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The Soy Bean in Michigan Agriculture

By COLON C. LILLIE.

IT is perhaps too early as yet to fix definitely the place which soy beans should occupy in our agriculture. The experience of a few men is not sufficient on a question of this kind. The crop may seem to meet certain requirements in their farm practice and warrant them in believing that it will apply in all cases, but it is not safe to assume anything of this sort. After the crop has been thoroughly tried out in every neighborhood, then the co-operative judgment of the best farmers might establish the proper place for that crop in our agriculture, but the opinions of a few men based on trials made under their special conditions only, do not constitute sufficient evidence to this end.

From my limited experience of a few years I am frank to assert that soy beans make the best "catch" crop I know of—the surest, the safest and the most valuable. I cannot think of any instance of a failure of any crop resulting from any cause where soy beans will not help the farmer out. Some of the most common "catch" crops are millet, turnips, buckwheat and sometimes common beans. If one loses the clover seeding, he will be short of hay, but he can break up this land, sow it to millet and get a substitute. Soy beans will take the place of millet for this purpose, will furnish a more valuable hay crop, and if wanted will furnish a crop of seed and the straw will be nearly or quite equal to millet as roughage for live stock.

If the seed corn rots, or fails to grow from any cause, soy beans can be planted as late as July 1 and produce a splendid forage crop. They grow wonderfully fast and luxuriant in the hot July weather. Wheat and oat stubble can be prepared after these crops are harvested and if there is sufficient moisture a splendid crop for fall pasture can be secured or, if the fall is at all favorable, this late sown crop can be secured for hay. In fact, any place that can be found in midsummer, when it is too late for ordinary crops, soy beans will bring a crop that will help out the stock farmer materially, and if you are not a stock farmer this crop can be used as a cover crop or a crop for green ma-

nure. Very few crops, if any, exceed soy beans in value or a green manure crop. The soy bean is a leguminous plant and, like clover, has the power of utilizing free nitrogen from the air. It makes a luxuriant growth and hence adds to the soil large quantities of organic matter which finally becomes humus. Very many of our Michigan soils need vegetable matter quite as much as they need plant food. In fact, the restoring of vegetable matter in the form of green manure, or

taining more protein with it to get the best ration. The soy bean fills the bill better than any other plant I ever tried. I have tried case-knife beans, pole lime beans and cowpeas, and soy beans are far superior to any of them. If you get corn or wheat or any plant of the same family too thick, it will not do so well, but plants of different nature, widely different balanced families, like the grass family, corn, wheat, timothy, etc., and clover, or soy beans, etc., which are of a very

thick for best results and yet soy beans grew among the corn, three feet high, blossomed and produced seed, being perfectly developed plants. The trouble is to get the seed evenly and properly distributed among the corn. The beans ought not to be planted as deep as the corn. If you mix the seed before planting it will not be evenly distributed. This coming summer I intend to try running the planter over the field the second time, taking pains to follow the planted rows of corn. This will distribute the beans evenly and they will not be planted as deep as the corn. I believe it will work.

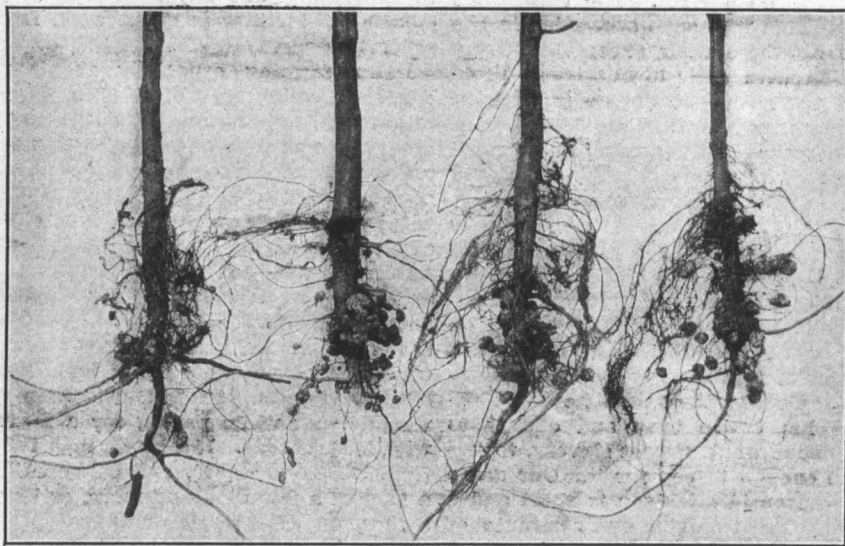
This year I planted soy beans the first week in July in rows 28 inches apart and pulled them with the bean puller and run them through the ensilage cutter when we filled the silos, putting in one load of beans to two or three loads of corn. This can be done, but if you can grow the beans with the corn, they are harvested at the same time and handled at the same time and much more evenly distributed in the silo. I know well enough that the soy beans improve the ensilage, and we can get along with a grain food containing less protein and consequently cheaper than where no beans are used.

Soy Beans in the Crop Rotation.

I am satisfied that soy beans will pay better than oats under Michigan conditions and that they will take the place of oats in a rotation. One of the common rotation of crops in Michigan is corn, oats, wheat and clover. This is quite generally considered a good logical four-year rotation for Michigan. Some years, on a dairy farm at least, it is difficult to prepare the ground and get the oats in as early as they should be. When this crop should be sown the dairyman has all his winter chores to do. He must work very short days and the time is very limited. Soy beans should not be planted till late in May or even June 1, and this gives the dairyman more time.

The Value of the Crop.

A good crop of soy beans is worth more than a good crop of oats. Experienced growers claim they will



Nodules of Nitrogen-Fixing Bacteria on the Roots of Soy Bean Plants.

crop residue, or stable manure is the first thing to do to improve them. It is the very basis for restoring their crop producing power. The plant is more efficient for this purpose than the soy bean plant. It is a quick grower, a vigorous grower and it has quality.

Soy Beans for Ensilage.

My experience warrants me in saying that it will pay any man who grows corn for silage to use a certain amount of soy beans with his ensilage corn seed. That is, grow the two plants together for silage. The theory is correct. Corn is a carbonaceous plant. We must feed some feed con-

different nature, they will stand crowding a little and not seem to check their development. We know we can get a larger yield of hay if we grow clover and timothy together than where we grow each separately. Neither family will stand crowding with their own fellows, but mix them and you can get more plants and plants that are just as well developed. So I believe, after two years' trial, that I can grow soy beans in a corn field where the corn is plenty thick enough. It would not stand any more corn but it will stand soy beans, and they will grow luxuriantly. I had some sweet corn this past summer that was too



A Crop of Wonderful Adaptability, Serving a Good Purpose as a Spring-Sown Grain or Hay Crop or as a Catch Crop Following a Spring Crop Failure.

yield from 15 to 30 bushels of seed per acre. These beans, at the present time, are worth \$2.50@3 per bushel for seed purposes. But let us figure them on a feed basis or valuation. Careful experiments at several of our experiment stations have proven soy bean meal to be equal, pound for pound, to cottonseed meal for feeding purposes and therefore worth \$30 to \$35 per ton. Then a 30-bushel crop would be worth \$27.40 per acre and a 20-bushel crop \$18 per acre for feeding. This year oats are unusually high, but a 60-bushel crop of oats would only bring \$30 per acre, and a 40-bushel crop only \$20. Ordinarily the same crop would bring no more than \$21 and \$14 respectively. Oat straw has some value as feed. It is well worth saving, but it has nowhere near as much food value as soy bean straw. I doubt if oat straw has one-half the food value of soy bean straw. And the soy bean straw is more palatable; in fact, it is relished by all kinds of stock. I would expect horses or sheep or young cattle to do as well on soy bean straw alone as on oats and timothy hay.

It would cost more to grow the soy beans. They must be cultivated, and until we get used to harvesting them it would cost more than to harvest oats. But if wheat followed in the rotation, the oat stubble must be plowed and properly fitted at a time of year when it requires the greatest amount of labor to till land, while the soy bean ground will be already prepared or at least only a light disking would be required. Last, but not least, oats draw heavily on the soil for nitrogen, while soy beans get their nitrogen from the air, and leave the soil in a better state of fertility.

Again, the dairyman has a home-grown food equal to cottonseed meal. That is worth something. It is worth more than we at first would think. If we can grow our own feed it is a better practice than to buy. With soy beans grown with the corn for silage and a little soy bean meal as a concentrate, the balance of the grain ration could be a cheaper food and a different food.

Soy Beans Have a Commercial Oil.

Soy beans are rich in fat and the agricultural chemist and the practical paint man also tell us that this fat or oil is a good substitute for linseed oil, so much used in paints. More than that, I am told that soy bean oil has, during the period of high prices for linseed oil owing to a disease in the flax plant, been substituted for linseed oil in the manufacture of paints, and that it is a satisfactory substitute. The time may come when we will grow soy beans instead of flax for the oil and then we will have the oil cake for cattle food just as we now have linseed cake or oil meal.

In Manchuria, China, and in Japan soy beans are grown extensively and are used in part as a human food. They are imported in large quantities into Germany and not only used as cattle food but variously prepared as human food. It is claimed that a German chemist has made a preparation from soy beans that has the same analysis as average, normal cow's milk, looks like it, and in fact, can scarcely be detected from cow's milk. In fact, people drink this and think it is cow's milk.

More Farmers Should Try Soy Beans.

I think the soy bean is a wonderful plant, worth much more to us than oats, and that it can take the place of oats in our rotation of crops and bring as great a profit. As I said at first, more years of experience may cause me to change my mind, and with my limited experience it may not be proper for me to say so much in favor of this new plant. I wish many farmers of Michigan would try this plant in a limited way so we could have the benefit that comes from knowledge of varied and extensive experience.

Getting a Start in Farming.

By C. W. MELICK.

ONE of the most important questions that confronts rural communities is whether or not their young men can buy farms and make comfortable homes. It means much to the prosperity and civilization of our country, for it is upon the thrifty farming communities that our nation largely depends.

The average young man of today can buy a farm and pay for it with the proceeds derived therefrom, but he will not do it.

The energetic, able-bodied young man, somewhat above the average, will when inspired with the thought of making a home for a nice young lady, buy a farm and pay for it within a few years.

The average young man, however, frequently reduces his energy and ability to a certain extent, by keeping irregular hours at night, the use of cigarettes and booze, and contents himself to work for wages. Even thus reduced in vitality and vigor, the average young man can, if he will, produce enough on a farm to pay for it in the course of time. The human willpower is a tremendous force when rightly applied. Willpower, however, should be combined with a strong healthy physique, a thorough knowledge of one's business, efficiency in the application of it, and a wife that co-operates with him, if a young man succeeds on a farm. The percentage of the men who have succeeded in life may attribute their success to co-operation with their loyal wives. Probably ten per cent of the failures in business may be attributed to lack of co-operation, shiftlessness, or extravagance of housewives.

Efficiency the Watchword.

Any successful business venture requires capital, either owned or borrowed. This is especially true of the farming business. If a young man attempts to buy a farm and pay for it with what it produces, he must obtain a loan of from five to ten years duration. During that time he must devote his entire time and energy to strenuous work, almost slavery, to produce enough to pay for it. Our growing season in Michigan is short and a farmer must hustle every minute of fair weather, and save indoor work for every rainy day. Efficiency should be his watchword. Every move should count. Many a man works 12 hours a day through a lifetime and gains nothing but six feet of graveyard sod. A

few mix sufficient brains and system with their work to secure modern homes and a comfortable living. "It is not what we say but the way we do or say it. What would an egg amount to, pray, if the hen got on the roost to lay it."

Lack of efficiency is most apparent among hired help. Most hired help work very well while the farm owner works with them. When left alone, however, few of them accomplish what is laid out for the day.

Many things, if done as you desire, must be done by yourself. In fact, a farmer must work several hours longer almost every day, while paying for his farm, than any hired man will work.

Last summer I employed a bright-looking young man who would do credit to any farm work if he would conserve his strength. He worked very well for a few weeks and then began spending his evenings down town. He spent all his money on cigarettes and booze and seldom got home before 11 o'clock p. m. His work grew less efficient until I had to dismiss him during the busy season of the year.

Efficiency Defined.

Efficiency on my farm means doing the work at the right time as well and as quickly as it can be done. Doing work well, but wasting two days to accomplish one day's work is not efficiency. Neither is quick work improperly done.

Dairy farming especially requires efficiency. The work of feeding, care of animals, milking and straining may be a waste of time and expense if unsanitary conditions exist in the milk house.

A farmer must practice modern efficient methods, be to some extent, a mechanic, soil analyst, veterinarian, and judge of live stock. He should have, or cultivate, foresight and executive ability. If he has not sufficient capital or cannot secure a loan for several years' duration, life is hardly worth living while paying for a farm with its proceeds. If a young man has from \$3,000 to \$5,000, and can obtain a loan of a few thousand more, or buy a farm on easy terms of annual payments, he should buy it and make a home. Every young man with health and vigor, which he may have if he conserves it, should own a tract of land, however small, and make a home that he can call his own.

POINTS OF ATTACK IN SOIL IMPROVEMENT.

Soil improvement should be the constant object of every modern farmer. It is best affected by four points of attack, namely, acidity, tillage, humus and capillarity.

Acidity.

Soils have a tendency to become acid and to increase in acidity year after year. Often soils fail to produce properly and farmers ignorant of the true cause continue to make heavy applications of expensive fertilizers without effecting any change for the better when the presence of too much acid is the sole cause of the trouble. The presence of acid is often indicated by the amount of common sheep sorrel found growing in it and by the fact that clover and alfalfa do not thrive in soils containing much acid. The valuable bacteria which produce nitrogen do not thrive in acid soil, while the injurious denitrifying bacteria do thrive and multiply in such soils. Farmers should guard against the increase in acid by testing their land for its presence. Litmus paper, the chemist's test for acids, costs but a few cents at any druggists. When the presence of acid is known, lime should be applied.

Tillage.

Plants get much of their food and drink from the mineral plant food held in solution by the film of water clinging tightly around each soil grain. Cultivation conserves this film of water to furnish food and drink to the plants. Good farmers of the future will cultivate and work over the soil more than we do now.

Humus.

Humus is decayed organic matter in the soil. It is former plant or animal matter that has decomposed into a form suitable to be taken up again as plant food. Some kinds of plants when decayed, afford more humus than others and the farmer should always seek to grow, save and plow under all the better humus-making crops such as clover, vetch, rye and straw manures.

Capillarity.

This law of nature may easily work either for or against the farmer's best interests. It is estimated from experiments that 900 tons of water are needed to grow an average acre of corn and that another 900 tons of water escapes during the process. At least 400 tons of moisture must pass through potato tops to produce one ton of solid, dry matter. Even more water is required in the growth of some grains. This moisture is being used constantly throughout the season in plant growth, while the rains may fall once a day, a week, a month, or not for an interval of two months in times of extreme drouth. The farmer must act so that this moisture is held back and both surface run-off and evaporation be retarded.

Early and frequent dragging will save much of this rainfall which would otherwise escape. A farmer should drag at the close of each day what he has plowed that day so as to retain the valuable moisture that is in the freshly turned soil and would soon escape by evaporation. If a full earth mulch is kept on the soil we save, the moisture that comes up from within the earth, even during the driest weather, and this, properly held back, will come in contact with plant roots and thus grow crops when no rain is falling.

Hillsdale Co. C. L. CHAMBERLIN.

THE DETROIT TRIBUNE DISCONTINUED.

We can accept no more subscriptions to the Detroit Daily Tribune. All subscriptions received by us after January 30, will be returned, as that publication has been discontinued. Old subscribers of the Detroit Tribune will receive the Detroit News.



The English Farm Lease

THE other day a friend of mine showed me a form of contract which is used in England for leasing land. It is a document 18x22 inches in size, all of one side of which and over half of the other side is used. It is a very concrete agreement which covers all the points where there could be any chance for dispute. Some of the items are more than merely interesting, and some are very instructive as well. I will try to pick out some of the more interesting and instructive items and give them in this article.

A Few Interesting Provisions.

In article 4, the landlord reserves to himself all the trees, mines, minerals, quarries and the right to work them. In the next article he reserves the right to all the game, wild fowl, fish, etc., and the right at all times for himself, friends and servants to enter the farm for the purpose of sporting and preserving the same.

Article 7 is one that should teach us a lesson in our farming. It reads: The tenant is to consume all the hay, straw and fodder on the premises, with his own stock, and not to take in any Ley cattle or stock, without first obtaining leave in writing of the landlord." Article 8 continues that the tenant is not to sell or carry off any hay, straw, fodder, turnips or any green crop (potatoes excepted), nor any manure, unless by written consent of the landlord. These two arti-

cles are very interesting because they are the keynote of the productiveness of the English farm. Article 11 reads as follows: "The tenant is not to take more than three crops of corn (meaning grain) from any land at one tillage, and after the second crop to sow turnips sufficiently manured and cleaned, and with next corn crop to lay the land, with a good assortment of clover and grass seeds. No hay crops to be mown twice in the same year." This is just another precaution that the landlord takes to keep his land in the proper shape. How many farmers will sow the same crop on the same land year after year until the land will not grow anything. The latter part of that article which says that no hay crops shall be mown twice in the same year is one of the best things in the whole contract.

Articles 13 and 16 state that the tenant shall keep all gates, fences, buildings, drains, roads, etc., in repair free of charge, the landlord furnishing the rough material for this purpose; also that the tenant is not to allow the pigs to run at large out of the sty. This provides that the place must be kept up all the time and has no chance to run down.

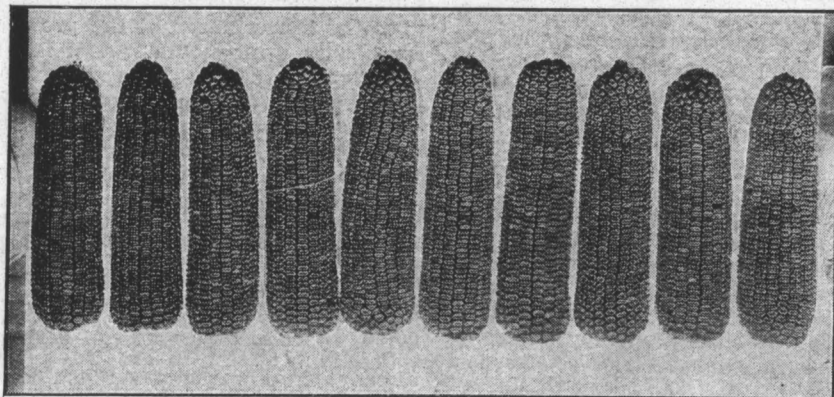
A Schedule of Costs.

On the last sheet of the agreement is what is termed schedules. It states that this schedule is what the tenant and the landlord consider fair and reasonable compensation in respect of improvements to which this schedule refers namely, the application of bone, lime, purchased manures and the feeding stuffs. I will not bother to give all of this schedule which is very definite and well worked out in every detail, but I will try to give something

of an idea as to its substance. It states how the ground, raw or boiled bone that has been applied to the land is paid for upon a seven-year scale if applied to pasture land and on a three-year scale if applied to a meadow, etc. Lime and purchased manures are figured in the same manner and valued according to the time that they have been applied. I will copy verbatim the article under the heading of feeding stuffs.

"One-third the cost of linseed, cotton or rape cake, consumed on the farm during the last year, and one-sixth the cost of that consumed during the preceding year. One-sixth the cost of manufactured stuffs and corn grown upon the holding and consumed on the farm during the last year, provided such consumption do not exceed the average consumption of the two preceding years. All farmyard manure resulting from feeding stuffs to be properly stored and preserved from unavoidable waste."

The above means that when the tenant goes away he will be paid for the fertilizer material that he leaves on the place, which they call improvements in the old country. They have figured it all out as to how long it takes for the lime, bone and manure to give up all of its food values and in what proportion it liberates these properties each year. They have even figured fertilizing value of the food stuffs that are fed and how much the



Sweepstakes Exhibit at the State Corn Show, Shown by D. E. Turner.

manure made from these feeds is worth to the land. All this seems very just and reasonable and in this respect the English farmer and his landlord are far in advance of us.

But the thing that impresses me in reading this last schedule, as it is called, is the weight that they count the fertilizing properties of these various substances. How many farmers in this country figure in any of these things. When we buy a ton of cottonseed we figure up the entire expense to the cows to which it is fed, and never figure that the manure is worth much. And because we do not figure the manure, we do not take the pains to save it that they do in the old country. We often let the liquid manure leak away and the rest of the manure stay out in the weather until it is all washed out and only the fiber left.

We have out-stripped our mother country in many respects and we pride ourselves upon that fact, but as yet we have much to learn from her in regard to the agricultural pursuits. England has a large population and a small amount of tillable soil to raise the foods for her immense family, but she makes the best of her opportunities and converts every resource that she has into making the land as profitable as possible. Can we say as much?

The English Tenant System.

In England, the tenant has to pay on the average about five pounds per acre, or \$25 per acre per year. In addition to this high rent, the tenant has to pay the taxes on the place and keep the place in perfect repair and cut all the weeds, etc. The land is not any better than lots of our land



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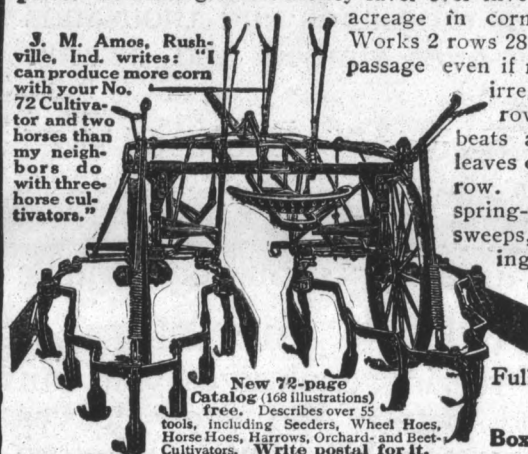
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and some of it not so good, but it is given every care to keep it in good condition and improve the fertility.

On a large stock farm there, say four or five hundred acres, there is what is called an out-barn on about each hundred acres. The cattle and stock are kept in these out-barns so that the hay does not have to be drawn so far as it would if there were only one central barn, and then the manure is there where it can easily and quickly be drawn out and spread upon the land. In the summer, between the haying and harvest, the farm hands are sent out into the pasture fields and all of the droppings from the animals are spread out on the land. My friend told me that he had seen a pasture field that had not been plowed nor re-seeded for sixty-three years and at that time it was as nice a pasture as he had ever seen.

Lessons For Us.

There are twenty-three articles in this agreement, all of which are interesting and instructive. I have only touched upon a few of the most interesting articles and the schedule at the end. I think that we can all of us find many profitable lessons in this English form for leasing the farm. The things that the old countryman lays stress upon are the things that we slight. The things that he considers of the utmost importance are the things that we think too trivial to notice. And after careful consideration and unprejudiced thought upon these matters, we have to admit that he is right and that we are too slack in some of these things.

Of course, the conditions under which our cousins across the pond have to work are different than are ours and this is the reason that some of these viewpoints are different than ours. But the chief reason that they are different is that they have to do these things, and as yet we don't have to. Our soil has not run out yet and our population has not become so large that we have to intensify our methods to the extreme. But sooner or later we will have to come to the point where the English are today, because we will have their conditions to contend with. The man who starts in gradually to copy after the old country farmer is the man who will have a productive farm long after the surrounding farms are beginning to lose their productiveness. In the east and the south, the results of ignorant and greedy farming can be plainly seen. You can even begin to see some of the signs in our own community. The time to think about these things is before it is too late.

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L. S. BRUMM.

FARM NOTES.

Improving an Alfalfa Seeding.

I have 20 acres of alfalfa which was seeded in the year 1913 on old light sandy soil, which does not grow very rank and the weeds have about the same stand as the alfalfa so far. I cut it well last year but it was not good hay. I top-dressed it last season after the first cutting. When it was seeded I sowed 500 lbs. of ground lime and 200 lbs. of fertilizer. I propose to sow 2000 lbs. of ground limestone, direct from the quarry, on the snow. Will it do any good? Would it be best to disc it in the spring? The stand seems thick enough but not rank enough.

Ionia Co.

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The experience recorded in this inquiry is not an uncommon one where alfalfa has been sown upon this kind of soil, even where heavier applications of ground limestone have been made. It is probable that had the light application been caustic lime, the results would have been materially different. The writer sowed a field of similar soil to alfalfa in 1913, applying two tons of ground limestone per acre to the major portion of the field. Lacking enough to finish the entire field, a few sacks of hydrated lime were purchased to cover the balance of the field after the ground limestone ran out. Last year there

was a very poor growth of alfalfa on this field with the exception of the patch where the caustic lime had been used and ground limestone had been applied some years before. On these two plots in different portions of the field there was a very good cutting of hay and a very vigorous second crop, while on the balance of the field there was a very poor showing, although the plants were about as thick. This difference was apparently due to the lack of inoculation on the balance of the field, while the nodules were plentiful on the two plots above noted, showing that there was plenty of bacteria present. Last fall there was an apparent improvement in this condition, and we are anticipating much better results from this field next season.

If a ton of ground limestone per acre is applied next spring, it will undoubtedly benefit the alfalfa, provided the stand remains until the lime can become effective. The writer has used small applications of 400 to 500 pounds of caustic lime on the surface on a check plot where alfalfa was sown on one side of a field without lime with satisfactory results. Sometimes, too, where a thin sandy field fails to produce profitable crops of alfalfa the first year or two after seeding it will become more vigorous in succeeding years. One field which the writer has had under observation was not cut at all until the third year, when it produced two fairly good crops on the best portion of the field. It is doubtful whether spring disking of a weak stand of alfalfa would prove profitable; an implement which seems to be in higher favor at the present time is the spring-tooth harrow fitted with teeth which are narrow at the point and will do a pretty good job of digging up the soil without damaging even a weak alfalfa plant.

Soil Erosion on Side Hill.

I would like to ask your advice regarding the handling of a strip of bluff or sidehill land that slopes from a sandy loam tableland with clay subsoil to a low piece of ground. This sidehill shows both sand and clay. It has been worked, but is rather too steep to work to advantage, besides this it is inclined to wash. There are already large washouts on it that I would like to fill. How would it do to fill them with stumps, logs and brush? This hillside is not seeded. What kind of grass would be best to stop its washing? It slopes to the north and west. Would it be advisable to plant peaches, pears, plums and cherries on this slope, also raspberries and blackberries? Would their roots keep the land from washing?

Montcalm Co.

R. N.

The most satisfactory way to handle a steep side hill of this kind is to get it into permanent pasture grasses and then use it for permanent pasture if it is so located as to make this course practicable. Well established gullies are difficult to mend, but by putting any kind of vegetable matter, even fine brush, in the bottom, washing will be temporarily stopped until grass can be established, which will hold the soil. Perhaps one of the best kinds of grass for binding this kind of soil is Bromus Inermis, which spreads by root stocks and makes a tenacious turf. Perhaps sweet clover grown on this soil would also be satisfactory. If sown to a mixture of grasses, however, probably best results would be secured.

One serious objection to the planting of fruits on this kind of land would be the difficulty encountered in spraying and other operations essential to their successful culture, although any kind of trees would help to hold the soil.

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Very truly yours,

W. L. LANG.

LIVE STOCK VS. STOCKLESS FARMING.

One of the notable trends of farming is that where no live stock is being kept. Not only are farmers planning their farm work to abandon the live stock business, but they justify their course in several different ways.

An intelligent farmer in Montcalm county who was in excellent financial circumstances, related to me his building up a fine herd of grade Jersey cows and making an excellent quality of butter for private trade. There was no special complaint about prices, but the constant attention demanded in dairying palled on him and his wife. There was no respite from work, and a change was determined upon. The rotation selected was clover seed, beans and wheat, occasionally some barley being used to seed with clover, thus making an additional cash crop. No live stock was kept but work horses and two cows for domestic use. The cross fences were cut out and larger areas of land were tilled. As high as 800 bushels of red kidney beans were grown annually, and often 100 bushels of clover seed produced. Quantities of clover were plowed down and none cut for hay beyond the actual farm needs. An occasional added slice of new soil was obtained by deeper plowing.

This farmer says since his change from dairy farming his actual cash returns have increased and also his farm fertility. The outlay for labor is much less and the constant attention to live stock has given way to opportunities for social engagements, hitherto impossible.

The accessories of dairying were inventoried and the expense was large. The conclusion attached to soil survey in Newaygo where dairy farming in a small way was investigated was clipped from the Michigan Farmer and quoted in evidence of the wisdom of cash crop farming. Other reasons found among farmers was the high price of live stock which made it more profitable to sell than to keep. War prices for grains and the increased price for sugar beets was also a consideration. The increased price of farm land left little surplus capital to purchase live stock and even if live stock was to be considered as desirable it would be purchased out of profits to be made in cash crop farming.

Tenant farming also exerts an influence in decreasing the number of live stock. The tenant figures on the minimum of investment and of labor and this excludes live stock, especially the dairy industry. Tenant farming without live stock also decreases the friction between landlord and tenant. An observant tenant once told me that most of the difficulties between landlord and tenant had their origin over chickens and cows. My own opinions were in concurrence on this subject. Short term leases in this country are not conducive to animal husbandry. In England and Scotland the value of unexpended manures or commercial fertilizers placed on the land by a tenant are adjudicated and their value paid to the retiring tenant by the landlord or succeeding tenant.

It also was pointed out that as population increases animals for food are not an economy since the grain consumed by animals commands a higher price for human food. The history of civilization is first pastoral and finally agricultural as population increases.

This article is not written to take sides in a disputed question, but merely to accurately describe a rural situation outside of specially favored sections, where milk prices are below the average. In a succeeding article some facts will be given showing the necessity of more farm capital and better prices for live stock as an aid to change the trend away from live stock.

Shiawassee Co. J. N. McBRIDE.

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Hereditary Unsoundness in Horses.

THE constantly increasing values of horses for heavy draft purposes has been followed by a corresponding tendency on the part of buyers to pass over any horses having even the appearance of unsoundness. It appears to be fully realized that the increase in size which has marked the horses of our draft breeds during the last decade and the heavier tasks which are set for them to perform, has made it necessary to produce more uniformly sound horses than was deemed necessary at an earlier period.

This being so, it followed that the breeders, upon whom devolve the work of supplying horses of the draft class to the users should, more than ever before, look well into the subject of forms of unsoundness which are inherited. In this category comes one form of unsoundness which is the bane of the city teamster's life, side-bones, and the tendency which results in this most common form of unsoundness among the horses which pull the heavy loads on our city streets, is unquestionably transmissible. In view of the hostility which all good buyers hold for a suspicion of side-bones no farmer is justified in using a mare having them, for breeding purposes or of mating a mare without them, to a stallion possessing that fault.

Bone spavin and splint have long been recognized as being of an inherited nature and, while the first named ailment is a most serious one and liable to appear on a colt before he reaches maturity, splint is not regarded with as much seriousness, although if it appears in close proximity to the knee joint it may result in lameness that will be exceedingly difficult to overcome.

Bone spavin, however, even though the horse having it may eventually get over the lameness resulting from it, is sure to destroy the horse's usefulness for an extended period. Its possession by either a mare or stallion should cause rejection for breeding purposes, always.

Navicular disease—inflammation of the navicular joint—sometimes appears in an unbroken colt, hence the preponderance of evidence is on the side of those who regard this practically incurable form of lameness as transmissible, and no animal having it should be selected to breed from.

The hereditary tendency to the reproduction of curb and ringbone are matters on which veterinarians do not agree, although general opinion seems to be veering quite generally to the opinion that ringbone, or the tendency to it, is transmissible. As to curb, it is possible that it is inherited only as the result of transmission of a certain conformation of hock rather than to any inherited weakness of ligament or tendon.

Bursal enlargements which include bog-spavin and wind-puffs, were at one time not regarded as transmissible, but the best authorities of the present era and especially those who have made a study of the forms of unsoundness which mark our heavy draft horses, now quite generally put them in the list of ailments which are passed from one generation to another and which should debar their possessors from the stud.

Undesirable features of the feet which are regarded as inherent are flat feet, which are usually accompanied by low weak heels. Feet of this kind quickly become afflicted with laminitis when the constant use of hard roads or paved streets is necessary, although laminitis itself is not considered hereditary except as it is found in conjunction with the formed foot mentioned. Contracted feet are inherited as are, in a lesser degree, brittle hoofs which go so often with corns. Trotting horsemen have had a striking illustration of the transmission of contracted feet in the noticeable degree in which that fault marked

ed the family of the old-time foundation sire, American Star. Sons of Hambletonian, the head of the family which bears his name, out of American Star mares, were troubled by contracted feet and their descendants, three and four generations away from American Star, show the same tendencies towards this form of faulty feet.

Some forms of blindness, notably that resulting from cataract and certain phases of ophthalmia are inherited without doubt. As a rule it is unsafe to use for breeding purposes a blind stallion or mare, although there are cases when the fault would probably not be transmitted. The noted thoroughbred stallion Lexington, went blind as the result of being ridden hard by his jockey, after gorging himself with oats, unknown to his trainer and a large number of his descendants in the first, second and third generations were afflicted with blindness. A stallion from a trotting family in which blindness had never been noted and whose dam was by a son of Lexington, and having good eyes himself, left a number of blind sons and daughters in a section of western New York where he stood, a fact that well shows the probability of blindness being transmitted, even after the intervention of a generation in which the fault did not appear.

Certain undesirable blood conditions are transmitted to progeny by parents with remarkable uniformity,

grease heel being one most noticeably handed down. There is a difference of opinion regarding the heredity of eczema. Some veterinarians assert that it is transmissible while one rather notable authority holds that it is hereditary only in the sense of the transmission of natural tendencies from parent to offspring, and not by virtue of any special virus.

Roaring, whether resulting from atrophy of nerve or muscle, or from a chronic thickening of the mucous membrane is generally regarded as hereditary, but there is a difference of opinion as to whether or not broken wind is transmissible, although the preponderance of opinion seems to be that the predisposition to that condition may be.

Admitting that diseases of the nervous system are transmissible, an admission that is quite general, then stringhalt is surely hereditary while the probability is, also, that epilepsy must be regarded similarly.

Faulty conformation and predisposition to certain forms of unsoundness which are transmissible from parent to progeny are features, in the selection of stallions and brood mares which no breeder can afford to overlook when selecting individuals to breed from, for now, as never before, soundness of conformation and freedom from defects of any kind decide whether a horse will bring a price that makes his raising worth while or one that fails to equal the outlay required to bring him to marketable age.

New York.

H. L. ALLEN.

A Solution for the Labor Problem.

THE subscriber who, in a recent issue tells of his problems in managing a one-man farm, broaches a subject equally vital to the small and large farmer. The problems are the same for both. Each in planning his work must take into consideration the question of help, and each must keep enough stock to enable him to keep up the fertility of the soil.

When farms are of sufficient size, the use of such tools as the hay-loader, manure spreader, and gang-plow helps materially in the solution of the labor question. With our loamy soil, by arranging the farm in large fields we use four horses on the gang-plow and wide drag very nicely, but where land is very heavy four horses could not handle the plow. However, we find the greatest help in keeping dual-purpose rather than dairy cows. It takes very little time to care for feeding cattle and most of it is done in the winter. By keeping dual-purpose cows only half as many are required to keep the same amount of stock on the farm, and the number to be milked can still further be reduced by allowing part of the cows to raise the calves. A good dairy Shorthorn cow will raise two calves and give them a much better start than when fed by hand.

I know some wise ones tell us that the dual-purpose cow does not exist, but as ever, "the eating is the proof of the pudding." She is here and well able to speak for herself. No one claims that dual cattle are superior to the special dairy breeds as milk producers but they continue to win their share of the honors in tests when matched against some of the best of the dairy type.

A few weeks ago there appeared in the Michigan Farmer, a picture of some of the cows from the Glenside herd that were winners in the milking Shorthorn class at the International last year. These cows are not only dual-purpose but come from a strain of Shorthorns with milk inheritance and records that place them in the front rank as dairy animals. At the Forest City Fair at Cleveland, this year, the Glenside herd was awarded first prize in the butter-fat and milk

test. This in competition with Holstein-Friesian, Devons, Dutch Belted, Brown Swiss, and Guernsey cows, from among the leading herds of the country. The test was made under the auspices of the Ohio Experiment Station and conducted by Prof. A. R. Middaugh. One of their cows, Mamie's Minnie, that gave 15,000 lbs. last year, is making a record which will probably exceed 20,000 lbs. This will place her second to the English Dairy-Short-horn cow that gave 22,000 lbs. last year. Space would not permit to tell of the many large records of the year but they won again over the Jerseys in the milk and butter test at Vermont State Fair, and, as usual, a Dairy Shorthorn cow won first place in the English Dairy Show, the second and third place going to the Jerseys. This cow made a little over three pounds of butter a day, which was not bad when you consider the conditions under which it was made and the fact that she is a dual-purpose cow.

In England the special dairy breeds have been unable to gain much of a foothold. The English are a meat-eating people and beef has always been high. We are rapidly coming to the same conditions in America. A few years ago meat was cheap and a good steer hardly paid for his feed and care. Men found it more profitable to keep cows for milk alone than try to raise the calf for beef. But times have changed; meat prices are advancing, never to be cheap again. Some think the day is not far distant when meat will be so high that only the rich can afford to buy it. The time is already here when beef making is equally as profitable as dairying. However, cows can not yet be kept on high-priced land simply to raise a calf. The greater profit lies in one that will more than pay for her keep by her milk, besides producing a good calf. Such cows can not help but be money makers.

The special dairy breeds will always have their place. Dairying is a good business for the right man with the right market. But with the high cost of feed and labor and the expense of keeping up the herd, dairymen have not, as a rule, been getting independ-

ently rich and many have given up the business because they thought a dollar could be made easier in some other way. Dairying at best makes a man a slave; there are always the cows to milk. A man may as well give up the hope of ever getting out in the evening, either socially or to attend an entertainment. And unless a man has extra help he cannot do the milking and keep up the other farm work.

But we must have stock to keep up the fertility of the land. Much of our soil is already badly depleted and we need cattle, not only to build up, but to maintain what fertility we now have. Formerly this need could be supplied by buying feeders. Now the great scarcity of cattle, the small difference in price between feeders and finished steers, and the high cost of transportation, both from and to market, make it more profitable to raise our own stock. For the general farmer this can best be done with the dual-purpose cow.

Ionia Co.

RAY NORMINGTON.

IMMUNITY FROM HOG CHOLERA.

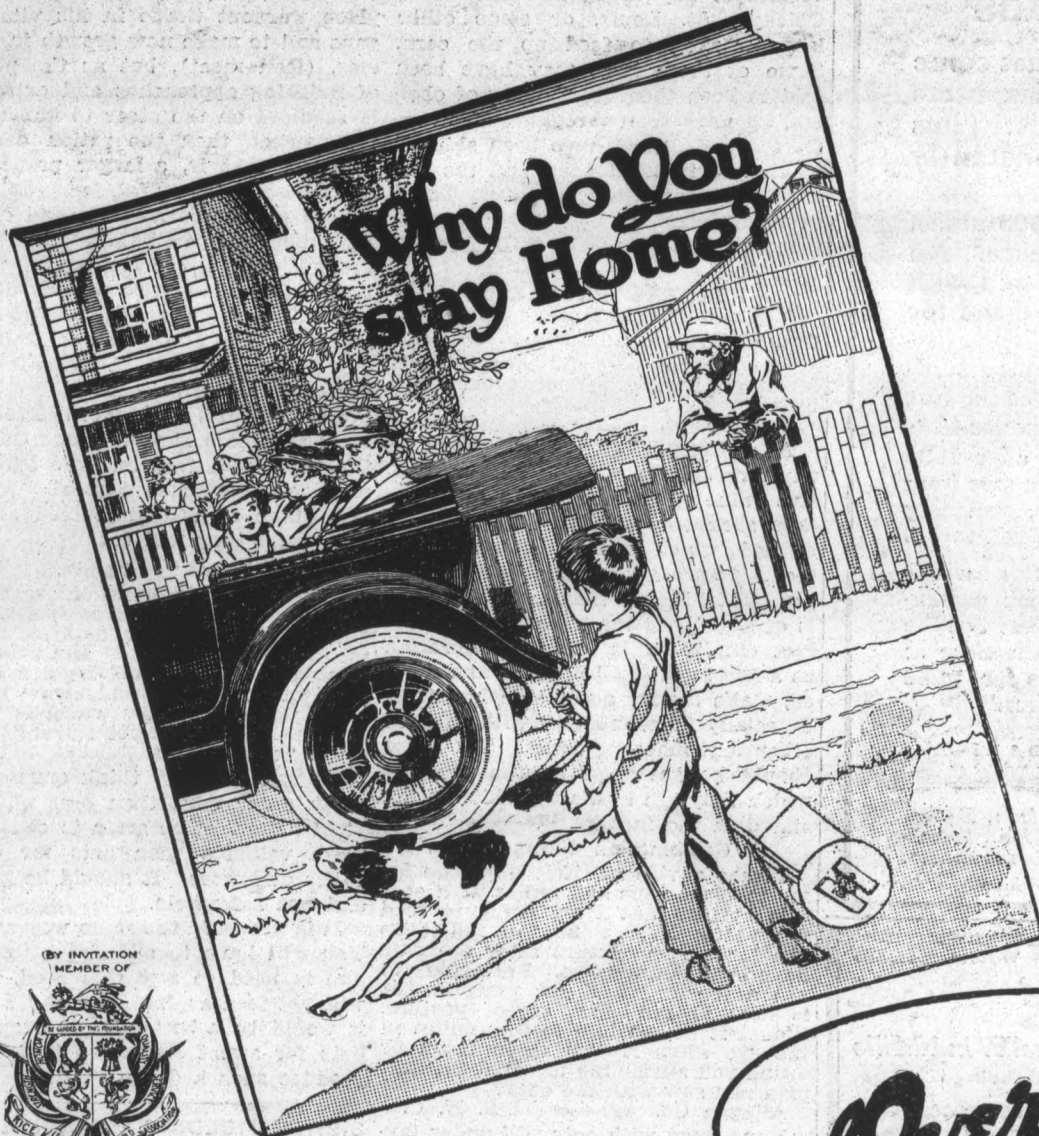
A copy of your paper, issue of January 2, fell into my hands, and I note an editorial, also an article on hog cholera. The farmers of this county are all hog raisers, and I doubt if any other equal area, in any state, sends more hogs to market than this one does. Yet, we have no cholera. In 1860 cholera was imported in hogs to be slop-fed at a distillery and killed nearly all the hogs in the country. In 1913 it was again imported, killing perhaps 200 head at the points of its introduction, this outbreak being soon stamped out.

But one reason can be given for our immunity from cholera, and I think that this reason points out a method for its eradication anywhere that it exists. Our farmers breed their own sows and raise all the hogs they fatten, no hogs for feeding being brought in, and breeding stock shipped in being subjected to the most rigid quarantine before it is released on farms. The same conditions exist in Adams, the county east, and in Clermont, the county west of us, save that a few local outbreaks have occurred in Clermont county, on the east fork of the Little Miami river, not far from a distillery where hogs are shipped in for slop feeding. In all this section, of these counties, a man who would go to the city markets, buy a carload of hogs and put them on his farm to feed out, would soon find that he would have to get his neighbors where he got his hogs.

During the past twenty years I have done a great deal of farmers' institute work, covering five or six states, and meeting with sections where hog cholera takes fully 33 per cent of all the hogs every year in a period of ten or more years.

The remedy I suggest is, that when cholera is raging in any county, a close organization of farmers be made, and that county be cleared of every hog in it just as quickly as is possible. Then keep it cleared of all hogs for a year, better two years, in the meantime doing all that is possible to disinfect all premises where it was found, and keeping up this work during all the time the county has no hogs.

At the end of this time re-stock the farms, being sure to select breeding stock from sections absolutely free from cholera, and have this stock brought in under the strictest sanitary rules known to veterinary science. I am sure that this would result in a term of four or five years, perhaps twice that time, of absolute immunity from cholera, and if the same care was taken to keep cholera out that is taken here, it is probable that a cholera-sick hog would become a curiosity. Hog cholera always follows a heavy corn crop in many sections, not be-



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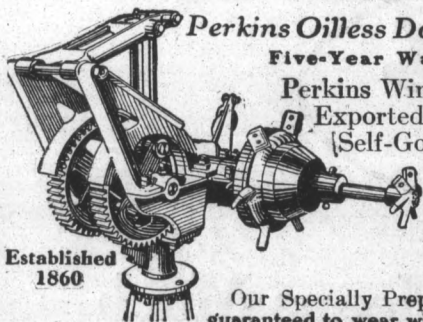
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cause corn, or anything else save a cholera germ, causes the disease, but because somebody, or a dozen somebodies, have more corn than hogs, and decides to buy enough, in Cincinnati, Chicago, St. Louis, or some other large market, to feed up the corn. Some of these hogs may have been sold to keep them from dying of cholera, all have been through cholera infested yards, most have been shipped in cholera infested cars, and the disease goes through a county. Think over this plan.

Brown Co., Ohio. C. D. LYON.

FEEDERS' PROBLEMS.

Ground Rye vs. Cull Beans for Hogs.
Which is the best and cheapest feed for hogs, ground rye or cooked cull beans?

Genesee Co.

C. L.

At present prices rye will prove an unprofitable hog feed. The comparative value of different grain feeds for hogs should be measured by the price of corn, which is the great staple hog feed. At present rye is about 46 cents per bushel higher than corn, and as it is of slightly lower feeding value, this fact eliminates it from consideration as a hog feed. Cull beans, when cooked, make a very acceptable hog feed, especially in connection with corn or other carbonaceous feeds. Their use should be governed by the price at which they are available, which is not stated in the inquiry.

A Combination Forage Crop.

Please advise me if it would do for me to plant rape and millet with oats this spring, that I am going to feed for pasture. I want the millet to use for a late pasture after the oats have been eaten down. I am going to use a ten-acre field for pasture that is now in rye for early pasture. Would it be too late to sow millet in the rye after it was eaten down or would you advise me to adopt the first plan and sow with the oats?

Allegan Co.

L. N. C.

Rape sown with oats will under favorable conditions come on after the oats are harvested and make excellent pasture throughout the balance of the summer. It is doubtful if millet could be used in this way with success. We have seen oats, rape and millet used to good advantage in combination as forage or pasture crop. Millet, however, requires a good seed bed for profitable results, and it would be better, in the writer's opinion, to sow a portion of the available land to the suggested combination in early spring, then pasture a part of the rye until the early-sown crop is ready to turn in to, when the balance could be sown to the same combination.

Value of Bean Pods as Roughage.

Will you kindly advise me as to the food value of bean pods as compared with clover hay for milch cows? I am not feeding grain.

Genesee Co.

C. A. R.

Ordinarily, bean pods are not nearly as good food as clover hay. If one had extra good bean pods and unusually poor hay there might be little difference in their value. They are both of the same nature as food, that is, both are leguminous plants and rich in protein. If beans were harvested in full blossom, the stage of development when we cut clover for hay, then they would probably be as good as hay, but beans are grown primarily for the grain, and bean straw is too ripe, too woody and contains too much cellulose tissue, which is not digestible, that is, it is not considered very valuable as hay, yet it is well worth saving. It ought not to constitute the only roughage. It should be fed with other foods. Sheep do the best of any animals on bean pods.

A Beef and Dairy Ration.

Please tell me what ration to feed my Holstein cows and what ration to feed my beef cattle. I have silage, clover hay, ground corn and oats, bran and cottonseed meal.

Macomb Co.

M. H. C., Jr.

Cows giving a good fair flow of milk and growing fattening steers require about the same ration for best results. Both the dairy cow and the growing steer require about two and a half

pounds of protein per day for 1000 pounds live weight. The cow uses the protein to build up her vital organs and produce the casein in the milk. The steer, too, needs protein to replace wornout tissue in his vital organs and to make new growth in muscles, (lean meat), but as the period of finishing approaches and extra fat is required on the steer to finish him for market, then the ration can be widened, that is, a larger proportion of carbohydrates or fat, fed.

Feed all the corn silage and clover hay they will eat. Mix corn meal, ground oats and bran, equal parts. Feed each animal two pounds of cottonseed meal and enough of the other grain to make one pound of grain per day for each pound of butter-fat produced per week for cows.

You can safely feed more cottonseed meal to steers if you wish. Cut out the bran if desired and the oats and feed more cottonseed meal. At the last stage of fattening, feed all the corn meal they will eat.

Emmer or Speltz.

Would like information regarding the growing of emmer or speltz. How does it compare with oats as a feed for horses and cattle? On land that is a sandy loam would I get a better yield of both grain and straw than I would of oats? How would it be as a nurse crop for sweet clover?

Gd. Traverse Co.

C. P.

On sandy land I think emmer is a much surer crop than oats and will yield better. The grain is equally or more valuable than oats for either cattle or horses. It should be ground and not fed whole.

It is grown in the same way as oats. You will have to adjust your drill if one is used to sow this seed, for it will not feed as fast as oats. I think it would be a better nurse crop than oats for sweet clover, as it does not produce such a dense shade.

SILAGE MOLDING IN CENTER OF SILO.

I find silage in some silos heating and molding in the centers and perfectly good at the outside. Can you tell me what to do for it and what is the cause of the heating? Do you think it was too dry when put in the silo?

Ingham Co.

R. R. S.

In all probability the reason for this silage in the center of the silo spoiling is as suggested the silage corn was too dry when ensiled. Corn wants to be fairly well matured when ensiled, but if it begins to get ripe or from any cause begins to dry up then moisture should be added. I got sufficient water pipe last fall to reach from the well house to either silo. At the well house end we made the pipe connections with faucet of water tank, and at the silo end we attached a hose and had one end extend into the blower part of the silage cutter. This was three-quarter inch pipe, but it furnished none too much water, and the corn did not seem to be so very dry. If the corn is dry it is not heavy enough to pack well, and this also adds to the trouble.

COLON C. LILLIE.

CATALOG NOTICES.

Zyro metal silos, manufactured by the Canton Culvert & Silo Co., of Canton, Ohio, is the title of a handsomely printed, illustrated 44-page catalog, describing the metal silos manufactured by this company from anti-corrosive galvanized sheets. It contains detailed information with regard to this modern type of silo, reasons for its superiority, details of erection, etc.

Planet Jr. farm and garden tools, manufactured by S. L. Allen & Co., Philadelphia, Pa., are fully illustrated and described in a 72-page catalog sent upon request by this company. Their line includes all kinds of hand seeders, wheel hoes, one and two-horse cultivators for various special purposes, with special list of equipment for same. Write for a copy of this booklet, mentioning the Michigan Farmer.

The 1915 Year Book sent upon request by W. N. Scarff, New Carlisle, Ohio, is a 40-page catalog of small fruits, dwarf apple trees, ornamental shrubs and farm seeds.

LIVE STOCK NEWS.

The advancing tendency of the various feeds, including corn, is a big factor in determining hundreds of feeders to ship their holdings to market at the earliest convenience, and it may be expected to become a much greater influence in this direction from now on, as the almost unprecedented boom in wheat is carrying corn, oats, rye and barley up too, although in a lesser degree. The other important influence that is responsible for much premature marketing of live stock is the prevalence of the foot-and-mouth disease many stockmen fearing that their holdings will become infected sooner or later. Corn has had a great advance since the European war opened last August, and, in all probability, it will go still higher, notwithstanding the active marketing from various parts of the corn belt. Corn exports have failed to reach the large proportions that many people looked for, but in all probability the dearthness of wheat and flour will result in vastly stimulating the foreign demand for corn and corn meal, which makes a good substitute for wheat flour. Marketings of all kinds of stock are temporarily checked by the quarantine maintained in the Chicago stock yards.

T. A. Toliver, a successful stock farmer of Iowa, says that during an experience of five years in raising sheep, more satisfactory profits were made than in handling cattle. Iowa has a dog law that taxes a dog a dollar a year, and the money raised in this way is used for sheep losses. But there is no wolf law, and a coyote can slip in and kill \$50 worth of sheep in a night. Many losses are prevented, however, by providing a corral for sheep to be housed in nights. Mr. Toliver has sheds for his flocks, but unless the snow is deep and the weather stormy, the sheep prefer to remain outside. Besides hay and rough feed, he is in the habit of feeding breeding ewes a small amount of grain through the winter. He has found that sheds are convenient for the sheep to go under in hot summer days when they use the sheds even more than in cold weather. In an interview published in the Live Stock Report, Mr. Toliver says he sold in a recent week a carload of ewes of the Shropshire breed in Kansas City at \$6 per 100 lbs., and he regarded them as the best grade ever raised in the corn belt. They averaged when sold 127 lbs., and the sale amounted to \$7.62 each. They sheared ten pounds of wool each on an average, which was marketed at 22 cents per pound, aggregating \$2.20 for each ewe for the wool. In counting up profits, the crop of lambs the ewes raised was not counted. Mr. Toliver keeps registered bucks and selects the best of his ewe lambs for breeding purposes.

Chicago and St. Paul live stock commission houses are advising Canadian cattlemen to dehorn their cattle at calf age, the numerous consignments of horned cattle from across the border selling from 15¢ to 25¢ per 100 lbs. below prices paid for dehorned cattle. Horned cattle are discriminated against by shippers, as they are likely to become bruised while in transit, and this eliminates outside buying competition and enables local killers to fix prices.

West of the Missouri River there is a lively demand for stock cattle as farmers in that part of the country see how such state as Illinois, Indiana and Ohio are being temporarily forced out of the live stock industry. Cattle of the stocker and feeder class are selling within the quarantined area from \$1.15 to \$1.50 per 100 lbs. lower than in the country lying west of the Missouri River because they cannot be moved except for immediate slaughter. Kansas, Nebraska and other western states which were so destitute of feeding stock a year ago, have been stocking up, while east of the Mississippi River the country is seriously short of cattle, hogs and sheep. Of late supplies in the middle west have been heavily depleted by premature shipments to market.

J. Ogden Armour, the Chicago packer, in a recent interview, points out the importance of farmers engaging more extensively in the production of beef cattle. He calls attention to the fact that on January 1, 1907, there were 51,000,000 head of cattle in the country, valued at \$881,500,000, while on Jan. 1, 1914, there were 38,500,000 cattle, valued at \$1,116,000,000. This shows a decrease of 12,500,000 head and an increase in value of approximately \$235,000,000. Mr. Armour says: "Live stock, bankers say, is the best security in America, and shippers are paid promptly in cash. The time has come for all concerned to give heed to the menace of the growing beef shortage in this country and to realize that this situation will become more acute instead of improving in years to come."

John Deere Implements



John Deere Two-Way Plow

The Sulky with the Steel Frame and Patent Auto Foot Frame Shift

Slight foot pressure swings frame and accurately locates plow bottom. Automatic shifting hitch—clevis cannot fail to move to position.

Automatic horse lift. Operator's foot releases latch. Pull of team raises bottom. Hand lever also provided.

For hillsides or uneven fields it throws dirt all one way.

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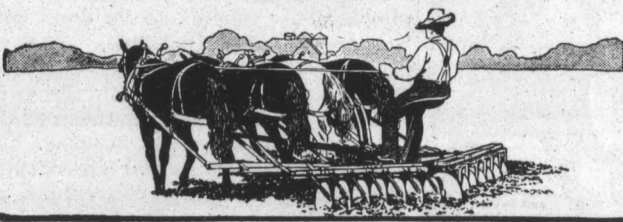
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The Flexible Harrow. Only that part passing over an obstruction is raised out of the ground.

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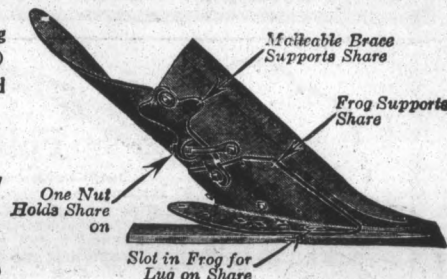
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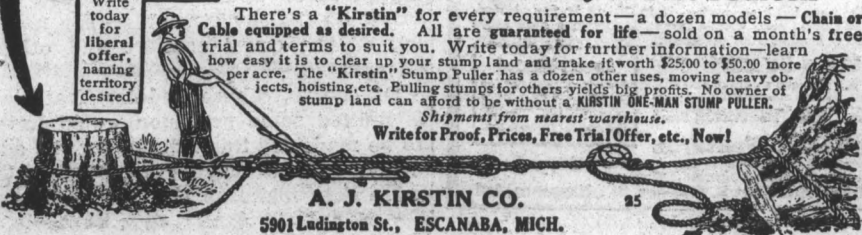


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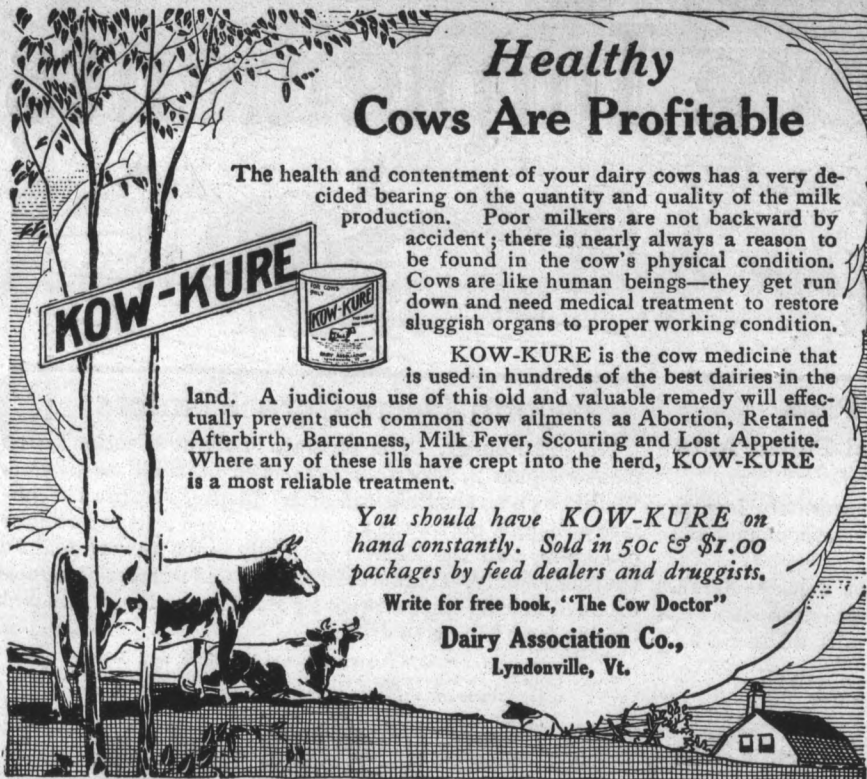
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KOW-KURE is the cow medicine that is used in hundreds of the best dairies in the land. A judicious use of this old and valuable remedy will effectively prevent such common cow ailments as Abortion, Retained Afterbirth, Barrenness, Milk Fever, Scouring and Lost Appetite. Where any of these ills have crept into the herd, KOW-KURE is a most reliable treatment.

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Comfort in the Dairy Barn.

STABLE construction is a subject that is commanding considerable attention at present, and the arrangement of one the writer recently visited may be of interest. It belongs to a man in Shiawassee county who is known throughout the state, and whose name would be recognized if it were mentioned. All of the main considerations of convenience, saving of labor, comfort for the cows, cleanliness and sanitation were combined with the utmost simplicity and small expense. The cows were quartered in the basement of the barn, and while not occupying all of the room 20 or more cows were kept in a space perhaps 50x60 feet. The equipment consisted of a row of ordinary cheap stanchions built along one side of the stable with a manger and feeding alley in front, next to the wall. The bull pen was in one corner, and gates were arranged between the posts which supported the barn above, thus providing a separate room for the cows which were soon to freshen.

Cows Have Liberty.

The stanchions were placed closer together than usual, perhaps three feet apart, as the cows were only confined in them while feeding and being milked. No drops nor gutters were required behind the cows, and the entire floor was kept well littered with straw. The animals were allowed to spend the greater part of their time at liberty and were consequently required to forego any pleasure or satisfaction that might have been derived from the use of their horns. They were as quiet as a flock of sheep and as clean a lot as one often finds. Their flanks were practically as devoid of filth as their backs. The silo was placed at one end of the feeding alley and a grain box at the other end, thus allowing the feeding to be done with the fewest steps possible. The arrangement of the stanchions was most simple and convenient. As the cows were not confined in them much of the time the rigid kind could be used. The arrangement for opening and closing was most simple and convenient. A narrow board was loosely bolted to the swinging part just below the girt that holds the tops, connecting a number together, so that several could be opened or closed from one end, and a single latch at the end securely fastened the whole line thus connected.

Stable Cleaning Not a Dairy Chore.

By this plan of stable arrangement the daily chore of stable cleaning is avoided, and it was only necessary to scatter straw about the floor as occasion required. About once a week or ten days the manure spreader was run in and the litter was forked into it and hauled direct to the fields. The manure was thus all saved, the liquids as well as the solids, and spread on the fields with the minimum amount of labor.

There are numerous stables that might easily be arranged to accommodate the cows in this simple manner. It is much more comfortable for the cows than to remain constantly in the stalls, or, far worse, to be turned out in the cold to "exercise." And if room is lacking why would it not be economical to construct a covered yard or runway? The amount of floor space in the instance referred to is about 140 square feet per cow. The cost of building walls eight to 10 feet high, with roof sufficient to accommodate such a number of cows as one might keep, would not be large, and the saving in labor would afford a good interest on the investment, to say nothing of the cows' comfort and other advantages.

Of course, where bedding material is limited some provision would have to be made for this supply, but the addition to the manure supply would more than make up this cost. Where

corn is grown in excess of the needs for silage the stalks are frequently shredded and this material used for bedding. But where there is an abundance of straw this is a splendid way to dispose of it.

Allegan Co.

EDW. HUTCHINS.

HOLSTEIN BREEDERS IN SESSION.

The fourth annual meeting of the West Michigan Holstein Breeders' Association was held February 3 in Grand Rapids with good attendance. Officers were re-elected as follows: President, Arthur Clarke, Alto; vice-president, Elmer McCoy, Grand Rapids; secretary and treasurer, W. R. Harper, Middleville. The executive committee chosen is new this year, with the exception of Mr. Rising, and is as follows: M. W. Willard, of Kent county; John Nyenhuis, of Ottawa; H. E. Curtis, of Ionia; H. E. Rising, of Barry, and Judge Frank H. Williams, of Allegan.

An amendment to the by-laws, as proposed by Mr. Willard, to the effect that no officer of the association, with exception of the secretary-treasurer, shall be eligible to re-election for more than two terms in succession, was adopted after some discussion. The plan is to pass good things around, find new blood and avoid ruts.

Tubercular Testing Continued.

It was also voted to continue the present arrangement for tubercular testing of herds under federal supervision for another year, with the same committee in charge.

It was voted to hold a consignment sale of cattle as usual this spring. The main criticism made concerning the sale last June was that too many bulls were offered and a majority of consignors of cattle favor the restriction of one male to five females for the coming sales. A majority vote favored June as the time, with Col. Perry as auctioneer and the place no doubt will be Comstock Park, Grand Rapids, as usual.

The morning session opened with the annual message of Pres. Clarke, which was full of good cheer. He urged the breeders to give their boys a start, with a calf or cow, letting them have the increase. In closing he recommended the appointment of the legislative committee just mentioned.

The Bull Calf Problem.

The bull calf problem was opened by Elmer W. McCoy, and was discussed by D. G. Clack and others, occupying the time until the noon hour. Mr. McCoy favors keeping the best bulls and charging \$5 to \$10 for service, instead of the usual \$1 fee. He wouldn't sell any kind of a bull for less than \$50. Mr. Clack spoke of the ridiculously low prices on bulls and of a sentiment in some sections in favor of the cheapest service. Mr. Hardy presented another phase of the matter. He gave instances of selling high-class registered bull calves rather cheap, as low as \$25 sometimes, to go into northern sections of the state, and these animals have made good, so good, in fact, that the purchasers have come back for more good stuff, so that the sale proved good advertising, and a profitable investment.

Judge Williams followed along this line of community building, and its advantages, urging breeders to stop figuring the immediate profits for themselves alone and to take the broader outlook. He hopes to help make Allegan a Holstein cattle center comparable at least, to Howell, in Livingston county. The risk incurred of spreading abortion and other diseases through low price service of outside cattle was spoken of by H. H. Stroud and others.

Disposing of Surplus Stock.

At the afternoon meeting Treasurer Harper read his report showing a bal-

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For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

\$24 BUYS THE NEW BUTTERFLY

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30 DAYS' FREE TRIAL GUARANTEED A LIFETIME

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it along side of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save half. Write TODAY.

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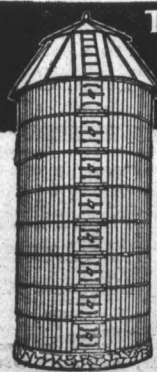
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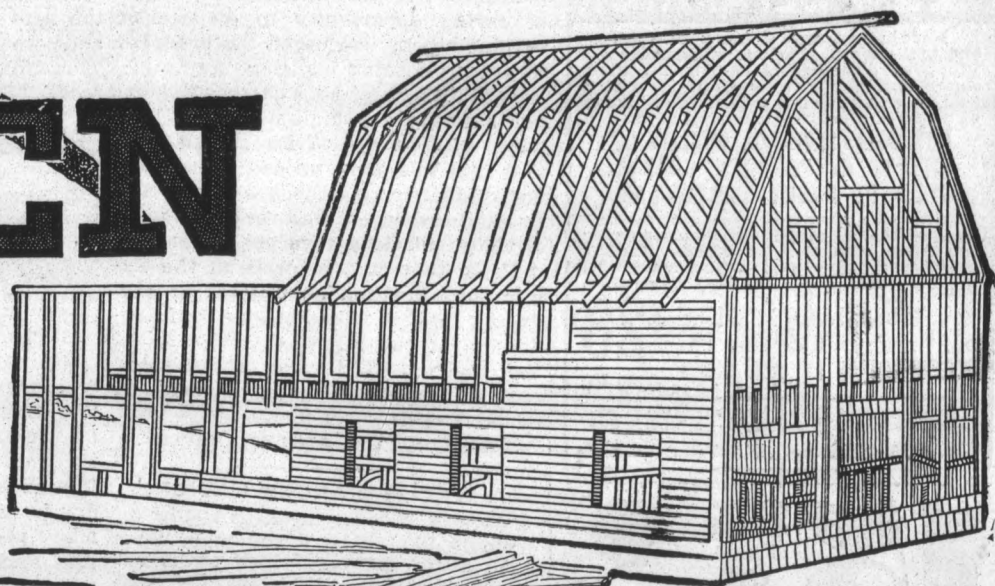
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**When Writing For This Book
Please State When You Expect to Build, and How Many Cows and How Many Horses You Want to House**

WE HAVE DESIGNS FOR NEARLY 4,000 BARNs and our architects will give your letter personal attention if we learn your exact requirements.

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Louden equipment makes possible a clean, sanitary barn with a minimum of expense for upkeep. When cows are transferred from dark, dirty barns

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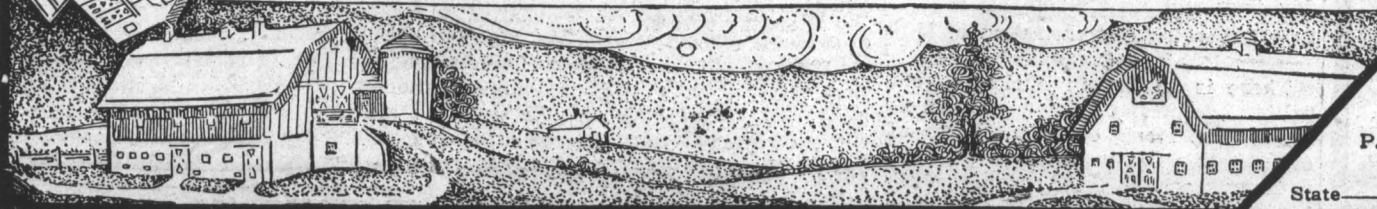
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Plans. I expect to build
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cows _____
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Barn will be about x feet.

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Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address: **AMERICAN SEPARATOR CO.** BOX 3061 Bainbridge, N. Y.



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Can't blow down, buckle, twist or collapse. Stands rigid even when empty. Fire-proof. No painting or repairs. Easily erected. No spoiled ensilage near wall. Guaranteed against silage acid. We also make the Ross Wood Silo. Write for free catalog.


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Reduces freight cost; fire and frost-proof; weight anchors itself; single hooper galvanized; priced at your town; 5 year guarantee; free sample.

Kalamazoo Tank & Silo Co., Kalamazoo, Mich.



ance of \$91.01 in the treasury, and a paid-up membership for the past year of 64. F. D. Cutler, of Wayland, discussed the coming consignment sale, pointing to its advantages in the way of giving opportunity to dispose of surplus stock. He urged the breeders to put up nothing but good stuff.

A. B. Niles read an interesting paper showing the high merits of Holstein milk as a food for human kind and said this milk needed more thorough advertising. Discussion was led by C. Hunsberger, who reviewed some of the regulations covering the sale of milk in this city, as well as the figures just reached as to cost of producing market milk here by Prof. Anderson, of the M. A. C. In view of the restrictions it was shown that milk is not bringing enough money in Grand Rapids.

Kent Co.

ALMOND GRIFFEN.

A WELL-BALANCED RATION.

Would like to have you make up a grain ration for my Jersey cows, out of the following feeds, for the best economical results. I have a limited amount of corn and oats, and can buy wheat bran at \$25 or \$26 a ton; gluten feed at \$30 a ton and cottonseed meal at \$30 or \$31 a ton. For roughage I am feeding corn silage and ensilage corn in the bundle mornings, at noon alfalfa hay, and nights corn silage and husked shredded cornstalks; after the bundles of ensilage corn are fed up I will feed mixed hay once a day, mostly June clover. For grain I feed a mixture of about one bushel of shelled corn, three bushels of oats, about one-third bushel of good cull beans. With each 100 pounds of this mixture I mix 100 pounds of wheat bran and feed each cow one pound of cottonseed meal a day in two feeds. I am giving at the rate of one pound of grain for every three or four pounds of milk. What do you think of cull beans in the ration at one cent per pound? Do you think it pays to water cows twice a day? I let my cows out nice days about 11 o'clock to drink and then the last chore at night I give them water from a pail, the water being handy. What is the law in regard to pasturizing milk and cream, and is it a state law or just a city law?

Lapeer Co.

S. P.

With the feeds named I do not see how this ration could be improved very well. I think it a most excellent arrangement of the different food-stuffs, both as to variety and also as to getting the proper proportion of the food nutrients. The ration is, in my judgment, as well balanced as is practicable.

Cull beans furnish a cheap source of protein. They are not quite as palatable as might be desired, but cows will eat them well enough as part of the ration. It would not do to feed too heavily of bean meal, for this food makes a hard, tallowy or brittle butter. There can be no objection to feeding them in the quantities suggested. You could cheapen the ration by reducing the amount of oats and adding more bran to take the place, as bran at \$25 to \$26 per ton is cheaper than oats at about 50 cents per bushel. Cottonseed meal at \$30 is a much cheaper source of protein than gluten feed at the same price, because cottonseed meal contains 37 to 40 per cent and gluten feed only 26 to 27 per cent protein. I believe it pays to water cows twice each day. Once a day is not often enough for best results. It is even better to have water in the stable so cows can help themselves when they are thirsty. But after cows are accustomed to drinking twice a day they will do all right.

Law Governing Pasteurization of Milk and Cream.

There is no law in Michigan compelling the pasteurization of milk or cream, but many cities have passed ordinances requiring this to be done with milk sold in their respective cities. It has been suggested that such a law should be passed in this state. Foot-and-mouth disease has been spread, in one instance at least, this fall through the skim-milk returned to the farm from a certain creamery. It is claimed that tuberculosis is often spread by this means. Several states

have such laws, and I think it would be one of the best things that could be done in this state. It can only be done at comparatively little expense by the creamery, and it certainly is on the safe side. It could do not harm, and would kill the disease germs. The milk would be just as good for food. "Safety First" is a good slogan.

COW DOES NOT YIELD WELL AFTER FRESHENING.

I have a seven-year-old cow that was hard to dry up before she came in. I milked her once a day within two weeks of calving. She came fresh a week ago and doesn't give over one quart to a milking. Her udder is all right. What can I do for her?

Allegan Co.

F. M.

The only thing to do is to keep milking the cow and feed her well. She may gain on her milk so she will be profitable, but she will not during this period of lactation, do as well as though she had been allowed to go dry for six or eight weeks. There are many persistent milkers like this one that must be forced dry so that they can give a full flow after freshening. It is better for the cow and the unborn calf that the cow goes dry for a brief period before freshening. The cow may give as much milk in the two years because she gives milk all the time.

BEET PULP IN RATION.

What is the most economical balanced ration from the following feeds for fresh cows giving from 30 to 50 lbs. of milk daily? Dried beet pulp at \$24 per ton; wheat bran at \$31 per ton; wheat middlings at \$35 per ton; cottonseed meal at \$36 per ton; oil meal at \$41 per ton; corn meal at \$35 per ton. Roughage consists of oat hay cut in dough stage, and corn fodder from which corn is husked.

Midland Co.

C. L.

Since you have no succulent food in the foods named for the ration I would certainly use some dried beet pulp, and I would moisten this pulp and let it stand before feeding, until it absorbed all the moisture it would. Don't have it so wet that free water will drip from it. Inasmuch as your roughage is somewhat deficient in protein you must have a goodly amount of protein feeds in the concentrates, hence feed two pounds per day of cottonseed meal to each cow. I would suggest you mix wheat bran and corn meal equal parts by weight, for the balance of the grain ration. Then you will have a ration like this: Two pounds of cottonseed meal, three to four pounds of dried beet pulp, and a sufficient amount of corn meal and wheat bran to make as many pounds of grain per day as you can produce pounds of butter-fat in a week, or one pound of grain per day for every four or five pounds of milk produced if your cows produce less than four per cent milk, and one pound for every two or three pounds of milk if your cows produce four to five per cent milk.

LOCAL JERSEY CLUB IS STARTED.

Recently 12 men from various sections of the county gathered at the home of B. L. VanAken, of Coldwater, and organized a Branch County Jersey Club. The men present at the home were first served with an elaborate banquet dinner by Mr. VanAken, and this gave an opportunity for all to become acquainted and prepared, in a way, for the issue that was to follow.

Following the dinner, the gentlemen entered into a business session, and the following officers for the proposed Club were elected:

President, B. L. VanAken, Coldwater; vice-president, C. H. Shoemaker, Coldwater; secretary, Ray Lockwood, Ovid; treasurer, C. R. Kibbe, Union City; directors, C. E. George, Union City; Ira VanOrsdale, Coldwater; Fred Lawrence, Coldwater.

The formation of this club is along the line of activities which has recently been instituted among the farmers of the county. For some time past it has been the desire of farmers to raise better and more pure blooded stock. The formation of the Jersey club will have a tendency to bring about this end, as far as this breed of cattle is concerned.

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Improved Keystone Dehorner quickest, cleanest, strongest and most satisfactory. Clean, shear and sliding cut; no crushing; no bruising. Money back guarantee. Send for booklet.

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Selecting the Breeding Hens.

LIKE begets like." Therefore, in preparing to breed for this season's flock of chickens, don't simply "turn the rooster loose." Use judgment in breeding. If you breed from weak, sickly, poor-laying stock, your next winter's egg basket and feed account will suffer. The troubles of life come from not looking far enough ahead. The farmer who breeds his fowls simply for the sake of "having some chickens," will never succeed with poultry. This is the man who sets about the four-corner store base-burner and tells us that poultry is a losing game.

Breed from hens rather than from pullets. Have the hens separated from the pullets during the breeding season. Hens lay larger eggs than pullets; they do not lay as many eggs in the fall and winter, therefore, when properly handled, hens should be in better physical condition in the spring than pullets to give strong, vigorous, good-sized chickens.

Better Stock Results from Breeding the Hens.

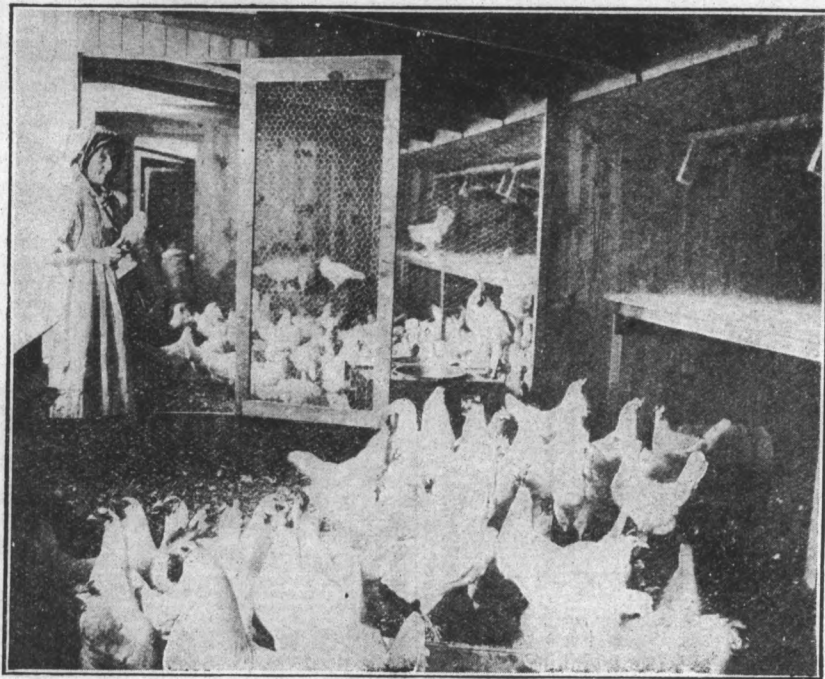
By breeding from hens in good physical condition, two or even three years old, we will have one or two

fore, do not kill the finest hens, those that have gone through a year or two of heavy laying and are still strong and vigorous.

Keep Good Birds.

At least one-quarter to one-third of the fowls on the farm ought to be hens, one, two or three years old, rather than pullets, and the same is true of the males. It is both a crime and poor business to sacrifice a male at the end of the year on the principle that a cockerel is younger and more active. Occasionally an exceptionally good male may be kept for a number of years, at least two or three. One New York farmer has one cock bird that is eight years old, and some that are four and five. This flock is sure to have strength to produce profit, for the mothers are of the same "tried and found true" kind.

While the trap nest may be all right for the experiment stations, it cannot be considered a good investment for the farmer. It is too costly and too troublesome. We must find some physical indication that will help us to recognize and select our highest producers to breed from. There are



A Coop Arranged for the Comfort and Well-being of the Chickens.

years' opportunity to eliminate the hens that inherit a tendency to short life. We are then breeding from the hens that have an inherited tendency to live long, and it is worth much for a chicken to be born from a line of long-lived ancestry, just as with a man. The chances are a hundred to one that better stock will result. In this way we can do much to cause the inherited tendency to live in the future generations. This is looking ahead. Too many times in the past, the breeders, in their desire to get the largest net income from their stock, have bred continuously from pullets and thus have not had the benefit of the winnowing effect of time in eliminating individuals which died the following season. In Madison Square poultry show a few seasons ago, the originator of a famous strain of Single Comb White Leghorns was offered \$12,000 for a pen of ten of his best stock that swept the stakes. What would you have done? This man turned this offer down. He was wise, for he pointed out that he would never be able to enter the prize ring again, nor maintain his high reputation as a breeder, if he sold off all his best breeding stock.

The pullet usually begins to lay early in the fall. After having layed for five or six months, by spring she has laid out. The critical time in the life of a hen comes when she has laid for 12 months and then undertakes to molt and lay at pretty nearly the same time. Longevity is a point that must always be remembered. There-

three or four principles that have been found desirable for this test. The first physical character and the most valuable of all in selecting hens for breeders that are high producers is lateness in molting. The hen that is born to lay a large number of eggs and is well fed and handled will generally follow the line of least resistance and continue to lay and thus fail to perform the natural process of molting. This is because she has so much reserve power that she continues to lay, and as a result her feathers do not die and loosen. Although the comparison is not perfect, the same principle really maintains, if we compare a late-molting hen to a strong, vigorous apple that that has been well sprayed. The leaves, like the feathers, continue to grow past their usual season and hang on the tree up to the winter time. We find that hens that have laid only 25, 50 or 75 eggs have, in almost every instance, molted during the summer, in July or August or September. They do not necessarily start laying again in the fall or winter simply because they molted early. The hens that molt late take the short vacations and begin to lay again.

Selecting High Producers.

Another way we may select the high producers is by the color of the shanks of the yellow-skinned breeds. The hens that have had little to do during the summer except to loaf about and eat, usually have the finest kind of colored shanks and skin, whereas, the high-producing hens have "laid out" most of this color. Af-

ter they have rested for a month or two, the color will return.

We may also determine the heavy layers from the drones by the way the hens eat. It will pay you to watch the flock and note how they eat their rations. The hen that is the largest eater is usually also the one that is the largest layer. This discounts the usual thought that hens that eat more than the others of the flock store the food in fat and therefore, do not lay at much. This is a mistaken conception. The heavy layer goes to roost late and gets up early, usually being the first biddie down in the scratching litter in the morning.

Shape Does Not Indicate Production.

Some men will tell you that the shape of the body determines the laying quality, and that you should breed for body shape. This has been exploded so many times in more recent experiments, that I believe that we should not place much emphasis upon it. The homeliest hen in a recent laying contest, as to shape, swept the stakes as an egg producer. But I never recommend breeding from a poorly shaped fowl, for the first sentence in this article holds true here. By breeding from stoop tails, crooked-spined, ill-footed fowls, what will the next generation be? So select the best shaped and highest laying hens for breeders.

One of the important problems on which breeding and feeding hinges is the question of how we shall handle and care for the flock. Here is an instance like a great many others where the practice of the farmer, who did not pretend to know the theories of production, was in advance of the various investigators. We all understood how the scientific men for years said that plants could not utilize the free nitrogen of the air, yet every practical farmer knew that clover made land richer. For untold centuries farmers and poultrymen, because of habit and convenience, allowed hens to run out of doors the year round. It was the easiest and most natural thing to do. While the properly built hen house has a great contribution to extend toward the building up of a highly healthy strain, the fresh air and large range gives added power for vigor that no other item can give.

Free Range Beneficial.

Profits show up more favorably for the hens and pullets that are on range than for those confined. This is because the increase in the egg yield, due to freedom, occurs when eggs are high in price. Just let us consider a year's experiment, held at Cornell Agricultural College. The number of eggs laid by the pullets on range was 164, while those held in close confinement was 147. In the case of the hens, those on range laid 105 and those in confinement laid 90. Taking the profit, including only feed, not the labor, interest on investment, etc., the pullets on range made \$3.25 profit and those in confinement \$2.50; a difference of 75 cents per fowl per year more in the case of the pullets allowed to run out.

It is a poor policy to cross-breed. Take a good strain, improve it, and stick by it. Study and fulfill its needs. Your success is certain. Farmers have been making the cross-breeding mistake long enough.

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SAVE THE POULTRY MANURE.

At present prices of commercial fertilizers, poultry manure is worth from \$15 to \$20 per ton in the fresh condition before it has been allowed to lose any large percentage of its constituents. When we stop to compare these figures with the price ordinarily paid for stable manure, we notice the marked difference and easily realize the importance of saving such a concentrated fertilizer if we are to get the largest returns from all the farming operations. It is especially rich in nitrogen, the highest priced element

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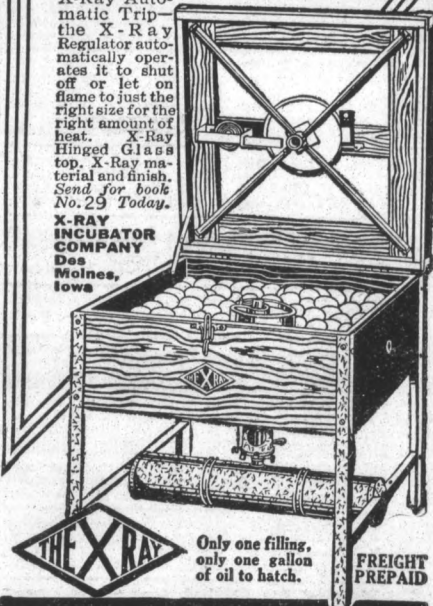
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White Holland Turkeys large, healthy, hardy. Indian Runner Drakes. T. B. & E. H. McDONAGH, Burt, Michigan.

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found in any fertilizer, and in addition has fairly large amounts of potash and phosphoric acid but not enough to make the material a balanced fertilizer.

Use Some Absorbent on Droppings Board.

To be able to realize anywhere near its full value some method must be adopted to prevent the loss of nitrogen in the form of ammonia before the manure can be taken to the field. Land plaster has been used to advantage for this purpose, but the farmer does not always have this material at hand and wants something that is always available for his use. Coal ashes, if they are dry and very fine, will serve the purpose very well. Never use wood ashes because of the injury to the feet of the hens when the ashes become wet and a certain amount of lye is liberated. Another material that is not used as frequently, yet is probably just as efficient, is an ordinary dry loamy soil. Not only will it act as an absorbent, but it can also take up the ammonia that would otherwise escape and fix it in such a condition that the crop can readily use it when the material is applied to the soil later.

When it is possible to do so it is a good plan to remove the manure from the dropping-boards every morning and place in some sort of a receptacle provided for the purpose. However, on most farms there is so much work to be done of more importance that

trials will soon convince the most obstinate that it pays big to save the poultry manure to the greatest extent possible, and in the best condition for use and for holding the ammonia.

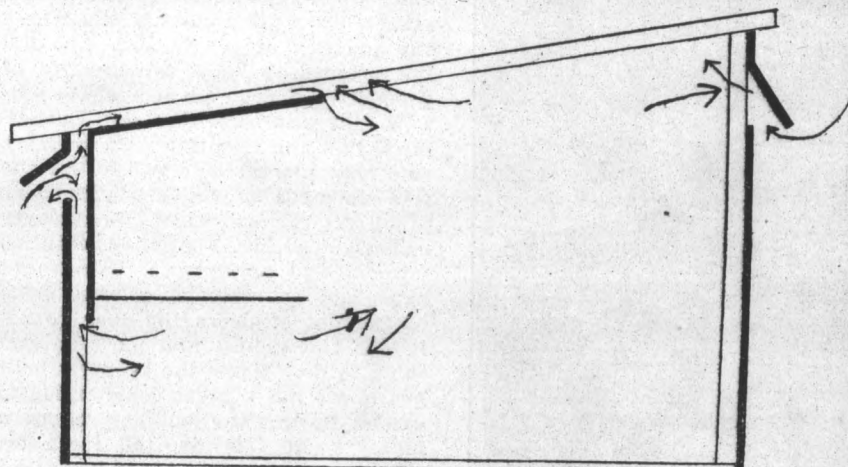
Iowa. F. E. ALLISON.

POULTRY HOUSE VENTILATORS.

Was much interested in your recent article on poultry house construction. Am building a house along similar lines to yours and desire to incorporate your features of ventilation at the roof angles (front and back). Will you please send me a sketch showing how these ventilators are operated and hinged in relation to the framework of the building? Also the size of the same. Do you advise a double wall in the rear of the building, with air space between? Would appreciate any other suggestions you may care to make.

New York. M. S.

The ventilators in question are common 12-inch wide boards, cut in the desired lengths. In our case most of them were in 12-foot lengths. However, they can be most any length up to 16 feet. As a rule it is advisable not to have them any longer than 12 feet to have them work easy. We have found it a good idea to use a good pine board for this, although we also have some of hemlock, but these are not giving as good satisfaction on account of their binding and warping more. These boards are hinged at the top to swing out, and are held open and closed by hooks and eyes. (See illustration). The ventilator in the



Showing a Very Practical Method of Ventilating a Chicken Coop.

this procedure is scarcely practicable. I have always found it much less trouble and just about as good to plan to clean out the house every 10 to 14 days but sprinkle a little of the ashes, soil, or whatever is used as an absorbent over the droppings every morning. This can be done at the time of feeding and need not mean very much extra labor or time if everything is kept handy for use. If this is done the odors are kept down just as well as if the house were cleaned every day, but the labor is not much more than half as much.

A Good Fertilizer.

When removed the manure should be placed somewhere to dry just as soon as possible so that it can be stored without danger of loss. When spring comes it may then be spread on the freshly plowed land where garden is to be planted, especially such crops as lettuce, radishes, cabbage or any other crop where a large and quick growth of leaves or stems is desired. It must always be remembered that this is a very concentrated fertilizer and must be used accordingly, more like a commercial fertilizer than in quantities employed in the case of stable manure. I have seen the material used on the poorest clay hillsides where practically nothing had grown in previous years, with the result that the subsequent oat crop grew so large that it lodged long before the grain was ripe. Of course, in this case too large an application was used but by using judgment and profiting by experience the farmer can soon learn just what portion of his fields respond best to the use of this highly nitrogenous manure. A few

rear is made in the same way as the one in front. It will be noticed that both are placed way up as near the top as possible. This is done to guard against drafts.

In constructing the rear wall we place the plate on edge. This, in connection with the double boarding part way down the rear wall and part way up the rear part of roof, provides for a live air space which is certain to keep the roosting closet dry at all times. The circulation of air keeps the wall dry. A dead air space is apt to allow moisture to condense on the inside, which is a serious fault.

The rear ventilator, like the one in front, is hinged at the top to swing out, this prevents the rain from beating in and also prevents a direct draft.

The illustration will show that our roosting closet is built so as to be almost draft proof at all times, even in summer when all the doors, windows and ventilators are wide open. It will be noticed that the roosting closet is ceiled up the inside from within a few inches below the roost platform, up the rear wall, and up the ceiling to extend beyond the front edge of the roosting platform. This form of construction prevents a draft when the rear ventilator is open.

In constructing these ventilators out of 12-inch wide boards, we have found it advisable to re-enforce them in such a way by cleats as to prevent warping. For hinges we use heavy T hinges.

We do not believe in a double wall in the rear of the building with the exception of the part enclosing the roosting closet. A double wall with an air space is no warmer than a



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Queen Incubator Co., 141 Bryn Mawr Ave., Lincoln, Neb.

Tells why chicks die

E. J. Reefer, the poultry expert of 643 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhea and How to Cure It." This book contains scientific facts on white diarrhea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

good tight single wall with a protection of a light weight roofing paper on the outside over the north, west and east ends. This makes better air-tight walls than double boarding does, and at a much less cost. Walls with dead air spaces invariably are damp in cold weather, due to the condensing of moisture on the inside.

Texas. F. W. KAZMEIER.

WHEN EGGS COUNT MOST.

Have you ever tried to figure why egg production is so greatly reduced in the winter time? This happens just at the season when we find the market the most profitable. It isn't because the hen is a hothouse fiend and dislikes the cold, bracing atmosphere. Though hens are more adapted to summer than winter there are very few days in the winter that the hens refuse to be happy, if properly cared for.

Mother hen doesn't suspend business in the winter because of her health, for she is warmly clad, and the feed bills show she eats more than she does when in the open. Then where does this trouble lie? She eats more, why don't she lay more? It lies in the fact that while the winter has no terrors for Mother Hen, the same cannot be said of bugs, beetles, worms and small animals, and plant life generally.

These choice dietary morsels are most important factors in her business of egg production. She is unable to find them during the cold months. Of course, a hen can "get along" on corn, wheat, etc. But the difference between five and six dozen eggs a year and 200 is quite another thing. You should look upon the hen as an "investment," and you want to "force her," just as the florist forces his flowers to bloom earlier than the other man's flowers. If you want more eggs you must furnish your hens with the necessary material with which to make eggs.

Hens must have green food. If you were a thoughtful man, you sowed a plat to beets, or you raised an additional amount of acreage of oats, and these are being fed as green food. It is a very easy matter to sprout oats. Ordinary green bone, obtained at the butcher's at a little or no expense, also supplies something that green foods will not supply, and at less expense than anything else. Few men feed green ground bone. But the small majority who do earn their reward in a full egg basket, other things being equal as to balanced poultry ration. Buy a bone grinder at once, and arrange to get the bones from the butchers. The bone must be ground fine, and the cost of the machine is small in comparison with the results it will bring to your income.

New York. EARL W. GAGE.

POULTRY NOTES.

Concrete and wood floors should be covered an inch or two with fine sand or garden loam. This covering will make the floor easier on the hens' feet and will make the house warmer.

Laying hens need plenty of animal food. This may be supplied by feeding beef scrap, cut bone or milk. In many localities, cracklings, the "leavings" from tallow or lard rendering can be purchased from local butchers at a very reasonable figure. These cracklings are identical, in food constituents, with the commercial beef scrap that cannot be purchased for less than three cents a pound.

A small flock in a large house will yield a larger profit than a large flock in a small house.

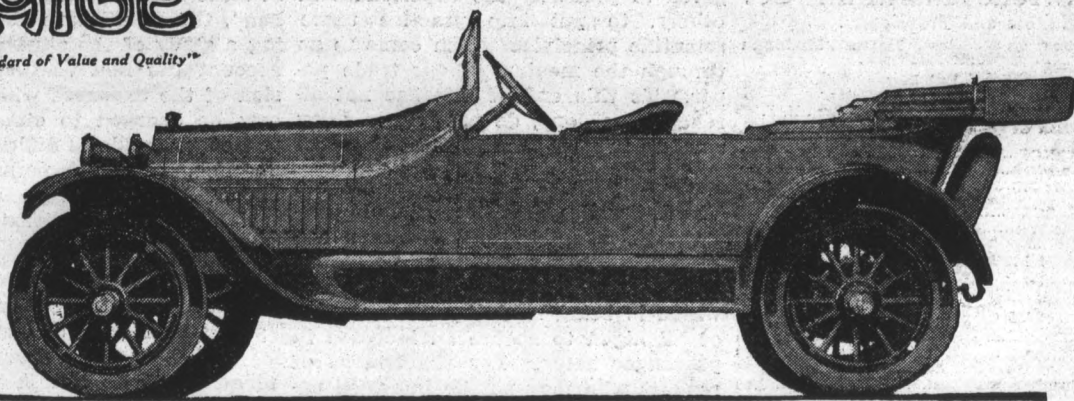
A hopper of charcoal in each hen-house is an insurance against disease.

Rye, when fed largely to hens will cause bowel trouble. A growing field of rye, however, is the best winter green food for hens.

Indiana. T. Z. RICHEY.

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and for all-round efficiency with economy.

Read below the unique and unequalled features of the Paige Glenwood—that have made this car "The World's Greatest Motor Car Value" and then remember that the new price is the lowest in the world for such quality—\$1075.

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These two cars have won the unanimous verdict of practical men—men, like you, who know.

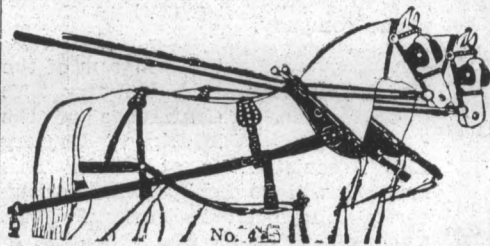
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Four-cylinder long-stroke motor, 4x5 inches. Multiple disc, clutch with cork inserts. Gray & Davis large unit electric system, Bosch magneto, silent chain drive. Center Control. Floating type rear axle. 116-inch wheel base. Tires, 34"x4", non-skids on rear wheels.

\$1075

Equipment—Rain vision ventilating windshield; silk mohair top with envelope; speedometer; one extra demountable rim; robe rail; license bracket; horn; pump; jack; tools and tire repair outfit. Trimmings black and nickel.



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DETROIT, FEB. 20, 1915.

CURRENT COMMENT.

Present prospects indicate that this will be a year of exceptional opportunities in agriculture. Prices of farm commodities are very generally high, owing to the demand for grains occasioned by the European war. There is every prospect that this demand will continue and that foodstuffs of all kinds will remain at abnormally high prices during the coming year. Such a condition makes it expedient for farmers generally to make the most of the opportunities which are thus presented to them. When there is a prospect of an abnormal demand for American farm products, every farmer should strive to do something toward satisfying that demand, that is, his production should be increased above the point which is the normal output of his farm.

This can be accomplished in various ways. One of the best ways to accomplish it is to clear up the waste places on the farm and make them available for crop growing. A very large percentage of the farms in Michigan have at least small areas of swampy land which could be easily drained and made productive. On a good many farms there are stony patches which have for years been used as a calf or hog pasture because of the difficulty in plowing and working same. These stones should be blasted and removed and this unproductive area made available for a place in the regular crop rotation. Then there are unimproved areas of cut-over lands which could profitably be improved for present use by modern methods.

In addition to the possibilities in this direction, there is a far greater possibility in increased production on the land already available for cultivation. By conserving and supplementing soil fertility, by adopting the methods of culture which experience has found to give the best results under like conditions, by applying the principles which scientific research have indicated to increase our yields and decrease the cost of production, we will be aiding in the solution of the problem of feeding a larger portion of the world which has been unexpectedly thrust upon the American farmer. At the same time we shall be helping ourselves and our families by increasing our own resources at a time when increased production will have a far less than ordinary influence upon market values. If we are to

keep up with the times, if we are to make the best use of our opportunity here presented us, we must be prepared to profit by the experiences of others, to put into practice those scientific principles which come to us through the medium of our trade paper. To this end, if this has not already been done, do not longer delay sending in your subscription.

The Railroads vs the Farmer.

In another column published a communication from a Kalamazoo county farmer on the attempt which is being made by the railroads of Michigan to secure an increase in passenger rates. For the benefit of readers who may not be informed upon this subject it may be well to here call attention to the fact that railroad passenger rates in Michigan are fixed by the Legislature, while the power of fixing railroad freight rates within the state has been delegated to the State Railroad Commission. Several bills have been introduced in the present Legislature proposing to change the legal railroad passenger rate which may be charged by Michigan railroads. These bills propose a variety of changes which it will not be necessary to enumerate in this comment. Suffice it to say, the change which it is thought the railroads of the state hope to gain is a general advance in the passenger rate to two- and one-half cents per mile.

Hearings are now being held before the committees of the two houses on these bills. No immediate action is likely, but there is reason to believe that the proposition embodied in these bills will be seriously considered by the Legislature during the present session. The arguments presented in the article above mentioned as sufficient reason for not advancing passenger rates at this time are such as will at once appeal to every thinking person. Neither the business man nor the farmer can get an advance in prices when same is needed and would be much appreciated as a means of helping him over a period of business depression in his particular line. From the standpoint of the state there is likewise no reason why those who have their money invested in railroads should be given greater special consideration.

There is, however, another phase of the situation which should not be overlooked and which is being brought prominently before the state at this time by reason of the fact that one of the state's larger common carriers is in a state of bankruptcy and is being operated under the direction of the federal court. It is a most obvious fact that the people of the state are not responsible for this road's condition of bankruptcy nor for the financial ills from which other railroads are at the same time seeking relief, but the state and its people are interested in the maintenance of such service by these railroads as will make for the prosperity and continued development of our industries. The claim is made for the railroad now being operated under direction of the court that the revenues of the road were last year several hundred thousand dollars less than was required to pay operating expenses, to say nothing of interest on its indebtedness. The plea is made that unless relief is had in increased passenger or freight rates, it will be necessary to break up the system, which will have the immediate effect of discontinuing or crippling the service on a large mileage of branch lines which, under present conditions, do not pay operating expenses. This contention, if substantiated at the hearings now in progress, is one which should receive the careful attention of the Legislature, since the farmers who are located on the branch lines of our Michigan railroads have made their investments in good faith, and are entitled to a continuation of service until the business

which they are helping to build up by the development of this new country will make that service profitable or at least self-sustaining. On the other hand, the Legislature should, in making a study of the situation, take into account the fact that an exact division of the expenses which may properly be charged to either freight or passenger traffic is difficult, if not impossible, and no permanent relief should be granted to the railroads which normal conditions would not seem to warrant.

Solving the Telephone Problem.

Communications published in this and another recent issue reflect the interest which is felt in the telephone problem throughout the rural districts of the state. One of these communications indicated how the problem had been solved in one fortunate community. Another communication appearing in this issue illustrates the dilemma in which another community finds itself owing to an all too great competition among existing telephone lines. There is no doubt but that any community can be better served by a community of interest in this public utility, that is to say, that local connections should be facilitated over as large a territory as possible and toll connections should be similarly extended. This has been accomplished in some localities by the organization and construction of rural lines under a working agreement with the telephone company having toll line service from the central point where the switchboard would be located. It is to be presumed that the position of the railroad commission is in line with the best interests of the state at large so far as service is concerned, rather than in sympathy with existing stock companies. It would, however, seem certain that any plan which would interest the people of a community in the securing of a needed public utility would be beneficial to that community, and that any complication of service which might result from the organization of local mutual telephone companies could later be adjusted by contracts with toll companies as above noted. For this reason it would appear that there could be no reasonable objection to making it legally easy for the citizens of any community to organize a local mutual telephone company.

The Country Life Conference.

The program of the third Country Life Conference of the Michigan Country Life Association is at hand. This meeting will be held at the Agricultural College on February 26-27-28. The program is all that the name of the organization implies. It will include the discussion of such subjects as rural sanitation, the marketing of farm products, the work of co-operative organizations, a general discussion of rural credits and agricultural co-operation, etc. The Saturday afternoon session will consist of a round table conference, and the Sunday afternoon session will be devoted to a discussion of rural church problems. These meetings will be of particular interest to all who are interested in the better development of rural life. Preceding, as they do, the Farmers' Week or Round-Up Institute at the College, the attendance of these meetings will be the more convenient for those who will participate in the sessions of the following week. The meeting should attract a large attendance from among the public spirited citizens of the state.

The report of a joint Congressional committee which has had under consideration the proposition of federal aid in road building contains strong arguments for the favoring of federal aid in road building by the farmers of the country. This report shows that of 15,

963,965 families in the United States as shown by the federal census, but 5,689,838 families reside on farms, the balance being residents of cities and villages. The proportion of farmers among the 38,167,336 persons engaged in gainful occupations is about proportionate with the number of families who reside on farms, the number engaged in agriculture being 12,659,203. These and other statistics show that only about one-third of the total population is strictly rural in character or occupation. As national revenues are derived from indirect taxation and income tax, contributions to national funds are proportionately rather heavier from urban than from rural population. It is therefore clear that under federal aid fully two-thirds of the national fund contributed to road building would be contributed by city residents, while all of it would be spent for the improvement of rural roads.

The merchant, manufacturer and also to a considerable extent, the consumers living in cities would, however, receive an indirect benefit from the betterment of country roads, and interest in federal aid has been quite as marked from city as from rural communities. It is probable that the adoption of any system of federal aid would be productive of better and more uniform methods in road construction and maintenance, since it is contemplated by every plan yet advanced that evidence should be given to the government that the funds contributed were invested in such a manner as to be most productive of beneficial results. This would mean that competent highway engineers would pass upon the character of the construction work done. It would, of course, still be up to the states and their minor municipalities to do the actual work of construction, but the educational influence of government inspection and supervision would tend to more uniform and more economical methods of construction.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The most important news of the past week from the great conflict in Europe is the success of the German forces in Prussia. By superior generalship the Teutons have forced the Russians to practically abandon German soil and have strengthened the position of the right end of the battle line for another assault upon Warsaw. To the south the Russians are confident of maintaining their hold on Bukovina and declare that Lemberg, Galicia, is in no danger as they are policing practically the entire northwest slope of the Carpathian mountains. Albanians have engaged small forces of Serbians on Serbian soil. In the west the Germans are said to be concentrating large numbers of troops in Alsace-Lorraine to drive the Allied forces from that district in order to free German soil from hostile troops. In Belgium bombardment of positions along the battle line between Neuport and Ypres has resulted in no change of the front of either army.

Differences between Japan and China have not been adjusted. Japan is insisting upon the acceptance by China of every demand, while the Pekin government expects to continue in its refusal to acquiesce in them. In the meantime Japan is building barracks at every important station along the railway between Weihien and Tsinan in the Chinese province of Shantung. Besides raising the maximum price of oats by \$12.50 per metric ton, the bundsrath of Germany has expropriated all the domestic stocks of oats, with the exception of seed oats and the grain necessary for feeding horses. The order takes effect February 16. The stocks of corn, wheat and flour have already been taken over by the authorities.

By reason of an order issued by Gen. Carranza forcing all foreign representatives in Mexico to treat with him alone, American agents and envoys of other countries will be greatly handicapped in their efforts to adjust relations between the different factions.

Ottawa, Canada, was given a war scare Sunday evening when three aeroplanes approached the city from the direction of Brockville.

National.

Last week the department of state (Continued on page 235).

Magazine Section

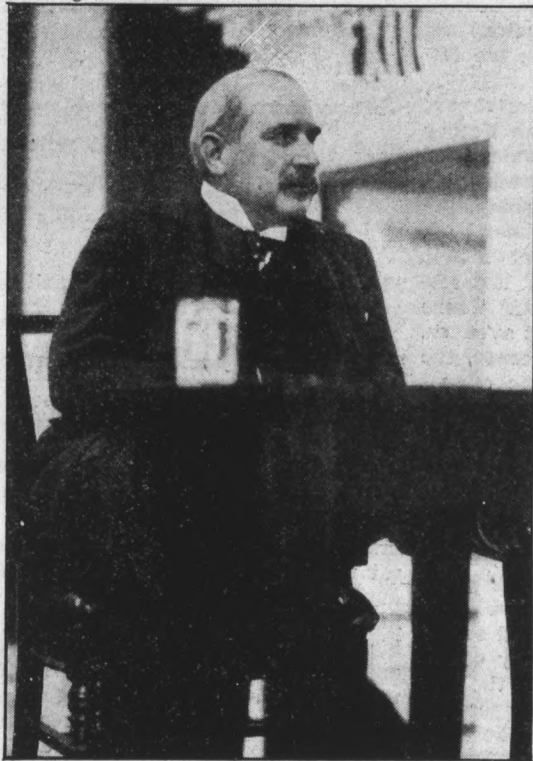
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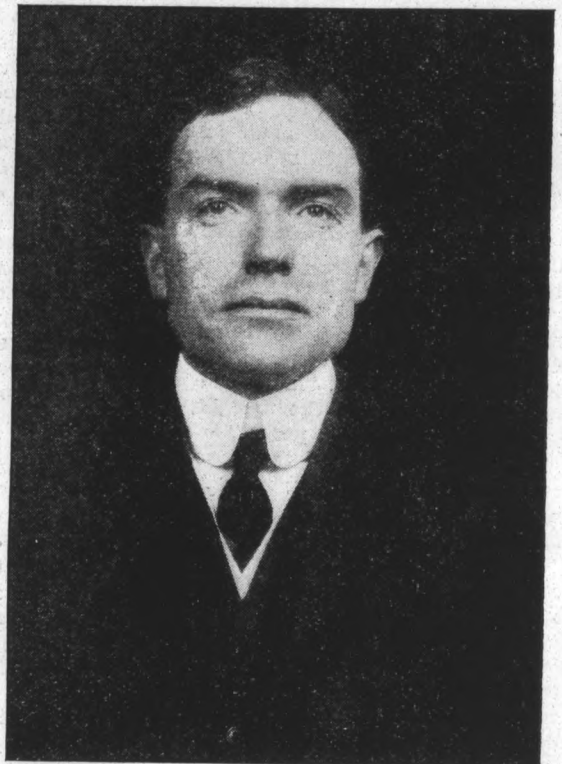
WORLD EVENTS IN PICTURES.



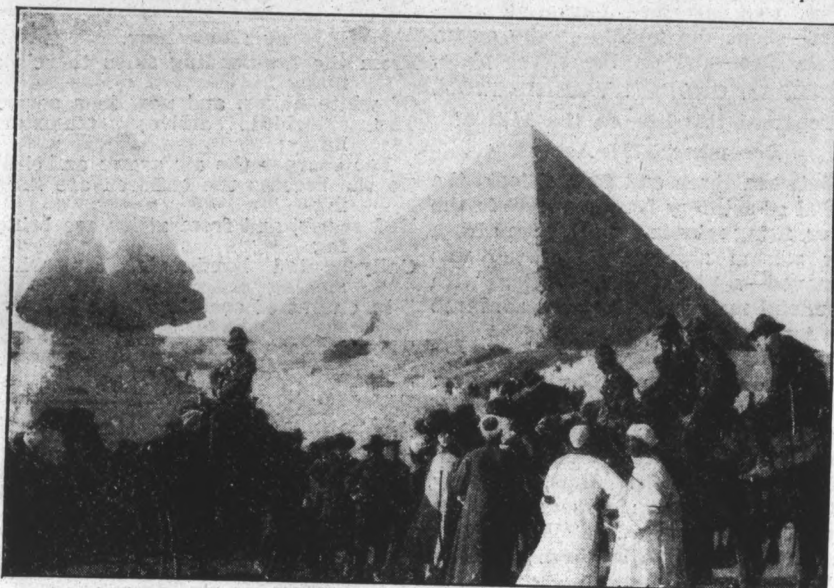
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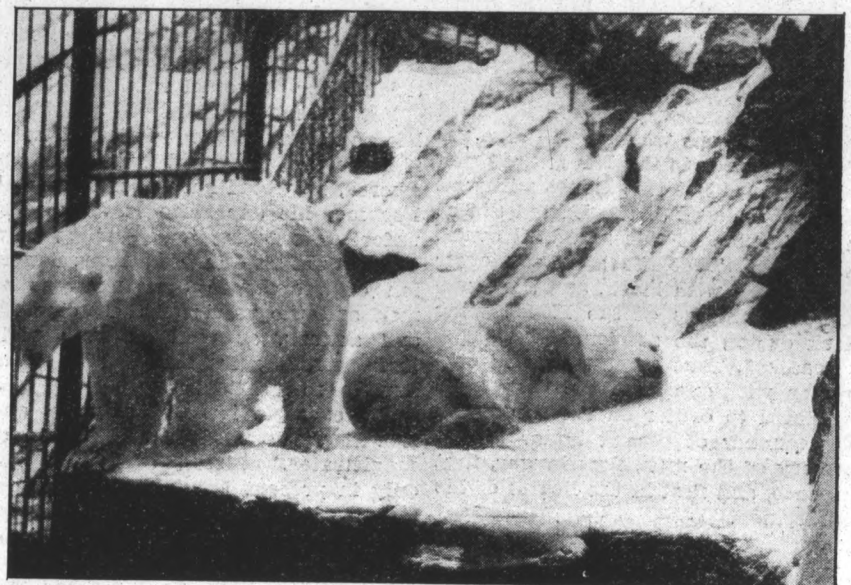
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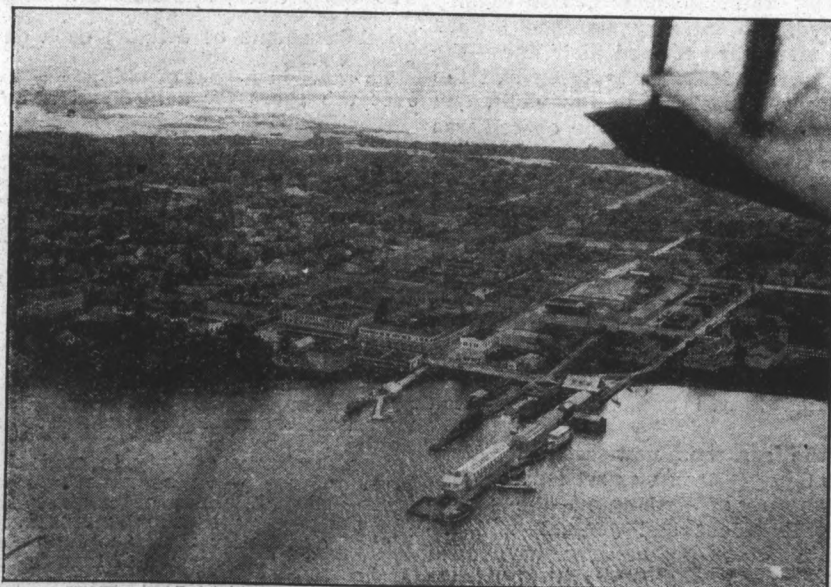
Son of Oil King Studies Labor Problems.



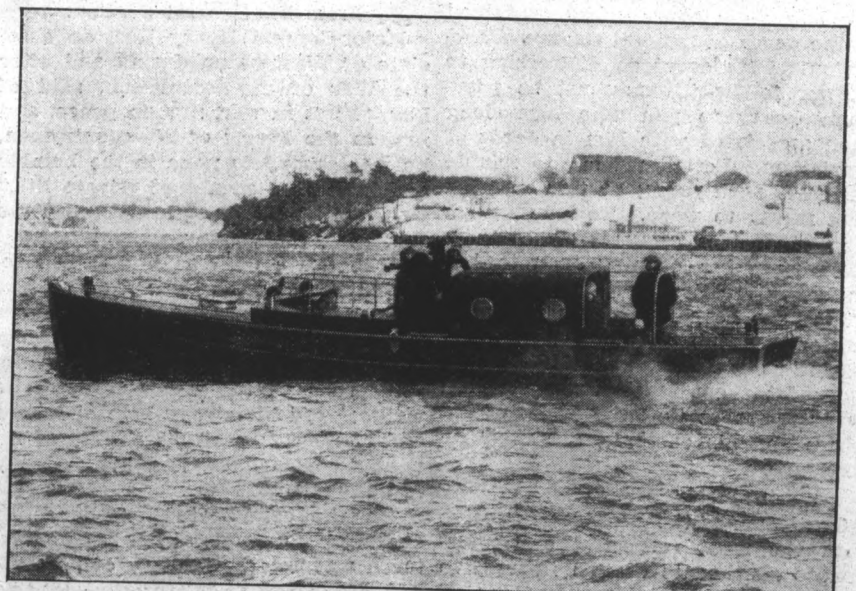
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Mahogany Barge to be Used by Pres. Wilson on trip through Panama Canal.

When General Washington Died.

ABOUT five o'clock of the evening of December fourteenth, 1799, Dr. Craik, who had been summoned from his home at Alexandria to the bedside of Washington at Mt. Vernon on the Potomac, arrived. The physician silently approached his old friend, Washington, who was then past the sixty-seventh mile-stone and probably incapable of recovery from serious illness.

"Doctor," said the aged general, "I die hard, but I am not afraid to go. I believed from my first attack that I should not survive it. My breath cannot last long."

The efforts of Dr. Craik and his assistant went for nought. It was evident that the "father of his country" would leave it soon. Once or twice he was heard to say:

"I should have been glad, had it pleased God, to die a little easier; but I doubt not it is for my good."

It was shortly after ten o'clock that the moment of his passing came. He raised himself up, closed his eyes, and whispered:

"Father of mercies, take me to thyself." The ex-President slowly repeated the thirty-seventh verse of the Thirty-Seventh Psalm, "Mark the perfect man, and behold the upright, for the end of that man is peace."

Seated at the foot of the general's bed was Mrs. Washington. "Is he gone?" she asked, and on receiving an affirmative answer, continued evenly, "Tis well! All is now over; I shall soon follow him; I have no more trials to pass through."

Thus the great Washington died!

Congress took action six days later. Mr. Marshall, with deep sorrow on his countenance and in a pathetic voice, addressed the House of Representatives. He said in part:

"Let us then, Mr. Speaker, pay the last tribute of respect and affection to our departed friend. Let the grand council of the nation display those sentiments which the nation feels."

Offers Resolution.

For this purpose, I hold in my hand some resolutions which I will take the liberty to offer to the House.

Resolved, That this House will wait on the President of the United States in condolence of this mournful event.

Resolved, That the speaker's chair be shrouded with black, and the members and officers of the House wear black during the session.

Resolved, That a committee in connection with one from the Senate, be appointed to confer on the most suitable manner of paying honor to the memory of the man, first in war, first in peace, and first in the hearts of his countrymen.

Senate's Action.

To the President of the United States: The Senate of the United States, respectfully take leave, sir, to express to you their deep regret for the loss their country has sustained in the death of General George Washington. This event so distressing to all our fellow-citizens must be peculiarly heavy to you who have long been associated with him in deeds of patriotism. Permit us, sir, to mingle our tears with yours; on this occasion it is manly to weep. To lose such a man at such a crisis is no common calamity. Our country mourns her Father * * *

Let the country consecrate the memory of the heroic General, the patriotic statesman, and the virtuous sage; let them teach their children never to forget that the fruits of his labors and his example, are their inheritance.

President's Answer.

Gentlemen of the Senate: I receive with the most respectful and affectionate sentiments of this impressive address, the obliging expressions of

Last Words of the "Father of his Country;" Action of Congress from the Original Documents; Newspaper Account of the Obsequies; Extract from the Funeral Oration; and Ode to Washington, Written Early in 1800.

By CARL SCHURZ LOWDEN.

your regret, for the loss our country has sustained in the death of our most esteemed, beloved and admired citizen.

In the multitude of my thoughts and recollections of this melancholy event, you will permit me only to say, that I have seen him in the days of adversity, in some of the scenes of the deepest and most trying perplexities. I have also attended him in the highest elevation and most prosperous felicity with uniform admiration of his wisdom, moderation and constancy.

Among all our original associates in the memorable League of the Continent in 1774, which expressed the sovereign will of the Free Nation in America, he was the only one remaining in the general government. Although with a constitution more enfeebled than his, at an age when he thought it necessary to prepare for retirement, I feel myself alone, bereaved of my lost brother, yet I derive strong consolation from the unanimous disposition which appears in all ages and classes, to mingle their sorrows with mine, on the common calamity to the world.

The life of our Washington cannot suffer by comparison with those of other countries who have been most celebrated and exalted by Fame. The attributes and decorations of Royalty could only have served to eclipse the majority of those virtues, which made him, from being a modest citizen, a more resplendent luminary. Misfortune, had he lived, could hereafter have sullied his glory only with those superficial minds, who, believing that characters and actions are marked by success alone, rarely deserve to enjoy it. Malice could never blast his honor and envy made him a singular exception to her universal rule.

For himself he had lived enough to life and glory. For his fellow citizens, if their prayers could have been answered, he would have been immortal. For me, his departure is at a most unfortunate moment. Trusting, however, in the wise and righteous dominion of Providence over missions of men and the result of their councils and actions, as well as over their lives, nothing remains for me but humble resignation.

His example is now complete, and it will teach wisdom and virtue to magistrates, citizens and men, not only in present but in future generations as long as history shall be read. If a Trajan, and a Pliny, a Marcus Aurelius can never want biographers, eulogists, or historians, neither will the great Washington.—John Adams, President, December 22.

From the Funeral Oration.

Major-General Henry Lee, an associate of Washington during and after the War of the Revolution, said of him, "First in war, first in peace, and first in the hearts of his countrymen, he was second to none in the humble and endearing scenes of private life." Dr. John M. Mason, who delivered the funeral oration, said in part:

"The death of Washington has revealed the extent of our loss. It has given us the final proof that we never mistook him. Take his affecting testament, and read the secrets of his soul; read all the power of domestic virtue; read his strong love of letters and of liberty; read his fidelity to republican principles, and his jealousy of national character."

"In the complicated excellence of character he stands alone. Let no Plutarch attempt the iniquity of parallel. Let no soldier of fortune—let no

usurping conqueror—let not Alexander or Caesar—let not Cromwell or Bonaparte—let none among the dead or the living, appear in the same picture with Washington; or let them appear as the shade to his light."

Washington Entombed.

Under the foregoing heading and dated at Georgetown, December 20, there appeared in the Ulster County Gazette (published at Kingston) in the issue of January 4, 1800, the following article:

On Wednesday last, the mortal part of Washington the Great, the Father of his Country, and the Friend of Man, was confined to the tomb with solemn honors and funeral pomp.

A multitude of persons assembled, from many miles around, at Mount Vernon, the choice abode and last residence of the illustrious chief. There were the groves, the spacious avenues, the beautiful and sublime scenes, the noble mansion, but alas! the august inhabitant was now no more. That great soul was gone. His mortal part was there indeed, but, ah! how affecting, how awful the spectacle of such worth and greatness, thus, to mortal eyes fallen!—Yes! fallen! fallen!

In the lone and lofty portico, where oft the hero walked in all his glory, now lay the shrouded corpse. The countenance still composed and serene seemed to depress the dignity of the spirit, which lately dwelt in the lifeless form! There were those who paid the last sad honors to the benefactor of his country, took an impressive—a farewell view.

On the ornament at the head of the coffin, was inscribed Surge ad Judicium—about the middle of the coffin, Gloria Deo—and on the silver plate, GENERAL GEORGE WASHINGTON,

Departed this life, on the 14th of December, 1799, Aet. 68.

Between three and four o'clock, the sound of artillery from a vessel in the river, firing minute guns, awoke afresh our solemn sorrow—the corpse was removed—a band of music, with mournful melody, melted the soul into the tenderness of woe.

The procession was formed and moved on in the following order: Music and clergy; cavalry, infantry, guard, with arms reversed; the general's horse with his saddle, holsters, and pistols; Cols. Sims, Ramsay, Payne, pall bearers; corpse; pall bearers, Cols. Gilpin, Marsteller, Little; mourners; Masonic brethren; citizens.

When the procession had arrived at the bottom of the elevated lawn, on the bank of the Potomac where the family vault is placed, the cavalry halted, the infantry marched toward the mount and formed their lines—the clergy, the Masonic brethren and the citizens, descended to the vault, and the funeral service of the church was performed—the firing was repeated from the vessel in the river and the sounds echoed from the woods and hills around.

Three general discharges by the infantry—the cavalry, and 11 pieces of artillery, which lined the banks of the Potomac back of the vault, paid the last tribute to the entombed Commander-in-Chief of the Armies of the United States and to the departed hero.

The sun was now setting. Alas! the Son of Glory was set forever. No—the name of Washington—the American President and general—will triumph over death. The unclouded brightness of his glory will illuminate the future ages!

Under date of January 5, 1800, a six-stanza poem or ode, signed "By a Young Lady," and entitled "On the Death of General Washington," was published. Four of the stanzas are as follows:

What means that solemn dirge that strikes my ear?
What means those mournful sounds—why shines the tear?
Why toll the bells the awful knell of fate?
Ah! why those sighs that do my fancy sate!

Where'er I turn the general gloom appears,
Those mourning badges fill my soul with fears;
Hark!—Yonder rueful noise!—'tis done, 'tis done!—
The silent tomb invades our Washington.

Must virtues exalted yield their breath?
Must bright perfection find relief in death?
Must mortal greatness fail?—A glorious name!—
What, then, is riches, honour and true fame?

The august chief, the father and the friend,
The generous patriot—let the muse commend;
Columbia's glory and Mount Vernon's pride
There lies enshrined with numbers at his side!

His Country First.

"First in war and first in peace" made him "first in the hearts of his countrymen" because his country was first in his own heart. The two colossal figures of our history are Washington and Lincoln. The "Father of his Country" became pre-eminent by his part in the making of a nation; and "Honest Abe," when destruction threatened, saved it. George Washington—general, commander-in-chief, twice-named president—was and is the true Patriarchal American.

COASTING.

BY ALONZO RICE.

From the low-bending skies there's a flurry
Of white flakes, and now in a scurry
The snowbirds arrive; teamsters hurry;

For sharper the air grows and chill.
To the breezes the children are flinging
Red scarfs, and from attics are bringing
Gaily-painted hand-sleds, the while singing
In chorus of coasting down hill.

Though keen winds from Northland are biting,
The smooth snow-clad slope looks inviting,
And with laughter and shouts all inciting
To pleasure they're off with a will.
Gay comrades are they: Paul and Freddy,
With Rhoda and Ruth. "Are you ready?"
While Dick with a hand that is steady
Is guiding his sled down the hill.

Beneath the red runners swift flying
The white track, and hills are replying
To their shouts of delight; each one trying
To excel in a trial of skill.
Just the sport for a girl and a boy meant;
And nothing can dull their enjoyment,
Not even the uphill's hard employment
For the next trip in coasting down hill!

SAGE ADVICE.

Be a gift and a benediction. Shine with real light and not with the borrowed reflection of gifts. Common men are apologies for men; they bow the head, they excuse themselves with prolix reasons, they accumulate appearances because the substance is not. The discharge of duty to one's fellow-man, the work of resisting violence and maintaining order and righting the wrongs of the oppressed, is higher and holier than the following of visions. The service of man is the best worship of God.—Henry Van Dyke.

Land O' Nod Stories.

By HOWARD T. KNAPP.

Frisky's Granary is Robbed.

TO much snow had fallen during the night that the White Forest was buried under a soft, white blanket a foot thick, and in places great drifts were piled up as high as your head. But that didn't bother Billy Be By Bo Bum, no, sir, not a bit of it, for he was bundled up as snug as a bug in a rug, and as he trudged through the big woods, he whistled as merrily as a lark.

"Gee, but I'm hungry," said Billy, and just then he spide a hickory nut in the snow at the foot of an old stump. But when he picked it up, he found a clean little hole had been cut in the shell and the kernel taken out.

"Now, who could have done that?" said Billy to himself, "and where did this nut come from, I should like to know."

Then he saw there was a small hole in the side of the stump, and thrusting in his hand, what do you suppose he found? Well, sir, you would never guess, so I might as well tell you. There was about a quart of nuts in that stump, but when Billy finished filling his pockets, nary a nut was left.

"Now I can have a feast," chuckled Billy, and he started for home as fast as his chubby little legs would carry him. But before he had gone very far he heard the most awful racket in the branches of a big oak, and there sat Frisky the Red squirrel, chattering and scolding away at a great rate. There was no use talking, Frisky was the maddest little fellow in all the White Forest, and generally he is the best natured old rascal in the world. But now he was using such terrible language that Busybuddy the Bluejay, who had come rushing up to find out what was the matter, flew away in disgust, and Busybuddy, you know, swears more than all the rest of the Little People put together.

"What under the sun is the matter?" asked Billy.

"Frisky has been robbed," replied Tinker Teedle Tee, the merry little elf, who flew up just at that moment and alighted on Billy's shoulder.

"Robbed! Why, who could have robbed him?" exclaimed Billy.

"I'm sure I don't know," said Tinker, nodding his head until the weeny copper kettle he wore for a hat bobbed up and down at a great rate. "But someone broke into his house back there in the old stump and stole his winter's supply of nuts."

Why, I—I— stammered Billy, and then he stopped, for he remembered his pockets were full of nuts, and he suddenly realized that it was he who had robbed Frisky. "I didn't know those nuts belonged to Frisky, honest I didn't Tinker," he said, two

big tears rolling down his cheeks.

"Now, now, Billy Boy, there's nothing to cry about," comforted Tinker, who could never bear to see anyone unhappy. "We can put the nuts back in Frisky's snug little nest and everything will be hunky dory again, but just remember it is mighty hard for the Little People to get enough to eat during the winter when the ground is covered with snow and everything is frozen up. Frisky makes out fairly well, for in the fall he stores up enough nuts to last him through the winter, but it is different with the birds, for there are no insects or berries for them to eat."

"Mother scatters bread crumbs in the yard every Sunday morning," said Billy, "and the birds have a regular feast."

"That's a mighty good idea," said Tinker, "but what do you suppose the birds do the rest of the week?"

"I don't know," answered Billy. "I never thought of that."

"Well, they often go to bed hungry," said the merry little elf. "Now, how would you like it if you had to go to bed without your supper?"

"I wouldn't like it at all," replied Billy.

"Neither do the birds. Now I have a bright idea. Although it is a long time after Christmas, what do you say if we give the birds a Christmas tree?"

"A Christmas tree?"

"Yes, sir, a Christmas tree. Only, instead of trimming it with bright balls and tinsel, we will trim the branches with crusts of bread, little pieces of suet and an apple or two, and on the snow under the tree we'll scatter a handful of grain. What do you say?"

"Why, that will be bully fun," agreed Billy, "and if you will wait for me, I'll run home and ask Mother for the things."

So Billy ran home as fast as his legs would carry him, and before long was back again with a big bundle of good things for the feathered dwellers of the White Forest. Tinker had picked out a small spruce tree that grew in a sheltered spot, and in no time at all they had the branches trimmed with big crusts of bread and pieces of beef fat.

Busybuddy the Bluejay had been watching them from the branches of a nearby oak, and as Billy and Tinker sat down on a log to rest, he flew up to see what had been going on. And when he found the branches loaded down with goodies, maybe he didn't have a feast. Then when he had eaten until he couldn't eat another crumb, he flew off through the woods, spreading the good news to all the Little People. The birds came by twos and threes, and before Billy started for home a whole flock of hungry but happy feathered songsters were gathered about the Christmas tree, enjoying the presents tied to its branches.

"I wish you had thought of this scheme sooner," said Billy, "but now that I know how much the birds enjoy their Christmas tree, I'll keep the branches filled with new presents every day." And he did, too.

This I resolved on—to run when I can; to go, when I cannot run; and to creep when I cannot go.—John Bunyan.

Life is full of opportunities, nature is full of loveliness and splendor, religion is sown thick with benignant signs for us. The spirit of the contemplative man should be filled with the love of the Being who fills all in all. The succession of our years should be one Thanksgiving day.—N. L. Frothingham.



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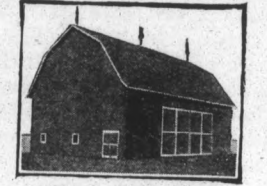
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Winston of the Prairie

BY HAROLD BINDLOSS.

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CHAPTER XX.

Winston had seen no crop to compare with it during the eight years he had spent in the dominion. There had been neither western drought nor hail that year, and now when the warm western breezes kept sweet and wholesome the splendid ears they fanned, there was removed from him the terror of the harvest frost, which not infrequently blights the fairest prospects in one bitter night. Fate, which had tried him hardly hitherto, denying the seed its due share of fertilizing rain, sweeping his stock from existence with icy blizzard, and moving down the tall green corn with devastating hail, was now showering favors on him when it was too late. Still, though he felt the irony of it, he was glad, for others had followed his lead, and while the lean years had left a lamentable scarcity of dollars at Silverdale, wealth would now pour into every man who had had the faith to sow.

He dismounted beside the oats which he would harvest first, and listened with a curious stirring of his pulses to their musical patter. It was not the full-toned song of the wheat, but there was that in the quicker beat of it which told that each graceful tassel would redeem its promise. He could not see the end of them, but by the right of the producer they were all his. He knew that he could also hold them by right of conquest, too, for that year a knowledge of his strength had been forced upon him. Still, from something he had seen in the eyes of a girl and grasped in the words of a white-haired lady, he realized that there is a limit beyond which man's ambition may not venture, and a right before which even that of possession must bow.

It had been shown him plainly that no man of his own devices can make the wheat grow, and standing beside it in the creeping dusk he felt in a vague, half-pagan fashion that there was, somewhere behind what appeared the chaotic chances of life, a scheme of order and justice immutable, which would in due time crush the too presumptuous human atom who opposed himself to it. Regret and rebellion were, it seemed, equally futile, and he must go out from Silverdale before retribution overtook him. He had done wrong, and, though he had made what reparation he could, knew that he would carry his punishment with him.

The house was almost dark when he reached it, and as he went in, his cook signed to him. "There's a man in here waiting for you," he said. "He doesn't seem in any way friendly or civil."

Winston nodded as he went on, wondering with a grim expectancy whether Courthorne had returned again. If he had, he felt in a mood for very direct speech with him. His visitor was, however, not Courthorne. Winston could see that at a glance, although the room was dim.

"I don't seem to know you, but I'll get a light in a minute," he said.

"I wouldn't waste time," said the other. "We can talk just as straight in the dark, and I guess this meeting will finish outside on the prairie. You've given me a good deal of trouble to trail you, Mr. Guyler."

"Well," said Winston, "it seems to me that you have found the wrong man."

The stranger laughed unpleasantly. "I was figuring you'd take it like that, but you can't bluff me. Well, now, I've come round to take it out of you for slinging that decanter at me,

and if there is another thing we needn't mention it."

Winston started at the man, and his astonishment was evident, but the fact that he still spoke with an English accentuation, as Courthorne did, was against him.

"To the best of my recollection, I have never suffered the unpleasantness of meeting you in my life," he said. "I certainly never threw a decanter or anything else at you, though I understand that one might feel tempted to."

The man rose up slowly, and appeared big and heavy-shouldered as he moved athwart the window. "I guess that is quite enough for me," he said. "What were you condemned Englishmen made for, anyway, but to take the best of what other men worked for, until the folks who've got grit enough run you out of the old country? Lord, why don't they drown you instead of dumping you and your wickedness on to us? Still, I'm going to show one of you, as I've longed to do, that you can't play your old tricks with the women of this country."

"I don't see the drift of a word of it," said Winston. "Haven't you better come back tomorrow, when you've worked the vapors off?"

"Come out!" said the other man grimly. "There's scarcely room in here. Well, then, have it your own way, and the devil take care of you!" "I think there's enough," said Winston, and as the other sprang forward closed with him.

He felt sick and dizzy for a moment for he had laid himself open and the first blow got home, but he had decided that if the grapple was inevitable, it was best to commence it and end it speedily. A few seconds later there was a crash against the table, and the stranger gasped as he felt the edge of it pressed into his backbone. Then he felt himself borne backwards until he groaned under the strain, and he heard a hoarse voice say: "If you attempt to use that foot again, I'll make the leg useless all your life to you. Come right here, Tom."

A man carrying a lantern came in, and stared at the pair as he set it down. "Do you want me to see a fair finish-up?" he asked.

"No," said Winston. "I want you to see this gentleman out with me. Nip his arms behind his back, he can't hurt you."

It was done with a little difficulty, and there was a further scuffle in the hall, for the stranger resisted strenuously, but a minute later the trio reeled out of the door just as a buggy pulled up. Then, as the evicted man plunged forward alone, Winston straightened himself suddenly, saw that Colonel Barrington was looking down on him, and that his niece was seated at his side. He stood still, flushed and breathless, with his jacket hanging rent half-way up about him, and the Colonel's voice was quietly ironical.

"I had a question or two to ask you, but can wait," he said. "No doubt I shall find you less engaged at another time."

He flicked the horse, and as the buggy rolled away the other man walked up to Winston.

"While I only wanted to get rid of you before, I feel greatly tempted to give you your wish now," said the latter.

The stranger laughed dryly. "I guess you needn't worry. I don't fight because I'm fond of it, and you're not the man."

"Not the man?" said Winston.

"No, sir," said the other. "Not like him, now I can see you better.

Well, I'm kind of sorry I started a circus here."

A suspicion of the truth flashed upon Winston. "What sort of a man was the one you mistook me for?"

"Usual British waster. Never done a day's work in his life, and never wanted to, too tired to open his eyes more than half-way when he looked at you, but if he ever fools round the saloon again, he'll know what he is before I'm through with him."

Winston laughed. "I wouldn't be rash or you may get another astonishment," he said. "We really know one or two useful things in the old country, but you can't fetch the settlement before morning, and we'll put you up if you like."

"No, sir," said the other. "I'm not fond of Englishmen, and we might get arguing, while I've had 'bout enough of you for one night."

He rode away, and Winston went back into the house very thoughtfully, wondering whether he would be called upon to answer for more of Courthorne's doings.

It was two or three days later when Maud Barrington returned with her aunt from a visit to an outlying farm, where, because an account of what took place in the saloon had by some means been spread about, she heard a story brought in from the settlement. It kept her silent during the return journey, and Miss Barrington said nothing, but when the Colonel met them in the hall, he glanced at his niece.

"I see Mrs. Crandall has been telling you both a tale," he said. "It would have been more fitting if she had kept it to herself."

"Yes," said Maud Barrington. "Still, you do not credit it?"

Barrington smiled a trifle dryly. "I should very much prefer not to, my dear, but what we saw the other night appears to give it probability. The man Courthorne was dismissing somewhat summarily is, I believe, to marry the lady in question. You will remember I asked you once before whether the leopard can change his spots."

The girl laughed a little. "Still, are you not presuming when you take it for granted that there are spots to change?"

Colonel Barrington said nothing further, and it was late that night when the two women reopened the subject.

"Aunt," said Maud Barrington, "I want to know what you think about Mrs. Crandall's tale."

The little lady shook her head. "I should like to disbelieve it if I could."

"Then," said Maud Barrington, "why don't you?"

"Can you give me any reasons? One must not expect too much from human nature, my dear."

The girl sat silent a while, remembering the man who she had at first sight, and in the moonlight, fancied was like her companion at the time. It was not, however, the faint resemblance that had impressed her, but a vague something in his manner, his grace, his half-veiled insolence, his poise in the saddle. She had only seen Lance Courthorne on a few occasions when she was very young, but she had seen others of his race, and the man reminded her of them. Still, she felt half-instinctively that as yet it would be better that nobody should know this, and she stooped over some lace on the table as she answered the elder lady.

"I only know one, and it is convincing. That Lance should have done what he is credited with doing is quite impossible."

Miss Barrington smiled. "I almost believe so, too, but others of his family have done such things somewhat frequently. Do you know that Lance has all along been a problem to me, for there is a good deal in my brother's question. Although it seems out of the question, I have wondered whether there could be two Lance Courthornes in western Canada."

The girl looked at her aunt in silence for a space but each hid a portion of her thoughts. Then Maud Barrington laughed.

"The Lance Courthorne now at Silverdale is as free from reproach as any man may be," she said. "I can't tell you why I am sure of it—but I know I am not mistaken."

CHAPTER XXI.

The Face at the Window.

It was a hot morning when Sergeant Stimson and Corporal Payne rode towards the railroad across the prairie. The grassy levels rolled away before them, white and parched, into the blue distance, where willow grove and straggling bluff floated on the dazzling horizon, and the fibrous dust rose in little puffs beneath the horses' feet, until Stimson pulled his beast up in the shadow of the birches by the bridge, and looked back toward Silverdale. There, wooden homesteads girt about with barns and granaries rose from the whitened waste, and behind some of them stretched great belts of wheat. Then the Sergeant, understanding the faith of the men who had sown that splendid grain, nodded, for he was old and wise, and had seen many adverse seasons, and the slackness that comes when hope has gone, to beaten men.

"They will reap this year—a handful of cents on every bushel," he said. "A fine gentleman is Colonel Barrington, but some of them will be thankful there's a better head than the one he has, at Silverdale."

"Yes, sir," said Corporal Payne, who wore the double chevrons for the first time, and surmised that his companion's observations were not without their purpose.

Stimson glanced at the bridge. "Good work," he said. "It will save them dollars on every load they haul in. A gambler built it! Do they teach men to use the ax in Montana saloons?"

The corporal smiled, and waited for what he felt would come. He was no longer the hot-blooded lad who had come out from the old country, for he had felt the bonds of discipline, and been taught restraint and silence on the lonely prairie.

"I have," he said tentatively, "fancied there was something a little unusually about the thing."

Stimson nodded, but his next observation was apparently quite unconnected with the topic. "You were a raw colt when I got you Payne, and the bit galled you now and then, but you had good hands on the bridle, and somebody who knew his business had taught you to sit a horse in the old country. Still, you were not as handy with brush and fork at stable duty."

The bronze seemed to deepen in the corporal's face, but it was turned steadily towards his officer. "Sir," he said, "has that anything to do with what you were speaking of?"

Stimson laughed softly. "That depends, my lad. Now, I've taught you to ride straight, and to hold your tongue. I've asked you no questions, but I've eyes in my head, and it's not without a purpose you've been made corporal. You're the kind they give commissions to, now and then—and your folks in the old country never raised you for a police trooper."

"Can you tell me how to win one?" asked the corporal, and Stimson noticed the little gleam in his eyes.

"There's one road to advancement, and you know where to find the trooper's duty laid down plain," he said, with a dry smile. "Now, you saw Lance Courthorne once or twice back in Alberta?"

"Yes, sir, but never close to." "And you knew farmer Winston?" Payne appeared thoughtful. "Of course, I met him a few times on the prairie, always on horseback with his big hat on, but Winston is dead—that is, I heard him break through the ice." The men's eyes met for a moment, and Stimson smiled curiously. "There

is," he said, "still a warrant out for him. Now, you know where I am going, and while I am away, you will watch Courthorne and his homestead. If anything curious happens there you will let me know. The new man has instructions to find you any duty that will suit you."

The corporal looked at his officer steadily, and again there was comprehension in his eyes. Then he nodded. "Yes, sir. I have wondered whether, if Shannon could have spoken another word that night, it would have been Winston the warrant was issued for."

Stimson raised a restraining hand. "My lad," he said dryly, "the police trooper who gets advancement is the one that carries out his orders and never questions them, until he can show they are wrong. Then he uses a good deal of discretion. Now you know your duty?"

"Yes, sir," said Payne, and Stimson, shaking his bridle, cantered off across the prairie.

Then, seeing no need to waste time, the corporal rode toward Courthorne's homestead, and found its owner stripping a binder. Pieces of the machine lay all around him, and from the fashion in which he handled them it was evident that he was capable of doing what the other men at Silverdale left to the mechanic at the settlement. Payne wondered, as he watched him, who had taught the gambler to use spanner and file.

"I will not trouble you if you are busy, Mr. Courthorne, but if you would give me the returns the Bureau ask for, it would save me riding round again," he said.

"I'm afraid I can't," said Winston. "You see, I haven't had the papers."

"Trooper Bacon told me he had given them to you."

"I don't seem to remember it," said Winston.

Payne laughed. "One forgets things when he is busy. Still, you had them—because you signed for them."

Winston looked up suddenly, and in another moment smiled, but he was a trifle too late, for Payne had seen his astonishment, and that he was not on his guard.

"Well," he said, "I haven't got them now. Send me a duplicate. You have, no doubt, some extra forms at the outpost."

Payne decided that the man had never had the documents, but was too clever to ask any questions or offer explanations that might involve him. It was evident he knew that somebody had impersonated him, and the fact sent a little thrill through the corporal; he was at least on the trail.

"I'll bring you one around the next time I'm in the neighborhood," he said, and Winston sat still with the spanner lying idle in his hand when he rode away.

He realized that Courthorne had taken the papers, and his face grew anxious as well as grim. The harvest was almost ready now, and a little while would see it in. Then his work would be over, but he had of late felt a growing fear lest something, that would prevent its accomplishment, might happen in the meanwhile. Then almost fiercely he resumed the stripping of the machine.

An hour or two later Dane rode up, and sat still in his saddle looking down on Winston with a curious smile on his face.

"I was down at the settlement and found a curious story going round," he said. "Of course, it had its humorous aspect, but I don't know that the thing was quite discreet. You see, Barrington has once or twice had to put a stern check on the indulgence in playfulness of that kind by some of the younger men, and you are becoming an influence at Silverdale."

"You naturally believed what you heard. It was in keeping with what you have seen of me?"

Dane's eyes twinkled. "I didn't want to, and I must admit that it isn't. Still, a good many of you quiet men are addicted to occasionally astonish-

ing your friends, and I can't help a fancy that you could do that kind of thing as well as most folks, if it pleased you. In fact, there was an artistic finish to the climax that suggested your usual thoroughness."

"It did?" said Winston grimly, remembering his recent visitor and one or two of Courthorne's Albertian escapades. "Still, as I'm afraid I haven't the dramatic instinct, do you mind telling me how?"

Dane laughed. "Well, it is probable there are other men who would have kissed the girl, but I don't know that it would have occurred to them to smash a decanter on the irate lover's head."

Winston felt his fingers tingle for a grip on Courthorne's throat. "And that's what I've been doing lately? You, of course, concluded that after conducting myself in an exemplary fashion an astonishing time it was a trifling lapse?"

"Well," said Dane dryly, "as I admitted, it appeared somewhat out of your usual line, but when I heard that a man from the settlement had been ejected with violence from your homestead, what could one believe?"

"Colonel Barrington told you that?"

"No," said Dane, "you know he did not. Still, he had a hired man riding a horse he had bought, and I believe though it is not my affair—Maud Barrington was there. Now, of course, one feels diffident about anything that may appear like preaching, but you see, a good many of us are following you, and I wouldn't like you to have many little lapses of that kind while I'm backing you. You and I have done with these frivolities some time ago, but there are lads here they might appeal to. I should be pleased if you could deny the story."

Winston's face was grim. "I'm afraid it would not suit me to do as much just now," he said. "Still, between you and I, do you believe it likely that I would fly at that kind of game?"

Dane laughed softly. "Well," he said, "tastes differ, and the girl is pretty, while you know, after all, they are very much the same. We have, however, got to look at the thing sensibly, and you admit you can deny it."

"I told you it wouldn't suit me."

"Then there is a difference?"

Winston nodded. "You must make the best of that, but the others may believe exactly what they please. It will be a favor to me if you remember it."

Dane smiled curiously. "Then I think it is enough for me, and you will overlook my presumption. Courthorne, I wonder now and then when I shall altogether understand you!"

"The time will come," said Winston dryly, to hide what he felt, for his comrade's simple avowal had been wonderfully eloquent. Then Dane touched his horse with his heel and rode away.

It was two or three weeks later when Winston, being requested to do so, drove over to attend one of the assemblies at Silverdale Grange. It was dark when he reached the house, for the nights were drawing in, but because of the temperature few of the great oil lamps were lighted, and the windows were open wide. Somebody had just finished singing when he walked into the big general room, and he would have preferred another moment to make his entrance, but disdained to wait. He, however, felt a momentary warmth in his face when Miss Barrington, stately as when he had first seen her in her rustling silk and ancient laces, came forward to greet him with her usual graciousness. He knew that every eye was upon them, and guessed why she had done so much.

What she said was of no moment, but the fact that she had received him without sign of coldness was eloquent, and the man bent very respectfully over the little white hand. Then he stood straight and square for a moment and met her eyes.

"Madam," he said, "I shall know whom to come to when I want a friend."

Afterwards he drifted towards a group of married farmers and their wives, who except for that open warranty, might have been less cordial to him, and presently, though he was never quite sure how it came about, found himself standing beside Maud Barrington. She smiled at him, and then glanced towards one of the open windows, outside which one or two of the older men were sitting.

"The room is very hot," said Winston tentatively.

"Yes," said the girl. "I fancy it would be cooler in the hall."

They passed out together into the shadowy hall, but a little gleam of light from the doorway behind them rested on Maud Barrington as she sat down. She looked inquiringly at the man as though in wait for something.

"It is distinctively cooler here," he said.

Maud Barrington laughed impatiently. "It is," she said.

"Well," said Winston, with a little smile, "I will try again. Wheat has made another advance lately."

The girl turned towards him with a little sprackle in her eyes. Winston saw it, and the faint shimmer of the pearls upon the whiteness of her neck, and then moved his head so that he looked out upon the dusky prairie.

"Pshaw!" she said. "You know why you were brought here tonight."

Winston admired her courage, but did not turn around, for there were times when he feared his will might fail him. "I fancy I know why your aunt was so gracious to me. Do you know that her confidence almost hurts me!"

"Then why don't you vindicate it and yourself? Dane would be your mouthpiece, and two or three words would be sufficient."

Winston made no answer for a space. Somebody was singing in the room behind them, and through the open window he could see the stars in the soft indigo above the great sweep of prairie. He noticed them vacantly and took a curious impersonal interest in the two dim figures standing close together outside the window. One was a young English lad, and the other a girl in a long white dress. What they were doing was no concern of his, but any trifle that diverted his attention a moment was welcome in that time of strain, for he had felt of late that exposure was close at hand, and was fiercely anxious to finish his work before it came. Maud Barrington's finances must be made secure before he left Silverdale and he must remain at any cost until the wheat was sold.

Then he turned slowly towards her. "It is not your aunt's confidence that hurts me the most."

The girl looked at him steadily, the color a trifle plainer in her face, which she would not turn from the light, and growing wonder in her eyes.

"Lance," she said, "we both know it is not misplaced. Still, your impassiveness does not please us."

Winston groaned inwardly and the swollen veins showed on his forehead. His companion had leaned forward a little so that she could see him, and one white shoulder almost touched his own. The perfume of her hair was in his nostrils, and when he remembered how cold she had once been to him, a longing that was stronger than the humiliation that came with it grew almost overwhelming. Still, because of her very trust in him, there was a wrong he could not do, and it dawned on him that a means of placing himself beyond further temptation was opening to him. Maud Barrington, he knew, would have scant sympathy with an intrigue of the kind Courthorne's recent adventure pointed to. "You mean, why do I not deny what you have no doubt heard?" he said. "What could one gain by that if you had heard the truth?"

(Continued next week).

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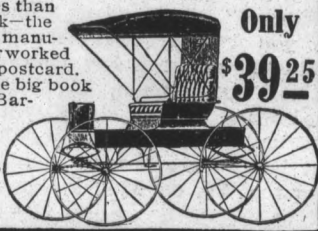
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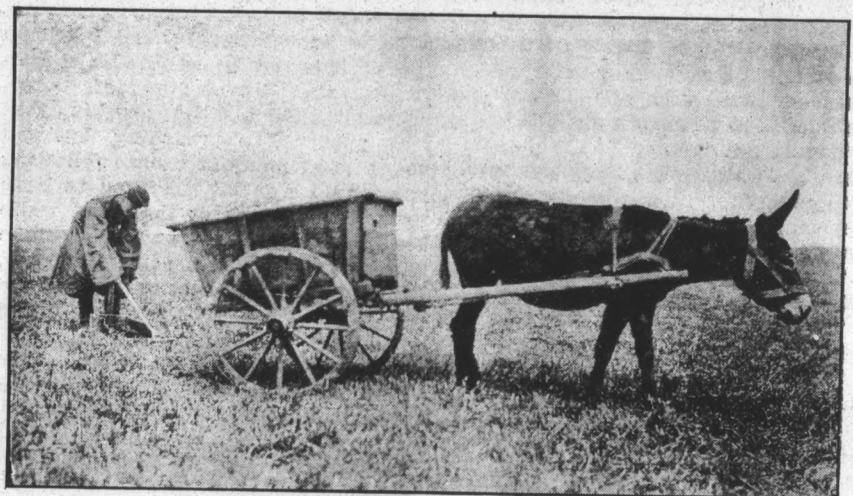
As Seen by American Commission.

By WM. B. HATCH, Michigan Member of the Commission.

WHILE the Hungarian Central Co-operative Credit Society is not regarded as a state institute, the treasury contributed towards its foundation \$200,000 and has extensive rights of supervision which undoubtedly adds strength and insures efficiency of management. It is genuinely co-operative. The smaller societies must hold stock in it, and it is thus organized like the smaller society with similar rights, liabilities and obligations of members. In fourteen years the number of affiliated societies has risen to 2,412, and the amount of credit granted them by the central institute alone amounts to more than \$20,000,000. More than half of the districts of the whole country are now organized. There are two kinds of local co-operative societies—agricultural and industrial. Out of the 2,412 societies only 226 are industrial. These are chiefly for co-operative production and sale of products, iron and steel, carpentry, tailoring, carpets and

In the case of the thrasher, the association takes the twentieth sack. It pays the machinist, and incidental outlay for coal, oil and repairs and reserves enough of the earnings of the machine to produce a depreciation fund with which to replace the machine when worn out. Co-operative creameries have grown in ten years from 34 to 651, from 2,767 members to 62,156, from 5,937 cows to 98,237, and from an income of \$107,850 to \$2,037,380. It should be remembered that this product is largely what was before mostly lost, as the small farmer with only one or two cows realized little or no cash from his surplus milk. Similar organization worked similar savings from eggs, vegetables and fruit, through co-operative production, distribution and finance.

We are reminded in America just now where thousands are hungry, that "nearly \$1,500,000,000 worth of food products go to waste annually because they cannot be marketed at the right



Hungarian Farmer Gathering Droppings from the Pasture Lot and Taking to Other Fields where Need is Greater.

glassware, basket weaving and other cottage industries, leather goods, etc. In 1912 goods to the amount of \$3,000,000 were sold and the workmen earned in wages and participation in profits fully \$1,800,000. The local agricultural co-operative societies have become especially helpful to the small holder. The affiliated societies have already 7,000,000 members. The loans being restricted chiefly to productive purposes it may be readily seen what a great constructive army is hereby organized on a business basis, which teaches them business-like methods by requiring them to practice it.

In addition to the above named agricultural and industrial organizations obtaining in Hungary we find others of perhaps lesser import but illustrating a response to agricultural and industrial needs, among which are the following:

The National Federation of Land Mortgage Institutes has more of a social than a financial significance. One of its chief functions is to assist people of little or no means engaged in agriculture. They are helped to procure pasture for their animals so that the increase is conserved; funds are provided to town councils for the erection of workmen's dwellings. This enables poor workmen to live in their own homes surrounded by a good garden for a very little more than is usually paid for rent for one room and a tiny kitchen. It aids also in getting the poor agriculturist started with seed, fertilizer, implements and stock. In order to make this Institute genuinely altruistic the state bears its administrative expenses.

Local unions of farmers are organized on a co-operative basis for the purchase at wholesale of their necessities, seeds, fertilizers, machinery, to do their own threshing, by the purchase of their own threshing outfits, for the purchase of steam plows, etc.

time, or properly kept until there is call for them." Co-operative granaries or storehouses are encouraged in Hungary. And the Hangya is the selling organization for over 1,200 co-operative associations, while The National Central of the Christian Co-operative Societies is a similar selling organization for 274 other societies with a turnover in 1912 of \$700,000.

A glance at the Hungarian labor law is interesting. It provides that the contract of service of the agricultural laborer is to be entered into in presence of the local magistrate, wages fixed in money or kind or both, at the option of the worker, and guarantees were exacted that the contract should be carried out and that no conclusive strike should break out. A labor exchange is maintained in each village through an agent appointed by the government to bring employers and those seeking employment together, to report conditions to other agents and the minister of agriculture and thus "regulate the economic incidence of supply and demand in each district so as to leave no permanent justification for emigration."

The housing problem, the servant problem, higher agricultural education are among other agricultural subjects which are receiving serious and constructive consideration.

The co-operative village of Totmegyer, between Budapest and Vienna, is of much interest, but space precludes the details of this enterprising community of 3,600 people, with its co-operative bank, distribution and buying society, library, casino, and the community spirit pervading all.

Roumania.

Roumania did not occupy a very large proportion of the time of the American Commission's studies, but it is interesting in some respects, not the least of which are the accomplishments of a country so small and ob-

scure from the American standpoint. It lacks eight thousand square miles of being as large as Michigan, but it has three times the population of Michigan, and of its 7,500,000 people there are two hundred thousand Gypsies. It lies just over the fence from Hungary so to speak, the fence being the Transylvanian Mountains. It has Serbia, the original war center, just over the Danube on its western border and extends from this much smaller country eastward to Russia and the Black Sea. Present reports say Roumania will join the Allies in the present war, in February. It is said to contain the chief European supply of petrol, or gasoline.

One apparently sensible thing which Roumania did when she saw the economic advantage of agricultural co-operation was that she proceeded to co-operate without waiting for a special statute. It started on a small scale in the cities in 1880, but did not make much progress until it spread to the villages in 1895-6. The start was made by the organization of popular banks. And even without the aid of central control and special legislation, these banks had grown by 1903 to number between six and seven hundred, with 60,000 members and about one million dollars paid up capital. In view of so important a manifestation the state decided to take them under its control and give them added encouragement and opportunity. They were exempted from taxes and stamp duties and a central institution was organized called the Central Bank for People's Banks and Co-operative Societies, endowed with \$4,000,000 capital, bringing all the co-operative societies under one system, furnishing the necessary instruction for further organization, by correspondence, publication of pamphlets, congresses and other methods.

A popular bank is organized as follows: Such peasants as wish to, at least 25, subscribe a capital of from \$4.00 minimum to \$1,000 maximum, which they are obliged to pay in within two years, although it may all be paid in at once. Each member is liable for the amount of his subscription (limited liability). There are also 20 or 30 unlimited liability banks, this number being small because of the individualist character of the Roumanians. The administration is intrusted to a committee of six or nine members, elected for a term of three years, of which one-third is replaced each year. The principal function of the popular bank is to make loans to members and non-members, one to two per cent more being charged members than non-members. Loans are approved by a loan committee which gives special attention to the purpose for which the money is to be used and see to it that it is used for that purpose. This can be done because the local popular bank restricts its operation to a comparatively small district. The majority of these loans are on personal security, but in a less degree on pledges. The statistics for 1911 show loans outstanding of \$20,195,614, of which \$7,000,000 was secured by pledges, and \$13,000,000 on personal credit; \$14,000,000 was loaned to members of the banks and \$6,000,000 to non-members. Loans granted on account of pledges are secured exclusively by agricultural implements or cattle, which are registered in a special register kept by the communal authorities, the property thus pledged remaining in the possession of the borrower. Members of one bank cannot be members or debtors of another. The payment of loans granted on personal security is guaranteed by the entire estate of the borrower on which the bank has a claim similar to that of any other creditor.

(To be continued).

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Fig. 2. Extra coating of finest rubber between fabric plies—not in others. No fabric separation in Firestones.

Fig. 3. 1-16 inch cushion layer of most expensive rubber to protect fabric—none used in others.

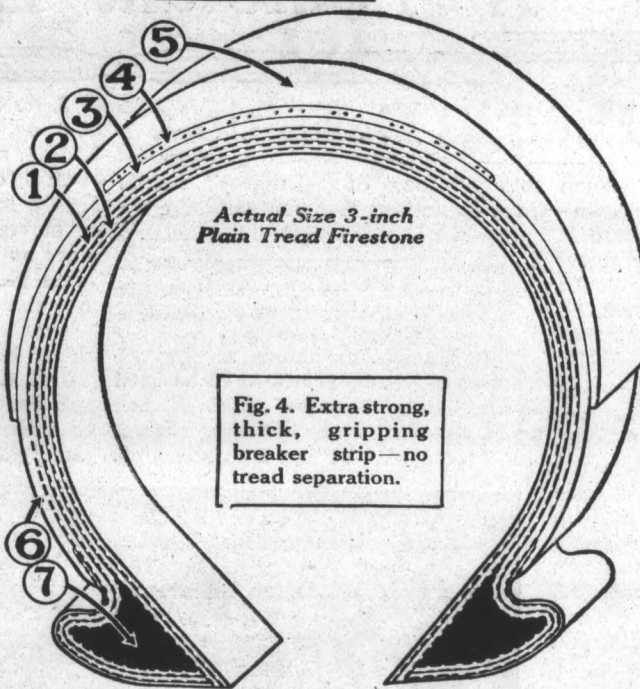


Fig. 5. Extra thickness of tread, 1-4 inch instead of 3-16 inch. Toughest, most resilient rubber—extra mileage.

Fig. 6. Extra thick, tough side wall, gives extra protection against rut wear.

Fig. 7. Extra large, strong bead, affording firm hold, firm foundation—extra mileage.

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30x3½	11.90	13.35	2.60	2.90
32x3½	13.75	15.40	2.70	3.05
34x4	19.90	22.30	3.90	4.40
34x4½	27.30	30.55	4.80	5.40
36x4½	28.70	32.15	5.00	5.65
37x5	35.55	39.80	5.95	6.70

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Woman and Her Needs

At Home and Elsewhere



A New Word and its Definition.

I DON'T know whether there is such a word as "slitherey," but it sounded so expressive when I heard it used that I've clung to it ever since. A doctor used it to explain the death of a patient. Of course, he blamed the other fellow, his explanation was that the nurse was "slitherey."

Knowing the nurse, I understood the word. The nurse was good natured and well meaning, but—well, her cap was always a little awry, the ends of her collar did not exactly meet, her apron was always a little soiled and only half-tied, her slippers were down at the heel, her uniform pinned where it should be buttoned, her nails always enshrouded in black and, when she opened her mouth, you always recommended your dentist.

Just to look at her you knew that it never bothered her if she gave the medicines a half hour late, or if she got them mixed and gave the bottle kind instead of the pill. You knew at once that the hot water bottle would be only lukewarm and the stopper not properly put in, that the toast would be burned, the milk cold, the eggs cooked to a frazzle and the doctor's chart not half-filled out.

You weren't a bit surprised that the patient died, and you did not blame the doctor for laying it on the nurse. She was "slitherey," i. e., careless, or "sloppy," and her careless habits cost a life.

Carelessness does not always cost so dearly, but its owners always pay heavily. Sickness, poverty, blindness, all sorts of troubles follow in its train. When I was younger I had a profound sympathy for the so-called "submerged tenth." But since I've known them better my sorrow is not so deep. A very large percentage of their poverty is caused by their "slitherey" habits. They have submerged themselves.

Their work, when they will work, tells the whole story. It is never properly done, never done with any evident desire to please. The one idea is to get through as easily as possible and claim the day's pay. As for steady work, the submerged tenth are not looking for it. They work just long enough to satisfy momentary needs, and perhaps get enough ahead for a day or a week. Then they disappear from your sight and bob up somewhere else when hunger again forces them to manual labor.

The average poverty stricken family gets more sympathy than it deserves. There is not a case on record where a person with ambition and habits of neatness, thrift and carefulness remained poor through life. Those who remain poor are the ones who are "slitherey," who do a job "good enough for now," and to be done all right tomorrow. But the tomorrow never comes.

Fences are to be repaired next week, but the cattle destroy the crops before repairing day rolls around. Machinery is to be drawn under cover tomorrow, but it rains tonight. Insurance is to be taken out after harvest, but the lightning does not wait for the policy to be written and the premium paid.

For hard luck we have pity, if it is unavoidable. But for hard luck and

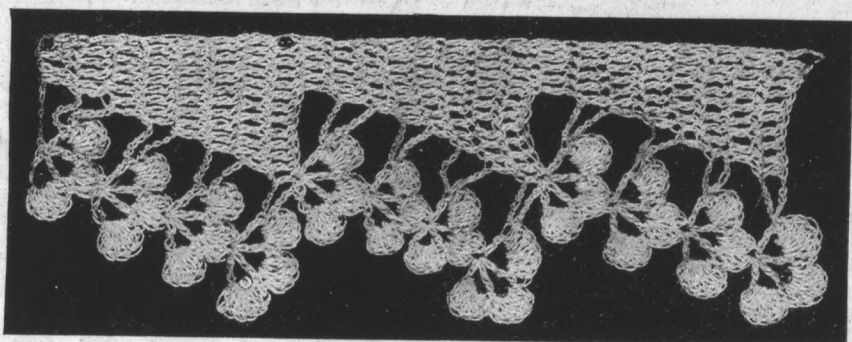
poverty born of "slitherey" habits there is nothing but contempt.

DEBORAH.

CLOVER LEAF LACE.

BY MAE Y. MAHAFFY.

The illustration shows a very attractive clover leaf pattern to be used as an edging. In a fine D. M. C. such as is pictured, or in ordinary thread, the widest part of the lace measures



A Simple Clover-leaf Design.

about two inches. This width will, of course, vary according to the weight of thread used. The pattern works up satisfactorily, even in as coarse thread as carpet warp, if the purpose for which the trimming is wanted will permit of this weight.

Chain (ch) 12 for the 1st row, and ch 3 to turn. Double crochet (dc), into 4th, 5th, 6th and 7th ch back. Ch 5, dc into 1st ch made. Ch 3, dc into 1st ch again. Ch 3, dc into 1st ch. Ch 3 and again dc into 1st ch. Turn. Single crochet (sc), once over last ch

of 3, dc 4, sc 1. Sc 1 over middle ch of 3, dc 4, sc 1. Sc 1 over 1st ch of 3, dc 4, sc 1, thus making clover leaf.

Ch 3, dc 6, ch 3 to turn. Dc 7, ch 5. Dc into middle of central section of clover leaf. Ch 3, dc into same place as before. Ch 3 and dc again in same place. Ch 3 and still again dc into clover leaf. Turn. Sc 1, dc 4, sc 1, over each ch of 3 to complete 2nd clover leaf.

Ch 3, dc 9, ch 3 to turn. Dc 10, ch 5, dc into center of 2nd clover leaf. Ch 3, dc into same place. Ch 3, dc into same place. Ch 3, dc into same place.

CORN MEAL, THE AMERICAN INDIAN'S GIFT TO CIVILIZATION.

Originally, "Indian corn" was a tropical or subtropical plant, but the Indians, who made it one of their staple foods, succeeded finally in producing varieties which would ripen as far north as Canada. Since the discovery of America, this staple food of these aborigines has been generally raised all over the world. It now ranks with wheat, rye, barley, oats and rice as one of the most important food grains, and may be called the American Indian's greatest gift to modern civilization.

Indian corn, therefore, has special historical interest for Americans from the fact that it is generally recognized as being native to American soil. Its cultivation and use even in the early colonial days, was very widely distributed. The desire to produce it was probably the incentive which most frequently led the Indians to abandon nomadic life and to form settlements. Because of the quickness and ease with which it can be raised, it was undoubtedly the means of saving from starvation many of the pioneers who came from other lands. So important was this food in the days when the country was being settled that both natives and colonists in their troubles with one another found it was a greater blow to destroy corn crops of adversaries than to make war upon them.

The Department of Agriculture's experts in nutrition have been studying the possibilities of corn meal, which they have figured out makes up over eight per cent of the total food consumed by the people of the United States. In a farmers' bulletin (No. 565), entitled, "Corn Meal as a Food, and Ways of Preparing it," several dozen recipes are given that may call to mind old favorites and suggest to the housewife untried dishes both appetizing and nutritious. Some of these recipes date back to the aborigines of the soil. One of them is as follows:

Zuni Indian Bread.

One cup of white corn meal, one cup yellow corn meal, one cup water, one teaspoon salt, one-eighth teaspoon cayenne, one cup chopped suet.

Mix all well together; form into rolls about five inches long; roll in greased paper and bake in a moderate oven for one hour. Serve hot. The habit among the Indians was to roll these cakes in the husks of the corn, a method which is sometimes followed by campers.

There are other simple breads which were first made by the Indians and are very old types, closely resembling the breads of other primitive people. Though easy to prepare, they are nevertheless very palatable. Two of these are "Ash Cake" and "Hoe Cake."

Ash Cake.

One quart corn meal, two teaspoons salt, one tablespoon lard or other shortening, boiling water.

Scald the meal; add the salt and shortening, and when the mixture is cool form it into oblong cakes, adding more water if necessary. Wrap the cakes in cabbage leaves, or place one cabbage leaf under the cakes and one over them, and cover them with hot ashes.

Hoe Cake.

Hoe cakes are made out of corn meal, water, and salt. They were

Michigan's Happy Babies—No. 11.

By DEBORAH.

IN many cases of bottle-fed babies constipation gives the mother a great deal of trouble. Sterilizing the milk is blamed for this in many cases, and other reasons are given. But whatever the cause, the trouble is there, and how to overcome it is a question of considerable importance.

How not to overcome it can be told in a few words, and that is by medicines. Medicines for constipation should never be given unless the child is actually sick and the physician orders the drug. It is not only a bad habit to acquire, but constant doses of a nostrum may seriously affect the stomach, perhaps damaging it for life. And in case the dose is a generous one the food is hurried through the system so that not enough is absorbed to satisfy the demands of the body.

With the tiny baby constipation may often be overcome by increasing the quantity of cream in the day's allowance of food. These increases must be made slowly, however, not more than a teaspoonful each day to the whole day's supply of food. Too much cream is as bad as too little, as it will ferment in the digestive tract and make the child gassy and uncomfortable. Two ounces of cream daily for the baby a month old is the usual amount, though some strong infants can take as high as four ounces daily. The mother must judge of the amount her child can take by its effect on the digestion of the little one.

If the cream does not help, oatmeal

water often given relief. This is made by boiling two tablespoonfuls of rolled oats in one pint of water for a half hour, or cooking in the double boiler one hour. Strain and add enough boiling water to have exactly one pint of liquid. If the infant is less than a month old, or if it is delicate, start with one teaspoonful of the water to the whole day's food and increase the amount one teaspoonful a day until the child is taking all it can digest. If it is a healthy infant you can start with a tablespoonful and increase more rapidly.

In healthy babies five or six months old, constipation is often relieved by giving a tablespoonful of orange juice or a very little scraped apple each morning. Do not overdo the matter by giving too much of either if baby likes the new food and cries for more.

Extreme cases of constipation are often relieved by substituting whey for a part or all of the milk. To prepare the whey, stir two teaspoonfuls of liquid rennet into one pint of milk, strain off the whey through a muslin and use this instead of whole milk. In this way the casein, which is the part of the milk that causes constipation, is removed.

Milk of magnesia, a teaspoonful to the whole day's supply of food, may be substituted for limewater in some cases. In any case do not resort to medicines. The infant that is properly fed does not require drugs except in cases of positive illness.

originally baked before an open fire on a board which, for convenience had a long handle attached to it. At present they are cooked slowly and on both sides on a well-greased griddle.

Certain dishes made of Indian corn have become identified with certain localities and thus we have particular recipes bearing the names of these localities. For instance, there is South Carolina Corn Bread.

South Carolina Corn Bread.

One and one-half quarts of fine corn meal, two and one-half quarts wheat flour, or two and one-half quarts fine corn meal, one and one-half quarts of wheat flour, two teaspoons salt, one pint mashed sweet potatoes, one cake yeast.

Mix one pint each of the corn meal and the flour and add warm water enough to form a stiff batter. Add the yeast cake, mixed with a small amount of water. Keep this sponge in a warm place until it becomes light. Scald the meal with boiling water and as soon as it is cool enough add it to the sponge.

Boston Brown bread may be made as follows:

One cup corn meal, one cup of rye meal, one cup Graham flour, two and one-half teaspoons soda, one teaspoon salt, three-fourths cup of molasses, two cups sour milk, or one and three-fourths cups sweet milk.

Mix and sift the dry ingredients and add the molasses and milk. Beat thoroughly and steam for three and one-half hours in well-buttered, covered molds. Remove the covers and bake the bread long enough to dry the top. This may be made also with one and one-half cups corn meal and rye meal and no Graham flour.

Boston Brown Bread with Fruit.

Follow recipe for Boston brown bread, adding to the dry ingredients a cup of seeded and shredded raisins or prunes or a cup of Zante currants.

Boston Brown Bread with Cream.

One cup rye meal, one cup of corn meal, one teaspoon salt, one-half cup of molasses, two eggs, one and one-half cups thin cream.

Sift the dry ingredients. Add molasses, yolks of eggs well beaten, and cream; lastly, fold in the whites of eggs beaten stiff. Pour mixture into buttered mold, steam three hours; then bake one hour in a moderate oven.

Italy has also contributed to the list of palatable dishes which may be evolved from corn meal. An instinctive attempt on the part of Italians to supply the body with all the food elements required, by means of one dish has resulted in "Polenta." This dish which is common in Italy, differs little, except in name, from hasty pudding, though it is served in very different ways. Sometimes cheese is added during the cooking. Polenta is often reheated either with tomato sauce, or a meat gravy left over from a meal or with a meat gravy made from a small amount of meat bought for the purpose, or with half tomato sauce and half meat gravy. In any case, the dish is improved by sprinkling each layer of polenta with cheese. When the polenta is to be reheated in gravy, it is well to cut it into small pieces in order that the gravy may be well distributed through the dish.

Tomato Sauce for Polenta.

Two tablespoons butter, two tablespoons flour, one cup thick strained tomato juice, salt and pepper.

Melt the butter; cook the flour thoroughly in it; add the tomato juice and seasonings, and cook until smooth, stirring constantly.

Another attempt to produce a balanced ration in one dish has been made by the natives of Jamaica, called "Stamp and Go." It consists of salt fish, lard and corn meal, and has a nutritive value resembling that of scrapple. A good recipe for scrapple is the following:

Corn Meal Scrapple.

One pig's head split in halves, two

cups corn meal; salt and sage to taste. Cook the pork in water until the meat can be easily removed from the bone. Remove the meat, cool the broth, and remove the fat. Reduce the broth to about two quarts or add water enough to bring it up to this amount, and cook the corn meal in it. Add the meat, finely chopped, and the seasonings. Pack in granite bread tins. Cut into slices and fry.

The addition of meat to corn meal does actually tend to produce a balanced ration, for the meat furnishes protein and fat while the corn meal furnishes starch. There are a number of dishes made from corn meal and meat or fish in which mush is made, or which resemble mush in some particulars. Among these are corn meal fishballs and tamales, recipes for which are given herewith:

Corn Meal Fishballs.

Two cups cold white corn meal mush, one cup shredded codfish, one egg, one tablespoon butter.

Pick over the codfish and soak it to remove salt, if necessary. Combine the ingredients and drop by spoonfuls into hot fat. Drain on porous paper. These codfish balls compare very favorably in taste with those made with potato and are more easily and quickly prepared.

Tamales.

Meat from half a boiled chicken, one clove garlic or half a medium-sized onion, one-fourth teaspoon cayenne, one teaspoon salt, one cup corn meal, two or three small red peppers. Corn husks.

Chop the chicken; season with the cayenne pepper, garlic, or the onion finely chopped, and salt; form the meat into little rolls about two inches long and three-fourths of an inch in diameter. Pour boiling water over the meal and stir, using water enough to make a thick paste. Take a heaping tablespoon of the paste, pat it out flat, and wrap a roll of chicken in it; then wrap each roll, as made, in corn husks which have been softened by immersion in hot water, tying the husks with a piece of string close to each end of the roll. Trim off the ends of the corn husks, allowing them to project an inch or two beyond the rolls. Cover the rolls with the broth in which the chicken was cooked, or with boiling salted water. Add two or three small, sharp, red peppers, and boil for 15 minutes.

Tamales are usually made with chicken but other meat may be used if desired.

VIRTUES OF SALT.

BY MRS. JEFF. DAVIS.

Common salt used twice a week on the tooth-brush for brushing the teeth, not only whitens them, but is very beneficial to the gums.

Salt and soda are excellent for bee stings and spider bites.

Salt in the oven under the baking tins will prevent scorching on the bottom.

Salt and lemon juice will remove iron rust.

Salt and vinegar will remove stains from discolored teacups.

Salt thrown on soot which has fallen on the carpet will prevent stains.

Salt put on ink when freshly spilled on a carpet will remove the stain.

Salt thrown on a coal fire which is low will revive it.

Salt used in sweeping carpets keeps out moths.

A pinch of salt in the white of eggs will lessen the time for whipping.

Salt, if rubbed on the hands, daily, after the housework is finished, will keep them smooth, clean and white.

If you wish to use the white of an egg and save the yolk for another time, break a little hole in one end, let out the white then put half of another shell over the hole. It will keep for three or four days.—Mrs. W. H.

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When writing to advertisers please
mention The Michigan Farmer.

THE CHILD AND HIS PETS.

BY MRS. JEFF. DAVIS.

Those who have most closely stud-
ied child life tell us that in the care
and love a child bestows upon pets
there is an untold amount of uncon-
scious training for the development
of kindness, thoughtfulness and gen-
tleness towards every living thing.

Mothers should remember this, but
they should also keep in mind, that it
is an unpardonable mistake to leave
the little folk to work out their own
salvation with pets. Unless taught
the duty of kindness, he may not real-
ize his responsibility towards his
dumb friends. Sometimes instead of
the development of tenderness that is
expected and desired, there comes the
early tendency to cruelty. And, un-
less checked, as time goes by it may
become somewhere on the road from
childhood to maturity, a heartlessness
that is so abhorred in the full-grown
man or woman.

Parents should teach their children
to be fair to animals. They should be
made to realize that it is the duty of
everyone to be kind to all dumb crea-
tures. Impress upon them the duty of
treating anything over which they
have control as they would like to be
treated by those who are over them.

If the pet is a dog, see that it has
plenty of exercise and keep it chained
up as little as possible. Never let
the feeding time be neglected, and be
sure that it, or any other pet is kept
clean, and free from vermin. The
trouble of caring for pets is small
compared with the pleasure of their
friendship and the knowledge gained
from studying them.

If a mother notices that her child
has developed a tendency towards
cruelty, his pet should be taken from
him until he realizes that he will be
made to treat his dumb playfellows
with kindness and gentleness. He
must be taught that pets are not for
his amusement alone, and that fair
treatment is the price of ownership.

If he continues to neglect to feed
his pets, he should be made, some-
how, to realize what it is to be hungry
and thirsty. If he is cruel, he must
be made to understand what physical
suffering is. If a child is old enough
to own a pet he is old enough to be
responsible for its welfare.

Children should be encouraged to
collect pictures of animals, and stor-
ies telling of kindness to animals
should be often related to them. In
this way they can be led to become in-
terested in and feel kindly toward all
the little creatures of the forests, as
well as their own pets.

We must not lose sight of the fact
that the child's character development
rather than entertainment, should be
the one thing at stake, and many
timely lessons can be given in con-
nection with his treatment of his pets.

THE KITCHEN FLOOR.

BY N. M. PAIRPOINT.

When the time comes for freshen-
ing up the house, the old kitchen floor
often presents a problem to the house-
keeper with limited means that is
hard to solve.

If a new floor can be secured, there
is the choice between hard and soft
wood, tile, and cement. Hard wood
is most desirable, but needs an expert
workman to lay it well, and so costs
quite a little. Birch and maple are
very desirable woods for this purpose,
and they must be finished with oil or
varnish.

Among the soft woods, yellow pine
is the best for a floor that is to be left
unfinished, as it contains a good deal
of resinous matter that resists fre-
quent wetting. But unfinished floors
that are scrubbed wear out very fast,
and are unsanitary in many ways, and
are not as satisfactory as if the wood
is protected with paint, oil or varnish,
and then well cared for.

For the old floor, or the soft wood
floor, there is no finish so satisfac-

tory as two coats of good floor paint
with a coat of varnish over it that
will not mark when stepped upon.
This will last for years, with right
care, and can be applied by the
housewife herself, if it is not conven-
ient to find anyone else to do the
work.

When a soft wood, or an old floor is
to be finished, first fill all the cracks
with a crack-filler, or putty, after a
few drops of disinfectant or kerosene
is put into them to insure their free-
dom from insects. When the cracks
are dry and hard, paint the floor, be-
ing careful to cover the wood, and rub
the paint well into the grain. When
this coat is dry repeat with another
that will go on much more easily than
the first, as the grain of the wood will
be already filled. Allow the paint to
stand for two weeks, then varnish.

In caring for this kind of floor soft
brushes are needed and soft cloths.
The regular stiff broom scratches and
also fails to gather up the dust from
the shiny surface.

When something more is needed
than dry sweeping, go over the floor
with a cloth wrung dry out of hot
soapsuds. When again dry, go over
the floor with a cloth moistened with
kerosene. This will polish the sur-
face, and help preserve the wood. The
slightly oily cloth is one of the best
ways to take up dust at any time on a
varnished or polished floor.

Cement and tile floors are splendid
for cleanliness but are very hard to
stand upon and, when used, should be
liberally supplied with rubber mats.

A good linoleum square under the
range, and through the middle of the
room, is an advantage as, when it is
well laid and varnished, it can be
washed as often as desired.

Perforated rubber mats in front of
the sink and range make the standing
much easier when dish washing and
cooking are being done.

THE SCHOOL LUNCHEON.

BY GRACIA SHULL.

By this time the school luncheon
has lost its novelty, and is becoming
rather monotonous, unless the one up-
on whom the duty of preparing the
school luncheon devolves has taken
special care to make the luncheon ap-
petizing and attractive.

Sanitary collapsible boxes are best
and one should be provided for each
child. Also a collapsible or, several
paper drinking cups. Plenty of wax-
ed paper, white string, a paper napkin
and a paper towel should go into the
lunch box. Sandwiches should be
wrapped in waxed paper, this will
keep them fresh and moist and free
from foreign tastes and odors. A lit-
tle square or ball of Dutch cheese
nicely seasoned then wrapped in wax-
ed paper will prove very acceptable.
Sandwiches may be made of cold bak-
ed beans sliced and placed between
thin layers of brown bread. Chopped
nuts, olives and celery moistened with
mayonnaise, then spread on crisp let-
tuce leaves and placed between thin
slices of bread, will make a tasty
sandwich. Cold mutton, minced fine,
with a very little minced onion and
chopped mint moistened with a spoon-
ful of mayonnaise will be relished as
a sandwich filling.

Brain and brawn giving foods should
be supplied if the children are to do
well in school. Heavy fatty foods
should be avoided and sweets should
be of the purest and proportioned ac-
cording to the needs of each child.
Pie, doughnuts, heavy cakes, rich
cookies and preserves should be en-
tirely eliminated from the school
luncheon.

Bananas are good if the child is
taught to masticate them slowly and
thoroughly. Apples, pears, pure home-
made candies, plain cake and ginger
bread or ginger cookies, bran, oatmeal
and graham cakes and crackers, crisp
celery, lettuce and cress, home-made
jellies, nut meats, raisins, eggs that
have been properly boiled, lean meats,

good bread and butter, etc., give us an
attractive list to choose from and the
children's lunch box should never be-
come monotonous through our neglect
and carelessness. A thermos bottle
costs very little when its usefulness
is considered and will provide hot
broth, cocoa or other hot drinks for
the school boy or girl and they will
enjoy it and its contents to the end of
the term and their health will be ben-
efited thereby.

The children should be taught abso-
lute cleanliness in the handling of the
noon meal and a paper towel in each
box will be a gentle reminder. Also
they should be taught the proper way
of masticating their food and that cold
food should always be eaten slowly.
In boiling eggs for the lunch box I
always boil them, rapidly, from two
to four hours. The yolk is thus made
digestible as it is dry and mealy. The
white has also passed the "gluey"
stage and is firm and tender.

If we wish our little folk to stand
at the head of their classes we must
pay strict attention to their diet and
the school luncheon demands especial
care and forethought.

SHORT CUTS TO HOUSEKEEPING.

A simple remedy for tired feet is to
throw a handful of epsom salts into a
foot-bath tub of very hot water. After
it has dissolved immerse the feet in
it for about 15 minutes, then dry
quickly and get into bed. Refreshing
sleep is sure to follow and that tired
sensation disappears like magic.—M.
A. P.

FASHIONS BY MAY MANTON.

Our latest Fashion Book, containing
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son's latest styles, and devoting sev-
eral pages to embroidery designs, will
be sent to any address on receipt of
fifteen cents.



No. 7793—Ladies' Sport or Mannish
Shirt Waist. Cut in sizes 34 to 40
bust measure. Size 38 requires 2½
yds. of 36-inch material.

No. 8411—Fancy Blouse. Cut in siz-
es 34 to 44 bust measure. Size 40 re-
quires 3¼ yards of 27-inch mate-
rial with ¾ yd. 27-inch for collar and
cuffs.

No. 8114—Bath Robe. Cut in sizes:
Small, 34 or 36; medium, 38 or 40;
large, 42 or 44. Medium size requires
5¼ yds. of 36-inch material.

No. 7318—Princess Combination
Corset Cover and Drawers. Cut in
sizes 34 to 50 bust measure. Size 50
requires 4¼ yds. of 36-inch material
with 5 yds. of embroidery 5 inches
wide.

No. 6236—Child's "Teddy Bear"
Night Drawers. Cut in sizes 2 to 8
years. Size 6 requires 3 yds. of 36-
inch material.

The above patterns will be mailed
to any address by the fashion depart-
ment of The Michigan Farmer on re-
ceipt of ten cents for each.

HAPPENINGS OF THE WEEK.

(Continued from page 224).

at Washington sent notes of protest to both England and Germany as the result of conditions growing out of the recent blockade of the English coast by Germany. The protest to England was regarding the use of the American flag on English merchant ships while passing through the blockaded zone, and warned the English government that England will be held strictly accountable to this country for any damage resulting to American boats and seamen by reason of indiscriminate use of our flag. The protest to Germany also gives warning of the intention of this government to hold Germany accountable for any damage done American shipping by German naval boats in the zone included in the blockade announcement. Kaiser Wilhelm has invited American Ambassador Gerard to the front, presumably to a personal conference on the war zone proclamation.

The deadlock in the Illinois House of Representatives still exists. Attempts to elect a speaker for the past seven weeks have so far failed. The contest is between the liquor forces and temperance adherents.

The National Brick Manufacturers are holding their annual convention in Detroit this week.

At Pikeville, Ky., 96 voters have been fined and disfranchised after being found guilty of selling their votes in recent elections. Similar charges against 800 other voters have been made and their trials are to follow.

Dr. Wm. Breakey, an army surgeon during the Civil war, author of many scientific and medical books and for more than half a century a member of the faculty of the University of Michigan, died at Ann Arbor last Sunday at the age of eighty.

Because of a lack of vessels exports are piling up in our eastern ports, particularly at New York, Baltimore, and Norfolk. This congestion of freight is enabling carriers to maintain high rates for carrying goods to foreign countries.

DO THE RAILROADS NEED HELP?

Besides showing us poor farmers how to raise hogs, is it not in the province of a valuable publication like yours to help us fight some of our battles?

I have noticed in the papers the provisions of the Stevenson measure for the advancement of railroad fares in our state and, to me, it seems that the Michigan Farmer could not do better service to its readers than to open a campaign to awaken the farmers to the necessity of putting up a protest against any such measure. I do not know who Stevenson is, but I certainly cannot believe that citizens of Michigan are going to stand for any such an advance.

The present rates went into effect some ten years ago, and Governor Pingree certainly made a grand fight to put them over. Since the railroads have abolished the pass evil I believe they have saved more dollars than they have lost by the cut to two-cent fare. Then, again, they have entirely eliminated special excursion rates and the like, prior to which they gave one fare for the round trip (one and a half cents) in many cases—practically on all occasions where they had large loads.

The same as for all other enterprises, 1914 was a hard year for the railroads, with every manufacturer and business man, they felt the depression in business; but why should they be allowed, on account of a depression lasting one year, to bring their rates up to old figures, when the present rate is certainly ample when prosperity returns, which certainly will be very soon?

It would be nice to have a little raise for a short time during the depression, no doubt, but a raise at this time means a permanent advance, something that will not be lowered again in ten years. There is no excuse for an increase except it be to carry the roads over a depression which they should be willing to stand the same as other people.

As I have said before, I still believe that the saving to railroads in pass money and reduced excursion fares amounts to more than the cut in their fares, and the natural increase in business in the last ten years would have brought them up to a healthy condition were it not for the falling off in their business of late, and we trust your valuable paper will see the wisdom in taking up the fight for the farmers of our state.

Kalamazoo Co. F. S. KENFIELD.

SOME ROAD AND AUTO TALK.

In my opinion the tax or license for autos ought to stay in the city or township where the auto is owned, the state to keep a record of all motor vehicles and furnish tags and numbers

wherever called for and to collect a fee to cover expenses therefore. Motorcycles ought to pay \$2; autos up to 20 horsepower, \$3; 20 to 30 horsepower, \$6; 30 to 40 horsepower, \$10, all autos above 40 horsepower, and motor trucks, \$15. As heavy autos are harder on roads than light ones, I think the above plan is fair. Under the present law the man who can afford only a cheap, light machine pays the same as the well-to-do man who runs large and heavy ones. In villages and cities under 5,000 population the auto tax ought to stay in the townships where the village or city is situated. All cities of more than 5,000 population should have the right to use highway and auto tax on roads which will benefit them most. Under the present law it is divided up so that no county gets much.

We ought to have a change in the road law. Townships ought to go back to the district repair work plan, the highway commissioner to look after the road improvement, culverts and bridges, the township boards to investigate all finished roads. The county road system is much like the high cost of living. When the farmer sells his products, every man who handles them takes a bite, and when the consumer buys them he "hollers" about the high cost of living. So it is with our "good roads" for all the tax we pay there is but little accomplished. Here are some road taxes I paid on 120 acres with not number one buildings: \$5.60 town road repair; \$10.47 town road improvement; \$7.15 county good roads. If I could afford an auto it would be at least \$3 more. My city and farmer brothers look the county over, and see if you are not in the same plight. Since the present road law went into effect there has been nothing done along my roadside, no matter how much I talked. "There is no money," was the reply. There are a few small bridges built, that's all. Last year I was given a chance to repair and improve 80 rods of road in front of my farm. I was allowed \$18. I was given an order for \$12, which was deducted from my tax. The other \$6 will have to wait as "there is no money."

Macomb Co.

J. W.

THIS COMMUNITY NEEDS HELP.

I was very much interested in Mr. Denton's article about the telephone service, which I read in your valuable paper recently.

Is it possible that we farmers can furnish ourselves with a local telephone service at a cost of from \$6 to \$8 per year? I would like to have Mr. Denton answer this and tell how it is done.

Is the present Railroad Commission really opposed to farmers getting a local service at the lowest possible cost? I would like to have Mr. Denton's ideas about that, too.

Again, I own a farm in Keeler township. I am unable to have a telephone. First, because the cost to me seems prohibitive, being \$18 per year. Second, most of my neighbors find this cost too high also.

Third, there are at least four telephone companies operating, or having branch lines entering the township, and if I should get financially able to hire a 'phone of the company which is nearest to me, I could not talk with other farmers in my town on the other lines.

Fourth, if I could get connections it would be in a roundabout way, with toll charges or very poor service.

Fifth, the farmers have a Grange at Keeler Center. There is a church there, a Woodman hall, some stores, shops, and a neat little rural village, but if we wish to communicate together a letter has to go to Chicago and back to get to our nearest neighbor, in some instances, and our telephone service scatters in every direction.

Sixth, there are probably hundreds of instances like this in the state of Michigan whose rural communities and natural social centers are being torn asunder by modern town and city efficiency.

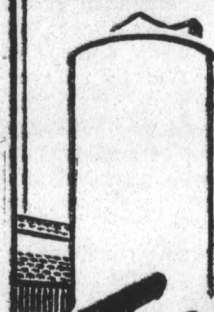
Now, will you have Mr. Denton, or someone else tell us in your next issue how we farmers can secure for ourselves a modern means of communication, like the telephone, at a price that we can all afford; and please hurry, because we feel the need of this service very keenly.

Van Buren Co. J. C. STAFFORD.

A CORRECTION.

In the advertisement of the Independent Silo Company, of 2329 University Ave., St. Paul, Minn., which appeared on page 63 of the issue of Jan. 16, an error of transposition was made in giving the city addresses of the branch offices of this company, located at Kansas City and Indianapolis. These should have read 817 I. O. O. F. Bldg., Indianapolis, Ind., and 5 Tradewinds Bldg., Kansas City, Mo.

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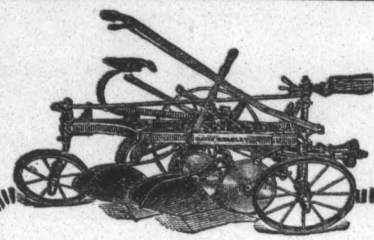
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FOX, COON AND RABBIT HOUNDS

Broke to gun and field. Prices right. Fox and Coon bound pups \$5 each. Stamp for reply. H. C. LITTLE, Fredericksburg, Ohio.

For Sale—SCOTCH COLLIE PUPPIES, pure bred, Sable and White. \$10 with pedigree. W. AUSTIN EWALT, Mt. Clemens, Michigan.

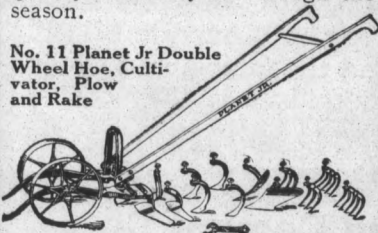
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Meeting of State Horticulturists.

THE State Horticultural Society held its mid-winter meeting in the Hackley Art Hall, Muskegon, February 2-3. Surrounded by the artistic results of pencil and brush work, the Society during these two days discussed the science and art of raising good fruit. Due to unfavorable weather, which made transportation difficult, the crowd was not large, but the program was of sufficient interest to make all who attended glad they put up with the inconveniences of getting there.

The program was considerably broken up on account of the failure of those on it to arrive on time. The first talk was on the history of horticulture in Muskegon county, by C. D. McClouth. By means of a map of the county he pointed out locations which were favorable to fruit growing and then told of the development of the industry in those places. Although this talk was given by a local man, it was not of the boosting kind, as it brought out both the good and bad features of fruit growing in Muskegon county. The cost of production in the apple orchard was the next subject taken up. In discussing this, F. A. Wilken gave the costs per barrel and per tree of the various orchard operations.

Peach Growing in Ohio.

R. A. Gill, of Ohio, spoke on the peach industry in that state, and indi-

gallons of the finest apple jelly. If properly distributed, this jelly could be sold to people who have but few apples, even in this year of plenty.

Beautifying the Home Grounds.

The Tuesday evening session was devoted to addresses by Prof. Thos. Gunson and Mr. Robt. Sherwood. Prof. Gunson spoke on "Planting the Home Grounds and Roadsides." By means of lantern slides he showed the differences he found in home and roadside conditions within one mile of road. He emphasized the fact that the beautifying of the home grounds need not entail much expense, as a general cleaning up of the front and back yards, and the planting of a few common trees and shrubs. Along the roadsides the trees and brush should be left for both practical and artistic purposes. There is a lack of uniformity in the roadside care, because each man has a different idea regarding it. To keep the boys and girls on the farm Mr. Sherwood said we should make the farm home as attractive as possible. The interior as well as the exterior, should be made attractive and a great factor in doing this was to have the house well lighted in the evening. A sixteen-candle power light in a large room did not give enough light to make the room attractive. The boys should also be given their time for play and given

of them were members of one of the five associations in that vicinity.

Modern Marketing Methods.

The next subject taken up was also on the co-operative methods of marketing. Mr. James Nicol told of the success of the South Haven Fruit Exchange. This exchange has been a great factor in broadening the market for South Haven fruit. During the first year 80 per cent of its customers were people who never bought South Haven fruit before, and last year over 60 per cent bought their fruit from South Haven for the first time. The association graded its fruit and sold it under brand names instead of A and B or No. 1 and 2 grades. This was a great advantage to the association, and also to the retailer, as he could offer these brands in competition with the regular graded fruit at higher prices.

C. A. Bingham, of Birmingham, gave his experiences in marketing fruit with a motor truck at Detroit. He showed that the cost of marketing by a motor truck was about one-half of that by wagon. The time used in marketing is also considerably cut and enabled him to attend to both the marketing and the management of the farm, whereas when he used a wagon the marketing end took all his time.

Spraying Suggestions.

Under the subject of spraying, Prof. H. J. Eustace explained the different kinds of insects to be controlled and the various kinds of remedies used to control them. On account of the increasing prevalence of aphids in the orchards, the addition of tobacco extract to the usual spray materials used was one of the most interesting features he recommended.

Mr. Floyd Barden, of South Haven, who has had great success in keeping accounts on his farm told of his methods of apportioning the various charges and receipts. He finds book-keeping essential in running a fruit farm in a business-like manner. He is the author of an experiment station bulletin on this subject, which gives his views and results in considerable detail.

Small Fruit Culture.

"How to Make Small Fruit Profitable," was ably handled by Mr. Chas. Handy, of Sodus. Mr. Handy has made a great success of his business in the section of the state where small fruit growing is the chief industry.

Mr. C. B. Cook, county agent of Allegan county, gave a very interesting and instructive talk on the care of the soil. He has given the matter of soil fertility thorough study and was therefore able to give many suggestions of value.

It was decided that the summer meeting of the society should be held in Grand Rapids early in August. The International Apple Shippers' Association is to meet there at the same time, and therefore this will afford the fruit growers the advantages of two meetings in one trip. Grand Rapids was also selected as the permanent place of holding the annual meeting of the society. The executive board elected C. A. Bingham to the office of vice-president.

LOSING SO AS TO GAIN.

Sometimes we learn of a street car company which has changed all its equipment for a more improved type which is being installed, quite generally by up-to-date concerns. The old equipment goes to the salvage men or the junk heap, at a loss of thousands of dollars, perhaps. Yet the company does this cheerfully, realizing that they will reap a greater harvest when the more efficient equipment is installed.

Under the same category might be placed the operation of top-working apple trees, as carried on in many instances, or of uprooting good bearing peach orchards that a more profitable



Duchess Top-worked to Wolf River.

cated that the essentials of good peach growing are somewhat different there than in this state. The most favorable peach soil is yellow clay and black loam was also used quite extensively. Sand was not liked because it did not contain much plant food. Elberta, Lemon Free, Smock and Salway were Mr. Gill's favorite varieties, with Lemon Free gradually taking the place of the Elberta as the most popular one. Interesting features in Mr. Gill's discussion of his cultural methods were that he found the tractor very satisfactory for cultivating the orchard and that a brush burner made of a smoke stack, three feet in diameter and ten feet long, carried on a mud boat or wheels, was a great labor saver in taking care of the brush made by pruning. Sweet clover is growing in popularity as a cover crop and alfalfa was also used some.

Prof. Frank Kedzie, of M. A. C., gave a very interesting talk on the chemistry of the apple. By chemical demonstration he showed that the apple contains a large amount of potash, and therefore it is necessary to use fertilizers containing considerable of this element in the orchard. Cover crops, generally used in the orchard, contained a large amount of potash and were a good means of putting back into the soil that taken out by the apples. The object of chemistry is to eliminate waste as much as possible; in the apple 11.17 per cent is wasted in the skin and core. One pound of dried peelings and cores, with sufficient water, would make two

some reward for their work in the way of a share of the profits.

Essentials in Cherry Growing.

Mr. E. O. Ladd, of Old Mission, described his methods of cherry growing. He preferred to get his trees in the fall and set them out early in the spring. It is especially necessary to set the sweet cherries early so that they can get a good start. Good care during the first few years in the life of the cherry orchard proved profitable, as the trees came into full bearing earlier than when neglected. For spraying Mr. Ladd preferred Bordeaux mixture to dilute lime-sulphur, as he considered it a better fungicide. From 225 Montmorency trees Mr. Ladd got 1900 cases of cherries, and from 200 Windsor trees he packed 1400 cases. Sour cherries are more easily grown and cared for than sweet cherries, but the sweet cherries often prove more profitable on account of the high prices received for them. Mr. Ladd figured the cost of producing a case of cherries to be from 75 to 90 cents, depending upon the season.

Under the heading of "Sizing and Grading Different Kinds of Fruit," Mr. Gill described several mechanical graders used in his section which were successful. Most of his talk was devoted to telling of the plans of organization and the methods of operation of the co-operative shipping association of which he was a member. The fruit growers in his part of the state were fully alive to the advantages of the co-operative idea, as practically all

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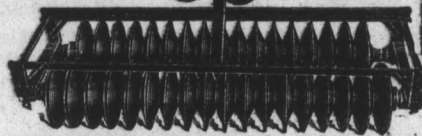
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kind of fruit may occupy the ground. Mr. J. J. Seel, a veteran apple grower of 34 seasons' experience, has a beautiful 35-acre apple orchard overlooking Crystal Lake, in Benzie county. About ten acres consists of thrifty young Duchess trees, about six years old. Last spring Mr. Seel and his boys procured cions of Wolf River apples, and went through the block of Duchess trees, grafting every other one. **Duchess Not Advisable in Northern Michigan.**

Now the Duchess is a good apple, but in Mr. Seel's experience, it does not pay so well as Wolf River. Mr. Seel has a Duchess orchard or two in Illinois, and finds that the apples there are on the market far in advance of the Benzie county supply. This tends to dull the demand from Chicago buyers for Duchess as an early apple from Northern Michigan.

The good qualities of the Wolf River, in Mr. Seel's experience, are as follows: Annual bearer, does not set so heavily as to require the thinning that the Duchess does; tree spreading in habit, making harvesting, pruning, and spraying easy from the ground; very hardy and free from body cankers; fruit large attractively colored, good shipper.

Wolf River a Good Seller.

To take an orchard in hand and top-work the trees as Mr. Seel is doing, will set back the period of return on the original orchard investment for three or four years; yet if the scheme works out as Mr. Seel has faith it will, the net returns over the whole life of the orchard will be greater when grafted to Wolf River than when left as Duchess.

Some returns are made from the orchard, however, by raising clover hay. The trees are spaded about while very young, and the rows intercropped with a rotation of corn, oats and hay. As the orchards get older, Mr. Seel mulches with the mowed grass, also hauling in any hay that gets spoiled by rains while curing. In the case of the Duchess orchard, he figured that this year the hay crop would be of more value than the apple crop, especially since the trees were grafted, and so he put the hay in the barn rather than around the trees. The weather has been so favorable that the grafts have done very well, making an average growth of better than two feet.

E. H. BROWN.

MORE EXPERIENCE WITH EVER-BEARING STRAWBERRIES.

I see in your issue of January 30 an article on fall-bearing strawberries, written by Mr. F. G. Smith, of Isabella county.

I would like to state my experience along this line. In the first place, as Mr. Smith says, common kinds are being sold as everbearers because of the demand for them at fancy prices. Also some of the fall-bearers are not very productive in the fall, all this with no knowledge of the proper method of growing them, has discouraged many.

As a rule, the shy bearing varieties are the most prolific plant makers and therefore sell cheaper and more are set. Will say, in the several years I have grown these, I have found very few barren plants of any variety, some other plants will not send out runners but the one that does will bear as many berries as the one that does not.

Some Good Varieties.

The Productive and Superb should be grown in hills, for the young or runner plants do not bear the first season, they require a rich loamy soil and on such soils the plants grow very large and thrifty, but the fruit stems are short and the berries are hidden away under the leaves where the sun never sees them, and if the season is wet, which is very common, a great many will rot, both varieties are good plant makers. The Productive has produced nearly 100 young plants from

one individual plant in one season for me.

The Americus, Progressive and Francis do best in matted rows, for a great many of the young plants will bear the first fall, but these varieties require different soils.

The Americus will be very disappointing on sandy soil, but do well on clay or heavy soil. I consider this a very serious defect for such soils are usually cold, as these berries run well up to winter it is necessary to grow them on warm soil to get best results. This variety makes an abundance of plants.

The Progressive requires a rich loamy soil, is very prolific of fine looking berries, but is absolutely lacking in flavor. This will be a very serious handicap when these berries become plentiful. This is also a good plant maker.

A Favorite Variety.

The Francis is by far the best of the varieties I have tried. The berries are large, well formed, of glossy appearance and have an excellent flavor even in cold weather. They are very firm, which makes them good shippers. I have sent them over one thousand miles by parcel post and they reached their destination in first-class condition.

This variety does best on sandy soil, the only fault being a poor plant maker. For this reason it is not listed by but very few nurserymen and are more expensive. These plants do not require babying, as some would have you believe. In transplanting I have lost fewer of them than any variety I have grown. The mother plant will grow as large as any variety, and is of spreading habit. I have plants 18 inches in diameter and you could scarcely see the leaves for fruit, stems and berries.

Renews Plantation Every Year.

I renew the bed each spring, picking only the one season. In this way the ground is kept in much better condition and the berries are larger. During the early season I cultivate with horse, and later by hand, working the ground frequently and keeping free from weeds at all times. I prefer this to mulching. I pick all blossoms up to July 1.

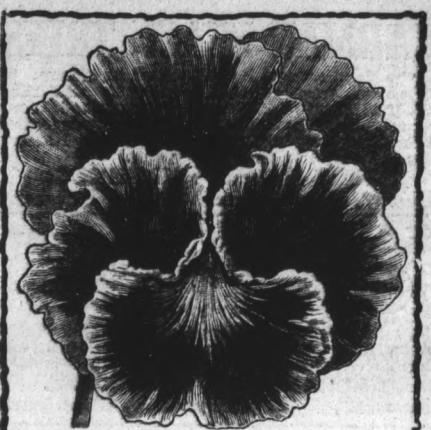
I don't consider it good policy to grow these as common berries are grown, that is, fruit the same beds from year to year, for if they are grown in hills and being fruited so late in the fall they go into the winter in such a weakened condition that a majority of the plants will not survive and it will be as much of a task to fill in and try to patch up the old bed as to set a new one; if the matted row system there will be so many plants it will be impossible to keep the blossoms picked off, and this is absolutely necessary to secure a good crop in the fall, but on new set beds the task is not hard, for up to July 1 there is only the mother plant to pick.

Needs no Irrigation.

I could not raise a crop of summer berries without irrigating, but have never had occasion to irrigate the fall-bearers for we always have plenty of rain at that season. Furthermore, the summer berries are frequently ruined by frosts; not so with the fall-bearing kinds, for if one set of blossoms are killed another will soon appear. Quite often a severe storm during the height of the blossoming period will also ruin the summer crop, but with the fall-varieties blossoms are appearing and disappearing all the time, so you are sure to get some nice berries.

I claim to be quite successful with summer varieties, but can make more money in one season with fall varieties than in two seasons with common kinds and with less work. I am satisfied I can grow at least 5,000 quarts of Francis per acre the first fall, and as it will be some time before these berries sell below 25 cents per quart, what crop will pay better?

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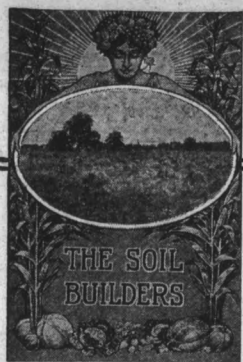
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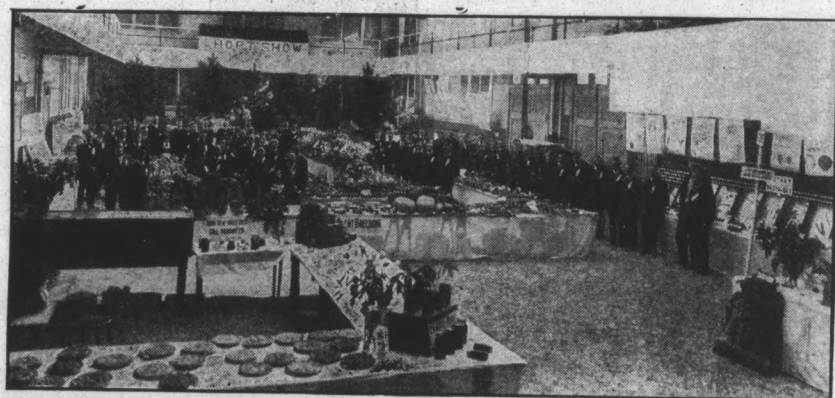
The M. A. C. Hort. Show.

ALTHOUGH the annual show of the "Hort Club" last year was the best that had ever been staged, the one held this year was better and bigger than ever before. This show is the big event of the year for the club and each member put forth his best efforts to make it a success. This club was the leader in this idea of giving a show and, having started it, is bound not to be outdone by similar organizations in the other departments. The show was held two days, January 29 and 30, in the large stock judging pavilion in the Agricultural Hall.

Potted plants from the college greenhouses formed an attractive exhibit in the center and these were flanked on either side by two long tables covered with plate exhibits of apples. There were state exhibits from Washington, New York, Connecticut, Massachusetts, Montana, Arkansas, Georgia, Florida, and Virginia. The Michigan exhibit was divided into counties and the counties represented were Mason, Grand Traverse, Kent, Benzie, Charlevoix, Newaygo, Jackson, Van Buren, Calhoun, Wayne, Allegan, Emmett and Berrien. It should be noted here that some of these counties are out of the so-called fruit belt. Alumni, short course men and students of the college sent in individual collections. All collections and the important varieties exhibited were

Suggestions for Improving Home Grounds.

The landscape department had several exhibits all showing what might be done to a bit of wild land to make it into an attractive park, or explaining just what is to be considered in laying out the plans to a well designed and attractive farm home. Another exhibit was one which showed by what means the plant breeder is able to perpetuate changes in old plants, or rather it told why the plant breeder was able to do such a thing. The sword fern specimens showed several types of the same fern that had varied from the original type so much that in appearance they were entirely different. A lily showed the first steps taken by a plant in doubling. However, the most interesting part of this exhibit was the parents of known apple crosses and their progeny. In



The Annual Hort Show, with the Co-eds' Pies as a Special Attraction.

judged and the decision of the judges was as follows:

Grand prize for exhibit winning the most points, Wesley Hawley, of Ludington.

State exhibits: 1, Washington; 2, New York; 3, Connecticut.

County exhibits: 1, Mason; 2, Grand Traverse; 3, Kent.

Individual collections: 1, Dan Mathers, of Charlevoix; 2, George Whitney, of Williamsburg; 3, Thos. Emery, of Lowell.

New varieties: 1, Delicious, sent in by D. F. Fisher, Wenatchee, Washington; 2, Ontario, sent in by U. S. Crane, Fennville, Mich.

Exhibits of Fruit Diseases.

The committee on fruit diseases and orchard pests had an attractive exhibit of charts, specimens of diseased twigs and fruits, and microscope slides to show why and how many of the common diseases and pests are so destructive. Many questions were asked by the visitors and much was learned by seeing the insect or the disease producing organism at home.

Near this exhibit was placed a modern sprayer as a hint as to the best possible method of combating either

Small models of pruning and picking apparatus now in use by the best fruit growers were next in line. Then followed samples of orchard heaters and models of how pruning should and should not be done, and also models of the best methods of tree surgery. Another exhibit explained the correct way to graft on either roots or large branches, or showed how a tree might be saved by the bridge graft when it has been girdled by rodents.

A model horticultural library was displayed and to the lover of real good books this opened a new and pleasant

both cases the progeny resembled neither the parents nor each other.

The Co-ed Pie Contest.

Another feature which has become quite popular is the pie contest in which the co-eds take part. Thirty pies were entered in the contest and the makers of the three best pies received five dollars, a barrel of apples, or a bushel box of apples, according to whether the pie took first, second or third prize. Miss Grace McKinley received first prize; Miss Eva Britton, second; Miss Frances Spencer, third. At the same booth where the pies were displayed was also a display of frozen fruit and baked apples, apple salad and other good things baked or made on the spot by the best cooks in the home economics department. When the visitor had eaten his fill at this place, another booth tried to get him to spend what he had left for such common articles as cider, fruit, honey, oranges, crackerjack, and the inevitable gum.

Lectures on Fruit Subjects.

Another feature which was started last year and was continued this year was a series of fifteen-minute lectures. These covered a wide range of subjects from the time that a fruit tree is planted to the time when the fruit is picked, packed, and consumed. During the entire time that the show was in session music filled the air. A victrola, piano, and a symphony orchestra took turns in presenting both modern and classical compositions.

Though a great deal of credit is due to the students for getting up a show that has never been beaten in the history of the college, back of it all is the enthusiasm, which is contagious, and the interest of the head of the horticultural department, Prof. H. J. Eust

tace. In spite of cramped quarters and many other inconveniences, this same enthusiasm on his part has built up a course in which a majority of the agricultural students are enrolled.

Ingham Co. J. A. BENNETT.

TROUBLE DEPARTMENT.

Fertilizers for Squash.

I am raising Hubbard squash for feed. A seed company buys the seed on contract. Would you advise the use of stable manure, commercial fertilizer, or both, for this crop? What would be the best formula for the commercial fertilizer?

Grand Traverse Co. R. A. W.

The fertilizing of squash depends a great deal upon the soil in which you are growing the crop. If the squash vines make good growth, but have a tendency to non-productiveness, it would not be necessary to apply any nitrogenous fertilizer. If, on the other hand, the vines are stunted, a nitrogenous fertilizer would be very valuable.

Barnyard manure, I would say, is a nitrogenous fertilizer, and whether it would be advisable for you to use it or not would depend upon the soil conditions, as suggested above.

A good general formula of commercial fertilizer is a 4:6:8, or one containing four per cent of nitrogen, six per cent of available phosphorus and eight per cent of potash; 300 pounds of nitrate of soda, 600 pounds of acid phosphate and about 200 pounds of muriate of potash will make a combination which has the above fertilizer elements in the proper proportion.

Controlling San Jose Scale.

Do you think there is any way to stop the San Jose scale on fruit trees? If so, please inform me.

Barry Co. I. J. M.

There is no doubt as to San Jose scale being easily controlled. When it first appeared it caused the fruit growers considerable concern but now it is nothing that one who makes fruit growing a business fears.

After years of experimenting by both experimental station men and fruit growers, the fruit growers of the country concede lime-sulphur to be the best material to control the San Jose scale. This preparation can be bought in a commercial form; it can also be made at home but the process of making is disagreeable, and it can be bought so reasonably that it hardly pays to bother with the making of it. The commercial lime-sulphur testing 32 degrees Beaume test, should be sprayed on the trees at the dilution of one gallon of lime-sulphur to eight gallons of water when the trees are dormant, as at this strength the mixture is injurious to the foliage.

One of the chief factors in the controlling of the scale is thoroughness in spraying. The scale is only the size of a pin head, and is not killed until it is hit by the spray material. It spreads more quickly in the tops of the trees where the newer wood is and there it is very essential to thoroughly cover every twig and limb of the tree to thoroughly keep the scale in check. After an orchard is once infested with the scale, it will be necessary to spray at least once a year, preferably in the spring before the leaves come out, as it is impossible to entirely eradicate the scale from the orchard.

Another kind of spray material which is used with success in controlling the scale are those of the oil emulsion type. These are much more pleasant to spray and are not harmful to the skin of the person applying it. Being of an oil nature, this kind of spray material spreads over the tree when applied, and many believe they can do more thorough work with it. Either of these remedies, however, if thoroughly applied will keep the scale in check.

Spray the orchard or cut it down for the other fellow's sake if not your own.

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NO MONEY IN ADVANCE—NO BANK DEPOSIT—PAY AFTER IT HAS PAID FOR ITSELF.
LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till next fall for our money.—The extra profit will more than pay for it. We pay freight. LOWEST PRICES. HIGHEST QUALITY. 5 YEAR GUARANTEE.



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Send me your Catalog, Spraying Guide and "special offer" on the sprayer marked with an X below.
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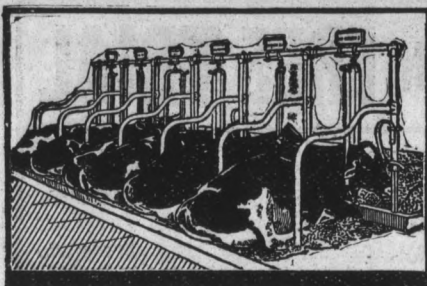
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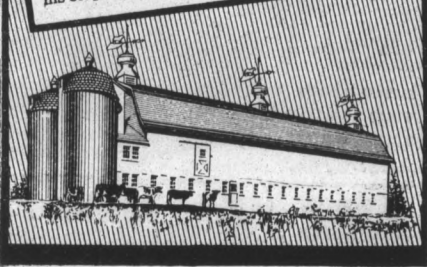


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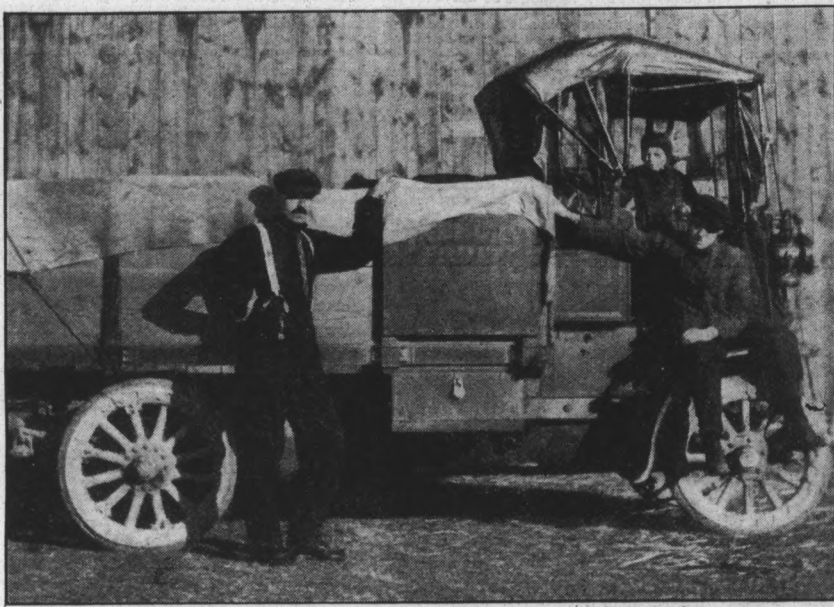
Marketing With Auto Trucks.

MOTOR trucks are already an important factor in the marketing of farm crops. And the saving made through their use will make them a larger factor in the future.

Take the Detroit eastern market as an example: In the summer of 1912 there were four motor vehicles used to deliver fruit and vegetables on the market while today there are between

could be multiplied many times by observations coming to our attention. And they are not unusual but merely the common experience of those who have adopted the new method of getting produce to market.

Lest the reader may think that the advantage in getting to and from the market quickly, consists only in saving from five to ten hours of time on a trip, it should be stated that while



Mr. Chas. A. Bingham, Vice-president of Mich. State Horticultural Society Finds Marketing with Motor Truck More Economical than with Horses.

45 and 50 auto trucks being employed by the farmers around the city for this purpose.

And the convincing thing about it is that those who began to deliver with power vehicles are still doing so. The advantages are so great that these men say they would not return to horse-drawn rigs again. Now, like most farmers elsewhere, and many men in other lines of business, these men have not figured the costs down to a nicety so that they can tell to the very fraction of a cent the profits secured from the investment in motor trucks. Nor could they do this were they experienced accountants, since so many elements enter that must be estimated, that the resulting figures would be more or less the result of guessing. Nevertheless the testimonies of some of these men is exceedingly interesting.

Saves Much Time.

One fruit grower who lives 32 miles from the market introduced a one-ton auto truck and finds that with it he can do the work of four teams. When crowded he has been able to make four trips a day by changing drivers.

Another party who has a two-ton motor truck left the Detroit market last Wednesday at 11:05 a. m., made the trip to his home, 26 1/2 miles away, looked over his truck, loaded it with 85 bushels of apples, returned to the market and had the load under cover by 5:15 p. m. During this trip he made two stops in his home village and was delayed a few minutes by reason of having "hooked" a street car.

A third farmer lives 22 miles out and finds that without hurrying he can cover the distance in less than two hours. He uses a trailer on which he loads about 40 bushels of produce.

Again, a producer owning a light car with which he delivers eggs, butter, pork, and occasionally some fruit, left his home a fraction over 30 miles out at a quarter of six o'clock in the morning and by eight o'clock he was on the market and had some of his load sold.

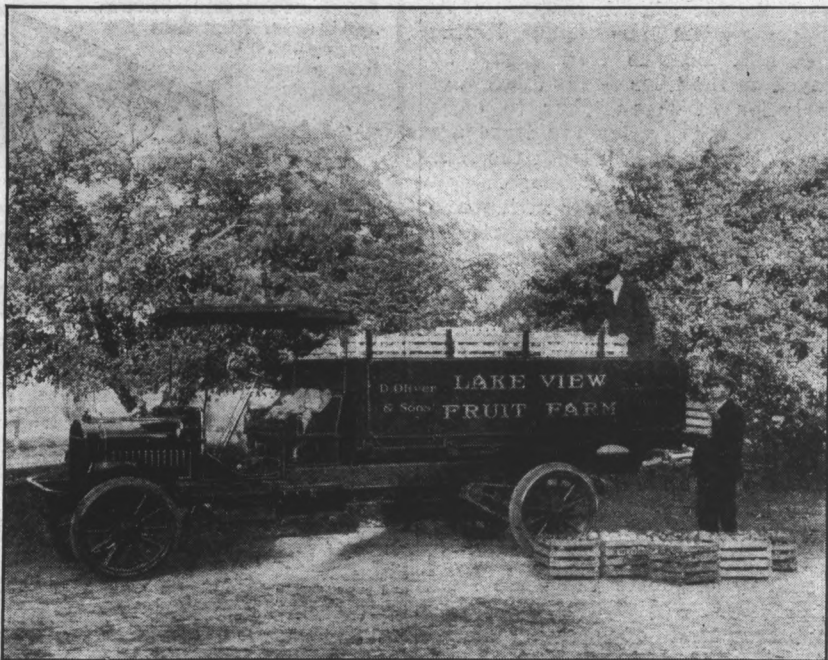
These illustrations of the saving of time by the use of the auto truck

auto truck moves rapidly it jars the fruit no more during a certain period of time than does a wagon equipped with good springs, and if the auto requires but one-fifth the time to get to market the fruit is subjected to proportionately that much less shaking. The same is true as to exposure to heat and the general action of the elements. Every user of power vehicles is convinced of the great saving in the condition of the fruit as it arrives upon the market and is aware of the increased price buyers are willing to pay for the fresher and better goods.

Conserves Energy.

A third advantage resulting from this reduced time of driving in is the saving of the man. Here is an item we may consider lightly; but it should be otherwise. All along farmers have put too little stress upon the qualities of salesmanship. The ability to sell has been largely disregarded. But a few days of close observation on our markets would convince those who are skeptical on this point. When one sees a wide-awake farmer sell No. 2 apples for the price his sleepy neighbor gets for No. 1 stock, and sees it done over and over again with not only apples, but with other products, he begins to feel that there is something in ability to sell. And it is also known that good salesmen cannot work to advantage when tired. So it is with the farmers when they come to market with goods to sell; if they are tired out with a long weary ride they are apt to make a poorer impression on buyers than when rested and vivacious.

One truck owner puts it this way: He would invariably stay at the hotel connected with the stable when driving horses in with a load; but with the auto truck he is in a mood to choose a higher-class hostelry and almost always finds that he can dispose of much of his load to the steward at premium prices before leaving. He would have been tired and indisposed to seek out the stewards of the better houses had he been obliged to follow the horses for ten or twelve hours before reaching the market. So, besides saving real time in the getting of produce to the markets, the auto truck enables the carrying out of a more efficient system of management, saves in the quality of the produce delivered and conserves the energy of the deliv-



Loading Auto Truck at the Orchard of Mr. Oliver in Oakland County.

the hands of his wife, or hired man, and spend his time upon the road and market. With the auto truck the farmer is able to sell his own produce and at the same time watch the progress of work on the farm. The auto truck, under these circumstances therefore, makes possible more efficient management of the farm and of the marketing of the products therefrom.

Again, these products arrive on the market in better shape. Although the

er for the important work of selling.

We have gathered some figures on the economy of the auto truck, which we shall give to readers of the Michigan Farmer in a subsequent article.

(Note.—The editorial department would be pleased to hear from those who have had experience with auto trucks on the farm. We would like to know what the results have been, the cost of operating, amount and kinds of work done, etc. State whether you use a trailer or not, and what your opinion is of the value of the latter to the farmer.)

GETTING THE CONSUMER'S ATTENTION.

John R. Blake, a prominent Kalamazoo county fruit grower, has evolved a unique and effective plan for bringing his fruit to the attention of the "ultimate consumer." Permission was secured to use an empty store-window upon a busy street in the city of Kalamazoo. In this window was arranged a tasteful display of fruit. Neat cards announced the name of each variety.

Blake has won high place at many large shows so that his little exhibit received much attention from passers-by. An alert man was kept in attendance. Interested persons were courteously approached and invited to place an order for their winter supply of apples. Orders were received at the rate of 150 bushels per day. When enough apples had been sold the orders were carefully grouped into districts as they were found to be from all sections of the city. Delivery then commenced.

In taking orders it is well to have a clear understanding that payment is expected upon delivery of the fruit. It is far better to lose a prospective customer than to make a sale on credit.

In booking orders it will be found more satisfactory to enter the names and addresses upon individual cards which are then dropped safely into a convenient holder, than to enter the names upon the usual order book. If this plan is followed the addresses can be easily grouped into convenient districts without any re-writing. With the help of a good city map it will be found possible to lay out a route to be followed by the delivery team. The cards belonging to each district can then be arranged in the proper order and given to the driver of the delivery wagon. In this way all unnecessary work is avoided.

Customers should be notified by mail of the day upon which delivery will probably be made, and requested to have the money ready so as to avoid delay. These notices can be printed upon common postal cards by the local printer.

The following form can be varied to suit the individual case:

Our Motto: . Honest Fruit and Full Measure.

Dear Friend:

Your order for bushels of apples amounting to \$..... will be delivered about Kindly examine fruit carefully before accepting. Our man is required to return cash for every order. Will you not assist us by having the money ready so that there may be no delay or disappointment? We are in business to stay and want your trade another year. THANKS!

A. B. & Co.

Delivery can be made in ordinary bushel crates as it is not at all necessary to furnish a package under this plan of direct marketing. Some apples are much heavier than others. Hence, care must be taken to maintain a uniform weight, 48 pounds being the standard for apples. The only safe course is to set, from time to time, a crate upon the scales.

It is essential that the salesman be provided with a conservative estimate of the probable number of bushels available in each variety. If the sales are then checked up each night, a variety can be withdrawn from sale as soon as sold out. In this way the necessity for substitutions may be avoided and one of the most likely sources of dissatisfaction eliminated.

Kalamazoo Co. C. A. ROWLAND.

HOW TO REACH THE CONSUMER.

If you are interested in direct marketing and desire to receive the names of consumers who would like to make arrangements to secure goods from you, send us your name and address noting things you have for sale, and we shall list yours with other names and have the list distributed free of all charges, among well-to-do families in the city of Detroit, asking them to correspond with you to arrange for direct sales.

Besides, we have arranged with a box concern to supply our readers with practical family shipping boxes for 50c each, to which should be added 8c for postage to points in first and second zones; 12 cents for the third, and 19c for the fourth zone from Detroit. These boxes are steel-crated, measure 8½x12½x14 inches and are equipped with four one-dozen egg cartons; one two-pound butter tub; one pint cream bottle; partitions, paraffin paper and shipping tags. The box is light, durable, easily packed and can be used over and over again. Address Farm Commerce Department, Michigan Farmer, Detroit, Mich.

Crop and Market Notes.

Michigan.

Livingston Co., Feb. 8.—Weather is fine, and sleighing has been good for several weeks. Wheat, rye and clover are in fine condition, having been well protected with snow all winter. Stock is doing fine, though there is not so much on feed as usual. Grain is scarce and very high. Farmers are holding their wheat and beans, even at the present high prices. Wheat \$1.57; beans \$3.10 basis; oats 55c; rye \$1.23; butter 25c; eggs 30c; hay \$6.75; lambs \$8.

Mecosta Co., Feb. 5.—Ice covers the ground, but there is enough snow under the ice to protect fall grain and seeding. There is about the normal amount of feed in the farmers' hands for the time of year. Not much market-fed stock. Potatoes ranging around 25c per bushel; eggs 30c; butter-fat 28c; rye \$1.20; oats 20c; corn 40c per bushel; hogs \$6.25; milch cows \$50 @75.

Monroe Co., Feb. 10.—Some snow on the ground again since heavy rains of last week. Roads fair, but very icy. Wheat and rye damaged some, with ice covering the low spots. More cattle being fed for March delivery. Hogs about all marketed. Farm live stock in good condition. There is a good supply of roughage on hand, but it will be pretty well cleaned up by spring. Fat cattle \$6@6.50; hogs \$6.50; chickens 12c; wheat \$1.55; oats 58c; corn \$1 per cwt; butter 28@30c; cream 33c; eggs 28@30c.

Sanilac Co., Feb. 9.—Ideal winter weather has prevailed, and there is about eight inches of snow on the level. All meadows, wheat and rye are well protected. There is an average amount of stock in farmers' hands and all seem to be wintering well. All produce is rather high. Surplus hay is pretty well cleaned up, bringing \$11 @13; the remainder of the bean crop is moving at \$3.05 per bushel.

Shiawassee Co., Feb. 8.—There have been heavy storms and we have about eight inches of snow. Roads passable, but very icy. Wheat and rye are in splendid condition, being well covered, and no standing water or ice. Clover meadows so far in fine condition. Plenty of feed in farmers' hands for home use. Not as many lambs on feed as usual. A few lots of cattle, but none ready for market. Wheat and beans are being marketed. Wheat \$1.46; oats 52c; barley \$1.25 per cwt; rye \$1.25; potatoes 30c; eggs 27c per dozen.

Wexford Co., Feb. 6.—We have had quite a quantity of snow all winter, but since the rains the fields are rather bare, and roads are quite bad. Wheat and rye went into winter in fine shape. Farmers seem to have plenty of home feed. Potatoes 20c; rye 90c; wheat \$1.10; hay, retail \$16; straw \$8; oats 60c; shelled corn 75c; eggs 30c; butter 27c; pork, dressed \$8.50@10; beef 10c.

Ohio.

Carroll Co., Feb. 8.—We had some stormy weather the last few weeks, and not much work could be done. Times here are very dull. Wheat \$1.40; corn 75c; oats 55c; eggs 25c; butter 28c.

Clermont Co., Feb. 9.—Two feet of snow last week went off with two days of rain, causing high water and some damage along rivers. Roads are in good condition. Wheat, rye and the meadows are looking fine, and present prospects are for a good crop of grain if not damaged later. Live stock is in good condition; however, the bad weather requires heavy feeding. Most farmers will have enough feed for home use. Corn 85c; butter 30c; eggs 35c per dozen.

Columbiana Co., Feb. 9.—Have been having fine weather for some time; not much snow and the roads are fine. Wheat looks good and meadows are in good condition. Most live stock looks good, but feed is going to be scarce before pasture time. Shippers are paying \$1.50 for wheat, hay \$15; potatoes 40c; apples 50c; chickens 13c; butter 26c; eggs 30c. Hens are laying some now.

Guernsey Co., Feb. 8.—The ground has been covered with snow until the recent heavy rains which caused high water. Wheat and new meadows are (Continued on page 242).



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Button Shoes
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Markets.

GRAINS AND SEEDS.

February 16, 1915.

Wheat.—Prices have swayed over a wide margin during the past seven days. From Wednesday till Friday of last week a decline of nine cents occurred on the local market, while on Monday an advance of four cents was recorded and another of 3½ cents on Tuesday. The attitude of the foreign buyer is the large factor in making prices. The advances on Monday and Tuesday were largely due to heavy buying in New York city, Chicago and at Gulf ports. American farmers are not stampeded by the high prices, but are delivering the grain moderately. Michigan farmers, however, are said to be selling more liberally than they have at any time during the winter. The demand for flour at present is slow; dealers are only taking what they need to meet current demand. The decrease in the American visible supply was large for the past week. One year ago No. 2 red wheat was quoted at 98½¢ per bushel. Prices for the past week are:

	No. 2	No. 1	Red.	White.	May.
Wednesday	1.63	1.60	1.66		
Thursday	1.60½	1.57½	1.64		
Friday	1.54	1.51	1.56½		
Saturday	1.54	1.51	1.56½		
Monday	1.58	1.55	1.61½		
Tuesday	1.61½	1.58½	1.64½		

Chicago, (Jan. 16).—No. 2 red wheat \$1.57@1.63; May 1.62½; July 1.36½.

Corn.—The bullish turn in the wheat market Monday gave corn a stronger tone, notwithstanding the handicap to the trade of carrying the heaviest stocks on record. While the farmers are not excited in the matter of selling their surplus corn, they are delivering liberal quantities at primary elevators. This they must do in order to market the bumper crop grown last year. Foreigners continue to take the grain, and the probability is that the crop will bring the American farmer a sum unprecedented in the history of the corn crop. The visible supply shows an increase of 3,509,000 bushels. One year ago No. 3 corn was quoted at 62¢ per bushel. Prices are as follows:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	78½	79½
Thursday	78	79
Friday	77½	78½
Saturday	77½	78½
Monday	77½	78½
Tuesday	77	78

Chicago, (Feb. 16).—No. 4 yellow corn 72@74½¢; May 79¼¢; July 80¼¢ per bushel.

Oats.—Prices declined in harmony with wheat and corn last week. The margin, however, was smaller, as the surplus in this grain is comparatively not so large as that of wheat and corn. The recent high prices have influenced more liberal selling by farmers, but foreign buying has absorbed the receipts so that little change is noted in the amount of grain in sight. Standard oats were quoted at 42¢ a year ago. Prices for the past week are:

	61½	61
Wednesday	61½	61
Thursday	61	60½
Friday	60½	60
Saturday	60½	60
Monday	60½	60
Tuesday	60½	60

Chicago, (Feb. 16).—No. 3 white oats 60½¢; May 61¢; July 57¼¢ per bushel.

Rye.—There is limited dealing in this grain because of the short supply. The present price for cash No. 2 is \$1.28 per bushel.

Beans.—Transactions are limited and quotations lower. Detroit quotations are: Immediate, prompt and February shipment \$3; May \$3.30. Chicago prices are strong to higher. Stocks are small. Pea beans, hand-picked, choice, quoted at \$3.40@3.50; common at \$3.15@3.25; red kidneys, choice at \$3.25@3.50.

Clover Seed.—Market is easy and lower. Prime spot \$9.25 per bushel; March \$9.30; prime alsike \$9.

Toledo.—All grades lower. Prime cash \$9.30; March \$9.30; prime alsike \$8.92½.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$7.90; seconds \$7.50; straight \$7.40; spring patent \$8.10; rye flour \$7.90 per barrel.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$28; standard middlings \$28; fine middlings \$32; coarse corn meal \$33; corn and oat chop \$29 per ton; cracked corn \$33.

Hay.—Quotations are steady. Car-

lots on track at Detroit are: New, No. 1 timothy \$16@16.50; standard \$15@15.50; No. 2, \$14@14.50; No. 1 clover and mixed \$13@13.50.

Chicago.—Market steady and demand good. Choice timothy \$17@18; No. 1, \$15@16; No. 2, \$13.50@14.

New York.—Quiet. Prime \$22; No. 1, \$21; No. 2, \$19@20.

Straw.—Steady. Detroit prices are: Rye straw \$7.50@8; wheat and oat straw \$7@7.50 per ton.

Chicago.—Rye straw \$7@8; oat straw \$6.50@7; wheat straw \$6@6.50.

Pork.—Market steady for dressed hogs, light weights selling at \$8.50 per cwt; heavy \$7@7.50.

Veal.—Quoted steady at 13@13½¢ for fancy and 9@10¢ for common.

DAIRY AND POULTRY PRODUCTS.

Butter.—The supply is ample and business is active at a decline of 1½¢ per pound for best creamery. Extra creamery 30¢; firsts 28¢; dairy 21¢; packing stock 19¢ per pound.

Chicago.—Increased supplies have forced lower prices. Buyers are purchasing cautiously. Extra creamery 29½@30¢; extra firsts 28½@29¢; firsts 26½@27½¢; seconds 24@25½¢; packing stock 19@19½¢.

Elgin.—The price for the week, based on the majority of the sales, is 30@31¢, which is 1¢ lower than last week.

Poultry.—Offerings are more liberal. The trade feels easier but prices are steady to higher. Live: Springs 15@15½¢; hens 8@15¢; ducks 16@17¢; geese 14@15¢; turkeys 20¢.

Chicago.—A fair demand and light receipts keep trading firm. Turkeys 13¢; fowls 14¢; springs 14½¢; ducks 16¢; geese 12@12½¢.

Eggs.—Quotations off 2¢. Supplies increasing but demand good. Fresh stock sells at 24¢ per dozen; current receipts 23½¢.

Chicago.—Receipts are heavy and demand is broadening. Miscellaneous lots, cases included 21@24¢; ordinary firsts 23¢; firsts 24¢.

FRUITS AND VEGETABLES.

Apples.—Market is active and well supplied. Baldwins \$2.25@2.50 per bbl; Greenings \$2.75@3; Spy \$3.25@3.50; Steele Red \$3.50; No. 2, 40@50¢ per bushel.

Chicago.—The market shows no improvement. Offerings continue free. The prices as here quoted are for refrigerator stock. Baldwins \$2.25@2.50; Kings \$2.75@3; Wageners \$2.25@2.50; Jonathans \$3.50@4; Greenings \$2.50@3; Northern Spy \$2.75@3.25. Western box apples are selling for 90¢ @ \$2.25 per box; common storage, all varieties \$1.50@2.25 per bbl.

Potatoes.—Offerings liberal at former prices. Carlots 30@35¢ per bu; in bulk 36@40¢ per bushel in sacks. At Chicago the market is easier with prices a shade lower. Michigan white, in bulk, are quoted at 40@45¢ per bushel. At Greenville potatoes are quoted at 26¢.

WOOL.

There has been a great deal of excitement in the wool market recently. Australia has again placed an embargo on wool to other countries than England or her colonies. When this was reported there came an unusual demand from manufacturers who have orders to fill, and prices advanced sharply. Fleeces participated in these higher quotations and the present basis is the highest the market has seen for a long period past. No. 1 washed Ohio is quoted at 40¢; fine delaine at 33@35¢, while unwashed quarter and three-eighths blood are 35¢, and half-blood 32@33¢. Stocks of some grades are entirely depleted.

GRAND RAPIDS.

The bean market continues erratic, with reports of \$3.20 paid at Albion and even \$3.25 or more in other places. Beans for export, however, are being affected much as wheat has been of late and there was quite a sag in prices in Flint and at some other shipping points last week. No one can foresee what will happen. The potato situation is unchanged. Eggs are lower, with quotations this week at 22@23¢; dairy butter unchanged at 22¢. Dressed hogs are bringing 8@8½¢. Grand Rapids mills were paying \$1.48 for red wheat Tuesday.

DETROIT EASTERN MARKET.

There was another large market on Tuesday morning. Apples made up the bulk of the offerings and they were moving very freely at former prices, which range from 40¢@1¢ per bushel, depending on kind and quality. Potatoes 45¢ per bu; cabbage 25@50¢; carrots 40¢; parsnips 50¢; onions 85¢; eggs 35¢ per dozen; hay ranges from \$19@22 per ton. Farmers are complaining that the hay prices reported on the hay board are marked low to help the city buyer. The figures mark-

ed down do not represent actual sales, which rule about \$2 above the prices reported.

THE LIVE STOCK MARKETS.

Buffalo.

February 15, 1915.

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

Receipts here today as follows: Cattle 85 cars; hogs 50 d. d.; sheep and lambs 22 d. d.; calves 300 head.

With only 85 cars of cattle on our market here today, but with 23,000 reported in Chicago and the market there dull and unevenly lower and many cattle left over unsold, again we have to report the worst market yet. Last week we thought sure the bottom had been reached, but today a few handy little butcher cattle sold about steady with last week and anything weighing 1100 lbs. and over sold from 25@50¢ per cwt. lower, and at the close of the market there are several loads of cattle, averaging 1500 lbs. and over, and thick fat, for which the best bid that could possibly be obtained was \$7.75.

We had a very light supply of hogs here today and a few sales of light hogs on the opening market we made from 30@40¢ higher than Saturday's best time, but shortly after these transactions the market slumped back to about Saturday's average in price. A few selected pig weights sold at \$7.75 and yorkers at \$7.50, but along about 10 o'clock, everything, regardless of weight, sold considerably lower, with the bulk of the mixed grades at \$7.25 and some going over unsold. Roughs sold at \$6@6.10 and stags were extremely hard sellers at prices ranging from \$4.25@4.75.

The market was active today on lambs and sheep, with prices 50¢ higher than the close of last week; most of the choice handy lambs selling at \$9.15.

Handy lambs \$9.15@9.25; 85 to 90-lb. lambs \$9@9.10; 100 to 120-lb. do. \$7.85@8; cull to fair \$6@8.75; yearlings \$7@8.25; handy ewes \$6.50@6.75; heavy ewes \$6.25@6.50; wethers \$7@7.25; cull sheep \$3.50@5.50; bucks \$4@5; veals, choice to extra, \$12.25@12.50; fair to good \$7.50@12; heavy calves \$6@8.

There is an order out from the federal government at Washington that after tomorrow night these yards will be entirely closed up and nothing admitted in the yards until the yards are once more cleaned and disinfected, which we think will take from a week to ten days. Our advice to all shippers is to keep their stock in the country until this thing becomes settled and people know just where they are at.

Chicago.

February 15, 1915.

Cattle. Hogs. Sheep.

Receipts today...23,000 50,000 11,000
Same day 1914...24,592 38,875 39,665
Last week...39,885 201,956 62,292
Same wk 1914...50,207 178,689 110,136

The three o'clock closing rule is again in force at the stock yards after its suspension during the shipping embargo.

This week opens with much too large a cattle supply for these times, and buyers are in a position to break prices once more. What the decline will be before the day closes, no one can foretell, but it will be large, without much doubt. Hogs broke 10¢ at the opening, with too generous offerings, buyers paying \$6.45@6.90, with a reported top at \$6.92½. Hogs marketed last week averaged 223 lbs. Sheep and lambs are irregularly higher, with a meager supply, tops at time of mailing being \$7.90 for yearlings, \$7 for wethers and \$6.75 for ewes. No prime lambs had been sold, with the better class held at \$8.75@9.

Shipments from here last week were only 7,016 cattle, 25,313 hogs and 10,420 sheep, comparing with 22,102 cattle, 54,537 hogs and 39,420 sheep for the same week last year.

Cattle were seriously depressed last week by the inability to ship out any considerable numbers to eastern markets owing to the numerous quarantines, and extremely small receipts failed to prevent some bad breaks in prices all along the line. Only one sale was made as high as \$8.70, and after Monday sales at \$8 and over were far from numerous, none going above \$8.30 on Thursday. The commoner lots of light-weight steers sold at \$5.50@6.50, including numerous yearlings, and the bulk of the steers went at \$6.75@7.75 by the middle of the week. Receipts included a good many fat heavy cattle, and they sold at much the lowest prices recorded in a long time, such kinds declining much more than the common to middling descriptions. Good, fat 1500-lb. bullocks sold at \$7.50, and it was remarked that they would have brought \$10.25 on the highest time last December, while steers that brought \$8 resembled cattle that sold at close to \$11 at the high time. Such steers as

sold recently at \$9.25 brought \$8.25, and other cattle sold proportionately low, the cheaper class excepted, these having already sold about as low as they were likely to go. Fat cows and heifers shared in the decline, although butcher stock continued to sell much more readily than steers, trade in the latter opening late in the day. The better class of heifers went at \$6.25@7.50, with sales all the way down to \$4.75@5.25 for common to fair cows and heifers and the best cows taken at \$6@6.75. Cutters brought \$4.25@4.65, canners \$3@4.15 and bulls \$4.50@6.75; calves sold during the week at \$5@11, the late top being \$10.25. The week's decline in cattle amounted to 25@50¢; closing prices being nominal at \$8.35@8.50 for prime heavy steers and \$8.40@8.70 for prime yearlings. The federal 48-hour limit requiring stock to be held in the stock yards not longer than 48 hours was a serious hindrance to trade.

Hogs sold much lower last week, with receipts very much larger than they should have been at such a time, and day after day prices kept on the down grade, reaching the lowest figures seen of late. With numerous markets quarantined, the aggregate receipts at all receiving points were extremely large, and it was evident that owners were in a great hurry to cash their hogs in as quickly as possible, fearing further reductions in values. Western packers have slaughtered since the opening of the winter season November 1, far more hogs than a year earlier, and provisions have been accumulating rapidly, the stocks held in the five principal markets on February 1 aggregating 299,023,936 lbs., comparing with 219,180,933 lbs. a month earlier and 222,460,122 lbs. a year ago. Fresh pork is having an extremely large sale, being much cheaper than other meats, but consumption of cured hog meats is kept down by their dearthness, retail prices having failed to decline along with the break in wholesale prices. After prime hogs had declined to \$6.72½, rallies occurred that left Saturday's figures at \$6.55@7, being 5¢ higher than a week earlier. Light hogs sold highest, and pigs brought \$4.50@6.95, the heavier pigs selling highest. Prime heavy hogs sold 5¢ below top figures.

Sheep, yearlings and lambs underwent some severe declines in prices last week, notwithstanding moderate offerings, the limited shipping demand explaining the unsatisfactory market. Because of the abnormal conditions existing here, many country shippers diverted their consignments to other western markets, and this was also true of cattle. Packers asserted that the market for dressed mutton was being injured by the cheapness of pork, and they also placed much stress upon the aggregate receipts of live muttons in all the western markets. It was added that dearthness of mutton and lamb in retail markets injured its sales. At the close lambs sold at \$6.50@8.65, top for the week being \$9 and top for the previous week \$9.35. Yearlings closed at \$6.80@7.85, heavy weights going lowest. Wethers closed at \$6.15@7, ewes at \$4.50@6.75 and bucks at \$4@5.25.

CROP AND MARKET NOTES.

(Continued from page 241).

looking well. Business is rather dull, mills, shops and potteries working only half time. Horse buyers are cleaning out good horses for army use. Wheat \$1.25; corn 75¢; oats 50¢; butter 32¢; hay 16¢.

Wayne Co., Feb. 8.—The weather has been very unsettled, with rain, snow and ice, and there is now an inch of snow. Roads are covered with ice, being in fine condition for teaming. Wheat has been covered with snow all winter. Live stock is in good condition, but very few being fed for market. There is plenty of roughage. Stock sells high at auction sales, milk cows bringing \$60@95; wheat \$1.65; oats 50¢; corn 70¢; butter 30¢; eggs 28¢.

Indiana.

LaGrange Co., Feb. 4.—We have had lots of snow all winter, the recent rains, however, have melted a lot of it and the fields are one mass of ice. The ice will injure much wheat and clover if it remains on the ground very long. The roads are icy. Many hogs have been marketed, due to the high-priced corn. Some hogs are being held until the market is better. Most farmers are pretty well supplied with feed yet but are running short on hay. Farmers' institutes are being held. Hogs are selling at \$6.50; wheat \$1.50; peppermint oil \$1.23; eggs 32¢.

Colorado.

Weld Co., Jan. 25.—Wheat and rye looking fair. Roads are good. There have been only light falls of snow, so farmers have had good use of their fields for stock. They have plenty of hay and grain for feed. There is some grain in farmers' hands for sale.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

February 11, 1915.

Cattle. Receipts 1746. Canners steady; cows and bulls 15@25c, all others 50 @75c lower than last week and very dull.

Best heavy steers \$7.50; best handy weight butcher steers \$7@7.40; mixed steers and heifers \$6.50@7; handy light butchers \$5.75@6.25; light butchers \$5.50@6; best cows \$5.50@6; butcher cows \$4.50@5.25; common cows \$4@4.50; canners \$3@4; best heavy bulls \$6@6.50; bologna bulls \$5.25@5.75.

Roe Com. Co. sold Bresnahan 3 bulls av 607 at \$5, 23 butchers av 663 at \$5.75; to Rattowsky 7 cows av \$9.94 at \$5.35; to Hammond, S. & Co. 2 do av 965 at \$4.25, 1 bull wgh 1750 at \$6.25, 1 do wgh 1450 at \$6; to Breitenbeck 12 butchers av 925 at \$6.50, 2 do av 850 at \$6; to Sullivan P. Co. 8 do av 1017 at \$7; to Newton B. Co. 1 cow wgh 1400 at \$5.50, 1 do wgh 850 at \$4.75, 9 butchers av 798 at \$6.25, 1 bull wgh 1060 at \$5.75, 1 cow wgh 1000 at \$4.50; to Mason B. Co. 9 steers av 755 at \$6.75, 1 bull wgh 1300 at \$6.25, 1 do wgh 1920 at \$6.25, 10 steers av 698 at \$6.50, 2 bulls av 1100 at \$6.25; to Hammond, S. & Co. 1 bull wgh 2000 at \$6.50, 1 do wgh 1230 at \$5.75, 18 steers av 1165 at \$7.65, 3 do av 1207 at \$7.65; to Rattowsky 2 cows av 1200 at \$5.75, 1 do wgh 900 at \$5.25.

Sandal, S. B. & G. sold Mich. B. Co. 3 cows av 940 at \$4.10, 2 do av 1040 at \$5.50, 3 steers av 853 at \$7.25, 1 do wgh 690 at \$6.50, 1 do wgh 580 at \$6.25; to Mason B. Co. 9 do av 821 at \$6.75; to Goose 3 cows av 1180 at \$5.50, 1 bull wgh 1450 at \$6.40, 2 do av 970 at \$5.50; to Sullivan P. Co. 23 steers av 1041 at \$7; to Mich. B. Co. 14 butchers av 774 at \$6.15, 22 do av 881 at \$6.65; to Grant 5 cows av 920 at \$4.35.

Reason & S. sold Thompson Bros. 12 cows av 1018 at \$5.75, 1 steer wgh 1000 at \$7, 3 canners av 810 at \$4, 5 butchers av 794 at \$7, 1 bull wgh 1000 at \$6.25, 1 cow wgh 950 at \$6, 1 do wgh 1080 at \$5.25, 4 butchers av 667 at \$6.85, 2 cows av 950 at \$4.50, 3 do av 1000 at \$5.75; to Goose 2 bulls av 1040 at \$6, 4 steers av 1012 at \$7.25; to Garber 3 cows av 1070 at \$5.75; to Hammond, S. & Co. 1 bull wgh 1200 at \$6; to Thompson Bros. 18 steers av 940 at \$7.50, 2 cows av 900 at \$4.25, 2 do av 975 at \$6, 2 bulls av 935 at \$5.75; to Mich. B. Co. 14 steers av 1000 at \$7.35, 1 bull wgh 1570 at \$6, 12 steers av 991 at \$7, 3 do av 907 at \$6.65, 1 do wgh 1270 at \$8.

Veal Calves.

Receipts 494. Market dull at last week's prices. Best \$10@11; others \$7@9.50.

Haley & M. sold Parker, W. & Co. 13 av 135 at \$10.75, 1 wgh 140 at \$10.50, 9 av 185 at \$11, 3 av 90 at \$8.

Roe Com. Co. sold Newton B. Co. 2 av 190 at \$10; to Sullivan P. Co. 7 av 175 at \$11, 3 av 160 at \$10.50, 3 av 150 at \$11, 1 wgh 130 at \$7.

Sheep and Lambs.

Receipts 5777. Market dull and 25 @50c lower than Wednesday's opening. Best lambs \$8; fair do. \$7.25@7.75; light to common lambs \$6@7; heavy lambs \$6.75@7; fair to good sheep \$4.50@5.50; culls and common \$3@4.

Roe Com. Co. sold Newton B. Co. 8 sheep av 115 at \$5.25; to Eschrich 30 lambs av 50 at \$7; to Mich. B. Co. 6 do av 95 at \$7.50, 116 do av 75 at \$8.25, 11 sheep av 120 at \$5.25, 6 do av 150 at \$5.25.

Haley & M. sold Parker, W. & Co. 32 sheep av 110 at \$5.50, 44 lambs av 75 at \$8.50; to Nagle P. Co. 39 do av 90 at \$7.50, 6 sheep av 140 at \$5, 16 do av 90 at \$5.

Reason & S. sold Thompson Bros. 28 lambs av 52 at \$7.75; to Sullivan P. Co. 5 sheep av 95 at \$4, 19 do av 110 at \$5.50, 7 lambs av 55 at \$7, 14 do av 50 at \$6.50, 40 do av 50 at \$6.25, 38 sheep av 80 at \$5.50, 5 do av 90 at \$3.50, 10 do av 101 at \$4.75; to Mich. B. Co. 93 lambs av 75 at \$8.25, 7 do av 40 at \$7, 30 do av 80 at \$8, 207 do av 70 at \$8.35, 109 do av 85 at \$8.25, 66 do av 80 at \$8.25.

Hogs.

Receipts 10,097. Nothing doing; prospects 10c lower than on Wednesday; packers bidding \$6.55 for all grades; none sold up to late hour.

Friday's Market.

February 12, 1915.

Cattle.

Receipts this week 2420; last week 1459. Market demoralized, 800 left over unsold; canners steady; bulls 50c lower; cows 50c lower; all others 75c @ \$1 lower than last week. Best heavy steers \$7.50@7.60; best handy weight butcher steers \$6.50@7; mixed steers and heifers \$6.50@6.75; handy light butchers \$5.75@6.50; light butchers \$5.50@6; best cows \$5.50@6; butcher cows \$5@5.25; common cows \$4.25@4.75; canners \$3@4; best heavy bulls \$6@6.25; bologna bulls \$5.50@5.75; stock bulls \$5@5.25.

Veal Calves.

Receipts this week 716; last week 483; market steady. Best 10@11; others \$7@9.50.

Sheep and Lambs.

Receipts this week 7088; last week 4590; market steady at Thursday's close. Best lambs \$8; fair lambs \$7.50@7.75; light to common lambs \$6@7; fair to good sheep \$4.50@5.50; culls and common \$3@4.

Hogs.

Receipts this week 15,115; last week 10,374; market 10@15c higher; all grades \$6.65@6.70.

LIVE STOCK NEWS.

Abnormal conditions caused by the spread of the foot-and-mouth disease have interfered so seriously with the hog trade that many farmer-stockmen decided to wait for better conditions before marketing their hogs. Still there were many others who were unwilling to wait, and they sent a good many hogs to Chicago, while other western markets had good supplies. The restrictions imposed on the Chicago market in recent weeks caused many stockmen to switch over to other receiving points, and this accounts for the materially increased supplies of cattle, hogs and sheep at such points. So many markets have been closed that comparatively few points of much importance remained open, and buyers exercised far more influence than in ordinary times in establishing prices. The desire to get hogs marketed is naturally general in view of the bearish state of markets everywhere, while corn is a dear article.

Cattle prices have been very unfavorably affected by quarantines, and sellers have had hard luck as a general rule. Packers in the Chicago market were disposed to hold back and tire sellers out, the result being that the market has been late in opening, while values were much more apt to decline than to advance. As a rule, packers have shown a marked partiality for fat light-weight steers and medium-priced fat cows and heifers, while passing by thin stock and wanting very few of the high-priced steers of heavy weight. All along heavy beeves have been the first to sell off, with fat yearlings and other light steers carrying a fair amount of flesh maintaining the most firmness.

SAVE MONEY



Turn your wasted fodder into ensilage. 40 per cent of the feeding value is in the corn stalk. Are you saving this 40 per cent? You will save it if you buy an INDEPENDENT SILO. Ensilage can be produced for \$1.00 per ton and will make your cream checks larger and produce beef, mutton and pork at a lower cost than any other feed. The

INDEPENDENT SILO

is constructed of BEST GRADE WASHINGTON FIR (one piece) Staves—fully equipped with our new ANCHORING SYSTEM—SHIP-PEP FREIGHT PREPAID TO YOUR STATION ON APPROVAL. Don't buy a Silo until you get our FREE CATALOG and SPECIAL OFFER for early buyers. Write today.

INDEPENDENT SILO CO.,

2329 University Ave. St. Paul, Minn.
817 I. O. O. F. Bldg. Indianapolis, Ind.

Auction Sale.

E. A. ROHLF will sell to the highest bidder, one mile east of Akron village, Michigan, on **February 26th, 1915, AT 10 O'CLOCK, A. M.**

Two Reg. Segis Heifers; one Reg. Butter Boy Bull, two years old, grandson of Butter Boy Rosina; and fourteen full blood but not Reg. Heifers from two to four years old, all due to freshen soon. (these are a choice lot of heifers, nicely marked); four winter Calves not Reg.; seventeen head of Horses from one to nine years old, nearly all mares and good ones, (they are Percherons and Belgians.) Free lunch at noon. Trains four ways, twice daily.

E. A. ROHLF, Box 6, R. No. 1, Akron, Mich.

Wins in the Two BIGGEST HATCHING Contests Ever Held

Why take chances with untried machines when for only \$10 we guarantee to deliver safely, all freight charges paid (East of Rockies), BOTH of these big prize winning machines fully equipped, set up ready for use? Why not own an **IRONCLAD**—the incubator that has for two years in succession won the greatest hatching contest ever held? In the last contest conducted by Missouri Valley Farmer and Nebraska Farm Journal, 2,000 Machines were entered including practically every make, style and price. With 140-egg Ironclad—the same machine we offer with Brooder freight paid, for only \$10, Mrs. C. F. Merrick, Lockney, Texas, hatched 148 chicks from 148 eggs in the last contest.

30 Days Free Trial
Money Back if not Satisfied

Both for \$10 Freight Paid
East of Rockies

140 Egg
Ironclads are not covered with cheap tin or other thin metal and painted like some do to cover up poor quality of material. Ironclads are shipped in the Natural color—you can see exactly what you are getting. Don't class this big, all metal covered, dependable hatcher with cheaply constructed machines—and don't buy any incubator until you know what it is made of. Note these Ironclad specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering, galvanized iron legs, large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boiler, self regulator, Tyco's Thermometer, glass in door, set up complete ready for use and many other special advantages fully explained in Free Catalog. Write for it TODAY or order direct from this advertisement.

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MADE OF CALIFORNIA REDWOOD
140 Chick Brooder

BROOD COOP
25X 23 SCIENTIFICALLY VENTILATED. \$17.50. YARD 20 X 23 \$1. WRITE FOR DESCRIPTIVE MATTER AND SPECIAL PRICES. THOMAS T. WAGGONER. FREEPORT, ILLINOIS.

ALL STEEL.

Baby Chix \$10 per 100. Brown and White Leghorns, Barred Rocks, Buff Orpingtons, White Wyandottes, also Eggs. RIVER RAISIN POULTRY FARM, Dundee, Mich.

Save One-Third ON FEED EMPIRE FEEDING MOLASSES

Greatest Food Value
Lowest Ton Cost
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WATTLES & COMPANY
Dept. F, Litchfield, Michigan

FARM DYNAMITE

and accomplish more work in removing stumps, rocks, also planting trees, digging ditches, etc., than twenty men. It's effective, safe and easily used; guaranteed Standard Brand; shipped DIRECT from Mill in this state; lowest prices. No salesmen. Established over 30 years. Write for full particulars. **BRUNS POWDER CO. TERRE HAUTE, INDIANA.**

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It increases production and lowers the cost. Try four parts Beet Pulp by weight to one part Cottonseed Meal or Gluten, with ensilage and hay. Oats and corn are pretty high priced for feeding.

Try Beet Pulp. You cannot lose. You will undoubtedly profit thereby.

Write T. F. MARSTON, Bay City, Mich.

Peach and Apple Trees 2c and up

Peach, Cherry, Plum, Grapes, Strawberry, etc. Catalog Free. **TENN. NURSERY CO., Box 62, CLEVELAND, TENN.**

SEED BEANS

From an Island in the Far North of Lake Michigan. Pea beans \$3.50; red kidney \$1. **RAY KENT, South Manitou Island, Michigan.**

BUY FEED—CAR LOTS

Cottonseed Meal, Hominy, Gluten, etc. Save money. Ask price. **J. E. Bartlett Co., Red Mill, Jackson, Mich.**

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Reg. Swedish select re-cleaned 80c. also Worthy at 90c per bu. Sacks free. **JOHN G. SCHWAB, R. No. 4, Vassar, Mich.**

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

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We will pay you the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. **AMERICAN BUTTER & CHEESE CO., Detroit, Michigan.**

POTATOES—HAY

More Money if you Consign to **THE E. L. RICHMOND CO., Detroit.** 21 years in business. Reference your Banker.

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116 Acre Farm—One of the finest in Wayne County, near town, on good road. **E. N. PASSAGE, Plymouth, Michigan.**

FOR A LIST of the best farm bargains in the best county in the state. Address, **KETCHUM & MORSE, Edmore, Michigan.**

NOTICE! If you want to rent a farm of 240 acres and 200 head of stock and have 1/2 of the increase and have 1/2 of all money received from stock and crops sale, write **A. YATES, Walkerville, Mich.**

WANTED—To hear from owner of good farm or unimproved land for sale. **C. C. BUCKINGHAM, Houston, Texas.**

A Splendid 110 Acre Farm—Excellent location. Will sacrifice for quick sale. For full description, low price, and easy terms Address, **M. HARTZ, Charlotte, Michigan.**

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

130 ACRES \$5000, \$2000 cash, balance on easy terms. House 7 rooms, 3 barns, good orchard, plenty water, black sandy soil, 2 miles from town. Write **J. B. Rice & Co., for farm list, Cortland, O. or Warren, O.**

Farms Wanted—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. **American Investment Association, 10 Palace Bldg., Minneapolis, Minn.**

BARRY COUNTY FARMS—The most profitable section in the State. We have real bargains. Write for list **A. BENHAM & TRIM, Hastings, Mich.**

FOR SALE—The Finest Suburban Home in Barry Co., containing 30 acres of the very best of soil and buildings, located in the city of Hastings. For full description address **P. G. BENNETT, 228 E. Lincoln St., Hastings, Mich.**

FOR SALE—85 Acres, 2 1/2 miles from good market. Good buildings, water and timber. Good home in desirable locality. Cheap if taken soon. **EDWARD KENNEDY, South Lyon, Michigan.**

FARMS, GOOD, CHEAP, UNUSUAL OPPORTUNITIES NOW

State Board of Agriculture, Dover, Del.

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FREE CATALOGUE OF SPLENDID BARGAINS. **R. B. CHAFFIN & CO., Inc., Richmond, Va.**

WANTED—Practical Farmer to take an interest in and charge of Riverview Ranch, Near Moosejaw, Saskatchewan, Canada. 1280 acres No. 1 level prairie, level land. I will take Michigan real estate for an interest. A fortune for the right parties. **Martin H. Holcomb, Owner, 238 Carlton Ave., Grand Rapids, Mich.**

THE SOUTH offers unequalled opportunities for farmers, with its mild climate, ample rainfall, two to four crops a year, great possibilities in live stock, dairying and food crops, low cost lands and good markets. Let me send you information. **M. V. RICHARDS, Ind. & Agri. Commissioner, Room 78, Southern Railway, Washington, D.C.**

Sunny Tennessee 285 Acres, 125 Acres tillable, 75 Acres bottom. Corn, oats, wheat and clover land. 4-room dwelling, tenant house and barns. Our farms and prices please. Free list. **JENKINS & SON, HUNTINGDON, TENN.**

FARM AT AUCTION—On Thursday, March 4, 1915, at 12:30 o'clock. I will sell at auction my farm of 136 a., on Chicago Turnpike, 2 miles west of Somerset Center and 3 miles east of Moscow, in Hillsdale County, Michigan. 100 a. plow land, balance pasture, timber, and low land, well seeded and fenced, good soil, 15 a. alfalfa, brick house, horse barn, cow barn, two silos, tool house and other outbuildings. Terms—1/2 cash, balance on mortgage if preferred. Reasonable deposit at time of sale. Stock and tools will also be sold. **M. R. MORTON, Jerome, Michigan.**

120 Acres \$2100
Cows, Machinery and Tools
Aged owner unable to care for this good New York State farm longer, insists upon immediate sale and throws in a quick buyer. 4 cows, lot of new farming machinery, milk wagon and all tools, splendid farming section, beautiful, level, machine-worked fields, all staple crops, cuts 30 to 50 tons hay, spring-watered pasture for 15 cows, 18 acres wood; 60 apple, pear, plum and cherry trees; 10-room dwelling, cellar, telephone, good condition; 12 ft. barn; pleasant surroundings, all conveniences near, mail delivered; price for all if taken now only \$2100, easy terms; full details, location, etc., page 3. **Strout's Special Bargain Sheet,** copy free. **E. A. STROUT FARM AGENCY, Station 101, University Block, Syracuse, N. Y.**

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IT HAS NO EQUAL

For — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

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Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$125.00 paid in doctor's bills."
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Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.



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80 HEAD

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60 STALLIONS

Ready for Service.

20 Brood Mares with foal, also some Yearlings and 2-year-old Fillies.

All of these at your own price.

Write now before they are gone.

JOHN CRAWFORD,

Importer. - - Byron, Michigan

Dunhams' Percherons

are today as for the past Forty-eight years the breed's best.

As a matter of fact you can also get more here for your money than elsewhere. If you are interested in

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and want to get in touch with the oldest concern in the business—the one that handles the best class of horses, and whose reliability is proven by the experience of thousands of satisfied customers. Come and see us.

New illustrated catalog on application.
DUNHAMS', Wayne, DuPage County, Illinois.

METZ BROS.,

Importers and Breeders of

Percheron Stallions and Mares

We have a fine selection of stallions and mares ranging from 1 to 6 years old. Prices reasonable, terms to suit purchaser. METZ BROS., Niles, Mich.

PERCHERON SALE.

Farmers and Breeders Attention.

In order to insure quick sales we have decided to cut our prices. Your choice for \$1000. A lot of good ones at \$400-\$500-\$600.

A. A. PALMER & SONS,
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GLYDESDALE
We have a lot of choice young Stallions and Mares for sale at bargain prices. Terms to suit.
FINDLAY BROS., Fairgrove, Michigan.

For Sale—2 Reg. Percherons—mare coming 8, stallion 7 in spring. Sell cheap if taken soon. Write for particulars. Edwin Parker, R. 1, Laingsburg, Mich.

Veterinary.

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

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

Enlarged Gland—Cracked Heels.—A soft bunch appeared below ear of steer, which is moveable and I would like to know what to do for him. I also have horse that has scratches in one leg, am washing it with castile soap, but it fails to help him. O. B. P., Ypsilanti, Mich.—Apply one part iodine and nine parts lard to bunch once a day and give steer 1 dr. of potassium iodide at a dose three times a day. Dissolve 1 oz. acetate of lead, 6 drs. sulphate of zinc and 1 oz. of carbolic acid in a quart of boiled water and apply to sore heels of horse twice a day. Give a dessertspoonful of Fowler's solution at a dose three times a day until the heel is all right.

Rickets.—For the past nine weeks my two hogs have been penned up, fed all the corn they would eat; they were also fed some cooked beans, but soon tired of them; however, their diet has been almost corn and water. These hogs will now weigh 180 lbs. each, but have both lost the use of their hind legs and, strange to say, their appetite has never failed them. A. I. B., Muir, Mich.—This is the result of feeding too much fat-producing food without sufficient protein. Feed tankage, oats, oil meal, roots and green stuff, and discontinue feeding corn for a while. Or butcher your hogs in their present condition. No drugs required in the treatment of this kind of a case.

Choking—Salt Water for Live Stock.—What is good for pigs with a cough that can't eat without choking badly? Also have a well recently put down in which the water is very salty. Will it injure stock if used regularly as their water supply? Mrs. H. W., St. Clair, Mich.—Your pigs doubtless choke on account of filling mouth and throat too full of cold food or water. Heating their feed and water and spreading it out thin seems to prevent these symptoms considerable; therefore, you had better follow these instructions. In my practice I have observed the manner in which hungry pigs eat and drink, often producing the symptoms you mention. Very few shallow wells produce water too salty for live stock; however, a certain amount of salt is required and if not furnished in food it should be supplied; very often I find live stock injured on account of being furnished too much salt.

Barren Cow.—I have a cow that had twin calves some months ago, one living, the other had the appearance of having been dead for some time. Since calving she has been bred regularly every three weeks, but fails to get with calf. J. Z., South Logan, Mich.—Discontinue breeding her until spring. Give her 30 drops of carbolic acid well diluted in water and mixed with feed every three days for 30 days. Dissolve 1 dr. permanganate of potash in a gallon of clean tepid water and wash out vagina thoroughly through a rubber tube with tin funnel every two days for 30 days. Six hours before you serve her and as soon as she comes in heat, wash her out with the following tepid soda solution made by dissolving 2 ozs. of cooking soda in three pints of clean boiled water.

Roup.—My chickens seem to be affected in a peculiar way, appear to swell in their head, lose their sight, a doughy bunch occasionally forms in mouth, making it almost impossible for them to eat, and after a few days they die. J. M., Mason, Mich.—You fail to give me sufficient symptoms to aid me in making a correct diagnosis; however, I am inclined to believe that they suffer from roup. The bunch in mouth may be abscess which, if opened, might afford relief. Paint bunch with tincture iodine, and apply one part peroxide of hydrogen and four or five parts water to head and dust a little calomel into eyes once a day. The badly diseased ones should be killed and burned, your coop thoroughly cleaned and whitewashed, adding one part carbolic acid to 50 parts of whitewash; besides, the lime you use should be fresh and active. Give your fowls some ginger, gentian and cooking soda in their feed.

Partial Dislocation of Patella.—I

have a four-year-old mare that is lame in her hind leg. She gets worse always when worked in loose ground. Sometimes when I try to back her the leg seems to be set or stiff and unable to move until several efforts are made, then the leg will give a kind of jerk, then is all right for a while. This case puzzles me and I would like to have your opinion. H. R., Morley, Mich.—This is clearly a case where the stifle bone slips out of place on account of the stretching of ligaments which hold it in position. Clip hair off and apply one part powdered cantharides and six parts lard every ten days and she will be all right. The bone is easily put back into place by pulling foot forward, pushing stifle joint back and bone into socket.

Indigestion.—I have an old horse that was full of worms some time ago, but I have rid him of those; now he is eating all the feed I give him, but does not lay on flesh. H. K., Grand Rapids, Mich.—His teeth may need floating, increase his grain ration, feed some clover and roots. Also give him 1 dr. powdered sulphate iron, 1 dr. of ground nux vomica, ½ oz. of Fowler's solution at a dose three times a day. Groom him well twice a day and exercise him slowly.

Sluggish Kidney Action.—I have a four-year-old gelding that is in good condition, except his coat is full of dandruff, his kidneys do not act free enough and his urine is high colored. S. H., New Baltimore, O.—Mix one part powdered nitrate of potash, one part rosin, two parts bicarbonate of soda and four parts ground gentian and give a tablespoonful at a dose in feed three times a day.

Cow Out of Condition.—I have a cow that seems out of condition. She calves last spring, apparently all right, but may not have cleaned properly. I bred her again January 9, 1915. I noticed today that there was a mucus discharge coming from her as if an abscess had broke. This cow did not thrive all summer, but milked fairly well. Her skin is dry and harsh, hair off in places and she has a general run-down appearance. Do you think she has aborted or lost her calf? J. W. McD., Pickford, Mich.—If your cow was not bred during 1914, then I do not believe she aborted from the January 9 service. Dissolve 1 dr. of permanganate potash in three quarts of tepid water, or wash her out with a three per cent solution of coal tar disinfectant daily until vaginal discharge ceases. Give her a teaspoonful of powdered sulphate of iron at a dose three times a day. She should be well fed and put in good condition before you breed her again.

Impaction.—I have a lamb that refuses to eat; drinks some water, and stretches more or less when standing; when lying down extends its legs as far as possible. F. E. S., Berville, Mich.—Give your lamb castor oil and olive oil, equal parts, to open its bowels. The dose for a sheep is 2 ozs. of each, and the dose should be repeated every 12 hours until medicine acts, then give lamb tincture gentian as a tonic. You failed to state the age of lamb, therefore, I cannot state dose.

Dehorning Pregnant Cows.—Do you consider dehorning cows in calf apt to produce miscarriage, and if it is done, what period of gestation would it be safest to operate? J. L., Eagle, Mich.—If dehorning is done carefully and cows do not tumble down and injure themselves, it should not produce miscarriage, but of course, the earlier in pregnancy it is done, the less risk of producing miscarriage.

Tender Shoulder—Collar Gall.—I have a work mare that became galled last spring about midway between the shoulder point and withers. The sore was slow to heal and it left a bunch which I am afraid will become sore again when I put her to work next spring; the bunch is soft and I would like to know of something that will remove bunch and toughen the skin on the part. F. F. B., Morley, Mich.—If I owned your mare and expected to do hard work with her next spring, I should remove sack and surplus tissue, together with a portion of the loose skin on shoulder, then it will not be likely to get sore again. Dissolve ¼ lb. acetate of lead, 3 ozs. of sulphate of zinc, 2 ozs. of tannic acid and wet shoulders before and while you are working her.

Leucorrhea.—I have a mare twelve years old that has been treated for whites by our local Vet. for the past five months and she is not much better. A. M., Sturgis, Mich.—Give your mare a teaspoonful of powdered sulphate iron and a dessertspoonful Fowler's solution at a dose in feed three times a day. Wash out uterus and vagina with a two per cent solution of carbolic acid twice a day for a week, then use one part permanganate potash and 500 parts water twice a day, and remember, it is good practice to deposit 2 drs. or more of iodiform in a gelatine capsule, put it into uterus and leave it there for two or three days. These are difficult cases to cure.

SAVE-THE-HORSE

(Trade Mark Registered.)



THE TIME, NOW!

All the winter long, the troubled owner of a lame horse reads our advertisements. Then, day after day slips away, while he talks, laments, listens, takes advice and hesitating—FAILS TO ACT—till the Springtime is on him and his horse is not yet able to work. Meantime the thrifty, prosperous, resolute man, reads, considers the evidence carefully—Decides Promptly—and his horse is quickly cured, worked, too, if needed. That's exactly what happens every year.

Send for our 96-page "Save-The-Horse BOOK." It explains all about our system of treatment—tells exactly how to go about it to get the best results in the up-to-date treatment of Ringbone—Thoroughpin—SPAVIN—and ALL—Shoulder, Knee, Ankle, Hoof and Tendon disease—Tells How to Test for Spavin: how to locate and treat 58 forms of LAMENESS—Illustrated.

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Druggists everywhere sell Save-The-Horse BOOK WITH CONTRACT, or we send by Parcel Post or Express paid.



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There is an old true saying "NO FOOT, NO HORSE." After 20 years experience with the hoof and foot, our saying is NO HOOF, NO FOOT.

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"TRUTH IN A HOOF-SHELL"

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We have sixty head of imported Belgian and Percheron stallions and mares, from weanlings up. We are also offering a car lot of big drafty grade brood mares all in foal, weighing 1600 to 1800 pounds.

LIGONIER, IND.

FOR SALE—One Pair of Ch. Belgian Geld's 5 yrs. old, wt. 2800 lbs.; One Pair of 5 yr. old Percherons, wt. 2850 lbs.; One Pair of Brown Belgian Geldings, wt. 2850 lbs.; One Blue Roan Gelding, 5 yrs. old, wt. 1540 lbs.; One Brown Gelding, 5 yrs. old, wt. 1500 lbs.; one Bay Blocky Mare, 6 yrs. old, wt. 1500 lbs.; One Red Roan Gelding, wt. 1300 lbs.; 7 yrs. old; One Black Mare, 8 yrs. old, wt. 1350 in foal to 2200 lb. Belgian Stallion. No. of other single Mares and Geldings suitable for Farm or Draft Purpose, also one Bay Road Horse 4 yrs., sired by Online. Horses for all purposes at the right price. Quality considered.
STARKWEATHER STOCK FARM,
Northville, Mich.

JACKS AND MULES

Raise mules and get rich. 230 head fine large Jacks, Jennys, and mules 14 to 17 hands high. Large registered Jacks and Draft Stallions, cheap now. Mules by the pair or carload. Stock guaranteed. Write for prices today. Address
KREKLER'S JACK FARM
West Elkhorn, Ohio.
Branch Barns, Clinton, Indiana.

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

Pigeon Pony Farm—Reg. Shetland Ponies, mostly spots, 1 spotted stallion and young stock for sale. Dr. W. T. Morrison, Pigeon, Mich.

PERCHERONS—Important, one of the heaviest horses in state, at head of stud. Brood Mares as good, young stock for sale. CHAS. OSGOOD & SONS, Mendon, Michigan.

A BARGAIN: For Sale, Pair Mule Colts 2 years old last Sept. Asking price \$250. Worth more. Not to sell. Write HENRY BLOOD, R.F.D. No. 1, Centerville, Mich.

FOR SALE—Registered Percheron Stallion Mares and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Public Auction Sale.

Having sold my farm will sell at Public Auction my entire herd of Pure Bred Holstein Cattle, also 4 thoroughbred Berkshire Sows and 1 Boar, 20 Grade Sows, 8 Horses and Colts, 1 Percheron Stallion and Farm Implements.

The Cattle will be sold the 4th day of March at 10 A. M. The latter will be sold the 3rd day of March, on my farm 2 miles Northwest of Bath. Train will be met by rig. Free Lunch.

LOUIS NELLER, PRO.

Auctioneer—Colonel Perry, Manager—Murry.

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HERD FOUNDED IN 1900.

Strains represented consist of Trojan Eriosa, Black-birds and Prides, only. Black Quality 100, a bull of rare individuality and merit. Head the herd.

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AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels; Duroc Jersey swine. Michigan school for the Deaf, Flint, Michigan.

Four Pure Bred Angus Bulls. Extra good ones. One show bull. Eight and nine months old. Priced reasonable. Inquire F. J. WILBER, Ohio, Mich.

Four Registered Aberdeen Angus Bulls, from ten to seventeen months old. Prices reasonable. GEO. HATHAWAY & SON, Ovid, Michigan.

MILO D. CAMPBELL, CHAS. J. ANGEVINE

BEACH FARM GUERNSEYS**OUR HERD BULLS ARE:**

1st Rosett's Straunford of Ingleside No. 22533 with six dams that average 706 lbs. fat.

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Duroc Jerseys: A few choice boars and bred gilts. Also S. C. W. Leghorns and Buff Rock Cockerels. J. MCNICOLL, Sta. A. R. No. 4, Bay City, Michigan.

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Have a fine bunch of bred spring gilts for private sale

Don't forget date of big Duroc sale, TUESDAY, FEB. 23, 1915.

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50 Gilts bred for March and April farrow, bred to White Hall Jr., second prize aged boar Illinois State Fair and Allen, Jr. Champion at Wis. State Fair, and to Jumbo and Wonder Boy. Here are a pair of big ones and are smooth. Special prices for the month of February. Service males and fall pigs of either sex. Write your wants and come and visit the greatest herd in state. All stock shipped c. o. d. and Reg. Free.

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Poland China Sows and Gilts bred for March and April farrow. Also fall pigs, satisfaction guaranteed. G. W. HOLTON, Kalamazoo, Mich.

LARGE TYPE P. C.—Either sex, pairs and trios, not akin. Am booking orders for bred gilts. W. J. HAGELSHAW, Augusta, Mich.

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Big Type Poland China Boars and Gilts plenty of size and great quality. I know I can please you. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

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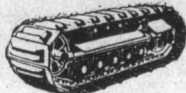
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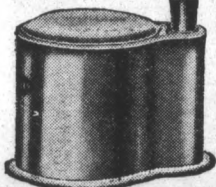
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Grange.

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

A NEW GRANGE'S ACTIVITY.

One of the youngest Granges in Oakland county, Milford Grange No. 1570, P. of H., organized last February, has just had two very successful open meetings. These meetings have not alone done much towards awakening a larger interest in the Grange among the farmers of the community, but they have brought to the gangsters themselves a full appreciation of the worth of the Grange locally, state, and nationally.

The first was a public installation on January 13. Mr. and Mrs. Eugene Root, of Novi, acted as installing officers and they were ably assisted by Mrs. John and Carl Gordon as stewards, and F. E. Bourne at the organ. The work was done in a very creditable manner.

Following the installation an excellent report of the Michigan State Grange meeting was given by Mrs. Root. Mr. Root brought out points of interest of what other Granges were doing along community lines, and several visiting members of neighboring Granges extended greetings.

The second meeting was on January 28, with State Master John C. Ketcham as guest of honor. Shortly before noon a large delegation from Tenny Plains Grange, West Highland, arrived. Members from the Wixom Grange were also present. During the noon hour those present feasted on an excellent dinner and enjoyed meeting old friends, making new ones, and talking over questions of common interest.

In the afternoon Mr. Ketcham spoke to a very attentive audience on "Grange Progress." His introduction brought out that the Grange is the oldest and largest existing farmers' organization. Granges are found in 32 of the northern states. The financial and political national standing is shown by the statement of Congressman Bothrick when he said that if the Grange and the Farmers' Union, the great organization of southern farmers, were to unite on any measure for the benefit of agriculture, their influence in Congress would be absolutely irresistible.

In developing his subject Mr. Ketcham defined progress as a definite movement towards a definite object. The days of usefulness for the Grange are not ended but new questions, great questions of the day concerning the welfare of farmers, must be decided and no other organization can champion the farmers' rights as well as the Grange. There is certainly an opportunity to better the farmers' economic condition when the average net income of all the farmers of the United States is only \$337.50. Out of this sum he must live, educate his children and have fun. Seventy-three per cent of the farmers of the United States live on rented farms or on their own mortgaged farms and are thus forced to dig out of the soil all they can which, to put it mildly, is not favorable for the conservation of the soil fertility. As long as farmers receive the small half of the dollar that the consumer pays for the farmers' crops, marketing conditions need adjusting. One solution of the marketing problem would be co-operation between farmers. Co-operation must begin in the small units and work up to the larger ones. The establishment of definite standards and an uniformity of products are essential. The old slogan needs to be changed from "Let the buyer beware," to "Let the seller beware."

Another way to progress was the promoting of bills in the Legislature

that would help to adjust conditions more favorable for the farmers. Several such bills with the Grange backing, were introduced on the previous day.

Mr. Ketcham touched lightly upon woman suffrage, saying that the Grange places the farmers' wives and daughters on an equality with the men and those holding views that woman should not have the same privilege in state affairs, had, when they saw the universal suffrage steam roller coming down the road, better get out of the road and climb aboard. At the close of the address, as we left for our homes, we felt as though we had something to think about for the coming days. E. S. CRAWFORD.

AMONG THE LIVE GRANGES.

Walkerville Grange, No. 985, held their regular meeting at their hall, on January 23. It was an all-day meeting. After an excellent dinner, served by the ladies, the afternoon session started with the installation of the officers, by the State Grange delegates, Mr. and Mrs. David Roberts, of Hart Grange. After the installation we listened to a good talk by Bro. Roberts, on State Grange work. This was followed by a lengthy report by Sister Roberts, that was enjoyed by all. After the report the new lecturer, Mrs. Mary Newton, gave a very interesting program. Song, by the Grange; prayer by Rev. Hatch, of Muskegon; recitation by Alfred Highland, song, Miss Elnora Clemmings; recitation, by Miss Ruth Goodrich; song by Marion and Margie Manning, and an address by Rev. Shaw, entitled, "The Open Door of the Grange." Rev. Shaw, who is a Granger and has been very successful in his pastoral work here, brought out a good many things in his talk that pleased the Grangers. He is not of the Sunday religion dispensary kind who, besides fulfilling his Sunday duties alone, believes that there are other duties to perform. He is one who believes that religion is an everyday affair, and can be applied and practiced, as well as thought. But having practical Christianity foremost in mind, he is not above lending a helping hand in the Grange work.—Mrs. Leslie Goodrich, Cor. Sec.

Farmers' Clubs

Associational Motto:

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

Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

COUNTY ASSOCIATIONS.

At the conference of local Club workers at the State Association of Farmers' Clubs held in December, the delegate from the Jackson county organization stated that a county organization was affected last winter, in which every Club in the county is interested, and in which it is hoped that every farmer in the county may become interested. This organization holds two meetings during the year, one in February and one in August, the latter meeting being a picnic. Matters pertaining to taxation, etc., are discussed at the meetings.

Delegate Mattoon of the North Newburg Farmers' Club, expressed the idea that every county should have a county association, and pointed the benefits which had been derived in Shiawassee county from the county association of Farmers' Clubs working in connection with the other farmers' organizations of the county.

CLUB DISCUSSIONS.

Discuss Prison Reform.—The Clover Leaf Farmers' Club held the second meeting of 1915 at the home of Mr. and Mrs. John Buzzard, January 26. Several took part in a discussion of "Prison extension work and prison reform," and there was some talk of having a lecture on the subject if a suitable place could be secured. The Club voted to join the State Association of Farmers' Clubs. The meeting was then turned over to the program committee and an excellent program

was given. After the program, refreshments were served and the remainder of the evening was spent in games and social intercourse.—Mrs. Starr Fenner, Cor. Sec.

A Banner Program.—The Somerset Farmers' Club met with Mr. and Mrs. Jay Chandler, Saturday, January 3. Fifty-seven people assembled at the usual hour and after a sumptuous repast, "fit for a king," prepared by the hostess and members, was served, the company were seated in the parlors to enjoy a feast of reason and an entertainment of music, singing and readings. Mr. Leroy Smith, vice-president, acting as chairman of the occasion, called the meeting to order and Chaplain Rev. Van Buskirk offered prayer. Singing by the Club, reading of minutes, and business followed. A paper on "Cattle Feeding," by Mr. G. B. Smith was listened to with good attention and the valuable points carried home for future use. This was followed by a well prepared paper by Mr. T. H. Smith, "Is the well equipped dairy profitable on the farm?" The speaker first proved by facts and figures that such a dairy could be profitably carried on in the city, and also produced the figures that it could be done with a much greater profit on the farm, where the expense could be greatly lessened by producing the grain, hay and fodder on the farm. An extra good program, composed of music, both vocal and instrumental, with readings and recitations by Mrs. Max Chandler, completed a day that would do credit to any Farmers' Club.—Mrs. Z. E. White, Cor. Sec.

A "Character Meeting."—The Wells-Dayton Farmers' Club met at the home of George Walls and mother, on February 3, with about 50 members and visitors present. It being Character Day nearly all came dressed to represent some character, i. e., Mrs. Daily as "Mrs. George Washington," and Orel Wells as her son, "Rastus," colored; Mrs. Chas. Hunt as Japanese lady; J. Weeden as "Uncle Sam," Miss Agnes Riley as spinster; Mrs. A. L. Adams as Irish lady; Mrs. Edith Johnson as America; George Rumbel as Ty Cobb; Warren Rumbel as a cowboy; Mrs. George Rumbel as a puritan lady; Mrs. C. E. Riley as Auntie Higgins, the dear old lady. A dialogue by five of the ladies, "Raising the price of Butter," caused much merriment. The president then called on each one dressed as a character, who responded with a toast. Mr. Mackey, a graduate of M. A. C., gave a good talk, which was much appreciated by the Club members. The question box was of much interest and many questions of importance were discussed. The next meeting will be at S. Stokes, and will be young peoples day.—Mrs. S. G. Ross, Cor. Sec.

Value of Banks to Farmers.—It is doubtful if the Milford Farmers' Club in its 20 odd years of existence, has ever had a larger attended meeting than the one held in February at the home of Mr. and Mrs. C. L. Pearson. The company, nearly 150, included a large number of townspeople and ex-farmers. After the dinner and a social hour, the program was opened by a number of excellent musical numbers. The feature of the program was a most excellent talk by M. B. Liddell on "The Value of the Country Bank to the Farmer." More or less obloquy has for centuries attached to the office of money lender, and the modern banker has inherited it in some degree, although the millions and millions deposited in American banks attest to the confidence that is placed in their integrity. The interest of a bank and its community are identical and contrary to general belief, bankers are glad to see everyone about them prosperous. The relation of a banker to his community is confidential and no one makes a greater mistake than to attempt to deceive his banker as to his financial affairs. It is part of a banker's business to handle paper with caution and no bank turns down a loan except for good and sufficient reasons. The value of a bank to a farming community is manifold—in making loans, in facilitating out-of-town business and often making it possible for the farmer to get "spot cash" when he sells his products. A good bank makes a good market town and a good market town enhances more than is generally realized the value of farm property. The question box brought out some timely topics, the relative value of good roads and good neighbors, the probable wages to be paid for farm labor this season, the wet and dry proposition, why farm loans cannot be secured at the low rates prevailing in European countries, a system for keeping farm accounts, the Torrens system of land transfers. These were answered respectively by Messrs. George Daniels, Fred Childs, Rev. Campbell, M. B. Liddell, Roy Gamble and B. T. Nicholson. The Club adjourned to meet March 3 at the home of Mr. and Mrs. Bert Farrell.

Practical Science.

FOOD LAW ENFORCEMENT IN AND FOR MICHIGAN.

BY FLOYD W. ROBISON.

Organization of Dairy and Food Department.

The Michigan Dairy and Food Department was formally established by law under act 211 of the Public Acts of 1893. The executive head of this department is the Dairy and Food Commissioner who is appointed by the governor on the first day of January, and who shall hold office for two years and until his successor is appointed and has qualified. The commissioner holds his office at the pleasure of the governor, who may remove him at any time in his discretion, but it is incumbent upon the governor to lay before the Senate at the next session of the Legislature the reasons for said removal.

The Dairy and Food Commissioner, by and with the advice and consent of the governor, is authorized and empowered to appoint a deputy commissioner and eight regular inspectors; likewise such special inspectors in addition as the duties of the office of Dairy and Food Commissioner may require. Certain fees are payable into the office of the Dairy and Food Commissioner to help defray the expenses of said office and the special inspectors appointed by the Dairy and Food Commissioner shall not be paid in total a greater quantity of money than comes to the department through the fees accruing to said office.

The commissioner, by and with the consent of the governor, is likewise empowered to appoint a competent person as state analyst. He likewise may appoint an assistant analyst.

The Paramount Duty of the Dairy and Food Commissioner.

Under the provisions of Sec. 6, of this act, it becomes the duty of the Dairy and Food Commissioner to carefully inquire into the drug, food and drink products which are manufactured, sold, exposed or offered for sale in the state, to procure samples of the same in a legal manner, and direct the state analyst to make due and careful examination of the same. Wherever it is determined by the Dairy and Food Commissioner in the course of his inquiry into the drug, food and drink products of the state, that filthy or unsanitary conditions exist in connection with the manufacture, sale, exposure for sale, etc., of food products, it becomes the duty of the commissioner to first warn such person or persons to remedy the unsanitary conditions within a reasonable period of time, and in the event that the warning is not heeded, to commence proceedings in court.

This is the provision of the law which has permitted the Dairy and Food Commissioner to advise the manufacturers that they are infringing upon the law and to thus remove the grounds for criticism so frequently heaped upon an executive department that food adulteration or an infringement is a non-wilful one on the part of the manufacturer or dealer so infringing the law. It is this part of the law which permits of a desirable degree of co-operation between the manufacturer and the Dairy and Food Commissioner.

The Seizure Clause in the Law.

A very important provision of the law is shown in Sec. 7 which needs certain amendments before it can be considered entirely satisfactory from an executive point of view. Very frequently in order to properly protect the public it becomes necessary for the Dairy and Food Commissioner to act quickly, to detain a product which is apparently in contravention with the law, until such a time as he may

have opportunity to investigate fully in the matter. This section deals with the so-called seizure clause, by which the commissioner is empowered to seize and take possession of any and all food products which, in the opinion of the said commissioner, shall be contrary to the provisions of the act. The person making such seizure is required by law to take a sample, which sample is forwarded to the state analyst for his examination. The remainder is to be boxed or sealed and held in the custody of the person from whom they were seized, subject to such further disposition as the court may finally direct. This section needs amending and in our judgment it should be so amended that the Dairy and Food Commissioner may have the power to remove such goods after seizure to some appropriate place where they may be held subject to the final disposition of the court. This section of the law has been used very little and is the section which places in the hands of the commissioner the power to more actively enforce the law than any other section of the food law. Why this is not used more we cannot understand unless there are some provisions in it which are legally weak, in which case it seems to us that the attorney-general should so indicate so that it may be amended by the Legislature.

If, when a dealer in colored oleomargarine, for example, legally and persistently violates the law by sale of his product, the product would be seized by the Dairy and Food Commissioner and taken from his shelves and boxed and sealed pending the disposition of the court, it would mean considerably more to him than the mere taking of a sample of his product for analysis and the making subsequently of a complaint, permitting him in the meanwhile to proceed with his wilful violation of the law.

There is one phase of inspection work and one habit which we think is uncalled for, and for which procedure there is no warrant in law. It has become quite the custom among inspectors of boards of health, dairy and food departments, and the like, to usurp the function of the courts in the handling of certain phases of food adulteration. We have known city milk inspectors and state dairy inspectors to pass final judgment on milk, for example, and when in their judgment the product is adulterated, to dump the same into the sewer, thereby destroying the property and preventing its becoming a subject of controversy in the court. This is entrusting judicial power to an inspector and we think there is no warrant in law, neither is it permitted by the law. It is contrary to the basic principle of our law and some provision should be made to prevent this procedure. The manufacturer or dealer has the right to be heard before a court at law regarding the condemnation of his property and the state law provides a legal manner in which food products may be apprehended. There is certainly need of some considerable attention to the law and to executive practice along this line.

Quite a number of special laws have been passed defining specifically what constitutes adulteration in various foods and food accessories. In 1895 was enacted what is known as the state general food law, which covers all classes of adulteration, misbranding, deception, etc., which are not specifically provided for by the other special laws. This is a very important act and we shall discuss some of its points in detail and deal further with some of the special acts which have been passed from time to time, in our next paper.

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The wagon had not been sheltered half the time for the last twenty years yet has never broken a wheel or an axle.

John H. Wood,
Flushing, Mich.



Hitches other wagons to his 37 year old Studebaker

A WAGON thirty-seven year old that can stand the strain of having another laden wagon hitched to it might be called a remarkable example of wagon building.

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Think what it means to get 37 years and more of work out of a wagon.

Cuts down the cost—doesn't it?

Especially if you compare 37 years with the 12 years an ordinary wagon lasts.

Studebaker wagons last a lifetime—because they are built to last. Wheels, body and gear are the work of experts. Air-dried lumber, tested iron and steel

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Don't be imposed upon by the wagon salesman who wants to sell you a farm wagon "just as good as a Studebaker."

Remember this—a Studebaker farm wagon is sold as cheaply as it is possible to sell a good wagon.

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"After feeding SAL-VET to pigs, I find it a splendid worm exterminator. The last bunch of pigs I killed were entirely free from worms, whereas those I killed before using SAL-VET were full of them."
ERNEST LORENZ,
Rt. 5, Mt. Clemens, Mich.
"My hogs were sick when I sent for

SAL-VET and before the preparation arrived, most of them had died. To those that were still living, I fed SAL-VET and saved them; have had no trouble with my hogs since."
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do not agree at all—the worms have to get out when SAL-VET comes in."
JOSIAH BLOUGH,
Rt. 45, Box 53, Clarksville, Mich.
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—I want you to feed it at my risk—I want to prove to you on your own farm that SAL-VET will rid your stock of worms, put them in healthy condition, easier to keep on no more feed—more profitable in every way—and less liable to disease. I don't want you to send me a penny in advance—just mail the coupon. I'll ship the SAL-VET just as agreed, let you feed it 60 days—and if it does not do what I claim, then I'll cancel the charge. Is not that a fair, open offer?

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You take no risk whatever in accepting this no-money-down offer. Just fill out the coupon, tell me how many head of stock you have, and I'll ship enough SAL-VET to last them 60 days. You simply pay the freight charges on arrival. If SAL-VET has not done all I claim, and you report results in 60 days, then I'll cancel the charge, and you won't owe me one penny. Address

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Route No. 2, Clearwater, Minn.

"After feeding SAL-VET to sheep, hogs, horses and cattle during the past winter, and found it a reliable conditioner and worm destroyer. My stock never looked so healthy and thoroughly conditioned as now."
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GEO. A. ELINE,
Route No. 20, St. Matthews, Ky.

"I have fed SAL-VET to all my stock; it has put them in fine condition, and improved them wonderfully. The cholera has been killing hogs all around my home, but I have not lost a single one. I have never used so effective a remedy."
SANFORD GERST,
South Boston, Va.

"I enclose check in payment of the SAL-VET sent recently. Four times this sum would not begin to pay for the benefit I derived from feeding SAL-VET."
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"I have great faith in SAL-VET. Since feeding it, I can certainly see a great improvement in my stock. I have fed a number of different stock foods and remedies, but have never found any as good as SAL-VET. I am recommending it to my neighbors and others who lost hogs with the cholera."
C. G. FIELD, Hiawatha, Kansas.

READ!

"I am feeding SAL-VET to 750 lambs and about 100 hogs. During this time there has been no sickness whatever among this stock. I consider SAL-VET cheap insurance."
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"SAL-VET is certainly a great medicine. I have been feeding it all winter, so far and since I started, my stock are better than ever before."
ALBERT MEANS, Walthill, Nebr.

"Have been feeding SAL-VET to some of my horses which were very thin and in a run-down condition. They have now picked up in flesh and spirits in spite of the heavy work incident to this time of year."
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"The more I use SAL-VET the better I find it. My sheep and hogs were thin and thrifty and healthy as now. We butchered this week, and did not find a single worm, while our neighbors' hogs are wormy and dying. I have been recommending SAL-VET to them and they are now ready to use it too."
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