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MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

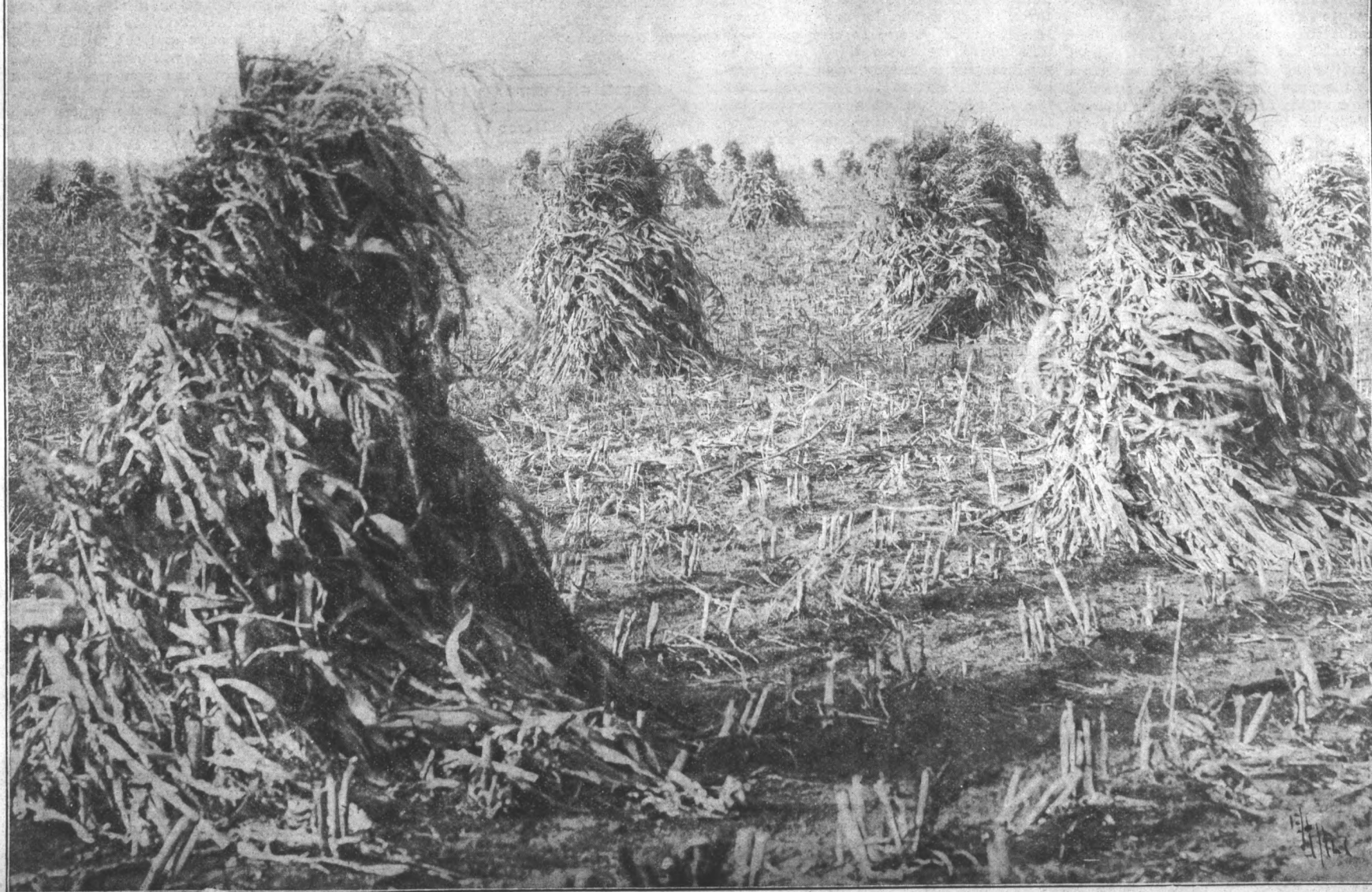
The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

VOL. CXXXIX. No. 21.
Whole Number 3618.

DETROIT, MICH., SATURDAY, NOV. 23, 1912.

{ \$1.00 A YEAR
{ \$2.75 5 YEARS.

THANKSGIVING NUMBER



WOOD ASHES FOR CLOVER.

I have been for some time interested in experiments with fertilizers of many kinds as applied to the growth of clover on so-called worn out lands. Within the past two years I have made 20 sowings, each under different conditions, fertilizers and treatments, all of which, from a practical standpoint, I consider failures. Meantime, in a field adjoining the experiment plots, I sowed in August, 1911, in corn at last cultivation, mammoth clover with half a bushel of rye per acre, on a strip of ten acres along south side of field. Clover germinated fairly well, but gradually died out. When the rye was harvested I was greatly surprised to find a great growth of clover in round spots about six feet in diameter, about 75 feet apart and about 20 feet from hedge fence. These spots were nearly uniform in size and equal distance apart, the entire length of field, and clover was very thick and 2½ feet high. This hedge fence was cut back and trimmed two years ago, and waste piled in small piles and burned; the clover now growing where the brush was burned. In my opinion clover can be grown on all of these lands if a fertilizer can be supplied containing the properties which were deposited by the burned brush. There are thousands of acres of these lands in southern Michigan, once the most productive in the state, now barren of clover and have been for many years. Brush piles cannot be furnished for all of these lands but, possibly a fertilizer can. Clover is the only thing necessary to make these lands worth \$100 to \$150 per acre. If you have a department for investigation of these matters, I would kindly ask consideration of this subject.

Berrien Co. G. L. S.
This letter was sent to a fertilizer company by G. L. S. and they in turn referred it to me. I am taking the liberty of answering it through the Michigan Farmer, because I consider it of so vast importance to Michigan agriculture. For a number of years back clover has refused to grow as luxuriantly as it ought to on large areas all over Michigan, and especially in southern Michigan. Some people claim that it has been the season, that the season has been too dry, that when there was plenty of moisture they got good catches of clover, (this, of course, helps even in an acid soil for it dilutes the acid and washes some of it away), but I have insisted all along that it showed an acid soil or soil exhaustion, because on my own fields I have never lost a catch of clover, and so I do not believe that it is the drought that is entirely to blame. Clover will stand a good bit of drought if it only has proper conditions.

The fact that wood ashes gave a growth of clover on these places where the trimmings from the hedge were burned, shows clearly that all that the soil needs to grow clover is one of three things, or the three things combined; and that is lime, potash and phosphoric acid. Wood ashes contain about 32 per cent of lime, five per cent of potash, and about two per cent of phosphoric acid, but experiments have proved beyond a question of doubt that you can't get results from commercial fertilizer if your soil is acid. No matter how badly the clover plant needs the potash and the phosphoric acid it can't utilize it if the soil has an acid reaction, because the plant can't grow. Now the fact that wood ashes produced such wonderful results shows clearly to my mind that the soil is acid. This can be ascertained without any great difficulty by the blue litmus paper test, and it would be well enough to make that test. Still, there isn't much use in making the test, because we know that hardwood ashes produce results. Now let's apply hardwood ashes. That is all that G. L. S. says is necessary to make a great deal of land that won't grow clover now in southern Michigan, worth from \$100 to \$150 an acre.

He wants to know if there is anything that can take the place of wood ashes. There certainly is. You can make artificial ashes just as good for clover as the real stuff, because all the ashes contain that will do the plant any good is the lime, the potash, and the phosphoric acid. Now you can buy plenty of lime. There are lime beds and marl beds all over Michigan. You can get it for just about the value of the labor necessary to get it out of the marl beds or out of the lime quarries and get it in shape and pay the transportation on it to the farm. You can buy any amount of commercial potash and phosphoric acid, and if you want you can mix them the same proportion that they are in wood ashes, and get the same results that you would with the wood ashes.

We are liable to make a mistake and think that lime is all that is necessary. It may be so, and it may not be so. As I said before, no matter how badly the clover plant would need potash and phosphoric acid, if you applied this and the land was sour it couldn't utilize it, and consequently when we apply the lime we

simply sweeten the soil, we don't furnish plant food, but we put the soil in condition so that the clover plant can live, providing it has enough to eat. We furnish an alkaline soil so that the bacteria which assist the clover plant in its growth can live in this soil, but we ought not to ignore the fact that undoubtedly the clover plant needs the potash and the phosphoric acid quite as much as it does the lime to make a healthy growth, and the wood ashes don't tell us this because we have the three combined.

Now, it seems to me the thing to do is to experiment with these three ingredients. On one strip of the field sow lime at the rate of about two tons per acre. On another strip of the field sow 500 lbs. of commercial potash. On another strip of the field sow 500 lbs. of commercial phosphoric acid. Then combine these. On another strip sow lime and potash. On another lime and phosphoric acid. On another phosphoric acid and potash alone, and note the results. My belief is that you will find where you combine the lime, the phosphoric acid, and the potash there you will get nearly ideal results. There you can raise clover. It will grow luxuriantly. You have sweetened the soil and you have furnished mineral plant food. I would have faith enough in this theory and from results on my own farm to cover an entire field this way, but if G. L. S. hasn't faith enough in the proposition to treat an entire field in this way then he can experiment until he knows just what he is doing.

There isn't any reason why southern Michigan can't grow clover again just as luxuriantly as it ever did if we would only supply the ingredients of the soil which have been taken out. We used to think that land got clover sick and it wouldn't grow clover any longer. They thought that down in New Jersey but careful investigation proved that the reason was because they exhausted the soil of phosphoric acid and potash and because the soil got acid in reaction instead of alkaline. Consequently when we supply these ingredients we can grow clover just as well as we ever did. Possibly we can't do it at first because we have robbed the soil of vegetable matter, and it may take a favorable season so far as the distribution of moisture is concerned the first year to get a maximum yield of clover, but after we have grown this crop of clover and we will plow it under and get vegetable matter in the soil then it will grow clover just as well as ever.

You can put any soil back into its virgin condition if you will only go at it in this way. First, if the land is acid, sweeten it by using lime. Second, incorporate vegetable matter. Third, use plant food. If you can't get stable manure get commercial fertilizer. Those three things will make any soil blossom like the rose. There is only one condition where all these things might not produce proper results, and that would be on land that is too wet and needed tile draining. In such cases the land must first be tile drained to draw off the surplus water, then those other three requisites combined as they should be, and as everyone can determine by a little experimenting, will make any land productive. It don't make any difference whether it is in Michigan or any other place.

COLON C. LILLIE.

FALL PLOWING FOR SPRING CROPS.

An able Scotch writer on agriculture says: "The object of plowing is to delve and turn over the soil to destroy the surface vegetation by burying it under ground, where it rots and becomes a kind of manure." He might have added that it is the first and most important step in pulverizing the soil, and making it fine, mellow, and porous, so the air can enter, warm, and sweeten it, and so that it will absorb and retain more of the rain water to supply vegetation in dry weather and enable the tender roots of plants to easily penetrate and spread themselves through it in every direction to secure a supply of their necessary nourishment.

In Canada, Prof. Shaw says: "Late fall plowing is universally practiced by the farmers in Ontario," and that "they cannot get uniformly good crops without plowing late in autumn."

Mr. McDonald says: "Fall plowing is coming to be an absolute necessity," and "we plow everything in the fall." Probably as these men say, the soil and climate of Ontario require it.

It is claimed by some writers that plowing a tough stubborn soil in the fall, exposing it to the action of the frost, freezing, and thawing—helps to subdue it; but not many farmers in our region

practice it for that purpose. They plow late in the fall solely because it can be done at a time of comparative leisure, and advance their spring work; but in Canada we are told that the land intended for hoed crops, (corn and potatoes), should never be plowed later than September—a month in which wheat and rye sowing and crop gathering make it a busy month for farmers as any month in spring. For early spring crops, oats and barley, they plow in November, whether it be stubble field or sold ground.

Soils differ in their composition. Plowing stubble fields late in the fall for early spring seeding may be all right for Canada, but I would not have it done on our farm if somebody would do it for nothing and board himself. I have plowed stubble fields in the fall in which the particles of soil coalesced, ran together, and consolidated, so that it looked like a dried-up bed of mortar. When plowed again in the spring, (as it had to be), the stubble, and rubbish were turned up again to the surface and the land was not in so good a condition as to fineness, as it would have been had it not been plowed in the fall. Sod ground turned down late in the fall gets so badly baked, leached, and consolidated, that it has a desolate look, is apt to be lumpy, and requires about as much labor to put it into good condition as it would be to plow and fit in the spring. Spring plowed land on our farm looks finer and raises better crops than the fall plowed.

It has been said that by fall plowing the worms and insects that have burrowed into the ground for winter quarters are turned to the surface and destroyed by freezing. I do not believe that freezing will kill worms and bugs unless they are nearly dead already. I think that frozen worms, like the frozen serpent in the fable, will, when thawed, revive and be as ungrateful and destructive as ever. A worm that was so nearly dead that it did not have strength enough to crawl back into the ground before a bird came along hunting, would be quite sure to die before spring anyhow.

It was once thought in England, and in this country, that it was necessary to summer-fallow in order to get uniformly good crops of wheat, but only a few farmers, either there, or here, practice it now unless they wish to rid the field of quack grass, or Canada thistles. It is not easy to see what benefit the soil can obtain by being exposed all winter for the rains and melting snows to leach the fertility from the surface and carry it down to the subsoil beyond the reach of shallow rooted plants.

A sod turned down late in the fall will remain frozen nearly the whole time and will not rot any more than the Chicago dressed beef in refrigerator cars, or the frozen meat shipped from Australia to Great Britain.

Pennsylvania.

J. W. INGHAM

LILLIE FARMSTEAD NOTES.

We have the best crop of potatoes this year that we have raised in recent years. Those who have read Lillie Farmstead Notes in the Michigan Farmer for the last year or two years, will undoubtedly remember that I have been trying to raise 200 bushels to the acre, but haven't seemed to be able to do this. I know a great many people can do this, but I haven't been able to do it, but this year I have, and so feel proud of my crop of potatoes. They were grown on an alfalfa sod plowed down, that had been manured with stable manure, and we also used fertilizer with the potato planter. We certainly had a nice crop of potatoes. While they were growing and the tops were yet green they entirely covered the ground. One could hardly see dry soil at all. The great fault with the potatoes is that they are too large, that is, many of them were a great deal too large to be real good marketable potatoes. I have finally accomplished what I undertook, to raise 200 bushels of potatoes to the acre in common field practice, and now of course I am not satisfied. Now I am going to raise 300 bushels to the acre in common field practice. I may not do it next year, and may not the next, but I am going to keep at it until I produce 300 bushels of potatoes per acre.

Alfalfa for Hog Pasture.

There isn't any question but what alfalfa is the ideal hog pasture if hogs will not injure the plants in pasturing, and they don't seem to. A June grass pasture is very good hog pasture real early in the season but it is only a few weeks before this plant becomes tough and nears maturity and the hogs don't like it, and finally in the middle of the

summer they will scarcely eat it at all. Hogs want a juicy tender plant. Rape is also a good hog pasture but it is difficult to get this in succession so that you have a continuous green succulent food the entire summer. But with alfalfa you can do this. The plant no sooner matures than a new growth starts out from the crown and a new crop commencing is just as juicy and tender as the first, and I propose to try to get practical results in pasturing alfalfa. I have some rough land through which the creek flows that is not practical to till for average crops. You couldn't get the fields so that the rows would be uniform and long enough so that you could use modern machinery in harvesting either corn or potatoes. But it is rich land, the most of it is well drained land, much of it is alluvial deposit where the water flows quite freely. Some places in this land, of course, there are depressions which need tiling and I have been doing this. Then in the fields that we are preparing for hog pasture especially, there is quite a big side hill which I doubted if I ever would plow again when I put it into pasture, but since I got such splendid results in growing alfalfa on a clay side-hill, I have made up my mind that it would pay me to break this up and seed it to alfalfa for a hog pasture. So we have been doing that while the land was too wet for anything else this fall. We have got it tilled and the most of it plowed, and I propose to sow it early in the spring to alfalfa and red clover mixed together, and to seed it with winter rye. The idea is that the winter rye will grow up rapidly and prevent any weeds from crowding out the clover, but as the hot weather of summer comes the rye will cease growing and it will have answered the purpose of a nurse crop and will not take all of the moisture from the soil just when the young plants need it. The trouble with seeding with oats and then cutting the oats for hay is, that you put off cutting the oats for hay. Then, again, I wouldn't care to harvest on this rough land a crop of oats for hay, and I believe that winter rye will be an ideal thing to sow as a nurse crop for the alfalfa in the spring. My intention is to sow three small fields on different parts of the farm to alfalfa in this way on purpose for hog pasture. If I get a good enough crop so that the hogs don't eat the whole of it when it comes time that the second growth begins to start from the crown, if there is any left of the first crop I shall go in and mow it and make hay out of it, and then when the second growth starts turn the hogs in again. I am positive that the theory of alfalfa for hog pasture is correct and I am going to find out its practical value.

We are now feeding alfalfa hay, second and third cutting, to hogs. Both the old broods sows and the young hogs, even the fall pigs, will eat this alfalfa hay much more than you would think they would. I believe that alfalfa pasture and alfalfa hay in the winter time is going to become an important food in the ration for hogs. I cannot tell you how much corn it will save but I am sure it will make the hogs more thrifty and healthy, and that it will be of especial value to brood sows.

COLON C. LILLIE.

CARE OF FARM MACHINERY.

In such an old settled section of the country as this is, it does not seem as though so many farmers would leave expensive tools standing in the fields exposed to the elements for months at a time. Only a few days ago in a short ride through the country, the writer saw half a dozen hay loaders, (mostly new), and many other kinds of farm machinery, including drills, etc., standing out in the fields or barnyards. Perhaps all these farmers did not have room in their barns to store these tools until later in the season.

Of course, lumber is high, but it is not necessary to put up a very expensive building in which to store tools. Many barns are so situated that a shed on one end could be built for this purpose that would not be very expensive, and almost any farmer could do this work himself. Of course, a separate building for storing tools when not in use, would be much better and more convenient than a shed built on one end of the barn. My tool house, which is 15x45 feet and eight feet high, except on one end (where the hay loader is stored), which is 12 feet high, was built out of old fence boards, cost me less than \$50 and I find it pays me a big interest on the investment every year.

Ottawa Co.

JOHN JACKSON.

THE BANK AS A FARMER'S ASSET.

The farmers throughout the country are yearly recognizing the advantages that our splendid American banking system affords and, to their credit and interests, a good share of them deal mostly through this financial medium. There is no business in the land that is conducted more on the lines of sound, reliable principles than the banks, which afford the same confidential respect and safeguards for one and all. Of course, there is occasionally a bank officer who goes wrong and causes great embarrassment, and sometimes a loss, to the other officers, stockholders and depositors. But usually in such cases the press exaggerates this to the limit, thus causing many to look on the banks as unsafe, while as a matter of fact, there are fewer losses from this source than any other investment we could make. For instance, 90 per cent of all business investments fail, and when it comes to farmers there are enough of them also; but seldom do we hear of a bank failing, and then there is seldom a total loss.

If you want good business advice go to your banker and he will give it to you. He will instruct you along the lines of honest business principles, and you will seldom make mistakes in following his directions. Just because there happens to be a member of a banking institution whom you do not like, or may not be just what he ought to be perhaps, do not turn down the bank, as one member does not constitute a bank.

The advantages which the banks afford for the farmers are many and, from the commercial or business standpoint, it would be impossible to get along without them. Bradstreet's and Dunn's, our great commercial rating agencies, are dependent largely on the banks for their information, and no doubt the day will come when every business farmer will have a commercial rating the same as other business men. Then he can send his check on his local bank as far away as he chooses for whatever he may wish to order. In fact, this is done now to some extent and here is one of the advantages of having a bank account. Your banker, if you have always dealt honestly and squarely with him, will be glad to recommend you to any business house on request.

Doing business with the bank elevates the farmer to more accurate business methods. It also systematizes all of his accounts. If you check out every dollar you handle during the year the banker has practically kept your books for you free of charge, and you know exactly to the penny how your business stands. This alone is worth much to any farmer.

No matter how small our deposits are, the bank appreciates them as well as the larger ones, consequently do not wait for more money to start an account. There are thousands of dollars lost, stolen and burned up every month in the year by peoples' carelessness in having too much money lying idle in their homes or on their persons, while if it was deposited in the local bank it would be perfectly safe. I sold a farmer some corn a few years ago. He paid me the cash, which I carelessly placed in my pocket. I was busy working around in the barnyard and when night came I had lost the cash. Now how much better it would have been for me had this farmer paid by check. If the check had been lost the money would have been in the bank and I could have obtained another check. I thought this was a lesson, but not long ago I lost some more cash in about the same manner, which has taught me a lesson, and when I take in money after this I will send it to the bank immediately and pay all my bills by check. If I lose my check book I can get another.

When you pay your bills by check you never have to get a receipt, as the check is a receipt which the bank returns to you. You can also refer to these vouchers in years to come in case of a dispute in settlement of estates, etc. Should they be lost the transaction is recorded on the bank books and you can refer to them. Also, when you pay your bills by check you always have the right change, which is no small item.

When you are in need of groceries you naturally go to the grocery store. When you want money, go to the bank. Many think it is better to borrow money from individuals and shun the bank. This is making a mistake, because you cannot always get the amount you want or when you want it. But if you are known at your bank and have good credit you can get any amount at any time and only have to pay interest on same for the time you need the loan. Many times

you have an opportunity to make a profitable investment by having some cash to invest in some good deal before you, and only have to have the amount from 10 to 30 days. Your bank always has the cash for you—simply give your note and check out the money. When you have made your profits take the other fellow's check and pay your note. You have not handled a penny of cash, run no risk of losing same, yet have done business at a profit by the best up-to-date method, while your banker has kept your books and done all the figuring free of charge.

Washtenaw Co. B. F. WASHBURN.

THE TRESSPASSING OF HUNTERS ON FARMS.

Now that the hunting season is open, young fellows from the city and villages, with one or more dogs, are daily roaming over the country, and if the farmer happens to have a small patch of timber, it is filled with hunters, especially on Sundays, and the barking of dogs and the firing of guns is heard more or less nearly all day. These young fellows do not stop to consider whether the farmer has any right to the rabbits or other small game, that may happen to be found on his premises. But few farmers like to put up "No Trespassing" signs, and these signs do but little good anyway. Some hunters seem to think that because they have a license, they are at liberty to roam wherever they choose and shoot at everything they please. Even the farmer's turkeys are not safe from these so-called sportsmen. Every Sunday morning especially, the interurban cars that run through this section, are filled with hunters and dogs, who get off at different places and go tramping over fields and through the woods, (where there are any), breaking down fences and leaving gates open. Of course, there is a law against such trespassing, but what farmer wants to go to the trouble and expense of making arrests. He would probably get the name of being mean and stingy for his pains.

The question is, what is the best course for the farmer to pursue in regard to lawless trespassing hunters.

Ottawa Co. JOHN JACKSON.

WILL IT PAY TO DRAIN A PEAT SWAMP?

I have a piece of swamp ground. I see by some writings, that some do not believe it pays to drain peat swamp. What is your opinion? In draining it how close do you have to put the tile? Would you run the tile running out around the swamp or would you run a main tile with laterals?

Wayne Co.

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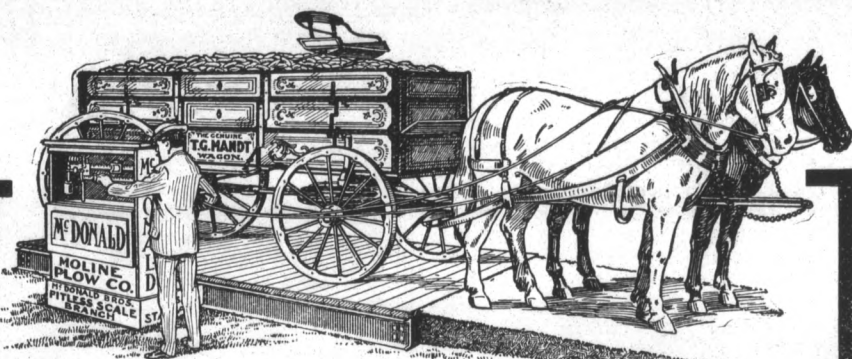
If the swamp is a clear peat, that is, entirely vegetable matter, it is very doubtful if it will pay to drain it for agricultural purposes. You have got to have some soil or sand or dissolved rock mixed with the peat in order to make it valuable for growing crops. Most ordinary swamps contain a large amount of vegetable matter mixed with soil, but there are peat swamps that contain practically no soil at all, and these will not grow crops, and consequently, for this purpose, it would not pay to drain them unless you went to a still farther expense of drawing on sand or soil to mix with the peat. Then such areas are usually very productive.

The best way to drain a swamp of this sort and do it thoroughly is to adopt both systems suggested by G. W. N. Run a drain around the outside of the swamp to catch the water that seeps down from the higher ground, and then run a drain through the center of it with sufficient laterals to drain the water off. If there is a large amount of vegetable matter in this soil the drains won't have to be quite so close together to drain it thoroughly as where there is only a moderate amount of vegetable matter on top and then a clay bottom. I should say that drains four or five rods apart would be amply sufficient to drain it.

COLON C. LILLIE.

EFFECT OF STORAGE ON SUGAR BEETS.

Foreign tests have shown that the losses of sugar in beets during storage are due in part to the absorption of large amounts of water, which dilute the juice, but mainly to the consumption of saccharose by the respiratory process of the beet. This latter loss, however, can not be prevented unless the vital processes of the beet are checked or destroyed, and this can only be accomplished by freezing or drying the beet at low temperatures.



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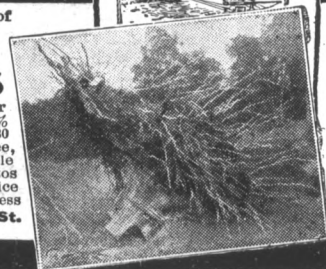


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HARVESTING SUGAR BEETS.

Many in this vicinity stop lifting and topping beets as soon as a load or two is in readiness and haul them to town. With a large field to handle this really wastes valuable time, for as it is now so late that the weather may change at any time and freeze those remaining in the ground, thus causing a needless loss. If beets are topped and properly piled in snug conical heaps, then covered all over with the leaves, etc., using them all for this purpose, the leaves and tops will settle and flatten out, shingling as it were, each heap so that the heaviest rains or snows will not get through. Thus secure from danger of freezing it is possible to give them ample time to cure and dry before hauling. When finally handled they are firm and dry and, by giving the fork a quick jerk or flip when loading them, over three-fourths of the dirt, etc., (now being dry) will fall from them and be left in the field.

I aim to favor each heap of beets by placing it upon a knoll or slight elevation, so that after a heavy downpour the beets will not be in water. Tons upon tons of beets are being delivered which, even as bad as the weather is, a farmer should be ashamed to haul. Many are so caked with mud and leaves that it is no wonder such farmers do not make good at growing beets. Even though beets are pulled from mud (I have lifted several tons from water and mud on my farm this season), if piled on the slightest elevation and covered well they will dry out nicely in two or three weeks, by which time the dirt will be so loose as to fall away in forking, as stated above, leaving your load dry and white, or at least a very nice appearing one, one that you will be proud of and will insure you a welcome at the weigh-station every time.

It is human nature to discriminate and those who bring clean, nice appearing beets can always feel reasonably sure of getting a square deal. And remember that it even costs less to have them in this shape than to market wet and muddy and stuck up with leaves, weeds, etc.

Gratiot Co. G. A. RANDALL.

THE POTATO MARKET.

The situation with regard to this crop is such as to bear out our prediction of some weeks ago, that even with the record yield predicted by the government crop reports, there would be a demand for the crop at fairly remunerative prices. Since that date a factor has entered into the situation which it is difficult to properly judge so far as its ultimate effect upon the market is concerned. In many sections the late blight so affected the crop that there is bound to be a more or less serious loss from rot and a consequent influence upon the market. Undoubtedly this tendency will cause more liberal selling during the early market season than would otherwise occur. At the same time it will make dealers more cautious about accumulating stocks in market centers, thus keeping the market more healthy in tone and leaving a larger likelihood for an increased demand late in the season for that portion of the crop which is in condition to be stored for later marketing.

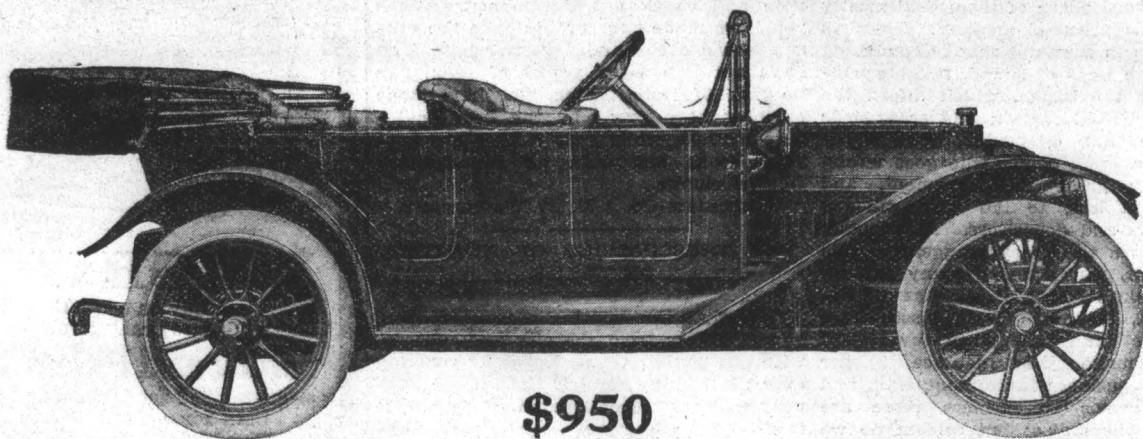
Under these conditions it would be the part of wisdom for those who have good sound tubers to store at least a part of them for later marketing, lest the liberal sales at this time should glut the market to a degree which would lower values to an unprofitable level. The usual car shortage at this season of the year, however, will operate to remedy an excess of early marketing to some extent and there appears to be a wise conservatism on the part of growers which is being felt in slightly increased values and a generally firmer tone to the market.

DON'T BE INDUCED

To pay a dollar a year for any agricultural paper, when you get the Michigan Farmer, by all odds the greatest in America, for only Fifty Cents, or three years for only \$1.25, or five years for only \$2.00. Send your renewal now and have it off your mind. We cannot promise how long these low prices will continue, but will guarantee that they will never be less.

James Barn Magazine is published quarterly by the James Mfg. Co., of Ft. Atkinson, Wis., in the interests of successful dairying through modern barn equipment. Write the above company for a copy of this interesting publication, mentioning the Michigan Farmer.

A Service Car for Michigan Roads



\$950

The Regal Model "T" Underslung Touring Car

The Only Way to Judge the Actual Worth of a Car—the only way you can determine its real merit is by analysis. That's the way we want you to judge the Regal Model "T" Underslung Touring Car. Determine whether it is actually worth the price we ask and if it is worth that much to you. Is it a sound car—a strong, fast and efficient car? Will it give you the service you demand? What is its pedigree and what its value as an investment? Consider all these features before you buy this car and then when you do buy it you'll be one hundred percent more than satisfied.

This Underslung Touring Car is the ideal car for Michigan roads.—A thorough understanding of the way the car is built shows the many reasons why. In the first place, it's an Underslung. This makes it a lower car and a lower car means a safer car. Under all conditions this Regal literally "hugs the road" and it cannot turn turtle or capsize. Ditches, gutters, mud holes and quick turns do not bother the driver. Furthermore, the vital parts are protected by a flat dust pan underneath the car. Between this pan and the ground there is ample road clearance; as much and more than in cars of the ordinary type.

A More Economical Car To Operate—The superior construction of this Regal Underslung allows a straight line drive for the propeller shaft and a different spring suspension. These special Regal features mean greater economy in gasoline consumption and reduced cost in tire upkeep. The power generated by the motor is transferred to the rear axle along a straight line. This means there is no wasted energy because of unnecessary joints in the

propelling shaft. You get the greatest possible driving force from the amount of gasoline consumed. Indeed, this Regal Car can travel more miles to the gallon than other makes of cars of its own weight. The springs are fastened to the axles in such a way that the rebound from a bump is upward. This relieves the tires of the extra strain and so keeps down the tire bills,—an important fact to consider in the purchase of this car.

The Car Will Prove Itself—Investigation of the Regal Model "T" Touring Car—comparison with any other car apparently competing with it will prove its actual worth. The remarkable advantages of Underslung Construction—the speed, power, simplicity, roominess, comfort, safety and economy of upkeep cost of this car demonstrates and establishes its right to leadership. And with its eye-pleasing lines—its beauty of design—its polished nicked trimmings and additional 1913 refinement, it positively defies competition.

Go to any Regal Dealer Today.—Study the Regal Model "T" Underslung Touring Car carefully—note its general all round superiority—its constructional perfection. Make up your mind for yourself that this is the car for you. If you do not live near a Regal dealer write us direct at the factory.

Here are Some Specifications—Motor, four cylinders cast en bloc; bore $3\frac{3}{4}$ inches; stroke $4\frac{1}{2}$ inches; dual ignition; thermo-siphon cooling. Selective sliding gear transmission, three speeds, forward and reverse. Tires, Morgan & Wright, $32 \times 3\frac{1}{2}$ inches. Equipment includes electric lights, with option of gas headlights and Prest-O-Lite tank, electric horn, tools and tire repair kit.

Other Regal Cars—Regal Model "N" Underslung Roadster, 25 Horsepower, \$900 (the car built to lead); Regal Model "C" Five Passenger Touring Car, \$1,250; the Regal Model "H" Underslung Five Passenger Touring Car, 35 Horsepower, \$1,400; Regal Underslung Colonial Coupe, \$1,250.

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Shoots high velocity smokeless cartridges, also black and low pressure smokeless.

Powerful enough for deer, safe to use in settled districts, excellent for target work, for foxes, geese, woodchucks, etc.

Its exclusive features: the quick, smooth working "pump" action; the wear-resisting Special Smokeless Steel barrel; the modern solid-top and side ejector for rapid, accurate firing, increased safety and convenience. It has take-down construction and Ivory Bead front sight; these cost extra on other rifles of these calibres.

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LIVE STOCK

HOW FEED INFLUENCES SIZE.

Careful selection of suitable sires and dams influences the heredity tendency to attain size. A liberal system of feeding and suitable environment develops these inherited tendencies. Heredity is a peculiar force. If not stimulated to do the things we want it to do, it is likely to do the very things we do not want it to do. Some farmers argue that if one mates a mare weighing 1,400 pounds with a stallion weighing 2,000 pounds, he can safely count on a colt weighing 1,600 pounds or more. However, in actual practice this is not so, for without some sort of special care and liberal feeding no one has ever succeeded in developing a 1,600-pound horse.

Feed has increased the size of all horses. Liberal feeding and suitable environments, together with the careful selection of suitable breeding stock has gradually evolved the present draft horse. In our efforts to maintain and increase the size of draft horses we must consider that all horses started originally from the same ancestry. Some of them are large and some of them are small. Feed made the difference at first, and of course the feed was a part of the natural environment. Unless supported by a liberal system of feeding the atavistic tendency is always downward toward the original ancestral type which was very small. We may take a band of Shetland ponies, breed them together, feed them liberally at all times, and in a few generations get them much larger than the original stock. On the other hand, if we turn a band of large drafters out on the range where feed is scarce their descendants will gradually decrease in size until they are not drafters at all. Bad environment will decrease size. Good environment will maintain or increase it. Every farmer who breeds draft horses should devote every possible effort to making his colts reach the best possible growth and development in the early part of their lives. Is it not easy to see that feed is fully as important as breed in developing draft horses.

When the foal is taken away from the mare he should be placed in a box stall that is well-lighted and well-ventilated. The box stall will afford him more exercise than a single stall but do not think it will furnish him enough; turn him out every good day and allow him to exercise about the yards. Bran and oats make an ideal grain feed and clover and timothy make the best roughage.

The feeder is the only man that can tell how much food the colts require for their best growth and development. They should always have only what will be cleaned up at one feeding. Nothing will make a colt grow unthrifty faster than allowing stale food to collect in the feed boxes and mangers from one feeding to the next. The colt's digestive system needs rest at times. They should never lose their foal flesh, but be kept on the grain ration from birth to maturity with plenty of bulky and organic food to maintain their health and vitality. The stable should be kept clean and the hoofs must be watched and kept trimmed to prevent them from growing the wrong way. From weaning time until it is ready to be conditioned for sale it should have plenty of bone and muscle-forming foods and be given the run of a good pasture at all times when the weather is pleasant.

The colt should be trained to do light work during the third year. This makes faster walkers and has a tendency to make them more graceful. Walking is the best gait a draft horse can have, and all that is possible should be done to cultivate a quiet and easy gait. Much judgment and patience are necessary in training colts. Training is as much a matter of judgment as of skill. It would be better if every farmer would keep professional horse trainers off their farms and handle the colts with more kindness and common sense.

In many localities in the eastern states good markets may be found right at home for four and five-year-old teams that have been worked for a year or two. Such horses are especially well fitted for the farmer's demands. This branch of the trade is more profitable for many growers to supply, as they may use their teams for one or two years and then sell them at a good figure and avoid the expense of conditioning them for market. Location and conditions determine which method is the best to follow.

The farmer who raises a number of well-bred colts each year may be able to dispose of them to better advantage by conditioning them for market. When horses are to be sold in the horse markets, it is essential that they show quality and finish, the same as beef cattle. While there is no denying that many horses are injured by overfitting for market, so long as the market demands this class of horses, the ones that are the most highly conditioned will bring the most money.

Fitting horses for market requires skill and brains. Of first importance is a good comfortable and sanitary stable. Box stalls in which the light is rather dim, are to be preferred. A rather dim light has a tendency to keep the horses quiet. The usual criticisms regarding dark stalls will not hold good in the case of fattening horses for market, because the fattening period is of short duration.

The feeds should be largely of a fattening nature. Good, sound ear corn does very well. Then, as the fattening period advances, and for the sake of variety, oats, bran and a little oil meal may be fed twice a day. This makes a simple ration, yet one of the best that can be made up. If more bulk is desired with the grain feed it may be supplied by adding cut hay. To add to the palatability of the mixture many feeders mix five or six quarts of molasses with a pail of water and pour it over the mixed feed. As for hay, the horses that are fed grain with cut hay will not eat a great deal. Clover and timothy give the best results.

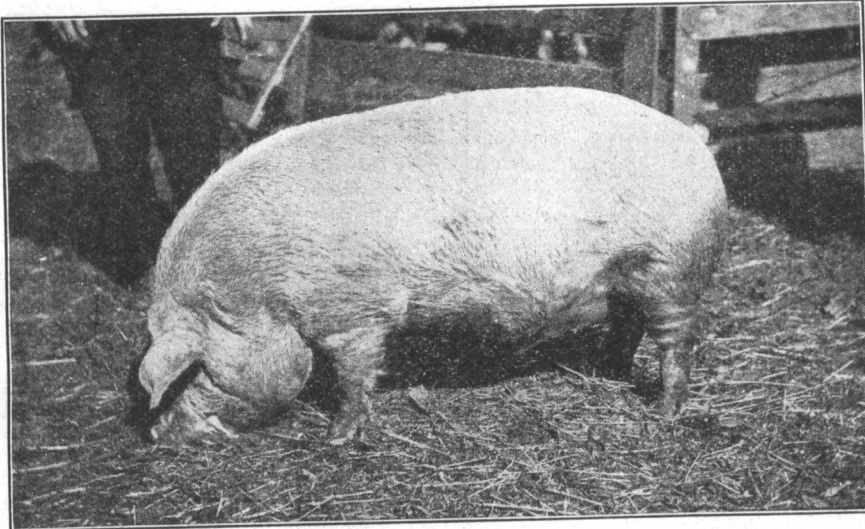
More or less attention must be given

Some will provide a balanced ration for the hogs and not for other animals that are not going to be sold right away. "If it pays," and it does, "to feed one animal a balanced ration, why will it not pay to feed another such a ration?" It will. The horse needs it as much, or more, as the hog, and the cow cannot do her very best unless fed in the very best possible manner.

When you begin to figure on the price of feed, and to think about the strenuous competition among feeders, you will jump at anything that promises to save feed and to shorten the time of the feeding period.

The balanced ration does both of these things—saves feed for the same period of time, and shortens the time of the feeding period. If a hog is fed on a single corn diet it must handle a great quantity in order to get enough of the building foods to supply the demand, and handle much of the fat forming part of it that is not needed and which must be thrown off at a great cost in energy, and at the cost of just so much of this part of the food. The animal would be healthier and thrive better if this work were not thrown upon its excretory organs.

The same thing is true when applied to horses and cows. A horse cannot be at his best when hard at work and compelled to handle this food that must be cast off. His digestive and excretory organs are compelled to act, using much of his energy, without getting the needed amount of stimulant. So it is with the cow, when fed upon a ration entirely out of balance. Her energy must be expended in this useless sort of way



Grand Champion Improved Chester White Boar at Chicago in 1911, Shown by Adams' Bros., of Hillsdale County, Mich.

to keeping the coat in good condition. Blanketing keeps the hair in good condition. Ordinary stable blankets that cover the horse well and strap under the belly are as good as the higher-priced ones. The small amount of oil meal in the ration also helps to make the coat glossy. By keeping the horses in this way until a few days before market and giving them a thorough grooming their coats will be in excellent shape.

Fattening horses do not need very much exercise. In fact, many good feeders do not take them out of the stables until about ready to sell. An occasional bran mash or dose of epsom salts when needed will do away with swollen limbs caused by standing in the stall. A day or two before sending them to market it is well to take them out for a short walk to get them gradually accustomed to the change and excitement. As a general proposition, eastern farmers will do better to sell their young draft horses in their natural condition and not assume the expense and risk of overloading them with fat in an effort to secure higher prices. Of course, the whole proposition depends a lot upon the ability of the feeder to get his horses in the proper condition to bring the most money.

New York. W. MILTON KELLY.

THE SIGNIFICANCE OF THE BALANCED RATION.

It is a lamentable fact that there are still many farmers that think nothing about providing a balanced ration, or even an approximately balanced ration, for their stock. We have them here in Indiana, and, I doubt not that some such may be found in other localities. But the idea that it has always been done this way, and always can be done in the same old way, is an old foggy notion of the "barbaric past," and cannot now longer find an excuse for existence.

trying to get a living instead of to produce milk and butter-fat.

And, we think the big thing of it all lies in the resultant better health of an animal. We have here in our neighborhood a gentleman who has built up a neat little fortune buying up jaded horses and sick horses, feeding them back to health and vitality and selling again to farmers, very often selling to the same man and for a good round sum the horse he had bought for a trifle. When approached as to his methods of "doctoring up" these animals he replied, "No doctorin' but feedin', restin', an' rubbin'." All they need's three good feeds a day. That'll cure any horse 'at's got life enough in 'im to eat." And we know it to be a fact that he believes in feeding exactly right. He was never known to discharge a man for anything except for feeding a horse wrong. But when a man does that he must get ready to pack the trunk "instantly."

We firmly believe that this man is almost wholly right in his ideas, and we firmly believe that the unbalanced ration causes more cholera in hogs, heaves in horses, and tuberculosis in cattle, than any one thing. And all because of the unnecessary duties placed upon the digestive and excretory organs, thus making the animal unable to resist the attacks of disease germs, and by weakening the organs so that germs may find congenial locations. If so, what a price we are paying for the privilege of throwing good feed away.

Indiana. E. P. H. GREGORY.

LOOK AT IT!

The wonderful low prices that we have been able to make on the Michigan Farmer and very many other most desirable publications. Compare it with offers with other agricultural papers. The list, with prices, is on page 7 of this issue. If not ready to renew now keep it for future reference.

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The Great French Veterinary Remedy. A SAFE, SPEEDY & POSITIVE CURE.

Prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.



SUPERSEDES ALL CAUTERY OR FIRING.

Impossible to produce any scar or blemish. The safest best Blister ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blisters from Horses or Cattle.

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Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.



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cannot drop out and will not break off; wear sharpest and last longest. They are the best and safest for YOUR HORSE.

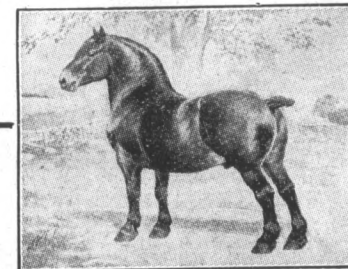
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We have given more than a quarter century to importing, breeding and distribution of the Belgian horse. We handle no other breed and believe we have now in this new importation of stallions and mares a class of horses that will please you, and all are for sale at prices not equalled by anyone in the business when merit is considered. Will be pleased to have you ask about them and to visit us at any time.

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Wabash, Ind.
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on hand and we can sell them for less money than any other importer. Write us your wants.

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Free Booklet HEAVE, COUGH, DISTEMPERS AND INDIGESTION CURE. Cures Heaves by correcting Indigestion. The original, scientific remedy. 22 years sale, 30 years in Veterinary practice. One to three \$1.00 cures cures heaves. Money refunded if results are not satisfactory after using two cans. A grand conditioner. Expels worms. \$1.00 per can at dealers or express prepaid. THE NEWTON REMEDY CO. Toledo, Ohio

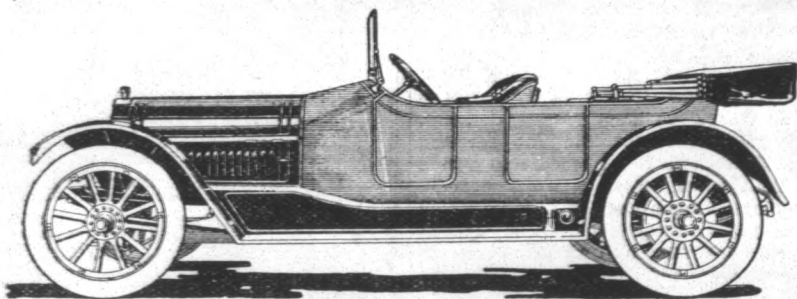
Mitchell

The biggest value of all! 1913 MITCHELL

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Mitchell 1913

THERE IT IS! There is the whole thing about this wonderful new Mitchell car—the value. There is nothing equal to it, nothing like it has ever been produced, to give the buyer so much for his money.

What does he get? First of all—best of all—the *real*, long-stroke, T-head motor—the motor that is going to revolutionize motor building. The Mitchell motors have a 6 and 7 inch stroke; the stroke that gives tremendous power—nothing can match it.

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We know that this improvement—the T-head motor with 6 and 7 inch stroke, and properly balanced bore—is the right idea at last, and the most valuable improvement that has ever been developed in automobile mechanics. Think of an engine like this in a moderate price car. Do more than think about it. Ask people who know, and see the car yourself. It is a revelation.

Other Mitchell Features

There are some more things that make the big value in the 1913 Mitchell: The extra long wheel base; the new, French Belaise springs; the complete electric lighting system; electric starter—independent of each other, and both operating from driver's seat.

We want to emphasize the fact that this big value of the Mitchell 1913 car has been obtained without any sacrifice of the high standard of material and workmanship always maintained in our plant.

All Mitchell 1913 cars have left drive and center control; Bosch ignition; Firestone demountable rims; rain-vision windshield; Jones speedometer; silk mohair top and covers; Turkish upholstered cushions; Timken front axle bearings; gauges on the dash to show air pressure and oil pressure; gauge in the gasoline tank which shows the amount of gasoline it contains; and a portable "trouble-finding" electric lamp which can be conveniently attached.

PRICES

All with T-head motor, electric self-starter, electric lighting system, and 36-inch wheels

		Wheel Base	Stroke	Prices F. O. B. Racine
7-passenger Six	60 H. P.,	144-in.	4 1/2 x 7 in.	\$2500
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Mitchell-Lewis Motor Company

Racine, Wisconsin.

M. A. YOUNG, 754 Woodward Ave., Detroit, Mich.

FEEDING SHEEP FOR EARLY LAMBS.

Among the problems that confront the early lamb grower, the one of feeding holds a prominent place. It is necessary to keep the sheep in good condition, yet not too fat, and, after the lambs are dropped, to force both sheep and lambs to their greatest capacity until the lambs are ready for market. How this can be done best, and also most economically, is a question on which there might be a great difference of opinion, but it is my purpose here to describe a method that has been applied successfully for several years, and one which seems economical.

As soon as the sheep are housed in the fall, they are fed clover hay in the morning and corn fodder at night, care being taken to feed only what they will eat up clean. They have free access to salt and water all the time. The corn stalks were grown in drills about three feet apart, on which a good many ears have formed. The stalks from the parts of the field in general on which grew the poorest and smallest ears are fed before lambing and those with the best ears, after. This avoids feeding too much corn before the heavier feeding is begun. The sheep have no difficulty in husking the corn or getting it off the cob, and they certainly waste less than the ordinary corn sheller. This feeding is continued with little variation until a few days after the lambs are dropped, unless bean pods are available, in which case they are substituted occasionally for the night feeding of fodder.

As soon as possible after the lambs are dropped, the sheep with lambs are placed in pens by themselves and heavier feeding is begun. At first only a light feed of oats and bran is given once a day, but this is gradually increased until they are fed both morning and night all they will stand. Any indication of over-feeding, however, will cause a drop in the feeding for a few days. Then, in connection with this feeding of oats and bran, more corn fodder is fed and stalks having the best-developed ears of corn. This feeding is continued until the lambs are shipped. Then the sheep are at once sorted out into pens by themselves and put back on the old feed of hay and stalks and kept so until they are turned out in the spring.

This method of feeding saves a great expense in the handling of the corn, and the heavy feeding is continued only during the time that is necessary for growing the lambs, a period of from five to nine weeks.

New York.

T. A. TEPPT.

THE HOG MARKET.

The sharp decline in hog values which occurred during the last week in October and the first week in November, aggregating fully \$1.25 per cwt., seems to have had the usual effect of increasing the run of hogs in this and other markets. Of course, there are other factors which enter into the hog marketing problem at this season of the year. Just now the prevalence of hog cholera in some sections of the state and the resulting quarantine proclamation issued by the state live stock sanitary commission, prohibiting the shipment of hogs not intended for immediate slaughter, may have had a tendency to augment the marketing of hogs in recent weeks. Then the demand for money at this season of the year induces many farmers to market their hogs as early as possible, while others have thought that by marketing them before the hogs fattened on new corn came into the market the price would be better than if they were marketed later.

There is no denying the fact, however, that a falling market induces liberal selling on the part of American farmers. They seem to want to hurry and get rid of their hogs and other products before the price goes still lower, no matter what the indications as to supply and demand may be. There is, of course, an inclination on the part of packers to force hog prices down at the season of the year when heaviest shipments may be expected, at which time they are laying in a stock of provisions for future sale, and there is no denying the fact that under some conditions they will be able to influence the market to a very marked degree.

But it is also a fact that there is a comparative shortage of hogs in the country due to the scarcity and high price of grain during the past year, and if their owners would hold back supplies on a declining market that market would at once show renewed strength and under conditions of short supply it would

be impossible for the packing interests to force prices down below a supply and demand basis. Hence under existing conditions it would be the part of wisdom for those who are not forced to sell their hogs to withhold such hogs as are not finished to heavy weight, thus decreasing supplies and imparting a strength to the market which is really warranted by conditions of supply and demand. Once tax time has been passed and the pork barrels are filled, there will be a noticeable decrease in the shipments of hogs, and by more conservative marketing, distributing supplies over a longer period of time the aggregate receipts to producers will be very materially increased.

THE INTERNATIONAL.

As announced on another page of this issue, the International Live Stock Exposition for 1912 will be held at the Union Stock Yards, Chicago, from November 30 to December 7. The list of entries for this year's show indicate that it will be greater than ever, the individual entries for the several classes being as follows: Cattle, breeding classes, 857, fat classes, 245; sheep, breeding classes, 461, fat classes, 352; swine, breeding classes 705, fat classes 340; horses, 1,286, making a total of 4,246 entries in the individual classes, to say nothing of the hundreds of carloads of cattle, sheep and swine in the carlot classes which will be on exhibition in the stock yards proper.

This opportunity to see such a large number of the very choicest individuals and collections of animals to be found in the world should not be neglected by any stockman or farmer who can possibly avail himself of the opportunity of visiting this premier live stock show. The block is the ultimate end of all meat animals and in this show ring as in no other in the country the ultimate end is kept in mind in placing of awards. Here as nowhere else, can the practical stock breeder and feeder gain ideas of economic value to him and his business and acquire ideals which will make him more enthusiastic, and consequently more successful. In addition to the show itself there are other attractions such as the meetings of the various national breeders' associations.

For the convenience of those who will attend, the judging program will be given in the next issue, the program for November 30, the opening day, being devoted to the students' judging contest for the judging of horses, cattle, sheep and swine. The judging program proper, which begins on Monday, will, however, be given in the next issue.

NATIONAL ASSOCIATION MEETINGS.

To Be Held at Chicago During International.

Saturday, November 30.

American Society of Animal Nutrition, Breeders' Hall, 1:00 p. m.

Monday, December 2.

Percheron Society of America, Congress Hotel, 8:00 p. m.

Tuesday, December 3.

American Shetland Pony Club, Sherman House, 3:30 p. m.

Continental Dorset Club, Wool Office, 2:00 p. m.

American Milch Goat Rec. Association, Breeders' Hall, 2:00 p. m.

American Cotswold Rec. Assn., Galloway Hall, 7:30 p. m.

American Shire Horse Assn., Assembly Hall, 7:00 p. m.

International Live Stock Exposition, Saddle and Siroin Club, 8:00 p. m.

American Oxford-Down Rec. Association, Breeders' Hall, 8:00 p. m.

American Cheviot Sheep Society, Exposition Hall, 8:00 p. m.

Hampshire Swine Rec. Assn., Wool Office, 8:00 p. m.

American Aberdeen-Angus Breeders' Assn., Grand Pacific Hotel, 8:00 p. m.

American Berkshire Assn., Stock Yards Inn, 8:00 p. m.

Wednesday, December 4.

American Shropshire Assn., Assembly Hall, 10:00 a. m.

Red-Polled Cattle Club of America, Breeders' Hall, 2:00 p. m.

American Poland-China Record Assn., Wool Office, 2:00 p. m.

American Hampshire Sheep Assn., Exposition Hall, 7:30 p. m.

National Lincoln Sheep Breeders Assn., Wool Office, 7:30 p. m.

American Association of Imp. & Br. of Belgian Draft Horses, Assembly Hall, 7:30 p. m.

Chester White Congress, Breeders' Hall, 8:00 p. m.

American Shorthorn Assn., Grand Pacific Hotel, 8:00 p. m.

American Yorkshire Club, Stock Yards Inn, 8:00 p. m.

Thursday, December 5.

American Galloway Breeders' Assn., Galloway Office 8:00 p. m.

American Southdown Breeders' Assn., Breeders' Hall, 8:00 p. m.

American Suffolk Horse Assn., Breeders' Bldg., 8:00 p. m.

American Rambouillet Sheep Breeders' Assn., Wool Office, 8:00 p. m.

Polled Durham Breeders' Assn., Grand Pacific Hotel, 8:00 p. m.

American Tamworth Swine Record Association, Exposition Hall, 8:00 p. m.

TO our friends and patrons who for sixty-nine years have staunchly stood by us—who have helped us grow from an infant publication in swaddling clothes to our present commanding position among the agricultural papers of the United States and to our many thousands of newer friends. To these friends who understand our efforts to better the farmer, his family and farm we announce The

MICHIGAN FARMER REDUCED

How can we afford to do it? Is the first thought that comes to your mind—We couldn't under old conditions—But we have decided to take the bull by the horns and *Change the Conditions*—Yes! It's a big contract—We know—but we are going at it with the same aggressiveness with which we have tackled many other difficult situations. We have burned our

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bridges and committed ourselves to the proposition irrevocably—and as the first step in the revolutionizing process we have abandoned premiums and their attendant expense—We have abandoned all exorbitantly expensive methods of producing subscriptions—The money we save in this way—we are going to give to our subscribers in the shape of lower subscription rates.

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For several years we have been giving premiums in connection with subscriptions to the Michigan Farmer—not because we wanted to—but because competitors forced us to—we have discontinued this practice because we want you to read The Michigan Farmer on its merits and not because of the premium inducement—The premiums we have given have been worth while and our offers have always been made in good faith but don't overlook the fact that YOU have had to pay for the premiums.

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WE believe Agriculture is a business that will return as much of Wealth and more of Health than any other vocation. Knowledge, Industry and Economy are the foundation stones on which it rests; Michigan Farmer will continue to furnish the first, guide the second and inspire the third. We believe the farmers' paper should be clean as well as practical; lofty as well as spicy; liberal and broad as well as vigilant and alert to the farmers' interests. Each week we shall continue to present in plain language the recent, actual experience of successful farm men and women. We shall also have articles on special subjects prepared by people who know. We believe in keeping close to the ground; in open dealing and getting our facts first hand. Our Office Editors are experienced and scientifically trained; our Contributing Editors are all prominently successful in their special lines. No other paper has such a strong corps of special writers and none has such masterly editorial guidance.

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

Sweeney Shoulder Lameness.—I have a six-year-old horse that was hurt on the boat during voyage from Chicago to Detroit one year ago last May. Soon after I got him shoulder muscles began to shrink and the whole shoulder seems to be small. He has been treated by different Vets., the first one injected an arsenic solution into shoulder at different times for four months without good results. I then applied a liquid blister and this failed to help him much. Another Vet. prepared some liniment which I applied and this seems to have failed in helping him. This Vet. advised light feeding. At times he will step upon the foot quite well, but most of the time will let it drag and hobble on three legs. He has done no work for over a year. M. E. C., Eastlake, Mich.—It is possible that shoulder was fractured and if so a bony union has not taken place, but a fibrous union occurred, which means that your horse will always be lame. The long rest and medical attention given him should have brought about a recovery ere now, if he was curable. Blistering shoulder every ten days with cerate of cantharides will do him good.

Chronic Laminitis.—I have a five-year-old horse, which weighs 1,550 lbs., that is sore and stiff but with exercise most of this soreness disappears, only to return when he is allowed to stand still a few minutes. Pressing tendons fails to make him flinch and he is inclined to place all four feet near each other when resting. E. I., Nashville, Mich.—I am inclined to believe that you have a case of either chronic laminitis (founder), or chronic navicular disease and he will be benefited by blistering coronets of fore legs with one part red iodine mercury and twelve parts cerate of cantharides every ten days. For fear it is a rheumatic ailment you had better give 2 drs. salicylate of soda at a dose in feed twice a day.

Indigestion—Hide-bound.—Have a pair of horses 15 and 18 years old, and the oldest one is not thriving. Had his teeth floated by a Kalamazoo Vet.; this horse eats everything I feed him and he is fed oats, wheat bran and clover hay with a handful of oilmeal added. His coat is rough and hide seems tight; he also has a discharge of mucus or saliva coming from mouth most of the time. W. W. H., Alamo, Mich.—Give your horse 1/2 oz. Fowler's solution, 1/2 oz. fluid extract gentian at a dose in feed three times a day. Dissolve 1 oz. borate of soda in a quart of water and wash out mouth twice daily.

Surfeit Buds—Farcy.—I have a mare with breaking out all over body. Pimples rise up about the size of hazel nut, then open, discharging yellow pus. These sores heal up in a few days and then a fresh batch spring up. She has been treated by several different Vets., who fail to effect a cure. F. M., Bristol, Mich.—It is possible that you have a case of farcy and in order to ascertain whether it is or not, you had better have the Mallein test applied and if she reacts, she should be destroyed. The symptoms you give are suspicious. If she has farcy it is a contagious ailment, similar to glanders, and dangerous not only to other horses, but to man. Give her 1/2 oz. Donovan's solution at a dose in feed three times a day and apply one part Chinosol and 250 parts water to sores carefully twice a day.

Sore Throat—Nasal Catarrh.—I have a three-year-old filly that has discharge from nose, and when drinking part of water runs through nostrils. When plowing she seems to be short of breath. She is large and growthy and has had a cough for two or three weeks. J. D. M., Pinconning, Mich.—Apply one part iodine and 10 parts vasoline to throat every day or two. Give her a teaspoonful fluid extract opium in 1 oz. of glycerine at a dose twice a day.

Cracked Heels.—I have a horse that has scratches, sores are mostly confined to back part of hind legs. His legs stock some every night and I would like to know how to treat him. H. W. H., Perry, Mich.—Dissolve 4 ozs. acetate of lead, 3 ozs. sulphate zinc, 3 ozs. carbolic acid in 1 gal. of water and apply to sore heels three times a day. Also give him a teaspoonful of powdered nitrate potash at a dose in feed three times a day. It is needless for me to say that wet and filth are exciting causes of cracked heels, consequently his heels should be kept dry and clean.

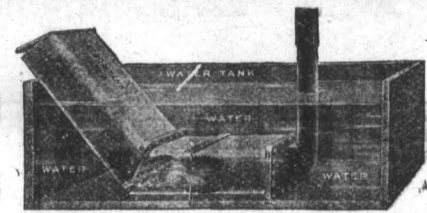
Divided Tendon.—Five-year-old mare cut tendon badly on barbed wire fence some time ago, since then she has not been able to handle this leg; besides, she must suffer considerable pain. J. S. M., Grindstone, Mich.—Your mare should be kept quiet and if so, tendon will perhaps unite. Apply one part carbolic acid and 20 parts glycerine to sore twice a day.

Wounded Fore Arm.—I have a colt that cut muscles of fore arm some nine days since and our local Vet. stitched it, now the most of stitches are torn out and I have been applying hydrogen peroxide four or five times a day and other healing preparations. H. H., Fennville, Mich.—After applying hydrogen peroxide dust on one part iodoform and 20 parts boracic acid twice a day.

Bigelow's Holstein Farms, BREEDSVILLE, MICHIGAN,

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

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

BREEDERS' DIRECTORY.

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Herd, consisting of Trojan Erics, Blackbirds and Prides, only, is headed by Egerton W. a Trojan Erica, by Black Woodman, sire of the Grand Champion steer and bull at the International in Chicago, Dec., 1910. A few choice bred young bulls for sale. WOODCOTE STOCK FARM, Ionia, Mich.

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GUERNSEY BULL CALVES, YORKSHIRE PIGS. Good Stock.

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Our stable is full so offer a few choice fresh cows with A. R. O. records.

Also a few Bully Good Bulls from \$60 up.

LONG BEACH FARM, Michigan.

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5--Yearling Holstein Bulls--5

And 4 Bulls from 4 to 8 months old.

All from A. R. O. dams and sired by Johanna Concordia Champion, the greatest bred bull of the breed. Send for his breeding and be convinced that this is not bluff. If you want this kind, worth the money, write or come quick.

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Born June 5, 1912, sire a son of the King of the Pontiacs from a daughter of Hengerveld De Kol. Dam of calf, an A. R. O. daughter of Sadie Vale Concordia's Paul Dekol, her dam a 20 lb. imported cow. ED. S. LEWIS, Marshall, Mich.

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Choice bulls from 11 to 14 mos. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. Also young bull calves.

McPHERSON FARMS CO., Howell, Michigan.

REGISTERED Holstein Cattle—Two good bull calves. Herd headed by Hengerveld Coin Pieterie. FLOYD F. JONES, R. F. D. 3, Oak Grove, Mich.

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(Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No males for sale at present. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Mich.

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Jerseys—Bulls ready for service, bred for production. Also cows and heifers.

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FOR SALE—Jersey Bull Calf—born Dec. 25th, 1911. First class individual from the best of blood lines. WATERMAN & WATERMAN, Meadow Land Farm, Ann Arbor, Mich.

WILL EXCHANGE A JERSEY BULL CALF for a Duroc Gilt. All kinds of Durocs for sale. F. A. Lamb & Son, Cassopolis, Michigan.

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Leicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berk shire swine. Elmhurst Stock Farm, Almont, Mich.

Reg. Rambouillets—12 ewes, 35 rams all in perfect health. Come and see me or write for circular of breeding—none better. 2 1/2 miles E. Morrice, on G. T. R. R. and M. U. B. J. Q. A. COOK.

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OXFORD RAMS sired by and ewes sired by and bred to Imported Rams for sale. B. F. MILLER or GEORGE L. SPILLANE, Flint, Mich.

OXFORDS for sale, at reasonable prices; twenty-five two-year-old OXFORD rams; four two-year-old SHROPSHIRE rams; and five yearling Shropshire rams. PARKHURST BROS., Reed City, Michigan.

Choice Registered RAMBOUILLETS—Both sexes and all ages, bred and sold right. Ira B. Baldwin, Hastings, Mich.

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Northern Crown Shropshire Sheep and Berkshire Swine. Yearling and two-year-old rams, two boars old enough for service, one of the best Jersey bulls in Mich. 3 yr. old. Blue Bells Golden Lad 8881. Will be sold cheap if taken at once. D. C. Magahay, R. 1, Harrisville, Mich.

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50 Choice two-year, yearling and ram lambs; 20 yearling ewes from imported sires. F. R. OTTAWAY, Flushing, Mich.

Shropshires—Yearling rams at \$12 and \$15. Two extra fine rams at \$25 each. C. J. THOMPSON, Rockford, Mich.

FOR SALE—Choice Shropshire Yearling Rams in lots of one to twenty. Prices right. JONES & MORRISH, Flushing, Mich.

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Shropshire Rams and Ewes at farmers' prices. HARRY POTTER, Davison, Mich.

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

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

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I HAVE some extra good DUROC males for sale. Prices right, just fall and spring farrow. Breeding and quality my standard. Brod sow sale this winter. H. G. KESSLER, Cassopolis, Michigan.

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Duroc Jersey SWINE. Spring and summer pigs for sale, both sexes. 1 day express. 25 years experience. J. H. BANGHART, Lansing, Mich.

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Big Smooth Poland China Hogs from large sires, at reasonable prices. ALLEN BROS. Paw Paw, Mich.

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Big Bone, PROLIFIC POLAND CHINA BOARS ready for business. Quality high, prices right. Write today. Maplewood Stock Farm, Allegan, Mich.

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

LARGE styled Poland China spring and fall pigs from strong, healthy, prolific breeders, either sex at low prices. ROBERT NEVE, Pierson, Mich.

POLAND CHINAS—Young sows bred for April farrow. Extra good fall pigs, either sex. L. W. BARNES & SON, Byron, Shiawassee Co., Mich.

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P. C. BOARS—large type—sired by Expression 30439 and E. M. F. 8396. Satisfaction guaranteed. R. W. MILLS, Saline, Mich.

Poland Chinas—The big kind wants. W. L. PENNOCK, Hastings, Mich. o

Butler's Big Type Poland Chinas.

We have a few big-boned, long-bodied P. C. boars yet in herd. Two big yearlings at \$80. Early spring pigs \$20 to \$25. Summer pigs \$10 to \$15. Fall pigs \$5 each. Pedigree with every pig.

J. C. BUTLER, Portland, Michigan.

LARGE strain P. C. Hogs, largest in Michigan. A few big strictly heavy boned boars of Mar. farrow left, weighing from 275 to 300 lbs. in just good growing condition, priced to move them quick. Come and see them, also see their big sire and dams. Free delivery from Parma. Expenses paid if not satisfied. W. E. LIVINGSTON, Parma, Michigan.

TWO YOUNG TAMWORTH BOARS FOR SALE

T. F. MARSTON, Bay City, Michigan.

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I have more than 5700 swine on my farm and am selling grade Yorkshire, Tamworth, Poland China and Duroc brood sows, boars and shoats in any quantity at best Buffalo market price for fat yorkers on day of sale. Sows to farrow soon included. These hogs are not fat, are cholera proof and prolific breeders. Pigs that are 6 to 10 weeks old at \$3 to \$4.

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LARGE YORKSHIRE SWINE—Pairs not akin. Sired by Canadian bred stock. Geo. S. McMullen, Citz. Phone, Grand Ledge, Mich.

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A few choice Gilts bred for September farrow, good ones. Spring pigs, either sex, pairs and trios not akin. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Mich.

Periodic Ophthalmia.—(Moon Blindness).—Horse six years old has been troubled all summer with moon blindness. I am anxious to have this horse cured. E. B. S., Adrian, Mich.—Periodic ophthalmia is a disease considered, by the best Vets., as incurable and none too well understood. However, by fomenting the eyes with hot water and applying a saturated solution of boracic acid, or applying one part extract witch-hazel and six parts water to eyes three times a day, also feeding the animal on a cooling laxative diet, keeping the bowels open and liver active, loss of vision can be delayed. I have obtained good results by giving a dessertspoonful of Fowler's solution at a dose in feed or water two or three times a day.

Spinal Paralysis.—Local Vet has been treating mare for past three months and she fails to improve. She sways when walking and occasionally falls. C. B. Caro, Mich.—No person can tell whether your mare will get well or not; however, you had better give her 1 dr. potassium iodide, 1 dr. ground nuxvomica and 1 oz. ground gentian at a dose in feed two or three times a day. Rub her back from root of tail to withers with equal parts alcohol and water twice daily.

Open Hock Joint.—Horse was kicked, injuring hock joint, followed by a leakage and I am sure joint oil is escaping. Local Vet. is inclined to believe case incurable. R. J. D., Belleville, Mich.—Open joint, when occurring in a joint that hinges, is always a serious ailment and if the opening is large it is almost impossible to close it. Inject one part bichloride of mercury and 2,000 parts tepid water into opening twice a day and apply packs that have been soaked in one part bichloride of mercury and 1,000 parts water, keeping them on joints continually. It is needless for me to say that horse should be kept quiet, it often becoming necessary to place animal in a sling to prevent motion of joint. In some cases blistering joint with cerate of cantharides, to cause swelling and closing of wound, is good practice.

Looseness of Bowels.—Nine-year-old mare is altogether too loose in bowels when working or doing road driving. She does not appear sick; is almost as bad when walking as when trotting. When she stands still her bowel movements are normal, but always too loose when driven. She has rubbed nearly all the hair out of tail. A. C. Rockford, Mich.—Mix together equal parts ground gentian, quassia, ginger and bicarbonate soda and give her two tablespoonfuls at a dose in each feed. I would suggest that you put her teeth in good condition, and water her often.

Orphan Colt.—I lost a mare by accident two weeks ago; her colt was only 3½ months old, but eats oats and bran all right. Had I better feed this colt "calf meal" or not? B. S. A., Lake, Mich.—Small quantities of "calf meal" fed to colts is all right; however, you had better let it have plenty of oats, mixed hay and good grass if possible.

Chronic Cough.—Cow is troubled with a chronic cough. E. W., Alpena, Mich.—Give 1 oz. ground licorice, 1 oz. ground ginger and ½ oz. tincture opium at a dose in feed or as a drench three times a day.

Imperfect Udder.—I recently purchased a good cow that has six teats; from two of them comes a watery suppurating fluid. R. G., Hillman, Mich.—Milk her daily and apply hot olive oil to bag twice a day. Give her a dessertspoonful powdered nitrate of potash at a dose in feed twice a day.

Barren Heifer.—Two-year-old heifer fails to come in heat. Her face is swollen and eyes run tears. She drools nearly all the time, but seems worse when she eats. Subscriber, Sumner, Mich.—Apply equal parts spirits of camphor and tincture iodine to swollen parts of face every day or two, and give her 1 oz. ground gentian, ½ oz. powdered cinchona and 1 dr. ground nuxvomica at a dose in feed three times a day. Also give her a dessertspoonful powdered capsicum at a dose in feed night and morning.

Fractured Hip.—About a week ago cow injured right hind leg in some unknown manner. There is no perceptible bruise or swelling, but she is unable to bear her weight on leg. She gets up and down with great difficulty and when she moves I hear a grating sound. I have tried various liniments with no results. N. E. D., Mendon, Mich.—Your cow suffers from fractured hip and if she is kept quiet the bones may unite. It is possible she should be placed in a sling, keeping her in a standing position for four or five weeks. External applications do very little good; however, she will be benefited by applying alcohol to hip twice a day.

Eversion of Bowel.—Four-months-old pig has protrusion of rectum. She has good appetite. I have given a dose of castor oil once a week. F. J. B., Maple City, Mich.—Protruding parts should be cut off with ecraseur or emasculator; by removing it in this way you will have less trouble in arresting bleeding. Apply one part powdered alum and 20 parts water three times a day.

Acute Indigestion.—Diarrhoea.—Tuberculosis.—My sows farrowed the last of September. When pigs were about a week old the sows were taken sick and pigs all died. One sow is troubled with looseness of bowels and is weak in hind parts. Another was costive and also weak behind. The youngest was not very sick and is all right again. The others are gaining and apparently getting well. Will these sows be all right for breeding purposes? My shoats showed some sickness soon after sows took sick but local Vet. tells me it is not cholera. Have opened four and find bowels have many hard lumps and lungs appear congested; besides, the kidneys are enlarged. I. B., Jonesville, Mich.—Your sows suffered from acute indigestion and perhaps from food poisoning. There is no very good reason why you should not use them for breeding. I am somewhat inclined to be-

lieve that shoats suffered from tuberculosis and perhaps congestion of lungs.

Acute Rheumatism.—I have taken the Michigan Farmer a number of years and always read with interest the veterinary department and receive much help from it. I now write to ask what ails my hens. I have 200 Brown Leghorns which are fed on oats, corn, wheat, millet seed and buckwheat, with plenty of clean pure water. They also have oyster shells and have a large clean coop; they are fed twice a day. First symptom is lameness, which seems to increase until they can scarcely hobble and are unable to get upon the perches. They seem to grow worse rapidly, becoming so lame they cannot walk, then die. T. A. C., Dansville, Mich.—I am inclined to believe that your chickens die from rheumatic trouble. It is possible to prevent it by keeping them dry and out of drafts. Their food supply may perhaps be causing the trouble. Give each chicken that takes sick a teaspoonful of castor oil and a dessertspoonful of olive oil—one dose only. Also give ½ gr. sodium salicylate at a dose two or three times a day.

Cat Has Worms.—My cat seems to eat fairly well, but what she eats passes through her whole and on several occasions she has vomited worms. J. A. P., Townley, Mich.—Your cat perhaps eats mice and rats and, if so, this may cause it to become wormy. Give cat ½ gr. powdered kamala for each pound of its weight and, two hours later, give a teaspoonful castor oil. Repeat this dose in three days if you believe it necessary. Also give 10 grs. ground gentian at a dose twice a day and salt its food.

Chronic Grease Heel.—Five-year-old mare is troubled with scratches and grease heel. A. J. S., Sparta, Mich.—Apply one part powdered sulphate copper, one part boracic acid and 15 parts vaseline to sores once a day. Also give her a dessertspoonful of Donovan's solution at a dose in feed twice a day.

Worms.—Garget.—Mare does not thrive as she should; has good appetite but passes a few worms. Cow has a slight hardness of one quarter of udder and I imagine that another quarter has become diseased. This cow has been on clover pasture in wheat stubble and has plenty of creek water. R. G. B., Coloma, Mich.—Mix together equal parts powdered sulphate iron, ground worm seed and ground gentian and give a tablespoonful at a dose in feed twice a day. Apply hot linseed oil to udder once a day and give cow a teaspoonful powdered sulphate of iron, a tablespoonful bicarbonate soda and a tablespoonful nitrate of potash at a dose in feed twice a day.

Vertigo.—My dog staggers and falls forward. When eating will fall forward on head and shoulders. He is a good watch dog and I would like to save him. R. M., Alleton, Mich.—Give dog one-sixtieth of a grain of strychnine, 2 grs. potassium iodide and 10 grs. bromide of potash at a dose three times a day. This is dose enough for a dog weighing 25 lbs.

LIVE STOCK NOTES.

Even South American cattle are booming, and late advices from Argentina say that steers that were bought and sold last year at \$25 per head are bringing \$45 per head, an 80 per cent advance. Meat is retailing fully 25 per cent higher, losses of from four to five million dollars.

Prime dairy cows sell extremely high in the Chicago market, because of their scarcity and a steady demand. Recently a big, fancy Red Polled cow brought \$105, but such cows are mighty hard to find. Feeding cattle have been selling in the Texas plains country at the highest prices ever known. One stockman has parted with his entire supply of steer calves at \$35 per head, with a 10 per cent cut-out at \$31.50.

The hog trade has furnished some surprises in recent weeks, the great advance in prices that carried values to the highest level seen in over two years being followed by a slide that bewildered many stockmen everywhere, although it is usual to expect a break in prices shortly before the winter packing season opens, on the first day of November. Of course, rallies in prices after sharp breaks are inevitable, but there is no probability that hogs will recover anything like their lost ground, the top at the highest time having been \$9.42½ per 100 lbs. It is known, however, that there is a serious shortage of matured hogs in most packing feeding districts of the corn belt, and the recent marketing of large numbers of young hogs of light weight by frightened holders cannot fail to cut heavily into future marketings of fat swine, as well as at other western packing points, and they have slumped sensationally in prices, falling as much as a dollar a hundred pounds in a single week. The weak feature of the Chicago hog market of late was the extremely small eastern shipping demand, giving the big local packers a fine opportunity to smash prices.

The surroundings of the Chicago and other western sheep markets have undergone radical changes within a month, the enormous receipts of flocks from the range country having ceased, giving a much better show for sellers of fed stock from the middle west. Prices have undergone a number of good advances all along the line from time to time, with fat lambs the main attraction to killers, as usual. They have shown especially good advances in prices on various occasions, and fat little yearlings, prime wethers and even fat ewes, have sold decidedly better. Sheepmen are now in a position to make good profits where they carry on the industry in a business-like manner, but it will not pay to ship stock back to market that is only partly fattened, as too many are doing. Corn, hay and other feed is generally abundant and cheap, and there is no good reason why stock should not be made good and fat before marketing. There has been at no time any perceptible abatement in the country demand for feeders, and

many more could have been disposed of had supplies been larger and prices somewhat lower. Late reports say that much less feeding than usual will be carried on this winter in most sections, Colorado excepted.

A prominent stock feeder from Menard county, Illinois, says that the farmers of that district are not banking at the high prices asked for feeding steers and are bringing into the county a good number of strong weight feeding cattle from western points. He says: "These cattle are costing from \$7.25 to \$8 per 100 lbs. laid down, and while the prices look high, there is confidence among the new owners that the clearly apparent beef shortage next year will afford them a high selling price when the cattle are fat."

The fat, heavy corn-fed cattle are pretty well shipped out from Kentucky, most of them having been contracted last July at \$8 to \$8.25 per 100 lbs. in the feed lots. A good many cattle are being shipped into feeding districts from western markets, most of them being of a medium class. Many Kentucky feeders are buying such offerings because of their much lower cost on the hoof than those of good to choice quality.

Shipments of feeders to sheep feeding districts since last July have run 40 per cent behind last year, and much less feeding will be carried on in such states as Michigan, Ohio and Indiana than last winter. Evidently mutton will come high.

There are some experienced stock feeders who have the courage to remain in the business of producing beef on an extensive scale, and not long since a big Pennsylvania cattleman bought in the Chicago stock yards a string of 400 head of feeder cattle, which he shipped to Lancaster, this being by far the biggest transaction of that kind witnessed in weeks.

The boom in prices for hogs that has taken place recently is based solely on the undeniable shortage of matured swine throughout the corn belt states, and further advances are freely predicted by the best authorities. The packers are unable to obtain anywhere near enough hogs to supply their actual necessities, and speculators have taken a hand in the business at the Chicago stock yards, making sure profits and materially aiding in the upward movement of prices. Farmers have utterly failed to maintain the pork production and while the population of the country has shot ahead at a rapid rate, the country is growing far less hogs than several years ago, the result being such a great shortage that hogs have been bringing the highest values obtained in more than two years. Speculators have aided the upward movement materially on several days recently. Everything points to further advances, and it will be some time yet before the last pig crop will be sufficiently matured to ship to market, the greater part of the spring pigs having been born much later than usual. Cholera has carried off large numbers of pigs this year in Iowa, Illinois and other states, and many healthy pigs have been marketed by panic-stricken owners who feared the malady would seize their pigs. At the present time many little pigs are being marketed, and disease is still prevalent in many sections of the country. Still not more than five per cent of the pigs are condemned at the post mortem test carried on by the government inspectors at Chicago. Iowa has an especially short hog crop, and so has Illinois. Litters were small in Iowa last spring, and the inclement weather at that time killed them off by thousands, while the death rate has continued large ever since. Cheap hogs are evidently a long way off, and predictions have been made that very much higher prices will prevail during January, February and March than were seen during the same months this year. Too many gilts have been used as breeders, this practice resulting in small litters, and too many young sows intended for breeding have been allowed to run with fattening hogs. Reports from the southwest say that hogs down there are extraordinarily scarce, and that part of the country is greatly dependent upon the middle west for its pork.

George L. Pratt, head hog buyer for Armour & Co., and connected with that firm at Chicago for a period of 36 years, has retired, the firm presenting him with a pension of \$5,000 per year for the remainder of his life. In the course of some remarks made to his friends who presented him with several valuable gifts, Mr. Pratt said: "In-breeding hogs is one of the evils causing a weakening of constitution and facilitating tuberculosis ravages. What other animal would submit to the ill-usage heaped on the hog without resentment? Outside the breeding establishments he rarely gets decent shelter, is submitted to inclement weather, confined in filthy lots and fed illogically. Hog growers should keep away from in-breeding and pay attention to constitution. I believe we will have healthier hogs with the coming of alfalfa. Corn and alfalfa makes an ideal ration, and if I were asked for advice by a hog grower, I would tell him to get a patch of alfalfa."

The Interstate Commerce Commission announced a decision on Monday upholding as a principle that where there are two routes between the same points over which different rates apply, a shipper who elects to ship his traffic by the route carrying the higher rate is not entitled to an award of damages merely because a lower rate was in force over the other route.

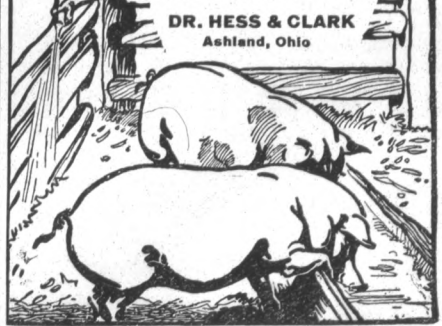
"The Importance of Raising Veal Calves," is the title of a valuable booklet which will be sent upon request by the De Laval Separator Co., of New York and Chicago. It is written by L. E. Barnes, De Laval educational expert, formerly of the Dairy Division of the United States Department of Agriculture. This is a comprehensive little booklet which it would be to the advantage of every dairy farmer to get and read.

Disinfect Your Pens

HOG profit is absolutely dependent on hog health. You can't market heavyweights from carelessly kept pens. If you would gain the most return for feed and labor spent, keep all premises germ-free and hygienic with occasional applications of Dr. Hess Dip and Disinfectant. This is a guaranteed germ and vermin killer as well as a powerful deodorizer and disinfectant. It reaches down into cracks and crannies where lice and other vermin hide and quickly ends them. But more than this,

Dr. Hess Dip and Disinfectant

sprinkled about the hog pens and sleeping quarters materially lessens the liability of hog cholera and other contagious diseases. It also meets the Government requirement for sheep scab. It is non-poisonous, non-irritating, and makes an efficacious dip for cattle, sheep and swine. Cures dog mange and eczema. Nothing like it to sweeten sewers and outhouses. One gallon makes 70 to 100 gallons of solution. Dip book free—send for it.



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PUFF OR THOROUGHPIN, but

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THE DAIRY

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WHAT GRAIN TO FEED WITH SILAGE AND TIMOTHY HAY.

I have five Reg. Holstein cows, average weight 1,350 lbs. Two have been fresh about eight weeks and are giving 40 to 60 lbs. of milk a day; two have been fresh since June and are due in March and May; one is giving about 40 to 45 lbs. of milk and the other, a heifer, about 25 lbs.; the other cow is just gone dry and is due Jan. 5. What ration could I feed economically, as I am selling cream. Have plenty of good silage, hay is pretty much timothy, good pasture daytimes and can get feed at the following prices: Bran, \$1.50 cwt; cottonseed meal, \$1.60; oats, 30c bu; dairy feed, \$1.50. If you know of any better feeds, give price. Could buy clover hay for \$10 a ton.

Clinton Co.

J. R. H.

Where you can get oats for less than \$20 per ton they are a pretty good thing to have in a dairy cow's ration. We can safely figure that oats are worth more as a dairy cow feed, or as a horse feed, for that matter, than the chemical analysis would seem to indicate. In fact there is no grain, pound for pound, that is any better than oats as a part of the ration. So I would be in favor of oats at 30 cents per bushel, of using this grain in the ration. Then, again, if you can get good clover hay at \$10 per ton you can afford to use it, and if you can exchange the timothy hay so that, including the cost of exchange, a ton of clover hay doesn't cost any more than a ton of timothy hay, you can well afford to make the change, because a ton of clover hay will produce more milk than a ton of timothy hay. Now, with regard to the balance of the ration: With the feeding stuff named you can get a pound of digestible protein cheaper in cottonseed meal than you can in any of the other foods, and with plenty of corn silage and good hay, cottonseed meal can be fed to a limited extent with profit. I do not like to feed over two pounds of cottonseed meal a day to each cow, and I would only feed cottonseed meal before cows freshen. And probably the cheapest and most economical ration you could get, so far as the grain is concerned, is to feed to the cows after they have freshened, two pounds of cottonseed meal a day. Then feed bran and oats mixed equal parts by weight, or in place of bran buy gluten feed, which is a corn product and is a most excellent feed for dairy cows, and mix this with oats in equal proportion by weight, and feed a sufficient amount of this together with the two pounds of cottonseed meal to make a pound of grain for every pound of butter-fat which the cow produces in a week. I don't think any better rule can be given than this, and on either of these proposed rations I believe that you would find that your cows would do excellent.

GRAIN RATION WITH SILAGE, CORN-STALKS AND BEAN PODS.

With a silo full of ensilage and corn-stalks and bean pods for rough feed, what grain would I have to feed to make a balanced ration for milch cows? Please state how much should be fed of each.

Kent Co.

A. H. W.

With these foods for roughage you want a grain ration that is comparatively rich in protein, because both silage and cornstalks are quite deficient in protein. Bean pods are a little better, being almost as rich in protein as clover hay, but the probability is that there will not be a sufficient amount of these fed to make any great impression on the ration. As A. H. W. doesn't say anything about what kind of feed he prefers or can get handy; he leaves me free to select the feeds. If I had just simply silage, cornstalks and bean pods and had to buy all of the grain ration at present prices, I would make a ration out of corn meal, ground oats, and gluten feed or oil meal. I would mix corn and oats in equal parts and grind them together. This is a very common ration fed by farmers. Then I would buy gluten feed, which is rich in protein, and mix it equal parts by weight with this corn and oat chop, say 100 pounds of corn and oat chop to 100 pounds of gluten feed. That would make a splendid ration. Or, if you prefer, you could buy oil meal or cottonseed meal. If you buy oil meal then I would mix 200 pounds of corn and oat chop with 100 pounds of the oil meal, and if I purchased cottonseed meal I would mix it in the same proportion suggested for oil meal. And I would feed each cow as many pounds of grain

per day as she produces pounds of butter-fat in a week. I think that is the most satisfactory rule that can be given if we are going to feed by rule.

Of course, give all the corn silage, cornstalks and bean pods that the cows will eat up clean every day. Don't stunt them on this, and there isn't any particular use in measuring or weighing it. Give them what they will eat up clean, and then feed the grain ration. They ought to do well upon this ration, and I believe they will if they are good dairy cows.

BEET TAILINGS FOR SILAGE.

Our sugar company make what they call, "beet tails," i. e., small beet roots and some dead leaves, say 75 per cent is the root-ends of the beet. I can get this and mix it with corn fodder the same as you do with beet tops. Will it work? How did your corn fodder and beet top silage succeed?

Shiawassee Co.

J. N. McB.

Beet tailings, composed of the fine roots of beets and some of the tops, should make good cow feed, and it could be very nicely preserved by putting it in a silo. There isn't any question also, but what, if this was mixed with cornstalks that it would make the cornstalks more palatable and you would get much more good out of them than you would if you attempt to feed the stalks dry. There is no doubt but what the roots could be successfully ensilaged. The only question in my mind is whether you can afford to draw these tailings from the factory. It will all depend upon the distance you have to haul them. They probably contain in the neighborhood of 75 to 90 per cent of moisture. If you have to haul them very far it will make the dry matter in them quite expensive as a feed, and it would probably make it more economical to buy dried beet pulp instead.

THE BUTTER MARKET.

The condition of the wholesale and retail butter markets of the country is, without exception, firmer than a week ago. Not a single one of the large markets has failed to advance quotations. Some of the cities, like New York, show a freer movement of top grades than of inferior kinds in spite of the high values ruling, but a majority of the trading points report firmness in all grades, including dairies. A shortage in the volume of receipts is the main pillar of support to the trade, the demand being about steady. A small per cent of butter users are endeavoring to cut down the expense of living by taking butter substitutes. This innovation as yet offers little danger to the butter counters, although in time its influence may become an important factor in the making of butter prices. For the present, however, the dairyman is having a good market for his butter.

SAVING SILAGE FOR SUMMER FEEDING.

We have a silo 12x30 ft. and intend to refill it this fall. Now would it pay best to feed the silage to everything this winter and feed it all up, or would it be possible without spoiling too much ensilage to save part of it till the dry season next summer? As we have only ten cows we would not feed it all this winter. What harm does it do to feed more than 30 or 40 lbs., which are recommended? Our cows will eat at least 50 lbs. a day if they can get it.

Antrim Co.

W. B.

I would not save silage in this instance for summer feeding because you can provide soiling crops which will take the place of silage. It is cheaper to have a sufficient amount of silage so that you will have enough left over to feed during the drought of summer, but if you haven't got this amount then I would feed it in the winter time when cattle are deprived of other succulent food, and would make arrangements next spring to raise a sufficient amount of soiling crops so that I would have plenty to feed during the drought. This can easily be done. Even if you have a short pasture during its flush you could supplement this with green clover, with peas and oats and later on with early sweet corn, and then late sweet corn, and finally with field corn, and get splendid results. It requires a little more labor to feed soiling crops than it does summer silage, but your cows will respond liberally to the succulent crops. Then again, a silo 12 feet in diameter is almost too large for the summer feeding of ten head of cows. I don't believe you could feed it down fast enough to prevent spoiling by exposure to the weather. At any rate I am positive that ensilage fed in the winter time to the other stock would be more profitable than to feed them dry feed entirely in the winter time. And the more so since it is possible to raise soiling crops for the cows during the summer drought.

Profits On The Farm



Caldron kettle cooker (catalog shows six other sizes) includes one-piece kettle, enclosed in steel jacket. Cooks feed, fattens hogs—all stock slick and well. Price, freight paid. 55 gallon capacity..... **\$11.90**



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Sanitary Cast Iron Hog Trough—No Seams—No Chance for Feed to be absorbed and spoiled. Cast in one piece—smooth, substantial—will last a lifetime. Three sizes; medium size shown, 4 feet long, weighs 65 pounds, freight paid..... **\$2.56**

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Semi-Official Yearly Record:
Lbs. of milk 27,404.4
Lbs. of butter fat 1,058.34
Lbs. of butter, 80 percent fat 1,322.925
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Stable mate of Banostine Belle DeKol.
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Lbs. of milk 25,592.5
Lbs. of butter fat 998.340
Lbs. of butter, 80 percent fat 1,247.925
Average percent fat for year 3.90



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World's Champion Junior 4-year-old.
Semi-Official Yearly Record:
Lbs. of milk 21,718.3
Lbs. of butter fat 962.795
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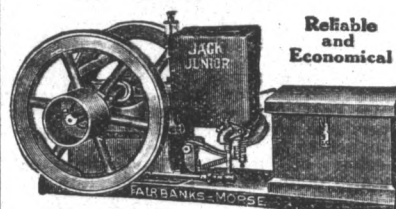
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Washtenaw Co.

W. J. B.

I never had any experience in putting rutabagas and turnips, tops and all, into the silo, but I don't think there is any question but what they will keep. As I have explained time and again about putting beet tops into the silo, there will be quite a waste on top because they pack in so loose that the air will get in and spoil them for quite a distance. You can prevent this by getting a load of wet beet pulp and put that on top to seal it up and keep them from spoiling. In putting beet tops into the silo every little while there is a beet that hasn't been topped, and this goes in with the tops, and it comes out in fine shape, just like cooked young beets. It is palatable and the cows like it, and I don't see why rutabagas and turnips would not make ensilage in the same way. I don't know whether there would be any advantage in siloing them over the old way of topping them and feeding the roots separate or not. One would have to determine this for himself by actual experience.

THE GRAIN RATION COSTS TOO MUCH.

Very often we hear dairymen say that if they could get along without the purchasing of such expensive grain rations, they could make some money with cows. Where we have to purchase the greater part of the grain ration at the present high prices, after deducting the cost of this from what we get for our cream or butter, it leaves the margin of profit small indeed. There is no question about this. The grain is seemingly the expensive part of the ration. The things which we grow on the farm, as silage, clover hay, and alfalfa hay, don't seem to cost so much money, and yet if we will take into consideration the amount of labor necessary in raising them it would amount to more than is usually thought, but the grain ration must be purchased at the market price and be paid for in cash that comes out of the milk money, and consequently we notice it perhaps more than we would if it could be provided in some other way.

It will not do to scrimp on the grain ration because the cows will yield less. They must have a liberal ration. A good cow will pay for a good grain ration. We can use our best judgment in compounding this ration so as to get the right proportion of protein to the carbohydrates, and thus make it economical and profitable. If it is a balanced ration, and balanced with due consideration to the nature of the roughage part of the ration being fed, then we can get more nearly a complete digestion and assimilation of the ration, and a less amount of it will be necessary to produce results than as though it was not properly balanced. But even then, the grain ration is expensive, and I am of the opinion that the average farmer in Michigan should attempt to grow more of his grain ration on his own farm. I have advised for a long time to grow more peas and oats. Canada peas make a splendid feed that is rich in protein to help balance up the roughage grown on the farm, and if one has suitable soil and understands this crop he can raise a fairly profitable crop. In some localities, however, the pea doesn't seem to do well. For instance, in light sandy soil, the pea, unless it is planted pretty deep and gotten in very early is liable to be affected by the hot, dry weather of summer, and it doesn't fill well and doesn't develop well. We want rather moist, rich ground for field peas. A soil with considerable clay is better than a sandy one if the clay is well drained. And, of course, the same is true of oats, and a man with this kind of soil can raise anywhere from 50 to 60 bushels of peas and oats, which makes a splendid ration, or certainly assists very materially in cheapening the ration. If one can raise corn abundantly it doesn't pay to feed the cornmeal alone because it doesn't give a balanced ration. This ought to be balanced up by gluten feed or cottonseed meal or oil meal or something of that sort. Otherwise it will take so much of the corn meal to produce the necessary amount of protein that it will make a very expensive ration.

I am of the opinion, however, that we can feed a little less grain and more good clover and alfalfa hay to cheapen the ration. A cow ought to have all the

clover hay that she will eat up clean every day. If it is alfalfa hay well taken care of, so much the better, because it is richer in protein. But, neither alfalfa nor clover will displace entirely the grain ration. They, with corn silage, should form the basic part of the ration. Then give enough grain so that the cow will do her best and we can cheapen the ration. If we can raise a part or all of this grain upon our own farm then we do not have to put our hands down into our pockets and take out hard-earned cash to buy the grain with, but we can get a profit for our labor in producing this grain, which makes it more economical than it does to buy it or a substitute.

ROPINESS IN MILK.

This is the season that the milk dealer is likely to be troubled with ropy milk. Beyond a knowledge of its existence when his milk becomes affected, he has but little idea of how to cope with the trouble by following it to its source and applying a remedy.

Conditions are usually brought to light in about the following manner: The milkman making his usual round of calls is informed by some of his customers that after the milk had been kept for a few hours it became viscid, slimy, or ropy, apparently altogether unfit for use, and disgusting to handle. This is sure to cause a serious financial loss to the dealer as he may be entirely in the dark regarding the cause and control of such an unsatisfactory state of things. Bacteriologists have proven conclusively, after an investigation of numerous cases, that ropy milk is not caused by a disease-producing germ, but one that lives in water, and is not at all dangerous from a health standpoint.

This little trouble maker is scientifically known as *Bacillus lactis viscosus*, which means, the germ that makes milk viscid. It is so small that it must be magnified a thousand times before it can be seen. Its natural abode is in water containing organic matter where it lives indefinitely and multiplies innumerable. Let one of these fellows with the thick gelatinous coat peculiar to him fall into the milk can and the trouble is on. In 24 hours he will have millions of companions, which, with their slippery, slimy covering have developed in the milk. It is plain to be seen how it becomes sticky or ropy. As a matter of fact, the milk is practically a mass of them.

Investigation generally traces the source of trouble to the wells, cisterns or cooling vats. Just one drop of this water accidentally splashed into a can of milk would cause it to become ropy. If some of the water gets onto the milk house floor any dust on the same becomes infected and should it blow into the cans will cause the milk to become ropy. Even if the milkman happened to get his hands wet in lifting the cans in or out of the cooling vat or in putting on or removing the lids there is considerable danger of the milk being infected. Cans, pails and strainers should be thoroughly scalded or they will be a sure means of infection. Ropiness develops in from 12 to 36 hours so it is usually the customer who is the only one in position to first discover anything wrong.

Now for the remedy. The first thing we will want to know is, where is the germ lurking? This may be ascertained as follows: Thoroughly scald out a number of bottles and put in them a small quantity of milk fresh from the cow. Into one of these put about a spoonful of water from the cooling tank; into another the same quantity from the well or cistern used to supply the cooling tank; into another a little dust from the milk-every source that may be suspected of house floor or the stable, and so on from possible infection. Then, stop up the bottles and set them away for 24 hours when the contents may be tested for ropiness and the germ located. If the source of contamination is the well or cistern the water from these should not be allowed to come in contact with the cans or other dairy utensils. In case it is impossible to obtain any other for cooling purposes a little potassium bichromate may be put in the vat at the rate of one part to one thousand parts water. This prevents the growth of the germ in the water, but being a poison one should use it with caution. The floor and walls of the milkhouse should be thoroughly disinfected with a five per cent solution of sulphuric acid which may be applied with an old broom. In a nutshell, keep the germ out of the milk and it will do no harm.

Canada.

J. HUGH MCKENNEY.

THE SELECTION OF FEED STUFFS.

Last summer, or possibly in the spring, when the cows were going out to pasture we may have resolved in our minds that when the animals were again put in the stables and on a ration prepared by our own hands that it would be more carefully selected than the rations we have been in the habit of mixing in seasons gone by. This resolve to do things as they should be done comes to us regularly when the work to be done is a great way off, but when the duty is at hand we are very apt to overlook the delicate points that seemed important and go along in the easiest manner possible.

But the proper selection of feeds cannot be consistently overlooked. It lies at the foundation of the dairy business. An expensive ration will make it impossible for the dairyman to succeed financially while an ordinary ration may give him barely enough returns to cover expenses. By giving the cows just what they need in a palatable form one may if he has good cows, secure a satisfactory return after he has paid for the labor, wear and tear of equipment, interest on investment, and managerial salary. But that "satisfactory return" will not come unless this matter of selecting the ration is made a careful study and such feeds employed as will bring the most economical results.

An example will illustrate the advantage of various combinations of different feeds: On a ration of wheat bran, corn chop, alfalfa hay, and silage, the Oklahoma station found the cost of milk per gallon was 11.2 cents. When on a ration similar to the above, with the addition of cottonseed meal, the cost of milk was 10.9 cents per gallon, but the quantity of milk was slightly decreased. In another test of the cost of milk production on a ration of bran, corn chop, cottonseed meal, and alfalfa hay the cost was 11.7 cents per gallon. On a similar ration, with silage as a supplement, the cost was 10.4 cents per gallon, and the yield of milk was slightly increased.

Besides the amount of fats, carbohydrates, and protein contained in a feed, one should understand the effect the feed has on the cows. Beans and peas provide an excellent source of protein for human food, but with some persons these foods do not agree, and they must eat other things to secure the protein their bodies demand, not because the other foods will supply protein cheaper, but from the simple reason of necessity. And with the dairy cow the same may be found true. Cottonseed meal is very rich in protein and the price makes the unit cost of that element lower than it perhaps can be obtained in most other feeds; but it has been found that where one expects to keep his animals from year to year and wishes them for breeding purposes, as most dairymen now do, that the general effect of heavy feeding of this product upon the cows is deleterious. Cows fed oil meal or other concentrates usually keep better for a longer period than do those fed liberally on cottonseed meal. We should, therefore, not be hasty in the selection of feeds for the cows, but besides looking to the food nutrients we should determine, if we can, what the effect of using a particular kind of feed will be upon the cows.

The cows should relish their feed. It should be palatable, stimulating the digestive fluids and making all the food eaten as fully digestible as possible. The palatability of the feed has a further value in urging the animal to eat more than she would of a feed that lacks this quality, and in eating a greater quantity more economical production results, since a greater portion of the feed is turned into milk.

In the selection of feeds for the dairy herd there is, therefore, three factors, at least, that the dairyman should consider, first, the nutrients contained in the feeds; second, the effect they will have upon the animals, and third, their palatability.

Wayne Co.

A. H.

With the lesson of the undesirability of attempting to conduct two immense dairy shows at the same time at points less than 100 miles apart, it is in no wise probable that the year 1913 will see a repetition of this condition. Had either the Milwaukee or Chicago show given way so that one could have followed the other it is obvious that both shows would have been greatly strengthened. It is not our purpose to enter into the merits of the controversy, but for the mutual interests of these great shows some satisfactory agreement should be reached.



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Entered as second class matter at the Detroit, Michigan postoffice.

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DETROIT, NOV. 23, 1912.

THE MICHIGAN FARMER ONLY FIFTY CENTS A YEAR.

We, of course, believe and know that a weekly paper like The Michigan Farmer is actually worth more than one dollar a year to any farmer. We also state most emphatically that considering actual cost of publication that the publishers of such a paper in justice should receive fully one dollar a year for it. Our idea of proper circulation of a periodical of any kind is that it should be subscribed for and paid for voluntarily by the subscriber purely on the merits of the paper and its adaptability to his wants. This has always been the principle we have tried to maintain in all of our circulation work and would now be only too glad to meet all competition with the merits of the paper alone. But quite a number of our competing publishers of agricultural papers have, in their struggle to keep up circulation, sent hosts of salaried traveling men through the country with premiums of uncertain values, to canvass from house to house with their talk and great premium inducements, securing subscriptions to their publications, nearly all of whom would never have taken their publications on their merits. The actual cost to the publishers of getting subscriptions by these methods is very heavy and with the very best possible management is in excess of amounts received for subscriptions, so that the publishers are actually paying out something on each and sending their papers for nothing. We freely confess that during the past year we have, from forced conditions, unwillingly employed these unbusinesslike methods to some extent and now admit that with the best possible management and systems, these traveling men, with their expenses and premiums used, have cost us more than they have received for subscriptions. But we must meet our desperate competitors in some way and so decide for a time, at least, to give the cost of this competition to the subscriber instead of to the traveling solicitor and in premiums. Therefore, we announce that the subscription price of The Michigan Farmer is only Fifty Cents a year and will continue this subscription rate until some of our competitors decide to adopt some reasonable business methods in their subscription work. We particularly ask the attention of our readers to the fact that the traveling agent's method gives you no benefits, as under it you pay the full price of one dollar a year. We propose to save the expenses of the traveling solicitor and give it to the subscribers by the reduction to 50 cents a year. We need not say, perhaps, that the high standard of excellence of The Michigan Farmer will be fully maintained in every respect. There will be no curtailment of expense in any of its departments. There is no agricultural

publication in this country that is spending more than one-half as much for correspondence, editorial work and illustrations as we are on The Michigan Farmer. We also have already under negotiation several important improvements along advanced lines for next year that will add quite materially to the expense of the paper.

We do not contemplate any loss of money by this reduction, but to actually receive much more than we have under the expensive traveling agents and premium system. We appeal to our subscribers and friends to support us in this very liberal proposition by sending us their subscriptions promptly. To save trouble and annoyance we request all to send us an even one dollar for two years or an even two dollars, which will pay for five years. We also ask our readers to assist us by making known to their neighbors and friends this great reduction in price of the best and most expensive agricultural weekly of this country. We cannot make any promises as to how long this subscription price of 50 cents a year will continue, but will promise that it will never be any less.

CURRENT COMMENT.

With the passing of another Thanksgiving, other year the return of the Thanksgiving season finds us in the enjoyment of blessings bestowed by a bountiful Providence exceeding our deserts, and in most cases our anticipations. Too often are we inclined to be pessimistic with regard to the future and rebellious concerning the conditions which immediately confront us, but more often than otherwise these things ultimately work out for our material good, both as individuals and as members of society. While the past year has been considered one of discouragement to many farmers, yet the outcome has been better than was anticipated and we have occasion to be thankful for bountiful crops which are typified by the first page illustration in this, our Thanksgiving number. In addition to a continuance of material prosperity, there is every evidence of a healthy trend of public thought and sentiment, denoting an advance of social and civic ideals among the people of the state and country. Let us then observe the Thanksgiving holiday in a true spirit of thankfulness for the blessings we have enjoyed, not alone for personal blessings, and bounteous harvests, but as well for the freedom from war, pestilence and famine which we, as a state, and nation have enjoyed.

The Opposition to Woman's Suffrage.

It appears that even after the electors of the state have expressed themselves as favorable to the adoption of the constitutional amendment providing for woman's suffrage, organized opposition to the granting of the ballot to the women of the state continues to be in evidence. This is perhaps fortunate, rather than otherwise, since it is likely to bring the real opponents of woman's suffrage out into the open where they may be generally known and recognized.

It appears that in a number of counties in the state the full text of the amendment was not printed upon the ballots, as required by the constitution, and efforts are being made to have the votes in these counties thrown out in the canvassing of the returns. The first effort of this kind was made in Genesee county, where petition was made for an injunction restraining the board of canvassers of Genesee county from counting the ballots cast on the equal suffrage proposition. From the language used by Judge Wisner in dismissing the petition for a writ of injunction—which petition also set forth that the adoption of an amendment creating so many new voters would entail a heavy additional expense in future elections, and therefore would result in pecuniary loss to the state—it would appear that he considered the petitioner a figurehead backed by other interests opposed to the adoption of the amendment.

In referring to the above, Judge Wisner said: "I cannot conceive of such a situation unless it should be that the complainant and others he mentions are engaged in some business which has no moral excuse for existence, and which will be wiped from the face of the earth when women are permitted to exercise the franchise." Following Judge Wisner's dismissal the matter was taken to the supreme court by petition for mandamus to compel Judge Wisner to issue the injunction, which petition was

promptly denied by the supreme court.

In connection with Judge Wisner's statement it is interesting to know that the petitioner in this case was the keeper of a poolroom, and it is very generally believed by those in close touch with the situation that the chief interest concerned in the organized opposition to woman's suffrage is the liquor interest, as might easily be inferred from Judge Wisner's statement. Previous to election this same organized opposition was everywhere manifest, purporting to come from the National Association Opposed to Woman's Suffrage. This organization sought to influence the voters of Michigan through a cleverly worded advertisement which was accepted by at least one publication having a circulation among the farmers of Michigan. Space was solicited for this same page advertisement in the Michigan Farmer, but the advertisement was rejected in the belief that it emanated from the source above mentioned, and because the nature of the matter which it contained was calculated to deceive and mislead the voter rather than inform him with regard to the true source of, and reason for, the opposition.

For this reason we hope that the continued manifestation of this organized opposition may develop its true nature. Just who the people are who are opposing the adoption of woman's suffrage in Michigan is a pertinent question for the people to ask of those who have in any manner aided in the campaign which has been and still is being waged against the granting of the elective franchise to the women of Michigan.

The increasing popularity of vocational training is frequently evidenced in many ways. A recent report of the Superintendent of Public Instruction of Pennsylvania indicates that vocational training has increased greatly in popularity in that state during recent years, while the old idea of manual training has waned in popularity, both as a means of educating the student and fitting him for the earning of a living. Without doubt the commonwealth owes a duty to the ninety odd per cent of students who do not have the advantage of high school training, but who are compelled to take up life's more serious work after having attended the primary schools, oft times without completing the grade work in those schools.

By substituting more practical work of a vocational character for the purely technical work which is required to prepare the student for more advanced education, a vast amount of benefit will be assured that large class of students. The general introduction of agriculture in the curriculum of the common schools in the state of Michigan is an example of this kind, and one which we believe is bound to become increasingly popular in the state as the benefit becomes apparent, not only to the students of the common schools but as well to their parents who have a voice in their control.

The selling of a manufactured product is generally recognized in the business world as being fully as important a factor of success as its economic production. The same law will hold good in all lines of production, including agriculture. While it is important that the farmer produce his products economically, it is equally important that he market them wisely in order to secure a maximum profit. To this end it is absolutely necessary for the farmer to be a student of crop statistics and market conditions in order that he may place his products upon the market in such a manner and at such a time as to secure the largest possible returns from same. This is, of course, a matter of judgment in which mistakes will be made, but these mistakes will be fewer and less serious on the part of the man who becomes a habitual market student than on the part of the farmer who sells his products in a haphazard manner or upon the advice of some other person, which advice may or may not be of a disinterested character.

We desire to encourage every Michigan Farmer reader to become a close student of crop and market conditions and to this end we are planning on increasing our crop reporting service and broadening the scope of our already complete market reports in order to afford the student reader a still better basis for accurate conclusions regarding the best course to follow in marketing his products. In addition we shall seek to point out factors which are likely to have an

influence upon future market conditions in various lines of production, but leaving it to the reader to do his own thinking and reach his own conclusions as to the best time and manner in which to market his products.

Some market writers assume to be able to predict the future trend of the market with a degree of accuracy. This, however, is impossible for any man to do except in a very general way, and it is far better and more satisfactory for the reader to reach his own conclusions after informing himself upon the facts bearing upon the situation. Such a course gives a man a feeling of independence and confidence in his business ability which is most advantageous and which is a very considerable factor in success. In fact, the close student of crop and market conditions will not only have a better idea as to the most profitable time and manner in which to market his products, but he will also become better educated in the matter of market requirements and by keeping these requirements in mind in planning his crop rotation will add not a little to the profit of his farm.

An organization known as the Housewives Consumers Plan Co-operation League, which took up the fight for cheaper milk in the city of Detroit after the recent advance by the local distributors from eight to nine cents per quart, has grown rapidly in membership in consequence of this move. It is stated upon good authority that this organization now includes about two thousand women who are interested in the lowering of the cost of living. Not having been successful in bringing about a reduction in the price of milk, it is said that these women are now contemplating the establishment of a co-operative dairy and distilling station to furnish its members with cheaper milk. It is said that capital has been interested in the project, providing it is finally decided to carry out this plan. Also arrangements are being made by this organization for the purchase of staple food products in carlots direct from the producer for distribution among the members.

This effort toward holding down the price of foodstuffs to a reasonable level is a commendable one on the part of this organization. In this effort it is but natural that such a mistake should be contemplated as the actual production of foodstuffs used, such, for instance, as milk. There is probably no doubt that in embarking in an enterprise of this kind the product would cost more than it could be purchased for from producers who are already established in the business who have a far better knowledge of its technicalities and requirements. There is no question but that this organization might far better secure their supply of milk as they contemplate securing their potatoes and fruits, direct from the producers, in a co-operative way, for distribution among their members.

However, the work of this organization will be watched with interest, since it holds much of promise for the future, when producers may sell in a co-operative way to consumers who purchase in a similar manner, thus greatly reducing the cost of distribution, saving money to the consumer and at the same time increasing the revenue of the producer.

The Mortgage Tax Law.

According to a recent statement of Auditor-General Fuller, the total amount of mortgages upon which the specific tax of one-half of one per cent has been paid during the fourteen months in which the present mortgage tax law has been in force is \$129,300,000. Prior to the time when the mortgage tax law went into effect, the mortgages in the state which were on the assessment roll and on which taxes were paid, amounted to but \$48,000,000, or scarcely more than one-third of the total of the mortgages which have been filed under the new law.

Of course, a considerable amount of this total of mortgages was held by banks and loan companies, which under the old law were exempt from taxation on this class of securities. But probably not more than one-third of this total at the outside were so held, indicating that at least one-half of the mortgages in the state escaped taxation under the old plan of assessment. Notwithstanding this fact, the new law has not been generally approved by the boards of supervisors of the several counties of the state, a number of which have adopted resolutions requesting their representatives in the legislature to use their influence to have the law repealed. (Continued on page 479).

Magazine Section

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

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

With the Curious Whirling Dervishes

By Felix J. Koch.

OBSERVANCE of the approaching "Turkey Day" in our own land will not serve to turn the eyes of the nation from the Sultan's unhappy realm. War in any part of the civilized world awakens new interest in the powers involved, in addition to throwing many sidelights on the history and customs of the combatants. In Turkey, war has a peculiar meaning to certain members of the regular religious orders, who are called dervishes (a class resembling somewhat the monks of Christendom), for to these men, in time of war, falls the task, very largely, of urging the fanatics on. The oddest of the many curious payments made from the

catches the secret of their art. The men stand on tiptoes, place the one foot across the other in just such wise that the legs touch right at the ankle. Each twist of the foot, then, is of exactly the same length as the rest, and in this wise a strict uniformity is maintained. Round and round—once, twice, a dozen times, a hundred times—these men circle, and in the silent room the swish of their long, white skirts, rising in circles in the air from the motion and revealing taut white drawers beneath, sounds as the foaming of a distant brook, while the ever-shifting play of the white fluted skirts fairly dazzles one, just to watch it.

How often these men spin around we cannot begin to guess. Their revolutions are ceaseless and unending. How their heads can stand it, what fearful neuralgia it must have occasioned at first, and whether the prolonged exercise does not eventually affect the heart, are questions constantly arising in the onlooker's mind, but to all of them the guides reply in the negative, for some of these twirlers are old men, with grizzled beards, who have whirled regularly, once a week, for years.

Almost from the outset the twirlers close their eyes, and this, it is said, enables them to keep their balance after the first half-hour of twirling. Round and round, as some puppet in white on a pivot, they go, and it is forty minutes by the clock before the first sign of halting.

Then, of a sudden, the sheik pronounces the name of Allah, and, as if by some magic, each one of those spinning, turning figures comes to a stop, bows to the ground, rises and dons a little black cape. Then the vice-sheik goes, solemnly, to the chief. Bending, he kisses this one's hands, piously, and takes a place at his side. The oldest dervish does the same, but kisses the vice-sheik's hands as well; then the next and the next, each in turn, repeat, embracing all those gone before them. This done, there is a signal and the men file out, the ceremony gone through with for the week. The government may go on mis-

ing or crying wildly to Allah (pronounced Ah-lah), while their comrades simply go on with their endless revolutions.

How these men avoid collisions at the outset is beyond comprehension. They take their places, raise their arms, turn up the one palm, turn the other palm down, and then, the tall sugar-loaf fez straight on the head, they spin slowly, then faster, then with lightning rapidity, round and round and round, until the face first grows livid, then pale, and, bit by bit, the tired arms sink just a trifle and the hands take other positions. Now and then someone in the audience will be seen to lunge forward, as though he, too, would join in the whirling, and Moslems nudge one another and remark that he at one time must also have been a dervish and now longs to rejoin his old colleagues. Otherwise the scene offers no variations. There is only the swish of the skirts and the tom-tom of the drum to break the quiet of this quaint little byway.

When particular prayers have been said, and the ceremony lasts longer than usual, novitiates will give out and fall insensible to the floor. So often does this occur, in fact, that no particular at-

tention is paid to it. As with the Jerk-ers of Kentucky, many years ago, the excitement of religious enthusiasm is held to be the cause of the swoon, and the dervishes are left alone until they



Ye Dervish.

Ottoman treasury is that which goes as subsidy to the various convents of whirling dervishes.

To begin with, these "whirlers" are little bands of men—street laborers, porters and the like for the most part—who assemble once a week, in a building off from one of the mosques, to twirl and sing and dance until they fall down exhausted. By so doing they have helped erase the sins of the government and secure for it the favor of Allah. The more atrocities the Ottoman government may have committed, the more anxious is it for the prayers of the band, and so the more money does it contribute.

Visitors are permitted to attend and there is always a stranger or two in the dark little chamber where the services are held. The room is narrow and feebly lighted. To one side a latticed balcony is reserved for female spectators, in order that they may look on without being observed, while above them a gallery holds the orchestra, whose cymbals and drums and flutes may inspire the whirling toward their best.

Promptly at 8:40 p. m. the services begin. Eight dervishes, each in white jacket, belt and long white skirt, and bearing on his head the tall dervish cap, enter and form a circle about the vice-sheik, who is to be distinguished from the rest by a green fez-ribbon alone. At one end of the room the head dervish takes his place, clad in a robe of black and a turban; silent and immovable, he awaits their finding their positions; then, at the appointed signal, somber figures begin to twirl.

Nowhere in all the world has whirling taken on such a fine form as here. The whirling is bare-footed, and, as the swinging progresses, one gradually



Meditation.

come to themselves, for it is during this comatose state that true religious ecstasy is said to be felt.

Studying the Winter Birds—No. I.

By Orin E. Crooker.

WINTER would hardly seem to be a seasonable time for beginning the study of birds, but in some ways the novice will find that he can make better progress in the study of our feathered friends when the trees are bare of leaves than when they are in full foliage. To be sure, there will not be so large a variety of birds for him to center his attention upon but he will come to know this lesser number much more intimately than he would in summer.

Whether birds remain in our northern states through the winter is, in large measure, a matter of food supply. Some

certain berries is abundant. But at best the supply of food in winter is limited, and at any time it is probably only the most venturesome individuals of such species that remain through the months of snow and ice.

In order to study the birds that spend the winter with us it is only necessary to assist nature a little by providing in some measure for their wants. A little food, suitably placed, proves an irresistible attraction and it is thus easy to coax numbers of these feathered individuals to certain spots near the house where they may be watched to advantage, even from the shelter of one's living-room, either with or without the aid of an opera glass.

To this end one should pick out some tree that is conveniently situated with reference to the window near which one most frequently sits. Let this tree be known as one's "bird tree" or laboratory for observation. The larger the tree and the rougher its bark the better it will prove for the purpose. If it has a few hollows or holes up among its limbs, this will add to its effectiveness, for such places of seclusion, when located near an established food supply, may prove quite attractive to a downy woodpecker or a nuthatch as a retreat for the night. Thus one's "bird tree" may possibly be the means of securing a few feathered "roomers" as well as "boarders" through the winter months.

Having selected the bird tree it is well to build a shelf on its side toward the observation window. This should be constructed of old lumber that has a weathered surface—otherwise birds will be likely to shun it. Place it about six or seven feet from the ground and let there be a moulding around its outer edge, in order that such food as is placed upon the shelf may not easily be blown off by the wind.

This shelf will serve two purposes. Some kernels of corn placed thereon will probably prove attractive to a wandering blue jay or two and keep them in the neighborhood for a day or so at a time when bird life of almost any kind is welcome. A crow may in some localities make bold enough in very severe



Future Dervishes.

governing, for retribution for all of the past has been made.

This, however, is an ideal performance. Time and again as one leans over the balcony rail (for there are no seats here) to watch the whirling, one or more will grow fanatic under the exercise, throwing their arms in the air and chant-

birds, such as the flycatchers, find it necessary to go south even before the first frosts. Others that depend for their food upon grubs or seeds are able to spend the winters with us. Robins are frequently known to remain in some of the New England states through the entire year at such times as the supply of

weather to visit the tree if his sharp eye catches sight of the yellow corn. But it may be that the visitor which will give the most pleasure will not be a bird at all but a fox squirrel (in some localities a grey, silver, or red squirrel). Such a visitor, once he finds the table spread for his coming, will in all likelihood take his meals regularly at the bird-tree lunch counter. He will become quite tame as the winter goes on and often bring his acquaintances with him—serving them a full meal at your expense.

Right here it should be said that nothing should be kept on this shelf that will prove to be any inducement to English sparrows. Their continued presence around a bird tree will keep other birds away. Whole corn, being too large for them to eat, will not attract them in any number, although its very presence will cause foragers of this species to visit the tree now and then.

The food that will prove an irresistible attraction to many birds other than English sparrows is strips of suet nailed to the side of the tree. If these are placed where the sparrows can get no foothold on an adjacent twig they will pay but little attention to it. The suet, however, will be the means of bringing to one's

tree numbers of hairy and downy woodpeckers, chickadees, nuthatches, creepers and frequently other birds. A few bones, with shreds of meat or gristle clinging to them, may also be nailed to the tree. These will be visited daily by birds in search of food. In fact, one will be surprised at how often the strips of suet will need replenishing. The same bird will come regularly several times a day for weeks at a time to get a few bits of the food that serves to keep his bodily fires burning.

For birds of the sparrow family provision should be made in the fall, after the frosts have killed all vegetation, by gathering a few bunches of such dead grasses and weeds along the fence corners as observation will show to still retain their seeds. These should be tied with cord and hung away in a dry place where they will not be disturbed. Then when snows and ice are heavy upon everything they can be brought out, bunch by bunch, and hung from the side of the bird tree so that they will just clear the surface of the snow. Winter sparrows, juncos, fox sparrows and now and then some other varieties will call one "blessed" when they discover such a treat awaiting them.

BRAMBLE HILL.

BY ROBERT CARLTON BROWN.

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Synopsis of Preceding Chapters.—Nathaniel Edgeworth, eccentric, hard-headed and well-to-do, is passing his declining years upon his 400-acre farm on the outskirts of the village of Turtle Creek. His household consists of Mother Hubbard, housekeeper, and Brigadier General (by courtesy) Hornbill, a fellow veteran; Zeb Wattles, an aged musician who, with his daughter Jerusha, occupies a cottage (rent free) upon the farm, also spends much time with his venerable benefactor. Estrangement and finally death, robbed Nathaniel of his only son some years previous, following which, bitter remorse induced him to grant the means of a liberal education to his sole descendant and grandson, Sidney Edgeworth. In like manner he had befriended his sister's adopted daughter, Susan Dunlap. The story opens with Susan's return from boarding school and her full appreciation of quiet Turtle Creek as she views it from her own motor car. Sidney Edgeworth has completed his course at Harvard and rented an expensive apartment in New York where he is searching for a position as diligently and sincerely as his grandfather's allowance of \$500 per month will permit. Among obstacles encountered are two college chums—Doodle, a typical case of "more money than brains," and Jim, of an altogether better sort, who has found a job in Yonkers. Jim's last night in the big city is made the excuse for an all-night celebration. On their assembling in Sid's quarters in the early morning they find a telegram announcing the death of Nathaniel Edgeworth of Turtle Creek, who, in a heated argument with Brigadier General Hornbill burst a blood-vessel and immediately passed away. After the funeral of his grandfather Sid years to get away from Turtle Creek but remains for the reading of his ancestor's will, only to find that the conditions imposed by that document promise to indefinitely delay his return to New York. By the terms of the will Sid inherits the farm at Turtle Creek, and valuable securities in addition provided, that he lives upon the farm, with the exception of two weeks' vacation each year, for a period of four years and during that time acquires, by gift or purchase, an adjoining strip of rough land known as Bramble Hill belonging to the foster father of Susan Dunlap; or, in lieu of acquiring Bramble Hill, he must make the farm earn \$100,000 during the four years. Otherwise, the entire estate reverts to Susan Dunlap. On serious reflection Sid decides to accept the conditions imposed and considers the possibilities in bee-keeping as a start toward his hundred thousand dollars. The profitable production of wine from the wild grapes going to waste in fields and roadsides is also considered. He wires Doodle for a case of his favorite cigarettes and develops a determination to make the best of his new environment.

Jerusha stopped at Sid's rapid approach and turned challengingly standing in the middle of the road.

"Well," she exclaimed, as his eyes instinctively sought the glaring faults in her dress.

"Let me carry one," he offered, reaching out.

"You!" she laughed in his face, a boyish laugh, droll, whimsical, cynically bolsterous.

Sid did look rather inefficient, standing there in his modish clothes—he had even stopped on Main street to dust off the bottom of his trousers.

He flushed at the taunting laugh.

"It's too much for you," he said with slight reserve.

"You'd get your hands dirty," she an-

swered defiantly, the sum of the man probably having been carefully calculated before at the bee swarming. "Besides, the milk might slop over and run into those eaves-troughs on your pant-legs."

Not a shy little dewberry, hiding behind the innermost foliage of the bush, at least. A bold dewberry, hard by the dusty roadside, accustomed to conditions, hardships even.

"You object to the trousers, then?" Sid asked, looking at her quizzically. "Would you prefer me in kilts?"

She glanced down the road, gazed intently for a moment, listening; then summed him up in a slow, cynical smile, drew the muscles in her firm, sensitive arms taut, bent her body like a shapely bow, heaved at the milk pails and trudged on across the road. A bell clanged out some distance away, breaking harsh and metallic through the hushed hour of high noon.

"There's your dinner bell," cried Jerusha over her shoulder; "better get home and rub off the dust with toilet water."

Her combativity aroused Sid. In two strides he reached her side and wrested from her hand one of the heavy pails.

"Go on, leave me alone!" she cried, giving him a vigorous push, the pail tilting and slopping a liberal dipperful over the side into the turn-up at the bottom of Sid's trousers.

"There, now you've—"

The girl cut off sharply at the sound of an approaching automobile, placed her own bucket on the ground and turned with a challenging stare toward a bow-window car just turning out of the Edgeworth private road.

It was the motor of privilege. At the wheel sat Miss Dunlap, and beside her an important looking young man with a highly figured blue tie and a watch chain dropping into his breast pocket from the lapel buttonhole above, where it was fastened with a fetching stud in the form of a perfectly impractical tennis racket.

There was an amused look on Susan Dunlap's face as she took in the surprising tableau. The nut-brown girl's lips curled contemptuously and parted, the ruddy glow in her cheeks mounting to her delicate temples as the important young man beside Miss Dunlap nodded toward her as though she were some funny little toad in the road.

Sid turned his flushed face and gave Miss Dunlap a confused nod. The machine had come as a total surprise to him. He subconsciously noted the young fellow (it would have been hard to overlook him) and presumed he was the cause of Susan Dunlap's trip to Bayview.

Susan acknowledged his bow and, noticing the milk gliding contentedly down his trouser leg, called out, "Been trying the simple life?"

"Yes. Very complex, isn't it?" answered Sid, wondering why the fellow at her side glowered at him and put a finger between his thick neck and high collar, encouraging a freer circulation of air.

In a minute the machine was out of sight. Sid turned to find Jerusha stand-

ing stock still, looking after the auto, her eyes aflare, her proud little nostrils expanding and collapsing with the snapping of her eyes.

"Why, why, what's the matter. You're positively torrid!" he exclaimed, looking at her.

"Oh, nothing, nothing!" she cried, twisting at a tear in her dress. "None of your business." Her lips continued in that hard, straight line as she said, in an even direct tone, "Give me that pail!"

For answer Sid darted out a quick hand, caught the wire to the bucket at her feet and made off across the ditch to the Wattles' cottage. The girl standing in astonishment for a moment, then, her lips quivering down from the straight line, she followed him slowly.

He set both pails on the back porch and waited till she came up.

The girl had a "thank you" trembling on her lips; her eyes seemed very strange.

Sid hardly noticed her; he was remembering the dinner bell and that he was hungry, almost ravenous enough to eat a hulking steaming potato and its accompanying pork chop, though he would draw the line at the heavy preserves afterward.

"You're Mr. Wattles' daughter, aren't you?" he asked suddenly, as the girl struggled with her "thank you."

She changed in an instant, neck stiffening, arms stretching down at her sides and her mouth twisting back to that sour smile.

"Well, what if I am?" she demanded.

"Oh, nothing, nothing at all," he answered, quite startled by her vehemence.

"Only if you are you've got a mighty nice fellow for a father. He's so gentle, so simple—really, Miss Wattles, I haven't seen anybody in Turtle Creek I like nearly so well."

She looked at him strangely, evidently wondering if he were making fun of her; seemed gladdened for a moment, then fell back on the easier, strangely unyouthful, cynical smile; switched back again and stood deliberating.

Meanwhile Sid, considering the matter closed, being very hungry and fearing the wrath of Mother Hubbard if dinner should be cold on his arrival, removed his hat, bowed, and sped swiftly down the Edgeworth private road to the old house where Hornbill, Mother Hubbard and Oley, the hired man, impatiently awaited him.

Chapter V.—Jerusha Has an Idea.

Sid sent to Chicago for books on grape culture and wine making. In a week's time he had learned enough to feel certain that his wild grape wine idea was practical.

Mother Hubbard resurrected an old wine-press, cob-webbed, from the cellar. "If they'd only left some wine in that when it was put away it would be priceless now," exclaimed Sid, examining the ark and rejecting it in favor of a new one offered in a dealer's catalogue.

Before the new press arrived, and while Sid was busy with wild grape gathering privileges, easily secured from the neighboring farmers, a dozen swarms of bees came by express to Watts and Sid dropped his grape interests only long enough to help Watts and Jerusha handle the new arrivals. Jerusha fitted him out with a mosquito-bar head-dress, a white jacket and canvas shoes, and Watts gave him valuable lessons in bee-keeping, though Sid found he learned more quickly from Jerusha, who was as deft and proficient as her father in the management of the swarms.

It would be a matter for close analysis to determine whether Sid's interest in the bees depended on Jerusha, or whether his interest in the girl should be attributed to the bees. Anyway, he spent much time daily with both and was even reluctant to tear himself away from the engaging new interest when his saddle arrived from New York and he recalled the promise Susan Dunlap had made him.

In the thick of the bee business he had called once on Susan and had felt a vague chill in the clumsy, curious welcome Sam Dunlap had extended. He had met her by chance once since then and they had got on much better without the blighting restraint of her father.

Sid called her up on the primitive party phone to announce the coming of his saddle and remind her of the ride to Lake Wingra.

She answered in a pleased tone that made him feel they were already more than acquaintances. The excursion was promptly arranged for that afternoon and Sid, all eagerness, took his puttees from his trunk and carried them to the back stoop to blacken them himself for the first time in his life.

Jerusha strolled up from the apiary, which had been located in a splendid southern exposure between the Edgeworth house and the Wattles cottage.

"Watts says we'll take out some of the filled frames this afternoon and put them in the new hives," she said, leaning against the churn and watching Sid with interest.

"Fraid you'll have to count me out," he looked up with an anticipant flush. "I'm going to try that Kentucky colt; the General says she has five gait and he is the only one on the farm that's ever tried her."

"Oh!" there was a catch of disappointment in Jerusha's tone.

"Don't think I'm shirking so early in the game! A fellow must have some time for enjoyment." He paused and glanced at her thoughtful face, adding hastily, "Not that I don't enjoy fooling with the bees, you know. But I need a change."

"Yes," she said wistfully. "I guess everybody gets to feeling once in a while that they need a change."

"That sounds gloomy for you. Aren't you happy enough?" he said slowly, rubbing a buckle.

"Oh, of course," her voice was gay in spite of her trembling lower lip. "But I'd like to see something beside the country for a change. Watts says I should, and if the bees and everything go all right he'll send me. I just can't wait!"

"You'd soon tire of the city, same as I do of the country—and shining my own shoes," exclaimed Sid, dropping his work and pushing back the damp locks from his forehead.

"But Watts can really get along without me now. Not that he always couldn't!" she cried quickly with a return of her old defiant manner. "But the bees keep him interested now and he really doesn't need me."

"How'd you like to go east to a boarding school?" suggested Sid speculatively.

"Oh, I don't want to go to school. I'm too old. I want to do things. Watts has taught me to teach myself. I'll get just as much from reading."

"You know how to concentrate already, and I guess that's the end of study. But I'll talk to Watts and we'll see if we can plan a change for you."

"Oh, don't do that, please! He knows how badly I want to see things and it will only hurt him to think I can't," she replied lightly, leaving the churn and starting back to her bees.

Sid looked after Jerusha wistfully; she was such good company, he rather wished he had decided to spend the afternoon with the bees.

But he had to look forward to and Jerusha was farthest from his mind when he had finally mounted the spirited filly and taken a gallop about the doorway to calm the animal down.

He waved gaily to Wattles as he swung past, and in ten minutes dismounted in front of the Dunlap house, throwing his reins to the Dunlap hired man, already holding a fine little bronco at the horse block.

Susan was awaiting him on the porch dressed in a captivating riding suit of the most proper cut.

They loped off together, looking for all the world like a snappy, breezy summer magazine cover done in crisp line.

"I'm hearing great things about your industry," said Susan, as they reined in to turn off the Bayview road.

"From none of the villagers, I hope?"

"No. From Mother Hubbard. I met her in town trying to deny—" she stopped and flushed.

"Deny what?" Sid asked quickly.

"Oh, you know. People will talk; and it's all over town that you're starting something dreadful, a brewery or saloon, I don't know what all."

"The grape wine?"

"Yes."

"You were wise to withdraw from the office of taster. I suppose I must taste my own wine if I make it here in Turtle Creek?"

"The town has a tender conscience, you know. Better make it unfermented grape juice instead," she suggested promptly, having given the matter some thought.

"Why, say, that isn't a bad idea! There's just as big a market, I suppose, and it wouldn't offend the natives."

"It would be much safer," she offered judicially.

"But what did Mother Hubbard say?"

"That you had gone to keeping bees and were working very hard."

"Yes, I've a bee in my bonnet, but I don't know why on earth Mother Hubbard should defend me. I frowned openly on her coffee last night."

(Continued on page 472).

A THANKFUL THANKSGIVING.

BY M. B. R.

The family reunion was to be at Grandpa Horton's. For this the children were glad because, if there were no coasting out of doors, there was sure to be plenty of it in the great barn where they could slide down the fragrant hills of clover and other dried grasses to their hearts' content.

The older young people were also glad, because grandpa was usually in a reminiscent mood at this time and they were likely to hear something entertaining about early days.

But this year there was to be a new note of interest added to the occasion. Everybody was to come prepared to give some special reason for being thankful, preferably some historical face with a colonial tang.

After all were seated around the festive board and grandpa had returned thanks in his simple, reverent way, Uncle George remarked that this was a small company compared with that of the first Thanksgiving, there having been ninety Indians present at the settlers' dinner. "They were no sponges, either," continued he, "but proud-spirited honorees who did their part by going out and killing five deer as their share of the feast. However, I am thankful that, although venison doesn't often appear on present-day menus, cranberry sauce is likely to gladden our eyes for years to come."

Charlie supplemented this by telling how Governor Bradford specified that "besides water-fowl there was a great store of wild turkies" that year, "but," he added, "there are plenty of good things besides wild turkeys and I see a whole lot of them right now."

Aunt Lydia was glad that she was in no danger of being burned as a witch on account of grandpa's late illness.

Aunt Esther ventured that the huge colonial fireplaces were more cheerful and picturesque than really comfortable, and she concluded, "We of the middle west would call their dimensions astounding. Just think of it! A chimney twenty feet square. I was reading only a few years ago of one of that size still standing in Rhode Island and the remark was made that an ox could have been roasted in it. A folding trammel, or pot-hook, nine feet long has been found in one of those old-time chimneys, but I am truly

thankful for my range, and am glad that I never have to lift kettles on and off the pot-hook, or burn my face over open flames."

Willie observed that he was thankful he lived in the day of plastered houses, for he shouldn't enjoy having his head scratched, while still in bed, by a hungry wolf thrusting his paw through the crack of an unchinked cabin as was the experience of a certain early pioneer.

"Yes," rejoined grandma, "and with your unchinked cabins went those old rough puncheon floors. I have read, too, of a dear, brave woman who begged her men-folks to build their house around a big flat stump which she might use for a table. I am rejoicing in smooth floors, pretty rugs, vacuum cleaners and plenty of convenient tables."

"Speaking of tables," said Cousin Adeline, "the very first settlers used what they called a table-board. This was about a yard wide and rested on standards something like a sawhorse. Although the forests were full of fine lumber, there were no sawmills and but few handsaws with which to cut boards. I enjoy our extension table, especially at Thanksgiving. I like plenty of elbow room then."

"While we are alluding to tables," put in Phil, just home from Harvard. "I must say I appreciate this beautiful plate and the other dishes that adorn this one. Our ancestors were content with what they called trenchers. These were made of wood and often were mere blocks ten or twelve inches square with a hollow place in the center into which porridge, meat, and vegetables were placed. Usually two children, or a man and his wife, ate from the same one. Even governors used them, and for many years Harvard boys ate from trenchers at the college mess-table."

And now it was Kate's turn. Brandishing her handsome fork she exclaimed, "I am thankful for this. When America was settled, only a few forks were found in England. The first one brought over was for Governor Winthrop in 1633. Thirty or forty years later a few odd, little two-tined ones came over, but I don't see how they could use them."

"I am glad that I have an individual salt," declared Uncle Ben, who hadn't been home in ten years. "Those old high, silver saltcellars no doubt were imposing and, had I been the guest of honor in those days as I am today, I suppose

WHO SHOULD BE THANKFUL?

BY IRMA T. SOPER.

"You ask me what I'm thankful for?" Said Farmer Brown. "Well, let me think! The crops wa'nt much good this year, but my son Thomas doesn't drink. When Thomas went to town last spring He got to runnin' pretty 'wild'; Mother an' I felt pretty bad; For Tom, you know, 's our only child. A month ago our boy came home— His voice a ringin' straight and true— 'No more of drink for me,' he says; 'With all that crowd you'll find I'm through.'"

"For what have I to be thankful?" Asked the laborer in his cot. "When my wages but meet the bread bill You think I've a pretty hard lot. Well, maybe, but wife is still with me— She was awfully sick last spring. But she lived, and is strong and smiling, Do you wonder I work and sing?"

"Aye," answered the bent old woman Who scrubs on the courthouse floor, "I've a lot to be thankful for, mister, Though I'm most mortally poor. The childer' are larnin' that fast, sor— They go every day to the school— My Pat is that kind and hard workin'."

He lives by the Golden Rule." And next of a man imprisoned The question then was asked, "For what have you to be thankful With prison and labors tasked?" "For the fact that I'm not guilty, I'll work out my time if I must For the loved ones who wait my return— ing, For a God that is loving and just."

"Now, surely," I thought as I journeyed To the County Home for the Poor, "I'll find none there to be thankful, Who are lodged inside that door." So I asked old Grandpa Jonson Who's been "blind for twenty year." But he answered me quick, "Why, bless you, I'm glad I can talk and hear." Dear Grandma Trent, bedridden, The blues she'd put to rout By the sunny smile she gave me When the Bible she pointed out.

So I found that each one was thankful, In my journeys all that day, And I thought, "I've a world of blessings," As my heart grew light and gay.

I should be sitting 'above the salt' as they called it; that is above the middle of the table, next to the host and hostess who, side by side, sat at the head. Joe, over there, would be 'sitting below the salt' where children and people of no dignity were seated, but I am satisfied to be on middle ground with a saltcellar all my own."

"It wouldn't have been half so bad to be seated with the no-accounts," rejoined Joe, "as to be cut off by log shutters or oiled paper windows from seeing outside. I am thankful for the fine, large, glass window in front of me through which I can see the river."

"Well," said Bob, who had come in from the city, "I am grateful for modern lighting. When grandpa was young they always announced their evening meetings, spelling and singing schools, as beginning at 'early candle light.' I believe grandma still has a pair of brass candlesticks, snuffers and tray, but oh, dear, how dismal to have mended socks by a tallow dip!"

"We mustn't forget the rural mail," declared Frank. "The carrier was called the 'post' and usually went on horseback. In winter it took a month to go from

New York to Boston and return. It was the custom to leave the mail on the tavern table or bar-counter. People went in, looked it over, and if they chanced to find a letter addressed to themselves they paid the postage on it, which was high in those days, and walked away with their possession. Think of getting a letter from your sweetheart after its being overhauled by the whole community!"

And so the chat went on. By the time the dessert appeared nearly all modern conveniences had been touched upon—the telegraph, farm machinery, automobiles, phonographs, and everything that makes rural life so comfortable today.

Then, repairing to the parlors, the guests sang songs and hymns to piano accompaniments, tried new records and played games until the full moon, peeping in at the windows, reminded them that it was time to make ready for the homeward ride.

MAKING THE MOST OF THE TRAPPING SEASON.

BY OLD TRAPPER.

Each fur season, which really begins in November and ends in March, there are thousands of dollars wasted or lost by farmers and young trappers by reason of their not knowing how to properly prepare pelts for market. Not only are they not acquainted with the best methods and practices, but many fail to appreciate that the season's success depends largely upon promptness in preparing pelts and getting them to market. Delay or procrastination is expensive, and especially so during the early part of the season for the reason that the demand is keenest then and prices, in consequence, more satisfactory. Mark the practice, in this regard, of those who make trapping pay big profits and it will be found that, almost invariably, they are the first to make shipments in the fall. They have learned that in marketing furs and hides, as in disposing of any other product, the best time to sell is when the buyer is most anxious to purchase.

Lest the beginner become overzealous in his desire to reach the market early, a word of caution as to the danger of securing fur before it is prime is not out of place here. The pelt side of a prime skin is white or flesh color; if not prime it will turn blue or black. Most skins, however, taken in this region after the middle of November or the first of December are prime.

If the fur becomes muddy or dirty, from the efforts of the animal to escape, be sure to wash off all the mud, also comb out burrs. It is hardly necessary to wait for the fur to dry before putting on the stretcher, but it is a good idea to "crack" the skin to remove most of the water. It is best to skin the animal as soon as possible after catching, and stretch the pelt at once. While warm it will stretch larger than a cold, stiff pelt. To properly skin mink, opossum, muskrat, skunk and fox, lay them on their backs, commence at each hind foot and slit with a sharp knife to the vent or root of tail; with a little work the skin then can be pulled back over the body, or turned wrong side out. When the front legs are reached, hook the finger under, skin them out to the wrist, and cut the skin off there. When ears are reached cut them off close to the head, thus leaving the ears on skin; cut close

AUTUMN IN THE WOODS—By ALONZO RICE

On rippling tides of autumn's wine-like air,
Bright argosies of leaves are borne today;
And he who sought the Golden Fleece so fair,
Had not such dreams of beauty by the way.

With what a splendor glows the fading scene;
The timbered hillsides fairy treasures hold;
The upland shows the gum-tree's glossy green,
And maples bright with their unminted gold!

The nut-shells carpeting the forest ground
Tell of freebooting squirrel, mounted high,
Who, like bold Robin Hood, the forest-bound
Has made his home, his roof the open sky.

And where the breath of autumn, balmy sweet,
The burdened branches of the browning trees
Inconstant sweep, gay fare the children's feet
In quest of their nut-crowned Hesperides!

The giant oaks, arrayed in russet and gold,
Triumphant stand, the goal of victory won;
The lithe persimmons' half-bare branches hold
Their purple fruit, slow-reddening in the sun.

On the light breezes the witch hazels flaunt
Long, golden petals, ceaseless to and fro;
From dark recesses lingering songsters haunt
Where globes of the red partridge berries show.

The low, soft twittering of the waxwing comes
From out the cedar gloom, the livelong day;
In fruitless quest, one faring bee still hums,
A moment poised, then booms full twang away!

The last flash of the summer's brilliant life,
The crimson of the cardinal grosbeak shines;
From field and wood, with song no longer rife,
Songsparrows southward sail in wavering lines.

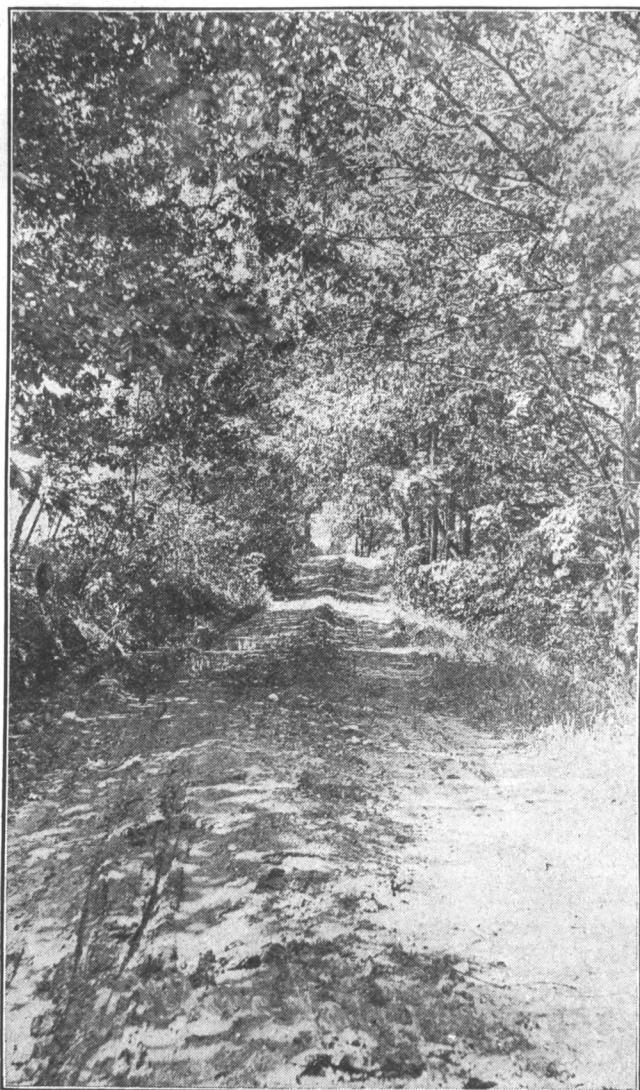
With petals matching heaven's serenest blue
The gentians to the wind's light touch unfold;
And dreaming still if the old faith be true,
The lovers' footsteps thitherward are led.

The robin's speckled breast is turning brown,
The hoar frost glitters on the stubble-land;
With lonely calls the blackbirds hasten down
The slanting sky, in many a gathering band.

On purpling grapes the ruddy sunlight falls
Subdued and soft; the drowsy crickets learn
A song of sorrow, while the partridge calls
In sadder strains as sunsets fainter burn.

Like one who doubts, the waning year abides;
"Nor yet on summer's death, nor on the birth
Of trembling winter." Clouded the red sun hides,
Then drops betimes behind the tilted earth.

Farewell to summer! Shades of twilight gain
Daylight's redoubt. On sunny cohorts thinned,
Fall the first lances of the conquering rain,
As sounds the bugle of the marshaling wind!





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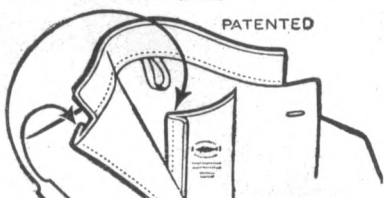
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around eyes, and skin clear to tip of nose, leaving tip of nose on the skin.

Tails should not be left on opossum, or muskrat, but all other fur bearers should have tails left on skin. Take out the tail bone, which is easily done by splitting a stick and putting it "astraddle" of the tail; grip tightly, pull and the bone will slip out. Then split the tail on under side to tip.

Raccoon must be split up the belly to point of under jaw and on under side of front legs to wrists; cut skin off at wrists. Raccoon are stretched open and the others mentioned must be cased or stretched over shaped boards, which are made to conform to the general shape of the animal. This is important, for if a mink is stretched muskrat fashion it lessens the value, or vice versa.

When the skin is first drawn down on the "paddle," as it is often called by trappers, is the time to remove surplus fat with knife and thumb. It is important to remove the fat, for warm weather often causes "grease burn," which causes the fur to "slip," and the skin is then practically worthless. Use plenty of small nails to tack on skin; it should then be hung up in a well-ventilated place, where the sun can not shine on it, or rain blow onto it. A good current of air is necessary in making a pelt—"cure" in good shape. Never salt pelts. It lessens their value. The stretcher boards should be made of some thin, soft wood dressed on both sides. Shave them down to required shape, and sandpaper the edges.

When the skin is thoroughly dry or air cured, remove from the stretcher and hang up away from mice, cats, etc. Fox skins are often turned fur side out, when partly dry, and put back on the board to finish drying. Be sure your board is 1/4-inch narrower at the shoulders than back along the body, or you will have trouble in removing the skin. Always stretch flesh side out and, when ready to take off, draw out the nails and "bump" the nose end of the board down on something solid.

When ready to ship, lay the skins on one another, without doubling if possible, except to tuck tails into the bodies, which prevents them from becoming greasy. Tie up the bundle securely, wrap in burlap, and tie or sew with coarse twine. Always make an invoice of the shipment, and be sure your name and address is on the tag. Also require the express agent to give you a receipt, with value of the shipment stated thereon. All this is important, as it pertains to the business part of the matter.

BRAMBLE HILL.

(Continued from page 470).

"Why, she talks as though you were her child. The poor dear, she loves everybody."

"Yes, I've noticed she has a most amazing way of folding my socks. I suppose that's an expression of it."

"Of course it is; a woman would never trouble with them at all if she weren't interested in the man who wears them."

"There's an idea! I'll carry a complete line of hosiery around with me after this and try every girl I know on them."

"Don't begin on me," she laughed. "Our cook rolls up father's."

"No, you're in the secret and would probably fold them carefully just to get even with me for trying you."

"I don't know that I should fold them at all."

"Then I should take it as a very favorable sign, in spite of your indifference. But tell me, is that Lake Wingra over there?" They had reached a pebbly knoll and beyond the trees stretched a sheet of shimmering water, rippling in the sun.

"That's it. Isn't it a gem?"

"Such a convenient little lake; one might carry it about in one's pocket for picnics."

"You must be more impressed with our proud features. Why, if Aloisius Stimpson heard you say that he'd dam it all up so you'd have nothing to carry off."

"Aloisius Stimpson, who's that?" asked Sid, vaguely recalling the name.

"Why, he's chief of the council of fathers at Niles Pash's store. He swears beautifully; his pride in Turtle Creek is the only thing sacred to his tongue."

"I'll have to watch myself then; even Hornbill protests when I take exception to his statement that Turtle Creek would have been as big as Bayview if it hadn't gone dry at an election some years back."

Sid felt it was quite the pleasantest afternoon he had spent since coming to the country and he was very reluctant to leave Susan when they arrived at her

house and found it was only a little after four.

But on the ride home alone he pressed his horse forward in the hope of arriving in time to help finish with the bees.

Catching sight of Jerusha in the sunny field where the new hives had been set up, he reined in and gave his horse to O'ey, who was passing on his way to the house.

"You're too late," exclaimed Jerusha as he came up. "We've just finished. Every one of the new swarms has enough bee's bread and honey now to last it through the winter. It was great fun. Sorry you missed it. I've got to run over to Havenhill's for some butter now." She straightened her back slowly as though it ached, and turned toward the creek.

"I'll go with you," suggested Sid.

"All right. If you want to. Have you tried that new wine press yet?" she asked as they started off toward the neighboring farm.

"I haven't had time," he replied, thinking of the village gossip handed on to him by Susan. "I may give it up."

"That's no way to talk. You can't expect the bees alone to make a hundred thousand dollars for you."

"Oh, I guess my chances at making that are pretty poor. The figure is big enough to stagger anybody, don't you think? Even you would give it up."

"No. I wouldn't," she said emphatically. "Think of the chance! Only four years and then you've got your whole life to do just what you want. You could go back to Paris and stay longer, as you say you wish you had—and, and Italy. You could go anywhere—do anything!"

"Your picture is very tempting," admitted Sid. "But what can I do? How would you make any more money out of this land if you were I?"

"Oh, there's such a lot of ways. I'd do it! I know I'd do it—if I were a man; no, if I were myself," she answered, "and I were to get a million dollars out of it. I'd find a way—anything. I'd work my hands off for four years and get out of Turtle Creek and to some place where I could see and learn and do the kind of work I'm going to do, some day."

Sid glanced sideways at her. She was tense. He always felt incompetent and futile before her ambitious spirit. She was such a startling little person. Think of overcoming environment as she had; using as good English as Susan Dunlap or himself, and all from reading it in books. But then, her father had given her something; he had learned much and studied music in Berlin, though it had all been swamped beneath the stagnant pool he had sunk in. If only he had had some of his daughter's initiative! Jerusha had the knowledge and wisdom of a woman already, having brought herself up rigidly, in spite of surrounding difficulties.

"Yes, I really believe you would," said Sid earnestly. "But how; get down to details." He swung his arm at random toward the grove along the creek. "There's some land that's bringing in nothing. What would you do with that?"

She stopped on the path and looked at the ground, limestone cropping out among the trees and preventing its use as farm land.

"Oh," she cried suddenly. "I know! The Old Settlers' Reunion takes place in less than two weeks. Rent the land to them for the day. It's better than the Glen, where they've held it the last ten years."

"By jove! You are practical!" cried Sid admiringly. "What's the amount of rent I could get? Who's the proper person to see about it?"

"Twenty-five dollars," she cried. "You will have to see Mr. Stimpson; he's one of the trustees of your grandfather's estate, you know."

"No, I don't know. Miss Dunlap mentioned him this afternoon. I dare say I've seen him," answered Sid languidly, his manner having suddenly changed at the mention of the rental price. "But what's the use? Twenty-five dollars wouldn't help much toward the hundred thousand."

"It would be a beginning, anyway," answered Jerusha confidently. "Besides, you could get the privilege of selling lemonade and ice cream for the picnic. You're the one closest at hand if they have it here. Don't look for big things all at once. Take care of the little things. Go on, go to town right now. This minute! See Mr. Stimpson about it. He'll be with the rest in front of the store; you can tell him from the others because he swears so dreadfully."

"Say," replied Sid with a speculative smile, "I think I'll do that. It would be something to pass the time, at least. I

like that lemonade and ice cream part. Once I superintended a keg party at college. I know where to get the tin cups for less than cost, because the fellow's father manufactures them himself, and he gives them to his friends when they have keg parties. I know how to turn the spigot, too. I'll sit astride the barrel of lemonade and cry out like a Roman herald, 'Pink lemonade—er—warranted not to fade—er—and all the rest of it, you know. I'll make money out of it, too. I will be a captain of finance, I will out-general Brigadier Hornbill with all his rent-collecting proclivities; I will make a temple to action, and worship there daily. I will barter and sell in the public marts. I will vote early and often and become a model citizen. Miss Wattles, I fell it coming; it's been on the way so long. I am the human century plant of business ability. I am about to bloom! Today I am coming out. I feel the quickening of the sap in my veins. I shall burst shortly, I shall dazzle the world with my radiance, the brilliance of my business ability. I shall—"

"Meantime you haven't even rented the land. Go along. Go now!"

Sid could never understand Jerusha's power of transmitting enthusiasm. He didn't like the notion of facing, for the first time, the assembled fathers at the store. But Jerusha turned suddenly and left him alone, calling out, "Good-bye!"

When he had recovered his breath there was nothing left for him to do but cut cross-lots to the village.

As he walked along he began to take quite an unusual interest in the Old Settlers' Reunion, the lemonade, ice cream and all. It was a sun-rift in the gloom clouds he had been pulling about his eyes and persistently burying his head in.

What if he could make that one hundred thousand dollars? Oh, yes, Sidney Edgeworth was a visionary, but for what else had he been trained?

If he could manage to make a hundred dollars out of that Old Settlers' thing! Well, it would be something; a start. Then it occurred to him that he'd have to do a stroke of business equal to it a thousand times. That discouraged him utterly.

It did look difficult. But he'd have to take a brace, go to church and stop smoking cigarettes. Yes, he'd have to; at the thought of it his hand mechanically slid into his loose outside pocket; he drew out the heavy, plain cigarette case and extracted a very fine sample of a Utopia. Lighting it, he continued on his way up Main street, bound for Stimpson and a settlement of the ground rental.

At the corner store he halted, nervously inhaled a deep puff of cigarette smoke and, with forced calmness, surveyed the awesome body of village fathers, gathered on boxes and tilted-back chairs beneath the porch roof.

Their expressions were hardly inviting. He didn't know which one was Stimpson and had no way of telling, except for Jerusha's hint, which he didn't see very well how to test.

"I say," he began, addressing the body at large, "I should like to speak to Mr. Stimpson on a little matter of—er—business. Can you—er—am I addressing him now?"

He had luckily hit on a transmittable means toward the desired discovery.

A lank, wiry man, sun-wizened and rickety, chewing a stogie in the front row, removed the cheroot as carefully as though it were a meerschau pipe in the process of coloring, expectorated into the sawdust box at his side, and drawled in dry, hay-feverish voice: "You air addressin' Aloisius Stimpson, but ef yeh don't take that gol durn coffin nail out of yer dod-blasted soft-speakin', citted mouth, Aloisius Stimpson ain't goin' to say a word to yeh, much less talk business. I hope that percolates through yer—"

There was more profanity rippling along, crowding for utterance, but Sid promptly threw the butt away and cut off further remark.

The gentleman answered Jerusha's description all right. It was Mr. Stimpson, and from the admiring glances cast in his direction by his collected colleagues it was very evident that Mr. Stimpson had stated his platform on the all-absorbing question of Nathaniel Edgeworth's grandson, and had said just what he said he was going to say on his first public meeting with that young scion, of whose ancient house he was proud to be a trustee.

Mollified, but not won over by Sid's bidability, Mr. Stimpson nodded his head in acceptance of the butt-throwing act

(Continued on page 475).

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A BELATED THANKSGIVING DAY.

BY S. VIRGINIA LEVIS.

The tiny home at Fernbrook was utterly different from the fine city residence from which they had been transferred about two years before. But the novelty of it all had appealed so strongly to the children that its charm had not lessened.

True it was that even holidays brought scant luxuries to the plain table of the Wentworths, and Christmas meant meagreness in the way of gifts, but the twins felt amply compensated by the broad stretches of hills whose crests and nooks held such wonderful delights.

Certainly father had changed from the cheery man he was once, and "Mother seems terribly worried sometimes," confided Annie to her twin chum. "And all on account of that wicked man—father was talking about it last week again," Fannie commented.

Both girls had a hazy knowledge of law proceedings that every once in a while summoned Mr. Wentworth to Red Bluff, about forty miles distant. Here it was, the very day before Thanksgiving, and Mt. Wentworth was expected to join her husband in the big city to sign some mysterious papers.

"It will be very late tonight when we return home," supplemented their mother, as she finished giving instructions to her "two trusty wee maids." She kissed eight-year-old Dora next, and lifted baby Ralph for a final hug. "No harm could come to my darlings in this peaceful spot," she mentally reassured herself for the twentieth time.

As she set out for a nearly two-mile walk to the station, the four watched her through the softly falling snow and tried to believe they wouldn't feel lonely.

"You did the milking this morning—it's my turn next," remarked Annie to Fannie, as they, along with Dora, who was armed with the fire-shovel, set out to clear a path to the barn while Ralph napped. In some places the ground was almost bare, but where the snow had drifted the girls had great fun shoveling it aside.

The path was short and they soon reached the stall of their only cow, the fawn-coated, fawn-eyed Buttercup. "I'll do the straining," announced Dora, determined to share responsibilities; and when Ralph awakened for his supper he clapped his hands delightedly at sight of his blue china bowl of foamy milk.

The snow continued to fall with night's descending shadows, and soon four drowsy heads were pillowed in dreams, to awaken betimes to greet father and mother with Thanksgiving kisses.

"Oh! they never came home!" exclaimed Dora, sobbingly, as the sisters peered into their parents' room. "But they'll be here all right—never fear," assured Fannie, bravely, though not without inward misgivings.

"Certainly," confirmed Annie, who possessed almost unlimited faith in their father's omnipotence. "Nothing ever happens to father, and mother's with him, so there's nothing to worry about,

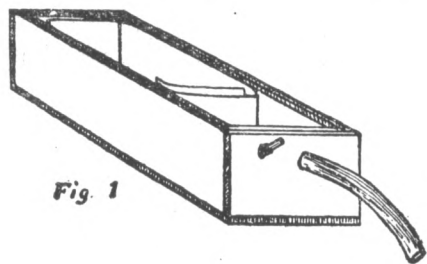


Fig. 1

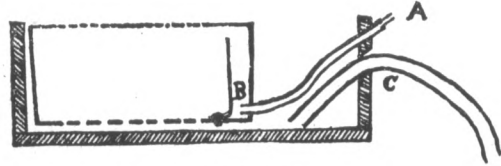


Fig. 2

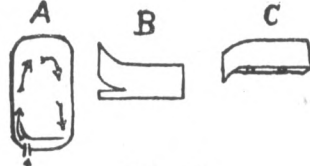


Fig. 3

you see." But as the trio went to the windows and contemplated the glistening landscape, its snowy heaps seemed more of a menace than a delight.

It was fortunate indeed that the way to the barn was so short, for a comfortable path was beyond the strength of even three such willing pairs of hands. However, by heroic perseverance, Buttercup missed neither her breakfast nor her milking.

"We're much poorer than I thought, Annie," remarked Fannie, as they set about preparing the noonday meal. "Nothing but half a loaf of bread! If we hadn't eaten so much yesterday—" she

faltered. "But we can't starve on milk," agreed the twins, yet undaunted.

Their holiday meal consisted of hot milk, salted, with one slice of toasted bread apiece for Dora and Ralph. They recalled stories they had heard of persons in desperate situations, and accordingly appreciated the fact that Buttercup stood between them and starvation. So it was not a dinner without Thanksgiving after all. Supper was followed by a night of increasing anxiety. What if something dreadful had overtaken their beloved parents!

The thought deprived the girls of any appetite for breakfast the next morning. Yes—of course they'd return, they told themselves again and again, and a comfortable welcome must be prepared. So the fire was replenished, though a few tears splashed among the ashes.

Hark! the silence of the whitened hills was broken, or was it imagination? Yes, a sleigh was nearing the house, and never had bells made such delicious music!

After the first joy of meeting, and a hurried explanation of snow-bound trains, with an added hindrance of wrecked freight cars ahead, attention was directed to the mysterious box which accompanied the travelers.

"A turkey!" cried the children. "Oh! what a lot of good things! Are we rich again, father?"

"Perhaps not, exactly," replied Mr. Wentworth, "but we're a long way from being poor."

"With so much cause for rejoicing," said Mrs. Wentworth, "we'll have a feast of Thanksgiving tomorrow." And never did a celebration bring more joyful merriment than that belated Thanksgiving Day among the hills.

"It's your Thanksgiving Day, too," whispered Dora to their milk-giving friend, and out of her apron tumbled some yellow objects which Buttercup knew in a minute were luscious carrots.

AMATEUR PHOTOGRAPHER'S WASHING OUTFIT.

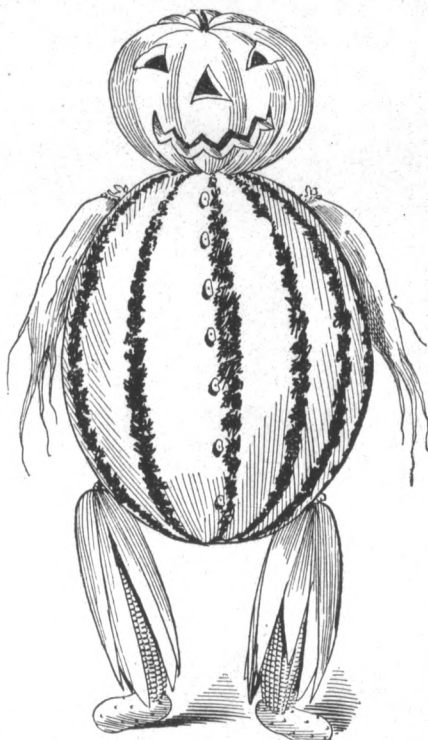
BY J. G. ALLHOUSE.

An automatic washing box for photographic prints and negatives, made with a few minutes' work at practically no expense, is illustrated in Fig. 1. A small wooden box, made of $\frac{3}{4}$ -in. pine boards, $5\frac{1}{2}$ in. wide, 5 in. deep and about 14 in. long, inside measurement, contains the upper, removable compartment of an oblong dinner bucket. This deep tin tray, measuring about 9 in. long, $5\frac{1}{2}$ in. wide and 4 in. deep, was set in the box close to one end, with 5 inches space at other end of box. To keep it from touching the bottom of the box, two narrow strips of cigar box wood were tacked lengthwise of the box for the pan to rest on. A number of small holes were punched in the bottom of the pan, so that if water were poured into the pan it would run out into the wooden box.

To render the box completely water tight, a second box was built around it by nailing on $\frac{3}{4}$ or $\frac{1}{2}$ -in. pine boards, cut a little larger than the boards of first box. In one end of this double box, near the top edge, were made two slanting holes, by boring with auger, then burning out with a hot poker till just the right size for one of the to receive tightly a piece of $\frac{3}{4}$ -in. rubber gas tubing, and the other a piece of 1-in. garden hose. The piece of gas tubing is about 8 in. long and extends from a little outside of the smallest hole in the box, down inside the box until it reaches a $\frac{3}{4}$ -in. hole punched in the tin pan, close to the bottom, in front and near one

the rubber tube at (A) it will run into the tin pan at (B), and out through the holes punched in the bottom, filling the pan and box together until it reaches the level at (C), when the 1-in. hose will be filled with water, and acting as a syphon will run the water out of the box, completely draining the pan. The water will then fill up the pan and box again, be drained out again by the syphon, and so on as long as water is supplied through the small tube.

In Fig. 2, the holes in the box that receive the tubes are shown one below the other; really they are side by side, with the smaller but a trifle higher than the larger. It is necessary to have the point of supply only a little higher than the water level at (C), and this level is established as high in the box as possible so that the tin pan is about completely filled before the syphon starts



"A Thanksgiving Promoter" as Pictured by One of our Young Readers.

running. In order to do this, the pan sits a little deeper in the box than it appears to be in the illustrations, and, also, in order to drain the pan totally, the end of the syphon-hose is lowered a little in front of pan b gouging a little out of the bottom of the wooden box.

The water, after it enters the pan, takes a circling motion, as indicated by arrows in (A), Fig. 3. It is made to do this by a device made by taking a piece of tin about $5 \times 5\frac{1}{2}$ in., and cutting a slit 2 in. deep one inch from one edge, and curving the larger portion of cut end as shown in (B); then bending over the smaller cut end and a strip one inch wide all along the tin at right angles, punching two small holes in the bent-over strip, as in (C), and setting this piece of curved tin upright in the pan in front of where the water enters, one-half inch from sides of pan, and fastening with small rivets to the bottom of the pan. The water, striking this, takes a circulatory course, keeping all the contents of pan in motion and separating the prints so they will be uniformly washed, or if negatives are set in the pan, the water travels around them and washes them thoroughly.

A washing-box of this kind requires, usually, one minute to fill up and one minute to run empty, making a change of water automatically every two minutes; an hour's time will thoroughly wash any batch of prints or negatives. If a large number of prints is being washed, it is best to separate them once or twice by hand, placing the lower ones on top. For washing negatives a simple rack of some sort should be made to hold them upright and apart while being washed. The washer described has been found a nice size for 4x5-in. prints and negatives and post cards or smaller sizes.

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BRAMBLE HILL.

(Continued from page 472).

and continued: "Well, what the devil do yeh want? Don't stand there like a gol blame—"

He stopped again just short of an oath in the comparative desert of his respectable speech and shook his crook-handled cane at Ed Humphrey, sitting at the feet of the fathers, eyes lit at the sacred candle of Drink. That gentleman had lurched forward hazardingly from his lowly, and therefore safe, seat, and was groping secretly toward the cigarette butt.

Sid found Jerusha pumping water in the yard as he returned from the village. He stopped and told her how he had finally come to terms with the irascible Mr. Stimpson, who had agreed to rent the grove for his picnic.

Jerusha didn't seem so elated over it as he had hoped. Though she answered happily enough, Sid felt a vague restraint in her manner.

"What's the matter?" he asked. "I thought you liked the idea?"

"Oh, I do," she answered quickly, "but it does seem so small after all, when you think of one—hundred—thousand—dollars," she drawled out the words, big-eyed. "If I had to make good on that will I'd find something bigger. There's going to be a new railroad coming through Bayview; Watts was just telling me. If I were a man and had a—hundred—thousand—dollars to make off four hundred acres of land I'd go to Bayview and—"

She stopped abruptly, noting that Sid's interest had shifted to soft music that suddenly welled out to them through the open windows from Wattle's plaintive old piano.

Both stood listening. It seemed that Sid was much more interested in the music than in Jerusha's vague speculations. It was Grieg, Watts' favorite (he had met the master in his youth, at Christiana), a little love song, light, full of fantasy and that elusive charm of understanding love.

"Why does he play that so much?" asked Sid, as the music ceased.

The girl half turned toward him and murmured: "It was mother's favorite. He's played it every day, like a prayer, since she—"

Sid listened as the strains came gliding to his ear again. The touch was vague and indefinite, a dream touch. Wattle was not a great musician, but he drew out of the piano a certain softness, gentleness, an almost feminine plea that charmed. Perhaps that was his fault. He was too tender, too much a spring child, loving, lingering, dreaming.

Sid motioned softly to Jerusha and they sat down together on the damp, mossy boards of the well to listen as the old man's sympathetic fingers played on their song of an unforgetting love. Sid wondered if Jerusha had, under her wild, crisp, thorny, fragrant ways, any of that strange, plaintive quality of imagination, that capacity for romance, possessed by her father.

"Jerry," he said, slipping unconsciously into closer intimacy, "I suppose sometimes you get tired of having stayed in the same place all your life. Do you ever wonder what you'd do if you had a share in somebody's million dollars?"

He caught the quickening of her breath and then she answered in slow dream words, eyes charmed half shut, "I'd buy a Steinway grand for Watts and a—oh! a gondola for myself—and the southwest balcony on a mouldy Venetian palace, and I'd sit in my gondola under a ruined arch bridge and I'd peer out at the sunset, listening to music far, far down the canal. And at night I'd sit in my balcony and wonder and wonder—till the ghosts of old lovers would glide past below in the darkling waters, and serenade old sweethearts in a corner of my balcony." She leaned forward, listening, lost in golden Venice. The poise of her proud, sensitive chin, and the almost-Italian color of her tan made Sid think she might as well have been a signorina herself.

"And these are glistening jewels, pearls, pearls; I shall make a rope of them." She ran her slight hand lightly through a pall of corn for the chickens, dripping the smooth grains through her fingers as Marguerite did the jewels in "Faust." "See!" she leaned forward and swept out her hands, which spoke interpretatively, "this tall green grass is a shady canal, all streaked with the quivering shadows of palaces in pastel. And Watts' music is coming from that gondola over behind the chicken house. And I am hiding behind a pillar, peering

out to see if you are coming—and—What silly nonsense! There! The gondola's sunk." She grasped the bucket of corn and jumped to her feet as Watts' music slipped off into echo with a final note. "Chick-chick-chick! Here chick-chick!" pausing, as she scattered the grain about, to remark, "You know, I nearly forgot the poor things."

Sid was sorry she hadn't.

He arose. Becoming once more conscious of the piano, his thoughts went back to Watts. Yes, Jerry was like him. His subconscious thought finally formed in words he didn't know he was muttering, half aloud: "And I suppose it's just because Watts never—never did anything; never built a brewery or fattened swine, that the people don't—well, don't appreciate—"

"What's that?" Jerusha asked sharply, turning fully toward him.

Sid looked down confusedly. "Oh," he said, "I was just thinking how lazy and good for nothing I am—"

"Whatever made you think of that?" she asked.

"Oh, I don't know," he answered hastily. "But I must be going. I've got to get to work on that Old Settlers' business. I'm glad. It will give me something to do."

As Sid walked toward home through the private road he thought much of the old musician and was inclined to parallel his own case with that of Watts. That heavy first three months of dull-eyed speculation had only been relieved by what Sid persisted in calling "Walks and Talks Afield with Wattle's." Sometimes it was with Jerusha, the wild dewberry. How he had enjoyed those walks. They did stand out—about the only things he remembered. He had come to know Jerusha well on the basis of comradeship; both being more or less social outcasts, they had sought each other, neither fully realizing why. Wattle was one of them, too; for the sloth is a very silly animal, not at all entitled to respect or much of anything else. And what had old Wattle's ever done but fiddle and pound that crazy piano of his, and, once in a while, give a lesson or two? And was this taciturn, provoking dude, grandson of Nathaniel Edgeworth, old grouch, any better? Sid remembered, on one walk through town, overhearing two pointed remarks. One was, "Thinks he's too pretty to work, I guess." The other, "I wonder if all them dudes in Noo York wear them there watches or sprained-wrist straps?"

Sid thought, too, of Hornbill. He almost felt that the old fellow took a fatherly interest in him. Hornbill endeavored, with pitiful effort, to make Nathaniel Edgeworth's grandson welcome. He had never even referred, after the first surprise of it, to the fact that he had a half interest in the house.

To Sid the grotesque old fellow, talking continually out of the side of his mouth, vehemently chewing his pipe and working his shaggy eye-brows up and down like an Italian polcinello, seemed an amiable old ornithorhynchus, kind and house-broken, but far, very far from human.

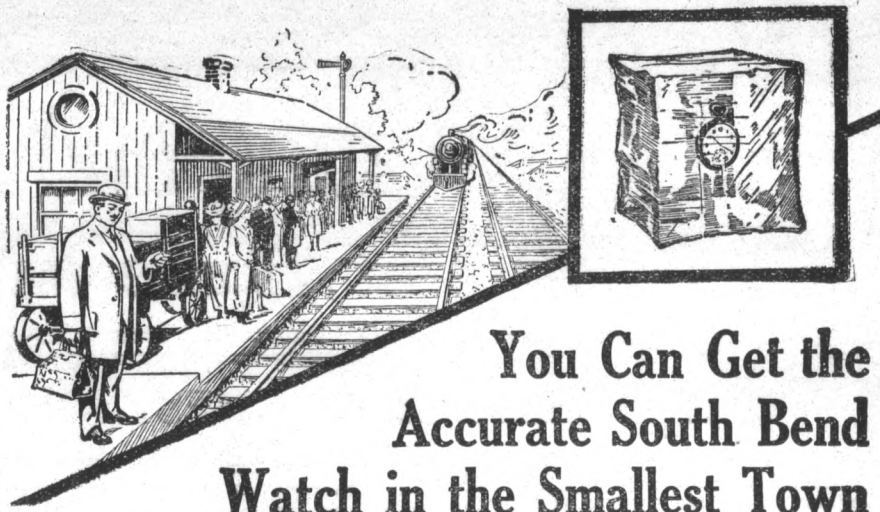
Wattle was so different; he was kindly, slow and understandable. He had never been to war and never wished to go; while Brigadier-General Hornbill thumped around like a peppery little South American insurgent, and gulped his potatoes as though he were catching red-hot shells in his teeth on the battlefield. Of course, he was a kindly old fellow at heart, but with a bullet through his jaw, three through his waist and thigh, and one, Achilles-like, in the heel, why shouldn't he articulate oddly and walk like a chicken with blistered feet?

Youth demands physical perfection. In spite of that, Sid had come to like Hornbill very much, but he could seldom understand what the old fellow said, and could never agree with him when he did.

Hornbill had taken up Sid's service right where he had laid down Nathaniel Edgeworth's. He made an admirable aid-de-camp, despatched the business of the farm in a few fiery orders, Sid being wholly incompetent, and collected the rents with a rigid fist, accounting scrupulously for every penny. As a collector alone he was quite worthy of attention and Sid could afford to cultivate a greater appreciation of his talents, for the fixed income to which he was entitled came mainly from these rents.

But Sid had just slipped along, contemplating the exacting terms of that will from afar. Now he was really going to get busy, and he must go to Hornbill for help. The ice cream and lemonade must pay a profit.

(Continued next week).



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Woman and Her Needs

At Home and Elsewhere



THE UNEXPECTED GUEST.

Household Editor:—I wish you would tell me how to treat and feed unexpected company. Thanking you in advance, I remain one of your faithful readers.—Mrs. F. A. R.

WAS there ever a housewife who at some time in her career, has not wished for an answer to that vexed question, what to do with unexpected guests, whether to smile happily, but falsely, and bid them welcome, or to come right out and tell the truth in plain English, that they are not a bit welcome at that particular time and we think they might have sent word they were coming, it is sometimes hard to say. It does seem in these days of rural mail delivery and telephones that no one need descend uninvited and unannounced upon a friend. But then, guests will do it, and if we are to keep our own self-respect the only thing we can do is to make them as welcome as we can.

Twenty years ago there was some excuse for such descents. Means of communication were few and it was not always possible to announce ones coming. On the other hand, visits from friends were infrequent and scattering and the average person was so glad to have company that unexpected guests were hailed with delight. Now, however, all has changed. Most of us have too much diversion. We can hardly keep up with our work because of the demands on our time from outside sources. Church, grange, clubs, telephone calls, all interrupt the day's work and company is not so much of a welcome diversion as it is a little extra bit of work. Most women realize this and never make a visit without announcing their coming. But there are still some who like to "surprise" their friends.

And those "some" are usually the city friends. It does seem as though women who live in cities think food grows already prepared on bushes in the country. At least they are always saying, "You know they always have plenty to

eat in the country, and it doesn't cost them anything. All they have to do is just to run out in the garden and pick it." So these women who wouldn't make a five-minute call on a friend in town without telephoning ahead that they were coming, will pack up the whole family and swoop down on a country relative or friend to stay from Saturday until Monday.

Well, we all know what we feel like doing, but we mustn't. The only thing for us to do is to remember that we are ladies and make the best of it. We must treat every guest with courtesy, so it behooves us to smile and make ourselves glad. So much is necessary and right. But it is neither necessary nor right to spend the time in cooking and baking for fear they will talk about us after they are gone. If the family were to have pork and beans, give it to the guests without apologies. If bread and milk was to be the bill of fare, serve bread and milk. It is a good wholesome food, and far better for the stomach than salads and desserts. Serve just what you had planned to have before guests arrived, and don't apologize whatever you do. They will admire you more for your independence than they would if you hurried about preparing better fare. I remember a neighbor who had prepared nothing but fresh bread and butter and young onions for supper, when a buggy load of friends drove in. She just scurried a boy out into the garden for more onions, cut another plate of bread and put on another pat of butter, and ushered her friends to the table. She didn't even send to the cellar for a glass of jelly or a can of fruit, or a plate of doughnuts, though all those things were there. And the guests all voted that meal the best they had eaten for a week. Everyone was jolly, the hostess wasn't tired out with cooking nor the least bit "flustered." She had grasped the key to the best way of entertaining unexpected guests.

DEBORAH.

Diet No. 3—What the Adult Should Know.

CERTAIN writers on the science of right living tell us that we all eat about twice as much as we need. Laboratory tests have proven to the satisfaction of the tester, if not of the tested, that even a laboring man can work on a diet which produces only 3,400 calories. Others say that 3,000 calories is enough and that this amount of energy can be furnished by 23.5 ounces of food principles. Just as a matter of curiosity, it would be interesting for each one who reads this to weigh her rations for one day and see how much she eats. I venture to say that few would eat less than twice as much, and many would eat three and four times as much as the learned dietitians want to allow us. It must be added that they magnanimously allow a woman doing her own housework the same amount as a laboring man.

Whatever we may personally think about their deductions, and whatever the experiments which we may make will prove to us, it is certain that nearly everyone eats not wisely but too well. Often it is that our ration is not properly balanced. More often that we eat too much. Sometimes we eat too heartily of meat, sometimes of potatoes and other starch, sometimes of sweets and less frequently of fats. But whatever the cause, the effect is shown in frequent headaches, pasty complexions, pimply skins, bad breath, constipation and the other ills of indigestion.

I am not one of those who cry out against the use of meat. Meat is a cell building food and the man and the woman who do bodily work certainly break down cells which must be built up. There is no better food for this than good

meat, well cooked and eaten with discretion. The beans, peas, lentils and other vegetable proteids put forward by vegetarians are often absolutely indigestible to some stomachs and the nuts which others recommend are so rich in oils that they are by no means a suitable substitute for meat. But there is such a thing as overdoing a good thing and many eat too much meat. Twice a day is often enough to serve it, and many persons are better if they eat it only once. An excess of meat causes uric acid and this leads to rheumatism and gout.

Lean meat and eggs, the two animal proteids most used, should constitute a part of the dietary, but by no means the greater portion. Starch, which is fortunately cheaper than meat and eggs, should make up at least 60 per cent of the whole day's rations, the remaining 40 per cent to be divided between the lean meat and eggs and fats and oils, which we get in the form of fat meat, butter, olive oil and the natural fats in nuts, grains and vegetables. This, then, is what we mean by a balanced ration, three-fifths of the day's bill of fare to consist of vegetables, grains and fruit, the remainder divided equally between fats, lean meat, eggs, or the vegetable proteins which are found in beans, peas and lentils. Physicians are coming more and more to say that half the illnesses to which flesh is heir are directly caused by bad methods in eating, and the other half might have been prevented if the patient's ancestors had eaten right and the person had been nourished properly from birth.

When we stop to consider that the

body must be built up entirely of what we feed it, we can see the reason in this theory. Besides, if we stop to study ourselves we must arrive at the same conclusion without outside help. How many times we have said, "I must stop eating so much candy. My stomach is all upset," or, "If I eat too many eggs I'm sure to be bilious," or, "I really must cut out fruit. I've eaten so much of it I am all bloated up." All these symptoms are simply warnings from the body that we are giving it more of one sort of food than it needs. If we heed the warning, and stop indulging in the food which disagrees with us, nature remedies matters herself. But if we gratify appetite at the expense of our patient and long suffering system, nature gets tired of trying to help us out and we have to call in a doctor.

The great sin of most people especially those who live far from markets, is eating too much sweet and starch in the form of made dishes, as cakes, cookies and pies. Starch is a good thing, but it is better taken as nature provides it in the form of vegetables and simply cooked grains. Vegetables should form a large part of the dietary of every person, not only for the starch but for the water and salts which they contain and which the body needs. Of course, we all salt our food, but common salt can not take the place in the body of the salt provided by nature in the vegetables at our hand. Yet how many persons turn in disgust from the vegetables which would give them health, to eat quantities of potatoes, baked goods, and sauce, and then go to the doctor for medicine to overcome constipation and stomach trouble which sanity in eating would prevent!

How many there are who say, "I'll eat what I like and if it makes me sick I can take a dose of medicine." How much better to say, "I'll eat what is good for me and save the money I would otherwise have to give a doctor, to spend for things I want." It may be all right to abuse the stomach for a few times and cure it with drugs, but there comes a time when drugs fail to cure and chronic dyspepsia, Bright's disease, diabetes, even tuberculosis, are the result. How sad that so many, otherwise bright people, can not see the folly of such ways of living. We would not say, "I'll put my hand in the fire and if it gets burned the doctor can dress it." Yet that proceeding is exactly as sensible as to eat something we know will make us sick and then go to the doctor for help.

Temperance in all things should be the golden rule in eating as well as in drinking. Just enough food to give the strength to work and keep the body up, and in the proportion given above, three-fifths cereals and vegetables, one-fifth lean meat and eggs, and one-fifth fats and oils. Yet how few of us make any attempt to observe this simple rule which would mean so much to our health and pocketbook. We decry drunkenness, while in our eating we are as intemperate as the drunkard, and without his excuse. For alcohol does create an appetite for itself which it is almost impossible to break, while overeating may be overcome by the simple process of stopping. The drunkard commands our sympathy at least, while the glutton deserves neither sympathy nor respect.

CRITICISM.

BY ELLA E. ROCKWOOD.

Two young married women were indulging in confidences concerning their newly acquired relations. Said one: "I have a perfectly adorable mother-in-law. She never criticizes, no matter what I do."

Is not this the key-note of harmony everywhere? Nobody likes to be criticized. Among those whose relationship warrants it it may sometimes be a necessity. Criticism, like ordinary comment, may be favorable as well as censorious, and implies no superiority on

the part of the person who utters it. Unlike blame, censure or disapproval which may be felt, yet unexpressed, criticism, is made known by word of mouth. Consequently it usually carries more or less of a sting. What we think does not hurt anybody so long as we keep it to ourselves.

It is easy to grow into a habit of criticism, and quite unconsciously, too. Some people are prone to pass remarks concerning whatever they see or hear, and while this may do no particular harm it is a bad habit to get into. Friendly criticism is sometimes permissible, even desirable, but one should be very careful about offering it. The most considerate of friends may give pain when they least suspect it. There are very few who have not suffered wounds at the hands of friends, words spoken with thoughtlessness no doubt, but which hurt all the same, and which cannot be forgotten, however freely they may be forgiven.

Friendly criticism, as has been suggested, is not meant in a harmful way, but this habit of criticizing does not usually stop there. It often manifests itself in unkind words which carry a barbed shaft which rankle deep in the heart.

One of the commonest varieties of criticism is that indulged in between members of the same family or between friends concerning wearing apparel. Someone buys a new hat, coat or suit and straightway all the others begin to pick flaws with it. One tells the unfortunate possessor that the shape is unbecoming or the style a season behind the mode. Another remarks that the color is not calculated to show off her complexion to best advantage. If it is blue it is too blue. If green, why, "green has been worn so long." This one would have had it different here and another says she would have liked it better if it had been a little different there. In some families it is actually an undertaking requiring considerable bravery to appear for the first time with anything new.

Then there is the man who is never quite pleased with his wife's selections. She may vainly plead with him to assist her in making a choice, knowing his predilection for criticism. "Of course, it is all right if you like it," he remarks meaningly. "You are the one who has got to wear it." Imagine the feeling with which she will wear that garment forever afterward. If a thing is done and can't be undone how much better to say nothing which can hurt. An opinion frankly asked for while there remains an opportunity for a change, deserves a frank expression. When too late to make a change, an evasion, or even a tiny white lie is better than outright disapproval which can do no possible good and will be sure to cause at least a cloud instead of perfect satisfaction in the heart of the owner.

Let us then beware of this habit of adverse criticism. Rather let us strive to put a check upon our tongue and where we cannot conscientiously approve let us keep silent.

"What you keep by you you may change and mend
But words once spoken can never be recalled."

DOPED FOODS.

BY CONDO J. HAM.

With all the legislation that has occurred within the past few years for the purpose of insuring pure foods, some interesting and surprising things are to be found still among our food products. There is cider vinegar that never saw cider, and mincemeat without a trace of meat, and all sorts of misrepresentations to be found.

A class in the pharmacy department of the University of Michigan recently took up the study of pure foods and drugs for regular class work and what they found as told by one of the class, tells to what

extent our food supply is still commercialized.

"We went down town one day," he began, "and purchased some 'cider' vinegar at a large grocery which had been advertising 'cider vinegar for sale.' On analysis we found it to be an acid composition which would cost the producer about half as much as cider vinegar can be produced for. Not only was this a cheat on the people, but the vinegar was absolutely injurious to health. We reported this case to the state pure food authorities. A few days later when we went to the same store to purchase some more 'cider' vinegar, we were told they had none in stock and since that time we have never been able to get another sample of that vinegar.

"One day a member of our class brought in a sample of hamburger steak and what we found started us on a search for meats that were not doped. That meat was as fine looking hamburger as was ever sold, with a good red color and absolutely no odor. We found it had been generously doped with a sulphite preservative. We then tried to find some regulation packed meats coming from any of our large packing houses that had not been doped in a similar fashion and all of the so-called fresh meats were found to contain sulphites. Now, sulphites in themselves are not harmful to health, but meat doctored with sulphite preservative can contain five times as many bacteria that are injurious to health, and still not smell, as can meat no so treated.

"Several of the well-known brands of mincemeat were then brought in and not in a single one of them could we find a trace of meat. We knew when we began to examine mincemeats sold in packages that we would find no meat, for it cannot be preserved, but those packages were brazenly labeled 'mincemeat' and every package was a misrepresentation to the public.

"Even a little drug like spirits of camphor was found on analysis to be an object of commercialization. The United States Pharmacopoeia, the drug standard for the United States, demands that spirits of camphor should contain 10 per cent camphor. Not a single sample could be obtained with this percentage of camphor, and some ran very low."

In this commercial age, one never knows, then, when he is safe from fraud or exposure to things injurious to himself. The trend of the times is upward, however. Good laws already enacted are being enforced and other good ones passed. Men in the food and drug business are being compelled to think of their fellowman's welfare and health, instead of always thinking of their own pocket-book. The pharmacy schools of the country are doing much to keep a watchful eye on the public welfare through the results obtained from classroom tests of foods and drugs.

HUMAN WELFARE QUERIES.

Household Editor:—Can you suggest any cure or relief for rheumatism?—Sufferer.

One of the first things to do is to stop eating meat and if the rheumatism is acute it is well to confine him to bread and milk for awhile. Chronic sufferers should cut out all red meat and eat only sparingly of fat bacon, a very little ham, white meat of chicken, and broiled fish, with milk, brown bread, rice, farina, barley, oatmeal, buttermilk, and perhaps a little fruit. Sweets, alcoholic drinks, potatoes and stewed tomatoes should be avoided, with the meat. Aspirin is recommended by some physicians in cases of rheumatism. Do not take more than eight grains every three hours, or five grains every two hours.

Household Editor:—Would you give bananas to young children?—Mother.

Bananas are hard of digestion and I would not feed them to young children. For adults they are better cooked. You can bake them by loosening from the skin, removing the coarse shreds and replacing them to bake until the pulp is soft. Then serve with a tart sauce, lemon or sauce made from fruit juice. They are also good sautéed in melted butter.

Household Editor:—How long should bread bake?—Sixteen.

From 40 minutes to one hour, depending on the size of the loaf.

Household Editor:—How can I use stale bread except in stuffing and bread pudding?—Economy.

You can crumb the bread, dry it thoroughly and pack in fruit jars to use for crumbing chops. The chops should first be dipped in beaten egg, then in the crumbs, then in eggs again. Or you can

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For the benefit and convenience of our subscribers we have arranged the following list of papers on which we can save them money. Besides the money, they save the trouble and expense of sending each order separately.

EXPLANATION—The first column is the regular subscription price of the other papers. The second column gives our price for a year's subscription to both the other paper and the Michigan Farmer. The third column gives the price at which the other paper may be added when three or more are ordered. If price is not given in this column ask us. Example: We will send the Michigan Farmer and

Detroit Semi-Weekly Journal for \$1.15. If, for instance, McCall's Magazine also is wanted add it at 40c making total \$1.55. Any number of papers may be added at third column price if they are for a subscriber to the Michigan Farmer.

If you want the MICHIGAN FARMER THREE YEARS and the other papers one year add 75c to the second column price. For the Michigan Farmer 5 years add \$1.50. We do not send samples of other papers. Address the publishers direct.

Send all orders to the Michigan Farmer or through our agents.

We will take your order for any publication you want whether listed or not. Write for rates.

NOTE.—So long as a subscriber is on our list for one or more years he may order at any time any publications at third column price. So that a three of five year subscriber does not lose the advantage of the reduced price if he wants any other paper next year or the year after.

Subscriptions ordered to Canada require postage. Write for rates unless postage is known, in that case include with order. Postage on Michigan Farmer alone to Canada is 1 cent per week.

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WISHES.

BY ANNA STERNS.

If I had a magic wishing ring
That would bring what I asked, just any-
thing.

What I wonder, now, would it be
I'd ask that the fairies bring to me?

Should I ask for riches, for land and
gold,
For a treasure island with wealth untold?
Or should it be for the laurels of fame
And the joys that come from a well-
known name?

Should I wish for power or for fine ar-
ray,
For pleasure to drive dull care away?
No, oh no! for my heart decrees
There are things more precious far than
these.

Just for helpful task and strength to do,
For a few dear friends who are staunch
and true,
For the chance to aid some weaker one,
And a place to rest when work is done.

For a heart set free from anxious care,
For eyes that see beauty everywhere
If I had a magic wishing ring,
These I would ask that the fairies bring.

make Brown Betty for dessert. This is made by first shaking the crumbs in melted butter until they are well buttered, then arranging crumbs and sliced apples in layers in a baking dish. Sprinkle each layer of fruit with sugar, and if you like, lemon juice. Add a tiny bit of water and bake about an hour. Cover for the first half hour. All baked puddings are better covered for the first part of the cooking, and only uncovered to brown.

Household Editor:—Can you give any suggestions for diet during scarlet fever?—Mother.

While the fever is high it is best to give only milk. As it abates, gruels, oranges, stewed or baked apples, may be given. After convalescence begins give soft boiled rice, farina, sago, oatmeal, milk toast, baked potatoes and baked apples adding fish and chicken after the third week.

Household Editor:—How do you blanch rice?—Mrs. X. Y. Z.

Put one cup of cleaned and washed rice in one quart of cold water and boil five minutes after boiling point is reached. Then drain, wash in cold water and drain in a sieve. Afterwards finish cooking in the usual way.

Household Editor:—A cooking school demonstrator who lectured in our church stated that if beets were not cooked done in a half hour they never would be. What do you think of that? I have cooked them five hours and they got soft and were very good.—Farm Wife.

I think your demonstrator left cooking school before she got to the course on cooking vegetables. The best tables give from 45 minutes to one hour for new beets and four or five hours for old ones.

Household Editor:—Is there any way to measure a cup of flour without a measuring cup? When you only have one it is usually wet with butter and milk before you get ready to measure your flour.—Amateur Cook.

I have found that four heaping table-spoons of sifted flour make one cup, but as your idea of a heaping spoonful and mine might be different you had better try this measurement in your cup first and see exactly how full the spoons must be. Why not sift and measure your flour and leave in a basin before you use your cup for other things?

Household Editor:—What is wrong with this sentence, "He has just went?"—Jack.

You are using the past form of the verb in a perfect tense. The past participle is always used in the perfect tenses, or those tenses formed with have, has, had, will or shall have, etc. The sentence should read, "He has just gone."

Household Editor:—My two-months-old baby cries all the time and has not gained in weight for three weeks. I have nursed her so far, but have begun to think my milk does not agree with her. The stools are yellow. Can you suggest anything to do?—Young Mother.

As the stools are of the right color I think the baby does not get enough nourishment and cries from hunger. Try giving her one tablespoonful of cow's milk before nursing every other time. If you find she digests this all right, gradually increase the quantity first by giving the milk before each nursing and afterwards by adding a little bit more milk each time until she seems satisfied. If you are sure to give the milk before nursing and nurse at once, it should not hurt her.

Household Editor:—Will you please print a good recipe for baking pumpkin pie without eggs.—Mrs. W. G.

I have never seen a recipe for pumpkin pies without eggs. However, I suppose you could use flour to thicken the custard instead of eggs, and use any good

recipe for pumpkin pies. Two level tablespoonfuls of flour to each pie should be enough. A good recipe for pumpkin pies follows: One and one-half cups of pumpkin, one and one-half cups of milk, one egg (omit the egg and add the flour), one tablespoonful of butter melted, half-cup brown sugar, half-teaspoonful each of salt and ginger, one teaspoonful of cinnamon. This is enough for one good-sized pie.

1. What is the best home cure for nervous prostration?

2. Should one try to take up a school course after having left it ten years?

3. What should one do who wishes to have a better education, but still has not the means to go through college?

4. Should one take cold baths in winter or warm ones?

5. How can a person overcome the habit of fault-finding?

1. The best cure for nervous prostration is rest, fresh air, plain food, regular habits and freedom from worry. The patient should be thoroughly examined by a competent physician to see that the nervousness is not caused by some organic trouble.

2. There is no reason why one should not take up a school course after a lapse of ten years.

3. The best education is obtained by wide reading and assimilating what one reads. There are many good correspondence schools for persons who can not afford to go to college.

4. If you are used to cold baths in summer you may continue them in winter. If you have been taking warm ones, however, do not change during the cold weather. Cold baths are not good for nervous people, as a rule, as the system is usually not strong enough to rally from the shock.

5. The only way to overcome any bad habit is to stop it. This requires a strong will and constant watchfulness.

The best way to clean varnished wood-work is with a cheesecloth soaked in any of the good furniture polishes. A good polish may be made at home with two-thirds boiled linseed oil and one-third kerosene, but this darkens the wood. Warm water and a good white soap will not hurt the varnish. If the spots are obstinate, rub them lightly with a good scouring powder and rub, as soon as dry, with polish.

FASHIONS BY MAY MANTON.

Our large Fashion Book for fall of 1912—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of 10 cents.



No. 7562—Fancy Blouse, 34 to 40 bust. With edges over-lapped in envelope style, with square or high neck, with or without lining with under-sleeves.

No. 7557—Semi-Princesse Dress for Misses and Small Women, 16 and 18 years. With four gored skirt that can be made in panel style or gathered at the back, with high or square neck, three-quarter or long sleeves.

No. 7442—Single Breasted Coat, 34 to 44 bust. With cutaway or straight fronts, elbow sleeves in bell shape or long sleeves that can be made bell shaped or plain.

No. 7507—Four-piece Skirt, 22 to 32 waist. With high or natural waist line. Five yards of material 36 in. wide when material has figure or nap, 2 3/4 yds, 36 when material has neither figure nor nap, is needed for medium size.

No. 7549—Four-piece Skirt, 22 to 32 waist. With side plaits at left of front and right of back, with high or natural waist line.

No. 7561—Closed Dart Fitted Knickerbockers, 24 to 34 waist. With knee bands or hems and elastic; 3 1/4 yds. of material 27 in. wide, 1 yd. of beading is needed for medium size.



Anty Drudge Tells How to Keep Up With the Work

Mrs. Hustler—"I declare, I'm all out of breath trying to catch up with my work. If it wasn't for wash-day, women's lives would be worth living!"

Anty Drudge—"Well, you'd better stop and get your breath, while you take a little rest. You can easily find time to do that and your washing, too, if you use Fels-Naptha Soap."

If you are too tired to eat you can't enjoy your fresh country eggs and delicious thick cream and good vegetables. Each day has its special work, but the special work for Mondays has always been a nightmare to women. That is, until they learn about Fels-Naptha Soap and all it does for them.

It does away with a hot fire, with a heavy wash boiler full of steaming clothes, with hard, back-breaking rubbing. It does this because it dissolves the dirt that you would otherwise have to rub and boil out of the clothes. You can use Fels-Naptha Soap for any thing requiring soap and water.

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x (Continued from page 468).
fluence toward making some change in the law as it now stands.

The total amount of taxes collected upon this \$129,300,000 of mortgages is \$642,953.50, of which amount one-half goes to the county in which the mortgage is filed and one-half to the state. What action the legislature may take upon this proposition is problematical, but it is entirely probable that the flat rate will be somewhat increased if the plan of assessing mortgages is not again changed. Such a change would appear to be unfortunate so soon after the adoption of the present law, for which reason it is more than likely that the present plan will be retained, under an increased rate, provided any change is made by the incoming legislature.

HAPPENINGS OF THE WEEK.

National.

President-elect Woodrow Wilson announces that he will call Congress together in extraordinary session not later than April 15 of next year. The purpose of this session is to carry out the promise of the party platform which declared for an immediate downward revision of the tariff. The probabilities are that the wool and cotton schedules will be among those considered at this early session.

After three years of inspection of school children in the city of Chicago, it is reported that nearly one-half of the children are found ailing. It is further reported that the number of physically perfect school children is probably less than one per cent of the total.

Large interests are concerned in the deliberations of the United States and Canada boundary commission, in session at Washington. The proposal to construct a dam to protect the Livingstone channel at the mouth of the Detroit river, will be considered. Also an investigation of the pollution of the waters of the St. Lawrence river will be begun. The sewage and drainage systems of several cities will be involved in the latter inspection.

Statistics gathered by the Ohio board of health indicate that whooping cough was the cause of nearly 10,000 deaths among children in the United States during the year 1909. This is a larger number than fell victims to scarlet fever.

Labor troubles are again disturbing the peace in the Charleston, W. Va., coal district. Many trains have been attacked and much shooting participated in at some of the more isolated places. The troops have been called in to quiet the disturbance.

The football game between the University of Michigan and Cornell University, resulted in a victory for the Wolverine team, the score being 21-7. The M. A. C.-Wabash game also resulted in a victory for Michigan, the Agricultural College eleven winning by a score of 24-0.

A riot occurred at North Collins, N. Y., between Italian residents and a party of Indians from the Cattaraugus reservation, in which a number of the Indians were more or less seriously injured.

Many persons are believed to have perished in a fire in the St. George Hotel, Los Angeles, Cal.

Action is started for the pensioning of old employes of the Detroit public library. The matter will need to go before the state legislature.

The "bath tub trust case," started in the federal courts at Detroit a couple of years ago has just been acted upon by the U. S. Supreme Court, in which the broad principle was laid down that there can be no monopoly in the unpatented products of a patented machine without infringement of the Sherman Anti-Trust law.

Foreign.

The Balkan war continues to go against the Turks. A steady advance toward the capture of Constantinople is being made by the allied forces. The Turkish town of Monastir has fallen and 50,000 troops and three generals have laid down their arms. This contest was bloody and between four and five thousand persons are reported killed. The battle before Tcharalja continues, with the allied forces constantly gaining little advantages that are almost certain to mean the capture of the place in time. The Turks are concentrating their forces in hopes that they may, at least, delay the capitulation of the stronghold until peace arrangements may be made. Another appeal has been sent to the powers to intervene and put a stop to the struggle. This, of course, has been upon the motion of Turkey but it is not likely that intervention will be made and Turkey, in all probability, will need to appeal direct to her enemies for terms. Cholera is reported to be raging among the demoralized and starved Moslem troops. British marines were landed in Constantinople to protect foreigners.

The grand jury provided by the Wayne county supervisors is now in session at the county building, Detroit. While the committee was selected particularly to look into the alleged graft cases in connection with the common council, a variety of interests will be considered during the session. The first proposition for inquiry was to learn why action cannot be secured against violators of the Warner-Cramton liquor law.

War between China and Russia seems imminent. President Yuan Shi Kai is receiving hundreds of telegrams daily urging an immediate declaration of war in order that Chinese control of Outer Mongolia may be perpetuated. It even seems possible that should the government refuse to declare war that a movement outside the government will be made. Reports have it that several Chinese generals are already planning to

lead their commands against the Russians, now in Mongolia, without waiting the president's order or consent.

Work on the Panama Canal has been prosecuted with considerable vigor and it is expected that the great structure will be open for the passage of vessels some time during the summer or fall season of 1913. The date set for the official opening of the canal was January 1, 1915, but this date will be anticipated to a great extent, according to the unofficial reports of the engineers. The appropriations thus far made by Congress for the canal totals \$322,541,468. Precautions against further landslides, which have caused considerable extra work, have been taken so that now the interruptions from this source will likely be diminished.

That the Mexican government is determined on ridding that country of disturbances from uprisings, is evident from recent orders from President Madero. Forces have been sent to those sections where revolutions are usually started and many cities belonging to the people of rebellious tendencies have been sacked and destroyed. The towns of Ixtepeji and Zai were destroyed, also other small towns and villages in the northern mountains of Oaxaca. These places are inhabited largely by Indians.

CROP AND MARKET NOTES.

Ottawa Co., Nov. 13.—A clover huller is now at work in this section. The yield of clover seed averages about one-half bushel per acre, and the quality is not first-class. There is considerable corn standing in shocks in the fields yet to husk. Some are waiting for machines to do this work, as it is almost impossible to hire men for this purpose. There has been no fall plowing done to amount to anything, and most fields are getting too wet to plow, so it does not look now as though there would be much more of this work done before winter sets in, than was the case last season. Some farmers have abandoned fall plowing entirely for oats, but instead they disk their ground in the spring for this crop. The apple crop was good in this section and the market poor.

Sanilac Co., Nov. 15.—Excessive rains have flooded the low ground and stopped fall plowing. Clay roads are almost impassable, but we are looking for the weather man to freeze it up soon. Corn stalks mostly in the field yet and not much husking done. Beans have fallen off in price, \$1.80 the price now. Cattle in good demand. Auction sales numerous but money a little scarce with the farmers, consequently sales are not netting as much cash for the proprietor. Oats, 28c; wheat, 96c; hay, \$10@12 per ton. Roots about all stored in the cellars.

Newaygo Co., Nov. 10.—October was not a very good month for getting much farm work done; some nice days but none too good for rushing fall work. Bean threshing is the order of the day with some good yields. Farmers rushing their corn out with some good yields. Lots of late sown rye, a bumper crop of apples, with a very low price, around 75c per barrel. Potatoes about all dug with some good yields, but prices are low and farmers are storing. Prices offered by dealers around 35c per bu. Beans are about the \$2 mark for hand-picked; eggs, 27c; dairy butter, 33c; chickens, 9c.

Ohio.

Carroll Co., Nov. 13.—We are having very nice weather for this time of the year. All live stock is doing fine. Some farmers are done husking. Some are having their corn husked by a corn husker and some husked their corn out by hand and are getting their fodder shredded. The wheat and rye look good. Most farmers are getting their coal hauled while the roads are good. Sheep are cheap this year. Some hogs for sale. Potatoes are cheap here this year, selling at 40c a bushel. Buckwheat, 75c a bu; No. 1 timothy hay, baled, \$17 a ton. The weather is fine for the progress of fall work and fall sown grain.

CATALOG NOTICES.

"Three Books in One" is the title of a 100-page booklet published by Funsten Bros. & Co., of St. Louis, Mo., largest direct buyers and sellers of furs in the world. This book is at once a trapper's guide, supply catalog and compendium of game laws of the several states in which fur-bearing animals are trapped. This valuable little booklet will be sent upon request to readers who mention the Michigan Farmer.

James Sanitary Barn Equipment is clearly illustrated and minutely described in Catalog No. 10, sent by the James Manufacturing Co., Ft. Atkinson, Wis. The James sanitary equipment includes several styles of stanchions, stalls, mangers and other accessories of the stable which are essential to the modern dairy. This catalog should be in the possession of all who contemplate building or remodeling their stables.

Eclipse Spray Pumps and Spraying Apparatus, manufactured by Morrill & Morley Mfg. Co., Benton Harbor, Mich., are illustrated and described in a 50-page catalog published by the above company. In addition to being a catalog, this booklet contains much information of value, such as a spraying calendar, direction for preparation of sprays, etc.

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MARKETS

Realizing the importance to our readers of reliable market quotations we spare no trouble or expense to insure the correctness of the quotations in our columns. Special representatives at all leading market centers insure the subscriber accurate market reports, uninfluenced by any factor of trade. All quotations are correct for the dates on which they are made.

DETROIT WHOLESALE MARKETS.

November 20, 1912.

Grains and Seeds.

Wheat.—With additional factors entering into the wheat trade to give interest the general trend of the market has been downward. Although war news in the east constitutes the largest element of influence, crop conditions in the Argentine, where a good harvest is now expected, and a large world movement of grain are other influential features existing outside the United States. In this country the weather has been favorable to marketing and a large quantity of the grain has gone out of the farmers' hands. The conditions in Argentine and the heavy world movement has caused values to decline at Liverpool, but the uncertainty of the European political conditions encouraged higher values at Berlin, Antwerp and Buda Pesth. The situation is perplexing to the dealers, most of whom are careful about loading up heavily, or selling short. One year ago the price for No. 2 red wheat was 97½¢ per bu. The visible supply increased over six and one-half million bushels. Quotations for the week are as follows:

	No. 2	No. 1	Red.	White.	Dec.	May.
Thursday	1.07	1.06	1.07	1.07	1.12	1.12
Friday	1.06	1.05	1.06	1.06	1.11	1.11
Saturday	1.06	1.05	1.06	1.06	1.11	1.11
Monday	1.06	1.05	1.06	1.06	1.11	1.11
Tuesday	1.05	1.04	1.05	1.05	1.11	1.11
Wednesday	1.05	1.04	1.05	1.05	1.11	1.11

Corn.—Values for this commodity rule a fraction lower than for the average of the previous week. The change is probably due to the influence of the wheat market. While weather conditions have been such as to encourage liberal offerings of new corn, it appears from reports that little of the crop is being sold by the farmers. The visible supply shows a decrease of several thousand bushels for the week. The local market is firm and the demand is better than the supply, there being very little corn for sale here. One year ago the price for No. 3 corn was 75½¢ per bu. The week's quotations are as follows:

	No. 3	No. 3	Yellow.
Thursday	61	63	63
Friday	61	63	63
Saturday	61	63	63
Monday	61	63	63
Tuesday	61	63	63
Wednesday	61	63	63

Oats.—Trading continues on last week's basis of values. The trade is holding firm with a fair demand. The local receipts show some improvement in the average quality. Chicago houses report that contract stocks are very light. The visible supply increased about one million bushels. A year ago standard oats were quoted at 51¢ per bu. Quotations are as follows:

	Standard.	Oct.
Thursday	34	33
Friday	34	33
Saturday	34	33
Monday	34	33
Tuesday	34	33
Wednesday	34	33

Beans.—The attitude of the local dealers indicates a firmer tone in the bean trade. The decline in last week's cash quotations has been recovered and on Tuesday another advance of 5¢ was made in both cash and December offerings. These prices, however, are largely nominal as there are few exchanges being made by local men. Quotations are:

	Cash.	Dec.
Thursday	2.30	2.15
Friday	2.30	2.15
Saturday	2.30	2.15
Monday	2.30	2.15
Tuesday	2.30	2.15
Wednesday	2.30	2.15

Clover Seed.—While this product is coming to the market a little more freely than it has been, the splendid demand for it is holding the trade firm at former figures. Quotations are as follows:

	Dec.	Alsike.
Thursday	10.75	12.75
Friday	10.75	12.75
Saturday	10.75	12.75
Monday	10.75	12.75
Tuesday	10.75	12.75
Wednesday	10.75	12.75

Rye.—A further decline of 4¢ is noted in this deal, the present quotation for No. 2 rye being 69¢.

Grains and Seeds.

Flour, Feed, Potatoes, Etc.

Flour.—The market is active with all grades steady.

Straight	5.20
Patent Michigan	5.60
Clear	4.60
Rye	4.80

Feed.—Steady. Carlot prices on the track are: Bran, \$23 per ton; coarse middlings, \$24; fine middlings, \$29; cracked corn and coarse corn meal, \$29; corn and oat chop, \$22 per ton.

Hay and Straw.—Market steady, except rye straw is higher. Quotations are: No. 1 timothy, \$16.50@17; No. 2 timothy, \$15@15.50; clover, mixed, \$13.50@16; rye straw, \$11@12; wheat and oat straw, \$9@10 per ton.

Potatoes.—The general situation of the good

potato deal is steady. Receipts are preventing any sudden upturn in value, they being large. Detroit quotations are unchanged. Local prices for car lots on track are 53¢ in sacks and 48¢ in bulk.

Provisions.—Family pork, \$21; mess pork, \$24@25; clear, backs, \$22@25; hams, 16@17; briskets, 13@14; shoulders, 14½¢; picnic hams, 14¢; bacon, 18@20¢; pure lard in tierces, 13½¢; kettle rendered lard, 14½¢ per lb.

Dairy and Poultry Products.

Butter.—The local butter trade is advancing with the other markets of the country. During the past week creamery goods have been marked up 2¢. Dairy quotations are steady with a week ago. The prices are: Fancy creamery, 35¢; first creamery, 32¢; dairy 22¢; packing stock 21¢ per lb.

Eggs.—Conditions have not changed from last week and prices are maintained at the advanced figures quoted a week ago. Current receipts, candled, cases included, are now selling at 29¢ per dozen.

Poultry.—Ducks are higher turkeys steady, while chickens rule a little lower. Quotations are as follows: Broilers, 11½@12½¢ per lb; hens, 10¢; No. 2 hens, 9¢; old roosters, 9@10¢; turkeys, 16@18¢; geese, 11@12¢; ducks, 12@13¢; young ducks, 15@16¢ per lb.

Veal.—Higher. Fancy, 12@13¢ per lb; choice, 10@11¢.

Cheese.—Michigan flats, 16½@17¢; York state flats, 18½@19¢; limburger, 17½@18½¢; brick cream, 18½@19¢; domestic Swiss, 21@23¢; brick cream, 18½@19¢ per lb.

Fruits and Vegetables.

Pears.—Keiffer, 75¢ per bu.

Apples.—Market about steady. Local prices: \$1.75@2.25 for fancy, and \$1@1.50 for common; poor, 75¢@1 per bbl. Snow apples, \$2.25@3. Good apples by the bushel are selling at 35¢@75¢.

Honey.—Higher. Choice to fancy comb, 16@17¢ per lb; amber, 14@15¢; extracted, 9½@10¢.

Onions.—Per bu., 55¢.

Cabbage.—\$1@1.25 per bbl.

OTHER MARKETS.

Grand Rapids. The potato market is very firm this week, prices ranging from 50¢@55¢. No improvement is apparent in the apple situation and offerings here continue heavy. Spys and Greenings are in best demand, Spys bringing 75¢ and Greenings 50¢@60¢. Hay is worth \$13@16. The mills are paying as follows for grain: Wheat, \$1.06; oats, 33¢; new corn, 50¢; rye, 60¢; buckwheat, 65¢. Beans are worth \$1.90. Live poultry is quoted as follows: Fowls 10¢; turkeys, 15¢; ducks, 10¢; geese, 8¢.

Chicago.

Wheat.—No. 2 red, \$1@1.04; Dec., 84½¢; May, 90½¢.

Corn.—No. 3 old, 52½@53¢; new, 46½¢; Dec., 47½¢; May, 47½¢.

Oats.—No. 2 white, 34@35¢; Dec. 31½¢; May, 32½¢.

Butter.—All grades are again higher, creameries gaining 1@1½¢ and dairies 1¢ since this time last week. Receipts last week ran more than 20,000 tubs below those for the corresponding week last year. Demand for good creamery stock is keen and for dairies fair. Quotations are: Creameries, 29@34¢; dairies 26@31¢.

Eggs.—Local and shipping demand for graded stock is good, with receipts about normal for this season of the year. Firsts and ordinary firsts are quoted ½¢ higher. Miscellaneous lots and storage stock quiet and slow at unchanged prices. Quotations: Firsts, 27¢; ordinary firsts, 24¢; at mark, cases included, 22@25¢; storage, 21½@21¾¢ per dozen.

Poultry.—Increased offerings have lowered values on all kinds except turkeys, which are quoted 1¢ higher. Quotations on live are: Chickens, 10¢ per lb; springs, 11½¢; ducks, 12@13½¢; turkeys, 17¢.

Potatoes.—Market sufficiently active to take care of the moderate receipts which are still running considerably below those at this season a year ago. Now quoted as follows: Michigan, 48@53¢ per bu; Minnesota, 47@50¢; Wisconsin, 45@52¢.

Beans.—This market continues quiet and easy. Pea beans show another 10¢ loss, due to lack of quality in some of the offerings. Quotations are: Pea beans, choice, hand-picked, \$2.60@2.65 per bu; prime, \$2.50@2.55; red kidneys, \$2.25@2.35.

Hay and Straw.—Timothy offerings are light and some grades show slight advances. Clover \$1 lower and oat straw slightly higher. Quotations: Timothy, choice, \$19@20; No. 1, \$16.50@18; No. 2 and No. 1 mixed, \$14@16.50; clover, \$7@12. Straw—Rye, \$8@9; wheat, \$6.50@7; oat, \$7@7.50.

New York.

Butter.—All grades of creamery butter show firmness at advanced figures. Demand steady and receipts lighter. Quotations are: Extra creamery, 35¢; first creamery, 32@34¢; seconds, 28½@31¢; process extra, 27½@28¢ per lb.

Eggs.—The advanced values of a week ago remain the trading basis of this week's market, except that extras show price improvement. Fresh gathered extras are quoted at 38@41¢ per doz; extra firsts, 34@37¢; firsts, 29@33¢; western gathered whites, 33@42¢.

Poultry.—Dressed.—Values in chickens have widened, fowls are steady, and turkey quotations are restricted to narrower limitations. Fresh killed western chickens are quoted at 11@19¢; fowls, 13½@16½¢; turkeys, 19@23¢.

Boston.

Wool.—The movement of wool from dealers to manufacturers does not appear to be subsiding greatly in spite of the fact that stores are rapidly being depleted. The demand for wool all through the present year has been unusually

ketting of products. The 1912 clip will go into the hands of the manufacturers, with possibly the exception of a few years, much sooner than previous seasons' clippings have done. Michigan fine unwashed wool fleeces are quoted at 22½@23¢; delaine unwashed, 24½@25¢; ½-blood unwashed, 27@28¢; ¾-blood unwashed, 29@29½¢.

Eggs.

Butter.—Market firm at 33½¢ per lb., which is an advance of 1½¢ over last week's quotation.

THE LIVE STOCK MARKETS.

Buffalo.

November 18, 1912.

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

Receipts of stock here today as follows: Cattle, 130 cars; hogs, 150 double decks; sheep and lambs, 135 double decks; calves 1,200 head.

With 320 cars of cattle on our market here today, with prices 5@10¢ higher on all grades of cattle, with the exception of the plain class of cattle, there was ample demand all day for all grades, and everything that was in and graded was well cleaned up.

We quote: Best 1,350 to 1,500-lb. steers \$9@9.50; good to prime 1,200 to 1,300-lb. do., \$8@8.75; good to prime 1,100 to 1,200 lb. do., \$7.75@8; coarse, plainish, 1,100 to 1,200-lb. cattle, \$7@7.50; medium butcher steers, 1,000 to 1,100, \$6.40@7; butcher steers, 950 to 1,000, \$6@6.75; light butcher steers, \$5.50@6; best fat cows, \$5.50@6.50; butcher cows, \$4.75@5.50; light butcher cows, \$3.75@4.25; trimmers, \$3.25@3.50; best fat heifers, \$6.75@7.50; medium butcher heifers, \$5.50@6; light do., \$4.50@5.25; stock heifers, \$4@4.25; best feeding steers, dehorned, \$6@6.50; common feeding steers, \$5@5.25; light common stockers, \$4.25@4.50; prime export bulls, \$6@6.25; best butcher bulls, \$5.50@5.75; bologna bulls, \$4.50@5; stock bulls \$4.50@5; best milkers and springers, \$6@7; common to fair kind, \$4@5.50.

Our receipts of hogs today were liberal; 150 double decks. Liberal receipts reported all over the west today and lower values caused our market to drop from 15@25¢ under Saturday's best time. A few fancy closely sorted hogs sold at \$8, but the bulk landed at \$7.90; yorkers, \$7.60@7.85, and pigs generally 7½¢. Roughs, \$6.75@7; stags, \$6@6.50. Trade active and a good clearance was made, with outlook fair for the balance of the week.

The sheep and lamb market was fairly active today, with prices about 10¢ lower than the close of last week; most of the choice lambs selling from \$7.35@7.40; yearlings from \$5@5.50. Look for little better prices the balance of the week.

We quote: Choice lambs, \$7.35@7.40; cull to fair do., \$5.50@6.75; yearlings, \$5@5.50; bucks, \$2.50@3; wethers, \$4.50@4.75; handy ewes, \$4@4.15; heavy ewes, \$3.75@3.85; cull sheep, \$2@3; veals, choice to extra, \$10.50@11; fair to good, \$7.50@10; heavy calves, \$4.50@6.

Chicago.

November 18, 1912.

Received today 26,000 38,000 50,000
Same day last year .. 23,590 50,669 44,749
Received last week .. 58,042 144,915 190,809
Same week last year .. 84,418 161,293 159,081

Cattle start off this week in a much less active manner than sellers would like to see, and even the best lots failed to go off as freely as they did most of last week. The unattractive offerings were very slow, and sellers called prices 10@15¢ lower for the greater part. Only about 2,000 western rangers were marketed. Hogs were active and firm, selling at \$7.30@7.90. Hogs received last week averaged in weight 223 lbs., compared with 211 lbs. a week earlier, 210 lbs. a year ago and 233 lbs. two years ago. Sheep were about steady on the whole, with average quality not over good. Lambs were less active and mostly 10@15¢ lower, with choice lots wanted around \$7.50 and none bringing last week's highest figures.

Cattle have not been in any better demand of late than for some time past, the dearthness of beef materially lessening its sale, but continued extremely small receipts compared with corresponding weeks in former years have resulted in some recent good advances in most kinds of cattle. Extreme scarcity of the best grade of long-fed heavy steers has resulted in re-establishing the \$11 price, with choice beefs selling at \$10 and upward and the commoner lots of grass-fed steers at \$5.50@6.60. The greater part of the steers sold last week at \$7@9.50, with the better class of little yearlings bringing \$9.50@10.60 and plain and medium short-fed steers at \$7.60@8.50. Good grass-feds sold up to \$7.70, and there was a good trade in fair to choice cows and heifers at \$4.40@7, with scattering sales of prime ones at \$7.25@8.50, while three head of fancy rather heavy heifers brought \$9.25. Canners sold at \$2.65@3.80, cutters at \$3.85@4.35 and bulls at \$3.75@7.50, most bulls bringing \$4@7. The stocker and feeder trade was contracted by moderate offerings of the better class of these cattle, as well as by a reduced demand, and despite the limited numbers on the market, prices weakened, stock steers going at \$4@6.50 and feeders at \$5.70@7.20, with not many sales as high as \$7. Western range cattle arrived in smaller numbers, the season being near its close, and the average quality of these offerings was very much poorer than when the season was at its height. Range steers sold mainly at \$5.50@8 and range cows and heifers at \$4.50@6.50. Calves had a good demand at firm prices, sales taking place at \$4@10.50 per 100 lbs., with choice vealers chiefly wanted. Milk and springers were in the customary good request at \$45@75 per head, with prime cows scarce and worth up to \$90 or more. The week

closed with beef cattle selling 15@25¢ higher than a week earlier and better values on an average for stockers and feeders.

Hogs continued in very poor eastern shipping demand for still another week, with eastern packing plants obtaining supplies mainly from their home territory, and this served to give strength to the market on different days. There was no rush upon the part of stockmen generally to get their hogs to market, but the prevalence of hog cholera in many places in Iowa was the cause of many marketings of pigs and young hogs prematurely, and this accounts for the too numerous consignments of pigs. Shippers and local speculators were the leaders in the buying that put prices higher, and choice droves were the first to show improvement in values. Choice barrows of good weights were the best sellers invariably, and choice light hogs sold at a marked discount, while pigs sold at an extremely wide spread in prices, depending a good deal on their weight. For some time past packers have dominated the provision market and have apparently worked to get hog prices down without demoralizing the trade in cured products, which is most of the time on a large scale and far ahead of a year ago, stocks of provisions everywhere being much under this time in 1911. Hogs declined late in the week and closed with the top price \$7.92½, compared with \$8.10 a week earlier, pigs selling at \$4.50@7.25 and coarse heavy hogs as low as \$7.20.

Sheep and lambs were shipped to market in unexpectedly liberal numbers last week, many shipments that were delayed by the national election showing up. The Monday sharp break in prices caused by an exceptionally big run was followed by good upward movements due to extremely good buying orders for fat stock, and prime natives sold wonderfully well. Fed flocks comprised most of the daily offerings, and most of the range shipments came from Montana. There was the usual lively demand for feeders, and prices were easily maintained, there being too few to go around. Stock feeders of long experience are counting on profitable returns on fat live muttons, as well as on fat beefs owing to greatly decreased feeding operations in the corn belt this winter. The close of the week showed advances of 25@40¢ for lambs and 15@25¢ for fat sheep over figures of a week earlier. Lambs closed at \$5.25@7.70, yearlings at \$4.75@6, wethers at \$4@4.50, ewes at \$2@4.25 and bucks at \$2.75@3.50. Breeding ewes brought \$3.50@4.60 and feeders paid \$6@6.60 for lambs and \$2.75@4.15 for sheep, with yearling feeders selling at \$4@5.25.

Horses failed to show any change for the better last week, despite the moderate offerings, the general demand being so slow that sellers found it no easy matter to dispose of their consignments. Prices were not maintained very well, and this was true of pretty good horses. Sales covered a wide range of prices, the poorer animals being quoted at \$75@125 and the better class at \$175@250, with strictly choice to fancy heavy drafters worth \$275@300.

LIVE STOCK NOTES.

The hog markets of the country have not developed much strength in recent weeks, and the occasional good rallies in prices have been followed by fresh declines, there being little in the situation that is bullish. What the Chicago market especially needs at this time is the revival of the former good eastern shipping demand, for real competition among buyers is absolutely essential to bring about raising values. The strongest factor perhaps is the greatly reduced stocks of provisions held in western warehouses and their rapidly decreasing supplies due to the substitution of fresh and cured hog meats for beef, which is now too high-priced to render it acceptable to families of moderate means. It is unfortunate that hog cholera is still widely prevalent in portions of Iowa, necessitating the premature marketing of large numbers of pigs and hogs, thereby cutting into future supplies of matured hogs. In some sections of that state farmers have lost all their pigs and hogs in this way, and in a recent week inspectors found 564 dead hogs on 56 farms. The champion boar at the Iowa State Fair was a victim, and many valuable breeders have died. The situation is serious, and no real remedy has been found.

The Chicago Live Stock Exchange has adopted a new adjustment of commission charges to meet the situation caused by the frequent "big car" shipments. It does not furnish an increase in commissions, but adjusts the charges to cover the expense of handling shipments consigned in cars of greater carrying capacity than the standard 36-foot cars. Big cattle feeders in the beef-making sections of the east are doing little buying of thin cattle to feed through the winter, according to John Harvey, for many years a buyer for Armour & Co., at Chicago, and now a resident of Rochester, N. Y.

R. S. Shaw, dean and director of the Michigan Agricultural College, showed up in the Chicago stock yards recently with 226 head of fed western yearling wethers that averaged 86 lbs. and brought \$5.35 per 100 lbs. and 18 head that averaged 90 lbs. and brought \$5. These yearlings were purchased as feeders in the Chicago market during the first half of last July at \$4.75, averaging at that time 69 lbs. in weight. They made money for their owners and sold at within 15 cents of the best yearling wethers on the market. Mr. Shaw said they were exceedingly useful in clearing up the cut-over lands of sprouts, seedlings and weeds. He added that the upper peninsula of Michigan contains a vast amount of fine agricultural lands valuable for growing wheat, corn, oats, potatoes, alfalfa, clover, peas and all kinds of root crops.

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.

November 21, 1912.

Cattle.

Receipts, 1,931. Market active at strong last week's prices on all grades.

We quote: Extra dry-fed steers, \$7.50 @8; steers and heifers, 1,000 to 1,200, \$6.50@7.25; do. 800 to 1,000, \$5.25@6; grass steers and heifers that are fat, 800 to 1,000, \$5.25@6; do. 500 to 700, \$4.25@4.75; choice fat cows, \$5@5.50; good do., \$4.50@4.75; common cows, \$3.50@4.25; canners, \$2.75@3.25; choice heavy bulls, \$5@5.50; fair to good bolognas, bulls, \$4.25@4.75; stock bulls, \$3.75@4.25; choice feeding steers, 800 to 1,000, \$5.50@6; fair do., 800 to 1,000, \$5@5.50; choice stockers, 500 to 700, \$4.75@5.25; fair stockers, 500 to 700, \$3.75@4.25; stock heifers, \$3.75 @4.50; milkers, large, young, medium age \$4.50@7.50; common milkers, \$3@4.00.

Spicer & R. sold Bresnahan 5 cows av 953 at \$3.65, 1 do weighing 870 at \$3.50, 11 do av 898 at \$3.60; to Sullivan P. Co. 6 do av 936 at \$4.25, 3 butchers av 783 at \$5, 2 steers av 1,075 at \$6.25, 1 bull weighing 580 at \$4.50, 9 steers av 716 at \$5.25, 1 cow weighing 1,130 at \$4.50, 1 do weighing 1,030 at \$3.65, 2 bulls av 870 at \$4.75, 2 steers av 825 at \$5.40; to Randall 5 stockers av 498 at \$4.50; to Benedict 6 cows av 730 at \$4.15; to Snow 1 stocker weighing 550 at \$4.75, 3 do av 490 at \$4.65; to Sullivan P. Co. 1 bull weighing 810 at \$4.25, 5 cows av 1,148 at \$5; to Bresnahan 12 cows av 837 at \$3.60, 1 do weighing 800 at \$2.50, 7 do av 860 at \$3.60, 3 do av 1,066 at \$4; to Thompson Bros. 17 butchers av 710 at \$4.25; to Bresnahan 5 cows av 816 at \$3.60, 5 heifers av 470 at \$4.35.

Bishop, B. & H. sold Schumaker 6 feeders av 775 at \$5.50; to Bresnahan 4 cows av 935 at \$3.60, 5 steers av 906 at \$6, 9 stockers av 662 at \$4.85, 1 heifer weighing 720 at \$5.25, 2 do av 650 at \$5.25, 2 butchers av 655 at \$4.25, 8 do av 750 at \$5.25, 2 cows av 780 at \$3.50, 2 do av 850 at \$4.25; to Newton B. Co. 13 butchers av 700 at \$5, 10 do av 780 at \$5.50, 6 do av 820 at \$5, 6 do av 666 at \$4.40, 13 do av 622 at \$4.50, 9 do av 850 at \$4.85, 21 do av 662 at \$5, 3 cows av 983 at \$4.50, 6 do av 926 at \$3.65, 3 do av 690 at \$4, 4 do av 887 at \$3.75, 8 do av 1,021 at \$3.75, 16 do av 876 at \$3.65, 3 do av 873 at \$3.50, 6 do av 1,063 at \$4.25, 4 do av 755 at \$4, 10 do av 810 at \$3.60, 6 do av 786 at \$3.60, 1 steer weighing 1,000 at \$6, 2 bulls av 670 at \$4, 1 do weighing 1,020 at \$5; to Goose 12 butchers av 386 at \$4; to Mason B. Co. 14 do av 584 at \$4.50; to Hammond, S. & Co. 1 bull weighing 1,900 at \$5.50; to Sullivan P. Co. 3 cows av 905 at \$4, 12 butchers av 716 at \$3.75, 10 do av 655 at \$4.50.

Haley & M. sold Sullivan P. Co. 6 butchers av 607 at \$4.60, 2 steers av 775 at \$5.50, 2 do av 960 at \$6.75, 1 bull weighing 960 at \$4.85, 3 heifers av 666 at \$4.25, 13 steers av 723 at \$5.10, 2 cows av 980 at \$4.35, 5 heifers av 704 at \$4.90, 2 bulls av 785 at \$4.35, 3 heifers av 750 at \$5.50, 2 cows av 942 at \$3.60, 1 do weighing 1,080 at \$4.50, 5 steers av 1,000 at \$5.65, 21 butchers av 786 at \$5.35, 3 cows av 883 at \$4, 4 heifers av 500 at \$4.50, 5 do av 594 at \$4, 3 butchers av 643 at \$4.25, 4 do av 392 at \$3.65, 2 cows av 890 at \$3.75, 4 do av 885 at \$4.25; to Snow 7 stockers av 511 at \$4, 5 do av 660 at \$5.25, 8 do av 584 at \$4.80, 1 bull weighing 1,020 at \$5.25; to Bresnahan 5 stockers av 640 at \$4.50, 14 do av 534 at \$4.55, 2 cows av 825 at \$3.50, 8 stockers av 531 at \$4.40, 6 cows av 901 at \$3.75, 4 cows av 995 at \$3.50; to Applebaum 4 do av 975 at \$4, 7 do av 936 at \$4.40; to Regan 21 butchers av 500 at \$4; to Bray 3 canners av 827 at \$3.50, 3 cows av 1,010 at \$4.

Roe Com. Co. sold Bresnahan 4 cows av 915 at \$3.50, 2 do av 1,000 at \$4, 26 do av 880 at \$3.60, 3 do av 960 at \$3.60; to Newton B. Co. 5 butchers av 730 at \$4.15, 9 cows av 833 at \$3.75, 3 steers av 827 at \$6.25; to Snow 7 stockers av 550 at \$4.65; to Sullivan P. Co. 7 butchers av 460 at \$4, 5 do av 448 at \$4, 2 do av 400 at \$4, 6 do av 430 at \$4; to Mich. B. Co. 24 cows av 998 at \$4.35, 10 do av 934 at \$3.85, 28 heifers av 673 at \$4.50.

Sandall sold Bresnahan 5 butchers av 1,036 at \$5, 16 do av 668 at \$4.75, 3 cows av 817 at \$3.50.

Kalaher sold Hammond, S. & Co. 2 cows av 1,065 at \$4, 13 butchers av 826 at \$4.50.

Haley sold same 6 cows av 1,106 at \$4.10.

Zenoski sold Mich. B. Co. 3 cows av 890 at \$3.50, 2 do av 890 at \$4.50.

Veal Calves.

Receipts, 380. Market strong at last week's prices. Best, \$9@10; others, \$4@5.50; milch cows and springers steady.

Dancer & K. sold McGuire 3 av 220 at \$6.50, 17 av 150 at \$9.50.

Bishop, B. & H. sold Sullivan P. Co. 2 av 140 at \$10, 3 av 115 at \$7, 12 av 135 at \$9; to Parker, W. & Co. 1 weighing 130 at \$9.50, 1 weighing 130 at \$10, 1 weighing 190 at \$7, 3 av 145 at \$9.50, 2 av 150 at \$9.50, 4 av 135 at \$9.50, 4 av 150 at \$7.50, 2 av 185 at \$7, 5 av 125 at \$9.50; to Goose 13 av 250 at \$4.50; to Thompson Bros. 10 av 138 at \$9.50; to Newton B. Co. 4 av 155 at \$10, 3 av 150 at \$9.50, 3 av 140 at \$9.50; to Burnstine 4 av 100 at \$8, 1 weighing 150 at \$10, 1 weighing 120 at \$9, 5 av 141 at \$9, 1 weighing 250 at \$5, 5 av 160 at \$9.50, 6

av 125 at \$9.50; to Mich. B. Co. 18 av 140 at \$9.50; to McGuire 4 av 150 at \$9.50, 3 av 180 at \$10.

Haley & M. sold Mich. B. Co. 1 weighing 130 at \$8, 3 av 135 at \$9.50, 2 av 155 at \$9.50, 3 av 225 at \$5; to Newton B. Co. 2 av 140 at \$10, 3 av 250 at \$6.

Sharp sold Mich. B. Co. 18 av 135 at \$9.25.

Sandall sold same 3 av 155 at \$9.25.

Roe Com. Co. sold Sullivan P. Co. 1 weighing 310 at \$4.50, 1 weighing 160 at \$7, 7 av 150 at \$10; to Newton B. Co. 6 av 150 at \$10.

Spicer & R. sold Newton B. Co. 1 weighing 300 at \$7, 2 av 140 at \$10; to Mich. B. Co. 3 av 130 at \$9.50; to Kull 8 av 110 at \$8.50.

Sheep and Lambs.

Receipts, 5,763. Market steady at last week's prices. Best lambs, \$6.40@6.75; fair to good lambs, \$5.50@6.25; light to common lambs, \$4@5; fair to good sheep, \$3@3.60; culls and common, \$1.75@2.75.

Roe Com. Co. sold Barlage 21 lambs av 60 at \$6, 102 do av 65 at \$6.25, 62 sheep av 95 at \$3.50, 5 do av 105 at \$3.25, 42 lambs av 70 at \$6.25.

Sharp sold Mich. B. Co. 24 sheep av 80 at \$3.35, 24 lambs av 68 at \$6.50.

Haley & M. sold Mich. B. Co. 37 lambs av 50 at \$5.50, 38 do av 60 at \$5.50; to Hayes 17 do av 75 at \$5, 52 do av 55 at \$5.25, 15 sheep av 100 at \$3.35, 14 do av 95 at \$3.50; to Nagle P. Co. 26 do av 83 at \$6.60, 41 do av 68 at \$6.40, 91 do av 75 at \$6.25, 105 do av 75 at \$6.25, 88 do av 83 at \$6.40, 33 sheep av 115 at \$3.50, 6 do av 83 at \$2, 57 do av 120 at \$3.25, 9 do av 85 at \$2, 23 do av 115 at \$3.25; to Hayes 14 lambs av 60 at \$6 to Newton B. Co. 91 do av 70 at \$6.40.

Spicer & R. sold Nagle P. Co. 16 lambs av 80 at \$6; to Mich. B. Co. 41 sheep av 110 at \$3.75, 31 do av 115 at \$3.40, 7 lambs av 65 at \$5.75, 109 sheep av 105 at \$3.50, 49 do av 85 at \$3.40, 18 lambs av 70 at \$6.25; to Newton B. Co. 12 do av 65 at \$6; to Hammond, S. & Co. 7 sheep av 75 at \$2.50, 150 lambs av 70 at \$6.30, 14 do av 75 at \$6.50.

Bishop, B. & H. sold Wilson 145 lambs av 55 at \$4.60, 18 do av 50 at \$4.50, 18 do av 50 at \$4.50, 15 sheep av 95 at \$2.50, 9 lambs av 100 at \$5; to Hammond, S. & Co. 21 do av 65 at \$6.25, 19 sheep av 90 at \$2.75, 30 do av 120 at \$3.50; to Sandall 109 do av 78 at \$6.50, 12 do av 65 at \$6.35, 55 sheep av 90 at \$2.50, 10 do av 137 at \$3.75, 115 do av 115 at \$3.50, 27 do av 170 at \$3.50; to Nagle P. Co. 24 do av 115 at \$3.25, 106 lambs av 80 at \$6.50, 152 do av 75 at \$6.10, 18 do av 83 at \$6.50, 30 do av 73 at \$6, 22 sheep av 105 at \$3; to Brown & F. 196 lambs av 75 at \$6.50, 173 do av 70 at \$6.35, 10 yearlings av 117 at \$5, 50 sheep av 115 at \$3.50, 6 do av 120 at \$3; to Thompson Bros. 83 do av 75 at \$2.50; to Parker, W. & Co. 74 lambs av 48 at \$4; to Sullivan P. Co. 30 sheep av 95 at \$2.50, 36 do av 50 at \$4.50, 26 do av 50 at \$4.75; to Hammond, S. & Co. 24 sheep av 520 at \$3.50; to Breitenbeck 92 lambs av 65 at \$6.25, 76 sheep av 95 at \$3; to Fitzpatrick Bros. 25 do av 90 at \$3.50; to Eschrich 49 lambs av 60 at \$4, 22 do av 60 at \$5.

Hogs.

Receipts, 6,397. None sold up to noon; prospects as follows: Pigs, 25@50c higher than last week.

Range of prices: Light to good butchers, \$7.50@7.65; pigs, \$7@7.25; light yorkers, \$7.25@7.50; stags one-third off.

Bishop, B. & H. sold Hammond, S. & Co. 3,115 av 195 at \$7.60, 1,016 av 185 at \$7.55, 515 av 150 at \$7.50.

Roe Com. Co. sold Sullivan P. Co. 187 av 200 at \$7.60, 160 av 185 at \$7.50, 67 av 125 at \$7.25.

Haley & M. sold Parker, W. & Co. 450 av 195 at \$7.60, 150 av 160 at \$7.55, 175 av 150 at \$7.50, 198 av 165 at \$7.45.

Spicer & R. sold same 888 av 195 at \$7.60, 115 av 155 at \$7.50.

A short time ago Clay, Robinson & Co., of Chicago, wrote to their representative at Buffalo asking for information regarding eastern packing interests, and received the following answer: "We think that there will be plenty of hogs to supply all the eastern trade until around New Years. Good weight hogs have been very scarce and will likely continue to be. We are of the opinion that supplies will fall quite a little short of one year ago, as there was a great loss of pigs in the month of March and a great many brood sows came to market in April and May that would not have come had they not lost their pigs."

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ADDITIONAL VETERINARY.

Warts on Teats—Ringworm.—I have a black cow that is giving milk; she is bothered with white pimples or tufts of skin growing on teats. Also, what can be done to cure ringworm on cattle? W. E. L., Hillman, Mich.—Apply acetic acid to growth on teats and if the sores are open apply one part carbolic acid and 30 parts water once a day. Apply either tincture iodine or iodine ointment to blotches every day or two.

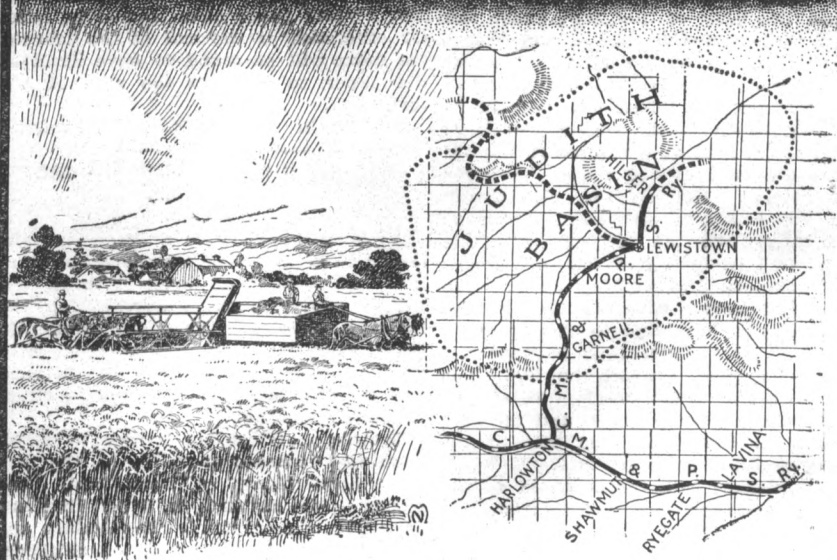
Cow Gives Bloody Milk.—I have a good cow that came fresh about two months ago and one month ago she commenced giving bloody milk from one-half of udder. The milk and cream has a sort of pink color and I would like to know if she can be cured? O. D. S., Sparta, Mich.—Your cow must injure udder and I would suggest that you ascertain the cause and remove it. If you fail to diagnose the case, apply one part tincture arnica and ten parts water to udder two

or three times a day. Give her a tablespoonful powdered nitrate of potash at a dose in feed night and morning.

Nasal Catarrh.—I am feeding 25 lambs and give them a pan of salt once a week with two handfuls of wood ashes, two tablespoonfuls of sulphur and the same quantity of sulphate of copper and would like to know if what I am giving them is all right and if not, why? Or would it be best to give them only salt? Many of these lambs have hard colds and run badly at the nose. H. D. G., Albion, Mich.—Mix together equal parts ground gentian, ground quassia, ground cinchona bark, powdered fenugreek, bicarbonate

soda and salt and give each lamb a small teaspoonful at a dose in ground feed twice daily. If they crave more salt, place it where they can help themselves. Wood ashes, sulphur and sulphate of copper are rather harsh remedies for the insides of lambs.

Sore Foot.—I would like to know what to do for a young cow that has a sore foot, causing her to walk lame. There is a small sore between toes and I presume the whole trouble is in foot. J. L., Coral, Mich.—Dissolve 1 oz. sugar of lead and ½ oz. sulphate copper in quart of water and apply to foot twice a day. The foot should be kept clean and dry.

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POULTRY AND BEES

PREPARING TURKEYS FOR THE FANCY TRADE

Before killing turkeys for the holiday trade I keep them for 18 hours in a clean, airy place without any food. They are given water, for this gives a healthy look to the skin and assists in cleansing the digestive organs of matter that would become sour and taint the flesh.

When a bird is to be killed it should be suspended head downward, with its feet in a noose of strong cord, far enough from the walls of the house and other objects so that it cannot injure its wings when it struggles. After stunning it by dealing a sharp blow at the base of the skull with a club, pass the left arm around the body of the fowl, under the wings, and hold the side of the breast toward you. Grasp the head in the left hand, opening the bill with the thumb and forefinger, and thrust the knife blade into the mouth to the region just back of the brain, making a sharp cut directly across the roof of the mouth to sever the arteries. Holding the bird firmly with the left arm and hand, begin at once to remove the feathers with the right hand, beginning at the juncture of head and neck and working up over the breast and body. Give the bird a turn that presents the back to the operator, and begin at the neck, or between the wings, and pluck toward the tail. The short feathers of the wings, tail, shanks and neck are removed next, and the long feathers of the wings and tail, if removed at all, are plucked last.

As a general rule the feathers of the last joint of each wing are left on, and the long feathers of the tail are removed, or not, as the market requires. Though the skin is less likely to be torn than in the case of chicken or duck, the plucking should be done carefully and none but experienced pickers should attempt to hurry the process. The thumb and forefinger do most of the work by firmly grasping a few feathers and removing them by a quick jerk, which begins upward toward the tail and terminates outward and is accomplished by a quick jerk of the wrist. This motion first loosens the feathers in their sockets by starting them the way they grow, and then removes them at the angle least liable to tear the skin. A well-grown turkey is very powerful and must be held firmly, yet with due care, for if the wings are grasped by their extremities, or held too rigidly in any position, the bird may struggle and break or wrench them out of joint, making the carcass unfit for sale. Careful handling after picking is also desirable, for a bruise will cause discoloration.

Cooling and Packing.

In my experience, cooling is best accomplished by hanging the picked turkeys in the open air, out of the sun, long enough to allow the escape of all animal heat, but not long enough for them to freeze or become stiff if the temperature is low. Some markets do not require turkeys to be drawn and some do. It is always best to find out what your market wants before killing, for if drawn turkeys are shipped where undrawn stock is wanted, the loss on a consignment is considerable. The feet and head should be washed clean and wiped dry, and all blood removed from mouth and throat. If care is used in killing and handling it will not be necessary to wash the body, and the skin will retain the bright yellow appearance better than when cooled in water instead of in the air.

Packing is as important as picking, but it is not so tedious. All consignments should be packed tightly, not jammed, in clean boxes, with sufficient packing to prevent shifting en route. Birds of different sizes, but not of different qualities, may be packed in the same box, and the contents of the box should be correctly marked on outside of cover. If the mark says "Eight young cocks and twelve young hens," and the dealer, upon opening the box, finds a few old birds mixed in, he of course loses confidence in the shipper and will not recommend his goods. Large boxes are inconvenient to handle and less desired by small dealers than boxes weighing from 100 to 200 pounds. If the market catered to favors drawn stock, drawing is performed rapidly before the fowl is hung up to cool. The incision should be as small as possible, and only the intestines need be removed.

Stock intended for special markets should be prepared with extreme care—

the intestines drawn and the head and feet removed. When the head is cut off considerable blood will be clotted in the neck, and unless this blood is removed it will turn black and show through the skin. If there is any food in the crop it is wise to remove it before cooling, which is done by pushing back the skin of the neck and working the crop out from under it with the forefinger, taking care not to tear the crop when separating it from the surrounding tissues. The removal of this organ does not leave the breast looking so well as when the crop is empty and left in, because its absence allows the skin to sag in front of the breast bone; but if the food remains it will show black through the skin, mar the appearance and taint the flesh. Draw the skin forward over end of neck and tie with a clean string. When thoroughly cooled wrap the carcass in clean parchment paper and pack in a clean box. White paper alone should be used, for otherwise at the end of the journey the color will be found to have deserted the paper to cling to the skin of the turkey.

New York,

A. E. VANDERVORT.

CONVERTING THE TURKEY CROP INTO CASH.

As a rule, we try to finish off all the larger turkeys for the Thanksgiving market. At that time large turkeys are wanted, everywhere. Later, during the holidays, smaller turkeys are always in great demand. Hen turkeys and late-hatched birds, when properly fattened and dressed, bring fancy prices in all of the large markets.

Growing turkeys are harder to finish than well matured ones. We let the turkeys have plenty of range until two weeks before the date on which they are to be sent to market. They cannot endure close quarters as well as chickens. A large shed will answer their purpose, if there is no turkey house on the premises. It should be clean and dry, with

Always feed the fowls in a clean spot on the floor, or in troughs. Corn should never be thrown into filth, and it is always better to use troughs in feeding mash.

Provide plenty of sharp grit. Oyster shell should be kept where the turkeys can reach it at all times. Coal cinders, with the ashes sifted out, are greedily eaten by turkeys, even when other grit is plentiful.

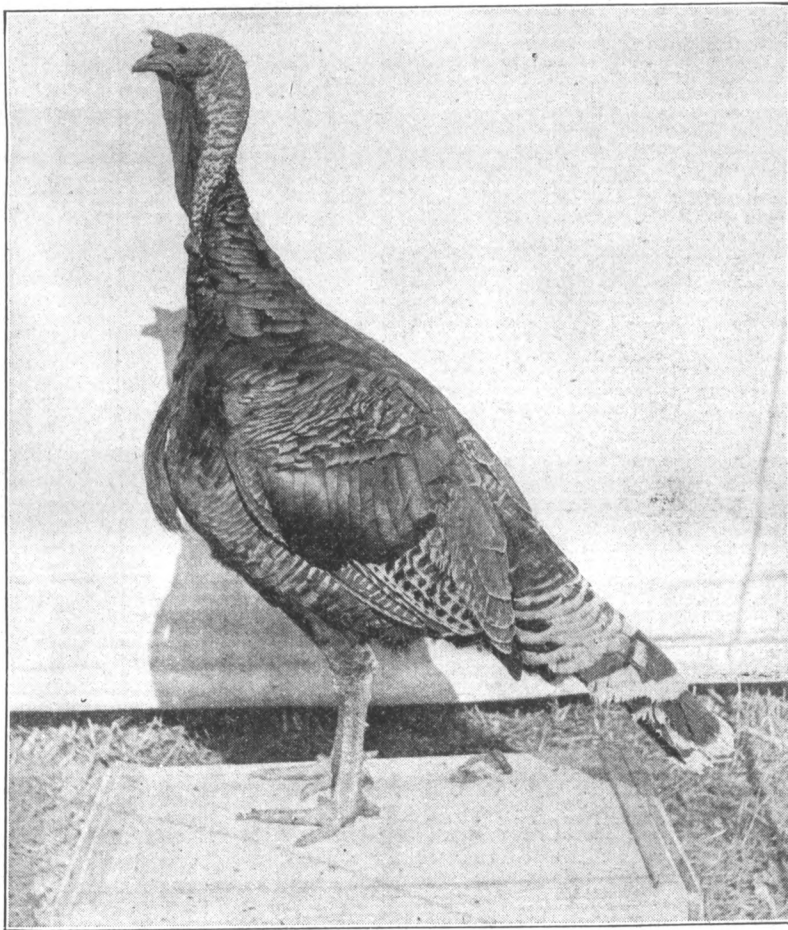
We find it an excellent plan to turn the turkeys out every two days, for an hour or two, so they can get some exercise. If grass or other green stuff is plentiful they will relish it greatly. In case no green food can be found, some cabbage should be fed in the house. Turkeys always relish raw onions and this vegetable is said to be a preventive of liver disease in turkeys. Therefore, when mixing the noon mash, we sometimes add a quantity of chopped raw onions.

While turkeys seem to like whole corn better than any other feed, we think a steady corn ration, without anything else, is much more apt to cause liver trouble than a varied ration. An abundance of clean water while they are confined is of course very necessary.

Turkeys are killed, dressed and shipped in the same manner as other fowls. Never allow them to freeze, as this greatly reduces their market value. Dry-picked turkeys usually sell best in large markets. However, it is a good idea to study the market beforehand.

In packing, be careful to assort the fowls properly and place all of the same grade together. When different qualities are packed together the rating given is invariably based on the poorest in the lot. It is best to have packages weigh from 100 to 200 pounds, as these sizes are most conveniently handled. On outside of package should be plainly written the contents, gross weight and name of the consignee, as well as that of the consignor.

When shipping poultry that is first class in every respect, it is a good idea



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good ventilation. Substantial roosts are, of course, necessary. They should not be over five feet from the floor, not too close together and either flat or rounded on the upper side. Some prefer stout poles, from the woods.

After the turkeys are placed in the fattening shed we feed all they will eat, morning, noon and night. Whole corn is always given, morning and evening. A mash, composed of equal parts cornmeal and bran, to which are added some cooked vegetables, such as potatoes, turnips or pumpkins, is the usual ration at noon. A little salt and some pulverized charcoal are also added to this mash. When convenient, buttermilk is used to moisten the ground grain. It is a good plan to moisten the bran and meal before the vegetables are added, as this prevents the mixture from becoming sticky.

to tag each fowl with the name and address of the producer. In this way a reputation may be gained that will enable one to always dispose of stock at fancy prices.

Ohio.

ANNA W. GALLIGHER.

POULTRY KEEPING AS A VOCATION.

In the field of industry there are many vocations which afford remuneration if pursued with intelligence and thought. There is none from which, along with profit, a greater amount of pleasure can be derived than that of poultry keeping. To watch the development of chicks from the time they leave the eggs until they become full-grown hens, ready to bring cash into the hands of their owner, is exceedingly interesting. But it is a business in which all do not succeed

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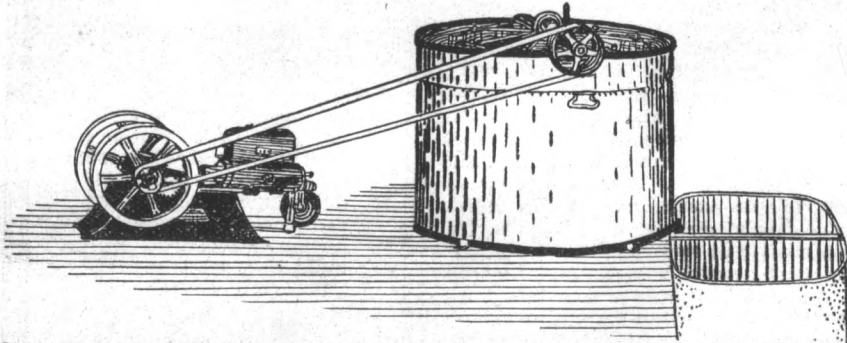
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because of their lack of a natural liking for the work—and there is plenty of work in connection with building up and carrying on a poultry business if it is to be made a success. But it is a business that is not likely to be overdone, as Americans are great consumers of eggs, so great that the supply does not nearly equal the demand. Therefore, to the person of average intelligence, possessing, perhaps, a fair knowledge of fowls, a strong desire to learn and a liking for outdoor life, poultry keeping is pregnant with possibilities. To such I would say, drain. Pollen, or bee bread as it is popularly called, is crushed with the rest, and fine grains of it find their way through the sack or strainer cloth and into the honey. This gives the product a flavor which is very objectionable to most people. Extracted honey, or the other brand, is taken from the hives in large combs and carefully uncapped with a large knife made for that purpose. It is then put into the extractor, which is an upright tank in which are revolving reels with pockets at their other extremities. Into these pockets the combs



Modern Power Extractor—Gasoline Engine Operating an 8-frame extractor; honey tank below.

go into it, put forth your best efforts, work for improvement, read and benefit by the experience of others and success will surely crown your efforts.

Wayne Co. Mrs. A. D. PITCHER.

EXTRACTED HONEY VERSUS THE STRAINED PRODUCT.

The production of extracted honey is a phase of bee-keeping which, by those outside of the profession, is very much misunderstood. The term in itself is

are placed and then, either by crank and hand power, or by the use of a gasoline engine, the reels are rapidly revolved and the honey thrown out by centrifugal force.

It is hoped that this explanation, supplemented by the accompanying illustrations, will help to bring about a clearer understanding as to the way in which the extracted product is secured and serve to convince the consumer that, honestly prepared, it is a most satisfactory product.

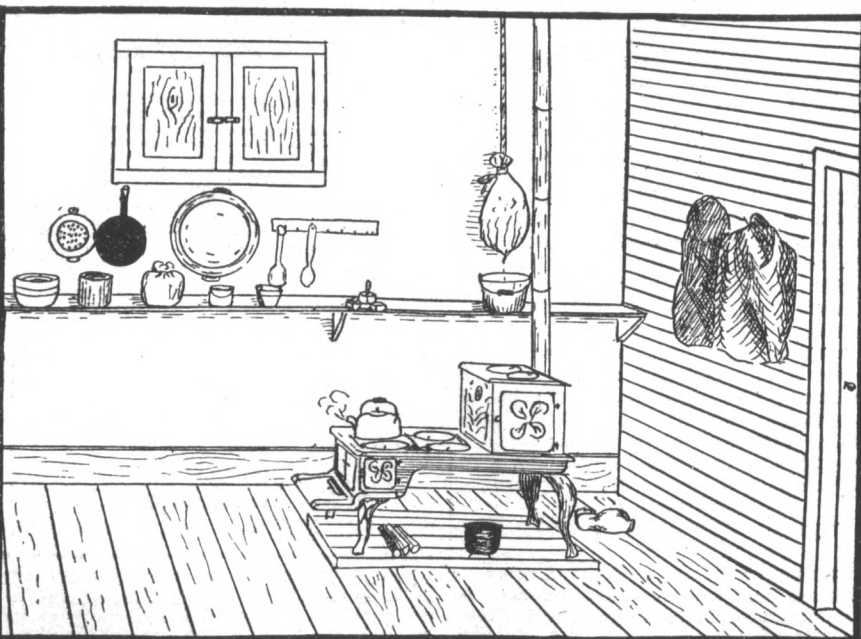
MICHIGAN POULTRY SHOWS.

Dates for more than a score of poultry shows have been claimed by local organizations throughout the state, most of these exhibitions to occur during December and January. Officials of associations having knowledge of additions or corrections to the list presented below will confer a favor by advising us. The location and dates of shows already announced, so far as we have been able to obtain them, are as follows:

Kent City	Nov. 25-29
Pontiac	Dec. 4-8
Owosso	Dec. 9-14
Cass City	Dec. 10-12
Michigan City	Dec. 16-21
Bay City	Dec. 16-21
Battle Creek	Dec. 17-22
South Haven	Dec. 17-20
Holland	Dec. 20-25
Kalamazoo, Southwestern Michigan Association	Dec. 23-28
Jackson	Dec. 29-Jan. 2
Zeeland	Dec. 30-Jan. 2
Lansing	Dec. 30-Jan. 4
Kalamazoo	Jan. 6-11
Lansing	Jan. 7-14
Detroit	Jan. 7-14
Muskegon	Jan. 14-17
Sheridan	Jan. 16-20
Calumet	Jan. 23-25
Manistee	Jan. 30-Feb. 2
Flint	Feb. 3-8

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Strained Honey of our Childhood Days Dripped from a Bag of Crushed Comb Hung Behind the Kitchen Stove.

profession calling the extracted honey of an even \$1.00, three years for \$1.25 and today "strained honey."

Let me explain briefly the difference high quality still be maintained. But we between the two. Strained honey is have made it possible, as explained on honey which has been crushed in the page 7, and you should take advantage comb, placed in a bag and hung up to of it while it lasts.

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My Specialty—Building Tractors for Medium-Sized Farms

Other tractor manufacturers have used their money and brains to build big, heavy tractors for large farms. That alone has kept them busy. None have ever made a serious attempt to build a tractor light enough, simple enough and inexpensive enough for men on farms of 160, 200, 240, 320 and 640 acres.

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With the result that I have perfected a tractor that pulls as much as 16 big horses, yet weighs 6,000 to 8,000 pounds less than any other of the same power. I did this by using high-grade steel, instead of common iron.

Think what a saving of power and fuel to have 3 to 4 tons less dead weight to pull!

And this tractor will work any place that a horse can. With its light weight and wide drivers, it does not pack the soil. You can harrow with it, do your discing, seeding and rolling. Plowing is only one of its many useful features.

You Can Get Into The Fence Corners

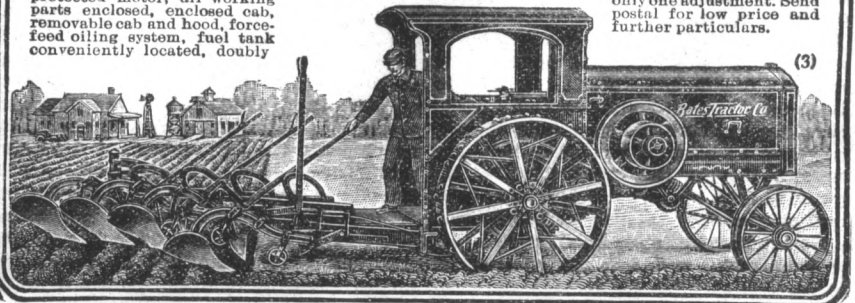
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efficient cooling arrangement, gear driven from both sides; sliding, positive clutch transmission, gears always in mesh,

stripping of gears impossible, external contracting friction clutch, no slipping, controlling levers in radius of 12 inches, only one adjustment. Send postal for low price and further particulars.



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Orders Booked for Single Comb Buff of May hatch. Otis Greenman, R. 4, Bellevue, Mich.

Silver, Golden and white Wyandottes, a fine lot of young stock. New circular January 1st. Browning's Wyandotte Farm, R. 30, Portland, Mich.

Barred Rock Cockerels—Big, sturdy fellows, hatched from great layers. Prices reasonable. W. O. Coffman, R. 6, Benton Harbor, Mich.

Crystal White Orpingtons—the great winter layers. Yearling hens, early hatched cockerels and pullets. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.

WHITE Wyandottes—The most beautiful and useful of American breeds. Send for 1912 circular A. FRANKLIN SMITH, R. F. D. 2, Ann Arbor, Mich.

S. C. R. I. Reds, Indian Runner Ducks—High class stock for utility or show. Hardy, heavy-laying strain at reasonable prices. Montrean Poultry Farm, Blissfield, Mich.

Prize Winning Barred Rocks, R. I. Reds, Mammoth Pekin and I. Runner ducks Stock for sale. Eggs \$1.25, \$2.50 per set. Utility \$5 per 100. EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

LILLIE FARMSTEAD POULTRY B. P. Rocks, R. I. Reds, and S. C. W. Leghorn eggs for sale. 15 for \$1; 25 for \$1.50; 50 for \$2.50. OOLON C. LILLIE, Coopersville, Mich.

DOGS. for Coon, Fox and Deer, sent on ten days' trial, pedigreed and eligible to registry, trained and untrained. R. F. JOHNSON, Assumption, Ill.

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HORTICULTURE

ORCHARD RENOVATION.

Much has been said about orchard renovation, most of which has been about the brilliant prospects that are in store for those who will undertake such work. This has led many into the belief that a headlong rush into the business was all that was necessary to bring a full pocketbook. As the result there are some "sore heads" from striking the bottom during such plunges.

It seems almost proper to think of orchard renting when we think of orchard renovation. One who renovates orchards most always rents and the one who rents almost without exception, renovates. Orchard renovation and renting are profitable if properly done. There are, however, a few things to take into consideration to do the thing properly and profitably.

Ventures into orchard renovation in farming districts where each farm has from twenty-five to one hundred trees whose lowest branches are about twenty feet from the ground and with about three to twenty varieties in the orchard, can not ever be very profitable. Small orchards in different places cause much loss of time in all orchard work. It is almost impossible to spray and to pick the fruit on the old timers, pruned to the shape of a palm tree, so common on many farms. Such high trees generally lack top or bearing surface and will not yield the number of barrels that a tree of normal size and shape will. Where it will cost thirty cents to pick and pack a barrel of apples picked from normal trees it will cost forty cents and over to pick and pack a barrel of apples, not as good, from high trees.

A large number of varieties in an orchard increases the cost of picking and decreases the chance to sell the crop to advantage. It also makes spraying harder and the results from spraying will generally not be as good as when there are few varieties in the orchard. The old farm orchards are very likely to have a large number of varieties in comparison to the number of trees, as they were set for home use, and not for commercial purposes.

The water supply is a very important thing to consider in the renting of orchards. Without water little success would be had in spraying. With water a mile away the cost of spraying would be greatly increased. In cases where orchards are rented longer than for a few years it will pay to make some arrangements with the owner for a convenient water supply near the orchard. If necessary put in a storage tank and gasoline engine. It will pay in the end. Be sure that you will not be at loss for water during dry times. If the August spraying is missed on account of the lack of water the loss will be more than the cost of several water outfits.

In renovating orchards the distance from the shipping point should also receive attention. A matter of ten miles will nearly make a difference of ten cents per barrel in the cost, and ten cents per barrel each year for five years or more would make quite a little spending money.

If the orcharding amounts to car load lots inquiry should be made as to the railroad over which you will ship your apples. Some roads will have a shortage of cars much sooner than others.

The source of barrels should also be given some thought. Some people are paying thirty cents a barrel while others are paying forty-two. It is well to figure the cost of the empty barrel delivered in the orchard. The forty cent barrel is sometimes cheaper than the thirty-five cent barrel when the delivery charges are considered. Again, it may be advisable to pay a little more for barrels from a source from which you know that all of your demands will be supplied. It is not fair to the cooper to expect a large number of barrels from him and not take a share of them early in the season and store them. The writer knows of several orchardists who do this and they are the first ones to howl if there is a shortage of barrels.

In the renting of orchards for renovation care should be taken to have the lease made out in proper legal form. I know of several renters who would have been a few thousand dollars better off if they had spent a few dollars to have the lease properly made out. It is policy,

also, to have the lease recorded on the county records of the property.

The more renovation the orchard needs the longer should be the lease and the cheaper the rent. In such orchards the sliding scale of prices is sometimes used. The first year or two the orchard rent would probably be twenty-five cents per tree; then fifty cents a tree for a few years, after which it might go to seventy-five cents. Many orchards are not worth more than fifty cents per tree at any time. Some can be had for nothing for the first two or three years. They are generally worth all that is put in them.

Renting for cash is by far the most satisfactory way of leasing orchards. The cost of orchard renovation is high and a one-third share of the crop would very often amount to an exorbitant price for rent. The third may mean a difference between profit and loss.

Van Buren Co.

F. A. WILKEN.

WINTER PROTECTION OF STRAWBERRY PLANTS ESSENTIAL.

Among the various operations involved in the growing of strawberries, there is none of greater importance than that of protecting the plants against injury from exposure to low temperature and winter sunshine; and the reason becomes obvious as inquiry is made into the nature and habits of the plants. Among other things, it will be found that the strawberry plant does not protect its bud system with a well ripened woody growth as is the case with bush and tree fruit, hence, for those latitudes subject to extended periods of freezing temperature, it becomes necessary to supply additional protection in order to conserve a maximum degree of vitality in the plants.

The quantity of material needed for this purpose as well as the time of its application varies with the latitude, seasonal differences, and other circumstances peculiar to the locality. For the bleak prairie lands of the Dakotas, it is advised that eight to ten inches be used to secure the best results. This depth of covering would require an immense amount of material, a quantity so great as to make the cost almost, if not quite, prohibitive. In a region where straw is sometimes sent up in smoke to get it out of the way, the cost should not be so great as to deter the grower in applying the limit as to quantity. However, two inches of settled material makes a pretty generous covering, under average Michigan conditions. This depth would perhaps require six large loads per acre. In our own operations, it is not often that this quantity is used, or needed. Under condition as they exist with us, for the purpose of winter protection only, a very light covering will meet fully every need of the plant, as we may safely reckon on an ample fall of snow. And there is no material that will afford such ideal protection as will a generous blanket of snow; and to make sure of this we only have to make provision for retaining the snow as it falls; and this can be accomplished through the use of straw and of windbreaks, either natural or artificial.

The location of our next year's fruiting bed is such that there will be a constant accumulation of snow until it attains a depth of two to four feet, depending upon the amount of snowfall. As there will be little, if any, freezing of the ground under such conditions, it might appear that additional protection was unnecessary. This, however, is not the case, for, as the snow goes next spring, there will be a week or so when night freezing will be the rule and this will work injury to the leaves and crowns of the plants left exposed.

Some growers advise delaying the application of the mulching material until the soil is frozen hard enough to hold the weight of team and wagon. Under a condition of soil saturation, this is advisable, but otherwise nothing is to be gained in thus delaying the operation, except it should be a question of convenience. The writer prefers to have the work accomplished as soon as there is any night freezing of the soil. A fixed rule regarding the time when this work may be most profitably done is not possible, because of a variation in seasons, and a word of caution will not be amiss here: Care must be exercised in applying a mulch when the ground is in an unfrozen state, for an application of a large quantity of material, or of material fine and close in texture, at this time may cause injury by excluding air. A light covering of some coarse material applied early in the season and supplemented later by a generous blanket of

snow makes ideal conditions, for, no matter how deep this snow covering may get, air will enter in sufficient quantities to meet the requirements of the semi-dormant plants.

As an ideal material for the purpose of protecting strawberry plants, marsh hay has no equal. The material is coarse and not inclined to settle close, excluding air, and another good point in its favor is that it is free from weed seed. Next in desirableness, perhaps, we would place corn fodder, that is, when grown thickly or shredded. Forest leaves are excellent for the purpose, but must not be applied in large quantities, for the tendency of this material is to pack closely, excluding air. Leaves, too, require the addition of some coarse material, or something that has weight, to hold them in place. In the absence of anything more desirable, a light sprinkling of earth will answer this purpose. Any kind of coarse straw will do except for the one objection of supplying noxious weed seeds. We use a greater or less quantity of this material each season, but this is done with the expectation that more or less work will be required in the spring, to get rid of the weeds thus introduced. But the strawberry plants must be protected, even though the operation does entail a great deal of labor; any remissions in this matter is pretty sure to result in a financial loss at harvest. This loss may be large or small, but whatever the amount, it is not a wise policy to take chances in this way.

Emmet Co.

M. N. EDGERTON.

PROTECTING THE FRUIT TREES.

It is an easy matter to lose trees from the attacks of rabbits, mice, and other rodents. There are a great many remedies for curing trees that have been girdled, but "an ounce of prevention is worth a pound of cure." The danger of girdling is not so great as it is supposed to be, for the rodents attack only the young trees. When a tree becomes old enough to have a hard bark, or a bark that is ridged and seamed, the rodents will not attack it. Food, in order to satisfy them, must be young and tender. Apple trees of more than two inches in diameter are not likely to suffer.

Trees are attacked by mice when the fields are covered with snow. The mice, deprived of other food, seek out a tree that has tender bark and will eat as far above the snow as they can reach and as far below as they can dig easily. As the snow settles it gives the mice a chance to eat the bark still further down, and it sometimes happens that a tree has its bark so badly eaten that it is impossible to save it.

A good protection is a screen made of a few laths between which wire has been woven in and out. The laths should be so small a distance apart that the mice cannot get through. These screens can be made in the house and quickly adjusted to the trees. Pick away the snow or frozen soil from about the tree so that the laths rest on the ground. This will keep the mice from getting under the screen. Other successful protectors used in practically the same manner, are on the market.

New York.

T. A. TEFT.

WHAT CAUSES SCULLION ONIONS?

In reply to the inquiry of Mr. Keeney, of Monroe county, as to the reason for so many scullions growing, can only say that my experience here has been very similar this year. He states that he had about 250 bushels per acre that were not marketable. I had fully as many that were unfit for the trade. I can account for this in no other way than that the backward spring delayed planting and the wet weather caused a rank growth of tops, and lacking our usual warm weather in July and August the tops kept right on growing, to the detriment of the bottoms. The same conditions, however, have been ideal for cabbage and I have the largest crop I ever raised.

Oakland Co.

G. I. COWDIN.

ANOTHER BERRY CANE DISEASE.

A report comes from England, of observations of a fungus which is responsible for serious injury to raspberries and logan-berries. The fungus attacks the stems during the summer when the young growth is tender, and as a rule lurid red or purplish patches appear on the stem. When several diseased areas are present the canes are killed outright during the winter, whereas when only one or two infected areas are present the canes may survive and produce a certain

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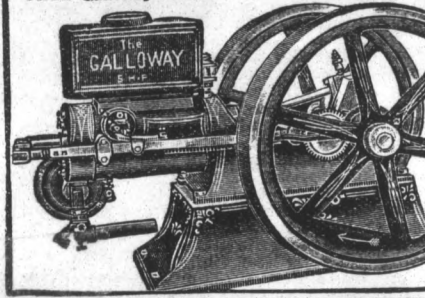
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amount of fruit. Infection mostly takes place during the fruiting period, hence spraying can not be successfully resorted to unless the fruit is sacrificed. If spraying is found desirable the use of Bordeaux mixture is recommended. All diseased canes should be cut out and burned as soon as noticed, and the practice of allowing dead canes to remain standing throughout the winter is condemned. This disease is known as Hendersonia rubi.

PROCEEDINGS OF MICHIGAN HORTICULTURAL SOCIETY.

The forty-second annual meeting of the Michigan State Horticultural Society was held at Grand Rapids, November 12-13-14, in conjunction with the Grand River Valley Horticultural Society and the Grand Rapids Fruit Growers' Association. Sessions were held at the Fountain Street Baptist church, and the convention was fairly well attended interest seeming to increase and was best at the closing session Thursday.

The annual election occurred Wednesday. President T. A. Farrand, of Eaton Rapids, having served two terms, was ineligible for re-election, and on motion of Geo. Friday, of Berrien Co.; Pomeroy Munson, of Grand Rapids, former vice-president, was honored by elevation to the place as head of the society. Chas. E. Bassett, of Fennville, was re-elected as secretary, on motion of C. F. Hale, and R. A. Smythe, of Benton Harbor, is the new treasurer, being placed in nomination by Edward Hutchins. Mr. Smythe succeeds James Satterlee, of Lansing, for many years treasurer of the society, who resigned on account of necessary removal to California for the winter for the benefit of his wife's health. New members chosen on the executive board are as follows: Frank A. Wilken, of South Haven, succeeding J. P. Munson, for one year; W. F. Hawkhurst, of Saline, one year, succeeding the late O. S. Bristol; C. A. Pratt, of Benton Harbor, three years, re-elected; Paul Rose, of Frankfort, three years, succeeding Edward Hutchins, who has served two terms and was not eligible for re-election.

Secretary Bassett reported the securing of 73 life memberships for the year and 111 annual members. Chas. W. Garfield made a detailed report concerning the T. T. Lyon Memorial Fund and the report of Treasurer Satterlee showed a balance on hand of \$956.02. Secretary Bassett recommended that a change be made in the method of buying spray material and supplies. The practice has been to ask for bids but under this plan many firms refused to submit bids that later were to be advertised. Under the new system the society will pool its orders, then go out and fill them at lowest prices obtainable. On motion of L. B. Hall, of Ionia county, the matter was left to the executive board, with power to act.

The need of co-operation and better packing and marketing methods in Michigan was emphasized early and often during the three days and a committee composed of A. M. Young, of Allegan county, R. A. Smythe and George Friday, of Berrien county, E. M. Ladd, of Grand Traverse county, and C. B. Welch of Allegan county, made the following report, which was adopted:

"We recommend the establishing of fruit marketing associations wherever fruit is grown in sufficient quantities to warrant it, and the co-operation of these associations already organized, for the purpose of getting marketable grades and for marketing same.

"We recommend adoption of the Sulzer law and encouraging in every way its practice by all the Michigan growers of apples.

"We recommend that this society take up the organization of local societies for the purpose of grading and marketing their products, especially apples, with the further view of federation of all societies, with the object of better grading and more profitable marketing of our fruits.

"We ask the hearty support and co-operation of every Michigan grower to help make the Michigan apple a standard of quality, a profit to the grower and an economic food for the consumer, by cutting out all unnecessary expense between the producer and the consumer."

The convention was opened with prayer by Edward Hutchins, of Allegan county. President Farrand's annual address was brief and to the point. "We are here for business," said he, "and in view of conditions there is certainly work for

us to do. We have got the fruit, now what shall we do with it? I can't believe that the few hundred of growers have the world glutted with apples at the present time and this problem of proper distribution is worthy of our best attention."

Luther E. Hall, of Ionia county, who has a splendid Northern Spy orchard of 85 acres, 30 acres of which is in bearing, was the first speaker on the program. Mr. Hall is very partial to the Spy and wishes that he had never known any other apple. His views and practices regarding low-headed trees and clean cultivation do not quite follow modern day teaching and methods, but so far he has been successful. His trees have high heads, the lowest limbs being five and a half to six feet from the ground and his orchard culture is a compromise between clean cultivation and the grass mulch system. His orchard was planted 21 years ago on hardwood lands, a heavy clay loam soil, and has produced seven crops of apples. Trees are set 40 feet apart. The orchard is plowed in spring and sowed to Canada field peas. When pears have matured he turns hogs into the orchard, allowing five hogs to the acre, also spreads shelled corn as hog feed among the trees. The hogs remain there until the fruit hangs down, the weeds are kept clipped off and the pea straw and weeds thoroughly mulches the ground. The aim is to get humus in an inexpensive way and this mulch is about as heavy as can be turned under in the spring. His aim is to have the trees bear, annually and not over bear. This is done with the pruning shears and small and unprofitable apples are eliminated. He is not troubled with codlin moth.

F. J. Overton, of Van Buren county, who led in the discussion, also favors the grass mulch for apples, and a severe heading in annually, making a semi-dwarf orchard. His orchard of five acres, set 16 years ago, came into bearing at ten years and bears annually, about three barrels to the tree. The soil is sand loam and clay. Trees are in sod and he has cut several crops of clover and timothy, which were left on ground as mulch. Trees are set 20 feet apart, with fall and winter varieties alternating, the object being to avoid tree competition. Fall trees make their demands on the soil early and winter trees call for food later. Several growers spoke in favor of clean cultivation. Chas. W. Wilde, of Kent county, favors oats and vetch as a cover crop in his orchard, sowing about October 1. Discussion of high color and how to get it, followed. Prof. Eustace said you can get color by the sod mulch system, but the apples lack flavor, yield and size. Fruit grown on warm limestone soils has better color. Pruning trees and thinning to let in the sun was advised, also use of potash and wood ashes. Henry Smith, of Kent county, stated he has used potash and barnyard manure with good results. Secretary Bassett pointed out that the sure way to get color was to get the sun.

"Grape Troubles and their Remedy," was the subject handled by Robert A. Smythe, of Berrien county. The chief troubles mentioned were black rot, brown rot and powdery mildew, which have been especially troublesome during the past two years, owing to excessive rains. These troubles are controllable by spraying, about four sprays being necessary. The new pest known as root worm, was also spoken of, which is not controlled by spraying. There are a few cases around Benton Harbor and the remedy proposed by an eastern authority is thorough cultivation, turning the worm up to the hot sun, which kills it. Mr. Smythe believes that grape diseases are an angel in disguise, for the men who is growing fruit indifferently will be put out of business, leaving the field open to the man willing to study, work and fight for better fruit. In closing the speaker made an earnest plea for co-operation in selling, saying, "we can grow good stuff but we can't sell it."

George Friday, of Berrien county, opened the discussion and denounced poor and dishonest packing methods, saying, "we've got to deliver the goods to the man at the other end." Present association selling methods, where the manager gets the first half-cent per basket, met with his strong disapproval. He gave instances of carloads of grapes shipped into the northwest from Michigan this season, that were fit only for vinegar. Mr. Friday favors associations properly conducted, with the manager paid a good salary.

Kent Co. A. GRIFFEN.
 (To be continued).

SCOFFERS

Often Make the Staunchest Converts.

The man who scoffs at an idea or doctrine which he does not fully understand has at least the courage to show where he stands.

The gospel of Health has many converts who formerly laughed at the idea that coffee and tea, for example, ever hurt anyone. Upon looking into the matter seriously, often at the suggestion of a friend, such persons have found that Postum and a friend's advice have been their salvation.

"My sister was employed in an eastern city where she had to do calculating," writes an Okla. girl. "She suffered with headache until she was almost unfitted for duty."

"Her landlady persuaded her to quit coffee and use Postum and in a few days she was entirely free from headache." (Tea is just as injurious as coffee because it contains caffeine, the same drug found in coffee). "She told her employer about it, and on trying it, he had the same experience."

"My father and I have both suffered much from nervous headache since I can remember, but we scoffed at the idea advanced by my sister, that coffee was the cause of our trouble."

"However, we finally quit coffee and began using Postum. Father has had but one headache now in four years, due to a severe cold, and I have lost my headaches and sour stomach which I am now convinced came from coffee."

"A cup of good, hot Postum is satisfying to me when I do not care to eat a meal. Circumstances caused me to locate in a new country and I feared I would not be able to get my favorite drink, Postum, but I was relieved to find that a full supply is kept here with a heavy demand for it." Name given by Postum Co., Battle Creek, Mich.

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

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

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GRANGE

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

STATE GRANGE IN UPPER PENINSULA.

For the first time in the history of the organization in this state, Michigan patrons will this year cross the Straits to hold their annual State Grange meeting. The dates are Dec. 10-13 inclusive, and Sault Ste. Marie is the chosen city. The planting of the Grange banner in every county, save Keweenaw, of the "upper country" constitutes one of the greatest achievements of the Grange in this or any other state, and a better appreciation of this fact by lower Michigan patrons is sure to result from this opportunity to meet and to visit with those sturdy members of an order which everywhere stands for fraternal interest and helpfulness. It is hoped that as many members as possible, aside from chosen delegates, will make the most of this chance to see a section of the state with which comparatively few of the residents of southern Michigan are familiar.

SOME RECOLLECTIONS OF A STATE GRANGE MEETING.

It was in December, 1902, that I first visited the State Grange, and I shall never forget that first day of the session. Brother Niles, who has become something of a permanent fixture in these meetings, met me and demanded the password. Brother K. L. Butterfield shook hands and asked me to lead the singing. I had met Brother Horton a few weeks before at the National Grange meeting, but had no acquaintance with him farther than that. His gavel fell shortly, and my interest centered in him, the best presiding officer I had seen up to that time. There was another in that hall whom I shall never forget. She sat at the chaplain's station, and when she lifted her voice in thanksgiving for the blessings of the year that had gone, and sought light and strength and peace that we might see the way, that seeing we might be strong to do, and that in all our work in the order peace might prevail, she uttered no vain repetitions, but she spoke the language of a heart that beat true to God and to the order she loved. To have known Mrs. Mayo was to have a strong faith in the world and in the principles she professed.

Well, there were the usual congratulatory speeches, plenty of music, and a good time generally until the credentials committee came in with its report. There was not a Grange in the Upper Peninsula then, though most of the counties of lower Michigan were represented.

At the afternoon session Brother Horton delivered his annual address. As he reviewed the different lines of Grange work the order seemed to grow and take on new importance before our eyes. As he spoke of needed reforms in legislation he made everything so clear that wise and helpful public opinion was moulded right there while he spoke. The address was very long, but we forgot the flight of time, forgot everything, save the Grange, what it had accomplished and the great things that still remained to do. Master Horton paid a touching tribute to Sister Hinds, of Stanton, who had passed away during the year, and closed his great address with a word picture of "The Grange Ship." He did not speak loudly, though Representatives hall was crowded. He uttered his message in a low impressive tone, but we all heard him. I can see that "Grange Ship" now, just as he pictured her. He spoke as a master builder, and he lifted his hearers and helped them to see new visions of Grange possibility.

On Wednesday afternoon Sister Saunders held her lecturers' conference. Her program was less elaborate than is the custom today on like occasions but they who took part did so because they had something to say, rather than because they were on the program. I recall Sister Buell's essay, in which she then gave promise of ability to do splendid work in the lecturer's field.

My mother was taken suddenly ill and I was obliged to leave before the close of the session. When I left the hall Brother Hull was making a strong plea for postal savings banks. He spoke very earnestly and with some agitation, but even then one might easily have foreseen

that the future held higher honors in store for him.

I fear I have drawn out this story to too great a length, but in these days, when the order has grown to larger proportions, when positions of honor are sought with far greater anxiety than in the times of which I write, in these days when every man in the order is subjected to "The X-Ray," it does us good to turn our thoughts back to a day when great men and women wrought together to build our order, with small reward save the esteem and confidence of their sisters and brothers and the knowledge that they were building wisely and well for the future.

All honor to the men and women who have given the best years of their lives to help build the Grange in Michigan. They have earned our gratitude and our esteem. May their example of faith in our order, and splendid service in its behalf, ever be held worthy of emulation.

W. F. TAYLOR.

AMONG THE LIVE GRANGES.

Charlevoix Pomona met with Ironton Grange on Thursday, Nov. 7, with an attendance of about 100, representing nine Granges. Before the meeting the members were served a chicken-pie dinner by the ladies of Ironton Grange. After dinner the meeting was called to order by Master Wm. Mears, and the committee having the matter in charge reported that the Grange rest room was practically completed and had cost approximately \$350, of which \$145.07 had been paid. It was decided to pay all of the smaller bills, leaving a balance of \$163 to be raised later. In the evening a class of seven brothers and six sisters was initiated into the mysteries of the fifth degree by the Marion Center degree team. The next meeting of Pomona will occur some time in February.—Sec.

Pomona, Goddess of Fruit, was honored at a recent meeting of Grand Traverse Grange. The hall had been handsomely decorated for the occasion and contained flowers, plates of fruit, branches of autumn leaves, branches loaded with red apples, witches made from black cardboard, and big red cardboard apples. The center of the hall was occupied by a table upon which the fruit was massed. A chicken-pie dinner was served after which ten sisters and one brother contributed to the afternoon's program of recitations, readings and songs. The Grange as a whole sang two songs, one of which was the recently written "Equal Rights for Michigan," by Mrs. E. E. Duryea. Primary election for officers of State Grange will occur at the next meeting, and such time as is available for a program will be given to discussing the Grange's legislative policy for the coming year.

Sumner Grange, of Gratiot county, has plans laid for another membership contest, the sisters to contest with brothers for the honors of bringing in the greatest number of new members.

COMING EVENTS.

Michigan State Grange, Fortieth Annual Meeting, at Sault Ste. Marie, Dec. 10-13.

Pomona Meetings.

Genesee Co., with Goodrich Grange, Friday, Nov. 22. Mrs. E. J. Creyts, state speaker.

Ingham Co., with Webberville and Vantown Granges, at farm home of Mr. and Mrs. Hugh Silsbee, Webberville, Friday, Nov. 22. Thanksgiving program.

FARMERS' CLUBS

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

PROGRAM FOR TWENTIETH ANNUAL MEETING.

Tuesday, December 3, 1912.

10:30 A. M.

Payment of dues.
Presenting credentials.
Appointment of committees.
Presentation of resolutions.

1:30 P. M.

Music, quartette, Mesdames Emma Hart, Willard Livesay; Messrs Willard Livesay, John Kuhns; accompanist, Miss Cora Pray, Greenbush Farmers' Club.
Invocation, Rev. O. J. Price.
Report of Associational Secretary, Mrs. C. P. Johnson, Hadley and Elba Farmers' Club.

Music, quartette.
The Traveling Library, Mrs. M. C. Spencer.

One Phase of Rural Development, Dr. Eben Mumford, M. A. C.

Reading, Miss Alta Sackett, Eckford Farmers' Club.
Modern Methods of the Modern School, J. F. Rieman, Flint.

7:00 P. M.

Music, Industrial School.
Address of welcome, Gov. Osborn.
Response, T. H. Townsend, Essex Farmers' Club.

Music, quartette, Greenbush Farmers' Club.

President's address, J. D. Leland, Cornu.

Reading, selected, Hazel Belle Crosby, Battle Creek.

Music, Industrial School.
Illustrated lecture, O. H. Benson, Washington, D. C.

Wednesday, December 4.

8:00 A. M.

Conference of Local Club Workers, directed by R. J. Pierson, Hadley and Elba Farmers' Club.

10:00 A. M.

Report of Committees: Temperance, honorary members, Club extension, good of the order, credentials, national affairs. Miscellaneous business.

11:00 A. M.

Election of officers.

1:00 P. M.

Music, furnished by School for the Blind.

Invocation, Rev. W. H. Thompson.
Report of committee on state affairs.
Michigan and its Proposed Canals.
Hon. Huntley Russell, State Land Commissioner.

Does a College Education Unfit Girls for Farm Life? Mr. C. A. Bullock, Hadley and Elba Farmers' Club.

Music, solo, Rev. W. H. Thompson.
Recitation, J. W. Woodworth, Battle Creek.

Agricultural Extension Work, Dean R. S. Shaw, M. A. C.

7:00 P. M.

Music, orchestra School for the Blind.
Treasurer's report, Mrs. C. P. Johnson.

Reading, J. W. Woodworth, Battle Creek.

Music, solo, selected.
Michigan, Mrs. O. J. Campbell, Washington Center Farmers' Club.

Pioneer and Historical Museum, Mrs. M. B. Ferry.

Music.
The Enforcement of the Drug and Food Act, R. E. Doolittle, Washington D. C.

Music, solo, selected.
Agriculture in Rural and Secondary Schools, W. H. French, M. A. C.

All Topics Open for Discussion.

FARMERS' CLUB FAIRS.

North Shade Club.

The annual fair and home-coming of the North Shade Farmers' Club was held last Friday at the home of William T. Hill. The weather was all that could be desired. In spite of the urgent demand which compelled many farmers to remain at home and attend to their bean fields, there was a good attendance. A large collection of the fruits of the earth tastefully arranged on the porch and on the lawn gave the whole scene the appearance of a miniature county fair.

After an hour spent in receiving the guests and in pleasant social intercourse the members of the Club and the visitors were invited to a picnic dinner in the dining-room. The table was loaded with an endless variety of edibles calculated to tempt the most fastidious appetite.

After dinner the Club was called to order by the vice-president, Daniel Spiece, and the proceedings opened with a song by the Club and prayer by R. H. V. Wade. The roll was called by the secretary and responded to by quotations. Mr. Campbell, of Washington Center, gave an interesting talk on sheep raising, showing it to be one of the most profitable enterprises in which a farmer can engage. Mrs. H. V. Wade gave a recitation entitled "Tradin' Joe," which was greatly enjoyed by all. W. T. Hill gave an address on "The Value of State and County Fairs to the Farmer," in which he showed that many of the fairs had degenerated and that the money which should be spent in prizes for farmers' exhibits was devoted to horse racing and other profitless diversions, which were of little or no benefit to the farmer. A clever recitation was given by Miss Clara Anna on "The Postoffice Pen," which was well received. Brief addresses were given by Rev. W. Mitchell and Rev. H. V. Wade.

Among the exhibitors were some very fine pieces of embroidery. Mrs. Nettie Todd exhibited some ripe red raspberries on the stem. Elder Walker contributed a few cornstalks 12 feet high. Mrs. Hill showed a quilt which was spun and woven by her grandmother when she was a girl about the year 1798.

The members of the North Shade Farmers' Club are to be congratulated on their splendid exhibits and on a most successful meeting of the Club. Mr. and Mrs. Hill filled the bill to perfection, making the guests and visitors feel perfectly at home and affording every facility for a most enjoyable time. A concluding song by the Club and the benediction by Elder Walker brought to a close a very profitable and pleasant session of the Club which adjourned to meet next time at the home of Mrs. Salisbury.—Ray Salisbury, Cor. Sec.

CLUB DISCUSSIONS.

In Memoriam.—The Hadley and Elba Farmers' Club cancelled the October meeting owing to the burial of Mrs. W. H. Johnson, an esteemed former citizen of Hadley, on that date.

Discuss Woman Suffrage.—The Salem Farmers' Club held its October meeting at the pleasant home of Mr. and Mrs. Van Vorse. An interesting discussion of the live subject of Woman's Suffrage was a feature of the program and was participated in by both ladies and gentlemen, showing sentiment favoring the question. Good music was given by Miss Mable Naylor, also Mrs. Van Vorse.

Prepare for Annual Meeting.—The Club held its November meeting at the commodious ne whome of Mr. and Mrs. Irving Johnson. A stormy day prevented a large attendance but a good time was enjoyed. Music, business, and making arrangements for the annual meeting, comprised the program. New members, Mr. and Mrs. J. Johnson and Mr. and Mrs. D. Farley. The annual meeting will be held at the town hall. A speaker and a good time are expected.—Cor. Sec.



Exhibits at the Recent Fair Held by the North Shade Farmers' Club, of Gratiot County.

PRACTICAL SCIENCE.

ORGANIC FOODSTUFFS. (Continued).

BY FLOYD W. ROBISON.

Amount of Food Required to Give 100 Grams Protein.

In order to obtain 100 grams of proteid, which is approximately three and one-half ounces, if the human being depended upon apples alone to supply it, it would be necessary to eat 25,000 grams; or 3,000 grams of milk; 800 grams of wheat; 750 grams of egg albumin; 480 grams of lean beef; or 430 grams of peas. In addition to getting our 100 grams of protein if we used cows' milk, we would also get 140 grams of carbohydrates and 47 grams of fat. In wheat we would get 580 grams of carbohydrates and 14 grams of fat; in peas, 230 grams of carbohydrates and seven grams of fat; in apples, 3,330 grams of carbohydrates and practically no fats.

Ordinary Vegetables Are Low in Protein.

It is very evident that it is difficult for the average human being to secure the amount of protein necessary in the ordinary vegetable foodstuffs. He might succeed in eating enough potatoes to furnish 100 grams of proteid but if he did so he would eat 5,000 grams of potatoes per day. This would amount to about 166 ounces of potatoes. Sixteen ounces to the pound would approximate ten pounds of potatoes to secure the desired amount of protein. If he were to live on rice, he would be able to obtain this protein from 42 ounces of rice, which would be nearly three pounds. If he obtained the 100 grams of protein from such a breakfast food, we will say, as wheat, it would be necessary to eat about 27 ounces of wheat, or nearly two pounds of a breakfast food made from wheat. Unless the product were eaten dry it is difficult to see how a person could eat in one day two pounds of Pettjohn's breakfast food or any other similar prepared food. If meat is used to furnish the protein, we find that by eating 16 ounces of lean beef during the day the 100 grams of protein may be secured. If peas are used, about 15 ounces would furnish the desired amount of protein.

The Balanced Ration in Human Food.

It is very evident that these figures point to one happy solution of human foods and that is a carefully balanced dietary which contains on the one hand just as small an amount of protein as is absolutely necessary to furnish the minimum protein required for the body and on the other hand, a sufficient amount of carbohydrates and fats to provide the other energy factors of the body.

Dietetic Considerations.

As we have explained in these columns, the average adult human being requires approximately 100 grams (3½ ozs.) of true proteid material per day. It seems that under certain conditions this amount of proteid material may be advantageously reduced below this figure, but it seems to the writer that any appreciable reduction below this point might be considered a sort of idiosyncrasy of occupation, if that term may be used, and would not apply generally to the public. It is important to consider carefully the sources from which this proteid is to be obtained and we should bear in mind that all substances containing nitrogen do not have equal values in the dietary.

Nitrogen Compounds Vary in Food Values.

For instance, if we should take lean meat as our typical example of a protein food material, we shall find upon a critical analysis that there are varying compounds in lean meat which have varying degrees of value in the dietary. There are various nitrogenous compounds in lean meat, the typical or true protein being entirely insoluble in water and constituting the principal nitrogenous constituent in meat. Accompanying this true protein are also various other nitrogenous bodies, the so-called extractives which, it is generally conceded, are inferior in dietary value.

Meat Extracts and their Value.

This calls to our attention a class of nitrogenous products which have been used extensively as food for persons recovering from an illness, the so-called meat extracts which are on the market. Modern research has shown, and we are indebted very largely to Fischer for light on these points, that in the breaking down of proteid material in the body a portion of it at least becomes simplified into what have been known as the amino

acids. The amino acids seem to be the intermediate product in the building up of proteids but the human digestive mechanism is so adjusted that it does not seem to get an equal value from the amino acids that it gets from the completed proteid which has been built upon the amino acids. We might, for the sake of clearness, suggest an analogy at this point. It is known perfectly well that animal bodies are unable to derive nourishment from the simple compounds, such as nitrate of potash, sulphate of ammonia, etc., but that plants seem to make use of these elemental substances in some way or another which permits them to build up a complex material, such as starch, or gluten, that is capable of directly nourishing animals. In fact, the latest research has shown that in the soil itself there exist these various simple nitrogenous compounds known as amino acids which undoubtedly serve in one way or another as a nourishing media for plants and thus, after the plant or vegetable kingdom has built up a superstructure, then the animal kingdom appears on the scene and is able to derive nourishment from the living matter made by the plants. The amino acids and other similar nitrogenous bodies which exist in meat extracts are in a way comparable to the simple bodies upon which plants subsist, although as a matter of actual fact, they represent one stage further in the evolution of food material than is represented by the main compounds which serve in plant nutrition. We should expect, then, that these so-called extractive matters, or amino acids, etc., represent the incomplete proteid which nature has attempted to produce, and if the process of building or growing went on sufficiently then the extractive matter, or amino acids, or simpler nitrogenous bodies which are found in animal tissues would in time ultimately be built into a true proteid material which would be a source of direct nourishment for other animals.

The Role of Meat Extracts in the Diet of Invalids.

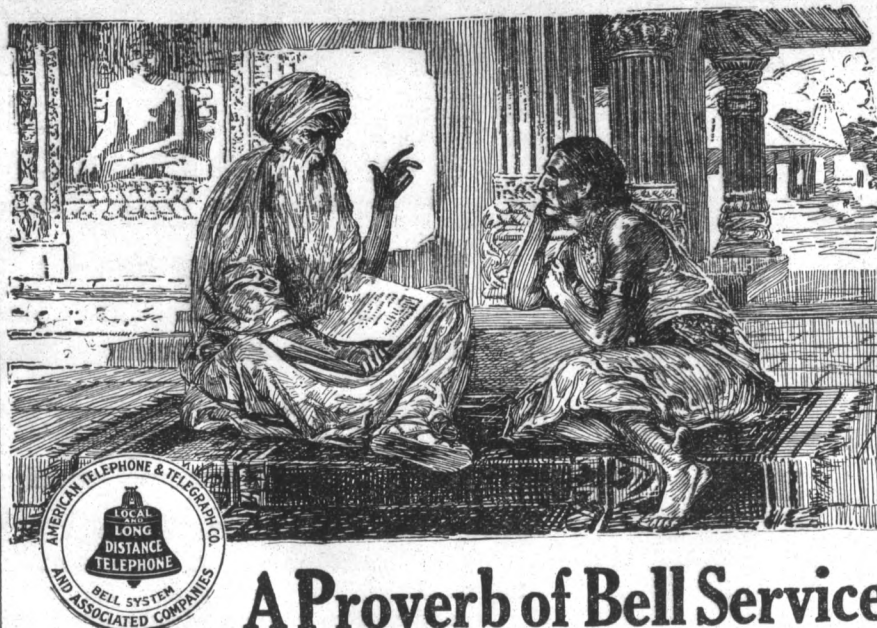
In a convalescing patient it is quite as important to begin the process of recuperation by stopping the tremendous expenditure of energy. Before a patient is in condition to actually begin building new material, the effect of the ravages of disease which are exhibited in the wasting of bodily tissues, must be counteracted. One very valuable function of the extractive matters which we have called the amino acids class is that while they do not serve as a direct source of nourishment to the body in that they are built into healthy tissue perhaps they do serve in such a capacity that they spare or prevent the destruction of material which is already an integral part of the body. We therefore call them spacers or proteids.

Meat Extracts are Supplements to True Food.

Therefore, if in supplying nourishment to the convalescing patient, we furnish an easily assimilated substance which will put a stop to the waste of material already on the body, the very first step in the recuperation of the individual is accomplished. Therefore, meat extracts and the various bouillons have a very valuable field and fulfill a very desirable mission in the diet. The serious error that has arisen in the use of these products has arisen through the ignorance of dieticians as to the functions of these extractive bodies. While they are valuable in stopping excessive waste in the body it must also be remembered that it is folly to attempt to build up permanent tissues solely by the use of these intermediate amino bodies. Consequently the skillful dieticians, once the tremendous waste of disease has been checked, begin immediately the gradual introduction of the true food material which at first becomes a supplement merely to the extracts given but which as the ability of the patient to assimilate food increases is gradually increased in the diet until the time ultimately comes when the extractive material may be eliminated almost completely from the diet.

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A Proverb of Bell Service

Once upon a time there dwelt on the banks of the holy river Ganges a great sage, by name Vishnu-sarman.

When King Sudarsana appealed to the wise men to instruct his wayward sons, Vishnu-sarman undertook the task, teaching the princes by means of fables and proverbs.

Among his philosophical sayings was this:

"To one whose foot is covered with a shoe, the earth appears all carpeted with leather."

This parable of sixteen hundred years ago, which applied to walking, applies today to talking. It explains the necessity of one telephone system.

For one man to bring seven million persons together so that he could talk with whom he chose would be almost as difficult as to carpet the whole earth with leather. He would be hampered by the multitude. There would not be elbow room for anybody.

For one man to visit and talk with a comparatively small number of distant persons would be a tedious, discouraging and almost impossible task.

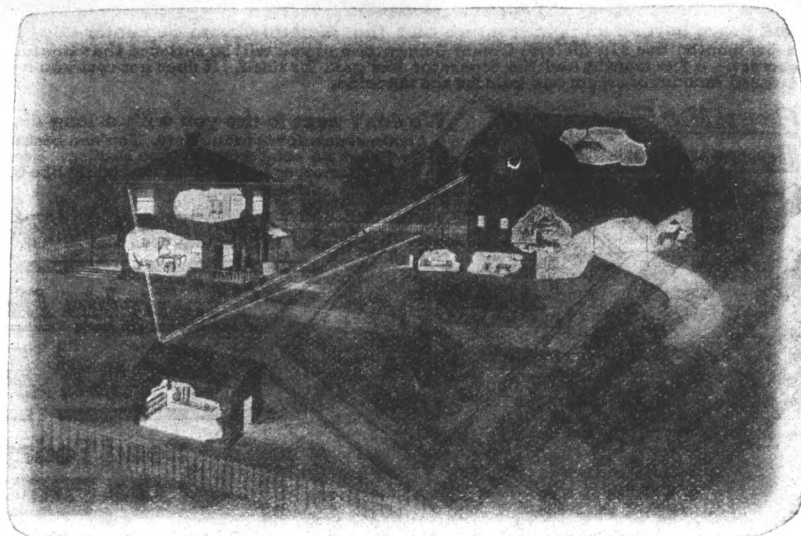
But with the Bell System providing Universal Service the old proverb may be changed to read:

To one who has a Bell Telephone at his lips, the whole nation is within speaking distance.

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Superb Light for Home, Barns and Outbuildings.

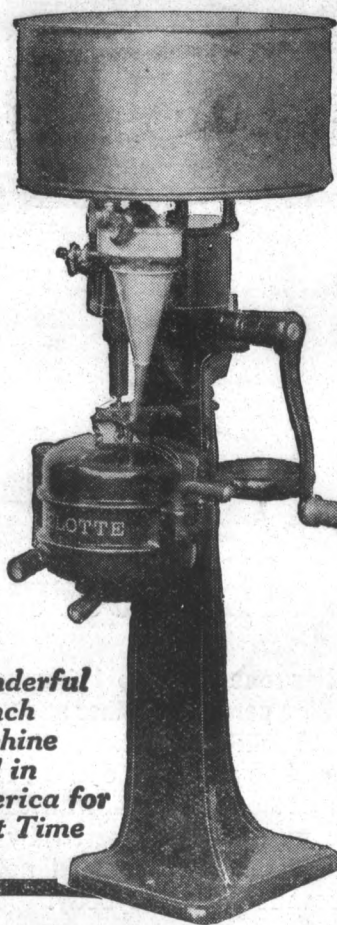
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This is positively the first bona fide, no-money-down offer ever made on any cream separator. No manufacturer of any cream separator ever *dared* to make such a startling offer before. All others who have ever *pretended* to offer you a free trial or to send their separator without any money down have taken care to get *something* out of you first.

But we don't want *anything*. All we ask is your simple request. We send the cream separator direct to your farm absolutely without any money down. We can afford to do this because the Melotte sells itself. It has an absolute self-balancing bowl.

We want you to read every word of this great offer. It is an offer which, we think, proves our *absolute faith* in the great *Melotte Cream Separator*. You are given the opportunity of seeing just how much cream this marvelous separator will extract from your milk before we ask you to send us one cent. You never saw another manufacturer who was so open-handed in his offer. The reason is that no other manufacturer ever wanted you to know *all* about his machine *before* paying him anything. We want you to know all there is to know because we know that we have the separator that is right. The principle of the Melotte has been *proven* to be right in the greatest dairying countries in the world. Now, read every word of this wonderfully liberal offer.

Sent Without a Penny Down

30-Day Free Trial!

Your simple word that you would like to see this cream separator in your own barn or dairy house brings it to you instantly. We send you the Melotte without a bit of quibbling or hesitancy. We neither ask nor want you to send a penny. We don't want a cent of your money. The Separator goes direct to you. You set it up, give it a thorough test with the milk from your own cows. We give you a free trial that *is* a free trial in every sense of the word. It is a free trial because we don't ask you to pay us any money down—there is no C. O. D.—no lease nor mortgage. You keep your money right in your own pocket. You pay nothing to anybody.

Some people *PRETEND* to give you a free trial, but they ask you to give them your money first. We are not afraid to let our separator speak for itself. Test the Melotte Cream Separator in every way, watch your profits go up, watch the increase of the amount of cream, then, if you do not believe that you ought to have a cream separator, just send it back at our expense. If, however, you decide to keep this genuine Melotte—the peer of all cream separators—the separator that gives you greater profits than any other—makes every cow you have give you 100% greater value and insures you greater profits from your dairy than you ever made before—we will allow you to keep it on extremely easy

MONTHLY PAYMENTS

These payments are so small that you will hardly notice them. You only pay out of your increased profits. You don't need to be without a cream separator when you can have the separator right in your dairy house while you are paying for it. In reality you do not pay for it at all. It pays for itself.

This is what we want to demonstrate to you. We want to demonstrate and prove beyond all peradventure that the Melotte Cream Separator does pay for itself. Only a few months' use of a Melotte Cream Separator and you will be satisfied that this statement is *absolutely correct*. A few months and the separator has paid for itself. It does not cost you a penny because the increased amount of cream has paid for the machine.

Send the Free Coupon now—Today!

Don't delay

We don't want to tire you with a long discussion of how our cream separator is made here. You can best understand this if you will let us send you our free catalog. Besides this free book we have another book which we should like to put into your hands.

Valuable Book

"Profitable Dairying"

Sent FREE!

Send Today! It Brings the FREE DAIRY BOOK

Just ask for this book and it will be sent to you. It is free. Place your name on the coupon, cut it out and mail it at once. Then we will send you our great free book, "Profitable Dairying," telling you everything about cows and dairying, butter and cream—how to feed and care for cattle, how to make them twice as valuable as they are now, and how to make more money than ever before out of your cows. This book is written by two of the best known dairy scientists in the country—Prof. G. H. Benkenhoff, Wisconsin Dairy School Agricultural College, Madison, Wis., and K. L. Hatch, Winnebago County Agricultural School, Winneconne, Wis.

We will also send you our FREE Catalog, describing fully the great Melotte Self-Balancing Bowl Cream Separator and telling all about our liberal terms. Find out all about our liberal terms. Find out about these terms anyway, even if you don't expect to buy a cream separator just now. Remember—no money down, free trial and easy payments—and we let the separator tell its own story. You see with your own eyes why we can afford to guarantee this separator for 15 years. The most sensational offer ever made in connection with a cream separator. Our catalog tells all about it. Don't delay. Sign the coupon RIGHT NOW.

BABSON BROS., Agents in U. S.
Dept. 4348, 19th St. & California Ave., Chicago, Ill.

Melotte Runs 54 Years!!

At the Melotte works one of the Melotte Separators has been working every day (driven from the shafting) since Nov. 5, 1900, running 10½ hours per day—or 19,687 hours at a cost of only \$7.50. Reckoning that a farmer works his separator one hour per day, the 19,687 hours represent (on the farm) a period of 19,687 days, or nearly 54 years. Therefore, the total cost of maintenance for the Melotte separator for 54 years, inclusive of oil, will be only \$7.50. At great trials of separators held at Boulogne, France, Oct. 5 to 9, 1905, under the auspices of the Federated Agricultural Societies of the North, the Melotte easily vanquished all other separators—proving the cleanest skimmer and taking less power—and was **Awarded the Gold Medal**.

World's Grand Prize Winner

Here is a small Percentage of the First Prizes the Wonderful Melotte Has Won:

- | | |
|---|--|
| 1888—Brussels—International Exhibition—Progressive Prize. | 1902—Prague—Diploma of Honor. First Prize. |
| 1889—Tongres—First Prize. | 1903—Reggio-Emilia—Diploma of Honor. First Prize. |
| 1890—Brussels—First Prize. | Aussig—Gold Medal. First Prize. |
| 1891—Louvain—Diploma of Honor. | 1903—Luxembourg—Gold Medal. First Prize. |
| 1892—Bouchout-lez-Anvers—First Prize. | Reims—First Prize. |
| 1893—Theux—First Prize. | London—Gold Medal. First Prize. |
| 1894—Weert—First Prize. Medal of Higher Merit. | 1904—Heyst-Op-Den-Berg—First Prize. Gold Medal. |
| 1895—Vienna—First Prize. | 1904—Vouneuil S Vienne—First Prize. St. Louis—First Prize. |
| 1895—Drontheim—Silver Medal. First. | 1905—Bombay. First Prize. |
| 1896—Patay—First Prize. Gold Medal. | Durban. First Prize. |
| 1897—Rennes—First Prize. | Orleans. First Grand Prize. |
| Brussels—World's Exhibition. First Prize. | 1906—Milan. First Grand Prize. Tours. First Prize. |
| 1898—Lyons—First Prize. | 1907—Amsterdam. First Prize. |
| London—First Prize. | 1908—Stardour. Grand Prize. |
| 1899—Poitiers—First Prize. | 1908—Saint-Gilles-Termonde. First Prize. |
| 1900—Northants—First Prize. | 1910—Axel. First Prize. |
| Paris Gold Medal and First Prize. | 1911—Sinay. First Prize. |
| 1901—Vise—Diploma of Honor. | Brussels—Grand Prize and First Gold Medal. |
| Marchin—First Prize. Gold Medal. | |

For full list of prizes which the wonderful Melotte has won send the free coupon.

Test With Other Machines

Before you decide to buy any Cream Separator arrange to test a MELOTTE along side of the machine you now think is the best separator in America. We want you to do this. Then there can be no doubt in your mind as to whether you are really getting the best machine. This is the only way to buy a cream separator. Then it will not be necessary to take anybody's word.

You'll know which machine turns easiest—which machine is the best made. You'll know which skims the closest. You'll know which will make you the most money.

Write to us about the MELOTTE and the MELOTTE FREE TEST today. We are the sole factory representatives in America.

BABSON BROS., Agents in U. S.
Kindly fill in this coupon and we will send you free and prepaid our book "Profitable Dairying" by Prof. G. H. Benkenhoff and Prof. K. L. Hatch, the Wisconsin Dairy School Agricultural College, Madison, Wis., and our free Melotte Self-Balancing Bowl Cream Separator Catalog, explaining our no-money-down and easy monthly payment offer on Melotte Cream Separators.

Your Name.....
Address.....

No letter necessary
Just sign and mail
the coupon
TODAY