a larger per cent of the cornstalks consumed and that they would give better results if fed in this manner.

ANOTHER GRAIN RATION.

With all the clover hay, corn fodder and alfalfa hay, fed alternately, that a cow will eat up clean, give proportions by weight of each, corn cob meal, bran and cottonseed meal, to make a balanced ration for cow weighing 1,000 lbs. and giving from 16 to 20 quarts of milk per day.
Oceana Co. S. E. M.
With both clover hay and alfalfa in the roughage ration you can reduce the protein in the grain ration materially and I would feed quite heavily of the corn and cob meal. I would suggest that you mix your grain in the proportion of 400 lbs. of corn cob meal, 200 lbs. of wheat bran, and 100 lbs. of cottonseed meal and then feed according to the Danish system of feeding, or the rule propounded by the Wisconsin Experiment Station, which was undoubtedly taken from a Danish feeder: That is, one pound of this grain ration for every pound of butter-fat which the cow produces in a week and feed it in two feeds, morning and evening. I think you would get much more out of your corn fodder if you would cut the corn fodder and feed it as you would corn silage and then put the grain on this corn fodder, when they will eat it nearly all up. But if you have a sufficient amount of this roughage it might not pay to do this, and still hay is dear this year and we ought to save all of it that we possibly can. If one has a warm feeding alley where water will not freeze he can cut the corn fodder and then moisten enough beforehand for each feed and put the grain on this for each cow. The animals will consume nearly all of it and this will save some of the clover or alfalfa hay in providing the bulky part of the ration.



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The Lawrence Publishing Co., Detroit, Mich.

DETROIT, DEC. 2, 1911.

THE U. S. DEPARTMENT OF AGRICULTURE.

Believing that the great majority of our readers do not appreciate the magnitude and importance of the U. S. Department of Agriculture as now conducted, we wish to present some facts to enable the public to form a definite opinion in regard to it. Fifteen years ago this department, from the standpoint of all practical, well-informed agriculturists, was almost a non-entity and of no real value to the great interest that it claimed to represent. Today, in the interest of national productive wealth, it far outranks all other government departments in importance. It has extensive systems of research and exploration in all parts of the world on the lookout for new seeds, plants and shrubs and for conducting experiments as to their adaptability to the agriculture of this country. The Bureau of Chemistry is testing and investigating nutritive values, fertilizing values, and enforcing the pure food and drug laws for the protection of the honest producer and consumer. The Weather Bureau conducts its remarkably systematic and useful vigilance over the climatic changes from day to day and issues the forecasts that all industries as well as agriculture have learned to rely upon and to profit by. The Bureau of Forestry and its great work of conservation is under this department and by exhaustive research and working systems is preserving and promoting immense resources for the country. The Bureau of Publications is another branch of great importance. Through it many millions of free bulletins are sent out at frequent intervals, giving to the public the information and advice that research and experiments have developed. The Bureau of Statistics is one of great value and interest, giving carefully-prepared crop estimates from thousands of points of inquiry, tabulated and interpreted, with annual estimates of total productions. These are only a few of the great divisions of the work.

By way of comparison, the Department of Agriculture fifteen years ago gave employment to a total of 2,444 people; it now employs 12,700 people. Fifteen years ago the total value of agricultural products of this country was four billion two hundred and fifty thousand dollars. For the year 1910 its value had increased over 100 per cent or to eight billion nine hundred and twenty-six thousand dollars. For the year 1896 the Department of Agriculture

expended for all of its work two and one-half million dollars. For the past year the appropriations for this department by congress aggregated over twenty million dollars. In the foregoing we have not undertaken to mention the great number of bureaus and departments of this monstrous branch of the federal government, but enough has been said to give an idea of its great work and value to the greatest productive industry of the country.

Every citizen should be interested in its management and should also utilize it as much as possible. It belongs to the people, is conducted for their benefit and all are entitled to get information and full benefits from it. We know that every communication no matter how trivial, receives prompt attention and response from this department of our government. We can not omit to mention that the Grand Old Man, the Hon. James Wilson, who for fifteen years has been at the head of this great department, and who through his great knowledge of agriculture, enduring industry, sterling honesty and loyalty to the cause, has been largely instrumental in making it what it is. He is entitled to the sincere gratitude and thanks of every patriotic citizen of our great country, regardless of interests or avocation, as he has been instrumental in more than doubling the productive capacity of the nation and has thus contributed to the benefit of every citizen.

CURRENT COMMENT.

The Speech of man worthy of the name, the People. an innate desire to stand well in the estimation of his fellow men. There is perhaps no more wholesome influence than the "speech of the people" among the many influences which regulate the conduct of the average man, particularly the man who represents his fellows in any public capacity. But this influence is not confined to this particular relation between men. All of us have a more or less wholesome regard for what other people may say concerning our daily lives and actions, and are practically in every case the better for the constant operation of this influence.

This influence, however, is one which should be operative or otherwise in influencing our actions, only as they may appeal to us to be right or wrong in character. But unfortunately we are so trammelled by custom, that this fear of the speech of the people may sometimes hamper our progress. This thought is brought out by a letter recently received from a young farmer who asks advice regarding a specific problem in agricultural practice with which he is confronted. He tells how he has gained his agricultural knowledge in the stern school of experience as a hired worker upon farms in different sections of the country for many years. In describing the time of farming which he is following and giving some figures with regard to results which he is getting in live stock production, he closes by stating that he has a bulletin board placed by the road near his buildings, upon which appears the name of his farm, his name, and headings "for sale," and "wanted," under which he may advise the traveling public upon these points. By way of comment he states that his methods, and particularly this bulletin board, cause a great deal of comment on the part of some of the people of his community, for which, however, he does not care.

This is a simple illustration of a wholesome disregard for the speech of the people in matters which concern one's own business and progress only. In this regard the old motto, "Be sure you're right, then go ahead" is one which may be profitably followed by all. None should be deterred from studying and understanding the latest methods in agricultural practice and their scientific application to the problems of the farm, even though they may thus invite the ridicule of others who may class them as "book farmers." However, there has been great progress in recent years in this direction, and there is a more general and wholesome regard for science as applied to agriculture and a more general and wholesome respect for those who take the lead in such application. In fact, any other attitude is rapidly becoming the exception rather than the rule, and the man who demonstrates the success of modern methods, as compared with those followed by his ancestors or contemporaries, is not only doing much through the power of example for the benefit of his fellow farmers, but in a majority of cases will ultimately gain an enviable

reputation in his community as a successful business farmer. Thus he will have a more wholesome regard for the speech of the people whose good opinion is worth while, than would have been the case had he been deterred from progress from fear of what the scoffers might say.

Government Investigation patch is to the effect that the government will conduct an investigation of the marked advance made by the Chicago Butter and Egg Board in the price of butter and eggs in that city the day the November cold wave appeared. It is stated that upon the rumor of the investigation the board promptly marked prices down again the second day thereafter, while a United States district attorney is quoted as saying that the board would have a chance to explain these fluctuations in prices. Rumor is also current that an investigation of the methods of conducting corners in grain are in progress and that the machinery of the Department of Justice of the government will be set in motion to correct evils which may be found in this matter of price making upon agricultural staples.

This is but another evidence of the undoubted fact that the high cost of living is more largely due to the manipulation of the market by distributors than to the price received by the producers for the staple food stuffs which they sell. Publicity along this line is a good thing for producer as well as consumer. There is no doubt that the distributors or middlemen now have too great a control over food supplies which they are able to accommodate to the demand in many lines, and thus adjust prices to their own benefit in many cases. The smaller the margin between the price received by the producer and that paid by the consumer, the better for both as consumption will thereby be stimulated and production will be increased to satisfy the demand through the more liberal prices received under such an adjustment of affairs. Undoubtedly cold storage warehouses, in which butter and eggs may be accumulated, are a steady factor in making the price to the producer and they should not be abolished or restricted to an unreasonable degree by a state or national law as has been proposed in many states and even in congress in recent years. However, a proper control of the distributors, so far as arbitrary price making is concerned, might be to the benefit of the consumer and producer alike.

HAPPENINGS OF THE WEEK.

National.
Two laborers were killed by a cave-in at the Yale mine at Bessemer, Mich. The men were caught by a falling rock. The mine was declared unsafe some time ago, and an investigation will be made into the accident.

Government authorities have learned that a large number of Chinamen have been secreted into this country by being hid away in secret compartments of cafe cars. The smuggling was by way of El Paso, Texas, to Chicago. Four Chinamen were arrested recently at the latter place. It is stated that fully 50 celestials are in cars over the country and if they are not released soon they must die of starvation.

The state of California, through the board of pharmacy, has inaugurated a campaign against opium users and smugglers and on Sunday 57 opium joints in San Francisco were raided, 210 persons placed under arrest, \$600 worth of the drug taken and \$2,000 worth of paraphernalia seized.

Seven persons were bitten by a dog in northwestern Detroit, that has since been declared to have rabies. Some of the victims are showing signs of the dread disease. All will take the Pasteur treatment.

There will be nine governors in a special train starting from St. Paul, Monday, and visiting 21 cities of the middle and eastern states in a 20-day circuit. The train will carry ten state exhibits.

Forest fires are threatening the suburbs of Omaha along the Missouri river. By Sunday night the flames had burned over an area a mile long and a half mile wide. Several homes are reported in danger.

Six persons are believed to have perished in forest fires in the Topanga valley of California. Many homes are destroyed and several hundred persons are now endeavoring to make their way to civilization through difficult passes.

A new school building at Hope, Indiana, costing \$25,000 was ruined by dynamite last week. The board had experienced some trouble in the installation of the heating plant and it is believed that some offended party did the act.

At the meeting of the American Bankers' Association held in New Orleans last week, William Livingston, of Detroit, was elected president for the ensuing year. The next meeting will be held in Detroit.

The Detroit United railway has offered a guarantee of a million dollar bond that the title to the property within the city of Detroit shall be clear and turned over to the city in case the people, by ballot,

decide in favor of municipal ownership. The corporation further agrees to pay \$5,000 per day to the city in case the company delay in any way the transfer of the title to the property.

The Vanderbilt cup race was won by Ralph Mulford, who covered 202 miles at the rate of 74.63 miles per hour, thereby lowering all previous Vanderbilt records. Twenty-three Chinamen were arrested while attempting to land at Monterey, Cal., from a steamer. Two of the ship's officers were also arrested.

The United States circuit court handed down a decision which dissolved the so-called bathtub trust, an action for the dissolution of which was started about a year ago.

Foreign.

Disorders are reported at Lisbon, Portugal, where it is believed that a revolt has begun to overthrow the republic. Much damage was done to property and the inhabitants are greatly excited. Two persons were killed and scores are reported injured. It is generally believed, however, that the government will be able to cope with the situation.

A co-operative movement is started among Americans and Canadians for the establishing of monuments and other structures in commemoration of the hundred years of peace existing between English-speaking people. It has been suggested with a great deal of propriety that Belle Isle in the Detroit river be selected for the location of a monument of peace.

An express package containing \$10,000 of money was stolen from the Canadian office at Regina, Sask.

The protest made against the attitude of Russia in barring Jews from entering that country, has been answered in a message to the American embassy at St. Petersburg in which it points out that America prohibits the entrance of Mongolians and Tartars of which a large part of the Russian population consists, which prohibition places her in a position untenable with the demand that Russia open her doors to the Jews.

The Mexican press expresses fear that the United States will intervene in the struggle which is being made to get the government on its feet. It points out that the action of this government has shown special favors toward Madero and his adherents while the Reyista movement has been frustrated at every turn. American Ambassador Wilson has found himself in an embarrassing situation. He is attempting to set the minds of Mexicans right, however, by declaring that the Washington government is but enforcing neutrality laws.

The Japanese government is conforming to the attitude taken by the powers' representatives at a conference in Peking recently and ordered a detachment of troops to appear at once at Peking and Tientsin with machine guns.

The revolutionary forces in China have begun a siege of Nankin, the old capital of the empire. It would appear that the attacking troops are well organized and that a sufficient force is camped about the city to ultimately take it. The Manchu adherents are much alarmed. Co-operative action between the land forces and the boats on the Yangtze Kiang river has characterized the effort thus far. The rebels have taken Lion Hill and have entrenched heavy artillery there, with which they are driving the Manchus back into the walled city. Pirates are swarming the river above the city and the people are praying for peace. Traffic is suffering and steamers are carrying armed guards.

It appears that the Italians are preparing for a general forward movement in the campaign in Northern Africa. Troops have gone out from the city of Tripoli onto the plateau and encountered a large force of Turks in an all-day battle with the results undecided. At other points oasis have been taken by the Italians. A bombardment of forts in the Aegean sea with the intention of extending the Italian front has already begun. The enemy has been dislodged from Mesri and the Italian forces were ordered to push toward Henni. A strong effort is being made to prevent the junction of the Arabs and the Turks that each army may be dealt with separately.

MICHIGAN FARMERS' INSTITUTES.

Dates of Meetings for December.

County Institutes:—Roscommon Co., Roscommon, Dec. 5-6; Montmorency Co., Atlanta, Dec. 5-6; Crawford Co., Grayling, Dec. 6-7; Otsego Co., Gaylord, Dec. 7-8; Cheboygan Co., Wolverine, Dec. 8-9; Emmet Co., Petoskey, Dec. 11-12; Wexford Co., Manton, Dec. 12-13; Osceola Co., Reed City, Dec. 14-15; Missaukee Co., McBains, Dec. 21-22.
The following one-day institutes will also be held:
Benzie Co., Frankford, Dec. 2; Benzononia, Dec. 4.
Clare Co., Arthur Twp., Dec. 5; Herick, Dec. 6; Lake, Dec. 7; Greenwood, Dec. 8; Sheridan, Dec. 9.
Emmet Co., Island View, Dec. 5; Stutsmanville, Dec. 6; Epsilon, Dec. 7; Brutus, Dec. 8; Ely, Dec. 9.
Isabella Co., Rosebush, Dec. 4; Shepherd, Dec. 5; Winn, Dec. 6; Blanchard, Dec. 7-8; Weldman, Dec. 9.
Lake Co., Chase, Dec. 18; Pinora, Dec. 19; Bristol, Dec. 20.
Missaukee Co., Shippy, Dec. 16; Morey, Dec. 18; Star City, Dec. 19; Lucas, Dec. 20.
Osceola Co., Leroy, Dec. 4; Tustin, Dec. 5; Marion, Dec. 6; Avondale, Dec. 7; Ewart, Dec. 8; Hersey, Dec. 9.
Wexford Co., Buckley, Dec. 5-6; Antioch, Dec. 7; Cadillac, Dec. 8-9.
One-day institutes will also be held during December in Cheboygan, Kalkaska, Mecosta, Mason and Oscoda counties.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

HE TOLD THE STORY of the MISSISSIPPI.

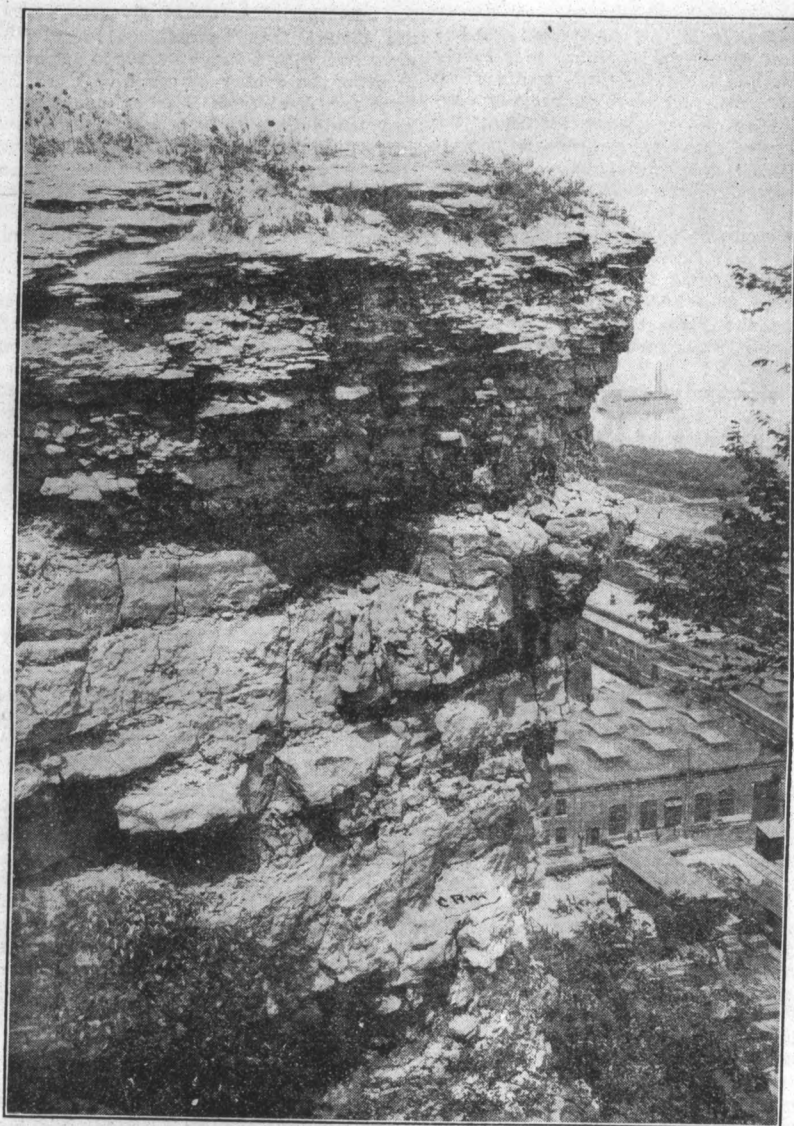
By Edgar White.

THE Forty-Sixth General Assembly of Missouri passed a bill appropriating \$10,000 to erect, in the city of Hannibal, a handsome monument in honor of Mark Twain. This is the result of an industrious campaign that has been waged by the citizens of Hannibal, among them many of the old schoolmates and chums of the dead author. The place selected for the erection of the monument or statute is Lover's Leap. This is a magnificent promontory referred to by Mr. Clemens in some of his books. The Mark Twain Monument Association has acquired this noble eminence, and 25 acres surrounding it, which is being made into a picturesque park, with driveways, terraces and other attractive features. The association will spend, perhaps, more money on the site than the Assembly has appropriated for the monument.

It is to the credit of his old friends in the town of his first inspiration that the work of honoring his memory has been prosecuted so rapidly and successfully. The 21st of last April was the first anniversary of Mark Twain's death. When the sad news reached Hannibal that their old friend was dead the association was immediately formed, and the work of honoring the illustrious exile has never been allowed to lag for one moment.

You can find a great many of the "old boys" in Hannibal yet. Many of them are older than Mark Twain was at the time of his death. Some of them are yet actively engaged in business. The woman who is said to be the original of "Becky Thatcher," Mrs. Laura Frazer, is matron of the "Home for the Friendless." She enjoys good health and has apparently many years ahead of her.

Other writers have told of the great Mississippi river, but it is doubtful whether any of them related the story with such fascinating interest as did Sam Clemens. In his boyhood days he looked upon the great river as the most important physical feature in all the world. Its capacities were never ending. In its turbid bosom you could catch fish, swim and endanger your life a dozen times a day. On its rippling surface majestically glided the great steamboats, the connecting link between the village of Hannibal and all the earth. Every boy in Hannibal wanted to be a steamboat man. To be president, or United States senator, or something like that was too far off; nobody about Hannibal could go to Washington and see you perform. But if you were engineer of a steamboat, or a pilot, or captain, or cabin-boy, you could walk out on the hurricane roof and, with folded arms, lordly survey your envious comrades who were lining the banks as the vessel majestically steamed into port.



Lover's Leap, the Promontory Overlooking the Mississippi at Hannibal, upon which the Twain Monument will be Erected

Mark Twain saw the river with the eyes of an enthusiastic boy. His love for it never left him. The book which has endeared him most to the people of the Mississippi Valley is his "Life on the Mississippi." Not only these people here at home thought it a great book, but Clemens himself said the Emperor of Germany had told him upon one occasion that it was the finest book he had

ever written. Later on the janitor of the apartment house where he stopped in Berlin imparted the same opinion. So there was little doubt about it.

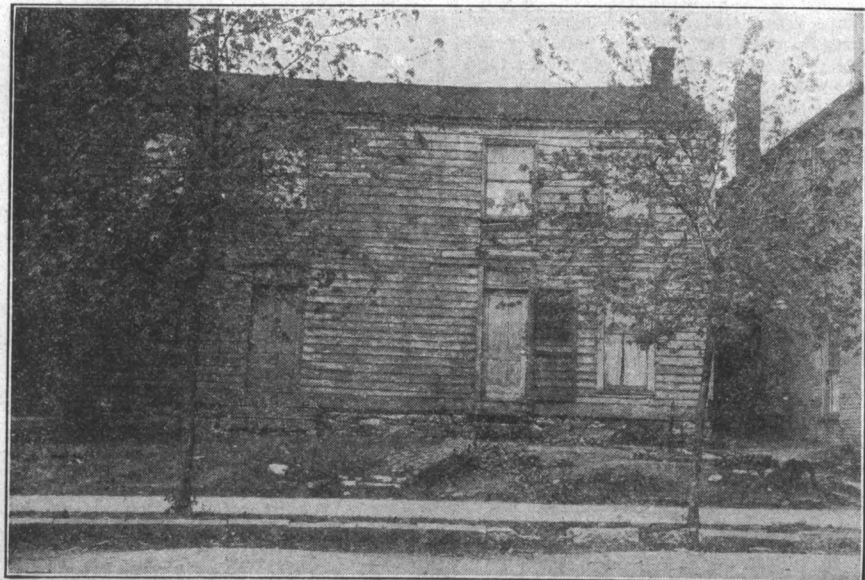
Mr. Clemens told of the river in the way that every man and boy along its length understood. He told of the big savage-looking catfish, and why they were fine eating. He explained how pilots studied the river, so as to find "easy wat-

er," and how they took dangerous chances in running through cut-offs and narrow places when the river was high. He described the dead and gone giants who stood by the wheel of a night when it was raining black cats and other things as luminous, and not only found a certain plantation, but could poke the boat's nose against whichever part of that plantation the passenger wanted to reach. Some of these things were doubted by laymen of later days, but old pilots, Horace Bixby, Jessie Jamison and others, declared it was so. Jamison was the man who piloted the "Robert E. Lee" from Cairo to St. Louis when that fine boat beat the "Natchez." He was well acquainted with Mark Twain, as were all the old pilots on the river.

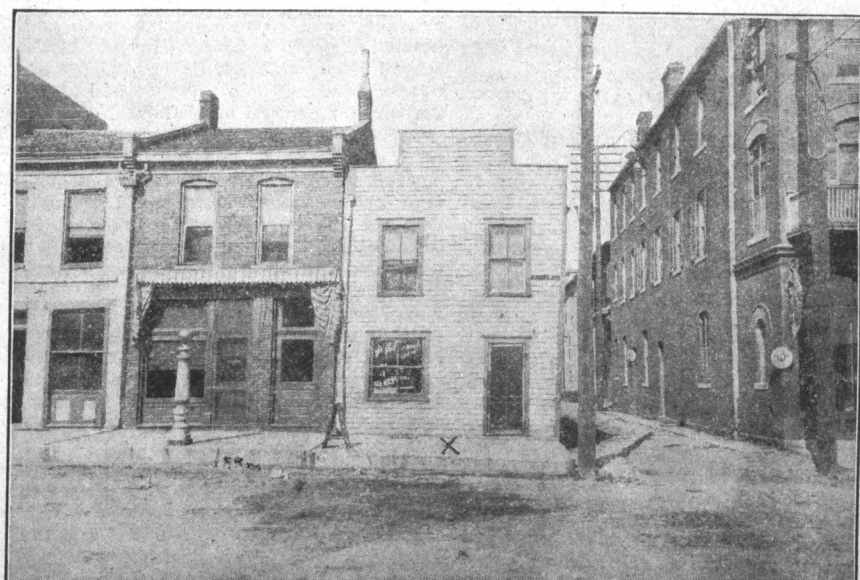
Many writers have attempted the story of a steamboat race, those dramatic events in the history of the river, but none of them have been able to give one the thrill of actual experience as strongly as did Mark Twain when he told how the Amaranth had crawled up inch by inch on the Boreas one bright moonlight night, and how the pursuing boat, just as victory was in its grasp, blew up with an awful detonation and killed hundreds of people. That story is not as well known by people of today as the chariot race in Ben Hur, but it is every bit as exciting. No one could have told it except a man who has stood in the pilot house and suffered the anxiety that always comes to the steersman when the boat behind him seems to be gaining.

When Clemens left Hannibal no one there felt that the town had suffered any distinct loss. He was a good, fun-loving youngster. The people thought well of him, but no one imagined he would ever set the town on fire. His school teacher had picked out another boy, Sam Raymond by name, to do that. It was Sam who was always trotted out on the occasion of a visitor to the old schoolhouse in the park and told to recite "The Boy Stood On the Burning Deck," and "The Charge of the Light Brigade," and other favorites which were old when Sam Clemens was young.

For a long time Hannibal watched Mark Twain's development with a suspicious eye. The people there always felt that something would happen. They didn't know just what it would be, but it didn't seem possible that he could keep up that gait with the great ones of the earth very long. As they read of his hobnobbing with kings and great rulers they shook their heads and predicted trouble. But as nothing happened they thought that possibly he had fooled everybody and they didn't know it. You see, Hannibal in that period hadn't set itself up as a judge



Building in which Mark Twain and "Becky Thatcher" went to School.



Street in Hannibal; X marks Building in which Twain's Father held Court.

of literature, and the old comrades didn't see anything in Mark Twain's writing to justify his being classed as an artist. It seemed to be the same sort of stuff he turned out when he was helping his brother edit the Hannibal Union. His witticisms didn't startle anybody there, because nobody believed he was in earnest. Then Hannibal thought that his association with the rulers of Europe and other dignitaries would cause him to turn up his nose at the town of his youth. So they didn't say very much about Mark Twain and his career.

But by and by the exile came back one bright morning, got off the steamboat, handed his grips to the darkey porter and began hunting around town for his old friends.

"Hello, Bill! How's the old boy! That you, Doc? Come here and give us your flipper! How's the wife? Lord, Jim, aren't you ever going to get any older?" These were addressed to the old boys he met standing about on Main street.

When the news spread around town that the wanderer was back, and that he was just as friendly as he always was, and didn't have any highfalutin airs about him, Hannibal thawed out. Everybody gathered around to listen to him talk. And he could talk, too. He told the strangest tales they had ever heard and he told them well. They sat about in the old stores, around the stove and on the boxes out in front, just like they used to do when they were boys together, and had a bully good time. Clemens renewed his friendships all around and, when he left, Hannibal was swearing that he was the greatest man that ever lived and immediately commenced reading his books.

From that time the man who went there and undertook to criticize anything that Mark Twain had ever done or written was sure to have a scrap on hand. That is why the old boys felt it so keenly when they heard of his death in the east. Their grief was genuine. They held a big meeting in one of the churches and every one of them said something nice. Then they began to think of the little incidents of Clemens's youth. The things he did were all harmless jokes, even to the stealing of watermelons and the tying of cats to door-knobs. Some said that they recognized, in these early displays of exuberance, manifestations of his coming fame. There wasn't an old comrade absent at the meeting, and there wasn't a one of them who didn't get up and say something appropriate about his dead friend. No glory that Mark Twain ever attained in the east or on the continents of the old world testified stronger to the worth of the man than did this meeting of the old friends at Hannibal.

George A. Mahan, a prominent lawyer of Hannibal, said this of Twain: "I believe that Sam"—in Hannibal they rarely call him Mark Twain—"was really more at home here, and more thoroughly contented, than he was when attending the functions of great people. He seemed to be bubbling over with spirits. The bars a boy again. I was with him a great deal were let down and he acted just like on the occasion of his last two visits to Hannibal and I want to say, in honor of his memory, that I don't believe a man ever lived who had more genuine affection for the plain country folks among whom he was reared than did Sam Clemens."

and winding that we would need a rope to find our way out."

Before starting Teddy tested his air rifle to see if it was in good shooting order, loaded it carefully, belted on his pistol and a new wooden sword which the hired man had made him; and whistling for Bruno, was off. Brave little fellow! He had the spirit and courage of a De Soto, for, to him, the old cellar was a darksome cave of dreadful mysteries and hidden perils. And Ellen—she would follow Teddy anywhere—trotted along after him, confident that her brother could protect her from every danger.

I watched the children until a turn in the path hid them from sight, then, without going near the house, I hitched up and returned to my work in the cornfield.

What a selfish thing love is! I knew that Elsie Lamont was not for me, and yet the knowledge that another was about to wed her was like the thrust of a red-hot iron in my heart. How I hated Harry Rodney! I had always disliked the man, but now the bitterness in my heart turned the dislike into hatred, and my blood grew hot with a fierce desire to seize and throttle the robber of my love. He had been my rival from the beginning; yet I had triumphed. I had won Elsie's love, in spite of his handsome face and gallant ways. I knew that she had loved me; and yet he was to wed her! No, it must not be! Love made her mine. I would go to her again. I would force her to hear me. I would compel her to tell me what I had done to forfeit her esteem.

But, no, she had shut the door in my face. She had returned my letters unopened. She had refused to give me the opportunity to vindicate myself, to even know of what offense I was guilty. No, I would not go to her again. I had done all that a self-respecting man could do. Yet, strange inconsistency of love! I had faith in Elsie. I knew, I felt, that she still loved me, that only the thought of my unworthiness kept her from me.

Love defended her and convinced me against my reason, that what she did, she did because she thought I had basely outraged her love. But how?

When I returned to the house at night Mary Jane was waiting for me at the gate.

"John Delvin!" she cried, the moment I came within reach of her voice, "God's mercy has kept you from being a murderer this day! an' Esther's babes from a—"

My heart gave a great jump. "What do you mean? What has happened? Where are the children?" and I sprang to her side and caught her by the arm. "The children! Where are they? Tell me!" and I shook her roughly, for a terrible fear that the expected catastrophe had happened ran through me like a knife blade.

"In bed! It's a punishment, a just punishment for your giving no heed to my—"

I waited to hear no more, but started on a run for the house. A scream from Ellen caused me to bound up the stairs and into the room where the children were. There were two beds in the room. Teddy stood on one, a look of consternation on his face, and Ellen was prancing up and down on the other, vainly trying to free her mouth, and nose, and face, and hair from a mass of feathers, while a white pathway from Teddy's bed plainly told whence the deluge had come. This was what I saw for an instant; and then, with exclamations of surprise, two little white forms shot under the bed clothes.

"You little rascals!" I shouted. "I have a notion to shake every hair out of your heads! What will Mary Jane say?" and I made a rush for Teddy's bed, a great joy in my heart to find the children sound and whole.

"To the rescue! To the rescue, Ellen! Uncle John's a giant! To the rescue!" and Teddy bounded up into the middle of the bed, and gripped a pillow with both hands.

With a whoop of delight Ellen tumbled out of bed, filling the air with a cloud of feathers, and came at me, a pillow held high above her head, and with hair and feathers in a merry tangle all around her face. Just as I reached his bed Teddy swung his pillow and brought it down with all his strength. There was an ominous ripping sound, and over my hair and shoulders poured a flood of goose down filling my nose and mouth and eyes and rendering me horse de combat for the moment. Ellen shrieked with delight and pommeled me with her pillow. Teddy yelled and tried to smother me in the bed clothes. And then Mary Jane entered the room. I could not see her, the smoke of battle was too thick, but heard her exclamations of astonishment, horror and

THE BACHELOR UNCLE

BY EVERITT McNEIL.

Synopsis of Preceding Chapters.—John Delvin, farmer, bachelor, is suddenly informed that his niece and nephew are being sent to him for safe keeping, while their parents take a vacation trip. His consternation at this responsibility proves to be well founded as Teddy the nephew, is a young dare devil, and Ellen, his sister, is his ardent worshiper. They have never been in the country before and have some wild ideas about conditions there. Little Ellen's innocent observation to the effect that Uncle John ought to have a wife caused the mind of the Bachelor Uncle to revert to a serious love affair which had been ended by his abrupt dismissal by Elsie Lamont, with no opportunity to ask for an explanation.

CHAPTER III.

The Robber's Cave.

At noon, when I seated myself at the dinner table, Mary Jane looked up at me sharply and said: "Hetty Miller called this morning an' told me that Elsie Lamont's weddin' day had been set for a week comin' next Sunday. She will marry Harry Rodney; an' people do say he looks enough like you to be your twin brother. Hetty said that he had been courtin' her for nigh onto two years now. She saw Elsie last night, an', somehow, she don't think she 'pears as happy as she ought, seein' that her weddin' day is so near, an' the bridegroom is Harry Rodney, the most likely man in these parts." Her shrewd old eyes watched my face keenly, as she imparted this bit of neighborhood gossip.

"Well," I answered, "I am sure I wish them a long and a prosperous life," and then I turned to Teddy, before Mary Jane had a chance to speak again, and asked: "What now, my boy?" for I could see that he was nearly bursting with the desire to speak. "Not another battle with the turkey gobblers, I hope?"

Bless the boy, he came to my rescue nobly!

"Oh, Uncle John!" he exclaimed, excitedly, "Bruno and Ellen and I found a robber's cave this morning!"

"A what!" ejaculated Mary Jane, dropping a mouthful of potatoes into her lap in her sudden fright, for the dear old lady was desperately afraid of robbers.

"A really and truly robber's cave," reiterated Teddy. "It's down by the river in the side of the hill, near a big oak tree, and there's lots of brush and little trees all around it; and we never would have found it in the world if Bruno hadn't run into the brush after something and began to bark, and then I went in to see what he was barking at, and found a deep, dark hole in the side of the hill, with stone steps leading down into the darkness, and hidden by thick brush all around it, just like all the robber's caves I ever read about. And, oh, Uncle John, I want a candle and some matches and a rope, and Ellen and Bruno and I will ex-

plore it this afternoon. I know there are no robbers in it now, 'cause the opening is all thick with dirty spider webs, but we might find a brass-bound chest full of gold and jewels and things that the robbers had stolen and left, thinking to get them some other time, and then never came back—"

"And then we would be awful rich and always live happy," broke in Ellen, not unmindful of the ending of other fairy tales.

"We can have the candles and matches and rope, can't we, Uncle John?" Teddy, asked, beseechingly.

"Of course you can," I answered, only too happy to find something to keep their mischievous hands busy during the afternoon. "That robber's cave must be explored at once. Who knows what awful mysteries it may contain? I will let you take a lantern, which will be safer than a candle. But, aren't you afraid? There might be dead men's bones in that cave!"

"John Devilin!" exclaimed Mary Jane, in horror, "you ought to be ashamed of yourself! Them dead babes shan't take a step into that horrid cave. Land of Goodness! to think that I have lived here nigh onto sixty years an' never heard tell on such a cave before!" and, in her excitement, she forgot all about Elsie Lamont and her approaching marriage.

Blessed be Teddy!

"I'm no baby, Mary Jane!" Teddy exclaimed, indignantly. "And I'm not a coward to be afraid of dead men's bones. Besides that cave must be explored, and I'm the one to do it, 'cause you're too busy, aren't you Uncle John?"

"And a Sleeping Beauty, or a captive Princess, or bags and bags of gold and jewels might be hidden in it, Uncle John!" Ellen exclaimed, her eyes big with wonder, and not one whit frightened by the thought of dead men's bones.

"That is just it, Teddy! I'm too busy, or I should go with you," I answered, more than pleased to side with the children against Mary Jane, for I thought that no harm could come to them in Grandfather Devlin's old outdoor cellar that was dug in the hillside some hundred years ago, and I wanted to keep Mary Jane's mind busy until I had time to think over what she had told me. "But you and Ellen shall explore it this afternoon, and tonight, when I return from my work, you shall tell me all about it, and we'll divide the treasure. Come, I will get you the lantern now."

"Well, do as you please, John Delvin, but if anything happens to Esther's babes don't you blame me," was Mary Jane's comment, as the children and I left the room.

I got the lantern for Teddy, also a large ball of heavy twine. "'Cause," as Teddy explained, "the cave might be so long

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indignation when she saw the contents of her pillows falling like snow to the floor and the way the children and I were carrying on.

"Heavens an' earth! John Devlin! Land of goodness! My pillows!" and she made a dash for Ellen, who dropped her pillow and flung herself into my arms, while Teddy, with a yell, "It's the ogre!" scrambled under the bed.

"Now, John Devlin," she demanded, bringing up in front of me, "what does this mean?"

"Well, Mary Jane," I answered, "it looks as if it meant that I was getting the worst of it; but, the enemy did not give me a fair fighting chance. I was taken by surprise, for I expected to find the enemy in bed. You—"

"John Devlin!" and Mary Jane seized me by the arm and shook me angrily. "Haven't you got no sense in that big body of yours? Them was your ma's best pillows. Now look at them! Look at th' floor! An' Teddy an' Ellen! I never did see such young ones in all my born days! I've a mind to spank them both—"

"The ogre! The ogre!" yelled Teddy from under the bed.

"We were just playing warships, Mary Jane," explained Ellen, looking doubtfully around the littered room and clinging tightly to me. "And Teddy's bed was an American warship, and my bed was a Spanish warship, and Teddy fired a great shell, and it burst open, and hit me on the head, and I was 'most killed, and then Uncle John came in, and—Oh, Mary Jane, will help you pick up the feathers, 'cause I'm sorry," and she clambered out of my arms, and began scooping up the feathers in her little white hands.

"Whoop-pe! I'll help too!" and Teddy rolled out from under the bed.

"There, there, Mary Jane, you had better sign the treaty of peace," I said, "and make these little rascals help you clean up the feathers. Then, after supper, I want Teddy and Ellen to tell me exactly what happened to them at the robber's cave," and, giving myself several great shakes to get rid of the feathers, I went down stairs, wondering greatly what mischief the children had been into and leaving Mary Jane still grumbling and scolding at the children, but already more than half mollified by their irresistible joyousness.

(Continued next week.)

FROSTWORK.

BY MILDRED M. NORTH.

"By the breath of God frost is given."—Job. 37:10.

Softly that Sabbath morning
The darkness changed to gray,
Then brightened and expanded
To the full broad light of day.

The great sun rose in splendor,
Looked o'er the frosty hills,
Throned in the eastern heavens
Where the morning wind distills.

He saw a new Creation
Fresh from the Maker's hand,
Pure as an angel's vesture,
A fair new "Promised Land."

I've gazed on sculptured marble,
I've looked on pictures rare,
But never saw a landscape
That appeared so wondrous fair

As lay that winter morning
Beneath a sky as blue
As that 'neath which in summer
June's fragrant blossoms grew.

The dark, worn fence was hidden
Beneath a frosty veil
That made a thing of beauty
Each knotted, time-seamed rail.

The trees bore leaves and blossoms
Most strange, but very fair,
"Frost-flowers," fragile "touch-nots"
Of workmanship most rare.

His hand, the Perfect Painter's,
Had touched the sleeping earth
And called from out the darkness
A new world into birth.

In the morning light sparkled,
White, far as eye could see,
A robe of ermine hiding
Each bare-limbed bush and tree.

Some day the veil will sunder;
We'll "see Him face to face;"
Earth's travel-stains will vanish
And leave no scarring trace.

We'll stand beneath the brightness
Of the Sun of Righteousness,
Where darkness never cometh,
And all His love confess.

Arrayed in raiment shining
Exceeding white as snow,
And rest in verdant meadows
Where living waters flow.

Someday we shall be like Him,
Someday, when He shall call,
When He, the King of Glory,
Triumphant conquers all.

Someday we'll stand transfigured
In robes of dazzling white,
As lay the earth that morning
In the dawn's first rosy light.

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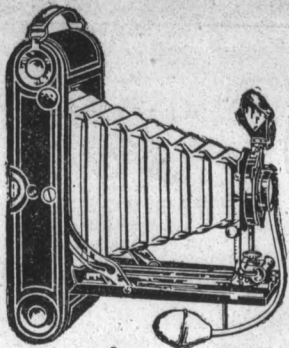
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Chatham Mill actually grades and cleans 75 seed mixtures—Oats, Wheat, Corn, Barley, Flax, Clover, Timothy, etc. Takes Oats from Wheat, any mixture from Flax.

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MOTHER'S CORNER.

BY L. M. THORNTON.

I took a paper from the shelf
And said, I'll read, and rest myself.
The day has been so trying.
A story if I keep awake,
Or else a little nap I'll take
The while supinely lying.
But when I opened up the sheet,
These words were first my eye to greet:
"The Mother's Corner."

And then I saw another room,
With kitchen odors its perfume,
And kitchen tasks its pleasure.
And Mother, not in easy chair
But bent with labor and with care,
And aged for lack of leisure.
And then I cried, "This house has not
What e'en my paper here has got—
A Mother's Corner."

And straightway I forgot to rest,
But sallied forth on sudden quest,
My lesson learned, from reading,
That henceforth, for a time each day,
Mother should take herself away
From washing, ironing, kneading,
And somewhere quietly should rest,
Sheltered by love that loved her best
In "Mother's Corner."

"SPANISH MERCHANT" GAME.

BY ALDIS DUNBAR.

Ask any member of "our old set" "What was the best game you ever played?" and straight back will come the answer: "Spanish Merchant, of course!" And though we're scattered from the Hudson to the Pacific Coast, yet if any two of us get together we can still play it with as much zest as in that far-off year when I was thirteen, spending the summer with my chums in an old farmhouse back in Chautauqua Co., N. Y. From the attic one of us had unearthed an ancient magazine which described in rather stilted terms the game which actually grew into our lives, and influenced them all very vitally.

Any number from two to a roomful could play it. One was to go out; the others were then to choose a book which all (including "It") had read. Then "It," coming in again, would remark: "I'm a merchant from Spain. What have you to sell?" in turn to each member of the circle. Each one offered him something mentioned in the book chosen—an article or an incident with real bearing on the story or narrative, yet not given so significantly as to betray the name of the book.

At once ingenuity came into play. Did we choose "Robinson Crusoe," one would answer, "A home on a hillside;" the next would suggest "A queer coat and cap," the next perhaps "an unexpected voice," the next, "tobacco," and so on. Great fun it was, this hovering on the edge of disclosure, taking care not to give incidents in their proper order of setting, for he by whose careless reply the title of the book was betrayed must be "It" in turn, and go out while a new choice was made.

Having read much the same books, we were quite ready to adopt the new game with keen relish. Even the littlest ones knew some of the stories, and could be trusted, with a slight coaching, to enter into the spirit of it. And the beauty was that no preparation was needed. Wherever we were, two sitting on a doorstep, a picnic party under the trees, or a small group coming from school, we could propose and play "Spanish Merchant,"

though the "Spanish" query was soon omitted, and we merely asked: "What have you?"

I don't think we realized then what it was doing for us in stimulating not only our strong love for books, but our attention to what we read, and, beyond all, our memories. Any doubtful mention would instantly be challenged, and must be justified or something else given, while a really clever or unexpected turn would be applauded by all.

Our supreme delight was to take a book thoroughly familiar, and use it successfully to elude the quick wit of the one who was alert for each tiniest clue. I have known "Little Women" to be chosen four times running one evening, and each time, though the handling grew ever more difficult, we managed, as they say out west, "to put up a good bluff." If one had not read the book in question, and so had to be left out once or twice, he became interested in it enough to want to read it.

AN INSIDE SNOW FIGHT.

BY FRANK H. SWEET.

"I wish I could think of something nice to play at my party tomorrow," said The Small Boy, wistfully; "something that we've never played before."

"Suppose you have a snowball war," suggested the Visiting Aunt.

"Oh, but we're going to play in the house," explained The Small Boy, politely.

The Visiting Aunt nodded, "Yes, I know."

The Small Boy looked puzzled. "But the snowballs would melt all over the carpet," he said.

"Not the snowballs we will use," smiled the Visiting Aunt. "If you will run down to the store and get a roll of white crepe paper we will make some balls that will not melt."

The Small Boy put on his cap and was off down the street almost as soon as she finished speaking. In a little while he was back with a roll of white crepe paper, and he and the Visiting Aunt went to work making white balls, that really looked very much like snowballs.

The next day when the children had all come to the party the Visiting Aunt stretched a cord down the center of a large room from which the furniture and bric-a-brac had been removed. Then she had two of the children choose sides, each side taking one-half of the room. She furnished each side with an equal number of snowballs, and explained that they were to try to get as many of them as they could across the line, and to keep all balls out of their own field. At the end of five minutes the side that had the fewest balls on their side of the line would be the winners.

When she gave the word to begin, the balls began to fly until the air was almost white with them. But these balls never hurt the way real snowballs do sometimes. Back and forth the balls flew, hardly touching the floor on one side before they were tossed back. At the end of five minutes it was the Small Boy's side that had the fewest balls over their line, so they won the game.

But the balls were quickly picked up and distributed again, and another war was commenced.



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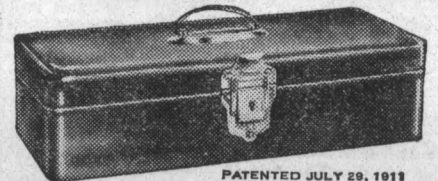
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Fourteen-year-old Pennsylvania Farm Boy who also Mines Coal.

The above picture was sent by Bert Clay, a Pennsylvania boy, upon whose father's farm is located a coal bank. The lad possesses a miner's cap and lamp and takes occasional relief from his farm labors in hauling the product of the mine with the mule and small cars and sometimes in digging coal.

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Woman and Her Needs

At Home and Elsewhere

WITH OUR READERS.

Should Encourage Better Table Manners.
Dear Deborah:—I should like to answer the question, "Should Children be Taught Politeness?" in the affirmative, most emphatically. I am glad you were brave enough to write what you did. Just keep at it, you haven't said half enough. This is a question that ought to be agitated everywhere, in school, club meetings, and farmers' institutes. You may have some cold water thrown at your effort but keep at it. You are working in a good cause. Next to religion there is nothing the world needs more than good manners at the table.—Mrs. N. A. M.

Good Schools in Livingston County.
Dear Household Editor:—Having read the article, "Back to the City," it filled my mind to overflowing, and I, being a farmer's wife, of which I am proud, could not help feeling insulted. My home has always been in the country, although I have spent enough of my time in the city to know that the country is the best and only place to bring up "boys." I have four boys, all under ten years of age, and every one is in perfect health, so far as I know.

We have a farm of 220 acres that they are at liberty to roam on, besides plenty of good, wholesome food and fresh air, which they would be deprived of if they lived in the city. Surely, with these advantages, there is no reason why their muscles should not be developed and I believe the country boy is fully the equal, physically and mentally, of the city boy and better equipped to make his way in the world, if thrown on his own resources. We have a very good school and the teacher doesn't race around through the woods looking for birds, either.

Having been a teacher in the country schools myself, I have learned by experience that the country school with children of all ages, is not like the kindergarten schools of the city and can not be carried on in the same way. Perhaps "A Disillusioned Mother," being city bred, never learned the art of bread-making, and being unable to step into a bakery to buy her bread, was compelled to feed her family on "soggy bread and salt pork," but such is not the case here, as we have milk, eggs and vegetables all fresh, and good home-made bread, all of which we would not have if we lived in the city.

So far as "bad associates" are concerned, you will find them in the city schools as well as in the country and the only thing we, as parents, can do, is to try to teach our children not to choose them for their companions while at school. When my boys are not at school I know where they are and who they are associating with, and it would make no difference how much they called me "stuck-up." I would not allow my boys to associate with bad boys.

I am glad God made the beautiful country and I am thankful we can gratefully appreciate it. And if man did make "the beautiful, wonderful city," he did not improve on the work of the creator, who made all things and pronounced them "very good."

Livingston Co. A FARMER'S WIFE.

"Disillusioned Mother" Had Better Go Back.

I wonder how the great majority of the Michigan Farmer's rural mothers felt when they read "Disillusioned Mother's" pitiful wall in the issue of November 11. To say that my "Irish" rose is to put it mildly. I do wonder what kind of a country neighborhood this poor woman struck in her search for a "dream country." And where did she come from? Was it Pontiac?

I don't like personal reminiscences, but I shall have to indulge in a few to show that I do not speak without authority. I was born, and mostly "raised," in the country, glory be, but in a somewhat eventful career have seen a little of both sides of the fence. I was the oldest in a big family, of whom all the other children were boys—just country boys, every one. I have taught for years, both in rural,

city, and village schools, north and south, and am, at this very time, in rather close touch with many hundred farm boys, in every state in the Union, though a particular work which has happily fallen to my share of the world's good things. So I feel that I know boys, farm, village and city boys. More than that, I have one of my own, whom I should be indeed sorry to have classed among the degenerate youth whom our friend seems to have unhappily fallen in with. That he shall not become so is one reason why we are keeping him out in God's free country, although there might be other reasons why we should seek another home.

Our rural parents do not object to nature study, even when it involves considerable "traipsin'." On the contrary, they are demanding, and getting, a country school curriculum that includes an intimate knowledge of field and forest. If this mother could see some of the rural schools which I have seen—and, happily, they are neither rare, nor peculiar to a single section—with their well-kept grounds, experimental gardens, hedges of flowers and shrubs, and even indoor aquaria and other appliances for scientific work such as befits the country, she would have to admit the injustice of her criticism. Has she ever heard the actual objections she quotes so confidently, or does she just imagine them to be?

As to the moral comparisons she makes, any one who has ever handled the average city-bred child in the schoolroom knows that he is by no means free from the same faults she ascribes to the "immoral and indecent" country lad. The truth is, that human nature is human nature, and that there are good and bad phases everywhere present. Of many of my town lads I have the most pleasant memories, and admire them for the clean, healthful manhood to which they have since grown. But there were others. If I were to tell of some of the actual experiences that have fallen to my lot in stamping out moral indecency among lads in the upper city grades, no paper would dare to print what I would be compelled to say. No amount of "pure poetry" will efface the mental stains that are, unfortunately, the inherent lot of lads bred up in the back alleys of the "beautiful, wonderful city." This very year past, our own rural school was compelled to refuse admittance to a city-bred boy of fourteen, because he gave so many evidences of utter lack of common honor and decency that we would not let our boys associate with him. And he was not a boy who had been brought up carelessly or evilly, either. His parents wanted to get him out of town into a more healthful moral atmosphere. We were sorry for them, and for the boy, but the risk to our own was too great.

I wish I could show "Disillusioned Mother" a few out of the many letters I get from my farm boys every week. There is not a phase of the life of field, stream, forest, or prairie with which they are not familiar. The farm boy who can not tell the names of more than "one or two" wild flowers must be a peculiarity of her part of the country, yet, in common respect for the boyhood of rural Michigan I must say I doubt very much if she knows what she is talking about. Among the many Michigan schoolboys whom I used to know, I can recall very few who could not speak familiarly of the trees, plants and animals of his section, and knew enough of their habits to give many naturalists pointers. My experience with the American farm youth is that if you want to know a thing about the out-of-door world the chances are he can tell you more than you ever heard of. Over and over again do "my boys" send in first-hand information that would do credit to far more mature research.

It is not to be expected that a city-bred woman should learn much about the youth of the rural districts in a single year. In fairness to her we will have to suppose that she has fallen upon exceptionally "evil times," as regards her surroundings. Has she tried to study them sympathetically, or has she stopped with one or two unfortunate examples? If her grown-up ideas were as far-fetched as

the material from which she built her earlier dreams, no wonder she was disappointed. If she studied the "books of the running brooks," and the poetry of the "green things growing," at first-hand, herself, perhaps she would have been able to judge more fairly.

When it comes to athletic sports, I will only cite a single example, which is typical of thousands of others. From my door I can see the towers of a large college building, among whose students are many well known on the athletic fields of this part of the state. And more than half of those who have this year made their mark in base ball and foot ball, have come from the farms, although far more than that per cent of the students are city-bred youths. And it is not all due to their college training, either, for this is the first year in school for many of them. I do not suppose, however, they were ever "gorged on pie, cake, soggy bread, and greasy fried cakes," to the exclusion of the "strength-giving" foods. Shades of my grandmothers! Did you ever eat a real country dinner, Disillusioned Mother? I am not much when it comes to cooking, but I should enjoy getting you up one, just for the sake of the argument.

The American farm boy does not need defending, especially against such an obviously unfair and partial arraignment. He is quite capable of speaking for himself. The trouble is that our critic does not know him. She would never know him, because it is very evident that she would hardly feel honored by his acquaintance. Sympathetic understanding does not come through antagonistic feeling like hers. Of course, none of us would wish her the ill-fortune to be compelled to stay in the country, when her heart so obviously turns toward the city, but it would be perhaps a revelation to her if she could come to really know the American farm boy of the fairly average type. There may be better "makings of men," but there are most certainly many far worse.—K. A. G.

So many letters were received by the Household Editor in reply to "Disillusioned Mother's" lament that it is impossible to print all of them at length. Such a strong defense of the country "doeth good like medicine." One country teacher writes: I challenge our "Disillusioned Mother" to question my schoolboys about the name, nature or habits of any bird, common to our locality, and receive a less intelligent answer than a city boy would give her, who has had only a cramped little piece of God's green earth to observe in. Also what little excursions I have had time to make to field and wood have never met with a particle of objection from anybody about "traipsin' around. Most country people are reasonable enough to see the common sense in it.

"One question which she raises is that of country boys having worse morals than city boys. Now, I do not deny that country boys use objectionable language and have a great many evil habits, but are they any worse than city boys? I say decidedly, 'No.' I am acquainted with teachers who have taught in the city and have discussed this question with them, and they invariably say, 'Give me the country child to teach every time. He is more easily managed and controlled.'

This from H. K.:—"I am sure this highly educated person is turning down an opportunity for a life work. She ought to endeavor to teach the simple country housewife to cook. It is too bad that these poor little waifs should be subjected to eating 'greasy fried cakes and soggy bread,' while all the meat they have is 'salt pork.' This great personage might in time succeed in teaching the 'simple folk' the more modern methods of living. I do not think, however, that the ladies of Oakland would consider her 'stuck up.' Oh no, far from it. They would only pity her, and pity is surely what this wonderful person needs."

Miss E. M. R. advises "Disillusioned Mother" to make a test of country fare. Says she: "Go into any store in the city and notice the pale, thin, and tired look—

(Continued on page 493).

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CANVAS STITCHES.

BY MAE Y. MAHAFFY.

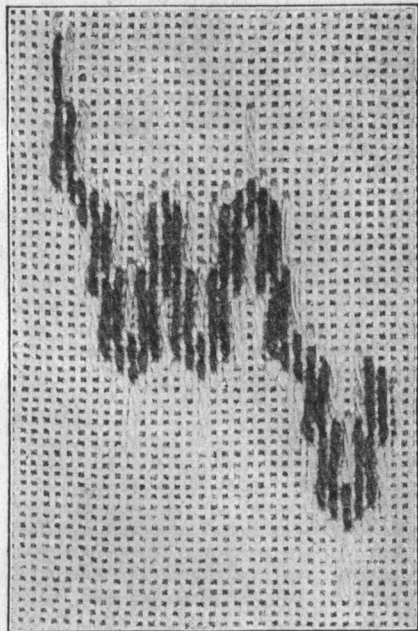
THE mere fact that canvas and allied fabrics have such decidedly rigid lines in warp and woof demands an angularity of design in elaborating it that it is not essential with a majority of finer materials, nor with many of the coarser. It is all in the manner of weaving, but the decorative work must be typical to be appropriately ornamental. Much of the ancient work, notably the pictorial or heraldic type, as well as the modern, was carried out along just such angular lines, and was frequently known as tapestry embroidery because of its resemblance to woven tapestries. Another name it received was that of cushion work, because it was so much in demand for upholstery purposes and hangings.

It is possible by careful planning to produce such exquisite colored effects in these canvas stitches that one wonders not at all at the well-nigh prohibitive prices placed upon such work when it is imported to this country from the European workers, a majority of whom are peasants accustomed to adorn their costumes in native colors. Sometimes their color combinations appear garish and crude to us, but time softens the strong colors, and then there is always the opportunity to duplicate them in softer tones. With certain furnishings, however, the decided colorings will not be in the least objectionable, but will blend in harmoniously, gradually but assuredly gaining ground in one's appreciation by the very boldness of their appeal.

In a majority of canvas embroideries it will be found a great help to lay out the work in advance of the actual embroidery. This is done by measuring it

this lesson, as well as others which will doubtless suggest themselves to the worker.

Tent stitch, No. 1, is the finest canvas stitch, and is used often in ancient work. It is a slanting stitch, just like half a regulation cross stitch, and is made over



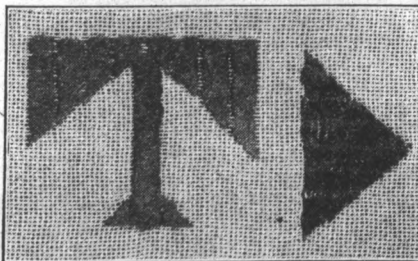
No. 4.

one thread of canvas only, thus filling in fine and compactly. The old-time embroiderer stretched her work upon a frame called a tenter, and it is from this word the stitch receives its name. It is shown grouped in several rows, and in one row singly, that the exact method of working may be followed.

At one side in this same illustration is the stitch on a larger scale, over two threads of the canvas, and known as one of the Gobelin stitches. When it is used in this way a heavy thread may be laid along the line and the stitches taken over this as well as the canvas, thus filling in the space which would otherwise appear beneath the stitches. This half cross stitch is exceedingly good for filling large surfaces, and permits the use of two colors, one for the under filling, and one for the stitch proper.

The grouped diamonds, canvas satin stitch, in No. 2 may be made to cover from one to nine threads of the canvas, but all should be of the same size throughout the design. In this case from one to seven threads are covered. The stitches are simply graduated at either edge. These diamonds may be used as single motifs, or crowded together for background work. The other pattern in No. 3 consists of alternate stitches over two and four threads of canvas, and may be used in rows or for solid backgrounds, with shaded effects if desired. It, too, is a Gobelin stitch.

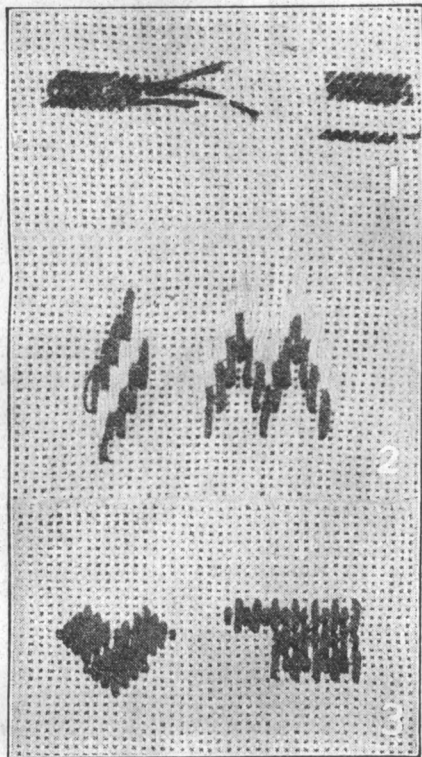
Graduated tiers of stitches over six threads of the canvas appear in No. 2, in alternating colors, green and pink. It is not absolutely essential that six threads of the canvas be covered, but a given number must be selected at the beginning, and that number adhered to throughout the work of any particular article. It must also be an even number, so that each succeeding stitch may be started half way back on the former one. These diagonal, upright stitches, called cushion or Irish stitches, provide a quickly made and attractive filling. Beautiful color schemes may be carried out in this mode, as well as in the same stitch taken zigzag fashion, also shown. In this latter form it is often called Florentine,



No. 5.

though there are numerous other forms of Florentine embroidery.

Probably one of the best known canvas patterns is designated "Bargello," the original work being preserved in the Bargello museum at Florence. It is a form of Florentine or Hungarian embroidery, and was used to cover the backs and seats of carved chairs of dark wood. Its colors originally were decided, but years have toned them down considerably. White, black, orange, three



Numbered 1, 2, 3, consecutively from Top to Bottom.

off into blocks of a certain size, outlining these with basting thread of some easily noted color. In this way by counting a certain proportion of the work it will be quite an easy matter to follow in the various blocks without losing one's self, as is all too likely when a large design is undertaken at random. Corners may also be basted diagonally and squared off to correspond to the remaining blocks.

In any canvas work floss should be selected, whether silk, linen or cotton, which will approximately fill the meshes, closely woven fabrics thus calling for the finer materials for embroidering. Blunt needles will be found useful in most of the work, since it is imperative that the canvas threads are not pierced, such treatment distorting the outlines. The work may be done on fabrics having no decided weave to guide the stitches by basting canvas over the plain material and working through the meshes of the canvas into the other material. The canvas threads are afterward removed, leaving the stitches upon the plain fabric. All such work is done to best advantage in a frame, though it is possible to carry out small pieces in the hand.

Cross stitches in the various styles, and the ever-useful back or stroke stitch, sometimes known as Holbein, were touched upon in a separate chapter, but are essentially canvas stitches, and are frequently combined with those noted in

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TRAUGOTT SCHMIDT & SONS, Detroit, Mich.

shades of lemon yellow, two of paler yellow, with seven of moss-green, ranging from light to dark, were used. Present day workers can utilize the same pattern, No. 4, with any preferred colors, its continuity giving one a wide range for color display. The short stitch covers two threads of canvas, and the long one seven, these two lengths being used throughout.

The remaining design, No. 5, shows the ordinary Gobelin stitch consisting of various rows of close set over-and-over stitches, which were originally intended to cover two threads of canvas only, but receiving exceptional license from later workers. The same number of threads must be covered, however, whether few or many, for any definite feature of the work. In some forms of needlework, like that of the Norwegian embroidery shown, the stitches are sometimes graduated to conform to diagonal as well as straight

lines. In both the Norwegian and Swedish work bright colors are used, stars, blocks, diamonds, and other angular geometric patterns prevailing.

WITH OUR READERS.

(Continued from page 491).

ing, young gentleman clerk behind the counter there, ask him to go to your home out of town, for a much needed rest and vacation, and see how eagerly he grasps at the opportunity to breathe fresh air and eat of the home-made fried cakes. Greasy, I believe they were called, but surely not made of cottolene as the ones we buy at the store, which so soon dry out. This clerk will soon gain flesh, on the good fresh butter, eggs and rich cream and milk. Then, too, observe when he goes back to begin once more his daily grind after two weeks of this healthful recreation, that there is a ruddy, healthy

glow on his cheeks, a brighter lustre in his eyes and a quick, manlier step. What is the cause of this change? Is it necessary to say that a farmer's good living and fresh air have wrought this wonderful change?"

Country children read articles describing athletic exercises, and then put them into practice, says "A Farmer's Daughter." She adds: "Every child has bad habits, but the country child has no worse than the city-bred child. If we do not want our children to play with bad children we do not allow them to go to their homes. In the public schools where the children have to mingle, what are you going to tell them to do? Snub them? I say no. Did Christ despise and cast aside the lowly?"

The morals of the country-bred child are as pure as any can be. In every community, whether country or city, you will find a few 'smarties' who put im-

moral interpretations to the mysteries of life."

"A Country Woman," from Ottawa county is a nature lover. She writes: "One can always see the beauty in surrounding objects if one only half tries and the country is certainly not lacking in beauty."

"It seems to me that you must live in an unusual district, one that is lacking in everything good and decent, if things really are as bad as you pictured them."

"As to the matter of strength, food and 'country badness,' I think you must have misrepresented. It is a fact that the city affords a better opportunity for gymnasium work, but I think that most country boys get all in that line that is necessary, by climbing trees, playing ball, hunting, and a hundred other things that boys will always find to keep busy. Doing chores morning and night is not all the exercise country boys get."



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THE MICHIGAN FARMER, Detroit, Mich.



PRACTICAL SCIENCE.

AMOUNT OF PLANT FOOD IN THE SOIL.

BY FLOYD W. ROBISON.

(Continued from last week).

We have seen that judging of the demands of a crop by an analysis of the plant at maturity we fall far short of the real demands of that plant upon the soil. At the same time we have seen that if this store of plant food did represent the demands of that plant upon the soil, it would not be necessary for us to give great economic consideration to preserving the equilibrium of the so-called plant food in the soil. As King very nicely states, we may assume that every man may be interested in maintaining the maximum of fertility of his land fifty years for his own interests and an additional fifty for the welfare of his children. It is exceedingly difficult, however, to persuade any generation to look much beyond one hundred years. We are showing an interest in the future and the conservation movement is gaining strength every day. We are undertaking a difficult feat, however, if we are trying to convince the farmer that he must use fertilizers religiously else, in the course of 1,000 or 2,000 years, his soil will no longer produce a maximum crop. The farmer must use fertilizers and practice diligent cultivation else his soil will not produce a maximum crop the second or the third year, and of this fact most up-to-date farmers are well aware. The question of maintaining the fertility of the soil is not a question of a hundred years hence, but it is a present vital problem and the farmer must meet it.

But we are told that upon analysis of the soil there is found to be a sufficient amount of plant food so that for all practical purposes a maximum crop may be produced for many years. Are we going to question the results of these several, yea, many analyses? The difficulty is not an analytical one and the analyses are not at fault, but the deductions therefrom have been illogical and faulty, because they have been deduced from wrong premises.

If we think the amount of mineral elements found in the plant upon analysis at maturity represents the demand of that plant on nature, let us attempt growing the plant by giving it what the analysis shows us it needs, and no more. We may then see how far short of a maximum growth that plant attains.

Constant cropping with the same plant without the use of fertilizers establishes this condition of inequilibrium. At the end of several years cropping with potatoes, for example, the soil may still contain enough potassium to produce, according to analysis, many maximum crops. But somehow the farmer knows that the soil does not respond and while he will get a growth for a great many years in succession, the quantity is materially decreased and the quality depreciated. The balance of that soil has been disturbed and it is surprising indeed, in fact, the one thing that scientists and agriculturists have been unable to appreciate, is that such an exceeding small quantity of fertilizer, of the right kind, as may be added to that soil will be sufficient to restore this balance.

We have gotten at this matter of the maintaining of the fertility of the soil in other ways than by the direct addition of fertilizers. It was quite early observed that great benefit was obtained by a judicious rotation of the crops upon the soil. For example, instead of growing potatoes on a soil for several successive years, it has become customary, where possible, to grow the second or third year a different type of crop upon this particular soil. It cannot be said that the growth of a crop different from the potato crop, in any particular way adds to the fertility of the soil. It is commonly supposed, and scientifically correct, that the potato crop draws especially heavy upon the soil for the mineral element, potassium. Due to some natural cause, the formation of starches and sugars seems to demand the services of a considerable quantity of potassium. Consequently in the course of a few years constant cropping with potatoes it will be seen that the soil balance may be disturbed and somewhat reduced insofar as the element potassium is concerned. Now if we plant upon this soil a crop whose demands are light insofar as the element

potassium is concerned but which uses considerable phosphorus in the administration of its organic make-up, we just as certainly reduce the total fertility of that soil but we restore again the favorable equilibrium which existed before the soil was originally grown to potatoes. In plain language, we have again placed that soil in the state of balance whereby its soil solution is again capable of operating to practically its maximum capacity. If now to this soil we were careful to add enough fertilizer to restore the equivalent of that which has been removed by all the crops it may be easily understood that that soil will respond under such treatment practically to a permanent agriculture. This is what rotation of crops means and this is why rotation of crops skillfully planned and executed has been such a tremendous success.

We will not lose sight of the possibility of a rotation of crops bringing about a favorable sanitary condition in the soil as well, and we do know that the question of soil renovation with the idea of possibly establishing in that soil what we might call a sewage system is certainly a very desirable factor to consider. However, it is definitely known that rotation of crops is by no means simply the establishing of a system of soil renovation and because the crops which draw heaviest upon one especial mineral element in the soil will not succeed well if they follow one another in the rotation.

The question of restoring to the soil the equivalent in fertilizing constituents of what was removed in the crop is not a difficult one. We have now at our disposal analytical data which advises us of the amount of so-called mineral nutrients which are removed per ton in most of our common crops. No system of farming should be followed which does not contemplate the return to the soil of the equivalent of the crop removed. Many soils may be encouraged in maximum cropping by the addition of an excess over that removed. In fact, it is the only way that some soils may be built up to a condition of permanent productive capacity.

It is by no means desirable that all fertilizers that are used must be of the immediately available kind. Possibly the very first office performed upon the addition of a soluble plant food to the soil is to render the same insoluble or reverted, whereby it becomes fixed and then may be considered as a permanent factor in that soil for plant production. All soils do not possess in the same degree this power of the fixing of the mineral nutrients. The soils which possess this faculty in the highest degree are the soils which have installed in them an active drainage and aerating system and that are subject continually to an intelligent system of cultivation. In a soil without drainage, a soggy, wet, stagnant soil, the loss of plant food constituents is enormous, and that soil does not have the favorable, desirable quality of properly fixing the mineral nutrients.

Much has been said of the desirability of placing fertilizers upon the soil in the most available form. By the term available, is here meant in the most directly soluble form. It is very certain that this is by no means always to be desired. On a soil not in a good condition of cultivation the addition of fertilizers in an exceedingly soluble form is wasteful. On the other hand, on a soil which is well cultivated, well drained, thoroughly aerated and containing a desirable quantity of organic matter, the addition of fertilizers in a wholly soluble form while by no means wasteful is, however, not necessarily advantageous. We must not imagine that when phosphoric acid in water-soluble condition is put upon the soil that that soluble matter is immediately taken up by the soil water and that it may be converted into plant tissue at once. A considerable quantity of soluble nutrients may be added to the soil before we have materially raised the nutrient content of the soil water if that soil is in first-class condition. Agencies are at work continually in a healthy soil putting in a state of solubility as it is needed, the otherwise insoluble soil nutrients. The proper problem of the maintenance of fertility is to have on hand a sufficient store of these mineral nutrients so that by its natural processes the water of the soil is continually charged with its most favorable equilibrium of soil nutrients.

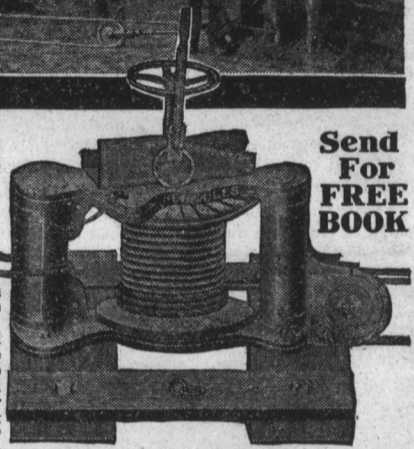
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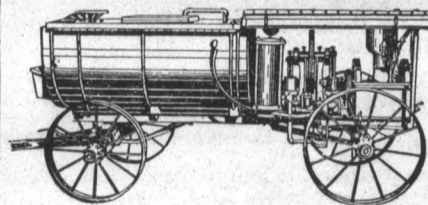
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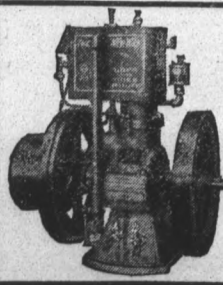


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As substantiating this point of view, it is common knowledge that practically the best fertilizer to be had today, to-wit, barnyard manure, is not in a state of high solubility. Indeed, it is quite well known that if we were to judge of the value of barnyard manure by its content of soluble nutrients we would judge much below its real value.

LABORATORY REPORT.

Using Treated Wheat as Stock Feed.

Is wheat, treated with formaldehyde to prevent smut, rendered useless, or injurious, in any way for feeding or milling purposes? I have several bushels that were treated, but owing to the extremely wet weather at seeding time was unable to sow it.

Newaygo Co. SUBSCRIBER.

When wheat is treated with formaldehyde, the wheat kernel soaks up the formaldehyde and when it is again exposed to the air to dry the formaldehyde undergoes what is called polymerization and does not nearly all evaporate. This polymerized formaldehyde will adhere to the kernels of wheat almost indefinitely. The surest way of removing it is to wash for a considerable period of time but this can scarcely be done without destroying more or less the value of the wheat for milling purposes.

We would not advise the use of formaldehyde-treated wheat for flour purposes. We think, however, that it may be used as a feed for hogs by soaking perhaps overnight in a barrel or vat of water, in the morning drawing off the water and washing once or twice more with fresh water, throwing away the water and then feeding direct to the hogs. We do not apprehend there will be any undesirable effects following this treatment. It would not be a bad idea, however, to mix this wheat with the other feed so that any possible formaldehyde which may remain in the wheat will be sufficiently diluted.

Working with Cement in Cold Weather.

I am building a cement cellar this fall and cold freezing weather has come, stopping work upon it. Is there any way in which the cement can be prepared so it will not be injured by frost? I have been told there was and am anxious to finish, if I can, this fall.

Otsego Co. H. K. B.

The question you raise is one which we apprehend may be of some more or less widespread interest among farmers at this period of the year.

Some time ago when cement and concrete work was more or less in its infancy, it was supposed that with the advent of winter weather all concrete operations must cease because of the freezing of the water in the cement, thereby fracturing the cement structure. At the present time contractors do not hesitate at any kind of weather, practically, in the building of concrete structures. The popular method is to use, instead of water for the mixing of the cement, a rather strong salt solution which lowers the freezing point of the water sufficiently so that ordinary temperatures do not affect it. If to 100 lbs. of water are added about 10 lbs. of salt and this brine solution used to mix the cement, little difficulty will be experienced by the freezing weather. It is customary, however, even when these precautions are taken, to keep the cement structure protected as much as possible from the weather by straw, or hay, or better still perhaps, manure.

We will say in addition that this is a common method among contractors who are doing extensive work of this kind and is quite simple in its manipulation, and we think in what work farmers may desire to do on the farm it will be found, especially at this time of the year, to be very advantageous.

CATALOGS RECEIVED.

A copy of the sixty-page, attractively illustrated booklet entitled, "Land of Manatee," printed in two colors and issued by the Seaboard Air Line Railway, of Norfolk, Va., has been received at this office. The booklet gives a detailed description of the land in Manatee county, Florida, describing climate, crops, markets, and other matters of importance to those interested in southern lands. A copy of the booklet will be mailed free to any Michigan Farmer reader by addressing the above company.

The Lehigh Portland Cement Company have issued a 70-page treatise entitled, "The Modern Farmer," in which are described the practical uses of concrete upon the farm, together with general instructions for its use. Illustrated with liberal reproductions of photographs and line drawings. Every reader should have a copy, which can be secured by writing the above company at Chicago, Ill. This same company has also published a 36-page, fully illustrated booklet, giving 41 real reasons why concrete should be selected to the exclusion of other types of construction. It will be sent upon request.

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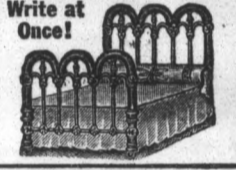
Imagine a gigantic sale of over two thousand special bargains, which covers: Lumber of all kinds, Millwork, Doors, Windows, Balusters, Wall Board, Paint and Paint Brushes, Roofing—Tarred, Rubber and Corrugated Steel—Steel Brick Siding, Pipes and Fittings, Boilers, Radiators, Hardware Supplies, Stoves, Ranges, Heaters, Furniture, Chairs, Desks, Dressers, Couches, Beds, etc., Rugs, Curtains, Washing Machines, Plumbing Outfits—in short, everything to build a home and furnish it comfortably.

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HORTICULTURE

PREPARING THE ORCHARDS FOR WINTER.

The first fall of snow makes us think that we should get ready for winter and this applies to the orchard as well as to other things. The older trees may be said to be ready for winter as soon as the crop of fruit is off. If the scale is bad it may be best to spray with lime-sulphur in the fall after the leaves are off, providing they are off soon enough, which is not always the case. On falls like the present when hard frosts hold off until late the leaves often persist in hanging on a healthy sprayed tree until winter sets in. This makes spraying in the fall unsatisfactory.

Pruning may or may not be done. We like to get considerable of the pruning done on the large apple trees in the fall,

way. We use a bicycle pant-guard to slip around the protector to hold it while tying. The bottom is pressed into the soil a little and a little soil pulled up around it to hold it in place and prevent mice from getting under. Where there is sod we sometimes put on two strings. Where there is mulching this may be pulled about the base of the protector to hold it. We do not like to use wire in tying, as the wires get down in time and may girdle the tree, as we know from experience. Tarred paper can be used instead of the veneer. It will cost a little less and last nearly as long. Some think the tar or black paper will injure the bark, but we have not noticed any injury from this cause. In putting on the tarred paper protectors we punch a hole near the edge to run the twine through in tying. The protectors may be left on until the trees are old enough to do without them, or they may be removed in the spring and replaced in the fall. The latter is more sanitary, but rather too much work. If the field is clean and rabbits

set on incline, the receiving end about four feet wide, tapering to about one foot at lower end, with hooks on to hold bag. This makes a good rig to sort with, although there is a machine made especially for this purpose that tops and sorts.

I planted my onions on the 10th of May, but would advise sowing earlier if possible. April would be better as it gives them more time to ripen. I think the Yellow Globe Danvers is the best for Michigan markets. The Red Globe and Red Wethersfield are good sellers in New York state and Montreal. I never grew onions in my life until two years ago. I put in a small piece and they did so well that this year I put in a seven-acre patch and next year will probably put in 25 or 30 acres. My land was tamarack and cedar swamp, clay subsoil and muck from two to ten feet deep. I have no doubt in my mind that I can grow a good crop every year.

What little knowledge I have has been gained by reading and visiting onion fields. This year I was undecided whether to thin my onions or not, as some said thin and others not. I thinned out five rows and then decided to find out which was best. I took a trip to South Lima, N. Y., where there is a 200 acre tract of truck land. They did not thin their onions, and I could see plainly they were right as their onions had begun to crowd out. I was gone about two weeks before I returned to my field and mine had grown so much and had begun to crowd so that I could plainly see that it did not pay to thin. My onions cost me \$400 for the seven acres up to pulling time, and the pulling, topping and hauling cost about two cents a bushel. The usual estimate is about \$75 per acre and 300 to 500 bushels is considered a good crop. On land that has been cropped a long time, they use commercial fertilizers. The average price of onions is about 40 cents, but this year I sold at an average of 85 cents. I would not advise any one to go into it heavy until they try their land. A neighbor of mine put in eight acres on clay land and plowed about all up and did not get much from that which he left.

A. WHEELER.



Loading Cabbages at Bellaire, Baraga County.. Number of Wagon gives one an idea of the size of the Cabbage Industry in the Upper Peninsula.

leaving the peach trees and the younger apple trees until spring. This helps to relieve the tension in the spring when work is always very plentiful and oftentimes the fruit grower is badly behind with it. If one has plenty of manure, straw, or any coarse material a mulch may be placed beneath the older trees during the fall or winter. This will furnish both nutriment and protection.

But it is more especially the young trees that I wish to consider. The younger ones have probably held their foliage until this time, and have been whipped about considerably by the wind causing the trunks to press the soil back from them at and below the surface of the ground, making an inverted cone-shaped cavity about the trunks of the trees into which water often runs and freezes. I have noticed a number frozen already, and this is claimed to be injurious to the tree. Whether it has any connection with the dying of the bark at the base of many young trees, known as collar rot, I am unable to say, but it is certain that the latter is becoming a very prevalent trouble, especially on trees of certain varieties, such as King, Grimes Golden, and Duchesne.

I think it is a good plan to go around the younger trees late in the fall, but before the ground freezes up for the winter, and stamp the soil down firmly about the base of the trees so as to fill this cavity and firm the soil about the tree, so that, with the foliage off, it will hold it more firmly from whipping in the wind. It is well to throw a few shovels of soil about the base and pack this down also, especially if there are weeds or other trash that would harbor mice, and protectors are not to be applied. This will assist in keeping the mice from nesting near the tree, in which case they are likely to gnaw the bark, and also assist in holding the tree firm and preventing the formation of cavities about the trunk.

Where mice and rabbits are quite troublesome it may be well to put a protector of wood veneer or tarred paper about the trunk. The wood veneer is made for this purpose, and will cost from a half cent to a cent apiece. These protectors should be moistened before putting on so they will not crack, and should be tied with a string about two-thirds of the way up. A decided notch should be cut in the outer edge of the protector, slanting downward and inward, to hold the string from slipping down, which it will do as the protector shrinks unless held in some

not too abundant, I think it safe to omit the protectors, as I would prefer not to use them unless necessary, since they harbor scale and larvae. If the trees are mulched it may be necessary to use them, though we omitted them from mulched peach trees last year and only two out of 900 were injured. The mulch was not placed against the trunk but kept a foot away from it.

Calhoun Co. S. B. HARTMAN.

MR. WHEELER TELLS HOW HE GREW HIS ONIONS.

I would like Mr. Wheeler to tell through the Michigan Farmer his method of planting and caring for onions. The distance apart and how much seed it takes.

Tonia Co. E. O. S.

I do not claim to be an authority on this subject, but will try and tell my experience, which was successful. The larger part of the onions were all grown on muck land; they require cool soil and are liable to fall on sandy soil. I consider new land the best and would not advise using barnyard manure as it would be liable to breed worms. I prepared my land by thorough draining, and fall plowing, dragging in early spring to make a good fine seed bed, and then roll. Plant with hand drill 14 inches apart, using 3 1/2 to 5 pounds of seed to the acre. I used 3 1/2 pounds per acre. Have a careful man to run the drill and be sure the drill is working and not clogged up and take pains to plant shallow. It is a good plan to buy your seed early and have it tested before planting.

After onions are up, work with a wheel hoe. Start weeding and do it well, weeding as often as required to keep clean. After the onions start to bottom work the dirt away from the onions, covering just the roots; but would not advise to do this until the roots have a good hold in the ground. An onion too deep in the ground will not bottom but will be a scullion. Do not thin the onions only in places where the seed is very thick, you will get better onions and less thick necks, onions crowd out and make room for themselves. After the tops start to die roll them down. I used a pork barrel, anything not too heavy will do. After the onions have pretty well died down, pull and top. I did my topping with sheep shears and paid three cents per bushel for topping and picking up.

Put them in bushel crates and let them dry for about ten days under shed; then run them over screen made of 1x3 strips

PROGRAM FOR STATE HORTICULTURAL SOCIETY MEETING.

The annual meeting of the Michigan State Horticultural Society will be held at Ludington, December 5-6-7, when the following program will be presented:

- Tuesday Morning, December 5, 10:00. Thirty-five Years of Fruit Growing in Mason County—Mr. Smith Hawley, Mason county.
- New Varieties for Michigan—F. A. Wilken, South Haven Experiment Station.
- New Points in Peach Growing and Marketing—Mr. George Friday, Berrien Co.
- Tuesday Afternoon, 1:30. Impression on Apple Growing in Different States—Henry Waller, Charlevoix Co. Selection and Preparation of an Orchard Site—O. S. Bristol, Lapeer Co. Care of a Young Orchard—E. O. Ladd, Grand Traverse Co. My Methods of Pruning—Paul Rose, Benzie Co.
- Wednesday Morning, December 6, 9:00. Controlling Fruit Diseases—Edward Hutchins, Allegan Co. Five-Minute Addresses by M. A. C. Senior Students. Report of the Trustees of the T. T. Lyon Memorial Fund. Report of the State Society Secretary and Treasurer.
- Election of Officers of State Society. Wednesday Afternoon, 1:30. Leasing Orchards as a Business—S. B. Hartman, Calhoun Co. Packing and Selling Michigan Apples in Boxes—A. M. Bullock, Lapeer Co. Fruit Farm Cold Storage Buildings—Prof. H. J. Eustace, M. A. C. What Means Can we Empoly to More Profitably Market Our Fruits? Education—Charles Pratt, Berrien Co.; Legislation—R. A. Smythe, Berrien Co.; Co-operation—C. E. Bassett, Allegan Co.
- Wednesday Evening, 7:30. Insects Every Fruit Grower Should Know (illustrated with stereopticon)—Prof. R. H. Pettit, M. A. C. Scenes on Many Michigan Fruit Farms (illustrated with stereopticon)—Prof. H. J. Eustace, M. A. C.
- Thursday Morning, December 7, 9:00. Practical Demonstration in Buying Fertilizers—Prof. A. J. Patten, M. A. C. Lessons we have Learned in Spraying—Chas. F. Hale, Kent Co. Is Lime-Sulphur a Satisfactory Substitute for Bordeaux in the Summer Spraying for Apples?—T. A. Farrand, Eaton Co.
- Thursday Afternoon, 1:30. Gooseberries and Currants—J. Pomeroy Munson, Kent Co. Pears for Profit—George Chatfield, Van Buren Co. The Michigan Fruit Growers' Opportunity—C. B. Cook, Shiawassee Co., Question Box. General Discussion.
- A fine exhibit of spraying machines and other appliances will be shown at the meeting. There will also be a fruit display that promises to surpass those of former horticultural meetings.

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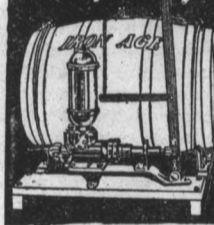
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GRANGE

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

THE DECEMBER PROGRAMS.

State Lecturer's Suggestions for First Meeting.
 Anniversary day program, commemorating the birth of the Order, December 4, 1867.
 10:00 a. m. Call to order in Fourth Degree.
 Election of officers.
 Noon recess—dinner served to all members of Grange families.
 1:30 p. m. Reports of retiring officers. Suggestions for good of the Order.
 Grand march about the hall, led by assistant stewards.
 Plays and games, in charge of lecturers and assistants.
Suggestion for Second Meeting.
 Song service of Christmas music. (One-half hour).
 Roll call—men to respond to the question, "What have people talked about in 1911?" and women answer the question, "Who have people talked about in 1911?"
 Dialog—"A Modern Hero."
 Serving Christmas pie, in charge of master and Flora.

THE SOCIAL SIDE OF GRANGE WORK.

There are a great many weak Granges in Michigan that could be materially strengthened by more attention to social work. The Grange constitutes a large part of "the great school out of school" and therefore its educational possibilities must continue to be its chief end, but the social possibilities of the order are great also and have not, thus far, received sufficient attention, perhaps because we are an exceedingly busy people and are prone to forget the social side of our natures in a mad rush for those material things which we are too apt to think alone constitute success.

The social demand of man's nature must be satisfied or symmetrical growth becomes impossible. The most miserable people, excepting those of the criminal class, are doubtless the men and women detailed to manage lighthouses at dangerous points far removed from sight of human kind. They soon grow discontented. They become jealous of each other, and finally insane, for want of human society, unless relieved by others who must soon share in whole, or in part, their miserable fate. There have been many in the past who have repaired to most lonely spots, far from friends and human companionship, in the hope that by fasting, prayer, and penance they might become holy, but they have failed. The imperfections carried with them into the desert have developed often faster than their virtues and, alone, away from human sympathy, faith wavered, hope died, courage failed and despair was born.

"Character," says Professor Drummond, "grows in the stream of life." From whatever point we choose to look, social work is important. The Grange numbers among its membership the young and the old, the prosperous and those who have met with unfortunate reverses, the bright, keen and intellectual and they who heretofore have done far more working than thinking. Each class is stronger and better for knowing the other. It is in the stream of life alone that all-round development is possible.

The lecturer's program should always contain something to enliven the hour by increasing its social possibilities, something to quicken human sympathy, something to make us laugh, something that will lift our thoughts from ourselves, prompted by a kindly interest in those about us. These are among the things of real worth in a Grange program. And then there is the Grange supper, as old as the order itself, for it dates from the time when Father Kelley, having completed the ritual of the fourth degree, at the hour of midnight, repaired to a restaurant and partook alone of the first Grange feast. The Grange supper has a mission which is largely social. It is indispensable to the largest growth of the order and to its highest good. From the viewpoint of a man, it would seem that we often overdo it; a greater degree of simplicity would accomplish the end sought as well, or better, and would permit its more frequent repetition.

The worthy lecturer can add much to the social development of the Grange if she will but keep on the alert for topics which aid in this way. A pioneer program is of much value to this end in a majority of the Granges in Michigan.

There are men and women whose faith and courage and toil have laid the foundation of the great present, and many of them enjoy telling about it. The power of memory to recall the past and make it to appear before us in all its distinctness has a mission to the human soul.

A lady in one of our northern counties said to me a short time ago, "I count it one of the greatest blessings of my life to have been a child here when the land was covered with a great forest. The memory of those splendid trees will never pass from my mind. I love to think of them. I shall always see them. I shall feel the cool of their leafy shade, and hear the wind softly whisper in their great, green tops." There are countless unwritten poems of the forest dwelling in the hearts of Michigan's pioneers. Lecturers, can you not secure some of them for your Grange programs?

But the thing that helps most of all in a social way is the spirit that we take to the meeting with us. If it is the right spirit, people will see it in our faces; it will be present in the hand-clasp and ring hopefully in the sound of the voice.

We cannot wait longer to develop the social side of life; many of us have waited too long already. The ripened corn, the scarlet leaves of the maple, and the autumn winds have spoken to us eloquently of the passing of opportunity. Can we not make the coming winter rich in the accomplishment of all that is best in Grange work, and may we not strengthen its social side? The answer lies with each individual Grange.

W. F. TAYLOR.

COMING EVENTS.

Michigan State Grange, Thirty-ninth annual session, at Kalamazoo, Dec. 11-15.
Pomona Meetings.
 Isabella Co., with Mt. Vernon Grange, Tuesday, Dec. 5. C. H. Bramble, state speaker.
 Clinton Co., with Olive Grange, Wednesday, Dec. 6. Election of officers.
 Lenawee Co., at Adrian, Thursday, Dec. 7. Annual meeting and election of Grand Traverse District Grange, with Grand Traverse Grange, Wednesday and Thursday, Dec. 6 and 7.

FARMERS' CLUBS

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

Associational Motto.—

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

CLUB DISCUSSIONS.

Hold Annual Chicken-pie Dinner.—The Rives and East Tompkins Farmers' Club spent a very enjoyable day at the home of Rev. and Mrs. Severance. After a bountiful chicken-pie dinner had been served to over 60, the Club was called to order by Rev. Reynolds in the absence of the president, and after singing "America," followed by a prayer by the chaplain, Rev. Reynolds called the attention of the Club to the opposite side of the parlor where the tokens of good will and esteem could be seen, and with a few well chosen words presented the whole to Rev. and Mrs. Severance. After Rev. Severance had expressed his gratitude the program was taken up, consisting of recitations, reading and music. Mr. Wesley Smith gave a graphic description of his western trip. Rev. Severance read an article on the agricultural exhibit to be held in New York. The meeting was adjourned to meet with Mr. and Mrs. Wm. Jones, the first Saturday in December.—Cor. Sec.

Elect Delegate to State Meeting.—The November meeting of the Milford Farmers' Club was held at the home of Mr. and Mrs. Watson Bourns. As the day was unusually fine a goodly company of farmers and their wives turned out. In the absence of the president, Mr. Bennett was chosen chairman of the meeting, which was enjoyed by all, especially the gentlemen, who had some lively talks on the road question. Albert Bucknell was chosen as a delegate to the state farmers' convention to be held at Lansing in December. The next meeting will be held at the home of Mr. and Mrs. Wm. Sutton.—Cor. Sec.

Discuss Forestry Problem.—In spite of the storm, about 50 of the members of the Odessa Farmers' Club met with Mr. and Mrs. Chas. Begerow, Saturday, Nov. 18. In the absence of President Carter, Mr. E. H. Curtis was called to the chair. After the opening exercises Mrs. J. L. Carter read a paper, "The Restoration of Our Forests." This was a plea for our timber lots to keep the stock out and plant other trees, locust, larch, etc. M. L. Foght would have children taught the care of fire, and so preserve the forests we have and would not spend time in planting more trees, but take better care of what we have. "Each generation is equal to every emergency. If the wood gives out they will find something else." Mr. Curtis said 40 years ago wood was worth 80 cents in the woods, and was worth more in Ionia than now. It took 500 cords per day to supply the city. A

good dinner was served at this time. "Home Training of Children on the Farm" was the subject of a paper by Mrs. Klahn. This was one of the best papers of the year, and was worth the stormy ride to hear. Discussion was not needed. The election of officers came next and resulted in the choice of M. L. Foght for president; vice-president, Henry Stinchcomb; rec. sec., Florence Lepard; cor. sec., Lottie Durkee; treasurer, Howard Klahn. Delegates to State Association, Z. W. Carter, Howard Klahn, with Mrs. John Klahn and Miss Florence Lepard as alternates. Club adjourned to meet with Mr. and Mrs. Z. W. Carter the first Saturday in December.—Reporter.

Lighting and Heating the Home.—The Lenawee-Hillsdale Farmers' Club held its November meeting at the home of Mr. and Mrs. J. C. Crofoot. Following the business session and dinner the discussion of lighting and heating the farm house was opened by Lorenzo Beal. He spoke of the great progress which had been made from the tallow candle up to the present time of acetylene and electric lighting systems. Then in the manner of heating from the fireplaces to the furnaces, steam heat, etc. He considered coal stoves excellent for heating, but thought people were apt to neglect ventilation. Mr. Weed favored a furnace with a two-flue chimney, with two registers in each room, one at the top of the room and one near the bottom for ventilation. Henry VanWie used a coal stove, but thought many favored steam heat. Mrs. Landon considered, aside from the first expense, the gasoline engine and storage batteries made the best lighting system for the home. Rev. Kishpaugh favored using coke in the furnace, as it cut down fuel expenses one-half. He had also used hard coal screenings with the coke, to good advantage.

Furnishings for the Home.—The next topic, "Furnishings for the Home," was opened by Mrs. Weed. She first spoke of the kitchen, as that was where the ladies had to spend a great deal of their time. She favored the oil stove and linoleum for floor covering. The covering for the dining-room floor should be something that could be taken up easily and cleaned often. But the furnishings of homes should depend on the amount of money the pocketbook contained. Mrs. Frye said in a home where there were children that good books, papers and music were more important than nice carpets and furniture. Mrs. Mary Van-

We thought we should furnish our homes according to our conditions. Cleanliness should be first of all our endeavors. Mrs. Beal thought when the day arrived of electricity in the rural homes we would have many advantages we are deprived of now. That a vacuum cleaner was necessary in every home. Mrs. Baker also favored the vacuum cleaner, but thought our homes should be arranged for comfort. She thought a bath room one of the necessary conveniences our rural homes might have. Mrs. Landon spoke of the septic tank, to be used in connection with the bath room. Mr. Crofoot was called upon to tell of their acetylene plant. They were very much pleased with it and considered it very inexpensive after once installed. Mr. and Mrs. B. W. Baker were elected delegates to the convention in Lansing. The Club adjourned to meet December 14, with Mr. and Mrs. Dorsen Warrn.

"Persimmons" for this Club.—The Columbia Farmers' Club, of Jackson Co., held its November meeting at the home of Mr. and Mrs. George Conover. A short business session was held before noon. Mr. and Mrs. Judson Freeman were elected delegates to the State Farmers' Club Association to be held at Lansing, Dec. 5-6. Roll call was well responded to with current events. Recent legislation was discussed by Sumner Ladd, Mr. Harper and Rev. Sidebotham. A box of persimmons was exhibited, sent to the Club from Paulina Raven, of Warrensburg, Mo. Mrs. Grace Peterson gave a very interesting paper on "What Should be Found in the Home Medicine Chest." Discussion followed by Mesdames Loomis, Crego, Donaldson and many others. After a good program had been completed the Club adjourned to meet in December at "Lindenhurst," the home of Mr. and Mrs. E. G. Hitt.

FARMERS' CLUB FAIRS.

Lookingglass Valley Club.

A crowd of nearly 200 were in attendance at the poultry show and fair held at the Wacousta Woodman hall, Nov. 14, by the Lookingglass Valley Farmers' Club. The hall was very prettily decorated, each department having a good number of exhibits. In the fancy work department, as in the other departments, nearly all who had exhibits received either a blue or red ribbon, Lizzie Wesseler carrying off three blue ribbons, Mrs. Faith Miller one blue and two red. Some nice hand-painted pictures were exhibited by Myrtle Miller. The fruit display, consisting mostly of apples, was very fine, Oscar Clark, M. L. Hunt, Bert Oliver and Chester Clark receiving the largest number of ribbons. In the grain, vegetable and canned goods departments the display was good, though smaller than the other displays. In a tent near the hall was the poultry. There were 20 exhibitors with 124 birds on exhibition, including 14 varieties. Roy Lee had the largest exhibit and Roy Hamilton had the highest scoring bird, a Black Minorca, which scored 95 points.

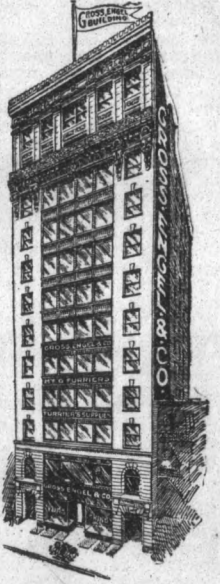
Next meeting will be held with Mr. and Mrs. F. Ainslie, which will be a corn meeting and a corn expert is to be present.

The second number of the Farmers' Club lecture course will be Friday night, Nov. 24, at the Wacousta M. E. church. The Old Kentucky Jubilee quartet.

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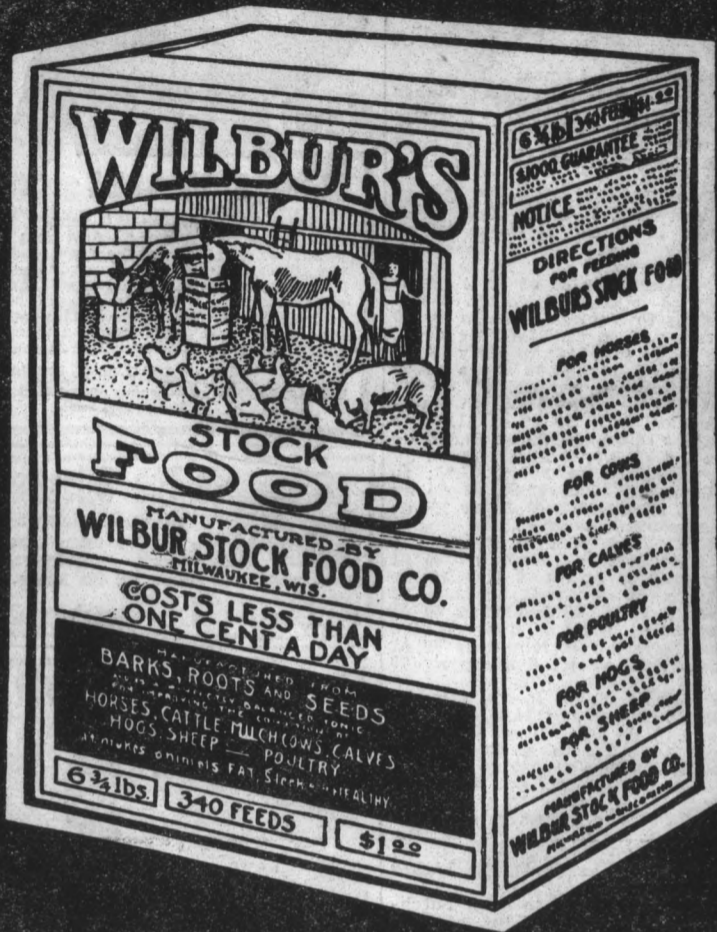
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