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The Evolution of the Farm House

PERHAPS no farm problem is of greater interest or importance to the average farmer than the farm building problem. This was the first problem which confronted the pioneer settler. It has proven an equally important problem and perhaps a more difficult one to solve for those who have followed the pioneer settler and reaped such a large measure of the fruits of his labor. The pioneer found the materials for his work right at hand, and his skill in woodcraft enabled him to fashion the rough but homelike and hospitable dwelling of logs, and a rude stable of the same material which would answer a temporary purpose for the sheltering of his stock. His was a problem of economy, rather than of economics. He must needs be satisfied with comforts, rather than seek luxuries or even conveniences and with picturesque, rather than modern landscape scenic effects. His problem, other than the gaining of an independent livelihood for himself and family, was the clearing of fertile farm lands for those who would follow him, rather than that of equipping them with permanent buildings. Hence he made few mistakes in this direction, but accomplished well the task before him, leaving the final solution of the permanent building problem until he could afford to cope with it or, as was more often the case, for those who followed him, to solve.

The Evolution of the Farm House.

But the evolution of the farm house in Michigan was rapid. Lumber of the best quality was one of the principal natural resources of the state and small brick plants were to be found on some farm adjacent to many small villages throughout the southern portion of the state. With cheap materials at hand, and with an appreciation of roomy houses born of the discomforts and privations of the log cabin, the permanent homes which followed the log houses of pioneer days were generally as large as their builders could well afford, and the class of farm homes which were built up in Michigan were as a consequence far better than those which are common in other states whose agriculture was developed during the same period. The style of architecture was largely that found on the more prosperous farms of the eastern states, particularly New York, from which state very many of our Michigan pioneers came. As a consequence, these old but substantial and capacious farm houses, when slightly remodelled and equipped with modern conveniences, are easily converted into up-to-date country homes, and fortunate indeed, is the possessor of a farm upon which the permanent home was constructed during that period of cheap material and old-fashioned architecture. The first two of the accompanying illustrations aptly illustrate this transformation in Michigan farm homes, the first being the original log cabin on an Eaton county farm and the second the permanent home which fol-

lowed it on the same farm, a typical farm house of that period.

In more recent years the general advance in the prices for building material as well as skilled labor have made the large house an expensive proposition, especially if finished and equipped in ac-

cord with modern ideas. Also the modern housewife has found the care of a big house an arduous task and the difficulty of securing help in the house has yearly become greater. Likewise labor conditions have changed so that it is more expedient to employ married men on the farm and house them in tenant

houses, thus removing this problem from the home. All these influences have contributed to the further evolution of the farm house, with the result that the present tendency is toward decidedly smaller, but much better equipped farm houses. Of course, many who can afford them still build big farm houses, but many of the same class do not, and there seems little room for doubt that the tendency of the future, as of the present, will be toward smaller, but more complete and better equipped farm homes of a more attractive style of architecture.

Rural Architecture.

In the matter of architecture there has also been a very marked evolution in the farm houses of Michigan. The massive simplicity of the earlier permanent farm homes of the state gave place to a craze for promiscuous ornamentation which happily soon passed. More recently the bungalow and cottage types of houses have come in vogue and many attractive effects have been secured, as evidenced by the attractive Gratiot county home shown in the accompanying illustration and the two houses shown on page 219. In the transitory stages of rural architecture there have been many intermediate types in which too little attention was given to appearance, but there is a general tendency toward a return to substantial simplicity in rural architecture in Michigan which is most encouraging since this style is most adaptable to country surroundings, is less expensive in construction and is more permanently satisfactory in appearance.

We would say, then, and we believe advisedly, that there has been a more rapid and satisfactory evolution of the farm house in Michigan than has been the case in any other section of the county. But while this evolution has been rapid and the results have, on the whole, been satisfactory, there is still plenty of room for improvement, especially in the matter of equipment for convenience and sanitation in the average farm home—factors which are more to be desired than even pleasing appearance. Yet a desirable combination of comfort, convenience and appearance should be sought in planning the farm house. The need for development along these lines has been recognized by the government and the Department of Agriculture has recently been seeking for a rural architect with the proper qualifications to take the lead in government work along this line.

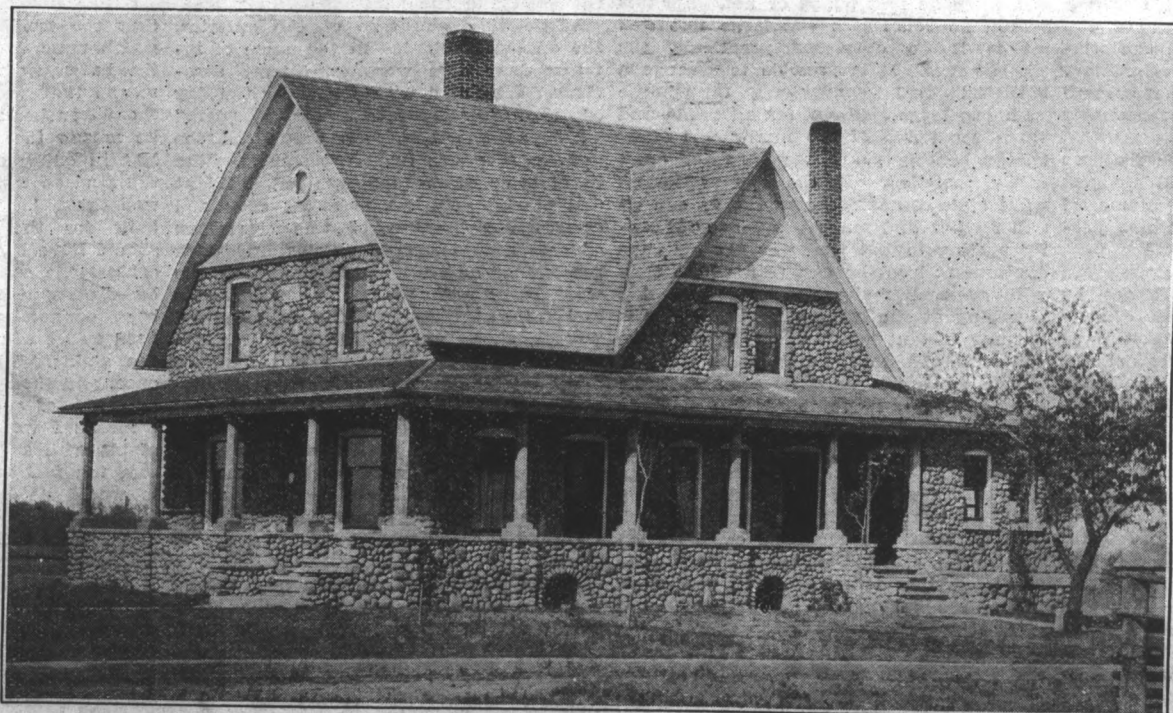
Assistance from various sources is often sought in the planning of a farm house by those who contemplate building a permanent home. Very often these requests are for specific plans instead of general suggestions. This is approaching the problem from a wrong angle. It is a far better plan to get ideas from all available sources, but the details of the plan should conform to the special needs of the family. In harmonizing the ideas thus gained and the desired features of a



A Typical Log House of Pioneer Days—Boyhood Home of Apollos Long, Eaton Co.



The Permanent Home which Followed the Log House on the Same Farm.



Modern and Attractive Farm Home of E. E. Ferris, Gratiot Co., Typical of Modern Rural Architecture.

specific plan, it will generally pay to seek professional advice from a competent architect, or at least from an experienced builder. The house which is to be used for a home is a permanent investment, and it is far more profitable to avoid mistakes in building than to save the fee for professional advice of this kind.

It is worth while to devote considerable time to thought and study in planning the house which is to be a permanent home. It is a very common thing for people to find that they have made mistakes in building which could have been avoided by greater care in studying the plans before the building was made. It is also best to have the plan which is adopted a complete one. The old custom of building a part of the permanent home with the intention of adding room later is not in accordance with the modern idea of architecture or with the planning of the home for the greatest comfort and convenience. Hence, the plan should be complete, and if necessary to bring it within the sum which one desires to put into a permanent home it is better to build on a smaller scale and yet have the home complete than to start on a more elaborate scale and be unable to complete the job at once.

After the plan is finally decided upon a draft should be made on a definite scale which the builder can follow in every detail. This will avoid misunderstandings and dissatisfaction and will be better both for the owner and the builder.

Some Desirable Features which Should be Included.

In building a permanent home on the farm there are a number of very desirable features which should, if possible, be included. Plans should be made for a supply of water in the house, both cold and hot, and provision should be made for a bathroom which can now be equipped at a moderate cost and should be considered as a necessity rather than a luxury in every permanent home. In this connection some adequate provision for sewage disposal should be made, the septic tank being the least expensive and best suited to farm conditions since it can be constructed with home labor and at small cost.

Perhaps the next in order would be a heating plant which should be installed in the basement, provided it can be afforded at all, as nothing will add so much comfort to the home at a similar cost. In addition to this the open fireplace adds to both comfort and appearance and serves a good purpose in properly ventilating the living rooms. Also an adequate lighting plant of some kind should be planned for in the future, if it cannot be installed at once. In view of the fact that we are now living in the electrical age and that the water powers of our state are being rapidly developed for the purpose of generating electricity to be distributed through the state, it is probable that electric current will be available in almost all parts of the state for lighting purposes within a few years. It would be the part of wisdom to wire new houses for electric lights since the expense of roughing in this wiring in an ordinary sized house is only about \$20 when the house is being built, and will cost many times that if done at a later period. In case electricity is not soon distributed commercially in the neighborhood, it may be desirable to install a home plant for the generation of the current at a later date, hence the wisdom of wiring the house when building. These plants are now a practical success and can be purchased at a reasonable price.

There are many other minor features of home planning which will suggest themselves to housewives as items of convenience, which space will not permit us to enumerate here.

Material.

Undoubtedly the future will see as great an evolution in the matter of material used for building farm houses as the past has seen in other features of farm homes. It is probable, however, that in the near future wood will continue to be the principal building material as it has been in the past. Gradually, however, more permanent construction will be used and cement will be more generally used either in solid or stucco plastered designs.

But even though it is not essential to here discuss the type of material used, a word with regard to its quality will not be out of place. The quality of the siding used, for instance, should be such as to insure that the paint will adhere to it permanently and thus preserve the wood and promote the good appearance

of the house. The material used in the interior should likewise be of a nature to prove permanently satisfactory. Hardwood floors for the main living rooms and well finished floors of southern pine, where these are not necessary, should be a feature of the plan in every permanent farm home, since they save much labor in the care of the house and add not a little to its appearance and comfort. The lumber in these floors should be of good quality as should also that of the interior finish. The cost of good material is a little more, but the cost of working it is less and a comparatively small increase in the investment required by the use of first-class material will be more than repaid in the added satisfaction given. Likewise the roofing material, whatever it is, should be of first-class quality and the porches and steps should be of permanent construction, preferably of concrete.

There are many other features of the farm home which could be profitably discussed did space permit. It must suffice however, to impress upon the reader that the problem is an individual one in every case, and that ideas are at a premium in this as in every other field of human endeavor. Consequently every man who is contemplating the building of a permanent home upon the farm should cultivate ideas with regard to both the general plan and the details of construction, always with a view to fitness of design to the needs of the family and the size of the investment which can be afforded.

REPAIRING AND BUILDING FOR THE FUTURE.

When repairing or building it should be done from the standpoint of 10 or 20 years or perhaps longer, as well as that of the present, and while there are many things about the future of farm houses that cannot be foreseen, it is possible to build wisely and with an eye to the future, and still save some money.

Especially where a farmer must be economical, the plans should be carefully scrutinized, and before the foundation is laid he should be sure he is getting the very best for his money now, and building a house that will take kindly to future improvements.

Beginning with the foundation, it is never well to have it low. Our ancestors wanted warm cellars, so they crowded the house close to the ground, making the cellars, dark, damp and unwholesome.

Now we appreciate sunlight and air in our basements, and they are more like first stories than cellars.

They are more easily drained, and consequently more healthful; they can be kept clean easier, and they have the merit of being more easily reached. Many of the new farm houses, where the lay of the ground permits, have wide doors to the basements opening on a level with the ground, and some are so arranged that later they can be used to store automobiles in in the winter. Though the farmers do not now own cars, they realize that the time may soon come when it will be the chapest way of getting over the ground, and while building they are arranged for the future.

Nearly every farmer knows the value of arranging the basement for a heating plant, whether he can afford to put in one when he first builds or not. For this reason he constructs one large flue and makes it do duty for practically the whole house. It is possible to arrange a beautiful and convenient farm-house with one large chimney for all needs, and when the purse of the family will allow it, the heating plant may be quickly and easily installed. If the farmer knows what style of heater he wants, he can go still farther and make provisions for easily putting in hot water or hot air conductors—at least he can plan where they will go—and make provisions for his plumbing at the same time. The day is not far distant when every farm house will have the bath, heating and lighting plant; so every new house should be planned with an eye to putting in these conveniences as cheaply as possible.

For a trifling sum any farmer can put water in his kitchen, and it is also possible to arrange a temporary heating tank for water without spending much money. Until the bathroom can be fitted up—and a room designed for this purpose should be arranged for in every new house—the temporary heater will be a great convenience. With water in the kitchen, the objection to the high porch and steps which the high foundation necessitates, is largely abolished. If the mistress of the farm house does not

have to run up and down stairs with heavy pails of water she will not say much about the high steps. Every house should be planned for the laundry, for it is certain that the time is coming when every farm house will have a laundry.

Fuel is getting more and more scarce and expensive every year, and it is safe to predict that the heater of a few years hence will be so arranged that it will not only heat the house perfectly, but will have ample facilities for doing laundry work and cooking, if the lady of the house so elects.

All over the house provision should be made for the future, but especially in the kitchen. If you cannot afford the convenient wall cupboards that are the delight of every housewife, you can at least save a space for them, and have room for a summer and winter stove.

The lady of our house says it is one of the most vexatious things in the life of any woman to want kitchen conveniences and have her wall spaces so cut up by doors and windows and chimneys and ill-arranged passage-ways and dark corners that she must walk some distance to the pantry instead of having things right at hand. Where she is forced to live in a house built many years ago, there is some excuse for such disappointment, but when the new house is built the trouble can be remedied.

A convenient pantry, even if it cannot be fitted up with all modern conveniences at first, should be planned for, and there should be ample closet and attic spaces if the purse will at all permit.

Since it doesn't cost a penny more to select a plan that will allow all conveniences, than one which is inconvenient and ill-arranged, it is the plain duty of every builder to provide for them so far as his financial ability will permit.

And I am led to believe that if there is a class of people on this old earth that does deserve to have all the modern conveniences in the house it is the man who tills the soil and makes food for the world and himself and family. I believe in the farmer and his family eating at the first table in everything and when it comes to repairing the old house, or building a new, no means should be spared to provide for comfort and convenience.

It is quite a satisfaction to know that we have labored and toiled to build a home, and it should be made all that home implies.

Illinois.

R. B. RUSHING.

VARYING TASTE IN DECORATION.

A few years ago very little thought was given to the exterior of the moderately priced house, and even much less to the interior. The planning of a house was considered more from the standpoint of convenience and economy than beauty and artistic effect. Regardless of the style of the house, each member of the family was apt to have some special idea, which he wanted carried out, and in order to adopt them the original plan was subjected to many changes. Starting in the beginning with very little attention paid to the type of its architecture, and with additions such as a corner bay window here and a tower there, the result was a mongrel type of a house that had no beauty and was oftentimes an object of horror to those sensitive to the good and the harmonious.

While this was true of the exterior, the crimes committed in the name of interior decoration were even more atrocious. We recall with a shudder the day of the over-decorated, stuffy "den," which at one time was considered the acme of elegance (save the mark!). The usual color of the den was red, brilliant and warm, and it was called cozy and comfortable because of this warmth of coloring. Heavy draperies and dark furnishings added to this warmth. Walls were hung with pipes, brasses, plaques and orinetal lanterns. Ginger jars and wooden shoes were used for match receivers, and in some instances, where great originality was striven for, a gruesome replica of the skull of poor Yorick, or some other member of the human family, grinned at one from some dark corner where it served the lowly purpose of holding tobacco. In fact, in every conceivable corner something was hung up to be ornamental regardless of its fitness.

Couch pillows of all sizes and shapes covered with all sorts of designs, such as Indian beads, canoes, beetles, and even spiders in their webs, expressed the prevailing idea of art. "Den" was an appropriate name for this sort of room—"cozy corner" a misnomer, while "cham-

ber of horrors" would have been more fitting than either.

Most of us followed this extreme of fashion. The pendulum of progress had swung too far. It had produced the grotesque. Fortunately the past few years have brought about great changes in homes, both on the exterior and the interior. Decorator and architect have done great service in educating the people up to the higher standards and much attention is devoted to harmonizing the interior decoration with the type of home always keeping in mind that the incongruous is to be avoided as the plague.

During this process of change, however, the eagerness to advance was the very thing that brought the Ornate Age upon us. The pendulum of progress had received a vigorous push and it had swung too far out of its normal arc and over-ornamentation was the result.

Elaboration both in decoration and furnishing was the fashion. Bright colored wall papers with large, bold designs were considered fashionable. No attention was paid to harmony in the treatment of walls. The desire seemed to be to have as many different colors in different rooms as possible.

These elaborate and extreme effects existed in furniture and architecture as well, and after years of massiveness and showiness the pendulum now marks the time of higher ideals in art and more cultivated taste.

The decorator who has not followed this change and who does not realize that the age of simplicity in all forms of decoration is upon us, has missed the handwriting on the wall and his success may well be questioned.

Dwellings now have a certain individual type and artistic interiors are demanded. Artistic feeling is the keynote of success now, both within and without the home.

Extreme types of decoration may have their place, but one soon tires of them, and the home must be of a type that will stand the test of time and still be beautiful.

Also the houses built today are dependent upon the skill of the decorator, both outside and inside, for their real beauty. Appropriate colors for outside painting are just as essential as the colors chosen for the wood trim or walls inside.

* * *

Interiors should be handled so as not to impart the feeling of limitation or confinement. Walls should not be treated as boundaries but as backgrounds for the furnishings (just as in a picture the background should never seem to be there). Walls should serve as a setting for the rest of the room.

This is a most important feature in decorating. Study carefully this first principle.—Reprinted from the Dutch Boy Painter Magazine published by the National Lead Company.

HOW TO KEEP WATER OUT OF BASEMENT STABLE.

Will someone please tell me how to keep water out of a basement? I have eave troughs and a good fall two ways from barn but every time it rains from the north or east my trenches are full of water. Did not put a drain from trenches as I did not want to lose the liquid manure.

Genesee Co.

SUBSCRIBER.

I take it from this inquiry of Mr. G.'s that the trenches, that is, the trenches which were dug in the first place to lay the basement wall on, are the ones he means that when there is a heavy rain these trenches are full of water. Possibly he means the gutters behind the cows. But in either case it simply means that the land on which the barn stands is not well drained. These trenches that were built for the foundation to stand on should have been drained and now if the cobblestone was put into these trenches by digging a tile drain away from the barn connecting these trenches with a good outlet will do very much in draining the stable. This ought to be done at once, and then again to prevent any great amount of water getting into the trenches I would surround the basement stable with a good tile drain. Put it off say, ten feet from the wall, and perhaps it would be better to have it six feet from the wall, entirely around the barn, and then run away to a good outlet. This will keep the land near the barn dry, and it ought to be. You won't have a good healthy stable unless you get this water drained off. If the trenches become full of water after every rain it will be impossible to have a good sanitary barn and this draining should be done as soon as possible.

COLON C. LILLIE.

Maintaining Farm Fertility--V.

MORE land in grass and other forage and fodder crops should be the slogan of every farmer. We have never given these crops and our soil a square deal. We have failed in the proper appreciation of the feeding and fertilizing value of these soil-building crops.

Many farmers prize crops that have a higher market value because their production has become a custom, looked upon as essential and fundamental in farming, rather than because there is a profit in them. On many farms grain and cultivated crops are grown at a loss when a greater acreage of grass and forage crops and the feeding of more live stock would result in greater annual returns. The growing of grass and forage crops carries with it the idea of intensive practice rather than extensive, which means better cultivation, better methods of crop rotation, continuous occupation of the soil, an increase in manurial substances and a gradual gain in productivity.

Successful and profitable crop growing requires that the rotation be so planned that the land is constantly occupied by a growing crop. This constant occupancy of the soil results in preventing losses of fertility which might occur because of washing and leaching during the fall and spring and by drying out the soils which lie bare during the hot, dry season, thus preventing the development of, or actually destroying the living bacteria, which we are beginning to recognize as an essential factor in soil fertility. Soils that are occupied by growing crops are constantly improving, because the natural agencies are more active. That is, dormant constituents and vegetable matter accumulated in the roots and stubble are broken down and changed into an available form, thus improving the soil, both in its physical and chemical qualities.

The Importance of Legumes.

It is best, whenever possible, to depend largely upon the legume crops which accumulate more or less nitrogen from the atmosphere, which with the vegetable matter, adds to the store of fertility in the soil. Clover gives a notable helpfulness in its nitrogen supply to other plants. Its 180 pounds of nitrogen in the roots and stubble of a large crop supplies enough nitrogen to grow several crops of any one of the standard farm plants. This nitrogen has been gathered from nature without the need of any artificial supply by man. The nodular growths on its roots are a center of nitrogen compounding from the atmosphere. The cost of this 180 pounds of nitrogen deposited by a large crop of clover would cost on the market \$36. Other legumes, such as

therefore indirectly supplying nitrogen for succeeding crops, which can obtain it only from soil sources, and it is practically a perennial, serving for a number of years without reseeding, and leaves the soil in better condition for other crops than it was before. Owing to its content of protein, it in many ways serves as a substitute for high-priced grain feeds, which it is generally necessary to purchase on the stock farm. All experiments unite in showing the high feeding and the high fertilizing value of alfalfa. These qualities make it especially valuable in all systems of crop growing that seek to improve the land.

Cowpeas, soy beans and the vetches are of great value in their places, but for

stimulating it to produce unprofitable yields.

In seeding clover it is usually advisable to mix timothy with it and allow the grass and clover to occupy the land two years, especially if a money crop is added to the rotation. Clover is a more active factor in soil improvement, being more quick in its returns, yet not furnishing us with a substantial base of humus for so long a period. In this way we have a place for the farm manure where it can be used for top-dressing to help grow more manurial substances to plow under instead of allowing its fertility to be sold out in a large part with the first money crop. If it is applied to the new seeding it makes a big crop of hay which, if fed on the farm, adds greatly to the supply of farm manure. If it is our real object to make grass and forage crops do their best work for us



Farm House of the Cottage Type, Home of Wm. Carson & Son, Mecosta County.

general farm crops in this latitude clover and alfalfa will furnish more feed and fertility.

Many farmers have been held up from soil improvement because red clover and alfalfa would not grow, and they have been lectured to over and over again that only these plants added nitrogen to the soil. Of course, they are the best, but, again, millions of bacteria are waiting to feed upon any old stem or root, anything organic, to make nitrogen available for another plant.

While all crops grown in rotation are not especially valuable, nearly every one possesses some characteristic which makes it highly valuable. Rye, for example, is valuable for a winter cover crop and furnishes large quantities of humus-making material to plow under in the spring. Crimson clover where it can be grown, is especially valuable because it

we must make the conditions favorable for them to make a heavy growth. The larger crops of clover and hay we harvest the more nitrogen and humus-forming materials go back to the soil in the roots and stubble of the crop. For many years it was our practice to plow under our clover sod after cutting one crop of hay, but I am beginning to see differently now.

Crop Rotation and Soil Fertility.

Crop rotation is a great aid in securing and conserving the soil fertility developed by tillage and soil-improving crops. No two plants root at the same depth. Corn is shallow rooted, wheat is deeper, and clover is still deeper rooted. Each feeds upon an area of its own. The roots of the plants feed other crops. Each crop has its peculiar way to gather nitrogen, phosphoric acid and potash. In the decay of the roots of a plant that can get potash easily, another plant that cannot so acquire it finds it prepared at hand. Clover affords the best example of helpfulness in its nitrogen supply to other plants, that do not possess the ability to obtain their nitrogen from the air. Different crops require different quantities of the materials needed for growth from the soil and air. Where potatoes take 35 pounds of potash it requires but 11 pounds of phosphoric acid, yet the wheat crop removes more phosphoric acid than potash. If potatoes follow potatoes the supply of potash will run out quickly. Rational crop rotations exhaust the soil equitably of the elements in the soil or added by manure or commercial fertilizers. Crop rotation is of great economic aid in plant food supply conservation and should have more attention from farmers than it does. In order to maintain the supply of humus and nitrogen in our soils it is absolutely necessary that we devote more attention to growing grass and forage crops and adopt a rational rotation of crops.

New York.

W. MILTON KELLY.

SPRING SOWN VETCH.

Can you give me any information concerning spring vetch for sandy soil? Muskegon Co. T. G. H.

The variety of this legume recommended for best results is known as the sand or hairy vetch. It gives best results when sown in August, but may be seeded in the spring. At the Colorado Station where sown in the spring for hay it is sown in rows and cultivated. As ordinarily sown for forage in Michigan the plant is sown in August with rye. Possibly it might be sown in the spring with the spring grain crop but we know of no cases where it has been tried in Michigan. There are also spring varieties of vetch which, however, have not given satisfactory results, except in limited areas in New England.



Farm Home of W. W. Ellis, of Kent Co., a Modern Type of Rural Architecture.

alfalfa, cowpeas, beans and vetches, may serve the two-fold purpose of a winter cover crop in gathering nitrogen as well as preventing losses of plant food from the soil.

The whole farm must be managed on a farseeing basis if the most benefit is obtained from growing these soil improving crops. It is not as simple as going out into the market and buying chemicals; it is much easier for a farmer to pay out \$2 or \$3 for nitrogen in the commercial forms, where \$1 would suffice for the same amount, besides furnishing considerable palatable and nourishing food for live stock. This kind of farming requires thorough knowledge and anyone willing to study the problem will be able to build up his soil for future crops, instead of

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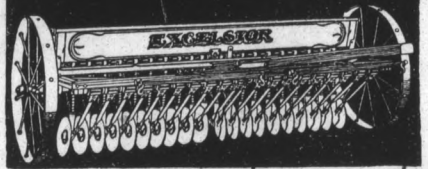
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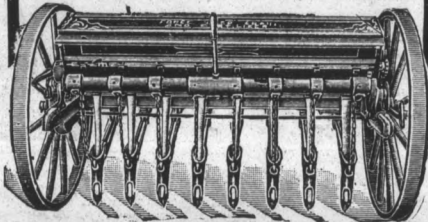
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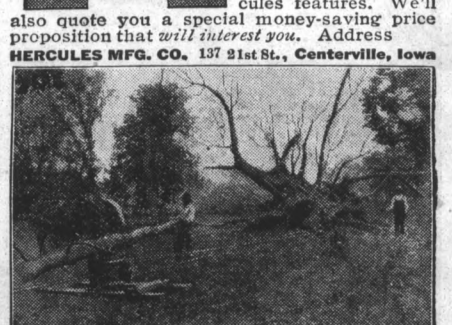
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So with your crops; they feed very much as you do. There is enough plant food in the soil for years to produce the ordinary every day crops our fathers used to raise; but along comes a good season, heat, sun and rain all working well together,—you have put in good, live seed, cultivated just right, and everything is pulling along finely for a bumper crop. But a bumper crop—a big bumper crop,—is larger than an ordinary crop and it needs more food to support it, and it wants it **now**—while it is growing. If the plant food isn't there in the soil the crop fails just for that one reason and no other. See to it that the available elements are in **your** soil this year.

A. A. C. Co. Fertilizers

supply this needed plant food.

EARLY TRUCK AND A GOOD MARKET

It goes without saying that early garden truck finds a good market. There is only one way to fertilize for early truck, and that is to use a fertilizer that is rich in available plant food. An early crop must have food when it wants it. If it is not supplied the crop will fail.

Let us send you our book on plant food. Every farmer should read this book. Write us to-day and tell your friends to do the same. We want agents in localities where we have none.

The American Agricultural Chemical Co.,
D Detroit Sales Department, Detroit, Mich.

One Dollar

Is All It Now Costs to
Have Your Seed-Grain
Cleaned and Graded



Now that farmers everywhere are cleaning and grading their Seed Grain, the question is, how to get it done best, easiest and cheapest. Here's my 1913 offer:

Send me one dollar and I will ship you, **FREIGHT PAID BY MYSELF**, this improved 1913 model Chatham Grain Grader and Cleaner with all equipment. Clean your Seed Wheat, Oats, Flax, Barley, Peas, Beans, Corn, Grass Seed, etc. Then **PLANT** those fine seed. **AFTER** you have harvested a bumper crop, pay me the balance of my low price. Not one penny need you pay, except the \$1, until next November. And by November **YOUR CHATAM WILL HAVE MORE THAN PAID ITS ENTIRE COST IN INCREASED CROPS.** Then you'll have a "Chatham" to work **FREE** for you the rest of your life.

Your Dollar Returned

If you want it. I don't want your dollar or want you to keep my "Chatham" unless it pleases you. If, after a 30-day test, you are not satisfied, return the machine at my expense and I will send back the dollar.

A Machine That Fits Your Farm

After 40 years' experience, I know every grain and noxious weed grown in America. I know the section where each one grows. I know every grain and weed that grows on your farm. Experience has shown that a Grain Grader and Cleaner should have special equipment for the particular farming section to which it goes. For example, I send an entirely different equipment of screens, riddles and gangs to Maine from what I send to California. In fact, there are scarcely 2 states in the U. S. to which I send the same equipment. Thus you get the exact and proper outfit to handle the grains and weed seed that grow on your farm. You don't have to pay for a lot of extras for which you have no use.

Extra Screens and Riddles Free

In case you want more or different screens, just write me and I will send them free. Not a penny would I ask for extra screens and riddles.

I also have a Free Service Department which will separate, clean and grade **FREE** any mixture you send in. If you've got some impurity in your



The CHATHAM
Grain Grader and Cleaner

grain that you cannot get rid of, don't get discouraged. Write me.

Handles all Small Grain and Grass Seed

My 1913 Chatham handles over 70 seed mixtures—wheat, oats, peas, beans, corn, barley, flax, clover, timothy, etc. Takes cockle, wild oats, tame oats and smut from seed wheat; any mixture from flax; buckhorn from clover; sorts corn for drop planter. Removes fowl weed seed and all sunken, cracked or sickly grains. Takes out all dust, dirt and chaff. It is also a bulky chaffer. Handles 60 bushels grain per hour. Gas power or hand power. Easiest running mill on earth.

Special Corn-Sorting Attachment

Last year I added a Corn-Sorting Attachment, which grades corn so that a round or edge drop planter drops the right number of grains in 88 out of every 100 hills (in repeated tests at State Agricultural College). Same planters, loaded with ungraded corn, make only 66 out of 100 perfect hills. In two months I shipped to Iowa farmers alone 4,000 machines with Corn-Sorting Attachments. Try my Special Corn-Sorting Attachment. It will increase your corn crop amazingly!

Postal Brings My New Book

on Seed Selection. Every chapter is highly practical and exceedingly interesting. It shows an easy, simple way to get rid of any weed on your farm; how to separate any mixture of grains—in short, how to get perfect grain for sowing, feeding or marketing. Send postal today and receive by next mail my new Book free. Address Dept. 60.

MANSON CAMPBELL CO., Detroit, Mich., Kansas City, Mo., Minneapolis, Minn.

SEED CORN

DIAMOND JOE'S BIG WHITE. Earliest Maturing Big Eared Corn in the world. Made 146 bushels per acre. It costs but 25 cents per acre for seed. Big illustrated catalog of seed corn and all kinds of Farm and Garden Seeds mailed **FREE** if you mention this paper.
RATEKIN'S SEED HOUSE, SHENANDOAH, IOWA.
Box 17 (LARGEST SEED CORN GROWERS IN THE WORLD)

FARM NOTES.

Applying Lime to Bean Ground.

I have read with much interest the articles on lime. As I have a field that I want to lime this spring, am going to sow field to beans, put lime on ahead of drill, next spring sow to oats and seed to clover and alfalfa. Is that O. K.? If not, why not? Also, where can I get the best lime for the least money, and what is the best lime? Also, I have raised red kidney beans for the last seven years. This year they were a failure; had a good stand up to the third cultivation, then they began to get black in spots in the field, dry up and disappear, all but a little stem. We called it blight. The beans are spotted, some of them. Is there any formula for treating them so that I could use them for seed this spring and be practically safe from last years experience?

Eaton Co.

H. B.

On soil that needs an application of lime there could be no better time to apply it than when preparing the ground for beans before seeding to clover after a small grain crop. The application of lime would doubtless prove beneficial to the bean crop which is a legume and requires the presence of nitrogen-fixing bacteria for best results, the same as clover or alfalfa. Then the soil would be thoroughly sweetened and a fit home for the nitrifying bacteria before the clover is sown, being in a way assurance that a good stand of clover will be secured.

Now with regard to the best kind of lime and where it can be procured. Ground limestone or marl is a very satisfactory source of lime where it can be cheaply secured, but there is such a demand for lime for agricultural purposes that one cannot always get just what he wants, consequently it may be necessary for him to use ground stone lime or hydrated lime. Last spring the writer could get nothing else and consequently used hydrated lime. The form does not make so much difference so long as the amount is properly graduated to the need of the soil where caustic lime is used.

What Ailed the Beans?

What ailed the beans is impossible to tell with any degree of accuracy from this description as to the nature of the disease which attacked the beans, but it was probably anthracnose or some one of a number of kindred fungous bean diseases. There is no thoroughly effective treatment for the seed. The best policy would be to get clean seed, if practicable, for next year's planting.

The Best Method of Applying Stable Manure.

Which do you think would be the best way to put on manure with a spreader, as a top-dressing after crops are put in, or apply as it is drawn from the stable during the winter? Do you think a manure spreader a profitable investment on its own merits, i. e., do you think one will get enough more good out of the manure to make it pay? I have from 30 to 50 head of stock and have always spread the manure by hand right from the stable. Could you compare them to a silo? I don't think a silo ever cost any man a cent, as I think he gets enough more good out of the feed for it to pay for itself. How would you apply commercial fertilizers to a corn field when you plant corn by hand? Would you think it profitable to apply fertilizer to a piece of ground that is a sandy loam soil, has a good clover sod, one crop of hay having been cut? It will also receive a dressing of manure this winter. What can be used to keep manure from heating when piled out? Some use it in the gutters.

Wexford Co.

F. B.

If it were practicable to apply all the stable manure as a top-dressing and work same into the soil when preparing a seed bed or cultivating a crop, there is little doubt but that the beneficial results would be far greater than where the manure is applied before plowing as ordinarily practiced. It is, however, not always practical to do this, and, in fact, we might say it is seldom practiced upon the average farm since this plan involves the storing of manure until the special season when it can be so applied and it involves not only considerable labor but also some unavoidable loss of plant food. For this reason the general practice of applying stable manure upon sod ground as it is made when conditions are at all favorable is probably the preferable practice for the general farmer.

The Manure Spreader a Profitable Investment.

There is no doubt in the writer's mind about the manure spreader being a profitable investment upon any farm where as much stock is kept as described in this inquiry. In the first place, it is a labor-saving implement and this saving of labor alone will soon pay the cost of the spreader, and even on the small farm it will pay good interest on the investment. But this is not the only advantage. Provided sufficient stable manure

were made upon the farm to apply say, 20 loads per acre to the sod ground plowed for spring crops each year this might represent the principal economy in the manure spreader, but this is true upon few if any farms, and there is no doubt but that better distribution of the stable manure can be secured where it is applied with the spreader than where it is spread by hand. And better distribution means that the same amount of stable manure can be made to cover a much larger area and will produce nearly as good results in the first crop where same is applied with the spreader, and this is an economic point of even greater importance than is the saving of labor.

Fertilizer Questions.

Where corn is to be planted by hand commercial fertilizer may be applied broadcast and worked into the soil when the ground is being fitted for planting. The writer has found this the most satisfactory method, even when the corn is planted with a check-row horse planter. We use a fertilizer or lime distributor for this purpose, applying from 400 to 500 lbs. per acre. Formerly a fertilizer attachment was used on the corn planter, but the fertilizer must be very dry and in the best of mechanical condition or it will bother some, and if too much is applied in the hill it is likely to injure the seed and result in a poor stand of corn. If a fertilizer distributor or drill is not available the fertilizer can be spread from a wagon by dumping the sacks and having a man spread from the rear end of the wagon or one from the rear end and one from each side while another drives. In this way the fertilizer can be distributed rapidly and fairly evenly, but it is not as desirable a job as sowing it with a distributor or drill.

It might pay to make an application of phosphoric acid and potash fertilizer to the sod ground above described, but it probably would not be profitable to use a complete fertilizer as the bacteria on the clover roots, supplemented and stimulated by the stable manure, should furnish an abundance of this most expensive of fertilizer ingredients when purchased in a commercial form. In the writer's opinion it would be better practice to apply fertilizer to the succeeding crop when the sod is plowed down.

We know of nothing which will prevent manure from heating in the pile. Ground phosphate rock or "floats" and acid phosphate may be profitably used as absorbents in the stable to save the liquid manure.

Plowing vs. Discing Corn Stubble for Oats.

In this section a good many farmers cultivate and drag corn stubble for oats. I tried same last spring as it was so late to plow ground when it got so it could be plowed on account of so much rain. The oats came up good and when about four inches high the ground got so hard they nearly stopped growing. They finally got about one foot high and headed out. I got about half a crop. The ground is hard clay. I did not work it when too wet. If I had plowed it would it have gotten so hard so quickly? Would it have done good or harm to have dragged the ground with spike-toothed drag when it commenced to get hard? How can I avoid the same trouble next spring?

Ionia Co.

A. I. B.

Very many farmers, even on clay ground, disk corn stubble as a preparation for oats, and where the land is fitted properly for the oat crop in this manner it requires just about as much time and labor as it would to plow the ground and fit it the old-fashioned way. Very often where poor success is had in fitting it in this way it is due to lack of thoroughness in getting the soil well pulverized and in a fine mechanical condition. There would be no objection to using the spike-tooth harrow on the oats when the surface of the ground is crust-covered. In fact, where the so-called dry farming is practiced, it is the usual custom to harrow the grain fields over frequently, until the grain is a foot or more high.

Potato Blight.

My son planted a piece of potatoes June 4, on heavy soil and they did not blight. I planted two days after on sandy soil and they all blighted. He planted another piece along the road about 10 days later on sandy soil and they blighted scarcely at all. I would like to have someone tell me the cause of this.

Montcalm Co.

W. L.

The nature of the soil is not a limiting factor to the spread of potato blight. The spread of late blight of potatoes depends upon the presence of the spores, the suitability of the weather conditions to spread them and the resistant qualities of the variety. It is impossible from the description given of these cases to determine the reason for the difference in the progress of the disease in different fields.

DESTROYING MUSTARD.

I have 60 acres of clay loam soil which has grown clover and timothy with some grain for the past 14 or 16 years. During the past two or three years under improper handling a large quantity of mustard has accumulated thereon, which I desire to dispose of. How is the best and cheapest way to kill this weed, so I can grow grain as well as hay?

Chippewa Co.

H. A. B.

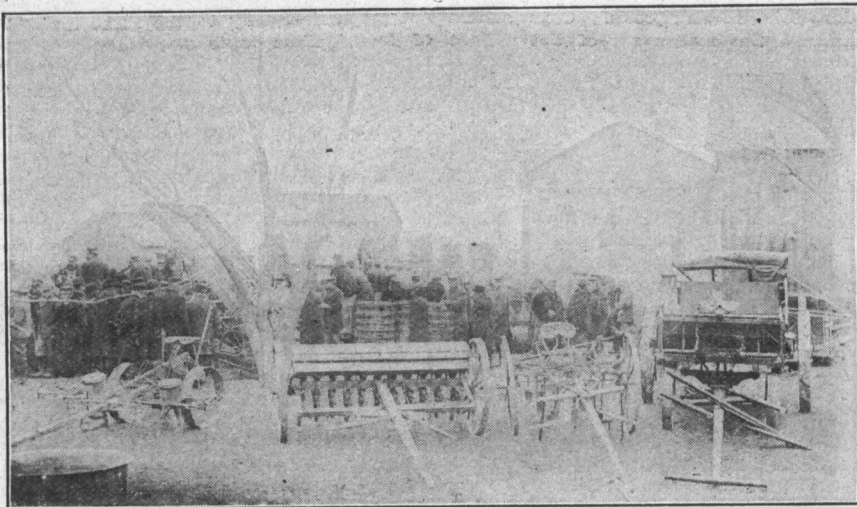
It is not such a great job to eradicate mustard from a field if you get right after it in earnest. In this case I should plow the ground next spring and plant it to corn. Plant the corn in hills so that it will row both ways so that you can give it good cultivation both ways. Keep it well cultivated and don't let any of the mustard grow. If there is occasionally a spear of mustard that comes up near the hill of corn, take it out by hand. Now I would put this field into corn again, you will probably have more trouble the second year when the old sod is turned up than you did the first, and keep it thoroughly cultivated. Or if you don't want to raise corn on it two years put in a crop of beans or any other hoed crop so that you give it good thorough cultivation. After having a hoed crop two years in succession and giving good thorough cultivation you can seed this field to wheat. If you put in beans the second year and can get them in early enough they will come off in time so that you can put the field into wheat. Then seed it to clover. Some mustard may come up in the clover but if this is cut early, by the last of June, the mustard is not allowed to go to seed. Then if you cut a

only know, but practice, the "Golden Rule."

Let us endeavor to hire the best we possibly can, and if we find, after searching diligently for the good in them, they are worthy to dwell on the land with which God has intrusted us, let us treat them as members of our household. Let us give them privileges, besides paying them all they are worth, instead of what may be rightfully termed the unjust going wages. Some men are worth \$35 per month, while others are not worth \$15. We should give to our tenant men all the above, besides furnish them with good, comfortable houses. Also supply them with some wholesome literature, including the grand old Michigan Farmer. If possible we should practice the kind of farming which gives employment to our help through the year. When we let a good man go in the fall, we lose our grip on him. He may promise to return in the spring; but if he gets a suitable job during that winter, he is not liable to return. And besides, a summer man costs nearly as much as a year man.

To keep hired men contented, and at their best, we must furnish them with the best teams, harnesses and tools we possibly can. And also those we board must be furnished with plenty of well prepared, wholesome food. They should have pleasant, comfortable rooms. An underfed, dissatisfied person will not show great interest in his work.

Places of amusement, etc., may be the main reason for people drifting to our cities, but not the only ones. They either get higher wages, or else work fewer



Farm Machinery Offered at Auction Should be in Good Repair.

second crop for seed, or if any mustard should come up mow all of this and I think you will find that you will have the mustard pretty well subdued. Alfalfa is a splendid crop to eradicate all kinds of weeds. There isn't any kind of weed that I know of that will stand it in an alfalfa field where this crop is cut three times during the season for hay. This gets the most of the foul weeds that grow on the farm.

COLON C. LILLIE.

THE FARM LABOR PROBLEM.

My solution of this tremendous problem is this—use intelligently, and to best advantage, the material which we have at hand. But, you say, "We haven't the material." I know that we have, or might have, if we were not so foolish as to let it slip to our towns and cities. If foreign labor must be employed, let it be in our cities and other places, where a master can preside over them with a "big stick."

We must necessarily be in sympathy with our help. We should have their confidence in order that we may obtain and retain competent employees. We are too often not "pennywise and pound foolish," but "ounce wise and ton foolish."

Some of us succeed in getting suitable help, why not all, or at least others? The fault as often lies with us as with the help. Most of the farmers and their wives who have worked by the week, month or year, have no trouble getting good help.

For many years, before I farmed for myself, I traveled extensively, and followed farming as an occupation, and I know from experience that there is as much difference in farmers themselves as there is in hired help. I have worked for some of the best farmers in the land; also, for short periods of time, for some of the poorest. If we wish to check this drift of humanity toward our towns and cities, we must be men in the broadest sense of the term. We must not

hours; sometimes both. To overcome these difficulties we must adjust ourselves to circumstances. We must hold out greater inducements to our young people to stay with us.

Why not make home life for our children so pleasant that they may be prepared to resist the often dangerous allurements of the cities? In the first place, let us give them the very best education we can afford. Also encourage and assist your boys and girls to beautify the home. They will take interest in the work, if you will give them an interest, financially. Why not give your girls a fancy breed of chickens, ducks or geese; your boys some pure-bred sheep or swine, etc., teaching them how to properly care for them, how to buy and sell advantageously, charging them market price for the feed you may furnish; but allowing them the revenue from them, yet encouraging them to make proper use of the money so obtained.

Parents give the best of all of God's earthly gifts—your boys and girls the chance to which they are justly entitled and they will not desert you for the uncertainties of the cities, even though laboring days may be shorter and wages higher. Instead, they will prove to be a staff and a comfort to you now, and during your old age; a blessing to you, your neighbors and their posterity.

New York.

W. D. KORB.

SOME SUGGESTIONS.

I heard one farmer tell another that if he ever buried his potatoes again, that he had learned better than to put straw under the pile and pour the tubers on top of it. I know that we have never done that, always putting the straw on after the potatoes were all in the pile and rounded up ready for the dirt. It seems that the straw under the pile does not leave any circulation and will not allow what moisture naturally would collect, to have a chance to escape. The result is rotten potatoes.

RAISE MORE CORN

EMERSON CORN PLANTERS

PLANT MORE ACCURATELY

THE EMERSON Edge Drop Planter shows by actual comparative tests that it has a more accurate drop than any other. This means even stands, no "skips", more corn.

The reason is because the EMERSON patented Seed Box and Plates are different. The plates are larger in diameter than others, and allow ample time for corn to enter the cell, no matter how much the corn varies in size or how fast you drive. You can plant more acres per day with the EMERSON, because the Emerson is a very light draft planter. It is easy to get an even stand and accurately checked field with the EMERSON.

Open Center Wheels

of the EMERSON pack the dirt firmly around the corn, but not over it. This leaves the top ground loose for easier and earlier growth!

Plates can be changed for greater or fewer grains per hill without removing corn from box. Works automatically as a hill or drill drop. Foot lever enables operator to change depth of runners instantly, so that in going over dead furrows, ridges, etc., the depth of planting

can be made absolutely uniform, insuring even germination and growth.

Patent Automatic Wire Doffer throws the wire automatically in turning around, so that driver can devote his entire attention to team at end of rows.

EMERSON Variable Drop Planters will vary the drop while driving, so you can drop 3 or 4 grains in rich soil and 2 or 3 in lighter soil if you wish, insuring maximum crops.

Our Free Planter Book

Illustrates and describes fully the many superior advantages of the EMERSON Edge Drop Corn Planter, the EMERSON Variable Drop Corn Planter, the EMERSON Planter for Corn, Kaffir Corn and Milo Maize, the EMERSON Planter for Cotton, Kaffir Corn, Milo Maize and Sorghum, the EMERSON 3-Row Drill Planter. All of these Planters are backed by the 60-year-old EMERSON reputation for highest quality. It pays to get the best. Don't wait until the last minute. Drop us a postal NOW for the EMERSON catalog on any farm machine you want, then you will have plenty of time to investigate fully and make sure of getting the best.

EMERSON-BRANTINGHAM IMPLEMENT COMPANY

788 Iron Street,

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Largest Line of Farm Machinery in The World.

Plows, Harrows, Pulverizers, Listers, Spreaders, Planters, Drills, Cultivators, Mowers, Hay Tools, Baling Presses, Corn Shellers, Gas Engines, Farm Tractors, Steam Traction Engines, Threshing Machines, Road Rollers, Wagons and Vehicles.

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Highest quality material and a half century of experience enable us to combine lightness with strength and simplicity in

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Every part is Johnston quality. Adjustments quickly and easily made. Steel frames, dustproof roller bearings, case hardened wrist pins, perfect

gears. Made in different styles and sizes for light and heavy work, on large and small farms. Thousands of owners say of our Mowers:

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Never Clogs.
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Solid Bottom.

Light and
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Spreads all
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Not a mere unloader—does not dump in piles. The only spreader with double beaters and revolving distributing paddles, which cut the manure into shreds and spread it evenly over three full rows—5 to 7 feet. No choking. No bunching. Low-down. Easy to load. Tracks with standard wagon. Easy haul for double team. Solid bottom which never warps, breaks or wears out. No cog or bevel gears. Only perfect endless conveyor—cannot slip. All power direct from rear axle. Only two levers to operate. Strong metal wheels. Absolutely necessary for every grain and fruit farmer.

Write for New Catalog. Shows pictures and describes in detail.

New Idea Spreader Co., 116 Sycamore St., Coldwater, Ohio

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So great was the demand, I simply had to! But this may be your last chance to get free—absolutely free—10 lbs. of this wonderful conditioner. Write for your 10 lbs. today. Needn't buy—just try—

Ringmaster Stock Tonic

For All Kinds of Stock. A Conditioner, Blood Purifier and Worm Exterminator of Unusual Merit. Saves Hogs from Cholera and is a Preventive of All Animal Diseases

I don't care what experience you've had with other conditioners. I tell you as man to man that here is ONE PRODUCT so far AHEAD of anything else now on the market that there's utterly no comparison.

And to PROVE it, I will send you 10 pounds without charging you a penny. I don't ask you to buy it. I don't ask you to buy any more like it. I merely ask that you place it before your wormiest, runtiest, skinniest hogs, sheep or cattle, or before animals you think in the pink of condition!

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And afterwards, TELL YOUR NEIGHBORS WHAT IT DID! That is the ONLY STRING tied to this offer.

Ringmaster Stock Food expels worms and parasites and keeps them out. It tones up the digestive apparatus and other vital organs. It adds weight—sickens coats—purifies blood—increases

milk yield—stimulates vitality and keeps disease and pestilence of all kinds away from stock, young and old. Not a single case of cholera reported among our feeders this year.

Would I make this FREE 10-pound offer if I didn't know the merit of this conditioner—know what it would do—and what all the others would do, too? Well, hardly!

And would such well-known feeders as these listed be using Ringmaster if it didn't PAY?

Supposing you got rid of only one nasty case of worms, wouldn't that well hog alone pay you handsomely for your trouble?

Send for your 10 pounds at once. No obligation—no charge—no expense to you except a few cents for parcel post. (Consult diagram for rate or ask your postmaster), and send stamps.

Also FREE

With the 10 pounds we will send you "Champions and Grand Champions"—a wonderful series of pictures of animals fed on Ringmaster Stock Food.

Hundreds of stock raisers told me at the last International Stock Show at Chicago that this is the greatest series of pictures they ever saw. Send for it at once.

We have only 1,000 books and pails to give away. First come, first served. Write today—now—when it's fresh in your mind. In writing, be sure and tell me number and kind of stock you own.

RINGMASTER STOCK FOOD CO. Dept. 25 Cleveland, O. (11)

Wintering The Colts.

Don't slight a colt the first winter of his life for the future value of the young animal will be governed largely by how well he gets through his first winter. Remember that the colt of today is the horse of tomorrow and that he should be given a fair chance to develop into the horse his breeding intended him to be. Therefore, as this is the crucial period in his making, he should receive the attention he properly deserves. If he is badly cared for at this season and comes out in the spring poor and long-haired, he will be so stunted that he will never get over it, no matter how well he may be cared for later.

It pays to keep the colt in a thrifty, growing condition every day during his first winter. Feed liberally; it is costly economy to stunt the colt for lack of feed. Plenty of bone and muscle-building feed is what he requires. Taking it for granted that he was taught to eat grain and hay freely before being weaned, as he should have been, he will now consume large quantities of good clover hay and oats if these are put before him. Bright, clean timothy in small quantities is good for colts, but good clover or alfalfa is to be preferred because these are richer in protein, then they are more easily masticated and digested. Never feed musty hay of any kind to a colt. He may be given all the hay he will eat without gorging himself.

Oats and bran mixed, with a small amount of corn, makes the best grain ration for growing colts. Oats should constitute the main part of the ration; all horsemen agree that this is the premier feed for horses of all ages. When the colt is thin-coated and inclined to suffer from the cold, more corn and bran are needed in the ration than otherwise. All corn should be ground, or at least shelled; the teeth of the young colt are not strong enough to eat much ear corn. The size of the ration always depends upon the size and condition of the colt. But it may be said that when the young animal is getting the proper amount of exercise he may be given at regular meals about all he will eat up clean. Towards spring, when the time for shedding the coat approaches, add a little oil meal to the colt's grain; this will hasten the shedding process materially. And if carrots or other roots are available, give him a feed of these occasionally; they are excellent in preventing a wormy condition.

The colt should be allowed all the pure water he wants. Icy water is not good, as he will not drink a sufficient quantity for the needs of his body. Either have the water in the stable where the colt help himself as he likes or pump a fresh supply just before he is led to the tank, then he will get it at the temperature at which it comes from the well. Keep a piece of rock salt in each stall or else give a pinch of common salt in the grain feed two or three times a week.

Regular exercise is very essential for the colt. Heavy feeding, with close confinement, is pretty sure to harm the youngster permanently. He should have the run of a pasture or large lot every day except in very severe weather. Even then he should be kept outdoors for two or three hours if rain or snow is not falling.

Teach the colt to stand tied part of the time so that he will come to know what the halter is for. Take the time to lead him to water occasionally. This will accustom him to being handled and a friendly feeling will be established which will prove of great help when the time comes to break him to harness.

Care must be taken at this season that the colt does not become lousy, for lice consume colt flesh very rapidly. In many cases, if the owner of a good colt, which is not thriving as well as his feed and management warrant, will make a close examination he will discover that the young animal is literally being eaten up by lice. Most of the lice powders on the market will prove very efficient if used frequently, or one of the coal tar dip preparations may be applied. Some efficient treatment should be administered once a week.

When the feed is not right, and sometimes when it is, some of the colts will become afflicted with worms. In mild cases of this kind, we have always secured good results by feeding raw potatoes in the grain ration, with an occasional feed of tobacco leaves.

The colt's feet require some attention at this season. An uneven growth of the

feet at this period of the colt's life will often result in misshapen bones and joints that will prove to be permanent injuries. If the colt will let you handle him at all it is easy to keep the feet correctly proportioned with nippers and a rasp; and if you can't do this work yourself, obtain the services of someone who can, for it may mean a difference of many dollars in the value of the animal later in life. The farmer who is willing to spend some time and money on the care of his young colts can develop them into valuable animals, while he who neglects his colts will never be overrun by buyers for his second-rate horses.

Indiana.

W. F. PURDUE.

DEVELOPING PURE-BRED DRAFTERS.

One of the most practical talks given at the recent meeting of the Michigan Horse Breeders' Association was by Mr. Jacob DeGeus, of which the following is a summary:

"Some think there is a trick in breeding pure-bred horses but there is not. Such horses have good characteristics and tendencies bred right into them. We must know the constitution and characteristics of each individual before we can know how to feed each horse most successfully. A vast amount of difference may exist between two horses which are of the same color, same weight and same disposition. They will not respond equally to the same amount of food. Thus it is necessary for the horseman to study his individual horses, for it will not do to dish out the same amount of feed to each animal.

"Rather underfeed the horse than overfeed him. More horses are killed by overfeeding than by underfeeding. This especially is true when too much roughage is fed the horse. Excessive amounts of roughage in the food tends to develop large legs so as to sustain the added weight of the body.

"One of the prime requisites of insuring a good colt is to have the stall nice and clean before the mare foals. This would eliminate a great many of the navel troubles which are now so common in colts.

"See to it that the colt is getting enough milk from his mother and if this is not sufficient to maintain a good healthy, vigorous growth then some cows' milk should be given. This milk should be whole and not skim-milk as is recommended by some colt raisers. When the colt is old enough to eat oats get him to eating them by first soaking the oats in milk, still warm as it comes from the cow.

"From this time on the young animal should have food which is easily digested, being careful not to overfeed. In the way of grain, bran and oats may be given but corn should never be fed to a colt before it is one year old. The food should be such that the period of growth should be undisturbed and continuous. Bran is used more as a cathartic than in the sense of a food.

"After the colt has attained the age of one year, it may be fed a grain mixture of one-third corn and two-thirds oats. See to it that the horse gets plenty of exercise for this will develop good circulation and insure rapid growth. In feeding, give just as much grain as the horse will clean up and leave him hunting in the manger for the last kernel."

ENSILAGE FOR HORSES.

I wish to thank Mr. E. M. Moore, of Oakland county, for expressing his views in your valuable paper in regard to feeding ensilage to horses. They are my views exactly upon the subject, as I have been feeding ensilage to horses for the past few years, including stallions, brood mares, and colts. But when I speak of ensilage for horses I mean ensilage made from well-matured corn as it does not contain so much acid as that made from green corn.

I have had four state speakers call at my barn to look at my stallions to see their condition after being fed on ensilage for three solid years. They all confessed that ensilage was good for them, although contrary to their former views and belief.

Injury to horses from feeding silage is due to sour or moldy ensilage or poor judgment in feeding.

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CLEAN DRINKING WATER FOR SHEEP.

There is probably no article in the daily ration of sheep more important and yet more frequently neglected than clean drinking water. All kinds of animals require a certain amount of water daily to assist digestion and promote good health. On the farm where an inexhaustible source is near at hand there is no reason why the flock should not have an abundant supply at all times. It is not an uncommon occurrence on many farms where sheep are maintained to find them compelled to drink from stagnant pools and unclean watering troughs. Sheep are particularly susceptible to infection of disease through drinking unclean water. The flock owner who allows his sheep to drink from shallow depressions where surface water, stands or from unclean watering troughs is running a great chance of introducing into his flock internal parasites which will claim a number of valuable animals if not ultimately infest the whole flock.

While the temperature prevails below the freezing point there is not the danger of parasitic infection of the flock through drinking unclean water as during warm weather. The great danger, however, in winter comes when the temperature rises and surface thawing begins. The gradual leaching of accumulated surface filth toward shallow depressions in the barnyard always carries along with it millions of minute disease germs that while living in the inert stage as soon as brought under favorable conditions immediately begin to

controlled by an air float. An inch pipe conductor can be laid under ground and the sheep trough located in a convenient place in the sheep barn. The small drinking trough has the advantage of being easily cleaned and the water is always fresh.

Sheep, to do their best, should have water constantly before them so that they may drink whenever so inclined.

Shilawassee Co. LEO C. REYNOLDS.

PROGRESS THE SHIBBOLETH OF THE LIVE STOCK MAN.

The onward march of progress is finding its way to all departments of industry and the farmer should be alert to claim his share and thus better his condition. Recent statistics show stock production falling to keep pace with our population in the United States. Also that prices of farm produce have risen along with land and practically all food products. Our increasing population and the demand for greater luxury has brought forth a condition in rural affairs which deserves careful study. The fact that live stock is not increasing normally is most lamentable and certainly regrettable from an economic standpoint. Now that prices of meat and butter have reached a high point, the stockman should be in a position to realize on the shortage. In the face of this, however, many cattle producers are selling their stock simply because the market is good. Like killing the goose that laid the golden egg, their policy is short-sighted. To turn rough, cheap forage into a finished product, as butter, beef, pork, or mut-



"The Right Kind of Farm Team," says their Owner, C. H. Barton, of Eaton Co.

grow and multiply. Sheep that are deprived of an adequate supply of clean drinking water will drink from these shallow depressions of accumulated surface water, consequently take into their system a large amount of organic matter in which millions of deleterious disease germs are embodied. No matter how strong and healthy the flock may be it cannot withstand abuse of this nature and heavy loss is sure to follow.

Aside from the deleterious influence unclean water has upon the physical condition of the ewe flock there is the immeasurable impairment of the vitality of the unborn young that must receive its supply of nourishment through the system of the mother. All the nourishment supplied the fetus during its various stages of development is carried in chemical conjunction with water. As a very large portion of flesh and bone during the early stages of development contains a high per cent of water it is obvious that unless the supply is clean and wholesome healthy growth cannot progress. There is little question but what an immeasurable portion of weakness manifest in lambs at birth is traceable to the effect of unclean water during the early stages of gestation. All impurities of foods taken into the animal system must in a measure pass into the blood and ultimately into the system of the unborn young. Therefore the flock owner who desires to promote healthy, vigorous growth in the unborn lamb crop should not lose sight of the importance of furnishing the pregnant ewes with clean drinking water during the winter months.

For sheep a small drinking trough is preferable to a large one. Where a water level can be secured from a large trough used for other stock I have found this an excellent method. My plan is, to use a small trough holding about three gallons of water so placed on a level with a large trough where the water is

ton, means economy, not only in the use of land but also a wise principle for the permanent welfare of a community. A people who turn out a finished product enjoy the benefits of all its stages of manufacture.

With high-priced hay and stock feeds, the cost of producing live stock has increased but with the use of the silo preserving forage in its best condition and rendering it a succulent, nutritious food through all seasons of the year, we have a means of greatly lowering the cost of production. Corn silage can be produced on the farm at a cost of \$2 per ton, including all expense, interest on money invested, taxes, etc., and it can be turned to a good value at from \$7 to \$8 per ton when fed to dairy or beef animals. The use of the silo for horse feeding and sheep feeding is taking a most important part in these industries. Recently one of the largest importing establishments in the middle west erected a large silo and are now feeding silage to their 2,000 horses. Some of the biggest sheep feeders are using silage and find it a most economic food. With this new equipment for canning what is usually wasted, we will be able to cope with new conditions. Worn land can be brought back to the richest producing soil, for by keeping stock and utilizing the roughage on the farm, the soil will be built up. As improved machinery, the science of spraying, improved market conditions and methods of transportation have come, so will follow improvements which will better our condition and make life easier and happier. To be alive, however, to these new interests, and to take advantage of them means progress and we must be ever alert to search for improvements and economic principles which will assist us in our work. We are accused of being too progressive, too anxious to take up with new things, but this is not true. We cannot be too progressive. The farmer

(Continued on page 252).

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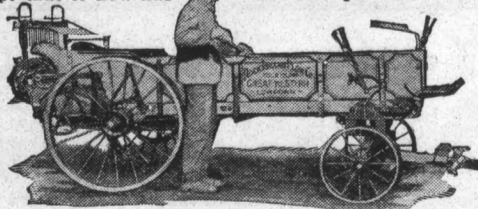
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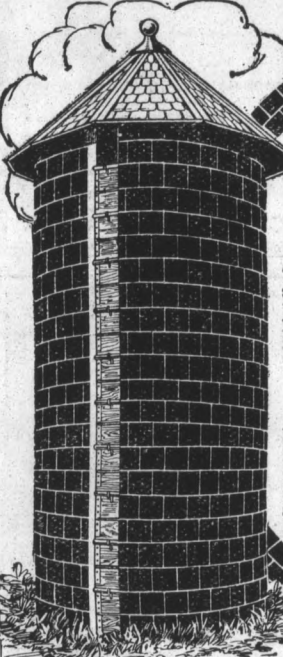
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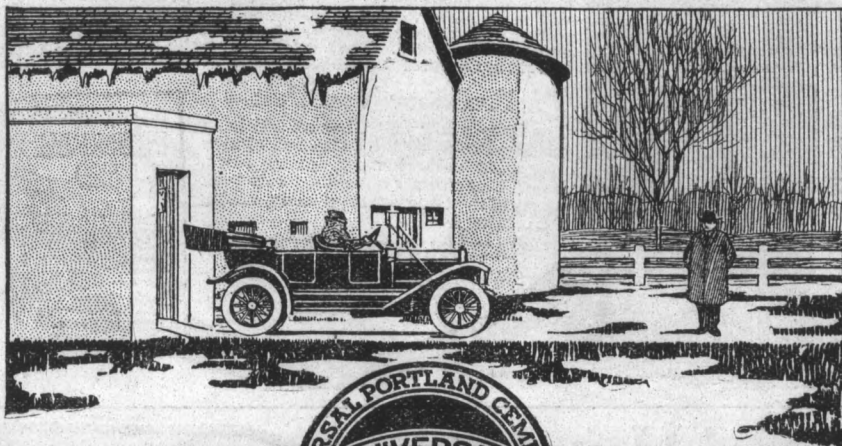
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THE ECONOMY OF SILAGE AND ALFALFA FOR THE DAIRY COW.

We should recognize the dairy cow as a machine, said Prof. G. M. Brown, of the Agricultural College, in the introduction of an able address on the above subject of the recent state dairymen's meeting. Now that scientific research gives us a knowledge of food values and energy we are able to determine just what part of the food given the dairy cow is used for the manufacture of products and what she requires for the upkeep of the body, and the amount of food going into the milk of the average well-fed cow has been determined to be 30 per cent of the energy of the food. A real good steam engine does not use more than 20 per cent of the energy in the fuel burned, so that the cow is more efficient than the steam horse.

But while the cow is to be considered a machine it has been found impossible to make milk mechanically. The chemist and biologist are able to tell the many different things of which milk is composed, but should they attempt to put these different materials together for the purpose of getting milk they will fail.

Prof. Brown expressed it as his belief that the man was the big thing when efficiency in the dairy is considered. A good man with a poor cow, he believed, would ultimately attain a higher success than would a poor dairyman with a good cow. The good dairyman would improve his animals and his land to where it would pay while the careless and ignorant man would allow his stock and farm to decline.

In this day when feeding is being done more carefully by the progressive dairymen there are certain things about a feed that men wish to know: They wish to be informed of the nutrients it contains and in what quantity and they want to know if it is appetizing and whether it will make an economical feed or not. Of the nutrients they are concerned about the protein content since it is this element that costs most and yet is required in its proportionate quantity to give maximum results. Carbohydrates and fats are also required for producing energy and heat, and dry matter is present to satisfy the appetite of the animal.

Generally speaking, the more roughage we can feed an animal the more economical will be her feed bill. The reason for this lies largely in the fact that roughage can almost invariably be produced by the dairyman himself while the concentrates are often imported, or are produced at such high cost that they cannot compete with such roughage feeds as silage, alfalfa, clover, etc. It is wise, then, to plan for a liberal supply of roughage and one can with a little care, grow crops that will take the place of a very large portion of the costly concentrates. According to the latest standards of feeding, a feed consisting of 40 lbs. of silage and 15 lbs. of alfalfa hay will make a balanced ration for the dairy cow so far as the quantity of each of the essential nutrients is concerned.

At this point the speaker referred the audience to tables he had prepared showing the change in feeding standards and the feeds required to meet the needs of each. He pointed out that a tendency exists among dairymen of this country to feed the wider ration to the milch cow and in harmony with this tendency Prof. Hecker has suggested a standard with a ratio of 1:7.2 instead of the Wolff-Lehmann standard with a ratio of 1:4.5. According to the latter standard it would require 24.2 lbs. of alfalfa hay to furnish the amount of protein required by an average dairy cow, 37.5 lbs. to supply the carbohydrates and 96.6 lbs. to produce the fats. According to Haecker's standard 20 lbs. 34.3 lbs. and 64 lbs. would be required to furnish the protein carbohydrates and fats respectively. The figures for clover hay are 50.7, 37.5 and 48.2 for Wolff-Lehmann standard and 29, 36.80 and 35.50 respectively for Haecker's standard. Of silage would be required about 257.5 lbs., 100 lbs. and 124.2 lbs. respectively.

Prof. Brown declared that while it was possible to provide a balanced ration by the use of roughage only, yet because of the energy required to digest so large a bulk of feed the practice was not to be

commended. For example, green grass and ensilage are easily digested, while corn fodder, straw and similar feeds are difficult to digest. It requires from 30 to 50 per cent of energy furnished by corn fodder to digest it and from 50 to 70 per cent of that of straw, so that little remains for other uses by the animal; whereas, grass only requires from five to 10 per cent of its own energy to properly assimilate it. This explains why succulent feeds should be used and also why a portion of the dairy cow's ration should be made up of concentrates, because it reduces the amount of dry matter that needs to be handled by the digestive system of the cow in order to secure the necessary amount of food nutrients for a maximum production.

The next point made was that liberal feeding should be practiced. A cow must first satisfy the needs of her own body before milk is secreted and it has been calculated that 43 per cent of the food used by an average dairy cow is required to maintain her body. It is reasonable, therefore, to conclude that the maximum profits will result only when the cow is fed all the appetizing food she can digest and assimilate and remain in a healthy condition.

The speaker then compared alfalfa with other feeds, figuring on a yield of four tons of alfalfa hay per acre. This is a very conservative average according to many of those who have had experience with this crop. To provide the nutrients found in four tons of alfalfa hay would require 4.3 tons of clover hay. This would mean that it is necessary to grow double the average clover crop in order to equal the other. When compared with timothy hay it is found that it would require 4.16 tons to give the amount of dry matter in the four tons of alfalfa; 15 tons of timothy hay to provide the amount of protein; 3.8 tons to furnish the amount of carbohydrates; and about three tons to supply the fats. Since protein is the expensive element in our feeds it is readily seen that timothy is not an economical crop to grow for the dairy farmer as compared with alfalfa.

He next compared the alfalfa hay with oats. To produce the necessary amount of dry matter it would require 4.9 tons of oats, which would equal a yield of 255 bushels per acre; to produce the same amount of protein it would require 4.7 tons of oats, or 294 bushels per acre; to supply the carbohydrates would require 73.2 tons of oats or just 200 bushels per acre; and to supply the fat would require .85 of a ton, or 53 bushels per acre. As compared with bran, to supply the amount of dry matter in four tons of alfalfa hay 74.15 tons of bran are needed; to supply the protein would require 3.5 tons; the carbohydrates 3.8 tons; and the fats 1.4 tons of bran. When compared with cottonseed meal analyses show that it would take 3.9 tons of this meal to supply the dry matter contained in a four-ton quantity of alfalfa; 1.1 tons of meal to supply the carbohydrates; and .35 of a ton to supply the fats in the alfalfa. It is therefore seen from these comparisons that an ordinary alfalfa crop is one of the most economic sources of feed for the dairy herd.

The last argument made by the Professor was for ensiling corn. He showed that when a corn crop that would yield 50 bushels of ears per acre and produce about 12 tons of ensilage, is ensiled, that the amount of dry matter produced would equal the dry matter in 3.9 tons of corn meal or 3.5 tons of gluten meal; that the amount of protein contained in the ensilage would equal that in 2.75 tons of corn meal, or .56 of a ton of gluten meal; that the amount of carbohydrates in the ensilage would equal the amount in 4.96 tons of corn meal or four tons of gluten meal, and that the amount of fats contained in the ensilage would equal the fats in 2.4 tons of corn meal and in 1.37 tons of gluten meal. Thus to make available the nutrients produced by the corn plant in the most economic manner means that the silo must be employed.

The Banquet.

In addition to the program, a banquet was held on Thursday evening, February 6, in the large dining-room of the Hotel Fordney, West Bay City. Mr. N. P. Hull presided as toastmaster, and the following persons responded: Ex-Gov. Fred. M. Warner; Mr. Tracy, secretary Saginaw Board of Trade; Mr. Floyd W. Robison; Mr. Vandenboom; Mr. Rawl, Chief of Dairy Division, Washington, D. C.; and Mr. L. C. Smith, of Boston, Mass.

The address of Mr. Tracy was peculiarly interesting. He took for his theme (Continued on page 222).

SILO AND OTHER DAIRY QUESTIONS.

Could you give me some kind of an estimate of how much more silage there would be in the last half of a silo 10x30 ft.? It settled three doors, 7½ ft., then I have fed 4½ doors. I would call it fairly well tramped; two were in the silo all the while but it was filled in five hours. Would tar or raw linseed oil be the best for coating on the inside of silo? My cows don't seem to want clover hay when I feed lots of silage. Wouldn't it be better to feed a little less silage and have them eat more clover hay? I feed 2 lbs. of cottonseed meal and the rest ground oats and bran.

Saginaw Co.

F. B.

I cannot tell you very accurately how much more the silage will weigh in the bottom of the silo than it will up towards the top. There is no question but what it is packed firmer together from its own weight at the bottom of the silo, and being more compact of course a cubic foot of it would weigh more. On the average it is estimated that ensilage in a silo will average 40 pounds to the cubic foot. I presume if the average for the entire silo was 40 pounds to the cubic foot that the bottom half of the silo would average somewhere like 50 pounds to the cubic foot. This is a mere guess on my part.

It does not do very much good to put tar or oil on the inside of a stave silo. If the silo is made out of good lumber there is no use putting a coat on the inside. That idea has been practically given up. Of course, if the silo is made out of cement blocks or grout or if it is a tile silo then it should be plastered on the inside with rich portland cement so as to make it air and water tight, but you need no coating on the staves.

If the cows do not seem to relish the clover hay when they are fed corn silage I should be suspicious that there is something the matter with the clover hay. Probably it wasn't cut green enough; you waited until it got too ripe. This takes the nice flavor and aroma out of clover hay and cattle have to be urged to eat it if they can get something else. In this case I would not feed excessively of ensilage and would try and get them to eat a good fair ration of clover hay. It would be better for them, and you have the clover hay and want to get your money out of it. So I think your idea would be correct, to feed only a good liberal ration of corn silage twice a day and then encourage them to eat a good feed of clover hay.

Your grain ration with your roughage is a splendid ration. Two pounds of cottonseed meal per cow is a sufficient amount, and then the ground oats and bran, mixed equal parts by weight, and feed a sufficient amount of this, taking into consideration the cottonseed meal, to make a pound of grain a day for every pound of butter-fat which the cow produced in a week.

BEAN PODS AS PRINCIPAL ROUGHAGE WITH CORN SILAGE.

Will you please tell me what grain to feed? I am feeding silage which had about 30 bu. of corn to the acre and bean pods for roughage. Cottonseed meal costs \$33 per ton, gluten meal, \$28, corn 50c per bu., oats 45c per bu., buckwheat bran and middlings together, \$15 per ton. I have clover hay, but I have all the bean pods they can eat from now until spring.

Arenac Co.

C. C.

Where one has an abundance of bean pods or, in fact, any one particular kind of forage, it is good business management to try and work this off as much as possible. That is the only way you can get anything out of the bean pods, is to feed them. And yet, I wouldn't want to depend upon bean pods entirely for the roughage for the cows, and I think it would pay you to put in a small feed of hay. They will eat almost as many bean pods as they will without the hay, making bean pods the principal part of the dry roughage, and then give what silage they will eat up clean. This should give you a good basis ration. For grain I would feed all of the buckwheat bran and middlings at \$15 per ton that I thought was profitable. I would also put in a little corn meal into this ration and also make a portion of it oats. I would suggest that you mix the grain in proportion of 200 lbs. of buckwheat bran and middlings, 100 lbs. of corn meal, and 50 lbs. of oats, and I believe that this will make a pretty good ration. You may find that it would pay you to put in the place of the corn meal, gluten feed, which will give you a little larger per cent of protein. You can tell by trying this. Then if you feed the cows as many pounds of grain per day as they produce pounds of butter-fat in a week you can expect them to do their best.

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When you receive our catalog you can quickly decide which size New Butterfly Separator you want to try 30 days at our risk. Send only \$2.00 with your order. We will gladly ship any machine we make—large or small—with this understanding, that you are to use it on your farm 30 days at our risk. If at the end of this trial you are not fully satisfied—if you are not convinced beyond all doubt that the New Butterfly Separator is the best separator you can buy even at twice the price we ask, simply return it to us at our expense and we will refund every penny you have paid including the freight charges both ways. YOU DON'T RISK A SINGLE PENNY by accepting this offer. You take no chance whatever.

Send the Coupon Today

Just fill out the coupon at the right and take advantage of this remarkable offer at once. Never before have you had such an opportunity—perhaps never again will it be so easy for you to get one of these big, fine, labor-saving, money-making machines. When our 1913 stock is sold this offer must be withdrawn. You should act quickly. Send the coupon NOW and get our big, FREE Catalog Folder, printed in colors, with astonishingly low factory-to-farm prices. Address

ALBAUGH-DOVER CO. 2269 Marshall Blvd. Chicago, Illinois



Proof From Actual Users

Albaugh-Dover Co., Chicago, Ill.
Dear Sir: the New Butterfly Separator has proved to be the best paying machine on the farm. The cream from four cows brought us \$24.00 for the month of October. I can recommend it to be as easy running and as easy to clean as any on the market. Yours very truly,
Williamstown, Ohio. C. C. TRACKLER.

Albaugh-Dover Co., Chicago, Ill.
Dear Sir: We have been using one of the New Butterfly Cream Separators for about four years and will say it is the easiest running, easiest cleaned and closest skimming machine I ever saw. I can recommend them to anyone wanting a first-class separator. Yours truly,
Donnellson, Iowa. CHAS. H. KIRCHNER.

Albaugh-Dover Co., 2269 Marshall Blvd., Chicago, Ill.
Please mail me your FREE Catalog Folder with full description of all sizes, factory-to-farm prices and terms.

Name.....
P. O.....
State.....
I Keep.....

GOING TO BUILD A SILO?

Send your name today for our silo book. Your choice of two famous silos. Get most authoritative figures on silage feeding profits and startling facts about

The Hinge Door and Lansing Silos

Hinge-Door Silo has the only practical door construction. Book Free—write quick.
Woods Bros. Silo & Mfg. Co. Lansing, Mich., E. St. Louis, Ill., Maryville, Mo., Topeka, Kas., Lexington, Ky., Minneapolis, Minn., Denver, Col., Cedar Rapids, Iowa, Spokane, Wash. Write Dept. 15, Nearest Office.

Make Your Own Drain Tile

THE FARMERS' CEMENT TILE MACHINE

Makes tile 3 to 8 inches in diam., 12½ inches long. One man or boy operates it by hand or power. 500 tile per day by hand, 1,200 by power. Tile thoroughly cured by patent process. No tamping or use of pallets. This machine and tile used by Experiment Stations of Agricultural Colleges and the U. S. Dept. of Agriculture. 5,000 farmers have doubled the yield of land by underdrainage, and saved 75% of cost by using our Machine. You can do the same. Save cost of hauling and breaking. Make perfect tile \$3 to \$5 per thousand. MACHINE SOLD DIRECT FROM FACTORY TO YOU. TEN DAYS' FREE TRIAL. SEND NOW for 36-page Illustrated Catalogue. Tells you about great benefits of underdrainage, how to take levels and get grades, make and lay your tile at low cost.

FARMERS' CEMENT TILE MACHINE CO.

Box 307, ST. JOHNS, MICH.

1595 AND UPWARD AMERICAN SEPARATOR

THIS OFFER IS NO CATCH. It is a solid proposition to send, on trial, fully guaranteed, a new, well made, easy running separator for \$15.95. Skims hot or cold milk; making heavy or light cream. Designed especially for small dairies, hotels and private families. Different from this picture, which illustrates our large capacity machines. The bowl is a sanitary marvel, easily cleaned. Gears thoroughly protected. Western orders filled from Western points. Whether your dairy is large or small, write us and obtain our handsome free catalog. Address:

AMERICAN SEPARATOR CO. BAINBRIDGE, N.Y.



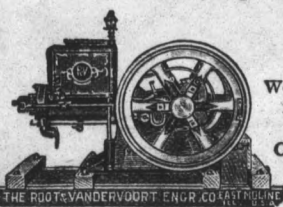
John Deere Implements



R & V "Triumph" Gasolene Engines

Popular Farm Power

Develop even more than rated horsepower. Easily started, smooth-running, dependable. Economical in use of fuel. Speed easily increased or decreased. Best type of magneto on the market. Portable and stationary engines.



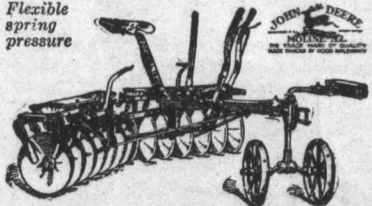
Light
Well Built
Durable
Neat
Compact

R & V "Triumph" Engines can be furnished in sizes 1 to 12-hp., with the hopper-cooling system. This cooling system does away with tank, pump, piping and fittings, making a neat, compact engine noted for its good working qualities. No air-cooled engine troubles to contend with.

Letting Gasolene Do It tells you about the convenience and money-saving points of a gasolene engine. Get this book and see how you can make your work easier. Lower left-hand corner of advertisement tells you how "to get these books."

John Deere Disc Harrows

Flexible
spring
pressure



Is the only spring-pressure harrow, and, therefore, only flexible harrow built. Spring-pressure secures greater penetrating power and more thorough cultivation. Instant leveling for all conditions enables operator to keep all discs cutting an even depth. High, solid steel gang frames make it extra stiff and strong, and give extra clearance.

Bigger Crops from Better Seed Beds

Tells you how to prepare your seed beds for a bigger and better crop yield. You'll profit by reading this interesting little booklet. Lower left-hand corner of ad. tells you how "to get these books."

Better Farm Implements and How to Use Them

Illustrates and describes the most complete line of farm implements. Tells how to adjust and use them under varying conditions. It has a practical encyclopedia for the farm, and is worth dollars to you.

To Get These Books Write to us at once stating which books you want, and they will be mailed free. To be sure that you get a copy of "Better Farm Implements and How to Use Them" ask us for Package No. X 5

Davenport Roller Bearing Steel Wagons

There is a wagon made that is stronger, more durable and of lighter draft than any other. This wagon is

Built Like a Bridge

Entirely of steel I-beams, channels and angles, solidly held together with large steel rivets, put in hot under great pressure.

Like the steel railway bridge, it is constructed for hardest lifetime service. Strong and durable.

Each front gear and each rear gear is practically one solid piece that can not come loose or apart.

Steel Wheels

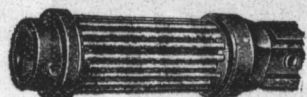
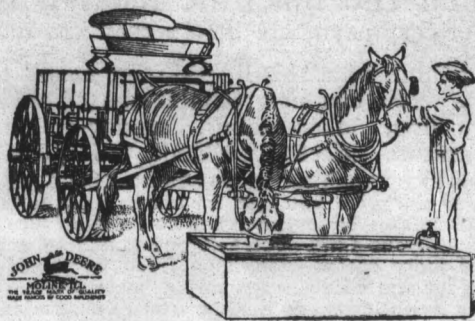
This wagon has steel wheels that are trussed and made with a tension, the strongest known wheel construction. Every spoke is staggered and forged hot into the tire.

Regardless as to whether the spoke is at the top, side or bottom of the wheel, it always carries its share of the load. Wheels on a Davenport wagon will stand up and work indefinitely.

Roller Bearings

That roller bearings reduce draft is generally conceded. Of the various styles, the straight roller bearing is the simplest and most successful. They are practically everlasting. For this wagon, the straight roller bearing is especially adapted.

The spindles and hubs are straight. Consequently, as this wagon is equipped with straight roller bearings, it is of light draft.



The Roller Bearing

When the Going is Hard is the title of an interesting little booklet on the wagon question. It contains twenty-six of the best articles on wagons that have been written. See lower left-hand corner of this advertisement for how "to get these books."

Aspinwall Potato Planter



The Leading Potato Planter in All Potato Growing Sections

Accuracy in a Potato Planter is the prime essential. This is found in the Aspinwall Planter—a machine that is staunchly built, will do good work and is easily handled.

CONVENIENTLY OPERATED

Both feed and cover tension are regulated from the seat. No removal of bolts—simply turning the thumbscrew does the work.

All parts are thrown in and out of gear automatically when lowering the plow for work or raising it at the end of each row.

This machine plants a greater range of seed, as to size and shape, does it easier and with less friction and wear, than any planter of its kind.

DOUBLE ROW PLANTER

A double row machine is made with extra large hopper capacity.

Either single or double row planters may be equipped with fertilizer attachment.

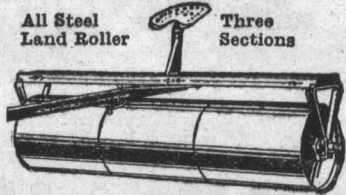
The Aspinwall is absolutely the only machine that will plant potatoes of any size without adjustments.

The Potato Suggestions from those making a study of the crop. How to rid the plant of insects; how to plant potatoes; the care of the crop, and how to dig them. You will find it a great help in making your potato crop. Lower left-hand corner of ad. tells you how "to get these books."



Dunham Roller-Bearing Land Rollers and Pulverizers

All Steel
Land Roller
Three
Sections



Dunham Land Rollers, Packers, Pulverizers, and Sub-Surface Packers are made for every purpose and all soil conditions. Only first-class material enters into their construction and they do good work even under the most adverse conditions.

Light Draft—Roller Bearings

The Dunham Pulverizers, Packers and Rollers are the only ones today equipped with Roller Bearings. The bearings revolve in the end bracket casting and the axle in turn revolves within the bearing. All bearings furnished with hard grease cups.

Dirt proof caps fit snugly into the shoulder on the end bracket castings, completely covering the end of the axle and making the roller bearing construction absolutely dirt-proof.

Do Good Work

Dunham Land Rollers and Pulverizers will break up the lumps, smooth off the field and give a perfect foundation for a full even growing crop.

Absolutely
Dirt-
proof

Runs 44 per cent
easier than others



The Roller Bearing Dunham

A little book that will be a great help to you in preparing your land for seed this spring. It contains suggestions from experienced men on the proper preparation of the land for the seed, and you will profit by getting this book. Lower left-hand corner of ad. tells you how "to get these books."

John Deere Plow Company Moline, Illinois

HOW TO UTILIZE CULL BEANS FOR STOCK FOOD.

I have a quantity of low-grade beans. Could they be used to any advantage in feeding cattle or horses? Could they be cooked and mixed with other grain and fed that way?

Montcalm Co.

P. H. S.

In Michigan this certainly is quite an important question as we raise a great many beans and probably will continue to grow them because we are in the bean belt good and proper. There isn't any other territory in the world better adapted to the growing of beans than much of Michigan, and probably this crop ought to be encouraged here for that reason. They can't grow them farther south with any success. And we will always have quite a large amount of cull beans. Now these can be utilized for stock feed. If they are ground into meal you can mix a portion of this meal with other feed for dairy cows and get good results. You can boil them and get fattening steers to eat them when they are boiled. You can feed the meal to horses. You can feed bean meal to sheep, and when beans are boiled and mixed with corn meal they make splendid feed for hogs. Most animals don't seem to like beans very well at first but will finally acquire a taste for them and do well. Cull beans at prevailing prices are certainly the very cheapest source of protein we have. Let us educate our animals to eat them.

PARSNIPS FOR MILCH COWS.

Will you kindly answer through your columns whether parsnips are suitable for feeding a milch cow to increase the milk flow?

Kent Co.

J. E.

Parsnips are not usually fed in any considerable quantity to milch cows because they are raised more particularly for human food, but they are all right and suitable to be fed to the cows. They are just as good as turnips, or carrots, or rutabagas, or any of that class of foods. It is better not to feed any of these kind of roots in too large quantities. Feed them in moderate quantities, a small feed night and morning, then there will be no danger of having the milk taste of the particular kind of roots that you are feeding; this is especially so of turnips, parsnips and rutabagas. I don't think parsnips would be any better than carrots or any better than turnips or rutabagas, and certainly no better than mangel wurzel beets, but probably just as good if fed judiciously.

BANQUET AT DAIRYMEN'S MEETING.

(Continued from page 224.)

The "Promotion of Railroad Transportation in the United States," and advocated the government ownership of railroad freight cars. Mr. Tracy elaborated on his theme in a very delightful manner after showing the entire lack of any relationship between the government appropriation for railroad transportation and the government appropriations for inland waterway transportation. Without doubt his point was well taken on the fact that the greater mass of shippers of the country are more advantageously affected by railroad transportation than by inland waterway transportation and his remark that if the government could appropriate a portion of this money to the purchasing of railroad freight cars so that in times of congestion when the produce of the country could be shipped, the railroad companies would have at their disposal cars sufficient to move produce, thereby tending greatly to simplify demurrage problems, were spoken to attentive hearers. This idea has not been brought forward to any great extent and now that the demurrage problems are becoming discussed by shippers and the question of government ownership or management is being widely discussed, the points brought out by Mr. Tracy were exceedingly timely and deserving of careful thought.

The banquet hall was filled beyond its capacity and the proceedings were very well received.

Officers for 1913.

The officers for the Michigan Dairymen's Association for the ensuing year are: President, Mr. Eldridge; vice-president, Mr. Vandenberg; secretary-treasurer, Mr. Geo. Brownell; directors, Mr. Frary, Mr. Webb, Mr. M. Seidell, Mr. Rosema, Mr. Van Slyke.

Sold Out Holsteins.

Please discontinue my advertisement in the Michigan Farmer, advertising Holstein springers and calves, as I have sold everything I care to and inquiries are coming every mail.—Wm. J. Morgan, Saginaw, W. S., Michigan.

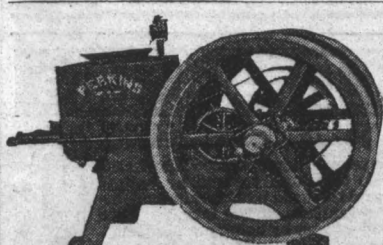
SAVE HARD WORK



MAKE A SULKY PLOW OF YOUR WALKING PLOW

Attach a Western plow sulky to your regular walking plow and ride. Fits right or left wood or steel beam plow. Levers give perfect control in any soil. 10 days free trial, fully guaranteed, sensational price. Write today for particulars. Western Implement Co., 833 Park St., Ft. Washington, Wis.

DO YOU WANT IT? FREE!



The "Clean Out" in the base of our engine does away with grease and dust and eliminates fire danger

We make NO CHARGE for our experience of fifty years. "PERKINS" on our goods stands for QUALITY the world over. Catalogue Free. Write us about—

Farm Engines, Wind Mills, Feed Grinders, Hand Trucks, Jacks, Tanks. Large Output. Low Prices.

PERKINS WIND MILL & ENGINE CO., 320 Main St., MISHAWAKA, IND., U. S. A.

54
KINDS
AND
SIZES



Practical Science.

FACTS RELATING TO PECUNIARY ECONOMY AND NUTRITIVE VALUE OF FOODS.

BY FLOYD W. ROBISON.

High Cost of Foods.

Within the last two years a great deal of emphasis from the consumers' point of view has been placed on, what seemed as excessive, costs of the articles used for human food consumption. Probably the most familiar example of high-priced food materials is shown in the cost of meat, particularly pork and beef. One coming from the country town to the city is at once impressed with the great difference in price between the two places and the reasons therefor are not always too evident. Beef and pork have come to be exceedingly standard articles of food among Americans and therefore any sudden or steady advance in cost is very quickly noticed by consumers. The public have been almost helpless in the matter of the regulation of prices of food products.

The Consumer Should Know the Cost.

It has occurred to us at various times that about the only effective means at the disposal of the consumer to checkmate any decidedly unfair advance in the cost of these various products is for her to be more familiar with the exact cost of producing and subsequent marketing of food products. In the special bulletin issued by the food department of the North Dakota Agricultural Experiment Station, Professor Ladd outlines some very interesting information. We quote what he has to say about the producer and distributor.

"It costs more to distribute our food products than it does to produce same. Why should this be? Why, for example, should the producer receive 31 per cent and the distributor 69 per cent of the cost paid by the consumer for eggs? Why should the farmer receive but 36.6 cents on every dollar, and the distributor 63.4 cents on every dollar for turkeys?"

"The following table shows the per cent to the total cost paid by the consumer than goes to the handlers of food products, the balance going to the farmers or producers:

	Per cent.
Poultry	55.1
Eggs, by the dozen.....	69.0
Celery by the bunch.....	60.0
Strawberries by the quart.....	48.9
Oranges by the dozen.....	20.3
Melons by the pound.....	50.0
Potatoes by the bushel.....	59.3
Watermelons, singly	33.5
Turkeys	63.4
Cabbages by the head.....	48.1
Apples by the bushel.....	55.6
Apples by the barrel.....	66.0
Onions by the peck.....	27.8
Green peas by the quart.....	60.0
Parsnips by the bunch.....	60.0
Turnips by the bunch.....	60.0

"Last year it is said, that the farmers sold agricultural products for about \$6,000,000; the consumer paid for the same products \$13,000,000. In other words, getting the food to the consumer costs more than producing the food. How can the cost of distribution be reduced?"

It has seemed to us that if the consumer were armed with reliable information as to the exact cost of the producing and marketing of any particular food product up to the time it is delivered to her, that information alone would tend to prevent merchants and dealers from charging excessive prices for these commodities. For instance, if it were commonly known that dressed poultry, for example, retails in the city market for 25 cents per pound and that 14 cents per pound of that 25 cents were paid to the retailer for marketing the product and the other 11 cents was paid to the producer for producing it, it seems to us as though the retailer would have a great deal more difficulty in raising his prices than if that information were not generally known. Again, if potatoes are retailed to the consumer at \$1.00 per bushel and it becomes known to her that of that \$1.00 she pays 60 cents to the market man for delivering it to her and 40 cents to the farmer for growing the potatoes, we think it would have a counteracting effect on an attempt of the retailer to raise the price to any excessive amount.

Suppose apples were likewise retailed at \$1.00 per bushel and of that \$1.00, 56 cents were paid to the retailer for delivering the apples to the consumer, and for their storage, of course, while 44

cents was paid to the horticulturist for growing the fruit with all its attendant labors, it seems to us that the public would be thus armed with information which would make it decidedly undesirable for the retailer to advance the price to a prohibitive point.

There can be no word of complaint raised against legitimate margins of profit in the transaction of business. In fact, every manufacturer or producer of a legitimate line of industry is entitled to a fair margin of profit on the business invested, but as the sale of oleomargarine for butter works an injustice upon the dairy industry, in the same way the excessive costs to the consumer works an injustice on the producer.

Some of the consumers are more or less familiar with cost items, but they are very few in numbers in comparison with the information which by far the majority of consumers have. It seems to us that if a consumer could go into a grocery store armed with approximate information as to the exact cost up to that particular time of any article of food or, for that matter, any other article for consumption, she would be possessed with information which could not help rendering her more or less immune to excessive prices.

LABORATORY REPORT.

No Danger of an Excess of Nitrogen.

I am very much interested in the Practical Science articles by Floyd Robison, and thought I might get some help from him to solve some of my own problems. I have a field of nine acres on which I want to grow potatoes this coming season. I cut a heavy growth of clover on it the past season, but before I could secure it for hay the rains had damaged it so badly that the whole of it was left upon the ground. The second growth came up and did not fill with seed, and it, too, was left, and was not pastured. I estimate I had easily 3½ tons of clean clover per acre, all left on the field. Now need I fear an excess of nitrogen? If so what shall I do to offset or overcome it? Will the nitrogen become available for the crop this coming season?

Macomb Co. S. W. H.
In answering this query, would say that we would have been glad to know the drainage conditions, etc., of this farm, but considering the drainage good, we think you need have no fear of ill results from the turning under of the clover in this field. It is not easy to get an excess of nitrogen in the soil. At any rate, while this nitrogen from the turning under of leguminous crops begins to be made available at once, it is not sporadic, and no fear need be entertained of its becoming a waste in the soil. We think the rains which damaged the crop for hay purposes undoubtedly conferred a very great indirect benefit through the necessity of using these crops now in their fertilizing capacity.

TOMATO DISEASES.

Prof. W. A. Orton, Pathologist of the Department of Agriculture, Washington, speaking to the N. J. Tomato Growers, gave a very instructive lecture on tomato diseases and how they may be controlled. He spoke at length upon the more common diseases and pointed out the tremendous loss to tomato growers annually from this cause and explained that a large share of this loss could be prevented by proper and timely spraying. He spoke of a new and very disastrous disease now prevalent about Grand Rapids, Mich. This disease attacks the soft tips of the vines similar to fire blight and spreads rapidly through the entire plant. He also called attention to the Fusarium Wilt of tomato, now quite prevalent in many of the southern states and gave as the only known remedy of these two diseases—breeding and selecting for resistant qualities. He explained the most improved method of making Bordeaux mixture, recommending: Four lbs. copper sulphate; 4 lbs. lime; 50 gals. of water, and urged the growers to use extreme caution in preparing this mixture, stating satisfactory results could not be obtained unless diluted solutions of both copper sulphate and lime were made before they were allowed to come together in the spraying tank.

He recommended a high-grade pump, that would carry at least 80 pounds pressure while spraying, in order that the mixture might be thoroughly applied and driven with considerable force against the foliage.



NOW
\$35.00

Flying Dutchman Variable Drop Corn Planter

If you pay more than \$35.00, and freight, for a Corn Planter you are actually throwing away your money.

You can save \$7.00 to \$10.00 and still get the World's Best Planter. The Flying Dutchman Planter which all Flying Dutchman Dealers are selling for \$35.00 F. O. B. our Factory or Warehouses at

BLOOMINGTON, ILL.

KANSAS CITY, MO.

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MINNEAPOLIS, MINN.

INDIANAPOLIS, IND.

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MADISON, WIS.

TOLEDO, OHIO

ST. LOUIS, MO.

OMAHA, NEB.

is the very latest and best Corn Planter we have ever built. From the ground up it is the best Planter that money and brains can produce. It is backed by the Flying Dutchman reputation, which has for nearly 50 years stood for the highest quality in farm implements.

ABSOLUTELY ACCURATE. DROPS 2, 3 or 4 KERNELS. EDGE OR FLAT DROP.

The simple Variable Drop device can be instantly changed while the Planter is in motion to 2, 3 or 4 kernels, to meet any soil requirements.

The drop is as positive and accurate as the tick of your watch. Drive fast or slow and the hills are always in check—absolutely no variation nor scattering. It can be instantly changed to a Drill—simply move a lever.

Write today for Free Folder showing illustration of Planter in colors. Ask your Dealer about the Flying Dutchman Planter.

Moline Plow Co.

Dept 26

MOLINE, ILL.



Damaging Air Spaces Due to Wrong Plowing



Land Plowed Right—C.T.X. Bottom No Air Spaces

Plow Right and Protect Your Crops

The coming season may be dry and hot. Better be prepared for drought in case it does come. Better see that no air spaces are left between topsoil and subsoil, whoever does your plowing. For those air spaces cut off the moisture from below and rob you of half your crop.

You'll have no air spaces if you use a Rock Island "C.T.X." Universal Plow. It turns each slice clear over, flat and smooth. Buries all trash. Pulverizes dirt—saves one harrowing—leaves the topsoil in close contact with subsoil. In dry weather, moisture comes right up from below, like kerosene comes up your lamp wick. This feeds and saves your crops. All due to the peculiar corkscrew-like bottom on the Rock Island "C.T.X." Universal. This patented mouldboard carries the dirt backward and DOWNWARD, not backward and UPWARD, like all other plows. A very simple invention, but one that is revolutionizing all plowing methods. (Picture A shows Rock Island Universal bottom, and the arrow shows how dirt travels. Picture B shows ordinary plow bottom, and arrow shows how dirt travels.)

A Genuine UNIVERSAL Plow

And the beauty of it is, with this plow you can plow up any field on your farm. Tame Sod. Heavy Clay, Sandy Loam, Mixed Soil, Stubble Fields, Old Cornfields, Meadows, etc., all look alike to the Rock Island "C.T.X." Universal. Saves buying a new plow or bottom for sod.

It's a Universal plow that does perfect work in all cases and leaves no air spaces. That's why this plow so quickly became the sensation of the farm world. That's why you'll want it the minute you see it. Send a postal now, and we will tell you where you can see a "C.T.X." and price it. You can judge yourself and will realize why it's so much better.

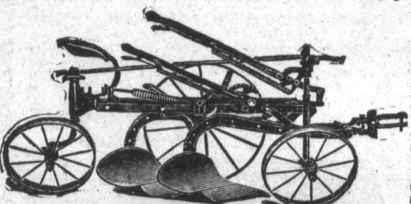
Latest Catalog Free

It pictures and describes this most popular plow completely. Simply write these words on post card. I am interested in plows. Then add name and address and mail card to

ROCK ISLAND PLOW CO.

245 Second Ave.

ROCK ISLAND, ILL.



Rock Island (C.T.X.) Universal Plow

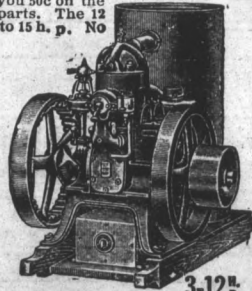
Run on Kerosene—Cut Fuel Cost in Two

Ellis Engines run on gasoline, kerosene or any fuel oil without extra equipment. On kerosene they give more power than other engines on gasoline. Do more work and save you 50c on the dollar in fuel. Strongest, simplest engines made—only three working parts. The 12 h. p., two cylinder opposed engine will do any work requiring from 14 to 15 h. p. No vibration. Low first cost, low cost to run, easy to operate.

ELLIS ENGINES

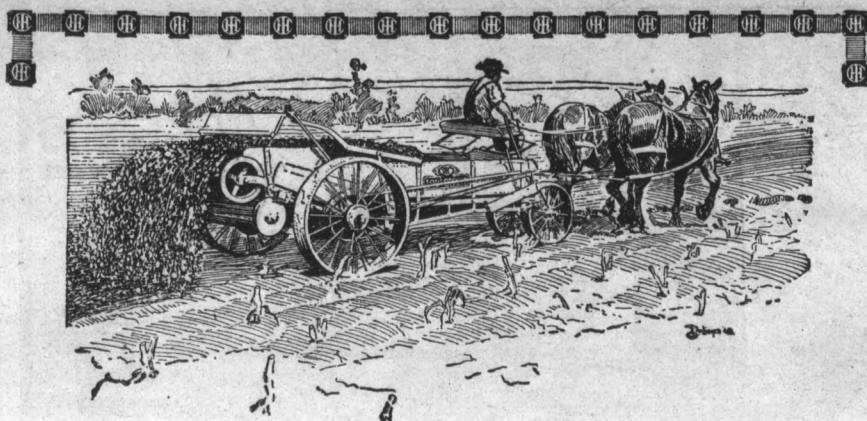
have patent throttle, giving three engines in one. Force-feed oiler, automobile muffler, speed-changing governor and many other exclusive features. Run either way—reversible while running. Buy direct from factory and save money. We pay freight, 10-year guarantee, 30 days free trial. Write for new catalog showing 1913 Models with special prices.

ELLIS ENGINE CO., 110 Mullett St., Detroit, Mich.



3-12

When Writing to advertisers please state that you saw their ad. in The Michigan Farmer.



Your Soil Is Alive

TO all intents and purposes, soil is alive. It breathes, works, rests, it drinks, and, most important of all, it feeds. It responds to good or bad treatment. It pays its debts, and pays with interest many times compounded. Being alive, to work it must be fed. During the non-growing seasons certain chemical changes take place which make the fertility in the soil available for the next season's crop. But this process adds no plant food to the soil. Unless plant food is added to soil on which crops are grown, unless the soil is fed, in time it starves. There is one best way to feed your soil. Stable manure, which contains all the essentials of plant life, should be spread evenly and in the proper quantity with an

I H C Manure Spreader

I H C manure spreaders are made in all styles and sizes. There are low machines which are not too low, but can be used in mud and deep snow, or in sloppy bar yards. They are made with either endless or reverse aprons as you prefer. Frames are made of steel, braced and trussed like a steel bridge. Sizes run from small, narrow machines for orchard and vineyard spreading, to machines of capacity for large farms. The rear axle is placed well under the box, where it carries over 70 per cent of the load, insuring plenty of tractive power at all times. Beaters are of large diameter to prevent winding. The teeth that cut and pulverize the manure are square and chisel pointed. The apron drive controls the load, insuring even spreading whether the machine is working up or down hill, or on the level. I H C spreaders have a rear axle differential, enabling them to spread evenly when turning corners.

A local dealer handling these machines will show you all their good points, and will help you decide on the one that will do your work best. Get literature and full information from him, or, write

International Harvester Company of America

Chicago

(Incorporated)

U S A



Black Orpington and **White Rock Cockerels** and cock birds for sale. Eggs in season. Drop me a card for prices. O. A. SMITH, Willis, Mich.

BARRED ROCK FEMALES—A few GREAT LAYERS for sale. W. C. COFFMAN, R. 6, Benton Harbor, Mich.

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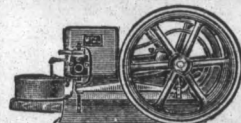
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Poultry and Bees the Fruit Grower's Allies

Poultry and bees are the natural allies of the orchardist in stimulating the productivity of his trees, and improving the quality of their fruit, hence a combination of poultry raising, bee-keeping and fruit growing suggests possibilities not to be ignored by the man who must get his living from a small acreage.

A flock of chickens, domiciled in one or more movable "colony houses," will feed to a large extent on the insects and larvae of insects found in the ground. Especially will they do this if the ground is cultivated—as it should be for the best results in orcharding. Many of these insects, at future stages of their existence, if not thus destroyed, may become agents of injury and destruction to trees and fruit. Chickens will also devour the wormy fruit which falls from the trees, thus again assisting in the destruction of the codling moth and some other pests. We read much of the valuable work done by insectivorous birds in general, in this direction. They certainly do enough to merit protection against the shot-gun, even though they do occasionally "take toll" of the fruit. But the faithful hen does the same work, and without taking any toll. The droppings of poultry also continually add a valuable fertilizer to the soil of the orchard, and the fowls' constant scratching helps maintain the moisture-conserving "dust blanket." Meanwhile, if the feed they gather from the soil is properly supplemented with grain rations, their production of eggs is as large as anywhere else and they can be fattened for the market with equal facility.

The presence or absence of bees in an orchard is often of sufficient importance to determine whether the fruit crop shall be large or small. Since practically all fruit blossoms are fructified by the passing of pollen from one flower to another, and since the wind too frequently fails perfectly to perform the office of a pollen bearer, great numbers of blossoms must remain unfertilized, but for the friendly offices of the bees, which seldom skip a bloom, as they pass from one to another in search of nectar. The pollen gathers on their wings and bodies to such an extent as often to change their color, and it is dropped on the waiting pistils of blossoms before unfertilized, thus ensuring the "setting" of the fruit. A few hives of bees in the orchard not only make the services of the little creatures in this way far more reliable than when dependence is placed upon the visits of wanderers from distant colonies, but if clover and other blooms are near to supply them with food after the fruit blossoms have performed their office, the hives may afford a profitable crop of honey.

The three in combination—orchard, poultry and bees—would seem to constitute, in trained hands, a very lucrative form of "intensive farming"—a form which makes the realization of a fair income from a few acres entirely possible. The "poultry," however, should not include ducks and geese. These fowls will occasionally snap up a bee, and the poison of its sting is fatal to them. With chickens, bees are safe company.

Minnesota.

C. R. BARNES.

GUARD AGAINST SPRING DWINDLING OF BEES.

If the conditions necessary to the successful wintering of bees were not complied with, and they have suffered from diarrhoea, many colonies may be lost by spring dwindling, especially if the spring proves cold and backward. Even colonies which appear to have gone through the winter strong in numbers may slowly lose bee after bee until the queen alone remains. This is sometimes mistaken for desertion, but that occurs only when bees are destitute of honey or pollen, or at the loss of their queen.

Several instances of spring dwindling with subsequent robbing of the honey, have been observed as late as April. The enlarged abdomen shows that the bees are suffering from constipation or inability to discharge their faeces; even though they may have cleared the abdomen since their long confinement, the intestines are in an unhealthy condition. Another cause of dwindling is the loss of working bees from cold while in search of water or pollen for brood.

To avoid or check these losses, so far as possible, the following may be observed: The hives should be located in a warm, sunny, well-sheltered place. The number of combs in the hive should be reduced, in early spring, with the division board to suit the size of the cluster. This helps the bees to keep warm and to raise brood. The space must again be enlarged, gradually, when the colony begins to get stronger. The heat should be concentrated in the brood chamber by every means possible, and not allowed to escape above. The entrance must remain reduced.

The bees should be provided with sufficient stores of honey, pollen and water. Water is essential in spring, as bees cannot be reared without it unless fresh-gathered honey is being brought in. Water may be supplied by removing empty combs from the hive and pouring water into them, or by having a receptacle in a sheltered position handy for them. Place floats of chips, grass or straw in the containers so that the bees may reach the water without danger of drowning. A better way of furnishing water is by feeding a thin sugar syrup, warm, at sundown.

Shiawassee Co. N. F. GUTE.

TURNING WASTE INTO CASH.

I have a friend who supplies a large summer boarding house with fowl. They always threw away the giblets but he arranged with them, and later with others, to buy these giblets at 10 cents per lb., or rather, to allow them that much on the price of the fowls. He then marketed the giblets three times a week to certain wealthy cottagers at 40 cents per lb., which in reality gave him 50 cents

per lb. for that part of the fowl. The giblets will average close to ¼ lb. per fowl. Certain epicures think highly of chicken livers, brochette, curry, with Maderia sauce, with bacon, with mushrooms, or some of the other innumerable ways of cooking them.

New York.

A. E. VANDERVOORT.

THE VALUE OF MILK IN POULTRY RATIONS.

Speaking before the recent meeting of Michigan State Dairymen's Association, Prof. J. Oliver Linton, of M. A. C., declared that comparatively few farmers fatten their chickens properly. It is only now and then that one is found who takes pains in this regard. Occasionally, however, one finds communities in which there appears to be general thoughtfulness along this line and buyers of poultry are usually acquainted with such sections, greatly to the advantage of producers in disposing of their flocks. There certainly is more attention needed in this regard and larger returns would result if chickens were fattened with the same care that other stock is.

Skim-milk and buttermilk have proven valuable for putting poultry in condition for market. Investigation has shown that for this purpose one can pay 25 cents per cwt. for buttermilk and make a reasonable profit on the investment. A combination of feeds suggested for finishing poultry comprised corn meal, oat meal, middlings and buttermilk.

These milk by-products are also of great value in supplying the animal food so necessary to the proper balancing of laying rations. Referring to careful trials along this line conducted by the Ontario station, Prof. Linton presented tables showing the value of buttermilk, as compared with that of other forms of animal food, for feeding pens of Buff Orpingtons, and also of Rhode Island Reds, as determined by the Ontario experimenters. The tables are given herewith and in both

Table showing result of feeding pens of Buff Orpingtons on different kinds of feeds:

Feed used.	Cost.	No. Eggs Laid.	Cost doz.
Buttermilk	\$18.16	2,040	10.68c
10% meat scrap in mash	19.85	1,670	14.28c
Beef scrap in hoppers	22.21	1,664	15.54c
No animal food...	17.99	1,496	14.40c
Green cut bone...	21.57	1,654	15.65c

Table showing result of feeding pens of Rhode Island Reds on different feeds:

Feed used.	Cost.	No. Eggs Laid.	Cost doz.
Buttermilk	\$25.00	1,762	17.45c
10% meat scrap in mash	23.00	1,380	22.96c
Beef scrap in hoppers	23.92	1,625	17.76c
No animal food...	17.70	750	24.09c
Green cut bone...	22.40	1,359	17.01c

instances, with a single exception, they show that the pens fed buttermilk produced eggs the more economically; that is,

a dozen eggs cost less when the hens were fed buttermilk than when given any other of the animal foods employed in the experiment. The single exception referred to is in the pen of Rhode Island Reds receiving green cut bone.

A similar result obtained when skim-milk was used as a constituent of the laying ration. The pens fed skim-milk produced 248 eggs more than the other pens, and the cost per dozen of eggs was reduced to 9.8 cents. In this experiment it appeared that an extra egg was received for every quart of skim-milk fed.

He also stated that these milk products are excellent used in connection with buckwheat meal for cramming, and for crate feeding. The following mixture is recommended: One-half part corn meal, one-quarter oatmeal and one-quarter middlings mixed together and allowed to absorb all the buttermilk it will. Prof. Linton further stated that the commercially dried milk products are valuable for poultry feeding, investigations so far conducted indicating that this feed can be used profitably at prevailing prices.

Another point made in the address was that fancy bred chickens are not to be relied upon as egg producers. In some experimental work along this line 15 fancy show hens were compared with 15 hens bred to lay. The fowls were given the same attention as to food and surroundings, being kept under the same brooder, colony and housing conditions. When these hens began laying, those bred to lay outclassed the others by a considerable margin. One Barred Rock member of the utility group, laid 282 eggs during the course of the year, while one of the show-bred hens laid only 13 eggs. While this experiment was not sufficiently comprehensive to draw final conclusions, it is suggestive of a point that should not escape the attention of the person who desires hens for laying purposes.

ESSENTIALS TO SUCCESS WITH TURKEYS.

We used to imagine that turkeys were difficult to raise. They are, if one goes into the business "by guess," as we did. That was a good many years ago; and I wouldn't like to tell of all the mistakes that were made. Perhaps it wouldn't make very interesting reading. But while we were blundering we were also learning. We tried not to make the same mistake twice, and here are a few of the things that we learned:

First in importance is the matter of a suitable location. No one can hope to become a successful turkey raiser without a good area that can be used for a range. Of course, the land need not necessarily be good for agricultural purposes. It may be practically worthless as farm land and yet be an ideal place for a turkey ranch. However, it should be "high and dry." Ground that is swampy is not suitable for turkeys. I know of one successful turkey ranch where the land is very poor and rough, with very little growing upon it but weeds, and a natural growth of scrubby trees and briars. This place being somewhat isolated, the owner has no trouble in keeping his turkeys away from neighbors' grain fields. When turkeys are kept in large numbers they become a nuisance in thickly settled districts if allowed free range. When kept in small enclosures they never do well. A large field or orchard, properly fenced, makes a very good pasture for turkeys, but after a time they become tired of going over the same ground day after day. When not allowed free range it is a good idea to turn them out of the turkey field once a day and have one or two herders. I know a young girl who herds turkeys every year. It is a rather monotonous task, however.

Seasonable Conveniences.

During the laying and hatching season a field enclosed with woven wire fence is a great convenience to the turkey raiser. Kept in such a place, the hens cannot wander away and "steal" their nests, as they otherwise would do, and when the young turkeys hatch they are much safer and less trouble. If there is no chance for the hens to hide their nests, some brush should be piled in suitable places for their benefit. Large barrels covered with branches and provided with some straw or dry leaves for nest material will sometimes meet the hens' approval. Barrels should be securely wedged so they cannot roll. Such nests are very convenient when the hens go to sitting, as they can be enclosed to protect the turkeys if there is danger.

When turkeys are kept in a field during the laying season it is a good idea to gather the eggs after the fowls have gone to roost. They resent intrusion, at this time, and we make it a rule never to let a turkey hen see us near her nest when it can be avoided.

A large house or shed that can be used for both old and young is a great convenience. Such a house can be built at small expense. It should have a good roof, but no floor is necessary if built on a well-drained spot, as it should be. Walls on all sides except the south should be quite close, and if the house is very large a few small windows, protected with wire netting, will be found of great advantage when the weather is so bad that the fowls need to be kept in the house. They need plenty of light and good, fresh air. One entire side of the house should be enclosed with strong, close-mesh poultry netting, or woven wire fencing, which is more substantial than the netting. Then a heavy double burlap curtain should be provided, for I find that in spite of the turkey's reputation for hardiness he appreciates some extra precaution in severe weather. Don't make it necessary for the turkeys to roost in trees.

Suggestions as to Feeding.

By the foregoing I do not wish to infer that suitable range and a suitable house are alone necessary to success with turkeys. While they require plenty of exercise, they also require plenty of feed. If it cannot be found on the range it must come from some other source. Turkeys consume large quantities of insects, especially flies and grasshoppers, but where the range is limited these soon become scarce. They also must have pasture. They like good grass, clover or alfalfa, but a grain field is their delight. A flock of growing turkeys will sometimes live for weeks in a wheat field after the grain has been harvested. This is clear gain for the farmer who keeps turkeys as a "side line."

While wheat is one of the best grains for them, they should not be confined to it alone. Then, too, it must be sound; moldy grain of any kind is unfit for turkeys, or any other poultry, for that matter. We have lost a good many young turkeys from eating unripe and moldy grain. A few years ago a near neighbor had a similar experience. His flock (the very finest in that part of the country), were a little more than half grown when they suddenly began to die. They had discovered some shattered grain around the place where the thrasher had stood. It was badly spoiled, some of it beginning to sprout, when they began eating it and the trouble commenced.

We never feed rye (that is, the grain), to any kind of poultry, because it is difficult to digest and is said to be too stimulating. Several years ago we lost a number of turkeys from the effects of eating rye. We did not know it was injurious and the turkeys were allowed the run of a rye field. To make a long story short, they ceased to thrive and more than half of them died. Those that survived were more or less stunted.

Oats will sometimes injure young turkeys if they eat too much of it. This is due to the hulls lacerating the digestive organs. This may be overcome by boiling the oats before feeding. Oats with the hulls on should be either boiled or scalded before feeding to any kind of poultry. We have found the steel-cut or pin-head oatmeal a valuable food for young turkeys when fed in a dry state, either alone or mixed with cracked corn. Whole wheat and cracked corn, equal parts, either dry or cooked, is an excellent ration for young turkeys. We feed corn and wheat daily after turkeys are two months old. Before that their ration is more or less varied. Onions play an important part, as a tonic. In fact, we find that even the matured birds relish an occasional bran mash containing chopped raw onions. They are good for all kinds of poultry, except laying hens. Nearly all of the trouble with young turkeys can be traced to wrong feeding, lice, and lack of vigor in the parent stock.

It pays to buy good breeders, even at fancy prices. Never keep hens and gobblers known to be related. We usually keep a young gobbler with yearlings or two-year-old hens. Young hens give better results with an old gobbler. Don't attempt to cross two varieties of turkeys unless you know what the result will be. We like the Narragansett better than the Bronze, but it is probably only a matter of taste. Have never raised White Hollands or Bourbon Reds. Ohio.

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DETROIT, FEB. 22, 1913.

CURRENT COMMENT.

Some of our sub-
scribers have courte-
ously protested
against an adver-
tisement of tobacco for the making of
cigarettes, recently appearing in many
farm publications, on the ground that
cigarette smoking is peculiarly a boy's
habit and a habit which is most injurious
to boys. As our readers know, the pub-
lishers of the Michigan Farmer have ever
prided themselves upon the matter of
censoring all advertisements offered for
publication in the Michigan Farmer with
a view of making that paper second to
none in the moral tone of its advertising
columns. Nor did it occur to us that
the publication of this advertisement
would tend to promote the habit of cig-
arette smoking either among boys or
men. It is a well known fact that if
cigarettes are to be smoked at all, (which
we believe should be prohibited by law),
it is less harmful to make them from
pure tobacco of good quality than to
smoke the ready-made kinds, and it was
upon this ground that the advertising
matter in question was accepted and pub-
lished in the Michigan Farmer.

We do not believe that the publication
of advertisements of this nature would
tend to increase cigarette smoking
among the boys of the country homes in
which the Michigan Farmer is a weekly
visitor. We desire, however, to shun
"even the appearance of evil" in this di-
rection. The revenue which would result
from the publication of any class of ad-
vertising which might in any way be
questionable from a moral standpoint is
not taken into consideration in shaping
our advertising policy, and while we be-
lieve our position as above stated to be
an entirely tenable one, in view of the
fact that our motives have been misun-
derstood by some of our readers, we have
decided to leave no grounds for such
misunderstanding in the future by clos-
ing our columns to advertising matter
pertaining to cigarettes as they have in
the past been closed to liquor advertise-
ments or any other of a questionable
moral nature.

The reader
who treats the
advertisements
appearing in
his farm paper as news matter will se-
cure a far greater benefit from his paper
than the man who looks them over hur-
riedly or not at all. In fact, the adver-
tising matter which appears in your ag-
ricultural paper is news matter in the
best sense of the term. Through the me-
dium of the advertising columns the read-
er will get up-to-date and reliable infor-
mation regarding the best quality of
goods on the market for use on the farm
or in the home. The manufacturers of
and dealers in merchandise of quality

realize that satisfied customers are the
first essential in the building up of a
permanent trade, and for this reason they
advertise their goods in reliable journals
that they may acquaint the public with
the merits of the goods advertised, there-
by securing permanent customers in the
satisfied users who are led to try out the
goods through the interest promoted by
the advertising. In fact, advertisers are
learning that this feature of cumulative
business is the source of greatest profit
from their expenditures for advertising
space. Also, this factor of advertising
insures the reliability of the information
presented through the advertising col-
umns of standard farm papers. The day
when misrepresentation in advertising
matter was practiced by responsible ad-
vertisers or encouraged or permitted by
reliable journals is long since passed and
the very fact that an advertisement ap-
pears in a standard farm paper is an
assurance as to the reliability of the
representations made in the advertising
matter.

No matter whether the goods advert-
ised are an immediate necessity on the
farm or in the home, it will be time
profitably spent for the reader to look
the advertisements over carefully, treat-
ing them as he would treat other news
matter in order to secure information
which will make him an intelligent and
critical buyer in the time of future need.
There is perhaps no better method of
becoming acquainted with the improve-
ments which are constantly being made,
not only in the matter of farm equipment
but other merchandise as well, than by
treating the advertising columns of your
farm paper as news matter along this
line. The reader may argue that he is
able to satisfy his needs for goods in his
local market and that for this reason it
would be a waste of time to carefully
study the advertising columns of his
farm paper. It is, however, a fact that
such a study is just as essential where
goods are to be purchased only in the
local market as where a restricted local
market necessitates securing certain
classes of goods from a distance, since
the best quality of goods are those which
are most extensively and persistently ad-
vertised for the very reason that the
advertiser expects to continue a trade
on the quality of the goods themselves
after it has once been built up by inter-
esting the readers in the goods through
advertisements in reliable journals.

Thus, for these reasons which may be
viewed as purely selfish ones from the
reader's standpoint, it will pay to treat
the advertisements in your farm paper as
news matter to be reviewed as regularly
and carefully as the reading matter which
appears in each issue.

The Equal Suffrage Amendment.

The proposition of
re-submitting the
constitutional amend-
ment providing for
equal suffrage will come before the leg-
islature for formal action before this is-
sue reaches the reader. A canvass of
the situation seems to assure the advo-
cates of equal suffrage of a majority in
both houses of the legislature who will
favor the re-submission of this amend-
ment, the only question at issue being
whether it shall be re-submitted at the
general election in April or go over until
the general election in the fall of 1914.
The opponents of the proposition contend
that it would be unfair to submit the
amendment at the coming spring election
on the assumption that interest in the
town meeting will tend to bring out a
larger vote in the country districts than
in the cities where there are no local
officers elected at the spring election. It
is, however, entirely probable that all
who are particularly interested in this
amendment from either standpoint will
take the trouble to cast their votes either
for or against the proposition, it being
a well established fact that nowhere near
all of the electors in either country or
city vote upon constitutional amendments
at any time when they are submitted.

In view of the fact that all of the lead-
ing farmers' organizations of the state
have declared in favor of the re-submis-
sion of this question at the earliest pos-
sible date, there would appear to be no
excuse for delaying its re-submission un-
til the general election in 1914, since its
submission at the spring election would
not entail any additional cost in any pre-
dict of the state. Since there is not an
absolute unanimity of sentiment among
the women of the state upon this propo-
sition, perhaps the ideal way to settle
the question, were this possible, would be
to submit it to the vote of the women
themselves, but as this is impracticable

it is entirely probable that a vote upon
the question by the qualified electors will
largely reflect the views of the women
of their respective households upon this
subject, and so far as the country vote
is concerned there is no doubt that it
will be strongly in favor of granting the
elective franchise to women. Hence the
reasonableness of the demand that the
question be re-submitted without delay.

The Weekly Half-Holiday.

At the Tri-State
Grain and Stock
Growers' Convention,
held at Fargo, North
Dakota, the Country Life Committee re-
ported that the country life problem is
largely a young people's problem and the
young people need more opportunity for
recreation than they are given in many
localities. It was recommended by this
committee that Saturday afternoon be
made a half-holiday, that the minister
and teacher take a lead in the games
and that the church and schoolhouse be
used as social centers. It was also sug-
gested that this Saturday afternoon
would be a good time for the farmers to
hold Club meetings and consider the in-
auguration of co-operative work. It was
argued by this committee that with time
for recreation on Saturday there would
be time for church and Sunday school on
Sunday.

While this suggestion, at first thought,
will not appeal to most busy farmers as
a practical one, yet it is worthy of sober
second thought. In practically all other
productive industries the weekly half-
holiday has become a fixed institution,
and to the country young man who works
long hours throughout the week this op-
portunity for recreation on Saturday af-
ternoon is most welcome and is one of
the allurements which city employment
holds out to him.

To many of us it would seem that in
the busy season the time cannot possibly
be spared for this half-holiday of recre-
ation for all hands. It has come to be a
generally recognized principle, however,
that continuous toil without any letup
is wasteful and that neither body nor
mind can be maintained at their best
under such conditions. It is claimed by
those who have investigated the proposi-
tion that in Europe and in some sections
of the southern and eastern parts of the
United States where the weekly half-
holiday is a common practice that as
much work is accomplished in five and
a half days as was formerly done in the
six days and in addition farm life has
been made more desirable. Very many
farmers have found that it paid to give
their help an occasional opportunity for
fishing or to attend a ball game and there
is a probability that less friction would
arise over such arrangements if the half-
holiday were a fixed institution so that
employers as well as employees would fig-
ure on it in the planning of the work.

At certain seasons of the year, how-
ever, it would be an impracticable ar-
rangement, at which time the farm em-
ployee who receives considerable treatment
in this direction at other times should be
equally willing to forego the half-holiday
to help in the pressing work of securing
the crops.

The source of this suggestion indicates
that in some sections of the country the
country life proposition is being seriously
studied and efforts are being made to
neutralize the tendency toward the drift-
ing of our young people to the cities.

Agricultural Fairs and Expositions.

According to a bul-
letin recently issued
by the Secretary of
Agriculture of a to-
tal of 2,740 agricultural fairs and ex-
hibitions, 764 are held in the eastern
north central states, in which division
Michigan is located; 573 are held in the
western north central states; 372 in the
middle southern Atlantic states; 181 in
the eastern south central states; 157 in
the western south central states; 129 in
the Pacific states, and 124 in the mount-
ain states.

From this division of agricultural fairs
and exhibitions as to the territory in
which they were held, it would appear
that the agricultural fair is, in a way
at least, an index of agricultural pros-
perity of the section in which it is held,
since there is no doubt that the terri-
tory in which the larger number of these
fairs are held is the most prosperous
from an agricultural standpoint of any in
the country. It is probable also, that a
diversified agriculture promotes these ag-
ricultural fairs to some extent as the
section in which they are most numerous
has a more diversified agriculture than
any other section of the country.

As to area contributing to exhibits,
county fairs are more numerous, num-
bering 839 as compared with 466 inter-
county fairs and 250 that cover less than
a county area; 200 are inter-state fairs
and 155 are state fairs, while 129 are
national and 102 are international in
character. General agricultural exhibits
appear to be most numerous at these
fairs, while poultry, which is a factor of
agricultural production in all sections of
the country, follows next in the number
of exhibits.

In this bulletin a brief history of ag-
ricultural fairs in this country shows
that the first agricultural exhibition on
record was held in October, 1804, in the
City of Washington, D. C., this being
termed a market fair at which the ex-
hibits were actually sold. Another ex-
hibition of this kind was held in 1805,
after which this class of fairs was dis-
continued. Another forerunner of com-
petitive agricultural fairs was the an-
nual sheep shearing contests established
in an early day, at which prizes were
awarded for certain classes of sheep and
wool and for home-made fabrics, gar-
ments, etc.

The first purely competitive agricul-
tural fair on record was held at George-
town, Maryland, in May, 1809. It was
organized by interested residents of
Maryland, Virginia and the District of
Columbia. This fair was mainly devo-
ted to domestic animals and manufac-
tures. It is an interesting fact that
there is now in existence an agricultural
society organized at about the same time,
the Berkshire Agricultural Society of
Pittsfield, Mass., which held its first fair
in the autumn of 1810.

The agricultural fair has a well-recog-
nized place as a long-established institu-
tion throughout the country and it is a
matter for regret that many of the small-
er agricultural fairs have been allowed
to lapse, due to a lack of patriotic local
support.

The Tax Conference Resolutions.

At the second meet-
ing of the Michigan
State Tax Associa-
tion, recently held
at Lansing, resolutions were adopted
which may be presumed to reflect the
sentiment of that body. These resolutions
follow:

Resolved, That this conference is of
the opinion that the tax laws of Michigan
be amended in the following particulars:

1. To set a limit upon the rate of as-
sessment for state, county and all other
municipal purposes except special assess-
ments, which limit shall not be exceeded
except upon the vote of the people of
such municipality so directing. That such
amendment be modeled upon the recent
enactment of Ohio providing such limit.

2. To give to the Board of State Tax
Commissioners authority to take legal
proceedings for the removal of assessing
officers who do not, in their valuations,
conform to the requirements of the law
as to the assessment of property at its
fair cash value.

3. To extend the mortgage tax to an
annual registry tax at a minimum rate
of \$3 per thousand, in accord with the
provisions of the mortgage tax law of
Minnesota, and to further extend the
principle of the mortgage tax law to all
credits and to provide that the tax be
divided when the lien is upon property in
Michigan upon a basis more favorable
than at present, to the community where
the property is located.

4. And it is further,
Resolved, That this legislative commit-
tee of this conference be directed to draft
bills in accord with these resolutions to
procure their introduction in the legisla-
ture and to use all proper means to pro-
cure their enactment into law.

Be it further,
Resolved, That the legislative commit-
tee be also directed to call to the atten-
tion of the proper committee of the legis-
lature the Wisconsin plan of equalizing
assessments as between the counties and
different forms of property on the basis
of actual value and not of assessed value
in order that the merits of such plan may
receive the fullest possible legislative and
public discussion.

Space will not permit a full discussion
of these propositions in this issue. The
second resolution, however, appears to
embody what is believed by many to be
the real object of this association, viz.,
the increasing of assessments upon the
general property of the state in order to
reduce the general tax rate upon certain
classes of property. The cash value of
property is largely a matter of opinion.
It may reasonably be presumed that the
local assessing officers will have as fair
a knowledge of values as any agent of
the tax commission. The present law
provides adequate means for the removal
of an officer who wilfully violates the ob-
ligations of his office and we do not be-
lieve that public opinion will be behind
any move to provide for the removal of
an assessing officer in case his opinion as
to local valuation does not conform to
that of the state tax commissioners.

(Continued on page 243).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

SO white and fine is the sand on the beach at Nome, Alaska, that no one can blame the Eskimo for setting up housekeeping there. No cleaner floor could be desired. It is soft and dry and very comfortable when a woman does her work on her knees, as the Eskimo women do much of theirs.

Children of the sea, as they are, the Eskimos never like to get far from the sound of the breakers, and during the summer they live mostly in the open air, much of the time with their heads bared to the sun and wind. The men wear their hair fantastically banged around their heads, but the women part theirs in the middle. Many of the women are very good looking; some of them, indeed, decidedly pretty, though they unfortunately age rapidly.

Their housekeeping is not a complicated matter. Their summer homes are tents pitched on the beach, with boats turned partly upside down as outdoor living rooms, or porches. These boats are large and rather crude, and covering them with skins is one of the duties which devolve upon the women. The skins of animals are used and are fastened in place before they have had time to dry and, as they lose their moisture, become taut and tough. The Eskimo women take great pride in doing this part of their work skillfully. Often they paddle the boats after they are in the water.

The tents used in summer were formerly made of skins, but, since the coming of the white man, canvas tents have been adopted to a large extent, and they provide more room than those made of skin, which are conical in shape. Indeed, the coming of people from civilized lands has resulted in many changes in the housekeeping arrangements of the Eskimo. The crude dishes of a few years ago are being replaced by the pans and pots and kettles found in our own kitchens. Lard pails and tin cans are often pressed into service, too. Cooking is commonly done over a little fire of sticks, but sometimes a cheap stove set up in the open air is seen. As a matter of fact, the Eskimos often eat their food without taking the trouble to cook it. Frozen fish, in particular, is eaten with relish while raw. Fish is a very important article of diet. Seal flesh is eaten constantly and sometimes the meat of wild animals. Those Eskimo who live near white settlements are gradually coming to eat the food of civilization, although the women spend little time, as yet, in preparing it. Boiling is the most common way of cook-

Eskimo Housekeeping

By E. I. Farrington.

ing meat and fish. The amount of food an Eskimo is capable of swallowing is enormous. It is not unusual for a man to consume ten pounds of flesh in addition to other food in a single day. Blubber is their most prized dessert, and a man will let his wife feed him with choice bits until he cannot move. Blubber is too scarce to be served generously, however, as a rule, for it serves to provide fuel and light in winter. Blood is relished, and the half-digested contents of a reindeer's paunch are enjoyed. Mussels, seaweed and berries are among other articles of food which the

Eskimo housekeeper provides for her hearty family by way of variety.

Eskimo women are experts with the needle, and the making of clothing occupies much of their time. They use steel needles when they can be obtained, but do remarkably good work with needles fashioned of bone. Sinew thread is used and is exceedingly strong, as it needs to be, for a garment once donned may be worn for a long time.

Although skins, often with the hair on, are used to make the garments worn by men and women alike, a very good fit is secured and the workmanship is neat and

creditable. Even when it comes to doing a bit of patchwork, the women show their skill.

Fortunately, fashions do not change as often as they do in more civilized countries, although that may be no proof of advanced civilization, and the men and women dress much alike. Both wear trousers and a jacket, but the trousers of the women are likely to be ornamented with feathers or leather embroidery, for the Eskimo wives and daughters are not without the love of finery which seems to be universal among that sex.

The jackets of the men often have hoods attached, which may be drawn over the head in very cold weather, leaving only the faces exposed to the biting arctic wind. The women also have hoods attached to their jackets, but designed for quite a different purpose. In their hoods, which are lined with fur, the babies are carried, and are well out of the way, although snug and warm. Sometimes the women's jackets have funny-looking little tails attached. The skins of reindeer or seals are usually employed for these garments, and in extremely cold weather two suits are worn, both having the hair attached and making it impossible for the cold to penetrate, as well as making both men and women appear as though padded. Neat boots of sealskin leather are worn, but must be changed, if wet, in cold weather, for otherwise they would freeze stiff.

This is the native way of dressing. Those Eskimo who have set up their abodes near Nome or other towns are beginning to wear the clothing of civilization, at least in the summer season. It is true that a Yankee wrapper is much less picturesque than the native garment, but doubtless the women find it just as comfortable, and easier to put on.

One of the greatest innovations which has come to the Eskimo of Nome is represented by the American wash tub and scrubbing board. Cleanliness is an unknown word to the Eskimo in his natural way of living. If a baby gets a bath, it is when the mother licks it with her tongue. The men may have layers of dirt on their faces without having the idea of washing it off occur to them. The women, however, are now learning the meaning of soap and water.

The natives have learned how to profit by the presence of their white neighbors in some sections of Alaska, and the women have had added to their duties the task of selling fish, which is spread out on pieces of canvas or burlap on the beach where prospective buyers are



Eskimo Mother Nursing her Child Beside a Crude Cook-stove.



Moving Day—Eskimos Breaking Camp at Approach of Winter, Nome, Alaska.

likely to pass. Picking up driftwood for use in winter is also women's work.

Winter must needs be provided for by ample preparation, for it is long and exceedingly cold. As it approaches, the tents are taken down and the families move into huts made of planks or earth or blocks of snow. However constructed, they are certain to be almost without ventilation and revoltingly filthy. Little house-cleaning is done. The dogs block the passageway and dead seals are thrown on the floor. At night little lamps the burning blubber are used and the atmos-

phere becomes hot and fetid. At one side of the room, or in the middle, is a bench which serves for a seat in the day time and answers for a couch at night.

In spite of the hard work which they are called upon to perform, the Eskimo housekeepers are good natured and easily made to smile. Indeed, good temper is a characteristic of the Eskimo. The women, like the men, are quick and intelligent; they are somewhat imitative and by no means devoid of that trait which is supposed to be displayed by the women of all lands—curiosity.

BRAMBLE HILL

By ROBERT CARLTON BROWN.

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She flew across the intervening space to Mother Hubbard's crowd and looked the men over rapidly. She tried to choke back a strange apprehension. She hoped nothing had happened. Watts had so long been her chief thought and constant care that her feeling toward him had come to be almost that of a mother for her child, especially since she had come back and found him aged.

No sooner had she left Mother Hubbard's camp-fire and sped toward the deserted quarry, where Watts had been last seen by Hornbill, than Sid, seeing her rush alone into the darkness, thrust the coffee pot into Jimmie's hands and raced after her.

As she was searching through the stony ground with a lantern, calling low to Watts repeatedly, apprehensively, Sid came up with her.

He caught her arm, took the lantern from her and swung it ahead as they searched together. They neared the hollow where the quarry had been and Jerusha, called anxiously in a low tense tone, "Watts! Watts, where are you?"

"Jerry," came a weak reply.

It was so close at hand that both started. Sid thrust the lantern ahead, through a clump of bushes, toward the voice.

A cry escaped Jerusha as the light stenciled out Watts' face with a smear of blood across it and one of his arms groping toward them. She shot past Sid and dropped beside her father.

"I knew something had happened. I knew it!" she cried hysterically. Then, realizing that she mustn't excite him, she calmed herself with an effort and went quickly to the source of pain which knotted his face in tortuous twistings. It was his leg. When she touched it ever so gently he cried out; his fingers gripped a root and tore it from the ground. Sid shaded the lantern from Watts' eyes and cried, "What shall I do?"

"Keep quiet!" Jerusha answered him. She had pushed up the frayed trouser leg and was feeling ever so gently for any irregularity that would indicate a fracture. She was quite cool now and questioned Watts closely. He answered between wincings of pain that he had started for the camp-fire to eat his supper just after the other men had gone. He must have dislodged a stone in stumbling after the others without a lantern, for he heard something slip, felt a burning sensation in his leg and knew nothing more until he tried to answer Jerusha's call and finally succeeded.

The blood on his face came from a stone cut received when he had fallen, and the rock that had dropped on him must have fractured his leg, for she found his limb frightfully distorted just above the knee.

Telling Watts to be silent, for he was still trying to answer her questions, she whispered to Sid to tell Hornbill and Jim to come, and for him to hurry back to the house and call up the doctor, telling him to come at once to the Wattles cottage prepared to set a leg.

Sid, dazed, dashed back to the camp-fire. Meanwhile Jerusha was endeavoring to cheer Watts, who lay moaning. She smoothed his forehead and spoke soothingly to him at the same time that she was slipping off her shoes and stockings, preparatory to making splints for his leg. She scooped up handfuls of earth and poured them into one of her stockings. When it was full and firm she snapped a shoe lace in two and tied the stocking securely at top and bottom, making a splendid temporary splint.

As she heard Hornbill and Jim plunging down the stony incline toward her lantern Jerusha drew her laceless shoes onto her bare feet and began filling the second stocking.

"Good for you!" cried Jim, a minute later, after she had explained the trouble in a few words. "Here! Put his leg in its natural position. I'll finish filling this stocking. Tear up something to tie the splints with. Hornbill, get one of the tall side-boards from one of those dirt wagons and bring two huskies back to help carry him." Jim took masterful command of the situation, having had some experience with broken bones among the men in his construction gang.

In ten minutes' time the fracture was securely held between the splints and Watts was being hurried, as fast as his conditions would permit, to the little cottage.

Chapter XIV.—Making History.

Like the herald arriving at the end of the first Marathon run, or any other Grecian messenger boy—even like an animated A. D. T.—Bud hurled himself through the atmosphere, leaving a jagged hole in the ether behind as he shot onto the porch of Niles Pash's store.

"The creek's broke loose!" he yelled the instant his freckled pug nose was over the tape.

Aloisious Stimpson, standing in the doorway, twisted his leathery neck around, scowled down at Bud with disdainful doubt, took in with cautious, speculative eye the excited condition of the boy and calmly removed the liver-colored stogie from his mahogany-stained lips. It was early yet, the council hadn't convened, and Aloisious Stimpson was always slightly sluggish until after his second chew in the morning. Besides, when anyone was excited Stimpson always showed his superiority by contrast and remained as cool and collected as money in the bank.

"Turtle Creek has broke loose," he corrected severely, having served a year on the board of education governing the district school.

"That's what I said!" screeched Bud emphatically. "It has!" His excitement was so tense he seemed to forget his fear of the city father and plunged past into the grocery, nearly upsetting Aloisious.

"Turtle Creek's broke loose! It's runnin' down the road up by the Wattles!" He scattered the news as though kicking apart a bunch of exploding fire-crackers on the Fourth.

"Who's running down the road? A runaway, did yew say?" cried Lufe Turner, the Rhesus-faced, wobbling to his rickety legs and making for the door; he was on hand early to execute his daily duty of scanning the hand-writing and post-marks on mail addressed to his friends and acquaintances.

"The creek! It's flowin' down—a thousand foot wide. I jumped across on some rocks. The Edgeworth private road is all flooded below the Wattles!"

"What air yeh talkin' about? Don't reckon anybody's going to take stock in a trumped-up story like that, do yeh?" queried Aloisious Stimpson, striding calmly through the door, his mustache twitching with concealed curiosity.

Bud no doubt would have repeated his information until the sun froze, in an effort to convince his incredulous hearers, if at that moment a well-known roan mare and a light top buggy hadn't stopped in front of the store and if Harold Ewer hadn't leaped out, crying: "Somebody's changed the course of Turtle Creek. It's a trick! It's an outrage! That fellow from New York visiting Sid Edgeworth's got some hand in it. He's a mean looking skunk; besides, did you see that skinny black tie he swells around in and the way his coat comes in at the waist? Guess he thinks it's fashionable—stylish. Gimme a package of Duke's, Niles. Gee, I'm all out of breath."

"What in h—l's all this about?" demanded Aloisious Stimpson, approaching Ewer and glaring at him with the intensity and disapproval of a Newfoundland about to shake a dachshund by the scruff of the neck.

"It's a trick to help Sid Edgeworth steal old Nathaniel Edgeworth's property. I was wondering what he had that cheap sport from New York down here for. The water's runnin' through the valley by the Wattles. There's a crowd there already. I drove over to see and it's three foot deep. Look at the buggy if you don't believe it. It's over the hubs an' flowing down as calm as you please; it must run around and back into the old creek bed a mile or so below Edgeworth farm."

"But how could it have got twisted like that?" cried Niles Pash, in great alarm.

"Somebody must have built a dam," replied Ewer.

"A dam! That ought to interest you, Aloisious; right in your line," allowed Niles Pash, with a snicker.

"I don't see no sense in all this dam talk," cried Stimpson, fixing a fierce eye on Niles Pash, his face settling into the severity of an Indian cigar sign. "What I'm tryin' to get at is why any fool'd go to the trouble of changin' the current of such a good-for-nothing stream as Turtle Creek."

"Don't you think it would do Sid Edgeworth some good to have the work on the right of way stopped?" sneered Ewer, the sneer not so much at Aloisious as at the thought of Sid.

"Yes, but how could the dam be made so soon? There wasn't anything the matter with the creek yesterday."

"Twenty or thirty men with scrapers an' plows could build a wing dam in six or eight hours' time and shunt all the water of the creek onto the right of way. That'd stop work quick enough, and to my way of thinkin' that's just what's been done, last night," cried Niles Pash, excitedly.

"But who could a thought of it?" demanded Aloisious. "What one of them idiots ever had brains enough to figure it out, an' why didn't they do it sooner?"

"Probably they was just waitin' till the rails got laid on the farm," offered Niles Pash, who had dumped the change from the till into his pocket, covered a cheese that had just arrived, rolled the gum machine inside, taken out the store key and now stood waiting to lock up and depart on the pending pilgrimage to the sensational scene.

A minute later Aloisious Stimpson grandly offered to ride to the new creek course in Ewer's buggy. But he was promptly turned down with the excited reply from Ewer that he'd just stopped on his way to bear the news to Sam Dunlap. Sufficiently awed by the name alone, Stimpson stood back while Ewer rushed past him, leaped into his light top buggy and whipped up his horse, throwing out his chest and shouting to the sleek roan as importantly as though he were an envoy extraordinary bearing a message to the King of England.

So Stimpson swore and stumped it out

to the creek alone; Niles Pash, Bud, the Rhesus-faced and several others who had gathered in, hobbled, hustled, hurried, jostled, pattered, lunged and ran ahead. Stimpson merely stumped, to save his dignity and breath.

As he panted in under the wire behind his following, half of Turtle Creek and her neighbors were there before him, standing agape along the new course of the creek; most of them gathered on Bramble Hill, staring down with eyes dumfounded at the valley full of water, flooding the newly laid railroad tracks. Beyond lay the bare pebbly bottom of the old creek bed, as innocent of water as an unbaptized babe.

There was the construction train at a dead standstill, its nose all but in the water. The workmen it had brought out stood by, slack-handed and stupefied. It had been a clever scheme! A wonderful idea, to change the channel of Turtle Creek and flood the tracks so no construction engine could carry the material for further work, so no further work of any kind could be done. Here was proof of its efficacy in the idle workmen and the stopped train.

"Have to hire a set of divers if they want to push that railroad any farther," remarked Ed. Humphrey, who was always on hand.

Aloisious turned and bit off a few bitter words for the benefit of Ed. "That's right, side in with 'em," he snarled. "Lick the boots of Sid Edgeworth an' maybe he'll take yeh on a jamboree next time he goes on one in Chicawgo."

Ed. hung his head and slunk off in search of a more fruitful field for his flippant wit, while Aloisious banished him from his select Garden of Gossip with this shriveling scourge: "Any decent citizen of Turtle Creek that wouldn't be affected to sober thoughts at this solemn sight of a dishonest endeavor to fight a public utility from comin' through here an' bringin' us blessings an' bounty ought to be roasted on a spit fer treason. Yes, treason, I say. It's nothin' more nor less for an upstart good-for-nothin' like you, Ed. Humphrey, to go around talkin' against a noble, high-spirited town that never had nothin' good to say of you, anyway. Ef you've got any idea of bein' an angel with wings, you'll need an airship buried with you. That's right, sneak off now an' hide your head in a bucket of beer an' try to better your ways."

Having frizzled up Ed. with the fire of oratory, Aloisious turned to his following and pointed, in dramatic silence, to the dam. It stood out boldly in the early sun rays, a masterpiece of bunker-building, no tiny crifice requiring the services of the boy-hero of Holland who stuffed his arm into the hole in the dike in our first readers and saved his country from being flooded by the sea before recess. A good sound dam it was, water-tight and complete. A carefully constructed dam built on property that belonged undeniably to the Edgeworth estate, private land on which no railroad could lawfully trespass. A well-planned wing dam which shunted the water across

(Continued on page 236.)

LITTLE FARM FABLES.

BY AUNT QUILLIA.

Shag's Retort.

Two dogs, Shaggy and Towser, once attended a great exposition. As neither had ever been a dozen miles from the farms on which they were raised, it goes without saying that to them it was a most remarkable event.

As they wandered from one department to another, invariably fetching up at the refreshment stands where they regaled themselves on the choice morsels thrown away, they justly felt that they were having the time of their lives.

Their masters, too, seemed to feel much the same. Especially did Mr. Bragg, Towser's master, expand and beam under the cheering influences of the occasion. With more than wonted complacency he strutted about, his sense of importance more than ever in evidence, and so constantly did he bore his companion with tales of his sagacity on similar events that it was with difficulty that the latter could keep up a show of civility.

Time and again he would exclaim, "What is the use of these fool signs staring us in the face at every turn? How tiresome to constantly be running up against such warnings as 'Look out for the loot-men,' 'Watch your watch,' 'Mind your pocketbook.' None but a pure greenhorn would need such counsel or gambles picks his own pocket."

pay the least attention to it. I have traveled thousands of miles and have been in hundreds of greater crowds than this, even in the wild and wooly west, and never yet have I had my pockets picked of a penny."

"Probably not," his friend would reply, "but all are not equally clever."

This covert thrust, however, was entirely lost upon Bragg who, in dense conceit, would go on and on multiplying instances where his remarkableadroitness had outwitted all manner of thieves, thugs and crooks. "No, sir," he would exclaim with a congratulatory slap on the leg, "No, siree; I am no poor galoot in need of these warnings. I never yet have had my pockets picked of a penny."

A few days after their return home Towser ran over to call on his friend.

"Good morning," he called out, "and now are you feeling after the big show?"

"Oh, fine," answered Shag. "And say, didn't we have a most fortunate trip with no accident or loss of any kind?"

"We sure did," replied Towser, "but that is all owing to the cleverness of my master. He was our protection. He is accustomed to crowds and never yet has had his pockets picked of a penny."

"Don't be too sure of that," retorted Shag. "Last night as we were coming out of town we saw him leaving one of the worst dens in the city. Turning to me my master said, 'Shag, there is an old proverb that runs like this: 'He who gambles picks his own pocket.'"

A VALENTINE—By IDA M. BUDD.

Sweetheart, 'tho years have passed since
you and I
Set out to meet life's shine or shade
together,
And 'tho we've journeyed far 'neath sun-
ny sky
And lowering cloud, through clear and
shadowy weather,
Still, as my thoughts turn back
Along our traveled track,
The love that has come with us all the
way
And lent its cheer to many a weary day,
Pure as at first, would fain vouchsafe
some sign,
And hence this valentine.

We have outlived the ardent fires of
youth,
But not, thank God, youth's tender,
sweet impressions.
We have known times of testing—times
when truth,
Faith, love and courage numbered our
possessions;
And courage oft had failed,
By shafts of doubt assailed,
Had not your faith—so steadfast, firm
and strong—
That through the darkness light would
break 'ere long,
By its calm power upheld and strength-
ened mine,
My own brave "valentine."

Through all, your love has been my bea-
con-star;
And now, as down life's slope our steps
are pressing,
When comes the parting, be it near or
far,
My heart can crave no greater farewell
blessing
Than that your face shall be
The last my eyes shall see
When closing on the scenes love has made
dear;
Your voice the last to reach my dulling
ear
With sweet assurances, amid death's
gloom,
Of life beyond the tomb.

BETTY'S VISIT.

BY PEARLE WHITE M'OWAN.

Betty Mitchel put her chin up in the air and stalked angrily off to bed. "What right," she asked herself resentfully, as she let down her heavy braids, "had sister Flora to lecture her?"

Indeed it seemed to her that Flora was always finding fault. She thought Betty should wash the dishes oftener, and not lie in bed so long in the morning that she didn't have time to do her room work before school. And tonight she had even remarked that "a big strong girl like her should get up and build the furnace and kitchen fires for her mother." That, Betty thought, was about the limit. She didn't know a single girl who

thought Betty crossly, and then deliberately turned over and took another "snooze" just to prove her independence.

It was that very day that Miss Marshall, the little German teacher whom Betty adored, asked her (for Betty was very bright and popular among her friends) to go home with her to spend the vacation week that was then almost upon them. Of course, her mother consented, as what loving, self-sacrificing mother, whose highest happiness lay in seeing her children happy, wouldn't? And two days later Betty, elated and self-satisfied, was speeding away with her beloved teacher to the little home in a neighboring village.

Of course there were little teas and parties and friends and good times in

er's worn old face, and the quick smiles to her lips. Noting and pondering on these things, unconsciously measuring herself by Miss Marshall's standard, Betty was astonished one morning when, having risen very early and, in her kimono, made her way softly down to the kitchen to get a much desired drink, she found Miss Marshall there ahead of her.

On her knees before the range the German teacher knelt, vigorously coaxing a wavering little flame into greater blaze and warmth. Betty got her drink and stood for a moment shivering in the cold morning air, watching while Miss Marshall brushed the hearth, filled the tea-kettle, and began her preparations for breakfast.

"Do you always do this?" ventured Betty. "I—I thought your mother did these things." Miss Marshall shook her head decidedly. "No, indeed. I can't afford to let my precious mother do this. She's not very strong, you know. Why, once, the winter after father died, I nearly lost her," just a suspicion of tears gathering in the kindly little woman's eyes as she softly recalled past sorrows, "and since then I've built the fires and done the hard things myself (I'm strong, you know), and since I've had to be away so much I've hired a boy to stay with her and do those things for her when I'm not home. I couldn't rest a moment and think that mother, frail and predisposed as she is to lung and bronchial troubles, was out here and down cellar building fires and shivering in the cold."

Betty was very sober as she walked up the stairs. Her mother was frail, too, and had a troublesome cough. But ever since the husband and father had "passed on" five years before, the sweet-faced, white-haired little mother had uncomplainingly shouldered all the hard, disagreeable things, and left her strong athletic daughters in comparative freedom. Flora, in the larger experience that had come with wife and motherhood, had begun to realize this, and, regretting her own former thoughtlessness, had tried, perhaps untactfully, to bring to Betty a similar understanding, and thus to benefit the dear self-sacrificing mother, and, perhaps, save the little sister future vain and bitter regrets.

Plainly now, in this moment of enlightenment, Betty realized something, at least, of her sister's hitherto apparently antagonistic attitude, and of her mother's sacrificing spirit. And while she

dressed and combed her long tresses and wound the smooth shiny braids about her head, she did some hard thinking, with the result that later in the morning she lay her head upon Miss Marshall's shoulder and told her how, in this visit, where she had expected only joy and good times, she had learned one of life's much needed lessons—one that before she had refused to even try to learn. "I'm going home," she vowed, tears glistening in her eyes, "and be a better daughter to my mother because of what I have seen here."

Thus Miss Marshall's heart was gladdened, too. 'Tis a beautiful thing to tell one's friends when they have helped in any way. One is strengthened in the telling and the other helped on to greater usefulness through the hearing.

It was just at dinner time when the telegram came. Strange what a fright and flutter those innocent looking little yellow slips of paper will send to the heart of one who does not often receive them. It read simply, "Come home at once.—Flora." Betty's face turned white with apprehension. "Mother," was all



We are two little farmers of Cooper township, Allegan county, and will ask you to give us a place in your Valentine edition.—Kenneth and Marguerite Jacobs.



Washing Day on an Alaskan Beach. (See "Eskimo Housekeeping").

did that, and as for the other things, why undoubtedly she had ought to help a little more, but there always seemed to be so many other things that she wanted to do. And mother would rather do the work than have her muddling around in the way, anyhow. She'd often said as much.

Of course Betty (who was really an altogether lovable and charming girl—a bit thoughtless and high-strung, that was all), loved her sister Flora very much, and enjoyed having her come home to visit, but it seemed, somehow, of late, as though each of those visits, which should have been so full of joyful companionship to the two sisters, was more or less marred by the little germs of discord that somehow crept into them. There were only the two, and before Flora's marriage they had always been so much to each other. True, they had one brother, much older, a business man in the far west where he had married and settled, and now for ten years the cares of business and family had pressed so heavily upon him that he had been unable to visit the old home, though he wrote kind, cheery letters that warmed the mother's heart and stirred in Betty (to whom he was merely an indistinct memory) a fervent desire to know that big brother better.

The next morning Betty heard her sister come softly and tuck her tiny baby under the warm bed-clothes, beside its grandma, telling her (the grandmother), to "rest on while she built the fires."

"Flora's taken with a sudden good streak. Never built the fires for mother when she was living at home. 'Spouse she's trying to teach me by axample,"

general that charmed and delighted the enthusiastic girl, but through it all she was impressed with the kindly little attentions that the lovely Miss Marshall bestowed upon her white-haired mother. She urged her presence with them at all times, made much of her, and tenderly did for her little kindly thoughtful things that brought the glad light to the moth-



An Alaskan Eskimo Family of Four.

she said, and Miss Marshall, with the conversation of the morning and an experience of her own to aid her loving understanding of the young girl's fright and misery, was very tender and gentle. No use to tell Betty that a telegram was nothing to be frightened over, that undoubtedly she would find things all right when she arrived at home. She only shook her head and murmured, "It must be something serious. Flora would never have telegraphed unless it was."

The fright and wretchedness of that homeward trip Betty never forgot. And then she climbed miserably down from the car steps and was greeted a moment later by Flora's cheery good natured call, a call that contained not the slightest suspicion of heartache. Raising her eyes she saw her sister waiting impatiently in the little carriage, and beside her a man, a big strong man whom Betty for a moment did not recognize, smiling a joyous welcome. No wonder the relief was so great that for a few moments she was almost hysterical.

"Only had two days," explained the big man, jovially; "just snatched them out of a hurried business trip, and I couldn't go back without seeing my little sister, could I?" he smiled quizzically down at her, and was pleased at her hearty, "Well, if you had!"

The little mother wondered somewhat at the unusual warmth of Betty's greeting, but it was all explained that evening when, alone together in mother's room, the lesson, with its subsequent fright and misery, were confessed, and Betty, laying a soft plump cheek against her mother's, whispered, "And mamsy, dear, you're never going to crawl out in the cold and build another fire as long as 'yours truly' is able to do it for you." And at her mother's quick, though pleased, remonstrance, Betty smiled her most bewitching smile and, shaking a plump white forefinger at her, chided gaily, "No, you won't, mother mine. I've been the pampered darling long enough. It's your turn to be babied now, if you please."

But the very nicest bit of it all is that Betty never forgot, keeping her resolve faithfully, and today people say of her, "Isn't that Mitchel girl lovely to her mother?" which is the very levellest compliment anyone can pay to a girl.

For rough roads

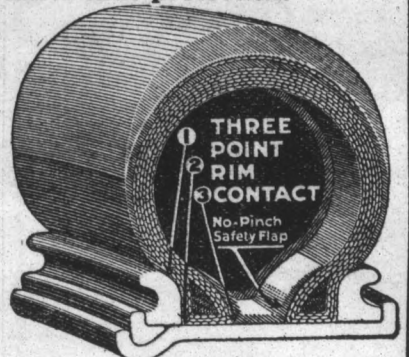
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WORK FOR IT.

BY JOHN E. DOLSEN.

I have noticed, my son, That no prizes are won, Worth the while, by desire alone; Back your wishes with good, Steady work, if you would Make the things that you long for, your own.

You should never, my son, While 'tis yet to be done, From the labor attempt to escape; If you'd have things "come 'round," Dig, chisel or pound, Pull or whittle them into that shape.

MATCHING MAN'S CUNNING AGAINST THAT OF ANIMALS.

BY ISAAC NOTES.

Perhaps, of all wild animals and birds, the wild turkey is the hardest to creep upon by a hunter, and yet the experienced turkey hunter occasionally brings in a fine gobbler or hen turkey from the woods as a trophy of his marksmanship and cunning. A hunter takes more pride, if possible, in killing a wild turkey than in killing a deer, because in some respects the turkey is wilder. A least it has sharper eyes. It is well-nigh impossible for a hunter to creep up near enough to shoot a wild turkey in the open woods, so he must resort to deception of some kind in order to get within rifle shot of it.

To do this he may have recourse to different methods. The method most commonly used by hunters is to call a turkey up by yelping through a quill or bone. Some hunters make a turkey caller out of a joint of cane about five or six inches long, and of the size ordinarily employed for a stem to a clay pipe. But the caller most commonly used is made from the bone in the second joint of a turkey's wing. This is cleaned of all meat and gristle and carefully scraped with a sharp knife or a piece of broken glass. Then the ends are cut away and filed smooth, after which the marrow inside is removed and the bone thoroughly dried. The opening at either end is trimmed out with a sharp pointed knife, care being taken to leave no uneven or splintered edges to spoil the clear, shrill tone of the caller.

The turkey hunter holds this hollow bone between his lips and, by drawing the air sharply through it, makes a sound like the call of a hen turkey. When a big gobbler hears this call in the early morning, soon after flying down from his roost, he comes eagerly towards it. If the hunter is well concealed behind a blind or in a clump of low bushes, and remains perfectly still, he has a thousand times better chance to kill the turkey than if he tried to creep up to it. If this plan doesn't work it will be because there are no turkeys within hearing.

So expert is the old turkey hunter in imitating the call of the hen that he can not only deceive a gobbler into walking up within rifle shot, but also other cunning animals, as a friend of mine once found out to his surprise. He was sitting at the foot of a large tree on the crest of a hill one morning, endeavoring to call up some turkeys which he had just heard fly down from their roosting places in the trees. In front of him, about three feet away, was a clump of grass which served as a screen. His position was perfect, and he felt confident of getting some game.

His rule was never to move under any circumstances after taking a position and beginning to call. It was very early in the morning, and a bit hazy, so that objects could not be discerned with clearness at any great distance. He had succeeded in getting the turkeys to answer him and waited as still as a stone image for their coming, when, suddenly, over the top of the grass screen flashed the lithe, red body of a fox, and two rows of sharp white teeth closed, with a vicious snap, on the hand grasping the wing-bone caller.

It is difficult to say whether the hunter or the fox was the most frightened. The man gave a yell which drove all the turkeys out of that part of the country and sent the fox away like a red streak through the woods.

While it is well-nigh impossible to creep up to a drove of turkeys, yet this is occasionally done if a man practices some deception which keeps them from discovering that it is a man approaching. This friend I speak of was skilled in every conceivable method of killing these sharp-eyed birds. One ruse was this: Upon seeing a drove of turkeys far in the distance, where the ground was dry and reasonably level, he would lie down, with

his rifle clasped to his bosom, the muzzle extending up some distance beyond his head, so as to avoid possible danger. Then he would roll slowly toward the turkeys. When they saw him they would probably take him to be a hog or some other low animal not dangerous to them. If there were hogs in the woods, or a number of cattle, the turkeys wouldn't be likely to take alarm at his approach, though they might eye him suspiciously if he was the only living creature in sight.

It might be possible in this way to get two turkeys, if the drove contained several, for when shot at so unexpectedly, from a point so close by, they would be apt to scatter in all directions, some running, some flying low, and one might run or fly so close to the hunter that he could spring up and shoot it on the wing or on the run.

One reason a turkey has sharper eyes than a deer is that, like all birds, it has the ability to move its eyeballs in their sockets with great quickness, so as to look in almost all directions without moving otherwise. It can thus change its angle of vision without the movement of its head. By this means it sees an enemy approaching from the rear almost as easily as if he approached in front.

You notice this in chickens and other domestic fowls. When the familiar warning is given in the fowl yard that a hawk is near you will see all the hens holding up their heads, rolling their eyes in every direction, looking for it. By rolling the eyeballs they adjust the angle of vision so as to look in all directions, and of course in wild turkeys this characteristic is more highly developed, being always more on the watch for danger than chickens. In spite of this, however, man has been given a trained mind which enables him to outwit the turkey in its own haunts, but it takes a hunter who thoroughly understands the nature of the fowl to do it. A turkey cannot fly far, and it would seem that nature has purposely made up for this deficiency by giving them the ability to run rapidly, and also blessed them with sharp eyes.

Another way the experienced hunter sometimes secures a wild turkey is by creeping upon them in a deep gulley or creek, while they are feeding along one side of the stream, until he is within rifle shot of them. Or he may take a position near a blackberry patch in the deep woods, or near the edge of an old abandoned field alongside deep woods, for blackberries are apt to grow along old fence rows in such places, and wild turkeys are exceedingly fond of them. By taking this position very early in the morning, before the turkeys have flown down from the trees, and hiding behind a screen of bushes or vines, you stand a good chance to get a fine, fat gobbler.

Another plan the turkey hunter sometimes follows is to go out in the deep woods at night, in some locality where he thinks turkeys are roosting, creeping around through the woods until he sees one in the trees. The moon should be full, and low in the heavens, say two or three hours high, so the hunter can get the turkey between himself and the moon, for if the moon is high he will have to come so close to the tree that the turkey will probably fly away. By getting a big turkey gobbler exactly between himself and a full moon the hunter has a fine chance to kill it, for the moonlight shines along the polished steel barrel of his rifle, enabling him to get as good a sight as though it were broad daylight, and if he is a good shot his folks may enjoy a fine turkey dinner next day.

BRAMBLE HILL.

(Continued from page 232).

the right of way, causing more excitement in an hour than Turtle Creek had known in a lifetime.

"Who could a figured out the idea of that dam?" cried Lafe Turner, grabbing Aloisious' arm quite irreverently in the excitement of the moment. "It couldn't a been Sid Edgeworth?"

"No, it weren't Sid Edgeworth; he thinks he knows too much to be smart enough for a job like that. It's what I'd call a damn good dam an' I'm bettin' dollars to doughnuts it's the work of that other city feller; he don't look like he knowed nothin' either. He must a come down on purpose."

All eyes in the little group drifted back to the sensational scene as soon as the oracle had closed his orifice. They watched a body of confused railroad hands trying to do something, evidently planning a second dam to shunt the water back off what they considered their ground. The planks they used floated down

stream, slipping away. It was a futile endeavor anyway, for it has been proved that water will not flow uphill and the empty creek bed was, at some distance up a considerable slant. It was impossible, too, to drain the water off on the other side, for there towered Bramble Hill. Their right-of-way was fairly trapped in a valley and the only possible way of relieving the situation and allowing work to continue was to destroy the dam. But that could not be done without orders from up above, for the act constituted a trespass and no construction boss would undertake anything actionable without definite orders from his superiors.

Another difficulty stood in the way of destroying the dam. That was Brigadier General Hornbill, marching up and down, patrolling the dam, militant, alert, his whiskers twitching like a rat's. Across his shoulder was his old Civil War musket, the barrel bent in service by a cannon ball, now loaded with salt and shined up for action. That he meant business could be seen in the energy with which he worked his jaws and glared at any section hand who dared cross an inch beyond the condemned strip of land.

All the sightseers gaped for a sight of Sid, or Jim, or Jerusha. But none of them put in an appearance.

Later in the morning Sam Dunlap picked his slow-footed way through the brush on Bramble Hill and had a look for himself. Harold Ewer was beside him, quite as aloof as his model, and as horrified, for the mixed expression on Sam Dunlap's usually smug face informed his neighbors that he was greatly perturbed, excited and put out by the unexpected, surprising turn that events had chosen of their own accord to take.

"It was a mighty low-lived trick to sneak up behind the railroad's back and fool them this way," Dunlap was overheard remarking in a cross-grained bel-low to Ewer. "If I'd have heard of it in time I'd have told the whole thing to the railroad people; then I guess Sid Edgeworth would have been surprised."

"I guess he would," Ewer was heard to agree. "As it was, he did a lot of underhanded work and got that grade contractor from Bayview to sneak over here in the dead of night and do the work, I hear."

"A fine thing to do!" was the last snort overheard from Dunlap. "If I'd only got wind of it I'd showed 'em a trick or two. I'd a beat them at their own game, I would."

"I believe you would, sir," agreed Ewer anxiously. "If there's anything in the line of smooth work going on you'll beat them all, sir, you'll get the best of—"

"What's that?" Dunlap caught him up quickly, "you—" but the remainder of the sentence was lost to the listeners. Dunlap had passed on and climbed heavily into the light top buggy, dragging his side down so the box scraped on the springs. Ewer hopped in at the other side and sat on the outer edge in an effort to balance the buggy as he drove his patron home.

The villagers switched back to a discussion of the part taken in the dam building by the grade contractor who had failed to get the railroad contract. His action in siding in with Sid and helping him was looked upon as rank heresy and he was censured on all sides.

Among the throngs who came during the day to witness the great spectacle was a queer old fellow whose farm Turtle Creek and Bayview straddled. He hadn't been to Turtle Creek for four years or more, due to his indolence and indecision of purpose; living exactly between the towns he couldn't make up his mind which to go to, so he stayed at home. But this wonderful happening had been big enough to drag him out with the others. He arrived along in the afternoon to see with his own squint eyes the goings on of the hitherto steady and fixed old creek.

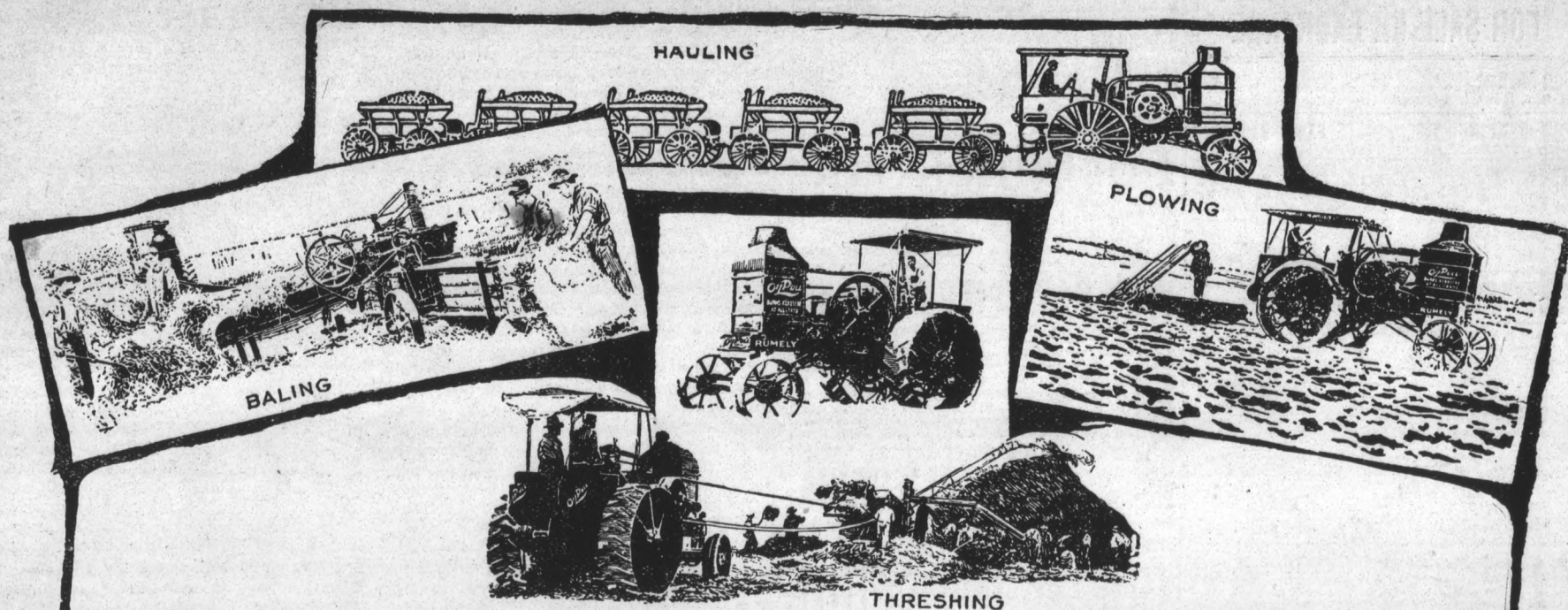
"Well, if here ain't Len Topping," exclaimed Niles Pash, first of the Stimpson ring to discover the old man, hurrying over to extend a hearty hand to the crotchety old fellow.

"Yes, here I be," answered Len Topping, drawing in a sad long breath like a bed-ridden great aunt and lifting his hand lazily to sweep the horizon, designating his long weary trip from home to Bramble Hill in his old Congress buggy, the trappings of which once black were now a mouldered green.

"What d'yah think of the goin's on?" queried Niles.

"Pretty bad! Pretty bad! There ain't been nothin' as big as this happened since the snow of '86."

(Continued on page 236).



AN ALL-WORK TRACTOR

Man did his first plowing with a wooden stick. If you plow with horses, this looks queer to you. But the farmer with a tractor looks upon working horses as queer too—except for small jobs—to him it means waste.

Get these Tractor Facts in your mind

One man's work on a farm with one horse is limited to 25 acres—one man with a tractor handles 400 acres. You can't afford to plow and till as deeply with horses—nor as well. It costs too much to keep a lot of horses standing idle most of the time.

A tractor will save \$1 an acre in plowing—besides it will harrow, haul, thresh, bale, saw, etc.—pull any machine or drive it with a belt. A horse eats 10,000 pounds of food a year. One acre out of every five under cultivation goes to feed farm horses.

A tractor works 24 hours a day if necessary—a horse 10 hours at best. Horses get sick—tractors don't. A plague struck Kansas last year—20,000 horses died in six weeks. To plow an acre is a day's work for a man and one horse—30 minutes' work for a man with a tractor. The tractor is as far ahead of the horse as the railroad is ahead of the stage coach.

Here is the whole tractor argument: LESS WORK—BETTER CROPS—MORE PROFIT!

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BRAMBLE HILL.

(Continued from page 234).

"It sure is bad," allowed Niles Pash, turning quickly to see if Stimpson were within hearing distance and then adding with a wink, "but I kinder admire the nerve of that Edgeworth lot. They say all of 'em took a hand, includin' Oley, an' Mother Hubbard, an' Jerusha an' Wattles."

"Yew don't say!" Len Topping's tone crept gradually upward until it reached the brow of a steep exclamation of surprise. "Jerusha Wattles," he repeated softly, patting the name with his breath. "Jerushy Wattles. Why, I ain't seen her since I pretty near horsewhipped her one Halloween, huh! blest if I didn't think she was a boy. How is the little—Hello, there, Aloisious!" Len Topping reached out his fat hand, the oily skin of it creased with tiny wrinkles, and grasped Stimpson's. Evidently Stimpson had sensed Niles Pash defending the building of the dam and had come up to represent the negative, to play his proud part as prosecuting gossip for the county.

"Jerusha's changed now, you wouldn't know her," Niles Pash answered, unmindful of the interruption, for Stimpson caused little fear in his breast, though he was respectful of Stimpson's views, for life would be dreary if Stimpson should change his headquarters from Niles Pash's store to the depot, for instance. Life in itself is pesty and tasteless, but sprinkle the good sauce Gossip on top of it and there isn't a dish that will equal it.

"So they say, so they say," murmured Len Topping in the tremble tone of a self-confessed invalid, "but I'd know them black eyes an' that black hair of hers anywhere, and that leetle mole on her forehead, right near her eyebrow," he squiggled up his face into the droll smile of a mixie or gnome and portioned off on his long, knife-scraped little finger nail a space hardly large enough to give a flea foothold. "She's still got that mole, I bet yew."

"I reckon not," cut in Aloisious Stimpson with the promptness of a bull charging a red rag. "I reckon since she's been to Noo York she's give up simple ways like wearin' moles an' freckles an' such. Her face is most likely all painted an' chalked like a Chiny tea-cup—if it ain't enamelled, they do that in Noo York, yeh know; that's the pernicious influence of the stage an'—"

"And Zebby, how's good old Zebby?" Len Topping's plaintive tone sawed through Stimpson's reply like a bread knife. "I'll have to stop in an' see him on my way back. I ain't seen him in six years. I'd like to hear him play 'In the Gloaming' jest once more before I—" his tone thickened up and he choked back tears of self-pity. Picking up his courage he continued, "Poor Zebby, I s'pose he's changed."

"Not much, except a blame sight more shiftless," began Aloisious Stimpson. "Always was a gol—"

The horrible oath rattled in his throat as Bud burst through the group and thrust himself into the position of speaker, explaining in a breathless gasp that he'd just been down to the Wattles cottage, that Watts must be sick, that the doctor's buggy was there and when he knocked on the door the city feller, Jim, opened it and said Jerusha was with her father and didn't wish to be bothered.

Another sensation! Watts sick! Even Stimpson seemed sorry for his words, trying to maintain his reputation by launching out half-heartedly, "He ain't sick at all. Blame fool probably tried to help in this here nefarious business and got a load of rock dumped on him. Probly strained his old muscles workin' away to help Sid Edgeworth, just because he likes him. It's like the old fool to be gettin' hurt doin' somethin' fer somebody else. He never did have no judgment. Serves him right. That's what he gets fer puttin' on airs an' mixin' up with young city fellers. Ought to a had more sense, but what can yeh expect from a brainless old idiot that never did nothin' but study music an' read books."

By evening Stimpson's crowd had shifted so that only a few of its original members remained, but it had steadily grown as the curious gathered in from Bayview and the whole county around to witness the wonder, and naturally gravitated to hear Stimpson orate about the outrage, for he never wearied of thrashing out the details with all comers.

Several strange faces appeared in the crowd, faces unfamiliar even at the Old Settlers' Reunion, where everybody went, except old Len Topping. A wayfarer, emboldened by the size of the gathering,

broke cover from a nearby thicket where he had been sleeping and approached the outer edge of the ring at dusk. An odd fellow, he was, legs like a sand-hill crane, a perfect Ichabod, confessedly a vagrant, but with an air about him, and clothes only shabby-genteel. He was thin, painfully thin; he continually caressed a grizzily stubble on his chin and cheek with slender, longish fingers.

As Stimpson finished his explanation of the outrage to a batch of newcomers the shabby gentleman on the outer edge of the ring thrust himself forward and waved one of his long, lean arms gracefully toward the dam and then dramatically toward the setting sun, already below the horizon, but splashing gold across the sky.

"Being a stranger to these parts, coming myself from the golden west," he opened, as though launching forth on a vaudeville monologue, "I am prompted to ask for more intimate details concerning this outrage about which our distinguished speaker talks with such fire and fervor. He has mentioned with slighting slur the name of lady fair. Is charming woman, then, responsible for this clever scheme worked upon the railroad sharks?"

"Who are yeh an', where do yeh come from?" Stimpson at white heat found the proper words to express the panicky curiosity of his hearers.

"I'm John Unusual Harp, common called Barb, I don't know why," explained the stranger with splendid accompanying gestures. He gestured in rhythm with his speech, making an even flow, a poetry of motion of the whole. "Lately landed from Japan and the Eastern Archipelago, citizen of the world, walking across North America in search of a courteous man."

"I guess yeh think that's smart talk. I reckon yer nothin' but a tramp," exclaimed Aloisious Stimpson, not impressed as the others by the scope of the stranger's world, for in his youth Aloisious had been as far as Columbus, Ohio, accompanying his father on a buggy-buying excursion.

"Sir, you do me an injustice," cried John Unusual Harp, throwing out his expressive hands in passionate protest. "I am a stroller, one of God's own wanderers, a rambler, a straggler, a scatterling. I am no abuser of the fair name of woman, no idle oath hurler." His hands fluttered down to his sides, each finger as busy as a butterfly and as light. "I am a nomad, picking up my living as the prairie chicken gleans the oat stubble, living on wild blackberries and bee's bread."

"You're nothin' but a gol blame tramp!" squeaked Stimpson, drawing threateningly near the nomad, "an' your nose looks as though you lived on hard cider an' dandelion wine. What's all this about defendin' wimmin', yeh chicken stealer, yeh barn burner, yeh pesky thief!"

"Hold, hold, good friend!" the stranger oscillated his flexible fingers close to Stimpson's eyes.

"What are yeh tryin' to do, hypnotize me?" demanded Stimpson, sweeping out his arm to push the fellow away.

"I am merely remonstrating with you and your slurring manner of mentioning a young lady whom I recognize from your description to be one who has looked with pity and compassion on the traveller athirst and weary. Yesterneen I stopped at yon cottage by the creek. There I asked for food, expecting a rebuff, but the lady fair asked me in to sit at her table with her father, a man as gentle as the Nazarene. I ate, and when I would go they filled my pockets from their meagre store. I will not stand by and hear that fair name slandered—"

"He must mean Jerushy Wattles and Watts," somebody spoke out in an awed whisper as the man paused.

"I will not stand by and listen to the man who called me Lazarus say that this fair lady probably learned to use rouge in New York. Gossip for old women's tongues fit alone. The young lady whose name I do not know, and would not mention in this motley assembly if I did, has a complexion as sweet, as natural and wholesome as that of a roadside raspberry, and her father is not a 'gol blame drone,' but a fading flower with a poet's soul and a sure sweet sense of melody that would charm the hearts of any but clods." He turned and darted through the twilight to cover in the woods, after breathing a kiss on his dirty finger tips and wafting it away toward the Wattles cottage.

"Of all the good-for-nothin', church-robbin' tramps I ever saw that gol— but nobody stopped to listen to Stimpson;

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THE MICHIGAN FARMER, Detroit, Michigan.

everybody was expressing his surprise for himself, in his own way.

"Desperate character; I'll have to lock my barn tonight; I didn't like the look of him a little bit," allowed the Rhesus-faced, hovering at Stimpson's side and echoing his sentiments to the nicety of a gnat's whisker.

A railroad outwitted! Impossible! A corporation, a powerful corporation defeated by an individual, and that individual a young fellow fresh from the city. It doesn't matter how rural and rustic a man may be, by word of mouth and pulse of heart, but somewhere, way down inside, he has a sneaking respect for, and awe of, the city man. Score one for the metropolis! Sid had come green from the city and beaten a railroad at its own game, according to common report. There would have been even more sneaked satisfaction if the county round had known that Jerusha, a genuine country product (for they are, after all, proud of their own pumpkins) had conceived the idea. Farmers are free-minded—Stimpson was an exception God gave to prove the rule. A joke's a joke, the more practical in nature, the better. Having recovered from the shocked surprise of it they settled down and chuckled over the thing. Going to town all over Pike county the second morning after the sensation had been sprung men drew in their horses with an elongated "Who-aaaa—" and asked each other if they'd heard of how the young city fellow had tripped up the new railroad runnin' out of Bayview through Turtle Creek.

The Bayview Bugle came out with an extra, featuring a diagram of just how the thing was done, a dotted line indicating the old bed of the creek and a gently flowing sheave of arrows indicating the water as it flowed serenely over the right of way. So anxious were the citizens to find exaggerated news of the event that, hearing of the extra, some drove twenty miles to get a copy of it, the day after it was struck off. The Turtle Creek dam made history, for the Bayview Bugle hadn't printed an extra since '90, when the county went democratic.

Sensation after sensation piled up until there was quite a heap of it. Newspaper men from Chicago came down with cameras as the story spread and took pictures of the water running placidly over the tracks, and of the special car that had been ordered to the scene, bearing one of the company's smoothest persuaders, a seasoned silver-tongued spell-binder who had been trying for three days to make Sid think he was the cleverest youth alive and at the same time that to support his sudden reputation for cleverness he should tear down his dam and accede to the railroad's firm wish in the matter. Pictures of the old mill, the Edgeworth private road, Oley, a stone boat said to have been used in building the dam, Bud, Humphrey, the Wattles cottage and lots of other things and people as distantly related to the event itself, were carried out of Turtle Creek by enthusiastic women special writers from Chicago and Milwaukee. Wattles' accident, guessed at, was written up with all the true pathos of the "sob-sisters" and Sunday Supplement writer's art.

The nearest that any newspaper person came to getting a picture of Sid himself was in photographing the old Edgeworth mansion and marking, with an obliterating X, the linen closet window and explaining below that this was the boudoir occupied by the young millionaire-to-be.

Some had the temerity to attempt a photograph of Brigadier General Hornbill serving as sentinel on the dam, but when one reporter was carried from the field with his back nicely salted and peppered all attempts in that direction ceased. Evidently the General had taken the camera for a new kind of gun, such as our navy is supplied with for shooting torpedo boats at night, and had shot in self-defense. The war waging did more than Madame Yale ever could have done to renew Hornbill's youth. His eye regained its quick brightness and his cheeks bore a healthful flush. It was as good as going back to war for him.

He had built an ambush, a sort of sentry box, beside the dam and from this cover held at bay and terrorized every section hand with trespass in his eye. At intervals, for recreation, he chased reporters and hurled furious, mangled, horribly distorted epithets after them if any of the hardened publicists tried to turn back long enough to get a snapshot of the furious little South American insurgent.

As a let-down, rest and relaxation from the strenuousness of this service so sweet to his soul, he chased off impudent visitors who came to stare and unwittingly stepped onto the forbidden ground.

Meanwhile Turtle Creek was flowing peacefully along with merry, happy, skipping little ripples, through its new channel. It had made itself right at home and seemed not to miss its old bed at all, flowing along quite unconcernedly, caring not that it rusted the bright new rails beneath.

Of course, there was no attempt at carrying on the work. The private car still stood with Turtle Creek lapping at its front wheels, and the negro cook pulling up his fresh water with a pail through the rear window. The suave gentleman who traveled in the car was still trying to favor and flatter Mr. Sidney Edgeworth into giving up the fight. He carefully explained all over again each day how really futile was Sid's thought of stopping their work. They could easily go to law and win, he assured Sid, and Sid was certain of that; but the diplomat professed that he would rather arbitrate than go to law. Sid was also sure of that. Privately, toward the last, the railroad representative swung around, admitted Sid had not been offered enough for his property and raised the price to twenty thousand to save the trouble and expense of a legal battle, and to save valuable time. That offer made Sid more firm than ever, all of which Mr. Hartridge, the representative, could not understand.

Hartridge belonged to the pink-manicured-nails and knit-silk-tie gentry. He also wore silk hose, and on his coming to tackle the problem had inquired around town all about Sidney Edgeworth in his carefully polished tone of casual interest; in that way he had found that Sid also wore silk socks and from the fact he set Sid down in a certain mental niche and brought out the line of argument used in beating down the beliefs of such a man. But evidently his sources of information had been poorly chosen. He had asked Sam Dunlap and found that Sid was a dissipated, cigarette-smoking young ignoramus who didn't go to church and, worst of all, didn't care who knew it. Hartridge had put the same question to Aloisious Stimpson, as a leading and knowing citizen, and had learned, "He's a smooth-speakin', citified son of a gun, an' he ain't got enough brains to make a decent dish of sweetbreads."

Yes, surely somebody had told him wrong, for when he faced Sidney Edgeworth and found him a languid, self-possessed youth of his own class or better, with a ready wit and fixed purpose, he was quite at a loss to know just what to do, which was something most unusual for the smooth Mr. Hartridge.

The change in Sid was due to Jim and Jerusha supporting him, one on each side, and the fact that public opinion was with him now; success gives a man strength to fight. It did him good to know that he was actually accomplishing something. He liked to read surprising accounts of the thing in the Chicago papers; it gave him a strange thrill of achievement. Besides, Sid was just slow enough to aggravate Hartridge and make him show his hand, as he had when he boosted the bid to twenty thousand dollars. That decided Sid in holding out and waiting to see what course things would take.

Half his time he spent at the bedside of Watts, taking Jerry's place; she would only sleep when Sid or Jim was with her father, for he was in a critical condition.

Poor Watts! The accident had gone hard with him. A broken leg at sixty is no small matter. The bones didn't seem to knit. His vitality ebbed, he became feeble. A more cheerful and patient invalid couldn't have been found, but somehow nature refused to perform her function, failing to react, making no response to invigorating tonics. The wound would not heal properly and it was with great effort that the doctor managed to stem the ebbing tide of the old man's strength, and ground gained one day was lost the next.

Jim had stayed on to help fight out the railroad game. He was absorbed in it, yet there was something else which held him to Turtle Creek, as even Sid began to notice when he found Jim more and more at the Wattles cottage, sitting beside Watts even when Jerusha was there. (Continued next week.)

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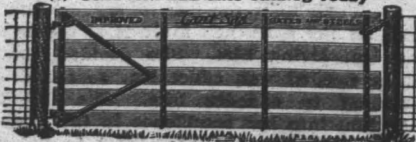
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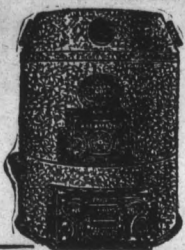
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Woman and Her Needs At Home and Elsewhere



Making the Best of a Bad Bargain.

MAKING the best of a bad bargain," does not sound just right when applied to matrimony. Poets and idealists have combined to paint the blessed state in such glowing colors that mere practical writers seldom dare hint that marriage is ever a bad bargain. But when one looks about and sees so many mismatched couples, what can one think but that a few, at least, have made bad bargains? And that is not saying that the bad is all on one side. Those who admit the mistake and set about together to make the best of it, usually come out fairly happy in the long run. But those who make wry faces and each lay the blame on the other can not fall of misery.

I remember two women who both made the same mistake. They were both thoroughly educated, fond of books, music and society, keenly sensitive, proud and high spirited. And each married a bluff, good-natured man, with no particular education, no interest in books, music or the niceties of life. Men who were fond of a joke if it wasn't too subtle, lots of company of their own sort, plenty to eat and drink, and whose greatest joy in life was to see a good horse race or prize fight.

Both women were madly in love, or thought they were, when they married. But like all the rest of us, they found marriage must depend upon something else than mere attraction. After the first year or so the real nature of the couples began to assert itself. The women wanted things they had been accustomed to in their fathers' homes, and thoroughly disliked the friends the husbands brought about them.

Here is where making the best of a bad bargain began to work. One woman began to feel sorry for herself. She began to think of what she might have had if she had stayed at home, or had married some of the other men she used to think wanted her. As a matter of fact, no man but her husband had ever proposed to her, but a woman with a good working imagination can always get past a little thing like that. From feeling sorry for herself in private, she began to pity herself out loud to her husband.

At first he didn't know what to think, but after she had told him for the dozenth time that she was vastly superior to her surroundings, he began to get miffed. So far as he could see, everything was all right. They had a pleasant home, money and, to him, congenial friends. Finally he began to retort to her complaints. She refused to go with him to horse races and ball games, and would not make the least effort to get acquainted with his friends. He retaliated by refusing to go to church and concerts with her. She drew more and more into herself, and he turned more and more to outside friends. Her attitude became one of superiority to her husband and his family, and she so far forgot her wifely duties as to complain to outsiders. Neither one made the least effort to look at things from the viewpoint of the other, or to find a middle ground on which to meet. The result was unhappiness for both, and a ruined home. For, while they did not separate, the place where they resided was not a home. It was a house where two people stayed, but out of which you wanted to escape as soon as good manners would let you.

The other woman woke up, too. And, being a woman, who woke up before her husband. Men have a comfortable fashion of thinking everything is all right so long as the meals are ready on time and the buttons always on their clothes. But this woman was wise. She realized that her husband hadn't changed a bit since they were married and that if he was a fine enough man for her to love at that time, it must be her fault if she didn't keep on loving him. She decided that all he needed was education, so she determined to educate him. She didn't take him into her confidence in this matter, for men strenuously object to being

made over if they know what is going on. But she began in a perfectly natural way to get him to read to her evenings. She had to sew then, and as he was very proud of her superior education she put it up to him in the light of helping her keep up. She selected things which she knew would appeal to him and before he knew it she had him looking forward to his evening's reading with as great a relish as hers.

She went with him to the sort of entertainments he enjoyed, and tried to see things with his eyes. And then he hadn't a plausible excuse for not going with her to her sort of amusements, though, he grumbled about "high-brows" a good deal at first. She received his friends courteously, for, while they were not her equals mentally, they were good, honest people and she knew that she could find something in each of them to interest her if she looked for it. Instead of an

air of aloofness and superiority she became one of them, and found that though she could give to them from her knowledge of books and music, she could also learn much from them of the beauty of simple living. She tried to appreciate her husband's jokes, and carefully kept down any hint of a feeling that she dimly suspected she was a bit above her surroundings.

It was not always easy, but it paid. Instead of drifting apart she and her husband grew closer together, for each was willing to meet the other, if not half way at first, at least a step at a time until the half way mark was reached. Their home is a real home in every sense of the word, a place where you love to linger because of the sane, wholesome atmosphere permeating it. And it all came about, not because this woman loved her husband more than the other, but because she was willing to make the best of what looked at one time a bad bargain, but what, through her good sense, turned out to be a prize package.

DEBORAH.

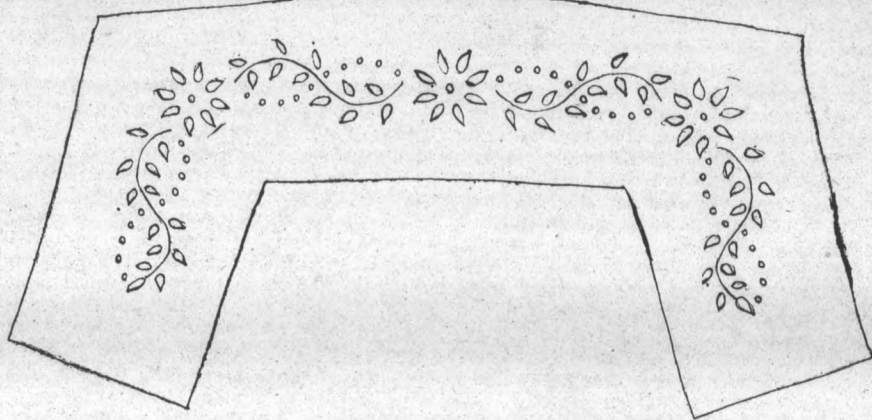
YOKE FOR NIGHT DRESS IN CUT WORK AND EYELET EMBROIDERY.

BY IDA NEWLAND COLE.

With white satin, outline all leaves and flower petals with running stitches. Leave all ends of threads on the wrong side of goods. Never fasten the thread when outlining but slip the thread, leaving short ends to keep it from pulling them onto the right side. With the scissors cut lengthwise of each leaf and petal through the center. With No. 4 mercerized cotton cover the outline stitches being careful to draw the thread snug and to make the stitches close together. After completing each leaf and flower

that isn't the only side of the question to consider. The young men going in debt for a farm and all the stock and implements on it, should look about him, and see what the rich and successful man paid for his farm in addition to the money that went into the fertile acres. On this hangs the whole story. If only money has been paid for the farm as the debts were cleared off one by one, then all is well, but too often the price paid was something not to be estimated in money.

Not long ago an elderly man was discoursing eloquently about going into debt, and saying that it was the only way for an ambitious young farmer to begin. His audience was deeply impressed, for



the eyelets are worked in the same way, except the stiletto is used in making the holes instead of the scissors.

The stems are embroidered in stem stitch. The pattern is intended for a low-necked gown but it is equally pretty for the yoke to a high-necked one.

SELDOM CONSIDERED FACTS ABOUT MORTGAGES.

BY HILDA RICHMOND.

Ambitious young farmers have the idea that to be successful a man must at once begin on a farm of his own. There is a prejudice hard to overcome against working by the month for a farmer or even farming on the shares until a start is made. Somehow the idea is that valuable time is lost if the farmer does anything but buy a farm and pitch in for himself, and this idea is responsible for much of the unhappiness in farm homes, and incidentally the foundation for the tales of woe about farm living that appear in the magazines with unfailing regularity. The farmer loads up with all the debt he can possibly go into—all that people will allow him to take on safely—and keeps his eye hopefully on the man who tells how he worked out on a mortgaged farm and now is rich and prosperous. As a matter of fact, there are many middle-aged farmers who did go into the business of farming 20 or 30 years ago as heavily loaded with debt as they could be and who now are rich, but

they were all young men in the crowd, but when he had walked away an equally successful farmer, in a financial way, added a word of warning. The last speaker said he had begun as a tenant and was rated as high financially as the man who had started heavily in debt, and he modestly said he thought he represented some other things in life that his neighbor did not. There was nothing boastful about his words as he told of the wife and children in his home, happy and well cared for, and then spoke of his neighbor's family in the grave yard and out in the busy world. His children—those who had lived—were estranged from him, driven from home by hard work and a step-mother, his wife filled an early grave because of hard work and lack of home comforts, and he himself had the reputation of being the stingiest man in the community. The young man realized as never before that success can not always be measured in money. The speaker warned them against getting into debt hopelessly, and said while a little debt was an incentive to activity and thrift and caution on a farm, a big one was a burden under which many men and more women and children had gone down to defeat if not death.

It looks so easy when viewed through the rose-hued glasses of youth, this going into debt to the limit. No allowance is ever made for sickness and disaster and bad management and rest, nothing

is taken into account but good weather hard work, thrift and prosperity. It is really distressing to hear the young men setting forth their plans, for they so seldom include recreation, good times and enjoyment. Now hard work is one of the important factors in success in any line, and particularly so in farming, but so is rest. Without rest and pleasure health falls and when health is gone everything is gone. What doth it profit a man if he pays the mortgage in full if he does so at the peril of his own life and the lives of those dearest to him? There is something depressing about worry over debts that sends many a man to the insane asylum and later to a premature grave, that the care-free farmer knows nothing about. Better be a tenant all one's days than to be burdened with debts and worry and ill health.

In a farm house recently where there was a severe case of illness, very suddenly a clean sheet was called for and it developed that there was no such article in the house. The farm was heavily mortgaged and in trying to save every penny for it the wife of the farmer had allowed everything to run down to the lowest ebb. The sheets had to be washed and returned to the beds the same day, there were barely enough towels to use when washed out frequently, the garments of the family were old and patched and they had to be hurried through the wash tub every few days, in short, everything about the place was really poverty stricken. And many of the frequent cases of illness came directly through lack of home comforts and the wearing of damp garments to save buying new ones. The money paid out in that home for avoidable illness would have made them all comfortable and furnished a little fund for pleasure, of which there was a lamentable lack, but the master and mistress of the farm house consider themselves skilled in the art of saving and no one could convince them that they are really throwing away their most priceless possession.

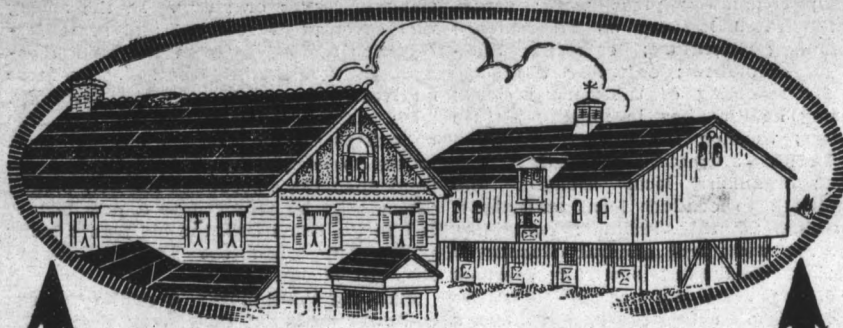
"But I'm not going to live that way," some young farmer is sure to say. Well, if you are not you may avoid the pitfalls of the mortgaged path, but in a few years you may change your mind from necessity or choice. There is something about a heavy debt that renders young farmers indifferent to the claims of home and society and church and everything pleasant and happy in life. Paying the interest is the chief event on the farm and toward this every energy is bent. The children's teeth are neglected, the new buggy is put off into the indefinite future, the girls coax for a piano in vain, the family withdraws from society because it costs too much to have company, and besides, nobody has clothes good enough for social occasions, well the list might be prolonged, but everyone knows what the excuses are. By and by the boys and girls leave home where they think they can have better times, and the wife and mother settles down into sallow, faded middle age, content to stay at home, or perhaps in such physical condition that she can not get away. Her husband finds his delight in telling how he started with his bare hands and now has a fine farm well stocked, and this is really the only satisfaction anyone gets out of the whole transaction.

So, before any young farmer decides that a so-called successful farmer who started on a mortgaged farm, that is, a farm mortgaged to the limit, really has made things pay, he should go deeper than the surface. It is a life-time job, this business of paying debts, with many people, so there should be some little effort made to investigate the matter before plunging into it.

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Additional workers are needed. If you can help in any of these ways, write to Miss Carol F. Walton, Secretary, Medical Building, Ann Arbor, offerings your services.

THE YARD BEAUTIFUL.

BY MRS. M. E. UNDERWOOD.

Now, while the seed catalogues are fresh in our hands and we are planning for our next garden I wish to put in a plea for more vines and flowers around the farm home. Bulbs, seeds and plants are offered so cheaply, and yet how noticeable is the barrenness of many farm houses! So much may be done with vines, it seems a pity that so many dwellings are without them. Almost any plain old farm house can be converted into a feast for the eye by a liberal use of vines. If there are no porches, a light framework over the door, covered with vines, greatly improves the appearance of the building, besides furnishing a shady place in which to sit on warm days. Where there are unsightly objects, old buildings, fences, walls, rocks, etc., they may all be hidden under a mass of green and bloom with very little expenditure of time or money.

The busy woman can hardly afford to experiment with novelties but there are many tried and true varieties. Of the flowering vines the clematis is a favorite. Climbing roses, when well grown, are beautiful, but they are less satisfactory to me than other climbers because of the care they require to keep them in a healthy condition. Then there are the wild honeysuckle, wild cucumber, Japanese hop, cinnamon and Maderia vines, all good. Even the morning glory, climbing nasturtium and sweet pea can be used, but to my mind the Virginia creeper is the most satisfactory vine for busy people. It thrives in almost any situation, grows equally well on the north and south of a building, needs but little attention when once established and gives the benefit of its shade and beauty from early summer until the last maple has dropped its leaves.

On our farm we have used hollyhocks and sweet peas for hiding a remarkably high stone wall in the rear of the back yard. We used the double variety of hollyhock, which is beautiful in early summer, and when they begin to fade the sweet peas are ready to bloom. Being in a sheltered situation, the sweet peas continue in bloom long after the first frost. Sunflowers and climbing nasturtiums have been planted together after the same plan, the sunflowers giving the necessary support to the vines.

Everyone should plant some hardy shrubs or plants. Personally I am partial to the old-fashioned sorts. What is more beautiful than the syringa, with its fragrant, waxy blossoms; or than a clump of hardy phlox, peonies or bleeding hearts? All of these but the phlox blossom in the spring. For midsummer and autumn there are roses, golden glow, larkspur, the hardy hydrangea and many others to select from. And let us not forget the lily-of-the-valley to plant in out-of-the-way nooks, shady spots and neglected corners. They are lovely for cut flowers and a continual joy during the blooming season.

If you cannot have a bed of annuals you can at least have a bed of pansies. If you have never tried them, purchase a package of mixed seed from any reliable seed house. Sow in a shallow box filled with good garden soil about the last of March. Place the box in a sunny window and cover with a glass or paper. Keep the soil moist. When all danger of frost is over and the soil is in good condition, set the young plant out in the open ground about one foot apart each way. In a short time buds will appear. Florists tell us that pansies require a shady situation, but I grow mine where they get the sun all day, and my bed is a mass of bloom from the last of June till cold, freezing weather. After the first snowfall I give the bed a light cov-

ering of leaves or straw. In the spring this covering is removed and some fertilizer is applied between the plants, being lightly raked into the soil. No more cultivation is given until the seedlings, from seeds dropped in the fall, are large enough to reset. I seldom buy new seed unless to secure a new variety, but depend upon these seedlings for new plants. These may be removed to a new bed or left in the same bed, the old plants being pulled out when the young ones are ready to bloom.

Just one thing more: Give the children a flower bed for their very own. Let them grow their favorites, attend and cultivate them themselves. Encourage them to do their very best. They will surprise you with results. Last spring I gave 16 children in our neighborhood 25 plants each for "Sunshine" gardens, and many bunches of flowers from their gardens found their way to the sick and shut-ins.

SPRING FASHION HINTS.

If there is one tradesman who deserves the name of early bird, it is the milliner. Already the spring hats are in, though the February winds are howling. And not a few "worms" has this spry bird caught, for many a feminine head is crowned with a straw chapeaux, above a warm fur scarf.

The hats are, of course, distinctly for early spring wear, and are turbans, with low crowns and small rolling brims. Red is the distinctive color, principally the warm cherry red that has been so popular all winter. Simple trimming is the thing, a velvet bow and band, a quill thrust through a knot of velvet, or one feather. Besides the red, which is in fine straw, there are dark blue and black and novelty braids.

After a few seasons of skimpy hobble skirts, we are coming to draperies, panniers or overskirts, whatever you choose to call them. The new skirts, even the suit skirts, are showing draped effects, much to the horror of stout women who look even worse in them than in hobbles, if such a thing is possible. Indeed, so popular are draperies that the bodices and sleeves are draped, as well as the skirts.

The woman with scrawny arms will rejoice to learn that long sleeves are to be worn again. The new sleeve is an old friend, rather full at the top and with the upper part shirred down the seam. While this sleeve is used almost entirely in the cloth and silk waists, many of the summer lingerie waists show the elbow length.

AN ENJOYABLE EVENING.

BY MAE Y. MAHAFFY.

A unique contest can easily be arranged to occupy an hour or so at some home party or social in an enjoyable manner. The contest is called "Making Pictures," and although the name sounds rather childish it will provide a field in which even the grown-ups' cleverness and ingenuity are tested.

In almost any magazine suggestions for the pictures may be secured, and these may be cut out and passed, one for each contestant, or for teams comprised of four or five if the gathering is a very large one. Or simply the names of pictures to be made may be distributed, allowing the contestants to call upon their own imagination in working up the pictures. Suitable topics or pictures are those having such distinctive features that they may be made up of various smaller pictures or advertisements cut from old magazines. For instance, "Circus Day" may show a group of tents, wagons, various animals, people, signs, stands, etc. The well-known painting, "Bubbles," is frequently seen as an advertisement. By using the figure of some pretty child, with a lace frill from some lace advertisement, fancy buttons from another, a pipe from a tobacco firm's notice, a bowl from a stone-ware maker's, etc., the whole may be very acceptably copied. Other suggestive titles are "In the Gloaming," "Hay-time," "At the Railroad Station," "In the Dining Car," "The Picnic," "By the Fireside," "Hunting with a Camera," "When the Sleigh Bells Jingle," "Skating," etc.

The hostess should provide plenty of magazines, pictures, and cards for material, as well as paste and brushes, scissors and large sheets of blank paper or cardboard to serve as backgrounds or foundations. The work may be done at small tables, or all the contestants may gather around one large table. Prizes

may be awarded for the best copy of any picture, proportion, coloring, etc., being taken into consideration. If only topics have been provided give a first prize for the picture which seems to meet the requirements most satisfactorily, and a booby prize for the most absurd. Small pictures, a book of snap-shots, a cut-out, mounted picture from a comic supplement, a small brush with a card attached bearing the following: "To brush the cobwebs from your brain," a pencil sharpener, "To sharpen your wits," or a small pair of sharply pointed scissors, with which "To cut straight next time," or similar articles will provide suitable prizes.

If desired, additional prizes may be given for guessing the advertisements which enter into the pictures. A majority of these would no doubt be familiar to most of the contestants. In carrying out this part of the game the pictures would of necessity have to change hands so that no one would hold the picture they had made.

In choosing judges it is a good plan to place folded papers in a hat, allowing each one to take one. At a signal all unfold their papers, and those holding the word "Judge," are expected to serve in that capacity, their own work being barred from the prize offers. All the other papers are, of course, blank. Three or five, according to the size of the crowd, should be chosen.

HOME QUERIES.

Household Editor:—What is the best way to crumb chops before frying?—Cook.

A nice way is to use the yolks of two eggs, well beaten, using as much water as you have egg. Brush the chop over with a brush dipped in the egg, then roll in fine crumbs. You can use the whole egg, but the white gives a tougher crust.

Household Editor:—How do you keep caramel?—M. B.

After the sugar has melted let it boil until it is quite dark. Then add an equal amount of boiling water and simmer a couple of minutes. You can keep it in bottles or fruit cans without sealing.

Household Editor:—How often should a six-months-old baby be fed in the night?—Mrs. B.

After a baby is six months old if it is fed regularly during the day it should not awaken between 10 p. m. and 6:00 a. m. Some babies do not eat between 8:00 in the evening and six in the morning. They must be fed by the clock in the daytime, though, or they will be hungry and demand food at night.

AN AID TO MEMORY.

BY ELLA E. ROCKWOOD.

How many times we find ourselves at a loss to recall the location of certain articles which we have put away so very carefully that we cannot find them. Some member of the family comes to us and says: "Here is this that I want taken care of. Will you take charge of it?" Or we put away something for ourselves without the slightest intention of forgetting it and after the passage of weeks or months, as the case may be, find ourselves wholly unable to find it again. It may be of importance to produce the article and we look here and there, upsetting the contents of boxes and drawers in vain search. Then when the necessity for locating it has passed, when something else has been made to take the place of it or the search has been dropped, we discover it peacefully reposing exactly where we put it and then it all comes back with a flash. Of course, we put it there, but why could we not remember this when we were searching for it? The answer is, because we did not think what we were doing.

I believe this will aid others as it has me in tracing various articles to their hiding places. Make it a rule never to put away a thing which will be wanted again without doing one of two things. Either make a note of it some place where it can be looked up in a moment or impress the circumstance upon the mind clearly and strongly at the time. I have spent hours searching for a small article which I knew perfectly well I had put away carelessly. I have gone directly to another article after the lapse of a year. I was able to do this simply because at the time I stopped to think where I was putting it.

I find the back part of my kitchen recipe book a convenient place for recording anything which I want particu-

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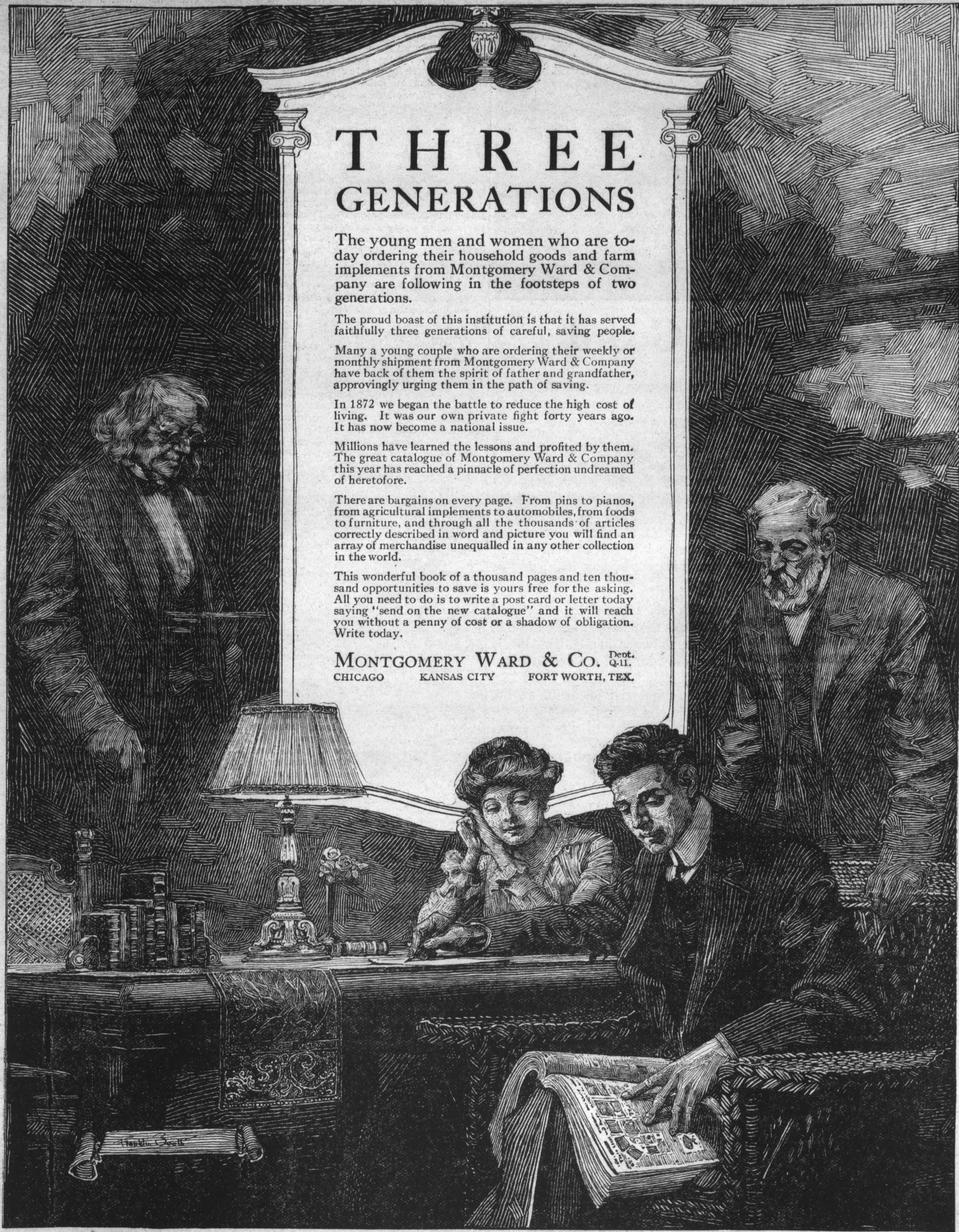
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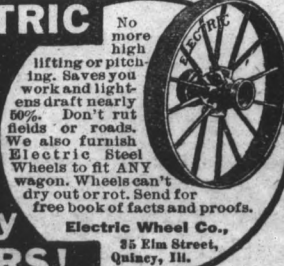


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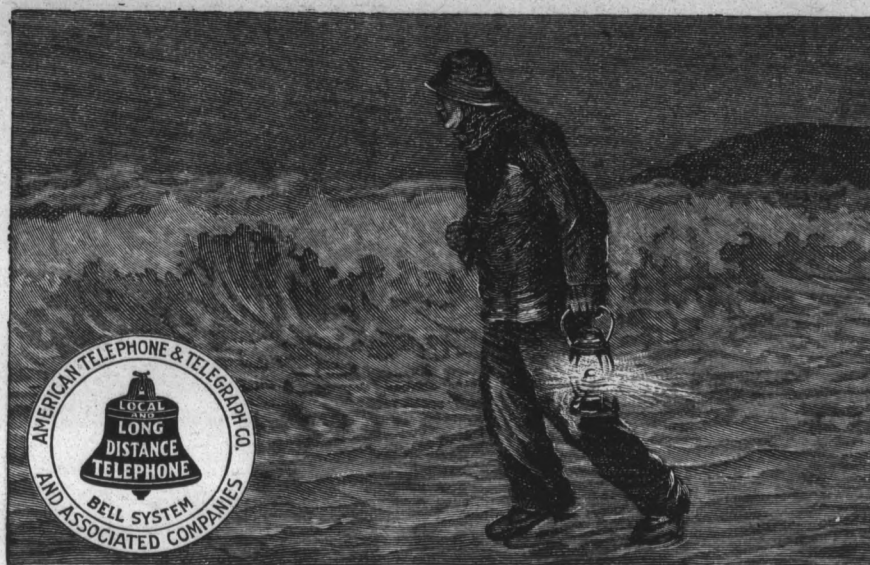
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larly to remember. Jotted down in a few words this often is a welcome reference of facts and figures. The book never becomes mislaid, as might occur with another or with a loose sheet.

In every family there should be a safe place for preserving papers of importance and all such documents should be kept there. For deeds, tax receipts, and other papers most necessary to preserve from harm many hire a safety deposit box at their bank. But there are receipts of a minor nature which if at hand often save the annoyance and loss entailed by twice paying a bill. If you have such a paper in your possession you are secure against any mistake which might result in the bill being presented a second time for payment. It should be the rule in every family to preserve all receipts for at least one year. Where payment is made by check this becomes unnecessary as the returned check is a receipt for the sum specified.

THE COUNTRY SEEMS PRETTY GOOD TO ME.

BY MRS. SELMA NEW.

At different times I have visited with friends and relatives in some of our large cities and I have learned much about the mode of living of many in the large cities. I have thought a great deal about it for some time, and this winter on my return from a visit, something seemed to say to me to write a bit of encouragement to readers of the Michigan Farmer—the wives who sometimes get discouraged with life on the farm.

First, let me say that, as a rule, I think the city people are good entertainers, doing their best to have us have a good time and to see many of the interesting sights.

But with all my pleasant trips sight-seeing, shopping, etc., it is so restful to me to get back to the country where it is quiet. The ceaseless noise of the city is tiresome to me. There, when you want to go anywhere, you have a long ride on the street car, usually having to transfer, always mingling with a large crowd, everyone as anxious as you to get somewhere, and maybe you will get the trimming on your hat singed by some man's cigar in a crowd, as I did.

'Tis true that our city friends have an advantage over us in buying at the large stores and if not too hasty in buying at the earliest, but wait awhile they can buy suits, dry goods and many things at a large reduction during the special sales.

They have endless ways of amusement most of which are costly, counting car fares and all. Most people on moderate salaries are living in homes, mostly rented, where they have all the modern conveniences. They spend in dress for themselves and children far beyond what they can afford if they have any idea for putting aside funds for a home of their own. There is so much false pride, so much strife to keep up appearances, practically living up their salaries as fast as earned, thinking not much about the future when they might lose their positions or in some unfortunate way become incapacitated. As I happen to know how some in the cities spend so much on expensive clothes for small children, I often wonder if they expect they can keep up the pace when the children are grown up, and lay aside for future.

So I am glad that most of us on the farms were brought up in a different way. Am glad that on the farm our money does not come in stated amounts at certain times, and that ever before the most of us is the thought that if we wish a home of our own, which most of us farmers are striving for, we must ever be watchful and careful, always laying aside some for the future. Then when we have a good farm of our own, well stocked and fitted with modern conveniences at both house and barn, we can live independently and nicely.

To the young farmer and his wife let me say, don't try to keep up with your city friends and relatives in fads and dress, but keep up with them or excel them intellectually. For, with the rural delivery and public libraries we do not need to be without good reading matter, nor fail to keep up with the current events of the day. We can dress neatly and keep our clothes cleaned and pressed as well as they.

Something else let me tell you which I enjoy on my return home, is the nice cream for coffee and cooking, the fresh sweet butter, the eggs, the good fruit and vegetables. Now, sister farmer's wife, when you get discouraged during the rush of work at certain times of the year, work and be patient. In the summer afternoons take your sewing or your

reading out under that nice big shade tree and think of some of your blessings while some of your friends in the cities are sitting in those hot flats which seem so comfortable in winter to you. Now they would be delighted to be out in that nice breeze with you. Then when your family is about you each evening think of many homes in the cities where the men are out with the "boys" and wife is left home with the children.

There are cares in the city where it is impossible for the father to see much of his children for when he lives a long way from his work he has to get up so early in the morning that the children are not up. Then, when his day's work is done and the long ride home and the dinner over, the children are tired and must go to bed, so have but little time with father. In endless ways I have compared city and country life and could say much more, but will end by saying, keep up courage and quietly count your blessings. Country life looks pretty good to me.

GROWING SWEET PEAS.

Household Editor:—I saw in the last issue of The Farmer, what one farmer's wife had written about the growth and culture of sweet peas. I think it is the easiest of all flowers to grow and the favorite in general. I think the garden is best of all places to raise them, and nearly everyone who has a garden will find room for a row of peas. The ground should be well manured, as for onions and radishes. After it is raked until any loose dirt is off, make two drills about six or eight inches apart and sow peas quite thick, as all seed does not grow. I have tried the trench but find sowing them as other seed, and covering well, is better than the deep trench, on account of the hard spring rains washing the soil into the trench and making it hard and many times covering the vines.

The plants should be three or four inches high before the support is put up and this gives a chance to pull out all weeds that have started and to work the soil gently around the plants.

A good way to support is to put old broom handles at each end of the rows, and one or two between, and string cord or carpet warp from one to the other. As the vines grow put on more rows of cord.

The best sweet peas to raise are the Spencer type. They have much larger flowers and longer stems and generally two and three, and often four, blossoms on a single stem, which makes them nicer for cutting. I think east and west the best way to plant them as they do not need the hot sun all the time and this gives them a chance to have the roots shaded part of the day and will keep them from turning yellow. The flowers should be picked every day or rather cut, being very careful not to split the vine or cut the joint where another bud will start. Mrs. W. K.

WHEN NEEDLESS WORRY CALLS.

BY HOWARD KEGLEY.

Upon an average, once a week, along comes Needless Worry. He wears a countenance forlorn; his tongue is always furry. He says: "I thought that I'd drop in to shake your hand and tell you that I just heard about the great misfortune that befell you. The whole blamed world is going wrong; there's little room to doubt it. I'm more disgusted with it every time I think about it."

"Old man," says he, "the price of eggs has raised beyond all reason. And butter costs full twice as much as we should pay this season. Crops everywhere are on the bum, and we must pay high prices for everything, from prunes and plums to pumpkins, spuds and spices. House rentals have been doubled twice in just a little while. And clover hay for cow feed this year costs an awful pile."

"The railroad rates have all gone up, and in the sky they're sailing. Hard times are here. Most all of our big banks down east are failing; the lumbermen have raised the price of shingles, lath and flooring. And the sun has ceased to shine. Look out and see the rain that's pouring. The government has gone to pot. What are our statesmen doing? I think a long and bloody war with old Japan is brewing!"

He passes me a lot of most unpleasant thoughts and hunches; He hands me mental sandbars and calamity in bunches; But I don't heed his idle talk. I know the sun is shining Somewhere today, and every dark cloud has a silver lining. So at that point I always turn and say to Needless Worry: "Well, here's your hat and overcoat, old man, but what's your hurry?"

(Continued from page 230).

Some of the other recommendations are good and there is a very general impression that the deliberations of this association were better directed at this meeting than at the first meeting of the organization held in Detroit last fall. There is undoubtedly an opportunity for valuable work by an organization of this kind, but it would not appear that its work can be made of the greatest possible value until the suspicions which now seem to exist among some of the farmer delegates who have participated in its deliberations that there is a sinister object in view are dissipated.

THE SINGLE TAX.

I have been unable to get satisfactory information on the subject of "single tax," and would be very glad to have you give a good analysis of it through the columns of the Michigan Farmer. I wish to say that I appreciate your paper very much.

Mecosta Co.

SUBSCRIBER.

Readers of taxation literature are familiar with the fact that there has always been in many countries more or less agitation for a single tax. This agitation has arisen in some instances through disgust with the confusion which is caused by the use of several taxes—all falling upon the same persons—as is the practice in most countries at the present time. In France, for example, the "Impôt Unique" was proposed more than a hundred years ago as a single tax upon land, the requirements of justice in the distribution of the tax burden being met by the expectation that though the land owner in the first instance paid all of this tax he would be required for his outlay through the larger prices he could charge for his products.

The incitement of the modern single tax agitation comes from a wholly different source and has its foundation in the desire to correct the evils of a pernicious source of income rather than to simplify taxation. The modern agitation is identified with the efforts of Henry George, so that a statement of the beliefs of this great agitator makes a presentation of the present day single tax theory.

Henry George in the late seventies commenced to teach that all such value of land, whether city or rural, as had resulted from natural advantageousness of the land in fertility or location, was properly seizable by government through taxation. This was so because these natural advantageousnesses were not properly the product of anyone's labor but had come about wholly through the bounty of Providence or through the growth in numbers of population, or through both.

The chance owner of a piece of land which appreciated in value in this way receives as a result of this appreciation an "unearned income," and it was the manifest injustice of the getting of something for nothing after this fashion which prompted Henry George to suggest a tax which should take away all this value. Through the fact that George claimed that an impost of this sort would furnish all the revenue required by governments, and consequently no other taxes would be levied, the scheme became known as the "single tax" scheme. A Mr. C. A. Fillibrown, of Boston, Mass., is the present secretary of the "Single Tax League" of America, and furnishes all applicants with valuable information upon the subject.

M. A. C.

W. O. HEDRICK.

HAPPENINGS OF THE WEEK.

National.

A strike prevails at Akron, Ohio, where rubber workers, dissatisfied with working conditions and wage agreements, have walked out. No riotous demonstrations have occurred although trouble is anticipated.

The institution started at Indianapolis some time ago and having for its object the care of children of mothers who are compelled to work, is meeting with favor. The nurses are now looking after 28 children daily.

The electorate of Kalamazoo will vote upon the adoption of a new charter at the coming election.

There is little abatement in the activity of the government against concerns, mergers and other combinations devised to, or are instrumental in, restraining trade. Last week an average of one new suit was stated for each day and several prosecutions were brought to an end by the "towing trust" of the Great Lakes being ordered dissolved, verdicts of guilty being returned against the cash register and "bath tub" trusts, and James A. Patten pleading guilty to one count of the "cotton corner" indictment.

Reports that American citizens and other foreigners have been fired upon and their property destroyed during the

present Mexican trouble have urged this government to make preparations for intervention in case matters go beyond reasonable control. Marines have been ordered to points in the West Indies to be in readiness for moving to Mexican soil upon a moment's notice. The transport Meade is now at Philadelphia taking on 1,200 marines to which number will be added 800 more at Norfolk, from whence they will be taken to Guantanamo where they will await further orders. It is thought that this movement of troops may have a wholesome influence upon the warring parties in Mexico since they are fearful that matters may work out differently than they wish should the United States intervene.

The supervisors of the state went on record recently as favoring compulsory free text books. The association recommended the legislature amend the mortgage tax law so that all money from these levies will go to the county entirely instead of to the state, asked the defeat of the bill providing for appointment of a probation officer in each county, and asked that the legislature provide for measures to insure trunk highways.

A report of the revenue cutter service indicates the protection afforded life and property by the government fleet of coast patrol amounted to a total of 260 distressed vessels assisted during the past year and their passengers totalling 2,212 persons rescued from danger which, in many cases threatened death. One hundred and six persons were actually saved from drowning. Vessels, cargoes and derelicts saved by the revenue cutter service during the year 1912 were valued at \$10,711,748, besides 45 derelicts and other dangerous obstructions to navigation were removed or destroyed.

The railroads included in the merger known as the Harriman lines have reached an agreement for dissolution in obedience to a decision of the United States Supreme Court in an action by the government against the merger. It is announced by the Attorney-General that the proposed division of the lines will bring about a healthy competitive condition in traffic between the trans-continental railroads.

Secretary of War Stimson has published an order for the administrative, organization and geographic adjustment of the United States army on a tactical base, the order becoming effective February 15. Under the new plan there will be three army divisions and one cavalry division within the territorial limits of the United States. The divisions will be located in what will be known as the eastern, central, southern and western departments with headquarters at New York, Chicago, San Antonio and San Francisco respectively. The San Antonio headquarters will be used by the cavalry division. Heretofore there has been no army organization larger than a regiment. As soon as the new organization is completed the three infantry divisions will consist of two or three brigades with the proper proportion of divisional artillery, cavalry, engineers and other auxiliary troops.

What promises to be one of the greatest ore discoveries is the location of an iron drift in southern Wisconsin. It is calculated that the ore extends under three counties and is believed to be 60 miles long and 40 miles wide. Assays show the ore to contain from 54 to 60 per cent metallic iron. While the upper portion of the field is non-Bessemer, it is expected it will develop Bessemer qualities at a lower depth.

The Ohio railway commission is forcing certain roads in that state to give the public better service. Orders were issued recently compelling the Columbus, New Albany & Johnstown Interurban line to add two more passenger cars within the next 90 days.

Foreign.

After being lost for three months in Antarctic waters an Australian expedition of 50 men has been located by wireless. The party had sailed to complete a geographical and magnetic survey between Cape Adare and Guassburg, a distance of 2,000 miles.

Mexican rebels secured a rich booty when they succeeded in robbing an express train carrying gold and bills to Mexico City from Monterey. The robbers secured \$700,000.

The three large railway systems of Canada have just announced extensive plans for new trackage, largely in the prairie states. In all, the new lines will measure 2,000 miles and involve a total expenditure for tracks and other improvements of \$41,000,000.

After nine days of war in Mexico City there is little change apparent in the positions of the federal and rebel forces, although it seems to be the general belief from the meager reports that are gotten past the strict censorship of the government, that the rebels are advancing and gaining strength in that many who were neutral and others who followed the government have, upon the showing of strength by Diaz and his followers, joined the rebel ranks. Unconfirmed accounts state that the rebels have advanced their lines beyond those occupied on February 9, and that Diaz now occupies the presidential palace where the fighting first began. The federals hope to starve the rebels into submission by holding them prisoners in the arsenal. The border town of Matamoros was taken by rebel forces last Monday morning, in spite of the protest of Madero in a communication to President Taft that all outside of the Mexican capital is quiet and also in face of news to the effect that the whole country is awaiting the result of the present battle before deciding which side they will choose to support.

Because of the reports spread among the Moros of the Island of Mindanao of the Philippine group that this country is about to tax the people for the purpose

of obliterating the Mohammedan religion from the island, a serious situation has arisen, and President Taft has sent an envoy to consult with the Sultan of Turkey who, as the head of the Mohammedan church, is in a position to counteract the false reports that an uprising may be avoided. Inasmuch as the arrangements will continue over into the coming administration President-elect Wilson has expressed himself as in full accord with the arrangements that no time may be lost in correcting the reports and pacifying the minds of the natives.

THE LEGISLATURE.

With the advent of the seventh week of the legislative session, many propositions of importance were up before the two houses of legislation for consideration. The week was badly broken up, however, due to the holding of two state conventions which many members of both Houses desired to attend and to the death of Representative Greusel, of Detroit, on account of which both houses adjourned one day out of respect for the deceased member.

During the week the Senate passed on third reading six bills amending the state banking laws, all of which had their origin in the state banking department. Several bills were also passed amending the general primary election law in unimportant respects, one of which provided for the selection of members of the state central committees of different political parties. None of these bills has as yet been considered by the House.

The House passed several bills which have not yet reached the Senate for consideration, among them a bill having for its purpose the reduction of the future number of defectives and criminals, and another authorizing the investment by the state of the funds that accumulate to pay awards under the employers' liability act, where such monies are paid to the state by employers to meet awards adjudged against them.

During recent weeks there has been considerable discussion in both houses and by the members of all parties with regard to the taking of stenographic notes of the proceedings of both houses in order that the legislative debates may be preserved and published. A resolution providing for such a report was previously introduced in the House and tabled, and by a majority vote the House refused to take it from the table upon motion, it being agreed by a majority of both prominent parties that there is not sufficient public sentiment for such a report to warrant the expense involved.

The total number of bills introduced up to the close of the seventh week aggregated 600. Among the important bills introduced during the week was one designed to abolish the office of State Land Commissioner and invest the present duties of that office in the Public Domain Commission. Among the important bills which have already been passed by both houses and signed by the Governor is a bill abolishing the office of State Salt Inspector which will take effect 90 days after the adjournment of Legislature.

A number of matters of minor importance have been considered and many important matters have been taken up in committees, so that from this time forward the work of the legislative session will be more strenuous and the results of the deliberations of the two houses will be more apparent as final action is taken upon many of the propositions presented.

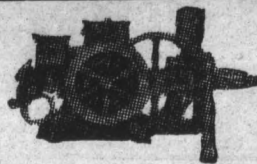
MICHIGAN EXPERIMENT ASSOCIATION.

The Michigan Experiment Association will hold its second annual meeting at the Michigan Agricultural College, East Lansing, Mich., February 26-27-28. The chief objects of this association are the testing of improved varieties of farm crops in comparison with the home varieties and the production of an adequate supply of seed of better adapted sorts to meet the demands of the state, and the co-operation of farmers in the study of the various local crop problems.

The program will consist mainly of reports of experiments conducted in 1912, with such business matters as may come before the association. The secretary reports considerable interest in the work of the association, some of the most progressive young farmers of the state having affiliated themselves with the work of the association.

THE ROUND-UP INSTITUTE.

The program of the State Round-Up Institute, to be held at the Agricultural College, East Lansing, on February 25-28, inclusive, is replete with interesting subjects which will be discussed by speakers of wide reputation as authorities along their several lines. The first meeting is on Tuesday afternoon, the topics for the lectures being "Theory and Practice of Land Drainage," "The Good Roads Movement in Michigan," and "Power on the Farm." Tuesday evening the M. A. C. Farmers' Club will hold a session, the program consisting of a symposium upon Michigan, her resources and opportunities for agricultural development. On each of the succeeding three mornings demonstrations will be given in live stock husbandry, horticultural practices and poultry management. The morning programs will consist of lectures on technical agricultural topics some of them by members of the college faculty and others by outside speakers, including Prof. Williams, of Ohio, Prof. Davenport, of Illinois, and Prof. Hunziker, of Indiana. The afternoon sessions will be more general in their educational character with speakers on practical agricultural topics who have made a success along their several lines in different (Continued on page 251).



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Horticulture.

DIRECTIONS FOR PRUNING.

The Peach.

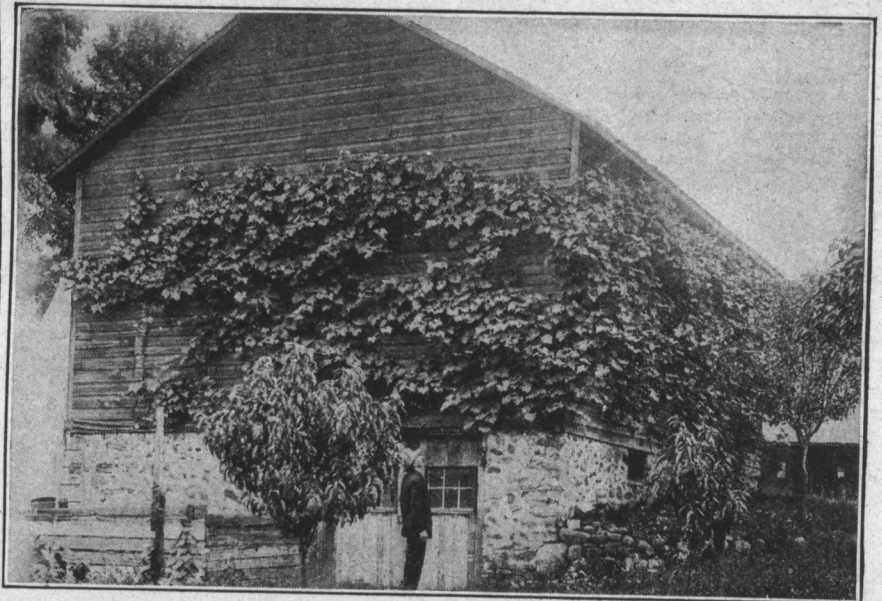
There is no trimming that gives the proficient pruner so much pleasure as pruning the peach, nor is there anything that will show the results of good or bad pruning as quickly as the peach tree will.

The peach bears its fruit on year-old wood. It is a very prolific producer of fruit buds and grows new wood, where the fruit buds will form, quite abundantly. This habit of growth makes quite severe pruning an essential in successful peach growing. Left to its natural tendencies the tree would bear large quantities of small fruit on the top and outer parts of the tree; the inner parts would be full of dead and dying limbs.

Lack of courage may be a cause of failure in pruning the peach. Probably about three-fourths of the new growth should be removed entirely. The laterals

a strong rich soil. Too much pruning of young trees will tend to check early production.

Cross limbs should be kept out at all times, and also anything that would tend to form a bad crotch. The head should be kept moderately open and the fruiting wood well distributed throughout the tree. A moderately spreading tree is the best and the natural tendency of any variety, if it be too upright or too spreading, can be corrected to the ideal type to a great extent by pruning. Varieties of long willowy growth can be made more stocky by heading in. Varieties that tend to overbear should be pruned quite heavily during the dormant season. Those that blossom heavily but do not bear fruit should receive the same treatment unless lack of bearing is due to improper pollenization. Varieties that refuse to develop fruit buds should not be pruned heavily during the dormant season at least. Summer pruning may



The Grape Vine Pictured Above Measures 64 feet across, covers three sides of the building and yields about four bushels of Niagara Grapes Annually.

must be thoroughly thinned out and all growths that are weak or interfere with others should also be cut. It is often advisable to cut the new leaders out entirely. This will check the upward growth of the tree and will tend to produce a top that is conveniently low and spreading. The remaining year-old growth should be cut back about half.

This method of pruning has two purposes, that of forming the head of the tree and that of thinning the fruit. While it does not take the place of the regular thinning it saves a great deal of tedious hand work at that time.

The pruning of the peach deals almost entirely with the last season's growth. If the work has been done properly in the past there will be very little occasion to cut older wood.

The young tree just set out may be pruned to a whip but more often it is advisable to leave three or four side shoots that are well placed and cut them back to about two buds. The larger the tree as it comes from the nursery the more the necessity of laterals.

Should a shoot longer and stronger than the others come out at one side and make the tree lop-sided, it should be cut out at its source. Heading it back to the height of the rest of the tree will only serve to make it stouter and will not correct the shape of the tree.

The Apple.

It is hard to give specific directions for the pruning of the apple as there is such a variation in size, shape and growth among varieties.

The young tree should be headed low; low heads being a commercial necessity nowadays. Trees of willowy growth, such as the Spy, Jonathan and Willow Twig may have their heads started a little higher than those of more stocky growth because a crop of fruit will bear the branches down more. About four limbs started so as to not form a bad crotch and placed so as to form a well-balanced head should be encouraged on every tree. The pruning of the young tree consists of nothing but that necessary for the formation of a good head, especially with varieties that make a strong growth, such as the Spy, Baldwin and Greening, or with any variety if on

The Pear.

The fruiting habits of the pear are practically identical with those of the apple. In growth the pear is more upright and the fruiting spurs shorter. The pruning should be greatly like that of the apple but generally not as severe. In fact, the pear will do quite well without any pruning.

The pyramidal shape that many growers consider unchangeable can be trained to a moderately low and spreading top by proper cutting out of the main upright branches when the tree is young. Some of our most prominent growers have trained the Flemish Beauty and other upright growing varieties to the shape of a spreading apple tree even after they were of bearing age, with the greatest success.

With reference to overbearing, or underbearing, the pear should be treated the same as the apple. Many dwarf orchards that are a source of financial loss now could undoubtedly be made to bear larger crops if a more thorough pruning out of the fruit spurs was practiced. The Anjou pear which often blossoms but fails to mature fruit, can also be brought to earlier bearing by a more thorough thinning out of the fruiting spurs.

The annual hedge-like heading, or "stubbing," back which is so commonly practiced especially in dwarf orchards, is not good pruning. The result of such work is a lot of fine growth in the tops for which there is no practical use. To keep a tree from getting too high all of the leaders in upward growth should be cut back sufficiently to some side branch.

Van Buren Co. F. A. WILKEN.

"Injurious Insects," by Walter C. O'Kane, Entomologist to the New Hampshire Experiment Station and Professor of Economic Entomology in New Hampshire College, is a book of 414 pages, illustrated with 600 original photographs of injurious insects which will aid the reader in learning to recognize them, as will the subject matter of the work in learning to control them effectively. Published by the MacMillan Co., New York. Price, \$2.00 net.

MANAGEMENT OF HOT-BEDS.

Although we do not consider hot-beds so convenient or even economical in the long run as the forcing-houses, yet, as beginners in the business are usually not over-supplied with means, and as hot-beds are to be had at much less first cost than the forcing-houses, we give a description of their management.

The heating material to form the hot-bed should be horse dung, fresh from the stables, adding to which, when accessible, about one-half its bulk of leaves from the woods. The manure and leaves should be well mixed and trodden down in successive layers, forming a conical heap, large enough to generate fermentation in severe winter weather. Care must be taken that the material is not allowed to lie scattered and get frozen, else great delay will ensue before heat can be generated. A few days after the pile has been thrown together, and a lively fermentation has taken place, which will be indicated by the escape of steam from the heap, it should be again turned over and carefully shaken out, formed again into a pile, and left until the second fermentation occurs, which will be usually in two or three days. It may now be placed in the pit, or on the surface, being regularly beaten down by the back of the fork, and trodden so that it is uniformly of the same solidity, and to the required depth, two and a half feet. The sashes are now placed on the frames and kept close until the heat rises; at this time a thermometer, plunged in the heating material, should indicate about 100 degrees, but this is too hot for almost any vegetable growth, and besides the rank steam given out by the fermentation should be allowed to escape before operations of sowing or planting begin. Beginners are very apt to be impatient in the matter of hot-beds; and often lose the first crop by planting or sowing before the violent heat has subsided, which it generally will do in about three days, if the heating material has been sufficiently prepared. As soon as the thermometer in the frame recedes to 90 degrees, soil should be placed on to the depth of five or six inches. This soil must be previously prepared, of one-third well-rotted manure, and two-thirds good loam, spread regularly over the surface of the manure in the hot-bed.

Uses of the Hot-Bed.

We use hot-beds for various purposes. One of the most important uses is the forcing of lettuce; this is planted in the hot-beds at the rate of 50 under each sash, the first crop by second week in January; it is covered at night by straw mats, and is usually marketable by the first of March. At that season lettuce is always scarce, and will average, if properly grown, \$6 per hundred, or \$3 per sash. The crop is cut out by the first week in March, giving plenty of time to plant the same bed again with lettuce; but now it is no longer a hot-bed, for by this time the heat from the dung is exhausted, and should be treated as a cold-frame.

Another use for the hot-bed is the raising of tomato and egg, and pepper plants. The bed should be prepared for these not sooner than the second week in March, with the temperature about the same as before described. In sowing, it is well to cover the seed, not more than a quarter of an inch, with some very light mold; nothing is better than leaf mold and sand, patting it gently with the back of the spade. From the time the seed is sown, attention to airing, during the hot part of the day, and covering up at night, is essential, and also that the soil be never allowed to get dry. Water, however, must be applied with judgment, as there is just as much danger from soaking the soil too much. Water should be applied with a fine rose watering pot, and if the water is heated to a temperature of 80 or 90 degrees, all the better. The temperature at night may range from 55 to 65 degrees, and during the day from 70 to 80 degrees. As soon as the seedling plants are an inch or two high, which will be in four or five weeks, they must be taken up and re-planted in a more extensive hot-bed, for they now require room. Tomatoes should be planted of a width to give 75 or 100 in each sash. Pepper and egg plants do better if planted in small flower pots, as they are more difficult to transplant; they may now also be kept a little closer in the hot-bed than the tomatoes, as they require more heat. After transplanting, great care is necessary that they always be immediately watered, and shaded from the sun until they have struck root, which will be in

two or three days after transplanting.

The hot-bed is also the medium for procuring us cabbage, cauliflower and lettuce plants for early outside planting, when not convenient to winter them over as in cold-frames. The seeds of these are sown about the last week in February, are treated in all respects as regards covering up at night as the tomatoes, etc., but, being plants of greater hardiness, require more air during the day. They will be fit to plant in the open garden by the middle of April. The beds they are taken from are usually employed for re-planting tomatoes, which it is not safe to plant in the open ground before the middle of May.

Essentials in the Care of the Hot-Bed.

Two most essential points in working hot-beds are in covering up at night and in giving air during the day. It often happens that a few mild nights in March or April delude us into the belief that all the cold weather is over, and the covering up is in consequence either carelessly performed or abandoned. Every season shows us scores of victims to this mistake, who by one cold night lose the whole labors of the season. It is always safest to cover up tender plants, such as tomatoes, etc., until the tenth of May and the more hardy plants, such as cabbage, to the first of April, when raised in hot-beds. Even if there is no danger from freezing, it will give a more uniform temperature, and consequently conduce to a more healthy growth. The want of close attention in airing is equally dangerous. Often an hour's delay in raising the sashes will result in the scorching up of the whole contents of the hot-bed, and irregularity of airing will always produce "drawn" and spindling plants, even when they are not entirely killed. The thermometer is the only safe guide, and should be regularly consulted, and whenever it indicates 75 degrees, it is safe to admit more or less of the outer air, proportioned, of course, to the condition of the atmosphere. If there be bright sunshine and cold wind, very little will suffice; if calm, mild, and sunny, admit larger quantities. If the days are warm, say 60 in the shade, in March or April, the sashes covering cabbage cauliflower or lettuce plants may be stripped entirely off, and also from tomatoes in April and May when the thermometer is at 70 degrees in the shade, covering up again at night, of course.

New York.

T. A. TEFFT.

PRUNING NORTHERN SPY AND WAGENER APPLE TREES.

In a recent issue of your paper Mr. F. A. Wilken said in an article on pruning, that a Northern Spy tree and a Wagener tree require different treatment. I would like Mr. Wilken's ideas as I have ten acres of young Spy trees with Wageners in as fillers and would like to prune both as they should be.

Ionia Co.

F. H. V.

The method of pruning for any variety of apples is determined by its character of growth and its bearing habits. The Spy and the Wagener varieties are typical of the two extremes in growth and fruiting habits. The Spy makes a large top of rather willow growth and comes into bearing very late, whereas the Wagener produces a rather small top, comes into bearing very early and is very likely to over bear. There seems to be a distinct relation between the growth of a variety and its bearing habits. Varieties that make large trees generally come into bearing late while those that make small growth are generally the early bearers.

Pruning is one of three methods we should use in controlling the habits of the tree. The kind of soil the tree is set in and the method of feeding are the other two.

The main effort in growing the Spy is to get it into bearing as early as possible. This can be done by setting it on the lighter soils, by giving it very little fertilization, at least until it comes into bearing, and by pruning. Before the Spy comes into bearing it should be pruned as little as possible; only what is absolutely necessary to keep its top in shape should be done. Heavy pruning encourages wood growth and heavy pruning of young trees delays their coming into bearing. A heading back of a few of the main shoots that are making upward growth a little each year, before the tree comes into bearing will make the tree more stocky and check its upward growth some. This heading can easily be overdone on the Spy and should therefore be done cautiously. When a limb is headed back it should be cut back to a side

(Continued on page 247).



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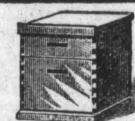
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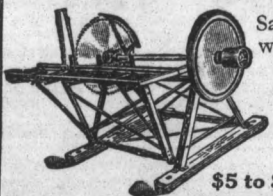
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RENEWED INTEREST IN APPLE GROWING.

Farmers in this section are gradually waking up to the fact that the apple orchard is a valuable asset of their farm property. For a number of years past, this idea has been growing. I think perhaps the farmers' institute has done more than anything else to awaken interest in this question. Occasionally, expert apple growers have been given a place on the institute programs, and have succeeded to interest a farmer or two in the locality, in the profitability of apple growing, and in the hidden possibilities of many old apple orchards if treated with up-to-date, scientific methods.

In awakening interest in the possibilities of the apple orchard, the farmer has been ready to listen, because of the fact that he already has the orchard, and hence needs only to prune and spray in order to reap the benefits. But while the possession of the orchard has in this way helped to awaken interest, from another standpoint it has made the farmer skeptical and hard to convince. He has possessed the old apple orchard for years. He has gleaned from it apples enough for family use, and occasionally sold a few at a dryer or at the cider mill, receiving scarce enough to pay for the work of picking and hauling. He has not considered the old orchard as worth much, and it is not always easy to convince him that the old trees are valuable.

But in spite of this drawback, the pruning and spraying of apple trees, according to scientific methods, is growing gradually, in some localities, rapidly. In every community in which interest has been aroused, the practice of scientific treatment of the trees continues to increase. When a farmer sprays his orchard and sells his apples at a high price, his neighbors are quick to take notice and do likewise. In some neighborhoods, too, the owners of orchards have been driven to the spraying of their orchards by the very necessities of the case. Many farmers who do not as yet prune and spray properly, spray for the scale which has made ravages among their trees. In this way, some come to realize the benefits of spraying, and spray for other pests as well.

In the writer's immediate locality, a young man who has been a student at the Michigan Agricultural College, has been leasing orchards for several years, pruning and spraying, for a portion of the fruit. So beneficial has the work proved to the orchards, that this year, the young man is caring for more orchards than ever before. Farmers who are busy throughout the season with their farm work, are glad to lease their orchards for a portion of the apple crop. In the long run the owner of the orchard is a gainer, as scientific care of the trees increases their value greatly.

In considering the reclaiming of old apple orchards, two important points stand out clearly: First, the value of farm property in the locality is greatly enhanced, the benefits being realized by both the individual owner and the community. Second, the farmer's profits for any given year are made more secure and stable. If the potato crop and the corn crop fail, the apple crop may still be a great success and save the day. It is these two factors that are bringing the farmers of this section to regard their orchards as something more than a kind of necessary evil. The final awakening is not yet, and many farmers still look askance at the proposition and say they can not waste their time doctoring their worthless apple trees. But a beginning has been made and interest in the apple and the apple orchard is sure to grow apace.

Hillsdale Co.

J. A. KAISER.

RHUBARB.

Rhubarb is easily grown. Consequently it is left to care for itself. It will endure neglect for a long time, but at last it will "run out." By loosening the soil around it and working some fine manure into the ground, the yield of stalks can be increased and the product will be of better quality. But it is still better to take up the old roots, separate the toes and replant. These toes can be cut in pieces, each of which will grow if it has a bud.

Most any kind of soil will do for rhubarb, provided there is a generous supply of plant food. It is a heavy feeder. The ground may be made too rich for it, but that is not often done. When it is set anew be liberal with it. Well rotted

compost is best and if it contains a goodly proportion of horse manure it is the more desirable.

One way to force rhubarb is to put a barrel, headless end down, over the hill, then cover it with a pile of fresh horse manure. The heat produced will start a growth of leaves in the barrel. The stalks will grow as well in the darkness as in the light. The objection to this is that it requires a large pile of manure to produce a few stalks, but perhaps it is as practicable as much of the advice offered. Anyhow, those who have the material in plenty can try it.

But the barrel can be put to a good use later in the season. After spring has opened it may be placed over a hill of rhubarb and the result will be a crop of stalks that will be suitable for use several days before that left in the open. The stems will shoot up to the top of that barrel in a hurry.

There are few varieties of rhubarb, but they differ considerably in the size of stalk. The greatest demand is for large stalks, a rule which applies to garden products in general. But some of the smaller kinds are of superior quality and better worth growing in the home garden, even though not so productive. Why not set a larger bed of a small variety and grow something really worth the extra cost?

Rhubarb can be grown from seed, but it does not always come true to name. The chances are more than even that the plants obtained in this way will be unsatisfactory. For this reason it has been found best to depend upon root propagation.

Many years ago rhubarb received some attention as a wine plant. In some sections large fields were set to it and cultivated for this purpose. But it proved to be unsatisfactory and the industry was abandoned. Probably the world in general is none the worse for the failure. As it is, rhubarb occupies a field large enough for one plant in furnishing material for good, honest pie and sauce.

Oakland Co.

F. D. WELLS.

CATALOG NOTICES.

Baldwin's Fruit plants, grown by O. A. D. Baldwin, Bridgman, Mich., are fully illustrated and described in a 30-page catalog supplemented by colored plates. In it are listed a full line of small fruit plants.

"Everything for the Garden," is the title of the 1913 catalog of Peter Henderson & Co., 35-37 Cortlandt St., New York. This is an exceptionally complete catalog of 200 pages, profusely illustrated and contains many colored cuts illustrating the complete line of farm, garden and flower seeds listed by this well known firm, also specialties in tools for use in the garden. Mention the Michigan Farmer when writing for this mammoth catalog.

Northern "New Land" Seed Products are listed in the 1913 catalog of the Gregory Farm Seed Co., Bay City, Mich. This is a 64-page illustrated catalog describing a full line of northern grown farm and garden seeds for Michigan planting. "Strawberry Plants that Grow," is the title of the 1913 catalog issued by C. E. Whitten's Nurseries, Bridgman, Mich. This is a 20-page catalog devoted entirely to strawberries and other small fruit specialties and contains information of value on how to set and grow strawberries successfully.

Iowa Seed Co., Des Moines, Iowa, publish a 1913 catalog of 150 pages fully illustrated with several colored plates. The illustrations and descriptions are carefully prepared to convey a correct idea of the articles offered and much thought has been expended in grouping special collections for real bargains. It is the policy of this house to give their customers the full benefit of bargains in surplus stock rather than offer them to other dealers at wholesale prices. Write for this catalog listing such bargains and a full line of staple and farm and garden seeds, mentioning this paper.

Doorenbos Bros., Kalamazoo, Mich., inventors and manufacturers of the Kero-Vapor incandescent gas lamp, will send descriptive folders of this safe, simple, reliable and efficient, yet cheap, substitute for city gas in country homes. Write at once for descriptive folder which will tell you how to make the home as light as day during the long winter evenings.

The Coil Spring Fence Co., of Winchester, Ind., manufacture 50 different heights and styles of fence, all described in their catalog which will be sent upon application. This company has sold their product direct to farmers for 20 years and have learned from experience the kind of fence which gives satisfaction. In writing for their catalog and price list mention this paper.

The Famous Old Trusty Incubator and Brooder, manufactured by the M. M. Johnson Co., Clay Center, Neb., is fully illustrated and described in a large-sized 100-page catalog published by this company. This catalog not only describes and illustrates in detail the goods manufactured by this concern but contains much information of value on the use of incubators and brooders in a scientific manner which insures easy profits. In fact, every department of the requisites for the successful hatching and rearing of chicks is fully treated in this catalog, which is exceptionally complete, including egg record tables, etc. Write for a copy, mentioning the Michigan Farmer.

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A. A. BERRY SEED CO., Box 531, Clarinda, Iowa

PRUNING NORTHERN SPY AND WAGENER APPLES.

(Continued from page 245).

limb. After the tree has come into bearing it may be pruned heavier if necessary but even then the pruning should be comparatively light. Pruning cuts away fruit spurs and on the Spy we generally want to leave on as many as possible. On the lighter soils the Spy may in some cases overbear. Of course, in such cases the pruning should be heavier.

The small, stunted Wagener tree which has borne itself to uselessness is almost as common a sight on the light soils as the overgrown unproductive Spy is on the heavier. The treatment for the Wagener should be exactly opposite of that for the Spy. It should be set on the heavier soils and have good feeding in the way of manures and cover crops to encourage growth. If the tree inclines to come into bearing too early the pruning should consist of cutting out some of the fruit spurs. Its general tendency to overbear can be checked by a liberal cutting out of these spurs every year. By such pruning its productiveness is made normal and some of its energies can be directed toward making wood growth. In thinning out the fruit spurs we should not make the mistake of cutting out all of the spurs in the lower and middle parts of the tree. A general thinning out throughout the entire tree with attention given to thinning out the tops as well as the rest of the tree will make a better shaped tree and one which will have its fruit well distributed.

Van Buren Co. F. A. WILKEN.

CANNING AS A MEANS OF INCOME.

Probably no question comes more frequently to those supposed to be fitted to advice, than the question, "How can I make money in my spare time at home?" No one can answer this question without a thorough knowledge of the enquirer's qualifications and surroundings. This appeal for advice comes frequently from farmers' wives, and from the grown-up daughter, whose parents do not wish her to leave home, and enter the business world. I want to assure all enquirers, who have a plot of land at their disposal, that a steady, and comfortable income may be made by canning vegetables and fruit at home.

It is a lamentable fact that half of the output of the average vegetable garden on the farm is wasted, and lost for want

of a simple way of taking care of the surplus. To undertake canning on the farm, in a small way at first, is not difficult nor expensive. A portable home-canning outfit can be purchased for from \$5.00 to \$15. A book of instructions accompanies each outfit, so that by following a few simple rules success is easy. One great advantage of this employment is, the canning season falls conveniently in the vacation period when the young folks can help. Indeed, when provided with a good canning outfit, the work is a pleasure, and every member of the family will wish to assist.

Conducted in a business-like manner, there is no work in which farmers' wives can engage which will bring in as large returns. Purchase a supply of cans, wholesale, and have labels with your name and address pasted on them. Don't give the middleman a share of your profits. Take a sample of your wares, and solicit orders from the best people, the best hotels and restaurants. Remember that your goods are worth more than the ordinary canned goods, and you don't have to compete with them. Put a good price on your products and if you have something better than the ordinary you will have no difficulty in selling it.

The overwhelming popularity of the tomato always gives it first place when it comes to canning for market. Realizing this the Department of Agriculture at Washington has recently issued a bulletin which tells all about the home-canning of tomatoes. Anyone can have all of the facts by writing for the two farmers' bulletins, Nos. 220 and 521. These bulletins contains not only explicit directions for canning and finding markets, but give many excellent recipes. All housewives know that tomatoes may be preserved in many different forms.

Chow-chow, relish, tomato ketchup, chili sauce, picadillo, green tomato pickles, tomato preserves, besides the plain canned tomatoes, are a few of the forms in which tomatoes may be canned for sale. It is to be hoped that the day is not far distant when most of our canned goods will be clean, honestly packed articles put up in our own homes.

MRS. JEFF. DAVIS.

After the situation has been carefully surveyed and all the factors considered the final conclusion as to the most important element entering into the production of successive crops of fruits, is brains—the power of thinking clearly and understanding things as they are.

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BUY Direct from the Grower and Save Money

Send us your nursery order and save the agent's profit of 50% or more. Our trees are grown in Danville, the greatest tree growing section of the United States, where Scale is unknown.

12 PEACH TREES 98c.
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All full rooted, carefully selected trees and guaranteed variety true or money back.
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THAT GROW—GENUINE—UNADULTERATED

50c COLLECTION for 10c

All packed in big envelope which is good as part payment on future orders. Good for 50c on orders of \$1.00 or more. Collection contains one regular 10c packet each of Champion Pickle Cucumbers, Matchless Tomatoes, Prize Head Lettuce, Southport Globe Onions and large G-B Mixed Sweet Peas. Nothing like equal value ever offered before.

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Shows largest collection of pure garden, flower and field seeds ever offered and at a big saving in money to you. Send for it right now and enclose with your letter 10c for the big 50c collection described above. Remember catalog is free.

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SKIPPED HILLS RAISE NO POTATOES

Every hill you miss in planting means money lost out of your pocket. No machine can plant perfectly unless there is hand correction of misses and doubles.

IRON AGE (Improved Robbins) Potato Planter

A piece in every space and one only. No pickers used—no injury to seed. Perfect placing of seed and uniform spacing. Can't you see that it must pay for itself? Write for new booklet, "100 per cent potato planting." We make full line Potato Machines, Garden Tools, Sprayers, etc.

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The new pasture and forage clover. Equal to alfalfa in productiveness. Sample seed and circular giving directions for growing mailed free on request. Also copy of our large illustrated catalogue of Farm and Garden Seeds. Ask for it.

IOWA SEED CO. Dept. 62 Des Moines, Iowa



WILLIAM GALLOWAY, Pres.

Here's What Your Neighbors Say:
Gentlemen: I received the spreader all O.K. and have it now nearly six months. I have never had any trouble with it at all and I like it very much. I would not be without one now for a great deal. My team weighs 2200 pounds and will handle it even on plowed ground. This morning I spread a load and there was two inches of snow on the ground, but the wheels did not slip, even without the mud lugs.
Yours truly,
Killarney, N. Y.
Walter Engen.
Dear Sir: I received your wagon box spreader and am more than pleased. It does the work far better and is much easier on the team than I expected. My little mules handle it easily and they only weigh 500 lbs. The farmers come from all around to see it work and they all say they are going to have one of them.
Yours truly,
Navas, Okla.
P. J. Robinson.

Yes, ABSOLUTELY Free—Not One Cent Down—No Bank Deposit

I don't want you to send me one cent for this spreader. No sir, not one cent. I don't even ask you to sign any mortgage, lease or note or even promise to buy it. I won't let you take any risk of any kind or nature. I'm making the most daring offer I've ever made and I'm banking on my spreader and your judgment.

Here's my plan: I'll ship you one of my new 1913 Model Galloway Spreaders right to your farm without even a dollar's deposit. I want you to take that spreader and test it in a way that would put any other spreader in the world on the scrap heap. I'll even tell you how to do it. Hunt up the toughest manure to handle you can find. If you've got any heavy, tramped-down, unrolled, frozen slough hay manure in your calf yard, that's just the stuff to use. If you can't find anything tough enough on your farm, get a load from one of your neighbors. Let him watch the test, too. Drive out into the field; get your team on the gallop AND SLAM! IN GEAR! Don't you worry about smashing the machine—remember, it's a Galloway you're using now. Besides, I'm taking the risk—not you. I've been putting the Galloway to tests like this for seven years. 40,000 farmers besides myself know what the Galloway will do. Study out the exclusive patented features—the things that make it easy for the Galloway to do things that would wreck any other machine in the world. See why I can make this offer, why I can guarantee it for a lifetime and back that guarantee with a \$25,000 bond.

Take a month to make up your mind—use the spreader all that time anyway you want to. Then, if you can't honestly say to me: "Galloway, your spreader is better than I ever thought a spreader could be and I don't see how I can get along without it!"—if you can't say and mean every word just sent it back to me and I'll pay the freight both ways so you won't be out a cent.

If you want to keep it, I'll absolutely guarantee to save you \$25 to \$50 on the very best spreader in the world. That's why I say: "The Only Way is the Galloway". Selling direct from factory to farm, every middleman's profit cut entirely off; the actual net factory price with just one small profit added.

My Special 1913 Offer

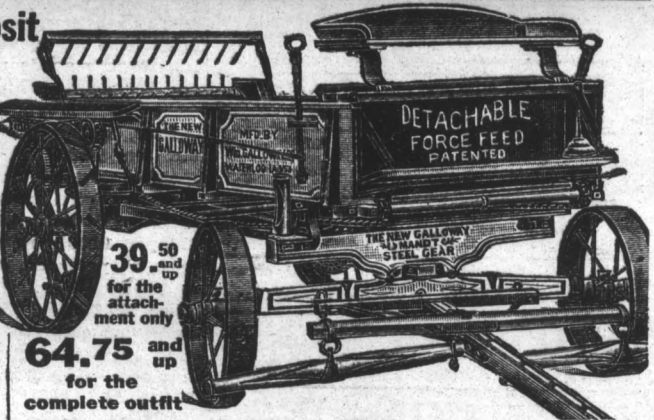
I've got a new proposition for 1913 that's so much bigger and more liberal than anything I've ever been able to offer before that there's simply no comparison. Listen—if you decide to keep the Galloway after having had the free trial, I'll tell you how you may get it partly or entirely free. No canvassing—no soliciting. Just the fairest, squarest, straightest, cleanest co-operative offer that anybody ever made. I can't explain it all here and I won't try to. But I'll tell you all about it in a personal letter if you'll write me right away.

My Regular \$1.00 Book

"A Streak of Gold"

Sent FREE

Nothing else like it ever written. Tells plainly just how to produce manure, store it, treat it, care for it and use it. This book is worth \$25.00. Price regularly one dollar a copy. I'll send it to you free in addition to a full explanation of my record-breaking, 1913 proposition and my big spreader catalog so you can pick out just the spreader you want me to send you on this free offer. A postal or letter is enough. Don't lay down this paper 'till you've sent it.



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649 Galloway Station, Waterloo, Iowa

Spreaders in Stock at Chicago, Kansas City, Minneapolis, Council Bluffs and Winnipeg

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Phelps' new book is a wonder. Grandest buggy salesman ever sent out—biggest money saver you ever saw. Takes the place of dealers, jobbers, travelers and other middlemen. Shows more fine buggies, surries, phaetons, carriages, runabouts, carts, spring wagons and harness, than you can find in 25 retail dealers stores and quotes lower prices than they pay even when buying in car-load lots for spot cash.

Proves by actual photographs, that Split Hickory quality is years ahead.

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tells you the right price to pay. Just mail a postal—Phelps pays the postage to you—and the book comes by return mail—all free. Address

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See 140 Styles of Vehicles, also Complete Line of Harness—Sold at Factory Prices Direct to You—2 Years Guarantee—Made to Order—30 Days Free Road Test

Book shows many features not found in any other line of vehicles—tells why Phelps saves you \$25 to \$40, and why 167,000 other folks bought Split Hickory after 30 Days Free Road Test and 2 Years Guarantee. Don't you want the Phelps Book? It's the best guide you can get, even if you buy elsewhere. It will show you what's what in vehicles and harness and



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CATTLE.

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

Aberdeen-Angus.

Herd, consisting of Trojan Erics, Blackbirds and Prides, only, is headed by Egerton W. the GRAND CHAMPION bull at the State, West Michigan and Bay City Fairs of 1912 and the sire of winners at these fairs and at THE INTERNATIONAL, Chicago, of 1912. WOODCOTE STOCK FARM, Ionia, Mich.

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

GUERNSEY BULL CALVES, YORKSHIRE PIGS. Good Stock.

HICKS GUERNSEY FARM, Saginaw, W. S., Mich.

10 Reg. Guernsey Bulls, ready for service. Large Yorkshire hogs, the best yet. Come or write. JOHN EBELS, R. 10, Holland, Mich.

HEREFORD BULLS FOR SALE China Hogs. ALLEN BROS., Paw Paw, Michigan.

HATCH HERD HOLSTEINS—Choice sires from ARO dams. Reasonable prices. HATCH HERD, Ypsilanti, Michigan.

CHOICE Bull Calves from A. R. O. dams. Sired by our herd sire whose dam and sire's dam each made over 30 lbs. in 7 days. E. R. Cornell, Howell, Mich.

A FEW CHOICE Holstein Friesian Bull Calves for Sale. A. R. O. Stock. GREGORY & BORDEN, Howell, Michigan.

Holstein Bull Calf, out of grand daughter De Kol 2nd. Butter Boy 3rd. Sired by best son of Pontiac Butter Boy. Price only \$50. C. D. WOODBURY, Lansing, Mich.

FOR SALE—HOLSTEIN BULL CALF Born June 5, 1912. Sire a son of the King of the Pontiacs from a daughter of Hengerveld De Kol. Dam of calf is A. R. O. daughter of Sadie Vale Concordia's Paul DeKol, her dam a 20 lb. imported cow. ED. S. LEWIS, Marshall, Mich.

Purebred Registered HOLSTEIN CATTLE The Greatest Dairy Breed Send for FREE Illustrated Booklets Holstein-Friesian, Ass'n., Box 164, Brattleboro, Vt.

"Top-Notch" Holsteins.

Yearling bulls all sold. Choice bull calves from 1 to 4 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. McPHERSON FARMS CO., Howell, Michigan.

Service Bulls and Bull Calves

Sired by Johanna Concordia Champion, whose sire's dam and dam's dam average 34.06 lbs. butter in 7 days, average fat 4.67%. Also cows and heifers bred to him. I can offer you bulls at bargain prices. Try me and see, and do it quick.

L. E. CONNELL, Fayette, Ohio.

Bigelow's Holstein Farms
Breedsville, Mich.

Have for sale several fine young bulls out of cows with high official butter and milk records.

Send for circular.

HOLSTEINS—Cow 11 yr. old, bred Jan. 11, '13. A. R. O. record 18.74 lbs. butter, 542.8 milk in 7 days. Heifer 16 mo. old, bred Aug. 31, '12. Price \$125 each. Bull calves priced to sell. B. B. Heavey, Akron, Mich.

BULL CALVES—Richest Hengerveld, DeKol and Korndyke breeding. Special prices for quick sale. YPSILAND FARMS, Ypsilanti, Mich. Cole Brothers, Owners.

A GRANDSON OF PONTIAC KORNDYKE and PONTIAC ARTIS from a 19 lb. Dam. \$200. LONG BEACH FARM, Augusta, (Kalamazoo Co.) Mich. Fred S. Kenfield, Prop.

Holstein Friesian Cattle—young bulls out of A. R. O. dams and sired by a bull with a 31 lb. dam. W. B. JONES, Oak Grove, Michigan.

Registered Holstein heifer, born Jan. 8, 1912. Mostly white. Sires 3 nearest dams have 7-day butter records that average 21 lbs. Delivered at your express office for \$125. Write for pedigree. Hobart W. Fay, Mason, Mich.

Jerseys—Bulls ready for service, bred for production. Also cows and heifers Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

FOR Sale, Jersey Bulls, old enough for service, sired by a grandson of Imp. Interested Prince and from cows that produce 400 to 500 lbs. butter annually. A. Newman R1, Marietta, Mich.

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

At Your Own Price

JERSEY BULLS Ready for service and younger calves. Strong well grown and the best of breeding both sides. All registered stock. They will be sold to the parties sending in highest bid on or before March 1st, 1913. Write for description and other information and on receipt of same pick out your bull and send your bid to FISHERTON FARM, Pontiac, Michigan.

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

Dairy Shorthorns—Large Cattle—Heavy Milkers. Milk Records of all cows kept. No stock for sale at present. W. W. KNAPP, R. No. 4, Watervliet, Mich.

Dual Purpose Shorthorns for sale, heifers bred to Bold Knight No. 31245, a grand May & Otis Bull, also young bulls, sired by him. DAVIDSON & HALL, Tecumseh, Mich.

Scotch Shorthorn Bulls and Heifers For Sale. W. W. KNAPP, Howell, Michigan.

Dairy Bred Shorthorns—Two yearling heifers for sale. Price \$100 each. Bulls all sold. J. B. HUMMEL, Mason, Michigan.

Farm Commerce.

A Need for Co-operation.

By W. H. Ingling, General Manager Monmouth Co., N. J., Farmers' Exchange.

The yearly output of white potatoes in our county and vicinity is probably from 3,500 to 4,000 cars under normal conditions. With this field of operations before us, we could see no reason why our farmers should not sell and distribute their produce, as well as buy their seed potatoes, grass seed, paris green, arsenate of lead, all kinds of insecticide solutions, baskets and barrels, and manufacture their fertilizers, when they could do it at cost. In fact, why not be their own middlemen and save the expense entailed by the old system? So they concluded to do it.

How we are Organized.

Our organization is as follows: We have a board of directors, elected by the stockholders annually. The directors appoint the officers and have general supervision over the entire business. Our general office is nearly in the center of the section in which we operate. We have 30 loading stations that extend about 30 miles west along the Pennsylvania Railroad and 20 miles east on the Central Railroad of New Jersey. We are connected with all of our stations by telephone, and all cities and towns in the country by long distance telephone and Western Union and Postal Telegraph companies.

During the heavy shipping season we have a special office of the Western Union Telegraph Company located in our general office. The members deliver their potatoes or other products to our agents at the stations and receive a receipt for them, showing gross, tare and net weight and they are loaded into the cars for shipment. The agent, about the middle of the afternoon, notifies the manager the number of cars he is likely to have loaded by shipping time, which is about five o'clock in our territory.

The manager and his assistants in the meantime have issued their quotations to all of our salesmen in the principal cities, either by telephone or telegraph, and generally by three o'clock the output of the day has been sold. On a steady market, orders continue to come until the day closes. It frequently occurs when the market is very active that our orders exceed the supply for the day by 30 or 50 cars.

When the business for the day is over, the prices obtained are averaged, and the farmer credited with the average price for the same grade and variety of stock, no matter where he may have loaded it. The bills of lading are sent to the general office, so that the invoices and drafts may be sent out the same night. The price is given to each agent every morning for the goods shipped the day before and the agent notifies the farmers.

What we Did.

Now, just a word as to the results of our five years' work. Beginning with a membership of about 300 in 1908, our paid-in capital was \$7,000. Our first year's business amounted to \$454,414.11. We shipped 1,000 cars, containing 203,938 barrels of potatoes and packages of fruit and vegetables. Our seed potato sales were \$39,965.45. The saving to our members was estimated to be \$55,000.

In our second year, 1909, the amount of business was \$508,504.74—an increase of \$54,140.63. The shipments were about 1,200 cars, containing 214,731 packages of potatoes, fruit and vegetables. Our sales for seed potatoes were larger than 1908, and our fertilizer sales about \$30,000. Our membership increased to 500 and the capital stock to \$31,275, and the net profit amounted to \$6,702.53. A dividend of five per cent was paid. It is estimated that our members realized at least \$60,000 more for their products because of the influence of the Exchange.

Our third year, 1910, we shipped 485,488 packages, about 2,575 cars, more than twice as many as the year before, and 39,818 more than 1908 and 1909 combined. Our total sales were \$917,562.64. We handled 20,000 barrels of seed potatoes, an increase of 7,000 barrels, and paid our members an average of 49 cents per bushel for their potatoes for the season. Our fertilizer sales were 2,200 tons, valued at \$63,000, an increase of 800 tons, all mixed in our factories from the best materials that can be bought, and without

a pound of filler of any kind. Our members, besides getting goods of the highest grade, obtained them at a saving of \$2 to \$6 per ton. Our membership increased to 800 and the capital stock to \$49,370. The net profits were \$12,552.15. A dividend of five per cent was paid. The direct and indirect influence of the Exchange no doubt netted our membership at least \$100,000 more than they would have received without it.

Our shipments for the fourth year, 1911, were about 2,518 carloads, containing 487,280 packages, an increase of 1,792, notwithstanding our potato yield was about 20 per cent less than in 1910. Our sales of fertilizers were 3,233 tons, valued at \$100,000, an increase of 1,233 tons. Our seed potato business was about 27,000 barrels, valued at \$85,000, an increase of 7,000 barrels over 1910. Our total business was \$1,499,500.99, exceeding 1910 by \$581,938.35, and 1908, our first year, by \$1,045,086.88. The average price paid the farmer for his potatoes, including round and long stock, was 89 cents per bushel. It is estimated that the farmers received at least \$125,000 more because of the influence of the Exchange. The capital stock had now reached \$74,245, and the membership roll was 1,075.

For 1912, we estimate that our shipments will be about 2,400 cars, although the yield per acre was 15 to 20 per cent less than last year, owing to extreme dry weather during our growing season. The sales for fertilizer were 4,209 tons, valued at \$128,000, an increase of 976 tons. Our

THE NOMID SYSTEM—A PLAN FOR DISTRIBUTING FARM PRODUCTS.**Chapter VIII.—Information on Handling Special Products.**

It is the purpose of this chapter to give information on preparing and delivering those products commonly sold by the direct method. It must not be inferred from limiting the instructions to the ordinary farm products that the possibility of direct buying and selling ends there, for the plan is as broad as are selling and buying taken in their most comprehensive meaning. It is impossible to emphasize too strongly the importance of confidence between parties where direct dealing is attempted and that it may be quickly established marketing those products that personal experience enables one to absolutely know are up to standard is the prudent course to follow. When business relations are once established with customers, it is then best to branch out into other lines of marketing, since each party will have the necessary confidence in the other, making easy the introduction of new products in the list of sales.

Eggs—Demand For.

Every household uses a quantity of eggs. The average city family will require from two to three dozen per week and, figured on this basis, each family will demand from 100 to 150 dozen in the course of a year. Where good eggs can be secured throughout the season the amount used is naturally increased. It appears, then, that on the average two or three city families will consume what an ordinary farmer will produce. Where shipments of twelve dozen are made every two weeks it is almost always possible to arrange for consigning the eggs to one of the parties who will distribute the eggs to and collect from the other or others. The amount produced and the amount consumed, as well as the method of delivery, will determine largely the particular arrangements for conducting the business, but the average family consumption is sufficiently large to make it economical to ship so frequently that fresh and wholesome eggs may be had at all times.

Kind of Poultry to Keep.

A good laying strain of hens is indispensable to the highest success. A more uniform grade of eggs will be received from such stock than from mongrels and the cost of production is certain to be lower where the hens have been selected for their laying qualities. The increased

seed potato business will be about 28,000 barrels, an increase of 1,000 barrels, with a value of \$98,000. Because of the lower prices obtained for our products this year, the amount of business will not total as much as last year, probably a little less than a million dollars. Our people realized an average price for their potatoes of 48 cents per bushel, and an extra indirect benefit of at least \$100,000.

The average price paid our farmers for the five years of our existence is 61 cents per bushel for their potatoes. Never in the history of potato growing in our section has anything like this average for a group of five years been paid under the old system. Our membership has increased to 1,227 and our capital stock is \$75,175. The usual dividend of five per cent will be paid on January 1, 1913. The financial condition of our Exchange today is:

Capital stock	\$75,175.00
Surplus	17,182.47
Undivided profits	7,612.75

Total

Our equipment for running this business is the general office, supplied with an adding machine, typewriter, all necessary filing and copying devices. At each of our loading stations we have an office building and a set of wagon scales. We have also three large fertilizer warehouses, with about 21,500 square feet of floor space, situated in such a way that most of our membership can reach them without having to freight their goods. We think this department is one of the most important we have, as by mixing our fertilizers we can give the farmer the very best grade of goods at the lowest price.

We have endeavored by this brief outline of the principle of co-operation to show what it will accomplish for the producer if honestly applied, and have held up some practical examples of its application and what it has accomplished for the farmers in the different sections where it has been tried. Our suggestion in closing is, "Go thou and do likewise."

interest and attention that naturally go out to the well-bred fowls are potent factors in the business of producing eggs for a direct trade.

The Quarters Should be Clean.

If the reader is not already apprised of the advantage of keeping his poultry premises sanitary he is certain to be convinced of its importance before he has carried on a direct trade for any considerable time, since he will find consumers more particular as to the condition in which the products are produced than the ordinary middleman. The place where unsanitary conditions will do the greatest damage to one's trade and where attention will bring the largest reward is the nests. Filth in them will surely result in a poor quality eggs being produced. While such eggs may be fit for immediate consumption they will soon go wrong if held, for germs in the dirt will pass through the porous shells and contaminate the contents. Some fine chaff is perhaps the best material to use in the nests. It should be replaced often. It should also be stated under this head that hens need to be kept free from vermin. The presence of these mites will reduce the income from the flock.

The Number of Nests.

It is important that a sufficient number of nests be provided for the hens. Lack of nests causes the hens to go into the barn, about the stacks, out into the grass, fence corners, and other out-of-the-way places to lay. Also where fowls have too few nests they crowd in these few, break the eggs that have been laid, and get them dirty, thus reducing their market value. About one nest for every four hens will give sufficient accommodation for the fowls.

Eggs Gathered Often.

There is nothing that a producer can do that will advance his trade faster in the confidence of his patrons than having every egg fresh when delivered and the producer can be certain that he sends such goods only when he gathers his eggs frequently and regularly. They should, at least, be gathered twice each day for the greater part of the year. It is the practice of many poultrymen to date the eggs with an indelible mark so the consumer can know the exact day on which the eggs were laid. This is a good practice, especially where the eggs are to pass through the hands of a middleman, but in selling direct the producer knows if the eggs are good or not and that he is responsible should they prove to be unsatisfactory, so the trouble need not be taken unless one is seeking to gain

new customers and wishes by this means to secure their confidence.

Conditions for Keeping Eggs.

Many eggs are spoiled because they are improperly kept while waiting to be delivered. It is not uncommon to see eggs put in a receptacle near the stove where conditions for spoiling are ideal. They should be kept in a cool, dry place. Cellars are usually cool but they are not always dry, and most house cellars have too few windows and no provision for ventilation. These should be provided if the eggs are to be stored in them.

Sorting and Grading.

On every farm and poultry ranch there will be some eggs produced that are dirty and small. These should be used at home if possible, and only the clean, average sized ones sold. Better satisfaction will result, while the unqualified eggs will serve the home demand in every particular. As a general rule, one should not attempt to wash dirty eggs. The water destroys the "bloom" over the surface of the shell and also that attractive appearance characteristic of fresh eggs. The pores of the shell are also opened up by the water, making it easier for bacteria to gain entrance. If, however, one wishes to clean the eggs, try to remove the dirt first with a dry cloth, and next with one made but slightly damp. Should both of these fail, then wash in pure warm water, free from alkali, soap, or cleaning preparations of any kind. By using warm water the egg dries quickly, an important feature.

For the ordinary trade it is not always necessary to grade eggs for color and size; but the practice is a good one to follow if one has an output large enough to make it possible. There are three grades for color: Brown, gray and white. The "browns" include eggs ranging from light golden brown to a reddish cast; "whites" embrace those slightly tinted, in fact, few eggs are ever of a dead-white, and "grays" take in eggs of all colors between the "browns" and the "whites."

Eggs are also graded as to size. Two, or three grades may be made: Large and small, or large, medium and small. Medium-sized eggs should weigh from 25 to 28 ounces per dozen. Those weighing more are large and those weighing less should be graded as small. Where eggs are sold in crates with a standard-sized compartment for each egg, small eggs show up badly and should either be sold at a reduction or used at home, as suggested above. Extra large eggs may break in shipping.

Packing the Eggs.

The method of delivery determines the manner of packing. Where eggs are delivered by the producer's rig, they can be taken in bulk and the required number counted out at the door. A better way, where the party takes a certain amount each week, is to put the eggs in containers that hold one or two dozen, and deliver. Such a delivery is more business-like and appears much neater when properly done. It is necessary to use strong crates when delivery is made by common carriers as the ordinary crates or cases are not satisfactory for delivering eggs by the direct selling method. They will hold up when carefully packed in a car close together, but when sent alone by express such cases do not stand the test. On the market may be found different styles of crates designed for just the purpose. They are strong and made in several sizes that will meet the wants of all patrons. Frequently where shippers have regular customers, the name and address of each customer is printed upon the crate in which his eggs are delivered. This care will insure the crate reaching its destination. Fillers should be clean. Eggs of the same size and color should be packed together, if grading is practiced. If the order is too small to allow filling the case full, the remainder of the space must be packed to keep the eggs from being broken by the contents jamming within the case. Seal the case so that its contents may not be removed without detection, and mark the name of the consignee (the party to whom the goods are sent) and his address plainly.

Delivering.

While it may seem a matter of little import, the exposure during the journey from the farm to the electric line, or railroad station often does much to rob good eggs of their keeping quality. Eggs should be kept cool and dry. The government reports instances where eggs being carried in the rear end of carriages, were exposed to the direct rays of the sun (a common practice), and a thermometer placed upon the top of the case registered 106 degrees F. Such a

temperature hastens decomposition and must be avoided by the progressive man. At the station or anywhere that exposure to heat may occur precautions should be taken to protect the shipment.

As stated above, eggs should be kept in a cool dry place to retain their qualities best and these conditions should be maintained by the consumer when he receives the shipment, for the eggs will retain their freshness longer.

CO-OPERATIVE INSTITUTIONS IN CANADA.

According to the 1912 report of the Dominion Fruit Division, there are 86 co-operative fruit growers' associations in Canada—ten in British Columbia, 46 in Ontario, six in Quebec, 23 in Nova Scotia, and one in Prince Edward Island. It is probable that in this number many efficient associations are omitted. The number indicates, however, the rapid progress of the movement in that country which is due to the many advantages that co-operation offers. Experience and helpful legislation is certain to clear the way for more efficient and general service from these institutions.

CROP AND MARKET NOTES.

Livingston Co., Feb. 17.—We have been having good snug winter weather for the past three weeks, with scarcely any snow on the ground and while it is too early to tell what damage has been done to wheat and clover, it has no doubt suffered materially. Stock is going to market as soon as it is in condition, the market being satisfactory to feeders this winter. Not much grain moving on account of the easy tone of the market. Considerable building will be done this year. Help will be very scarce this year, farmers are offering from \$30 to \$40 per month and board. It has been an exceptionally good winter to work in the woods and farmers have been making the best of it in getting up their wood supply early.

Shiawassee Co., Feb. 11.—Strong prevailing winds from the south and west and snow flurries. Very little work being done on the farm except hauling out manure, getting up the winter's supply of wood and marketing baled hay. A few farmers in this locality still think it profitable to sell hay, but they are gradually becoming fewer in number. The large portion of the marketable clover hay is purchased by sheep feeders and converted into mutton and manure. Farmers are very slow about moving beans on account of the decline in the market. Now and then a farmer is selling barley and oats and some wheat. Potato growers seem in no hurry to open pits. Some growers, however, fear heavy loss from rot. Farmers are very slow about signing beet contracts, believing that other crops are more profitable at present prices. A few apple growers are marketing a part of their store crop, selling chiefly to home customers. Farmers seem well pleased with the milk business this winter, receiving as high as \$1.70 per cwt.

Mecosta Co., Feb. 14.—February has been, until today, one stormy period. The wind has blown from the northwest nearly all the time, making it very disagreeable, even though it was not so very cold. That is, the thermometer only registered two degrees below zero for the coldest weather here. Haven't had any sleighing as yet this winter. The ground is entirely bare, which has no doubt damaged the fall seeding to quite an extent. Potatoes are mostly in the farmers' hands and still holding on for higher prices. They are quoted at 32c now. Lots of hay and hard to dispose of at any price. Butter-fat is quoted at 34c and butter from 22c to 28c per pound, eggs 22c per dozen. Not much live stock left for shipping this season, as there has been about 75 cars shipped out during the past year.

Newaygo Co., Feb. 14.—January was a rather mild month, not very cold and not much sleighing. It has been a hard winter on all kinds of fall seeding. Potatoes still low in price, with lots in the farmers' hands. February so far has been much colder than the fore part of the winter, which will probably help the potato market some. Not much doing on the farm. Wheat, new, 85c; old, 95c; oats, 35c; corn, shelled, 60c per bu; rye, 45c; buckwheat, per cwt., \$1.30; eggs, 22c; butter, 28c; pork, live, 7c; dressed, 9c; chickens, 10c; beef, live, 24c; sheep, 2½@3½c; veal, 3@5½c; hay, \$10@12; beans, red, \$1.75; white, \$1.75; potatoes, 30c; butter-fat, 37c.

Wayne Co., Feb. 13.—The weather has been quite cold all through this month, with the thermometer hovering close to zero nearly all the month so far, and the ground almost bare. The weather is very hard on wheat, there being not enough snow to protect it and a cold wind blowing. Lots of auction sales. Horses and cattle selling high. Horses bringing from \$90@250. Milch cows are bringing from \$30@75. Stock in general looking good, as rough feed is plentiful. Wheat, \$1.05; oats, 32c; corn, 52c per bu; eggs, 23c.

Don't let your subscription to The Michigan Farmer expire. It now only costs you 50 cents a year, \$1.00 for two years, \$1.25 for three years, and \$2.00 for five years. It is a necessity for the home of every farmer in Michigan and it is the lowest priced necessity there is.

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WOOL

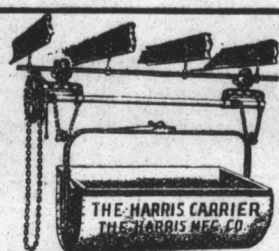
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for working horses on swamp land. This shoe is adjustable to suit the size and shape of any horse's foot. Patented and manufactured by **L. Brigham, Decatur, Mich.** Send for circular.

Breeders' Directory—Continued.

For Sale—One extra good black **PERCHERON** three-year-old **STALLION**, will make a ton horse. **E. P. SESSIONS, Grand Ledge, Mich.**

SHEEP.

Wanted—500 good grade bred ewes. Submit number, breed, age, weight, date of lambing. Lowest prices. **DR. C. A. BEEBE, Wellston, Michigan.**

"BREED UP YOUR SHEEP" Article sent free to any address. **"The Sheep Man of the East."** **PARSONS, R. No. 1, Grand Ledge, Mich.**

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES, 2½ miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

SHROPSHIRE SHEEP—15 Reg. ewes for sale, bred to choice Imp. Rams. Also Reg. Clydesdale Stud Colt, 8 months old. **W. P. Pulling & Son, Parma, Mich.**

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HOGS.

BERKSHIRE BOARS May and June farrow, large size, heavy bone. \$18 and \$20 each. **GEO. E. LAPHAM, St. Johns, Michigan.**

BERKSHIRES—Yearling Sows bred for April & May farrowing. Also a few open gilts. **A. A. PATULLO, Deckerville, Michigan.**

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

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

O. I. C.—TWO BOARS fit to head any herd. Fall pigs ready to ship. **C. J. THOMPSON, Rockford, Michigan.**

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O. I. C. Swine, both sexes. Males weighing 100 to 225 lbs. Herd registered in O. I. C. Association. **GEO. P. ANDREWS, Danville, Ingham Co., Mich.**

Improved Chesters—Young breeding stock, either sex. Also a few tried sows to be bred for spring farrow and early fall pigs. **W. O. WILSON, Okemos, Mich.**

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

O. I. C. Pigs of September and October farrow for sale cheap. **JOHN BERNER & SON, Grand Ledge, Mich.**

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O. I. C's—A fine lot of last spring stock for sale, big growthy type, either sex, pairs not akin. Sired by Grand Champion boar, Scott No. 1. Half mile west of depot. **OTTO B. SCHULZE, Nashville, Mich.**

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. **SPECIAL BARGAIN** in summer pigs. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

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

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P. C. BOARS AND SOWS—large type, sired by Expansion. **A. A. WOOD & SON, Saline, Michigan.**

POLAND CHINA SOWS—bred Single Comb Black. Minorca cockerels. Satisfaction guaranteed. **R. W. MILLS, Salina, Mich.**

LARGE TYPE P. C.—Largest in Mich. A few late March Gilts weighing 300 lbs. and over. Bred to big Dermons, the largest pig in U.S. of age weighed 512 lbs. at 10 mo. and 18 days old. Come or write. I can show the goods, free delivery. **W. E. Livingston, Parma, Mich.**

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I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." **G. S. BENJAMIN, R. No. 10, Portland, Mich.**

LARGE Yorkshires—Choice breeding stock, all ages, not akin, from State Fair prize-winners. Pedigrees furnished. **W. C. COOK, R. 42, Box 22, Ada, Mich.**

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I keep from 4000 to 6000 grade Yorkshires and Poland China cholera immune hogs and am selling prolific brood sows, also sows weighing from 50 to 150 lbs. at prices that make them desirable on cholera infected farms. Sows weighing more than 100 lbs. are supposed to farrow in April and May. I expect to have several thousand pigs from immune sows and boars for sale next spring.

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LARGE YORKSHIRE SWINE—August farrowed gilts \$20 each. No males in stock. **Geo. S. McMullen, Citiz. Phone, Grand Ledge, Mich.**

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A splendid lot of fall pigs at reduced prices, pairs and trios not akin. Young sows and gilts bred for April farrow. Your money back if you are not satisfied. **COLON C. LILLIE, Coopersville, Mich.**

Markets.

GRAINS AND SEEDS.

Wheat.—Altogether this has been a poor week for the selling side of the wheat market, prices ruling fully four cents below those of a week earlier. Since the decline on last Thursday it appears that the market has found a new bottom and values have ruled comparatively steady at the price reached on that date. The heavy marketing of wheat from Argentina has been one of the chief bearish features. Another is the total world's visible supply which is 12,000,000 bushels greater than for the same period a year ago. The cash wheat market is also dull, there being at present little demand for flour. The bears, however, appear to be somewhat anxious over the present situation because they have practically counted on the growing crop being a perfect one and it is already known that a little damage has been done in Kansas and Nebraska by a lack of moisture and that there are evidences of damage from the Hessian fly, although this information has probably been magnified by the bulls. On Tuesday Canada was selling wheat to European markets at advanced prices and quotations abroad were generally higher, due largely to anticipated trouble between Russia and Austria. The bulls gave this added credence because Russia, an export country, is now purchasing a small volume of wheat from Argentina. One year ago No. 2 red wheat was quoted on the Detroit market at 96¢ per bu. Detroit quotations are as follows:

	No. 2	No. 1	Red.	White.	May.	July.
Thursday	1.07½	1.06½	1.10	95½		
Friday	1.08	1.07	1.10½	95¾		
Saturday	1.08	1.07	1.10½	95¾		
Monday	1.07½	1.06½	1.09½	96		
Tuesday	1.07½	1.06½	1.09½	96		
Wednesday	1.07½	1.06½	1.09½	96½		

Chicago, (Feb. 18).—No. 2 red, \$1.03@1.08; May, 92½¢; July, 91½¢ per bu.
New York, (Feb. 18).—No. 2 red, \$1.11 f. o. b. adroit; May, 99¢; July, 98½¢ per bu.

Corn.—Prices here have declined in harmony with those of wheat, although the margin is much less than for the major cereal. It is probable that but for the reduced prices in wheat, corn would have remained about steady, although it is declared that there is a falling off in the demand from the eastern states due to unsettled questions between capital and labor. Receipts at the Detroit market have been large and a fairly good local demand exists. One year ago the price for No. 3 corn was 65½¢ per bu. Detroit quotations for the past week are as follows:

	No. 3	No. 2	Yellow.
Thursday	50¾	51¾	
Friday	50	51	
Saturday	50	51	
Monday	49½	50½	
Tuesday	49½	50½	
Wednesday	49½	50½	

Chicago, (Feb. 18).—No. 2 yellow, 50¢; No. 3 do., 47½¢@49¢; May, 52½¢; July, 53½¢ per bu.

Oats.—Prices gradually declined in this deal until Tuesday when a slight reaction took place. There appears to be a good supply of oats on the market, while the demand for the cereal is only fair. The decrease values for wheat and corn have undoubtedly augmented the decline here. However, Tuesday's market, both at Detroit and Chicago, showed fractional gains. One year ago the price for standard oats was 53½¢ per bu. Detroit quotations are as follows:

	Standard.	No. 3	White.
Thursday	37½	36½	
Friday	36½	35½	
Saturday	35	34	
Monday	34½	33½	
Tuesday	35	34	
Wednesday	35	34	

Chicago, (Feb. 18).—No. 2 white, 33½¢@34½¢; standard, 33¢@33½¢; May, 34½¢; July, 34½¢ per bu.

Beans.—News is lacking in this deal and there is nothing to excite interest. Prices are the same as quoted a week ago. Immediate, prompt and February shipment remains at \$2.10 and May at \$2.20 per bu.

Chicago, (Feb. 18).—Pea beans rule steady while red kidneys are lower than a week ago. Pea beans hand-picked, choice are quoted at \$2.20@2.25; do. prime \$2.05@2.10; red kidneys, old, \$1.75@1.85; new, \$2.25 per bu.

Clover Seed.—While this trade is now active prices show a decline from last week. Prime spot is 35¢ lower and now quoted at \$12 per bu; prime alsike is 20¢ lower at \$13.30 per bu.

Toledo, (Feb. 18).—Prices for clover seed are lower here than last week. Cash and February, \$12 per bu; March, \$12.02½; alsike, prime cash, \$13.35; March \$13.45.

Timothy Seed.—This trade rules steady. Prime spot is selling at \$1.75 per bu.

Toledo, (Feb. 18).—Prime timothy seed, cash, \$1.72½; March, \$1.75.

Rye.—The price for cash No. 2 rye is the same as given last week, 63¢ per bu.

Chicago, (Feb. 18).—No. 2 rye is quoted lower at 62½¢ per bu.

Barley.—Chicago, (Feb. 18).—This cereal rules about steady with a week ago, being quoted from 47½¢@71¢ per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.80; second, \$5.40; straight, \$4.90; spring patent, \$5.30; rye flour, \$4.60 per bbl.

Feed.—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$24; coarse middlings, \$24; fine middlings, \$29; cracked corn, \$25; coarse corn meal, \$22.50; corn and oat chop, \$21 per ton.

Hay.—Unchanged. Carlots on track at Detroit. No. 1 timothy, \$14.50@15; No. 2, \$13@13.50; light mixed, \$13.50@14; No. 1 mixed, \$12.50@13 per ton.

Chicago.—Demand fair; better grades higher. Choice timothy, \$16.50@17.50; No. 1, \$14@16; No. 2 and No. 1 mixed, \$12@13; No. 3 and No. 2 mixed, \$6@10; clover, \$6@11; alfalfa, choice, \$17@18; do. No. 1, \$15@16.50 per ton.

New York.—Market lower; standard, \$18.50@19.50 per ton; No. 1, \$20@21; light clover, mixed, \$18.

Straw.—Car lot prices on wheat and oat straw on Detroit market are \$8.50@9 per ton; rye straw, \$9.50@10 per ton.

Chicago.—Higher. Rye, \$8@8.50; wheat straw, \$6@6.50; oat straw, \$6@7 per ton.

New York.—Rye straw, \$20 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Last week's rather substantial advance has held unexpectedly well, the only marked reaction being seen in New York where top grades dropped back a cent or more. The local market is quite steady at last week's values, jobbing prices ruling as follows. Fancy creamery 35¢ per lb; firsts, 34¢; dairy, 22¢; packing stock, 21¢.

Elgin.—Market firm at 35¢.

Chicago.—Receipts show some increase but the demand is also better, the call being mostly for fresh goods. Values about on a par with last week; top dairies higher. Outlook seems favorable to greater steadiness than has been seen in many weeks. Quotations are: Extra creamery, 35½¢; extra firsts, 33½¢@34½¢; firsts, 30½¢@32¢; seconds, 27@29¢; dairy extras, 31¢; firsts, 25@26¢; seconds, 22¢; packing, 12@20½¢ as to quality.

New York.—Market has steadied down following a 1@1½¢ decline from last week's extreme figures. Creamery extras, 36@36½¢; firsts, 33@35¢; seconds, 31@32½¢; thirds, 29@30¢; state dairy best, 33½¢@34¢; good to prime, 29@33¢; common to fair, 24@28¢; packing, 17@21½¢ as to quality.

Eggs.—Egg prices are materially lower everywhere, due to unusually liberal receipts for this season of the year. Locally the quotation is 4¢ below that of a week ago, with the feeling easy. At Detroit current offerings, candled, and cases included, are quoted at 18½¢ per dozen.

Chicago.—The downward tendency in this market remains unchecked and all grades are off 3@4¢. Receipts very liberal but trade good and consumption showing marked increase. Miscellaneous receipts, cases included, are quoted at 15½¢@17½¢; do. cases returned, 15@17¢; ordinary firsts, 15@16½¢; firsts, 17½¢; refrigerators, firsts, 13¢ per dozen.

New York.—A firmer feeling is in evidence here, although prices have suffered a decline of 4@5¢ since this time last week. Fresh gathered extras, 21@22¢; firsts, 20¢; seconds and lower grades, 18@19½¢; western gathered whites, 22@24¢ per dozen.

Poultry.—The local market continues strong, the demand quickly absorbing offerings at figures well above those ruling in outside markets. Chickens are again higher, hens being on a par with springs. Ducks and turkeys also quoted higher. Quotations: Live—Spring chickens, 16@16½¢; hens, 16@16½¢. No. 2 hens, 12@14¢; old roosters, 10@12¢; turkeys, 19@20¢; geese, 15@15½¢; ducks, 19@20¢ per lb.

Chicago.—Offerings meeting a rather indifferent demand. Chickens and fowls on a par and lower. No other changes. Quotations on live are: Turkeys, good weight 15¢; others 10¢; fowls good, 14½¢; spring chickens, 14½¢; ducks, large, fat, 17¢; do., thin, ordinary, 15@16¢; geese, full feathered, 13¢; do., plucked, 8@10¢ per lb.

New York.—Dressed stock firm. Fresh killed western chickens, 15@18¢; fowls, 14½@17¢; turkeys, 14@24¢ per lb.

Cheese.—Wholesale lots: Michigan flats 15½@16¢; New York flats, 18@18½¢; brick cream, 17½@18¢; limburger, 18@19¢.

Veal.—Detroit.—Steady and unchanged. Fancy, 13@14¢; choice, 12@12½¢ per lb.

Chicago.—Fair to choice, 80@110 lbs. 13@14¢; extra fancy stock, 14½¢; fair to good chunky, 12@13¢.

FRUITS AND VEGETABLES.

Apples.—Deal is unchanged while the fruit is freely offered. Detroit quotations now are: Fancy, per bbl., \$2.50@3.50; ordinary, \$1@1.50.

Chicago.—Trade about steady with quotations ruling from \$2@4 per bbl.

Potatoes.—Market is easier and lower with practically no demand for car lots, farmers are delivering large quantities daily. Michigan stock in car lots, 42@46¢ in sacks, 40¢ in bulk.

Chicago.—Receipts show a marked increase and caused a break of 2¢ from the high figure reached last week although the quotations are now identical with those reported in our last issue. Fancy Michigan stock 48@50¢ per bu; best Wisconsin, 46@50¢; Minnesota, 47@50¢.

Cabbage.—The local market is still flooded with offerings and prices are down to the low point occupied this winter, \$1@1.25 per bbl. In New York a little improvement was noted during the recent cold weather but old conditions recurred with warmer days. Buyers are paying \$7.50@8 per ton for the best stock. The market at Chicago is stagnant, reds selling at 75¢@1 per bbl., and Holland at \$6.50@7 per ton.

MISCELLANEOUS.

Wool.—(Boston).—Domestic wools are in better demand, especially for the better grades for which prices are firm while the poorer kinds are easy and values show a tendency to sag. Among the leading domestic quotations are: Michigan fleeces—Fine unwashed, 22@23¢; de-

laine unwashed, 24@24½¢; ½-blood unwashed, 27@28¢; ¾-blood unwashed, 29½¢@30¢.

Provisions.—Mess pork \$20; family pork \$23@24; clear backs, \$21.50@23; hams, 15½@17¢; briskets, 12@13¢; bacon, 14@17¢; shoulders, 13¢; picnic hams, 12½¢; pure lard in tierces, 11½¢; kettle rendered lard, 12½¢ per lb.

Honey.—Choice to fancy comb, white 14@17¢ per lb; amber, 14@16¢; extracted, 9½@10¢ per lb.

DETROIT RETAIL PRICES.

Eastern Market.—With a large number of buyers and a liberal supply of products there was a lively market on Russell street Tuesday morning and prices of the previous week were maintained. Apples were offered freely at quotations ranging from 50¢@\$1 per bu. Cabbage continued to be the most conspicuous item and sold at 25¢ per bu. Potatoes were also generously presented at 55¢ per bu. Other quotations: Carrots, 30¢; parsnips, 35¢; turnips, 30@40¢ per bu; rhubarb, 20¢ per bunch; celery, 30¢; pork, \$10@11 per cwt. Hay is still quoted at \$15@20 per ton for loose and loads are freely offered.

THE LIVE STOCK MARKETS.

Buffalo.

February 17, 1913.
(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York.)

Cattle.—Receipts, 100 cars; market strong, 15@25¢ higher; best, 1350 to 1500-lb. steers, \$8.50@9; good to prime 1200 to 1300-lb. do., \$8@8.40; good to prime 1100 to 1200-lb. do., \$7.50@8.15; coarse, plainish, 1100 to 1200-lb. steers, \$7.50@7.75; medium butcher steers, 1000 to 1100 lbs., \$7@7.75; butcher steers, 950 to 1000, \$7@7.50; light butcher steers, \$6.25@6.75; best fat cows, \$6.25@7; butcher cows, \$5@5.75; light butcher cows, \$4.25@5; cutters, \$4@4.50; trimmers, \$3.75@4; best fat heifers, \$7.50@8; medium butcher heifers, \$6.50@7; light do., \$5.50@6; stock heifers, \$4@4.25; best feeding steers, \$6@6.50; light common stockers, \$4.50@5; prime export bulls, \$6.50@7; best butcher bulls, \$6.25@6.50; bologna bulls, \$5.25@6; stock bulls, \$4.75@5.50; best milkers and springers, \$6.75@7.50; common to fair kind, \$4@5.00.

Sheep and Lambs.—Receipts, 75 cars, market steady, top lambs, \$9.15@9.25; culls to fair, \$6@9; yearlings, \$7.75@8.50; wethers, \$6.75@7.25; ewes, \$6.25@6.50. Calves, \$5@12.

Hogs.—Receipts, 100 cars; market active and 10¢ higher; heavy, \$8.60@8.70; yorkers, \$8.70@8.75; pigs, \$8.55@8.80.

Chicago.

February 17, 1913.
Cattle. Hogs. Sheep.
Received today 22,000 45,000 30,000
Same day last year..... 28,083 62,447 28,324
Received last week..... 39,060 169,824 93,790
Same week last year..... 55,009 201,362 102,131

After the recent meager receipts of cattle the week opened today active at strong to 10¢ higher prices, with only a few prime enough to bring \$8.75@9. Hogs were active and strong, with plenty of late sales 5¢ higher, sales for the day ranging at \$7.95@8.40. Hogs marketed last week averaged 228 lbs., against 217 lbs. a year ago, 232 lbs. two years ago and 212 lbs. three years ago. Sheep were steady today, but buyers were bidding lower on lambs, with the receipts embracing but a small proportion of lambs. There was a moderate showing of feeders.

After a long period during which the cattle market was dull and weak for the greater portion of the time, the cheaper class of steers and butcher stock excepted, a gratifying improvement took place last week, due in part to the change recently to cold weather, but largely attributable to the small receipts for weeks in succession. Within a week the average prices of cattle have moved up 25¢@40¢, and the almost total absence of strictly prime long-fed beefs is accentuated by the sale last Wednesday of 14 head of 1400-lb. steers at \$9.25, the sole transaction for the week above \$9. The big share of the steer sales for the week were at \$7.50@8.50, with good cattle bringing \$8.30 and upward and choice beefs quotable at \$8.75 and over, while ordinary to fair light-weights went at \$6.65@7.75. Medium to good warmed-up steers brought \$7.80@8.25, and good to choice yearlings sold for \$8@8.60, while butcher lots of cows and heifers were active at \$4.60@7.60, a few prime heifers going as high as \$8. Cutters went at \$4.10@4.50, canners at \$3@4 and bulls at \$4.50@7. The stocker and feeder trade was very good on the whole, despite the advanced prices, intending buyers withdrawing and refusing to follow up the higher quotations. Furthermore, killers frequently outbid country buyers where feeder stock carried considerable flesh. Stockers went at \$5.60@7.50 and feeders of considerable weight at \$6.90@7.75. Prices for these cattle have within a short time reached high figures never before seen, and purchases around top figures look risky, although it is well known that there is a great shortage of cattle in feeding districts. Calves sold freely, bringing \$8.75@10.25 for light vealers, while the coarse heavy calves sold around \$4.50@8. Milk and springers sold better at \$4.50@8.50 each.

Hogs made a new high mark last week, continued inadequate receipts here and at other leading packing points resulting in putting prices up to the highest level recorded in four months. The eastern shipping demand was unusually good, and there was lively competition between local packers, speculators and shippers for the choicer consignments. As has been the rule of late, the best demand was for prime light-weights, and these brought the highest prices, with strong weight pigs selling at very high figures for the fresh pork trade. The dearthness of beef, as well as advanced prices in the retail

meat markets for lamb and mutton, is making the consumption of fresh pork greater than ever, this being cheaper than other meats, and there is also a good consumption of lard and cured hog meats, although it cannot be claimed that they are low in price. Western packing operations are falling far short of last year, and there is no telling how high the market will go, although everyone knows that when hog products sell so high as to materially lessen consumption reactions are due. Current marketings are largely of rather light weight. At the high time of the week prime hogs brought \$8.47½, while Saturday saw sales at \$7.90@8.35. A week earlier the best price was \$8.15. Pigs closed at \$6.50@8.15.

Lambs and sheep have been marketed here and elsewhere of late much less freely than several weeks ago, and despite reactions in prices frequently, due to the unwillingness of packers to buy freely at top figures, values still stand very much higher than in former years. All the time the best demand by far is for fat lambs of medium weight, with the heavier lambs and yearlings strongly discriminated against by buyers. Extremely few feeders are offered for sale, as the incentive is strong for finishing off stock in good shape, and desirable feeding lambs naturally command extremely high prices. Colorado and other western lambs are held in large numbers in railway and feed lots near here and are being marketed as soon as fat, provided market conditions are favorable. Lambs and sheep closed the week about 25¢ higher than a week earlier, lambs going at \$6.75@9.15, yearlings at \$6.75@8, wethers at \$6@6.60, ewes at \$3.75@5.85 and bucks at \$4@4.25.

Horses showed more activity and firmness last week, with smaller offerings for several days and an increased attendance of buyers, particularly from eastern sections of the country. Demand was chiefly for farm chunks, with sales usually at \$140@210 per head, and choice mares were too few to go around. Very attractive drafters sold around \$175@225, while wagon horses were salable at \$160@250. Choice to extra heavy draft horses were worth \$250@300, with very few prime ones on the market. Drivers were quoted at \$100@200 and not very active, and inferior thin animals were poor sellers around \$75@90.

LIVE STOCK NEWS.

There is a strong inquiry for good breeding swine of the various descriptions, including Poland-Chinas, Berkshires, Yorkshires, Tamworth and Duroc Reds, with an especially large call for a breed of hogs that will reach a weight of from 225 to 300 pounds when nine months old.

Feed lots near Chicago are holding large numbers of Colorado and other western grown sheep and lambs, and they are marketed as fast as they become fat enough. The market calls for fat lambs and yearlings of medium weights, and heavy lots are selling less satisfactorily. In various quarters farmers are beginning to see what they can do in breeding choice sheep.

A prominent sheep seller at the Chicago stock yards connected with a commission house that does an exclusive sheep business, selling for sheepmen, as well as buying feeders and breeders for shipment to sheep districts, says: "The demand for feeders of all kinds is extra good. It is probably safe to say that there are orders here in the yards for 300 or 400 cars of lambs, while only one or two cars of feeders are going to the country in the course of a week. Everyone is hoping there will be more feeders come to market, but from what we can gather, it looks as if there will be less marketed during the next three months than we ever had at this season of the year. Most of the hay-fed lambs that usually come to market to be resold and taken to the country are going on feed, the owners preferring to feed them out themselves rather than to sell this year, and while we are getting some feeding lambs, the packers are buying them for slaughter at much higher prices than the feeders want to pay. Owing to the fact that there is so little stock on feed east of here, we are very bullish and think our eastern friends should buy some lambs, even if prices are high."

A good demand has started up in the Chicago stock yards for good cows and heifers adapted for breeding purposes, and buying orders are coming from far and near, including the southwest, in numerous instances entire car loads being strongly wanted. Similar reports come from other important live stock markets, while breeders of the various breeds of cattle are receiving inquiries for bulls and cows. It is evident that many farmers are waking up to the fact that they can no longer depend on the other fellows for supplying them with feeders for finishing, the feeder supply being a small affair to what it was half-a-dozen years or so ago. The ranges are going out of existence as a large source of supply, and Texas is building silos extensively and preparing to feed its own cattle largely, instead of furnishing other parts of the country with thin cattle. Of course, there are plenty of high-priced breeders of the several breeds, but the average stockman is not willing to pay the prices asked by breeders of Angus, Galloway, Hereford and other breeds, and this accounts for the growing orders for breeders received by live stock commission houses. It is unfortunate that the unusually high market prices offered for female cattle have drawn such large numbers to market, where they have been killed for beef, and it is also regrettable that similar causes have resulted in the slaughter of many thousands of good calves that would have made choice beefs had they been retained on farms long enough.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

February 20, 1913.

Receipts, 1251. Market dull at Wednesday or last week's prices.

We quote: Best steers, \$8@8.20; steers and heifers, 1000 to 1200, \$7@7.50; do. 800 to 1000, \$6.25@6.75; do. that are fat, 500 to 700, \$4.75@5; choice fat cows, \$6@6.50; good do., \$5@5.50; common do., \$4@4.50; canners, \$3.50@4; choice heavy bulls, \$6@6.50; fair to good bolognas, bulls, \$5.50@5.75; stock bulls, \$4.50@5; choice feeding steers, 800 to 1000, \$6@6.50; fair do., 800 to 1000, \$5.50@5.75; choice stockers, 500 to 700, \$5.50@6; fair stockers, 500 to 700, \$5@5.50; milkers, large, young, medium age, \$50@65; common milkers, \$30@45.

Bishop, B. & H. sold Hammond, S. & Co. 2 cows av 1175 at \$5.35, 1 do weighing 980 at \$6, 2 steers av 1235 at \$5.10, 7 do av 771 at \$6.90, 2 cows av 890 at \$4.50; to Mich. B. Co. 2 cows av 1080 at \$6, 24 steers av 910 at \$7.25, 2 do av 500 at \$5, 11 do av 735 at \$6.25, 4 cows av 895 at \$5.25, 5 do av 1076 at \$5.50, 1 bull weighing 1180 at \$6.40; to Rattkowsky 3 cows av 1033 at \$5.50, 1 do weighing 750 at \$4.25, 5 steers av 388 at \$5; to Rattkowsky 1 cow weighing 1480 at \$6.50, 1 do weighing 1130 at \$5; to Sullivan P. Co. 1 do weighing 910 at \$4, 4 steers av 997 at \$7.25, 5 cows and bulls av 853 at \$6, 12 stockers av 620 at \$5.50, 7 butchers av 764 at \$4.50, 4 canners av 750 at \$3.80, 1 cow weighing 910 at \$4.25, 10 butchers av 784 at \$5.80, 4 cows av 980 at \$4.50, 3 steers av 953 at \$7, 1 bull weighing 1430 at \$6.25; to Mason B. Co. 11 steers av 870 at \$7.10, 3 cows av 1080 at \$6.10; to Parker, W. & Co. 24 butchers av 810 at \$6.50, 2 bulls av 1140 at \$6.25, 8 steers av 970 at \$7.50; to Thompson Bros. 10 cows av 961 at \$4.75, 1 do weighing 930 at \$3.75; to Arndt 6 steers av 1111 at \$7.75.

Haley & M. sold Sullivan P. Co. 1 cow weighing 620 at \$4, 4 do av 1105 at \$4.60, 1 bull weighing 780 at \$5.75, 3 steers av 707 at \$6.50, 1 do weighing 650 at \$6.35, 7 do av 824 at \$7.25, 2 bulls av 1010 at \$6.15, 10 butchers av 733 at \$6.80; to Goose 5 cows av 1028 at \$4.75, 1 do weighing 580 at \$4.25; to Kamman B. Co. 1 heifer weighing 780 at \$6.75; to Schurman 8 steers av 866 at \$7.40; to Kamman B. Co. 1 heifer weighing 750 at \$6.25, 2 do av 605 at \$5; to Goose 8 cows av 975 at \$4.85; to Bresnahan 5 heifers av 560 at \$6; to Sullivan P. Co. 2 steers av 800 at \$5.75, 1 do weighing 1040 at \$7.25, 1 bull weighing 1290 at \$6.25, 5 cows av 1074 at \$5.75, 1 bull weighing 1180 at \$6.25; to Nagle P. Co. 2 steers av 1025 at \$7.65; to Goose 12 cows av 1012 at \$4.85; to Breitenbeck 15 butchers av 903 at \$6.90, 3 cows av 1057 at \$4.80; to Thompson Bros 4 steers av 635 at \$5.70, 1 cow weighing 680 at \$4.50, 1 do weighing 800 at \$3.75.

Sundry sales to Mich. B. Co. 9 butchers av 798 at \$6.15, 21 do av 766 at \$6.75, 5 do av 747 at \$5.50, 1 cow weighing 1020 at \$4.50, 14 butchers av 847 at \$6.50; to Wyness 13 do av 788 at \$6.85, 2 cows av 810 at \$4.80, 3 do av 1023 at \$5.65; to Rattkowsky 1 bull weighing 1130 at \$7; to Thompson Bros. 2 steers av 900 at \$7, 2 bulls av 900 at \$6; to Hammond, S. & Co. 1 bull weighing 1520 at \$6.25; to Newton B. Co. 14 butchers av 961 at \$6.50; to Heinrich 10 steers av 932 at \$7.50; to Goose 4 cows av 967 at \$4.90; to Mich. B. Co. 11 butchers av 880 at \$6, 1 cow weighing 1100 at \$4.50, 3 do av 927 at \$5.50, 1 steer weighing 800 at \$7; to Parker, W. & Co. 3 canners av 970 at \$3.75; to Kamman B. Co. 6 steers av 760 at \$6.75, 4 do av 725 at \$6.50, 5 do av 856 at \$7, 1 do weighing 590 at \$6, 3 cows av 1133 at \$5.25; to Breitenbeck 5 do av 944 at \$5, 5 do av 1072 at \$5.

Roe Com. Co. sold to Mich. B. Co. 1 bull weighing 470 at \$5.50, 4 cows av 1175 at \$6, 1 do weighing 1010 at \$4.50, 2 do av 1015 at \$4, 11 butchers av 744 at \$6.40, 4 do av 1045 at \$6, 9 do av 806 at \$6.65, 5 cows av 726 at \$5, 16 steers av 974 at \$7.25, 1 do weighing 820 at \$5.50; to Bresnahan 1 heifer weighing 650 at \$5.25, 5 canners av 844 at \$4; to Breitenbeck 1 cow weighing 820 at \$4.50; to Kamman B. Co. 5 butchers av 908 at \$6.25, 1 steer weighing 1070 at \$7.50, 2 cows av 1015 at \$5.60, 18 butchers av 740 at \$6.70; to Rattkowsky 2 cows av 1090 at \$5.10; to Thompson Bros. 2 do av 1075 at \$4.75, 1 do weighing 960 at \$4, 1 heifer weighing 450 at \$5.50; to Wyness 1 bull weighing 1440 at \$6.50; to Newton B. Co. 2 cows av 955 at \$4.90; to Parker, W. & Co. 7 steers av 1000 at \$7.50.

Veal Calves. Market steady at Wednesday and last week's prices. Best, \$9.50@11; others, \$6@8.50; milch cows and springers, good grades strong, common dull.

Roe Com. Co. sold Thompson Bros. 1 weighing 150 at \$11, 1 weighing 120 at \$7; to Goose 7 av 110 at \$9; to Nagle P. Co. 13 av 120 at \$10; to Goose 3 av 125 at \$7; to Nagle P. Co. 13 av 135 at \$10.50, 7 av 150 at \$10.50.

Sundry sales to Sullivan P. Co. 6 av 145 at \$10.50; to Mich. B. Co. 6 av 170 at \$10, 2 av 120 at \$9.50; to Newton B. Co. 2 av 110 at \$9, 2 av 145 at \$10.50, 3 av 150 at \$10; to Rattkowsky 2 av 135 at \$10.

Haley & M. sold Rattkowsky 4 av 120 at \$8.50, 7 av 130 at \$10, 2 av 95 at \$8,

2 av 120 at \$10, 1 weighing 110 at \$8; to Thompson Bros. 1 weighing 170 at \$11; to Newton B. Co. 2 av 115 at \$10, 1 weighing 100 at \$8; to Rattkowsky 2 av 140 at \$10.75, 2 av 130 at \$6, 1 weighing 140 at \$10.75; to Schirer 9 av 120 at \$9.30; to Goose 8 av 155 at \$10.50.

Bishop, B. & H. sold Parker, W. & Co. 2 av 120 at \$10.50, 1 weighing 160 at \$11, 5 av 125 at \$9.75, 9 av 155 at \$10, 1 weighing 120 at \$8, 13 av 130 at \$10, 2 av 140 at \$11; to Goose 5 av 115 at \$8, 1 weighing 200 at \$7.50, 3 av 95 at \$6.50; to Thompson Bros. 4 av 130 at \$10.50, 4 av 125 at \$8; to Newton B. Co. 5 av 125 at \$10; to Hammond, S. & Co. 9 av 150 at \$10, 4 av 105 at \$8, 6 av 140 at \$10.50; to McGuire 2 av 125 at \$10, 2 av 140 at \$11, 1 weighing 110 at \$8, 13 av 135 at \$10, 1 weighing 170 at \$8, 3 av 140 at \$10.50; to Goose 6 av 135 at \$8.50; to Burnstine 8 av 140 at \$10.50, 16 av 135 at \$10, 3 av 140 at \$8.50, 11 av 145 at \$10; to Hammond, S. & Co. 11 av 150 at \$10.50, 2 av 170 at \$11.

Sheep and Lambs. Receipts, 5217. Sheep 25c higher than last week; lambs \$10@15c lower than on Wednesday or last week's opening. Best lambs, \$8.50; fair lambs, \$8@8.25; light to common lambs, \$6@6.50; fair to good sheep, \$5@5.75; culls and common, \$3@3.50; western yearlings, \$8@8.25.

Bishop, B. & H. sold Nagle P. Co. 834 western yearlings av 90 at \$8.25, 43 do av 95 at \$8.25, 79 lambs av 65 at \$7.50, 17 do av 65 at \$7.50, 200 do av 75 at \$8.50; to Swift & Co. 65 do av 88 at \$8.70, 40 do av 78 at \$8.60, 24 sheep av 95 at \$4.75, 25 sheep av 100 at \$4.50, 227 lambs av 75 at \$8.75; to Mich. B. Co. 9 do av 50 at \$6, 16 do av 58 at \$7, 27 do av 55 at \$6.50; to Youngs 41 do av 63 at \$8, 137 do av 75 at \$8.40, 27 do av 78 at \$8.25, 28 do av 80 at \$8.40, 8 do av 70 at \$8.25; to Sullivan P. Co. 32 do av 58 at \$7.25, 16 sheep av 90 at \$4.75, 15 lambs av 40 at \$5.50; to Mich. B. Co. 70 do av 55 at \$7; to Kirk 85 feeders av 52 at \$6.75, 39 do av 45 at \$6.25.

Haley & M. sold Youngs 59 lambs av 70 at \$8.40; to Bray 12 do av 95 at \$8.50, 15 do av 90 at \$8.50, 10 do av 56 at \$7, 10 do av 80 at \$8.50; to Thompson Bros. 16 sheep av 85 at \$4.25; to Newton B. Co. 10 lambs av 51 at \$7.50, 68 do av 78 at \$8.70; to Harland 23 sheep av 120 at \$5.50.

Sundry sales to Mich. B. Co. 85 lambs av 70 at \$8, 20 sheep av 105 at \$5, 7 do av 87 at \$3.50, 8 do av 125 at \$3.50, 49 lambs av 80 at \$8.35; to Youngs 69 do av 75 at \$8.75; to Bray 21 sheep av 95 at \$4.60; to Hammond, S. & Co. 19 lambs av 70 at \$8.50; to Bray 22 yearlings av 90 at \$7.25, 14 sheep av 125 at \$5; to Sullivan P. Co. 21 lambs av 75 at \$8.35. Roe Com. Co. sold Thompson Bros. 22 sheep av 85 at \$4, 13 do av 105 at \$4, 18 do av 50 at \$7; to Nagle P. Co. 108 do av 75 at \$8, 1 sheep weighing 110 at \$5.50; to Barlage 23 do av 105 at \$4.50, 18 lambs av 55 at \$7.50.

Hogs. Receipts, 3289. Pigs 10@15c lower than last week; others 10c lower than last week; none sold up to noon.

Range of prices: Light to good butchers, \$8.35@8.40; pigs, \$3.40@3.50; light yorkers, \$8.35@8.40; stags one-third off. Bishop, B. & H. sold Parker, W. & Co. 900 av 160 at \$8.40, 710 av 200 at \$8.35, 105 av 240 at \$8.30. Spicer & R. sold Hammond, S. & Co. 150 av 160 at \$8.40, 220 av 190 at \$8.35. Haley & M. sold same 270 av 185 at \$8.40.

Roe Com. Co. sold Sullivan P. Co. 225 av 190 at \$8.35.

Friday's Market.

February 14, 1913.

Cattle.

Receipts this week, 1102; last week, 1761. Market strong at Thursday's prices: Best steers, \$7.75; steers and heifers, 1000 to 1200, \$6.75@7.50; do. 800 to 1000, \$6.25@6.75; do. that are fat, 500 to 700, \$5.50@6; choice fat cows, \$6@6.50; good do., \$5@5.50; common do., \$4@4.50; canners, \$3.50@4; choice heavy bulls, \$6@6.50; fair to good bolognas, \$5.50@5.75; stock bulls, \$4.50@5; choice feeding steers, 800 to 1000, \$6@6.25; fair feeding steers, 800 to 1000, \$5.50@5.75; choice stockers, 500 to 700, \$5.50@6; fair stockers, 500 to 700, \$5@5.50; milkers, large, young, medium age, \$50@65; common milkers, \$30@45.

Veal Calves. Receipts this week, 659; last week, 625. Market steady at Thursday's prices. Best \$10@11; others, \$4@9.50; milch cows and cpringers steady.

Sheep and Lambs. Receipts this week, 5961; last week, 5790. Market steady at Thursday's prices. Best lambs, \$8.75@8.90; fair do., \$8.25@8.50; light to common do., \$6.75@7.50; yearlings, \$8; fair to good sheep, \$5@5.50; culls and common, \$3@3.50.

Hogs. Receipts this week, 4791; last week, 5171. Market 15@20c lower than on Thursday. Light to good butchers, \$8.30; pigs, \$8.50; light yorkers, \$8.30; stags one-third off.

LIVE STOCK NOTES.

The Beef Producers' Association of Iowa reports that 24 farmers grew and fattened beef calves for market in 1911 and 1912 at average profits of \$7 per head. The association states that beef can be grown on Iowa land at six cents per pound, and it believes that the beef supply cannot possibly catch up with the demand in less than ten years.

The quality of veal calves is also offered is common and sheep are selling no higher but good lambs are in active demand at an advance of 25@35c over last week.

The quality of veal calves are also common, the few that are good, however, sell exceedingly well at an advance of 50c per cwt. The trade don't want these thin common calves.

(Continued from page 243).

sections of the state, together with outside talent, including Prof. Price, of Ohio. The evening sessions will be still more general in character and will include on Thursday an explanation of the farm management work being undertaken by the United States Department of Agriculture, by Prof. Clinton, of Washington, D. C., and Prof. Mumford, in charge of the work in Michigan. A special fruit and potato session will be held on Thursday afternoon separate from the general session of the institute, while the Women's Congress will meet as usual on Wednesday and Thursday afternoons, and special demonstration work will be given for the women each morning. Space will not permit the reproduction of the program in full, but it is one of the best, and perhaps the best which has ever been offered to the farmers of Michigan at an institute meeting and all who can possibly arrange to do so should attend and secure the benefit which is theirs for the taking.

WOULD FORCE COLLECTION OF TAX OR DESTROY DOGS.

The matter of a tax on dogs, in recent issue of The Farmer, has come to my attention and I wish to say that the present dog law would be all right if the tax were raised to \$3.00 each, and a fine of \$10 imposed upon the supervisor who does not assess all dogs, and another fine for the treasurer who does not collect the tax, or report the delinquent to the humane officer. Then the officer should be paid \$10 for each dog reported to him and killed by him, and he should be subject to a fine of \$10 for each dog he neglects or fails to kill, after its being reported to him. The person who harbors a dog should be considered its owner, in the sight of the law, and subject to the above provisions.

The trouble with the present so-called dog law, is that the good dogs owned by responsible parties, and carefully taken care of are taxed, and the tax paid, or collected, while the poor man who keeps and harbors a mongrel female, that is always turned out of doors at night to prow around, is either not assessed at all, or the tax is never collected. And kindly tell me how it can be collected under the present law.

I asked a man who had two mongrel curs—a male and a female—if he paid a tax on his dogs. He answered that the "female was ten years old, and had never been assessed," and that sometimes he had a "dozen dogs," but that he had never paid a dollar tax, and asked how anyone could make him. Besides, he said that the law was such that no poor man was obliged to pay anything on dogs, and I conclude he was right. I was told not many years ago that in one township in this county there had been 97 dogs assessed the previous year, and \$7 collected, and that was paid by a man who had one male and two female collies, all recorded, and cared for and kept on his own premises, and indoors nights. You see, this man could cast but one vote, while the 90 dog owners who did not pay, cast 90 votes.

Van Buren Co. SUBSCRIBER.

SOIL SURVEY OF GENESEE COUNTY, MICHIGAN.

The field work of the Soil Survey of Genesee county, Mich., made by experts of the Bureau of Soils, United States Department of Agriculture, has been completed and the report will be issued during the latter part of the coming summer. The county contains about 648 square miles, or 414,720 acres.

The survey was made by the Bureau of Soils in order that the agricultural value of the soils of the county might be determined and show to what crops each type is best adapted, in order that the department may recommend what agricultural methods should be practiced to obtain the best possible yields, and, at the same time, maintain or increase the present fertility of the soil.

A soil and topographic map will accompany the report, showing in colors the location and extent of the various types of soils found during the survey, as well as the location of all farm houses, churches, schools, public roads, streams, and railroads in the county.

Fifty cents for one idea that returns several dollars. Would you pay it? Of course you would. The Michigan Farmer comes 52 times a year, each issue chuck full of good ideas and you can get all these ideas that come in one year for 50 cents, two years for \$1.00, three years for \$1.25, five years for \$2.00. Can you afford to miss getting these ideas at a cost of 50 cents? Answer—about as well as you could afford to miss paying your insurance because you think your house might not burn down.

AGENTS Something New

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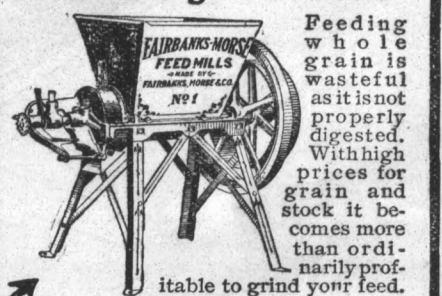
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grind mixed grain and corn on cob at the same time, insuring an easily digested mixture. These mills have light draft, large capacity, long life. Grind fine, medium or coarse. No gears to waste power. Wearing parts renewable at small cost. Capacities: 6 to 60 bushels an hour.

Grind Cheaply—Use a Jack of all Trades Engine for power. It runs on Kerosene or Gasoline. An outfit will save its cost in a short time and will give years of service.

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The McDonald Pitless Scale

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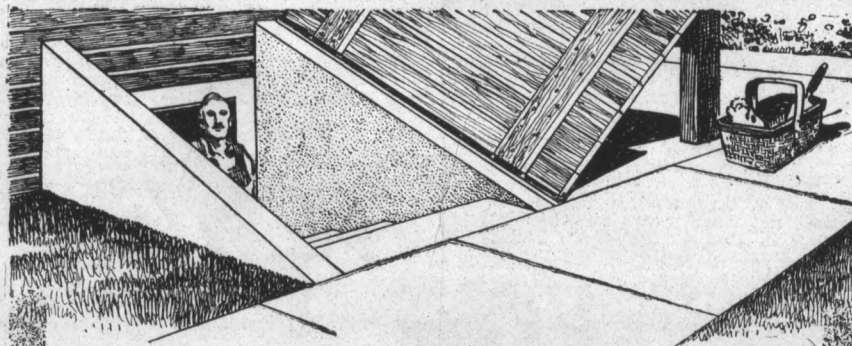
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(Continued from page 223).

owing to his isolated condition, is inclined to be a little behind in taking up improvements. Fruit trees should have been sprayed 25 years ago when it was well demonstrated by investigators to be the best method for growing fruit. The silo was known to be a splendid method of preserving corn 30 years ago. Much of our improved machinery was invented and put on the market long years before it was put into use. Many of the improved crops, such as alfalfa, have come slowly into general use. Good methods of feeding and breeding of stock have been preached for a hundred years, but only a small per cent of the stock farmers are putting into practice the best of these findings and teachings. No, we cannot be too progressive in our methods, providing we use good judgment in their introduction.

Nebraska.

E. H. CLARK.

PRACTICAL EXPERIENCE WITH HOGS.

The article by E. J. Rice in regard to his hogs eating too much salt prompts me to offer my practical experience with the hog question.

Here at the State Reformatory, during the past 12 years, we have had on an average of 200 hogs and have had no cases of hog cholera. Plenty of good pure water and clean, dry sleeping quarters are as essential to the hog as any other animal, but it seems with 75 to 100 hogs running together in a small enclosure sometimes there will be some that may have a cough and be unthrifty. For this I give one quart of kerosene oil mixed in one barrel of swill and feed it until they are well.

We plan to have charcoal in reach of the hogs at all times. For several years we have used the following mixture where the hogs have been affected with worms: Three bushels common charcoal; eight pounds common salt; two quarts air slaked lime; one bushel of wood ashes. Break the lumps in the charcoal; if there are nails or glass in the ashes sift them and thoroughly mix the whole mass together. Then take 1 1/4 lbs. of copperas, dissolve in 10 quarts of warm water, sprinkle the whole mass and thoroughly shovel over so that the copperas is thoroughly mixed through the whole. Put this mixture in a self-feeding trough or box so that the hogs, both young and old, can help themselves to it any time they wish.

Ionia Co.

GUY CONNER.

MUSTY RYE KILLED HOGS.

In looking through your issue of February 1, I see an inquiry by E. H. S., Montcalm county, in regard to feeding musty rye. I had a little experience with feeding such grain. I bought a sow and eight pigs last spring and a nicer, thriftier bunch I never saw. They grew just fine till they would weigh around 75 pounds, when I got a chance to get some rye that had heated in the bin a little and I commenced feeding that to them. I did not feed very heavy, as they were on good pasture, but they soon commenced to die and before I got rid of them I lost three. A neighbor bought three of them and they did fine for him. He fed them just clean slop and grain. Now I have not lost a hog since I quit feeding the rye and I could not think of anything that killed those shoats but the heated rye. Of course, I am, in a way, guessing at the rye being the cause, but I never lost a hog in that way before. I would like to ask your veterinary what he thinks of it, or others, if any have had experience.

Wexford Co.

F. BREDALL.

SHORTHORN BREEDERS ORGANIZE.

The central Michigan Shorthorn breeders, comprising Montcalm county and adjacent territory, met at Greenville last Saturday and organized an association.

Oscar Skinner, of Gowan, was chosen president; G. W. Rader, Pierson, vice-president; C. W. Crum, McBride's, secretary-treasurer, and E. A. Stokes, Gowan, and F. W. Bailey, Coral, members of the executive committee.

The members must all breed Shorthorn cattle and it is hoped all will work into the same kind of hogs, sheep, horses and poultry, so that those seeking breeding animals can find what they want among the members. A list of all animals for sale by members will be on file with the secretary, who will advertise the same and direct the prospective buyer to the member having what he wants. In this

way the expense of advertising will be reduced. Members will also exchange desirable breeding animals, thus saving another item of expense to the stockman.

The Shorthorn cow is the ideal cow for the great mass of general farmers who cannot be exclusive dairymen or beef producers. The average farmer must have a cow that gives a good quantity of good milk and at the same time produces beef at a profit. The high price of beef is increasing the demand for this kind of cow, and the Shorthorn fills the bill as no other breed does. The wide-awake breeders who organized this association are putting themselves in position to supply some of this increasing demand for breeding animals.

A committee of the association will inspect all animals offered for sale by the members for breeding purposes, and nothing but first-class stock will be O. K'd by it.

C. W. CRUM, Sec'y.

LIVE STOCK NEWS.

Horses are meeting with a fairly good demand, farm chunks being principally called for, with sales chiefly at \$125@210 per head, although choice mares sell higher now and then. Drafters are moving moderately at \$175@225, with limited numbers of better and much heavier horses fetching \$250@275 and now and then a sale around \$300. Inferior old horses sell as low as \$65@90, and drivers are in poor demand around \$100@200.

The general conditions governing the cattle markets of the country have not changed radically in recent weeks further than somewhat lessened consumption of beef throughout most sections of the United States because of the early opening of the Lenten season. However, the interference from the fast is not nearly what it used to be years ago, and after all the principal trouble arises from the refusal of retail markets to lower their prices for steaks and roasts in accordance with the reductions in prices that are made from time to time by the packers on carcasses of beef. Since the beginning of the year average cattle prices, while much higher than in former years, have been materially reduced, yet the prices charged for beef in the retail meat markets are for the most part unchanged, ruling practically as high as ever. The average family has ceased to indulge in beef anywhere near as freely as in former years and is substituting to a great extent pork and mutton, fresh pork being especially favored because of its cheapness as compared with all other meats.

W. C. Harris, a large Colorado feeder of cattle and sheep is fattening many hundred imported Mexican steers, their ages running from five to ten years. They are fed beet pulp, beet tops and hay covered with molasses. Years ago, when the first beet sugar factories were built, the beet pulp was wasted, while beet tops were regarded as useless for feeding to stock. Since then the beet sugar mills have learned much and they refuse to part with the beet pulp at any price, preferring to convert it into beef themselves. Beet tops bring as high as \$4 per acre, a price that used to be paid for rent per acre for farm lands.

The recent official report made by the agricultural bureau of the United States says that within a year there has been a reduction of 8.6 per cent in the number of breeding sows on farms, with the loss chiefly in the corn belt states of Kansas, Illinois, Missouri, Indiana, Ohio and Iowa. Far too many brood sows have been marketed at a period when there is the greatest reason for retaining on the farm as many good breeders as possible. The old sows are discriminated against severely by the packers and small butchers, and they were sold in the Chicago market in recent weeks at discounts of from 25@50c per 100 lbs.

Very few breeding ewes are being offered for sale in the markets of the country, but a few sales have been reported in the Chicago market at \$4.90 per 100 lbs. and thereabouts. Feeding lambs are scarce articles there and have brought since the first of the year anywhere from \$7@8.40 per 100 lbs., depending principally on how much flesh they carried. The highest prices are paid for lambs that require only a few weeks longer feeding to make them prime in quality. Sales in January were largely at \$7.75@8. This is a winter when the incentive is so powerful to make lambs prime that very few sheepmen neglect the business. The mutton shortage is unusually great, with Colorado and the surrounding regions the only parts where the industry has not lagged behind. The Colorado flocks are now headed marketward, being mostly fat as butter and prime in quality, but their owners have no intention of glutting the markets and thereby precipitating a slump in values.

The opening of the Lenten season has a decided influence on the market for cheese, and all American and foreign makes have been advanced half a cent per pound in anticipation of a broader consumptive demand during the 40 days' fast of a portion of the Christian world. Eggs and butter have also been advanced.

Hogs are being shipped to market as fast as they reach moderate size, their owners preferring to accept the prices offered for prime light and medium weights rather than to hold until heavy. It is the light and medium weights that command the highest prices, with heavy lots selling at a discount.

Manipulation of the price of butter on the Elgin Board of Trade is not to be tolerated, said Charles H. Potter, the president, at a recent meeting. He ruled out of order the sale of butter for which a higher price had been offered than the one accepted by the seller. There will be no fictitious market set by the Elgin board, said Mr. Potter.

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 the letter.

Grease Heel.—I have a ten-year-old Clydesdale mare that has sore legs, her heels crack open and discharge a sticky fluid which has a strong odor. I applied oxide of zinc and oil of tar which seemed to heal the sores, but lately I find sores under belly. S. J. J., Bad Axe, Mich.—Clip off hair and apply one part iodoform and ten parts boracic acid to sores twice a day. Give her a tablespoonful Fowler's solution at a dose in feed three times a day. Feed her some roots and well salted mash to keep her bowels open.

Indigestion.—I have a pair of horses that are thin and much out of condition which I am anxious to build up. They are fairly well fed but do not thrive and lay on flesh. W. J. D., Elm Hall, Mich. As you have had the services of three Vets. I shall not advise you to pay out any more money for treating them. Mix together equal parts powdered sulphate iron, ground gentian, ginger and cinchona and give a tablespoonful at a dose in feed three times a day. These horses should be groomed twice a day, kept warm and well fed.

Dropsy.—Every spring my brood mare swells under belly, her hind legs stick, but she does not appear to be sick. C. J. S., Bellevue, Mich.—Give her a teaspoonful of powdered nitrate of potash and two tablespoonfuls ground gentian at a dose in feed three times a day, or as often as you find it necessary. Her bowels should be kept open, she should have daily exercise and be well fed.

Rheumatism—Sore Shin.—I have a six-year-old horse that went lame some three months ago and our local Vet. believes he has rheumatism. When turning him to right he shows very little lameness, but always limps when going to left. J. M., Kingston, Mich.—Examine him closely and you will find he strikes his shin when traveling and when turning to the left. Dissolve ¼ lb. sugar of lead in one gallon of water, and add ½ pt. tincture opium then apply to shin three times daily. For rheumatism give a teaspoonful of salicylic acid, a teaspoonful saltpeter and a tablespoonful cooking soda in feed three times a day.

Punctured Foot—Quittor.—Last June my horse went lame in hind leg; I examined foot, found hole in it and when I cut down on sole found pus, but the wound soon healed and he went sound. Last week he again went lame, and I pared foot out, found more pus and matter comes from upper part of hoof. He remains very lame and I would like to know how to treat him. W. R. G., Snover, Mich.—Apply one part iodoform and six parts boracic acid to sores twice a day. The foot should be kept clean.

Mange—Eczema.—For the past twelve months my mare has been itchy and her yearling colt is in the same condition. This disease is confined to head, neck and shoulders and there are a few sore spots on back. G. G., Leslie, Mich.—Give mare a dessertspoonful of Donovan's solution and colt a teaspoonful at a dose in feed three times a day. Apply one part bichloride of mercury and 500 parts water to sore parts twice a day; also apply vaseline twice a week. They should be well groomed twice a day.

Stocking.—I have a 12-year-old mare that is in foal, which has a stocked hind leg, and I wish you would tell me what to do for her. J. B., Morley, Mich.—Give her a dessertspoonful of powdered nitrate of potash at a dose in feed twice a day, when needed to keep kidneys active. Bandage leg in cotton.

Bone Spavin.—I have a horse that goes lame when first taken out of barn, but after traveling a mile she trots sound. I find a bunch on lame leg and am told it is what is called "Jack" spavin. B. F., Mason, Mich.—Give him rest and apply one part red iodide mercury and four parts lard to bunch once a week.

P. P. R., Saginaw, E. S., Mich.—See treatment for grease heel this paper.

Surfeit—Splints.—My 4-year-old mare is troubled with pimples forming on neck which itch some, but refuse to go away. I also have a three-year-old colt that has two small hard bunches on hind shin. G. E. L., Lake Odessa, Mich.—Give horse a tablespoonful cooking soda at a dose in feed three times a day.

F. B., Breckenridge, Mich.—See treatment for sore legs, this column.

Roarer—Foot Sore.—I have an eight-year-old mare that will weigh 1,750 lbs., which eats and drinks good, but breathes fast and seems to be short of breath. She has been treated by our local Vet. with poor results. I also have another draft mare that is foot-sore on account of flat feet. She travels best when shoes are off; fore feet are hard. E. G. H., Eckford, Mich.—Feed no clover or musty, dusty fodder, and dampen her feed. It will perhaps be necessary to do some surgical work on throat before she will breathe free and normal. Give her 1 dr. gualacal at a dose three times a day. Apply lanolin to fore hoofs twice a day, also apply one part powdered cantharides and six parts lard to coronets once a

week; this ointment will blister and stimulate a healthy growth of horn.

Seedy Toe—Barren Heifer.—We have a four-year-old horse whose hoofs seem to be separating from flesh and I wish you would tell me what will cure her. I also have a heifer that is now 18 months old which has never been in heat. L. C., Addison, Mich.—Apply iodine ointment to upper part of hoof three times a week. A recovery in this kind of a case is doubtful. Fatten heifer, for she will perhaps never breed.

Garget.—One quarter of cow's udder is soft, but she gives a watery fluid instead of milk and I would like to know what can be done for her. A. K., Fenningville, Mich.—Hand-rub bag three times a day; this will assist in stimulating udder into action. Give a dessertspoonful of powdered nitrate of potash at a dose three times a day for ten days.

Opacity of Cornea.—Have a heifer that is troubled with sore eyes and there is a thin film on both eye balls which I would like to have removed. Her sight is yet fairly good. M. M., Evart, Mich.—Blow a little calomel into eyes once a day and blow some boracic acid into eyes once daily. Keep bowels open and heifer in dark stable until she is well.

What Causes Lumpy Milk—Infected Udder.—We have a cow that gives lumpy milk from one teat only and good milk from other three teats; I am at a loss to know how this happens. L. K., Omena, Mich.—An infective germ makes its way through teat into udder and had these germs passed up teat canal in all four the whole bag would have been diseased instead of one quarter. Apply iodine ointment to diseased quarter three times a week. Milkers are usually careless and spread udder disease in this way.

Lump Jaw.—One of my cows has lump jaw and I would like to know how to cure her. H. J. M., Richmond, Mich.—If you have only one case in your herd, fatten her and then there is little danger of spreading the infection. Good results are obtained by applying one part red iodide mercury and four parts lard every week and giving her 2 drs. potassium iodide at a dose three times a day.

Heifer Falls to Get with Calf.—My two-year-old heifer has been bred to two different bulls several times and fails to get with calf. W. L., Rothbury, Mich.—Dissolve ¼ lb. cooking soda in ½ gal. tepid water and wash her out three hours before having her served and occasionally between heat periods.

Inflamed Udder.—One quarter of my cow's udder is inflamed and somewhat blocked; what shall I do for her? J. W. V., Frankenmuth, Mich.—Apply hot raw linseed oil twice a day and give her a tablespoonful of powdered nitrate of potash at a dose in feed three times a day until she is well.

F. W. K., Foley, Ala.—Try the soda treatment on your barren cows.

Nodular Disease.—I have lost two sheep lately and they showed the following symptoms before death: The first symptom is dullness, drooping head, general dumpishness, hold head high or to one side, chewing fast, frothing at mouth and having spasms; after a few days' sickness they die. I have been feeding shredded fodder, bean pods and crushed oats. E. G. H., Gregory, Mich.—It is possible that they die of impaction; however, I believe they die of parasitic bowel trouble called nodular disease. Give each sheep 3 ozs. of a one per cent solution of coal tar creosote once a week for three weeks. A fairly good remedy is giving a teaspoonful gasoline in 2 ozs. sweet oil or milk once a week. Keep their bowels open by feeding some roots.

Chronic Leucorrhoea—Abnormal Heat.—I have a cow nine years old that appears to be in heat most of the time; besides, she has a thick white discharge which does not lessen. A. R., Shaftsbury, Mich.—Your cow will not get with calf until vaginal discharge ceases. Dissolve 1 dr. permanganate potash in a gallon of tepid water and wash out vagina thoroughly once a day. Give her a teaspoonful powdered sulphate iron, and two tablespoonfuls cooking soda at a dose in feed two or three times a day. She may suffer from a chronic inflammation of ovaries and if so she might as well be fattened.

Sprained Hock.—My 9-year-old mare sprained hock and when moving leg forward moves it cautiously and I imagine farther forward than opposite one. I have applied arnica, witch hazel, and water, which I think helped it some. F. J. B., Marcelus, Mich.—Clip off hair and apply one part powdered cantharides and eight parts lard once a week.

Stifle Ligaments are Weak.—I have a two-year-old colt that is troubled with weak stifle ligaments for the cap is inclined to slip out of place, and I would like to know what to do for him. C. A. R., Mt. Morris, Mich.—Clip off hair and apply one part cantharides and six parts lard every ten days.

Malignant Wound.—Some three months ago my horse cut ankle on cultivator and I have been unable to heal wound. There is quite a bunch in sore which I have cut off, but the proud flesh seems to grow soon after I remove it. W. A., Fenwick, Mich.—You will find it impossible to reduce leg to its normal size and wound will always contain a whole lot of scar tissue which if removed will very likely grow again. Apply equal parts of oxide of zinc, powdered alum and boracic acid to wound twice a day. The fungus tissue should be removed with a knife.

Ringbone.—I have a four-year-old colt that has ringbone and blisters fail to make him go sound. Can you recommend a remedy that will take off bunch and cure lameness? C. L., Sears, Mich.—I know of no remedy that will cure all cases of ringbone; however, if you will give the horse rest and apply one part red iodide mercury and four parts lard once a week, it will do as well by him as

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any drug you can apply. In my practice I very often fire and if you have blistered this horse often, you had better fire him.

Weak Back.—My six-year-old horse is wrong in back and I would like to know what to apply. He moves forward fairly well, but it is difficult to back him. H. J., Dorris, Mich.—Apply equal parts alcohol and spirits of camphor to back twice a day. Give him 1 dr. ground nux vomica, ½ oz. ground gentian, and ½ oz. of cooking soda at a dose in feed two or three times a day.

Impaction.—I have been feeding my mares oat and wheat straw with 2 qts. of oats daily until two weeks ago; since that time I fed threshed alsike hay and ground corn and oats. One of them was taken with indigestion and both seem to lose their appetite. I gave the sick one two pints of raw linseed oil and the other one enough oil to open bowels. I would like to know how they should be fed to keep them healthy and the bowels kept open. J. I. W., North Branch, Mich.—Feed enough well salted bran mash, sludge, or roots to keep the bowels moist. Kindly understand the bowels of a horse move four or five times as often when he is exercised, than if standing still.

Hemorrhage Following Dehorning.—We have just dehorned our cows and a few heifer calves; one of the cows nearly bled to death and none of them act as bright as usual. In using caustic to destroy the growth of horn on calves, how often should it be applied? What should be done if the caustic is inclined to eat or burn a hole in calf's head? J. R. S., Jeddo, Mich.—In my practice I usually twist the artery with forceps, sometimes tie blood vessel, sometimes apply Monsell's solution of iron or adrenalin. However, no stiptic will completely arrest hemorrhage from a large artery. They should be tied, or packed with cotton or oakum and pressure applied to it. Never apply too much caustic but be sure and apply to the whole horn, for if this first application is thorough it will prevent the horn's ever growing. In making this application, do not get the caustic too wet, for if so it will burn the healthy part and perhaps some of it get into the eye. Apply one part iodoform and ten parts boric acid to horn stubs on cows once a day. To stop the action of the acid, apply vaseline or fresh lard; however, this should seldom be necessary.

Blocked Teat Canal—Sores on Udder.—I have a Jersey cow that appears to have a hard swelling that extends the whole length of center of teat; besides, there are some sores on skin. J. G. E., Fife Lake, Mich.—Dissolve 1 oz. acetate of lead in one quart of water and apply to teat three or four times a day. After the wound heals apply iodine ointment three times a week.

Drying Cow.—What had I better do to dry milk yield of cow? H. M. S., Farmington, Mich.—Give her 2 drs. gum camphor at a dose three times a day and feed her very little milk-producing food. Timothy hay is a poor milk-producing food.

Milk Cow Too Long.—I have a cow that just came fresh which we milked up to one week ago. Since she freshened her milk yield is just the same as before. What do you advise? R. M. V., Gowen, Mich.—I do not regard it as good practice to milk a cow up to so near milking time. They should be dried up a few weeks before calving time. Increase her food supply, is the best advice I can give you.

Cow Leaks Milk.—I have a nice four-year-old cow that leaks milk and I would like to know if there is a practical way to prevent it. W. H. E., Clare, Mich.—Either milk her three times a day or use teat plugs. If you are not supplied with teat plugs, this office can furnish them.

Sow Does Not Come in Heat.—Is there any drug I can give sow which will cause her to come in heat? She is kept in a good warm place, fed warm feed, but shows no indications of coming in heat. I would also like to know how to prevent a sow from eating her pigs, and if they do it once, are they likely to do it again? W. B., Ellsworth, Mich.—It is difficult to tell why a sow should incline to eat her own offspring; however, some sows do it, just as cows are inclined to eat the afterbirth. I have known sows to do it when they had a high fever and were in a delirious state. By feeding the flesh of animals to sows is said to assist in preventing them doing so. However, I have known it to fail as often as it was successful. Give your sow 10 grs. powdered cantharides, 10 grs. powdered nux vomica and 1 dr. powdered capsicum at a dose in feed two or three times a day. This treatment will have a tendency in the right direction, but it is not certain to produce the desired results. Let your sow associate with the male.

Foot Soreness.—I have a 10-year-old mare that limps, caused by soreness in right fore foot; when driven on rough, hard roads, she is quite lame, but moves better when footing is soft. C. A. P., Flushing, Mich.—Clip hair off coronet all the way round and apply one part powdered cantharides and six parts fresh lard three times a month; also apply lanolin to hoof, both wall and sole.

Thrush.—I have been an interested reader of your paper for quite a few years and receive a whole lot of good from it, especially from veterinary column. I have a horse that is troubled with thrush in all four feet; have applied a disinfectant, which fails to help him. When standing he spreads his feet far apart and appears to be uncomfortable. D. A. B., Bark River, Mich.—First of all thrush is usually the result of too much wet and filth. Therefore, I suggest that you keep his feet dry and clean; also apply calomel to diseased frogs twice a day and if his hoofs are hard, apply lanolin once a day.

Diseased Udder.—I have a three-year-

old heifer that dropped her second calf last October; she has been giving a good flow of milk up to four weeks ago, then the right hind quarter of udder began to dry up, the teat seems to be clear, but quarter fails to fill with milk. She is a well-bred Jersey and I dislike to have her lose use of this quarter. C. W. D., Kalamazoo, Mich.—Give her ½ oz. hypsulphite of soda at a dose in feed three times a day and apply hot raw linseed oil to diseased quarter once a day.

Eczema.—I have a Holstein heifer that is troubled with an itchy condition of skin and is inclined to rub off some hair. Chickens have access to my cow stable, but I do not believe her lousy for the other cows are not in this itchy condition. H. M. S., Farmington, Mich.—Apply one part oxide of zinc and five parts vaseline to itchy parts of skin two or three times a week. Give a dessertspoonful of Donovan's solution at a dose in feed two or three times a day.

Itchy Condition of Skin.—I have a six-year-old cow that appears to be healthy that is rubbing the hair off neck and shoulders. I first thought she had lice, but have been unable to find any. She is fed four quarts of grain and some roots twice a day; besides, for roughage she has clover hay and cornstalks. N. D., Mt. Clemens, Mich.—Apply one part bichloride mercury and 1,000 parts water to itchy parts of skin twice a day and occasionally apply vaseline. Give her a dessertspoonful of powdered saltpeter at a dose twice a day.

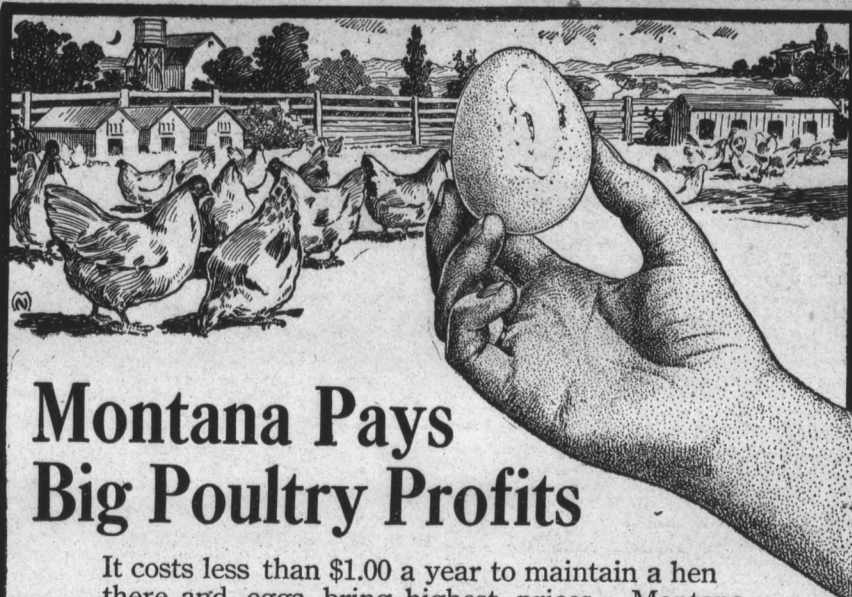
Lumpjaw—Ejects Food.—One of my cows has a bunch on lower jaw that is growing quite rapidly and is almost as hard as bone. I also have another cow that occasionally drops partially chewed food out of mouth and I would like to know what can be done. This cow is not giving as much milk this winter as she did last. E. G., New Boston, Mich.—Apply one part red iodide mercury and four parts lard to bunch on jaw once a week and give her 2 drs. iodide potassium at a dose in feed two or three times a day. The teeth of your other cow may need a little attention and perhaps by feeding her ground and cut feed she might be all right.

Hemorrhage from Lungs—Fit—Rheumatism—Loss of Appetite.—One of my 90-lb. pigs had a hemorrhage from lung, causing it to become weak and quite sick. Another one of my hogs had a light fit, but recovered. I also have another that went lame without showing any particular symptoms of disease. F. C. H., Auburn, Mich.—First of all let me say that very little can be done to prevent bleeding from lungs. Keep the animal as quiet as possible and by itself. The hog that had a fit is perhaps wormy. Give a dessertspoonful of fluid extract of spigelia and a dessertspoonful of fluid extract of senna at a dose daily until you believe it is rid of worms—two or three doses is generally enough, especially if the medicine produces considerable bowel action. Give your hog that is rheumatic and has a poor appetite a teaspoonful of the following compound powder at a dose in feed twice a day: Mix together equal parts ground gentian, ground ginger, bicarbonate soda and ground red cinchona. I also suggest that you feed them less corn and more oats, oil meal and roots.

L. V., Marion, Mich.—Drugs will not do your boar any good, but I advise you to apply hot water or hot packs to injured parts one hour at a time, twice a day.

Congestion of Lungs.—I had a two-year old buck die recently that was fat and apparently very thrifty. The night before he died it seemed difficult for him to breathe. I opened him and found the lungs presented a diseased condition. I have 20 more ewes that are all seemingly in a healthy condition. A. H. J., Mason, Mich.—Your buck died the result of acute congestion of the lungs and perhaps could not have been saved. You will perhaps not have any more cases of this kind; however, if you do apply one part turpentine, one part aqua ammonia and four parts olive oil to sides and chest once a day. Give whiskey, spirits of nitre or aromatic spirits of ammonia every three or four hours.

Vermineous Bronchitis—Stomach Worms—Tape Worm.—My sheep are troubled with lung, stomach and tapeworm. The lung worms are of a light cream color about two inches long, the size of a fine thread and seem to inhabit the tubes in the lungs. The stomach worms are a pinkish color about three-quarters of an inch long and are found in the fourth stomach. I also find links of tapeworm in excrement of lambs. These sheep have been treated at different times by our local Vet. and we have fed three or four kinds of medicated salt without it killing these worms. A post mortem shows me that these sheep are still very wormy. What treatment do you advise? A. H., Union City, Mich.—First of all your sheep should be well fed and for the lung parasites place the affected animals in a close building and burn pinch after pinch of flowers of sulphur on a piece of paper laid on an iron shovel until the air is as much charged as they can bear without coughing violently. The administrator must stay with them in the room to avoid accidents and keep up the application for half an hour at a time. It is good practice to treat them once a week for two or three weeks. For the stomach worms you had better give each sheep three ounces of a solution made by adding one part coal tar creosote to 95 parts water and they should be given a dose once or twice a week for two weeks, or give them a dessertspoonful of gasoline in 3 ozs. of sweet milk twice a week for two weeks. Or give a teaspoonful of turpentine and 3 ozs. of olive oil once a week for three weeks. For tapeworm, give 1 gr. of powdered kamala for each pound the sheep weighs twice a week for two weeks. It is good practice to give 2 ozs. of castor oil two or three hours after you have given the other medicine, unless the bowels are open and active.



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

Associational Motto:

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

Associational Sentiment:

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

YEARLY PROGRAMS.

Ingham County Farmers' Club.

The annual program for Ingham County Farmers' Club for 1913 contains on its colored cover the name of the Club and the year for which the program serves, also the year of organization, which was 1872. At the bottom of the cover page appears a fitting motto, "Growth is better than permanence and permanent growth is better than all." The regular meetings of this Club will be held on the second Saturday of each month, as shown by the announcement on the title page. Following that is a list of officers and directors for the current year and on the succeeding page appears a list of standing committees of the Club. The succeeding pages are devoted, one each, to the programs for the monthly meetings. An appropriate sentiment heads each program. Roll call is responded to in a manner appropriate to the program. The programs are complete in practically every detail and the table committee for the month is named at the bottom of each page. Special features are a basket picnic in July, a Young People's Day in August and a Women's Day in November. On the last page of the program there is a memorial tribute to those who have gone before. Altogether, the program is a natural development of the long experience of this Club and is admirably fitted to serve a useful purpose in stimulating interest in monthly meetings of the organization.

Thornapple Farmers' Club.

The program of this Club is for the fiscal year from March 1, 1913 to March 1, 1914. At the bottom of the title page is an appeal to every member to remember that interest in the Club cannot be kept up unless the members attend the meetings. The printed program simply gives the date of the meeting and the leading topic for discussion at each monthly meeting throughout the year, together with the name of the leader, the literary part of the program for each month being made a matter for a contest to increase the interest and membership of the Club. In this contest two leaders are appointed by the president, who choose sides, thus dividing the entire membership of the Club, each side to be awarded points of credit for the furnishing of literary programs, in the discharge of which duty the two sides alternate. A certain number of points are designated for each feature, such as 100 points for a five-minute speech by an active member, 50 points for an original essay, etc., all through the varied features of the program. Also each side is given a credit of 100 points for each new member secured. At the close of the contest in November the side having the least number of points will serve a good dinner to the side that wins the highest number of points, this dinner to be served at the December meeting. The plan is an interesting one and should be a fruitful means of interesting the young people as well as the older members of the Club. Special feature meetings are a young People's Day in August and a Club Fair in October. On the back cover of this program appears the officers for the current year, the order of business followed by the Club, the amount of membership dues, which are 25 cents per member payable in advance, and an announcement of the date of the meetings, which are on the first Thursday of each month. At the bottom of the page is the appeal, "Let us make this our banner year." This plan of stimulating interest in the program is well worthy of emula-

tion by other Clubs in the winter where the young people are not as actively interested as they should be.

WHAT THE LOCAL CLUBS ARE DOING.

The Penfield Club, of Calhoun county, has monthly programs. The Club owns its own chairs and tables. Ten monthly meetings are held during the year, with special features, such as an ice cream social in July and an August picnic. The annual fees are 25 cents per year for each gentleman and the ladies pay a fee of 10 cents per year which goes into the floral fund. This Club has been represented in the State Associational meetings for five years. A good social time is enjoyed at the meetings, which are pleasant as well as profitable occasions for the members.

The Lebanon Club, of Hillsdale county, was organized in 1896 when it had 100 members. It now has but 41 members, although it is in a prosperous condition. The annual fees are 20 cents per member. Ten meetings are held during the year, the hostess furnishing tea or coffee with "trimmings" and butter. The meal is served on lapboards. An oyster dinner is held once a year, at which occasion the men serve the dinner. Monthly programs are used.

CLUB DISCUSSIONS.

A Big "Church" Meeting.—The Assyria Farmers' Club held its monthly meeting at the Assyria M. E. Church, Saturday, Jan. 25. No forenoon session was held on account of the lateness of the hour. Dinner was served at 12:30 to about 100, after which the meeting was called to order with a song by the Club, "What a Friend." Devotionals by Rev. McClure. The chorus class gave a selection entitled, "Song of Victory," and responded to the encore with a second number, "Immanuel." The traveling library will be ordered soon and Mrs. Nina Tasker will announce later the dates that these books may be drawn. "The Ideal Life" was the subject of a reading by Mrs. Emma Hill. Popular opinion has ever held tenaciously to the old adage that "any fool can farm." If a boy shows an aptitude for learning he is promptly declared "too smart to waste his time on a farm," and is advised to learn a profession. Girls are more liberally educated. Their time being of less value, as a result nine-tenths of farmers' wives are better educated than their husbands. Not that all farmers are ignorant, but that nine-tenths of them do lack a thorough business education. Another fact is, that the getting of money alone is not the surest mark of success. A man's bank account may reach the millions, yet his life may be a miserable failure. No man's life is a success who "liveth unto himself alone." A reading by Mrs. Ida Kent on "The Farmers' Wife," and a paper on "Farm Life," by Rev. J. E. McClure, completed a good program.

The Cost of Producing Beans.—At a recent meeting of the Napoleon Farmers' Club, of Jackson county, the subject for discussion was "The cost of producing farm crops." Mr. N. J. Nichols, who spoke on the cost of producing beans, said in part as follows: "The common bean is supposed to be a native of the borders of the Caspian Sea, and they were cultivated to a small extent at least, in ancient times in Palestine, Egypt, and in southern Europe. They are still being grown to some extent in Michigan, as you will note when I give you the figures. The yearly acreage ranges between 150,000 and 350,000 acres, with a total production of between 1,500,000 and 5,500,000 bushels per annum. I will give you as nearly as I can, what a bushel of beans cost the farmer today, my figures being based on my own experience. Taking an average year about seven per cent of a crop of beans have fallen into the class known as culls or damaged beans. My average yield for ten years was about 14 bushels per acre, or about 13 bushels of good salable beans. Now what did it cost to raise this 13 bushels of good beans. I shall assume that we can hire a man and team at \$4 per day, and would estimate the total expense as follows: Plowing one acre, \$1.25; dragging four times, \$1.08; seed beans at \$2.50, \$1.87; drilling, .37; weeding twice, .28; cultivating three times, \$1.71; pulling and bunching, \$1.91; turning twice, .50; drawing, .82; threshing, .98; taxes on the land, .70; interest on money invested, \$4.50; total cost of one acre, \$15.97, or an average of \$1.23 per bushel. We have said nothing about the pods, nor about the board of the extra help, as I think the one would about balance the other.

The Cost of Producing Corn and Buckwheat.—L. G. Palmer spoke on the above topic at the same meeting, giving his estimate of the cost of growing an acre of corn as follows: Plowing, \$2.20; dragging and rolling, \$1.20; planting, .20; cultivating, \$2; cutting, \$1.50; husking, \$3.50; drawing, .80; total, \$12.20. C. A. Elliot, in speaking on the subject of buckwheat raising, gave his experience for the past year. He sowed 25 acres to buckwheat, in order to obtain a good seedling. The crop cost him as nearly as he can estimate, \$269.80. He harvested 540 bushels, a part of which was sold at 60c per bushel. Figuring this price for the whole crop, his profit was \$54 and as fine a stand of clover as he ever saw. At this meeting the Club decided to purchase two dozen more song books.

Grange.

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

THE MARCH PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Opening song.
Progress of state legislature.
Should the farmer favor the short ballot? What is the short ballot?
Market eggs and their improvement.
Discussion.
Stunts by a young person.
Story of an Agricultural Hero.
Instrumental duet.
Roll call, responded to by each member giving a quotation relating to Co-operation.
Song, "Father, We'll Rest in Thy Love."

Suggestions for Second Meeting.

Music.
Roll call, responded to by each member giving a bad roads experience.
What do good roads mean to girls and women on the farm? by one of them.
Echoes from a sermon heard or read recently.
Recitation.
What can this Grange do to promote co-operative producing, buying and selling?
State and city milk inspection regulations.
Discussion.
Irish story tellers' half hour.

FIRST INTER-COUNTY POMONA A HUMMER.

The success of the joint Pomona meeting, held by the patrons of Eaton and Barry counties, at Charlotte, Jan. 25, exceeded the wildest dreams of its promoters. No little interest attached to the outcome of this meeting for the reason that the holding of such union meetings has been strongly urged by State Master Ketcham as an effective means of widening the acquaintance of patrons, quickening Grange enthusiasm generally, increasing Pomona membership and stimulating effort in various directions among the subordinates. In other words, such meetings were held essential to the complete success of the Grange extension campaign planned by the State Grange executive committee and outlined in these columns two weeks ago.

As stated above, Eaton and Barry counties started the ball rolling, Eaton Pomona acting as hostess, the patrons of Barry being guests and supplying the program. The return meeting occurs at Hastings on Saturday, March 1, with conditions as to program and entertainment reversed. The attendance at Charlotte proved something of a shock to the patrons of Eaton who had secured the Masonic temple for the occasion and prepared to entertain at least 400. A careful count showed that 716 ate dinner at the Grange tables while something like 100 more found it impossible to get into the dining-room. In the evening supper was served to about 400, making it a fairly busy day for those having this feature of the meeting in charge.

The forenoon was given up to hearing reports from Granges represented—26 subordinates responding—and to conferring the fifth degree. The candidates for this degree marched to the Grange hall in a body. There were 70 of them—40 from Eaton county, 29 from Barry and one from Ingham county. The work was given by the Eaton county degree team in a most impressive and thorough manner.

After dinner Barry county took charge of the work and furnished a very entertaining and instructive program. In the entertainment section, Glass Creek Grange carried the burden, furnishing an instrumental quartet of splendid talent and liberal disposition, composed of Ira McCallum, first cornet; Forrest Havens, second cornet; Ray Ervay, trombone, and Charles Belson, clarinet. F. C. Kerr, also of Glass Creek Grange, was another splendid card on the program, and his readings were superior to many heard on the lyceum stage. A dialogue furnished by Maple Leaf Grange, was irresistibly funny, and the piano duet by Mrs. Perkins and Mrs. Williams was fine. Another hit of the program was a song by Master John C. Ketcham, Jr., and his sister, Ruth.

The intellectual feast was in keeping with the rest of the program. A. G. Hathaway gave a five-minute talk on "Alfalfa," telling of the experience of several of his neighbors in the raising of this wonderful plant and advising his hearers to give it serious consideration. M. L. Cook, of Hastings, gave a short talk on "Agricultural Education," his central thought being the devising of some means whereby each county represented at the meeting might raise the necessary funds to procure the services of a farm expert to assist and instruct the farmer along the line of more scientific farming. Mr. Cook suggested that Barry and Eaton pool their interests and procure such an expert were it found that the expense would be too great to be met by the counties individually. R. M. Bates made converts to the cause of good roads through a short but spirited talk on "The Cost of Bad Roads." Mrs. J. C. Ketcham read an excellent paper dealing with the care and education of children, and the State Master commented briefly on the success of the meeting, predicting that the good effect of such gatherings will extend far into the future.

ISABELLA PATRONS PREPARE FOR REVIVAL OF INTEREST.

A splendid meeting of Isabella County Pomona was held with Mt. Vernon Grange, Wednesday, Jan. 29. Mt. Vernon meets in a large cement hall built about ten years ago, and standing as a monument to the industry and loyalty of the members of that subordinate.

Almost the first to arrive at the meeting were a sister and brother who had driven 20 miles through the cold. More soon came, however, and by noon seven of the nine Granges in the county were represented, and also one Grange in Clare county.

After dinner the Grange was called to order and, following a few preliminaries, the writer spoke in answer to the question, "What is the Grange for?" A very pleasant session followed in which visiting members gave testimony of their loyalty to the order and their faith in its mission to the people who live in the country. Officers were then installed and by this time some of the best cooks in Michigan were all ready to deliver the next number, for it was time for supper.

The evening program was open to the public. It began with a number by Mt. Vernon Grange choir. The writer will never forget the first time he heard this choir sing. It was ten years ago and of course there have been some changes here as elsewhere since then, but it is still one of the best in this part of the state.

A gentleman from Mt. Pleasant spoke for a time in support of the county road system, and the writer followed with an address upon "Co-operation."

Fruits of the Meeting.

After every great rally of men and women for any purpose comes the all-important question, Has any permanent good been accomplished? It is my belief that on this occasion purposes were formed and plans made which will result in much help to the Granges in that county.

A deputy is soon to be sent to the weaker Granges, and one of the objects of my visit to the county at this time was to solicit the co-operation of the entire membership in making the visit of this deputy helpful to those for whom it has been planned. It seemed that a very general purpose was formed at the meeting to make this year's work memorable in the annals of Grange history in the county, those present apparently realizing the very important fact, that the Grange in Isabella county is in their keeping, and that no deputy, and no state speaker, can save it without their co-operation. Great results in Isabella county may be expected during the year to come; in fact, all over the state there is a feeling that things are "on the up grade."

This courage and this faith are truly inspiring to every true patron, and should lead us to redouble our efforts for a splendid harvest of good things in the near future.

W. F. TAYLOR.

AMONG THE LIVE GRANGES.

Steps Toward a Pomona organization in Livingston county were taken by Howell Grange at its closing meeting of the old year, its secretary being instructed to take the matter up with the other subordinates in the county. Present officers of Howell Grange are: Master, W. J. Witly; overseer, W. J. Hosley; lecturer, Mrs. H. E. Reed; steward, E. M. Bigelow; assistant steward, E. D. Lawson; chaplain, R. C. Reed; secretary, Mrs. Eula Worthington; treasurer, E. E. Towse; gatekeeper, L. R. Richards; Ceres, Mrs. R. Brainer; Pomona, Mrs. Jas. Sexton; Flora, Ethel Francis; lady assistant steward, Mrs. E. Lawson.

Ingham Pomona held an unusually good meeting at Mason on Jan. 25, with 12 of the county's subordinates represented. Supervision work for the county was given some attention, E. A. Holden, of Capitol Grange, H. M. Young, of Mason Grange, and Mrs. F. Taylor, of Telephone Grange, being appointed a committee to direct the work during the year. Over 150 took dinner at the Grange hall, after which came the lecture hour, which was open to the public. H. R. Pattengill, of Lansing, C. H. Bramble, of Tecumseh, Frank P. Rogers, deputy state highway commissioner, and Walter S. Foster, former prosecuting attorney, gave addresses. Mr. Pattengill talked along educational lines, Mr. Bramble on agriculture, Mr. Rogers explained the county road system and Mr. Foster advocated woman's suffrage. He felt that the subject was one of vital interest, a step in the right direction and united effort would win the day for the women. Considerable attention was given to the question of high cost of living, which was discussed by C. W. Jewell, of Telephone Grange, C. L. Hewett, and Wm. Sturgis, of Cedar Grange, A. E. Mills, of Capitol Grange, and D. D. Huriburt, of Ingham Grange. All seemed to feel that the cause was the high toll paid to the middleman, and municipal markets were suggested as a remedy.

COMING EVENTS.

Pomona Meetings.

Genesee Co., with Flint Grange, Friday, Feb. 21.
Ingham Co., with Cedar Grange, Saturday, Feb. 22. Patriotic program.
Inter-county Pomonas.
Eaton and Barry Co.'s at Hastings, Saturday, March 1.
Washtenaw and Wayne Co.'s at Ypsilanti, Tuesday, March 11.
Southwestern Michigan counties, at Kalamazoo, to meet Pres. K. L. Butterfield in conference on rural life, Friday, March 14.

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